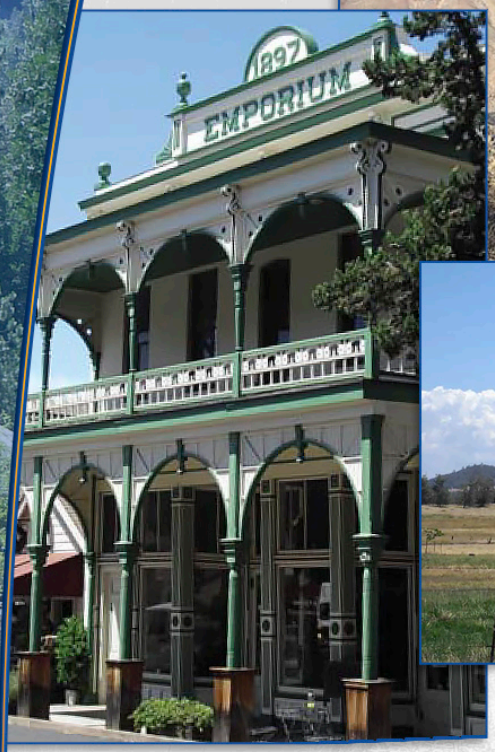

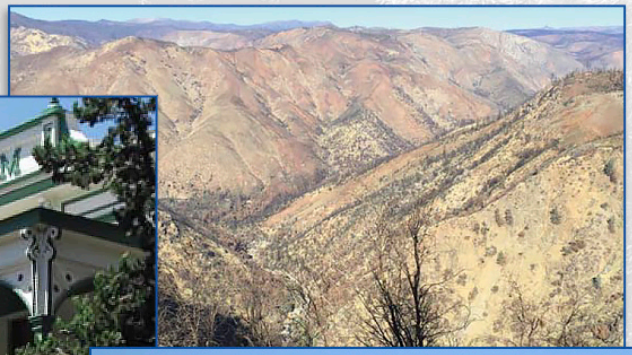

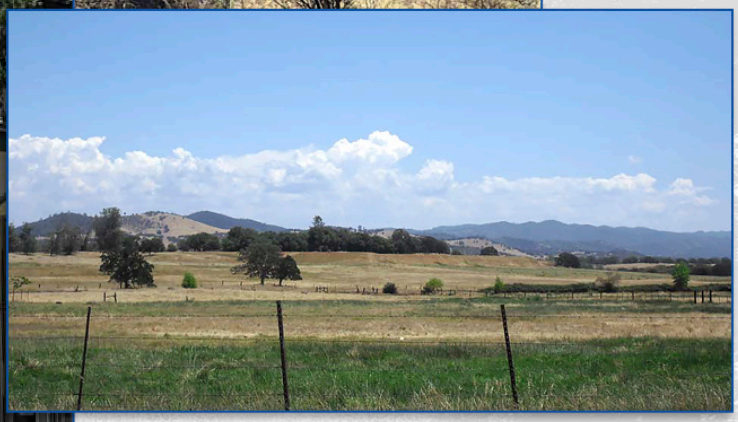

Draft Recirculated Environmental Impact Report
for the

Tuolumne County General Plan Update Project

State Clearinghouse No. 2015082027

Prepared for:

Tuolumne County
Community Resources Agency
2 South Green Street
Sonora, CA 95370

August 2018

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ACRONYMS AND ABBREVIATIONS

°F	degrees Fahrenheit
2017 Scoping Plan	*California's 2017 Climate Change Scoping Plan*
AB	Assembly Bill
ACM	asbestos-containing material
ADT	average daily traffic
ADT	average daily trip
AFY	acre-feet per year
ALUC	Airport Land Use Commission
ALUCP	Airport Land Use Compatibility Plan
APCD	Air Pollution Control District
AQMD	Air Quality Management District
BMP	best management practice
CAA	federal Clean Air Act
CAAQS	California ambient air quality standards
CAFE	Corporate Average Fuel Economy
CAL FIRE	California Department of Forestry and Fire Protection
Cal/OSHA	California Occupational Safety and Health Administration
CalEEMod	California Emissions Estimator Model
Caltrans	California Department of Transportation
CAP	Climate Action Plan
CARB	California Air Resources Board
CBC	California Building Code
CCAA	California Clean Air Act
CCR	California Code of Regulations
CDE	California Department of Education
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CESA	California Endangered Species Act
CFC	California Fire Code
CFC	chlorofluorocarbon
CFGC	California Fish and Game Code
CFR	Code of Federal Regulations
CH_4	methane
CHP	California Highway Patrol
CIP	Capital Improvements Program
CNEL	community noise equivalent level
CNPS	California Native Plant Society
CNRA	California Natural Resources Agency
CO	carbon monoxide
CO_2	carbon dioxide
County	Tuolumne County
CRHR	California Register of Historical Resources
CRPR	California Rare Plant Ranks
CSD	Community Services District
CWA	Clean Water Act
CWHR	California Wildlife Habitat Relationships

dB	decibels
dBA	A-weighted sound pressure level
DHS	California Department of Health Services
DOC	California Department of Conservation
DOT	U.S. Department of Transportation
DTSC	California Department of Toxic Substance Control
DWR	California Department of Water Resources
ECA	Essential Connectivity Area
EIA	U.S. Energy Information Administration
EIR	environmental impact report
EMT	Emergency Medical Technician
EO	Executive Order
EPA	U.S. Environmental Protection Agency
ESA	federal Endangered Species Act
FCEP-CIP	Financially Constrained Expenditure Plan Capital Improvement Program
FEMA	Federal Emergency Management Agency
FICAN	Federal Interagency Committee on Aviation Noise
FIRM	Flood Insurance Rate Map
FMMP	Farmland Mapping and Monitoring Program
FPD	Fire Protection District
GCSD	Groveland Community Services District
GHG	greenhouse gas
gpd	gallons per day
GWP	global warming potential
HAP	hazardous air pollutant
HCP	habitat conservation plan
HFC	hydrofluorocarbon
HMP	Hazard Mitigation Plan
ISO	Insurance Service Office
LAMP	local agency management plan
LBP	lead-based paint
LCFS	Low Carbon Fuel Standard
L_{dn}	day-night average level
L_{eq}	equivalent noise level
L_{max}	maximum instantaneous noise level
LOS	level of service
LUST	leaking underground storage tank
MCAB	Mountain Counties Air Basin
MCL	maximum contaminant level
MEI	Maximum Exposed Individual
$MMTCO_2e$	million metric tons of carbon dioxide–equivalent
mph	miles per hour
MPO	metropolitan planning organization
MRZ	Mineral Resource Zone
MS4	municipal separate storm sewer system
$MTCO_2e$	metric tons of CO_2 equivalent GHG emissions

N_2O	nitrous oxide
NAAQS	national ambient air quality standards
NAHC	Native American Heritage Commission
NCCP	natural community conservation plan
NEHRP	National Earthquake Hazards Reduction Program
NESHAP	National Emissions Standards for Hazardous Air Pollutants
NFPA	National Fire Protection Association
NMFS	National Marine Fisheries Service
NOI	Notice of Intent
NO_X	oxides of nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
NRCS	U.S. Department of Agriculture, Natural Resources Conservation Service
NRHP	National Register of Historic Places
NWI	National Wetlands Inventory
OEHHA	Office of Environmental Health Hazard Assessment
OPR	California Office of Planning and Research
OSHA	federal Occupational Safety and Health Administration
PFC	perfluorocarbon
PG&E	Pacific Gas and Electric Company
PM	post mile
PM_{10}	particulate matter measuring no more than 10 microns in diameter
$PM_{2.5}$	particulate matter measuring no more than 2.5 microns in diameter
PPD	pound per day
ppm	parts per million
PPV	peak particle velocity
PRC	Public Resources Code
PRG	Preliminary Remediation Goal
project	General Plan Update
Providers	refiners, blenders, producers, or importers
RCP	Representative Concentration Pathway
RCRA	Resource Conservation and Recovery Act
Recirculated Draft EIR	Recirculated Draft Environmental Impact Report
RHNA	Regional Housing Needs Assessment
RMP	Risk Management Plan
RMS	root mean square
ROG	reactive organic gases
RTP	Regional Transportation Plan
RWQCB	Regional Water Quality Control Board
RWWTP	Regional Wastewater Treatment Plant
SANDAG	San Diego Association of Governments
SARA	Superfund Amendments and Reauthorization Act
SARC	School Accountability Report Card
SF_6	sulfur hexafluoride
SFPUC	San Francisco Public Utilities Commission
SGMA	Sustainable Groundwater Management Act
SIP	state implementation plan
SMAQMD	Sacramento Metropolitan Air Quality Management District
SMARA	Surface Mining and Reclamation Act
SO_2	sulfur dioxide

SR	State Route
SRA	state responsibility area
SWIFT	Southwest Interface Team
SWPPP	storm water pollution prevention plan
SWRCB	State Water Resources Control Board
TAC	Toxic air contaminant
TCAPCD	Tuolumne County Air Pollution Control District
TCFD	Tuolumne County Fire Department
TCOC	Tuolumne County Ordinance Code
TCR	Transportation Concept Report
TCSO	Tuolumne County Sheriff's Office
TCTC	Tuolumne County Transportation Council
TMDL	Total Maximum Daily Load
TUD	Tuolumne Utilities District
UBC	Uniform Building Code
USC	U.S. Code
USFWS	U.S. Fish and Wildlife Service
VMT	vehicle miles traveled
ZEV	zero-emission vehicle

EXECUTIVE SUMMARY

This Recirculated Draft Environmental Impact Report is part of the ongoing environmental review process for the draft Tuolumne County General Plan Update and was prepared in accordance with the California Environmental Quality Act (CEQA) to evaluate the potential environmental impacts associated with the implementation of the project (State Clearinghouse Number 2015082027). This document is prepared in conformance with CEQA (California Public Resources Code, Section 21000, et seq.) and the State CEQA Guidelines (California Code of Regulations, Title 14, Section 15000, et seq.). Recirculation of an EIR requires notice pursuant to CEQA Guidelines Section 15087 and consultation pursuant to CEQA Guidelines Section 15086.

The environmental impacts of the proposed project are analyzed in this Recirculated Draft EIR to the degree of specificity appropriate, in accordance with CEQA Guidelines Section 15146. This document addresses the potentially significant adverse environmental impacts that may be directly or indirectly associated with the policies set forth in the revised General Plan. This Recirculated Draft EIR is intended to serve as an informational document for the public agency decision makers and the public regarding the proposed project. This Recirculated Draft EIR includes substantial revisions to every section of the original Draft EIR and includes a new section, "3.6 Energy," as well as evaluation of two additional alternatives (summarized below) in Chapter 6, "Alternatives."

ES.1 GENERAL PLAN SYNOPSIS

The proposed project is a comprehensive update to the Tuolumne County General Plan (hereinafter referred to as the "General Plan Update"). The General Plan Update, which updates the 1996 General Plan, establishes the community's vision for the development of Tuolumne County through the year 2040 and will serve as the fundamental land use policy document for the County. The General Plan Update consists of two components: the Countywide General Plan and Community Plans, which relate to the communities of Jamestown, Columbia, East Sonora, Tuolumne, and Mountain Springs. The General Plan Update includes goals, policies and implementation programs to guide the development of Tuolumne County through the year 2040.

Since 2007, the County of Tuolumne has been participating in Tuolumne Tomorrow, a Regional Blueprint planning process for directing future growth and enhancing the quality of life in the County over the next few decades. Through this coordinated effort, the City of Sonora, Tuolumne County, the Tuolumne County Transportation Council, and community members developed Guiding Principles for growth and development, and studied the potential effects of the likely land use development pattern and possible alternative growth scenarios on the transportation system, housing, local economy, quality of life, natural resources, and the environment. As a result of this effort, the Distinctive Communities Growth Scenario was selected and adopted by the Board of Supervisors in August 2012 as the preferred growth scenario for Tuolumne County. The General Plan Update has been formulated to reflect this preferred growth scenario.

The General Plan Update is intended to function as a policy document to guide land use decisions within Tuolumne County's planning area through the year 2040. As discussed above, Tuolumne County's General Plan Update has been formulated to reflect the preferred growth scenario (the Distinctive Communities Growth Scenario of the Tuolumne Tomorrow Blueprint). Based on the general philosophy and input from the community and County decision makers, the General Plan Update includes the following overall objectives:

- Adopt a County-wide General Plan that reflects the current values and vision of the communities in the County and reflects the latest legal, statutory, scientific, and technical changes and advancements.
- Update the County General Plan to achieve and enable maximum flexibility for development within the bounds of state and federal law as well as an ever-evolving legal, cultural and environmental landscape.

- Promote the delivery of efficient and cost-effective public services.
- Enhance the unique nature of identified communities while providing services and amenities for residents, businesses, and visitors on a County-wide basis.
- Minimize or eliminate restrictions and requirements that can increase delays and/or the cost to development.
- Promote development within the County that is designed to fit the needs of the County's residents, businesses, and visitors.
- Promote the stewardship of the County's natural resources, which includes providing for the productive use of natural resources, and management to reduce risks of wildland fires.
- Conserve the County's historic resources and recognize their unique value to the County's social and economic fabric.
- Allow residents and property owners to use their land to the maximum extent of the law, while respecting the values of the community.

The General Plan Update includes the update of the seven mandatory General Plan elements. Government Code Section 65302 requires a General Plan to have both a Conservation Element and an Open Space Element, but also authorizes these elements to be combined. Due to the similar themes of these elements, they have been combined in the General Plan Update as the Natural Resources Element to minimize redundancy. The mandatory elements included in the General Plan Update are as follows:

- Community Development and Design Element (equivalent to a land use element),
- Transportation Element (equivalent to a circulation element),
- Housing Element,
- Natural Resources Element (equivalent to a combined open space and conservation element),
- Noise Element, and
- Natural Hazards Element (equivalent to a safety element).

In addition to the mandatory elements discussed above, the General Plan Update includes the following optional elements to guide the development of the County through 2040:

- Utilities Element,
- Economic Development Element,
- Managed Resources Element,
- Agriculture Element,
- Healthy Communities Element,
- Parks and Recreation Element,
- Education and Libraries Element,
- Cultural Resources Element,
- Water Supply Element,
- Air Quality Element,
- Public Safety Element, and
- Climate Change Element.

Finally, there are plans for five of Tuolumne County's identified communities:

- Columbia Community Plan,
- East Sonora Community Plan,
- Jamestown Community Plan,
- Mountain Springs Community Plan, and
- Tuolumne Community Plan.

Consistent with Policies 8.D.1, 8.E.2, and 8.E.3 and Implementation Programs 8.D.a and 8.E.c in the Agriculture Element, the General Plan Update also includes proposed amendments to Title 17 of the Ordinance Code, which would expand the range of economic activities allowed on land zoned for agriculture. The amendments to Title 17 are described in Section 2, "Project Description," and the actual proposed text amendments (in strike-through/underline) are included as Appendix F of this Draft EIR.

ES.2 SCOPE AND CONTENT OF THE EIR

The following issues are evaluated in Section 3, "Environmental Impact Analysis," of this Recirculated Draft EIR:

- Aesthetics
- Agricultural and Forestry Resources
- Air Quality
- Biological Resources
- Cultural Resources
- Energy
- Geology/Soils
- Global Climate Change
- Hazards & Hazardous Materials
- Hydrology/Water Quality
- Land Use/Planning
- Noise
- Population/Housing
- Public Services
- Recreation
- Transportation and Circulation
- Utilities/Service Systems

ES.3 ALTERNATIVES

As required by CEQA, this EIR evaluates a range of alternatives to the proposed project. Alternatives, analyzed in Chapter 6, include five total alternatives, including three growth scenarios identified through the Tuolumne Tomorrow Regional Blueprint process and two additional alternatives identified after receiving public comments on the Draft EIR. Alternatives evaluated in Chapter 6 include:

- Alternative 1: No Project (Recent Trends, Existing);
- Alternative 2: Public Services;
- Alternative 3: Recent Trends, Proposed;
- Alternative 4: Historic Structure Preservation; and
- Alternative 5: Williamson Act Property Preservation.
- Alternative 6: Modified Public Services

Each of the alternatives discussed in Chapter 6 are summarized below.

- **Alternative 1: No Project (Recent Trends, Existing).** Under this alternative, the current 1996 General Plan's land use diagram would be retained and the existing policies in the current 1996 General Plan would remain in effect. The historic and current trend of primarily low-density suburban and rural development would continue.

- **Alternative 2: Public Services:** Under this alternative, new development would be allocated at higher densities in locations closer to multiple public services than under existing conditions. Although development would continue to grow within identified communities, it also would radiate outward along a select number of arterials, major collectors, and transit corridors where public water and sewer exist. The proposed policies and implementation programs in the General Plan Update would still apply to the Public Services alternative, with the exception of those that are narrowly tailored to the proposed Distinctive Communities Growth Scenario.

- **Alternative 3: Recent Trends, Proposed.** Under this alternative, the current 1996 General Plan land use diagram would remain unchanged; however, the alternative would include the proposed policies and

implementation programs in the General Plan Update (with the exception of those that are narrowly tailored to the proposed Distinctive Communities Growth Scenario). As with the General Plan Update, this alternative would promote locating development near existing communities; however, it would generally continue the historic and current trend of primarily low-density residential development.

The following two new alternatives were not included in the originally circulated Draft EIR.

- **Alternative 4: Historic Structure Preservation.** This alternative is consistent with the proposed General Plan Update with respect to the land use diagram and is primarily consistent with the proposed policy framework, but with one key difference. The Historic Structure Preservation Alternative would include policies prohibiting demolition or substantial alteration of significant historic structures (with some exceptions based on the structural condition and cost of preservation). This alternative is designed to substantially reduce significant impacts associated with historic resources.

- **Alternative 5: Williamson Act Property Preservation.** The primary difference between this alternative and the proposed General Plan Update is that, under this alternative, the 134 acres of land designated agriculture that are currently under Williamson Act contracts, would not be redesignated to residential use. To achieve the same amount of housing identified in the General Plan Update, this alternative would require increased residential density in other areas designated for residential development. This alternative is designed to substantially reduce significant impacts associated with consistency with the Williamson Act.

- **Alternative 6: Modified Public Services.** The Modified Public Services Alternative, which was recommended as part of public comment on the originally circulated Draft EIR, would be designed to directly reduce new development outside identified communities by providing similar incentives in the General Plan Update for encouraging growth within identified communities, but also going further than the General Plan Update to create disincentives for development in rural areas. Under this alternative, no land located outside identified communities would be redesignated from Agriculture to a non-agricultural use.

Because it would likely reduce multiple significant impacts associated with the proposed project, Alternative 6, the Modified Public Services Alternative, is considered the environmentally superior alternative.

ES.4 AREAS OF KNOWN CONTROVERSY

Tuolumne County received 57 letters during the public review period for the Draft EIR. These comments covered a range of topics. Key areas of potential controversy and concern raised in these comments included: population projections, the classification of areas as “urban” and development assumptions, natural resources impacts, oak woodland policy, water supply, wastewater service, groundwater quality, flooding and dam failure, wildfire risk, traffic impacts, noise impacts, land use compatibility, increases in density and increased development, coordination with tribes, effects on community character and historic resources, other aesthetic impacts including light pollution, impacts to agriculture and impacts associated with agritourism, project alternatives, and consistency with state regulations and guidelines. Impacts related to these issue areas are addressed throughout Section 3, “Environmental Impact Analysis” of this EIR. Please note that cumulative impacts are addressed in Section 4, “Cumulative Impacts.”

ES.5 SUMMARY OF IMPACTS AND MITIGATION MEASURES

Table ES-1 includes a brief description of the environmental issues relative to the proposed project, the identified environmental impacts, proposed mitigation measures, and residual impacts.

Table ES-1 Summary of Impacts and Mitigation Measures

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
N = No Impact LTS = Less than significant PS = Potentially significant S = Significant SU = Significant and Unavoidable			
3.1 Aesthetics			
Impact 3.1-1: Impacts to a Scenic Vista or Scenic Resource Visible from a Visually Sensitive Location The General Plan Update would facilitate development visible from locally designated scenic routes. General Plan Update policies also would protect scenic vistas along locally designated scenic routes. With implementation of these policies, projected development under the General Plan Update would not be expected to substantially alter views of important scenic resources from visually sensitive areas. Therefore, impacts to vistas and scenic resources viewed from key locations, including designated roadways, would be less than significant.	LTS	No mitigation is required.	LTS
Impact 3.1-2: Substantial Degradation of Existing Visual Character or Quality The General Plan Update would promote development within and near identified communities, which would minimize changes to the County's predominantly rural character. Policies in the General Plan Update would encourage new development to be compatible with the scale and character of existing development and would enhance the distinct visual identities of communities and preserve aesthetic quality. General Plan Update policies also would protect the visual character of communities with historic buildings. Impacts would be less than significant.	LTS	No mitigation is required.	LTS
Impact 3.1-3: New Substantial Light or Glare That Would Adversely Affect Daytime or Nighttime Views The General Plan Update would facilitate development that would introduce new sources of light and glare, which would increase overall ambient nighttime light and daytime glare from building materials. Dark sky standards for the communities of Tuolumne and Jamestown would minimize light spillover and glare in those planning areas, and the General Plan Update includes standards for light and glare in other identified communities. Impacts to existing development would be less than significant.	LTS	No mitigation is required.	LTS
3.2 Agricultural and Forest Resources			
Impact 3.2-1: Loss of High-Value Agricultural Land The General Plan Update would re-designate 4,509 acres, of a total 160,735 acres, of land designated for Agriculture to residential or commercial uses. While policies in the General Plan Update would limit development in agricultural areas and minimize the potential for indirect conversion of agricultural land to other uses, re-designation of Agricultural land may occur on parcels that would be considered High-Value Agricultural Land, according to the	S	Mitigation Measure 3.2-1: Evaluate Land Using Tuolumne County's Agricultural Rating System Matrix and Conserve High-Value Agricultural Land at a 1:1 Ratio The County will include the following as a new implementation program of the General Plan Update. Implementation Program 8.A.x [Specific numbering to be provided with Final General Plan	SU

Table ES-1 Summary of Impacts and Mitigation Measures

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
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Tuolumne County Agricultural Rating System Matrix. The re-designation of Agricultural Land to residential or commercial use would remove barriers to conversion of agricultural land to non-agricultural uses. This would reduce the value of agricultural land under the Agricultural Rating System. Because the quantity and location of potential High-Value Agricultural Land is currently unknown, based on readily available data and the site-by-site evaluation needed under the System Matrix, the extent of the potential conversion cannot be determined at this time; however, the loss of High-Value Agricultural Land would be significant.		Update]: Establish a new procedure for evaluating development on lands with an Agricultural land use designation that includes the following requirements: For any proposed non-agricultural development on land designated Agricultural (according to the land use diagram in the General Plan Update), the County shall require, prior to issuing a completeness letter, the submittal to and approval by the Tuolumne County planning staff of the Tuolumne County Agricultural Rating System Matrix to determine whether the land proposed for development qualifies as High-Value Agricultural Land. If the results of the Tuolumne County Agricultural Rating System Matrix provided in Exhibit 3.2-1 of the Recirculated Draft EIR indicate that the land proposed for development does not qualify as High-Value Agricultural Land, no further action is required. If the results of the Tuolumne County Agricultural Rating System Matrix indicate that the land proposed for development does qualify as High-Value Agricultural Land, the County, consistent with Implementation Program 8.A.a, shall require the applicant to purchase agricultural conservation easements at a 1:1 ratio (acres preserved: acres converted), commensurate with the type of High-Value Agricultural Land (e.g., grazing land) that would be converted by the project. Proof of the purchase shall be provided to the County prior to issuance of grading permits.	
Impact 3.2-2: Conflict with Land Zoned as Forest Land, Timberland, or Timber Production Zone Although the General Plan Update would redesignate 1,194 acres of land designated Timberland to Public Land, this change corrects a previous error in the land use map and constitutes a "paper change" with no resulting physical effect. General Plan Update policies also would protect timber resources from development. Impacts from the rezoning or loss of timber land would be less than significant.	LTS	No mitigation is required.	LTS
Impact 3.2-3: Conflict with Williamson Act Contracts or Agricultural Preserve Overlay Districts Future development under the General Plan Update could conflict with Williamson Act contracts and lands within agricultural preserves on some properties. If land under a Williamson Act contract is proposed for development, the property owner could either allow the contract to expire under a notice of non-renewal or obtain a cancellation. Land under agricultural preserves would need to be re-zoned to remove the County's AP Combining	S	**Mitigation Measure: 3.2-3 Adopt an Implementation Program to Limit Growth-Inducing Public Services** The County shall add the following implementation program under Policy 8.B.4 of the General Plan Update: **Implementation Program 8.B.x** [Specific numbering to be provided with Final General Plan Update]: Establish development standards to provide County staff with discretion to deny development that proposes to introduce growth-inducing public services like public sewer	SU

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Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
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District or approved by the Board of Supervisors to be removed from a preserve. No development would be allowed until the Williamson Act contract is expired or cancelled and the parcel is removed from an agricultural preserve; therefore, direct conflicts with Williamson Act contracts would not occur. However, the overarching purpose of the Williamson Act is to promote voluntary farmland conservation; therefore, the redesignation of land currently under Williamson Act contracts to non-agricultural uses would constitute a conflict with the overall intent of the Williamson Act. This impact would be significant.		systems and potable public water into agricultural areas.	
Impact 3.2-4: Conflicts with Agricultural Land Uses The General Plan Update would alter the present land use pattern in portions of the County and may result in incompatibilities where community and agricultural uses would be located in close proximity to each other. The proposed allowance of special events on agricultural land also may result in incompatibilities with nearby agricultural operations. However, potential conflicts would be reduced through the proposed policies that guide growth to identified communities, the review process for Conditional Use Permits, and application of the County's Right to Farm Ordinance. Therefore, impacts that would occur from development and commercial events would be less than significant.	LTS	No mitigation is required.	LTS
3.3 Air Quality			
Impact 3.3-1: Generation of Construction-related Emissions that Would Violate an Existing Air Quality Standard Projected development under the General Plan Update would result in construction activities associated with the development of new land uses in the County. Construction activity associated with the development of these new land uses would result in emissions of ROG, NO_X, PM_{10}, and $PM_{2.5}$ that would not exceed the daily or annual emissions thresholds established by TCAPCD. Therefore, construction activity associated with projected development under the General Plan Update would not violate an existing air quality standard and this impact would be less than significant.	LTS	No mitigation is required.	LTS
Impact 3.3-2: Generation of Long-term Operational Emissions of Criteria Air Pollutants and Precursors that would Violate an Existing Air Quality Standard Implementation of the General Plan Update would result in operational activities associated with the development of new land use in the County. These activities would result in emissions of ROG, NO_X, PM_{10}, and $PM_{2.5}$, but emissions of these pollutants would not exceed the thresholds set by TCAPCD of 1,000 lb/day or 100 tons/year. In addition, the General Plan Update includes policies and implementation programs in the Transportation,	LTS	No mitigation is required.	LTS

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Climate Change, and Air Quality Elements that would reduce emissions of air pollutants in the County. The General Plan Update would not exceed TCAPCD's air pollutant thresholds and, therefore, would not violate an existing air quality standard. This impact would be less than significant.			
Impact 3.3-3: Exposure of Sensitive Receptors to TACs The development of new land uses would result in TAC emissions of diesel PM from the exhaust of off-road heavy-duty diesel equipment used during construction. These emissions could expose nearby existing sensitive receptors to TACs, particularly diesel PM exhaust emissions. The General Plan Update would also allow for the development of residential land uses in close proximity to local roadways and other potential sources of TACs. As a result, existing and new sensitive receptors could be exposed to TACs that may cause health risks. The General Plan Update includes policies and implementation programs specifically for mitigating exposure of existing and new sensitive receptors to TACs. Additionally, all new development undergoing discretionary review would be required to evaluate existing TAC exposure and incorporate available reduction measures, if necessary. Therefore, implementation of the General Plan Update would not result in the exposure of existing or new sensitive receptors to a substantial increase in TAC emissions, and this impact would be less than significant.	LTS	No mitigation is required.	LTS
Impact 3.3-4: Generation of Long-term Mobile-Source CO Concentrations that would Violate an Existing Air Quality Standard Long-term operational mobile-source emissions of CO potentially generated by vehicle trips associated with projected development under the General Plan Update would not violate or contribute substantially to localized concentrations of CO that exceed the CAAQS or NAAQS for CO. Additionally, the traffic volume increase under the General Plan Update would not result in affected intersections experiencing more than 31,600 vehicles per hour and, therefore, would not exceed CO hotspot concentration thresholds. As a result, this impact would be less than significant.	LTS	No mitigation is required.	LTS
Impact 3.3-5: Expose Sensitive Receptors to Odors Projected development under the General Plan Update could result in construction activities that would introduce new odor sources into the plan area (e.g., temporary diesel exhaust emissions during construction and delivery trucks associated with commercial land uses). However, these odor sources would be temporary and intermittent and would largely come from mobile sources. Projected development under the General Plan Update could	LTS	No mitigation is required.	LTS

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result in new sensitive receptors being located near existing odor emitting land uses and could potentially cause a nuisance. However, the Community Development and Design Element and Agriculture Element of the General Plan Update both include policies regarding the siting of incompatible land uses that would consider potential odor impacts. Further, except for agricultural operations, TCAPCD Rule 205 prohibits the emission of any material that may cause a nuisance to a person or the public. As a result, projected development under the General Plan Update would not result in odor impacts on new or existing sensitive receptors; therefore, this impact would be less than significant.			
3.4 Biological Resources			
Impact 3.4-1: Disturbance or Loss of Special-Status Plant and Animal Species Projected development under the General Plan Update may result in the disturbance or loss of special-status plant and animal species. However, the compliance with state and federal law, as well as implementation of the General Plan Update's policies and implementation programs, would reduce potential impacts of projected development under the General Plan Update and require project-level environmental review and mitigation, if needed. This impact would be less than significant.	LTS	No mitigation is required.	LTS
Impact 3.4-2: Loss or Degradation of Riparian, Oak Woodland, and Other Sensitive Natural Communities Projected development under the General Plan Update may result in the loss or degradation of riparian habitat, oak woodlands, or other sensitive natural communities identified in local or regional plans, policies, or regulations, or by CDFW or USFWS. This impact would be potentially significant.	PS	For projects that may cause a significant loss of oak woodland, as defined in Policy 16.B.5 and Implementation Program 16.B.j, the following mitigation measure is recommended to reduce and compensate for significant impacts to oak woodland. Mitigation Measure 3.4-2: Implement Oak Woodland Mitigation Guidelines The following new implementation programs shall be added under General Plan Policy 16.B.5: Implementation Program 16.B.x [specific numbering to be provided in the Final General Plan Update]: When considering discretionary development proposals, the County, through CEQA reviews, will require that project applicants map oak woodland resources on the project site and, where feasible, establish buffers around existing oak woodland stands to prevent adverse effects. For mapping purposes, project applicants may use the County's existing oak woodland map (developed for the Recirculated Draft EIR) as an initial base map for project-specific ground-truthing/field verification. The County will require implementation of BMPs while working near retained oak woodlands to avoid inadvertent damage to oak trees. BMPs will include establishment of no-disturbance buffers around the outer canopy edge to prevent root and crown damage, soil compaction, and standard management practices to reduce introduction and spread of invasive species and other indirect effects.	LTS

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		For those impacts on oak woodland that cannot be avoided, the County will require the project applicant to minimize adverse effects. If substantial conversion of oak woodland will occur based on Implementation Program 16.B.j, the County will require one or more of the following mitigation measures be implemented to mitigate the impact from loss of oak woodland habitat pursuant to Public Resources Code Section 21083.4, (which specifies certain projects, including commercial agricultural production, are exempt from the requirements of Section 21083.4): ◢ Conserve oak woodlands through the purchase of conservation easements. ◢ Plant acorns and container stock from a local seed source to replace oak woodland removed. The following parameters will be applied: ◤ Plant an appropriate number of trees, including maintaining plantings and replacing dead or diseased trees. ◤ Maintain trees for seven years after the trees are planted. ◤ Planting may not account for more than 50 percent of the required mitigation and must occur on lands that are subject to conservation easements, zoned open space, or similarly restricted from development. ◤ Mitigation through planting may be used to restore former or degraded oak woodlands. ◢ Contribute funds to the Oak Woodlands Conservation Fund, as established under subdivision (a) of Section 1363 of the Fish and Game Code, for the purpose of purchasing oak woodland conservation easements, the Tuolumne County Oak Woodland Conservation Fund, or other appropriate established oak woodland conservation fund. Implementation Program 16.B.x [specific numbering to be provided in the Final General Plan Update]: The County will require project applicants to develop a mitigation and monitoring plan to compensate for the loss of oak woodland habitat. The mitigation and monitoring plan will describe in detail how loss of oak woodlands shall be avoided or offset, including details on restoration and creation of habitat, compensation for the temporal loss of habitat, success criteria ensuring habitat function goals and objectives are met, performance standards to ensure success, remedial actions if performance standards are not met, and requirements for reporting implementation actions and progress to the County. The plan will include detailed information on the habitats present within the preservation and mitigation areas, the long-term management and monitoring of these habitats, legal protection for the preservation and mitigation areas (e.g., conservation easement,	

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		declaration of restrictions), and funding mechanism information (e.g., endowment). If planting is used as part of compensatory mitigation, an oak planting plan will be developed by a qualified professional such as a professional biologist, arborist, or registered professional forester using the best available science and will clearly state all mitigation measures required. Implementation Program 16.B.x [specific numbering to be provided in the Final General Plan Update]: Oak woodlands habitat placed under conservation easements will be at appropriate ratios to offset the loss of habitat functions and values of the oak woodland to be lost. Oak woodland habitat preserved this way should have similar tree sizes and densities, species composition, site condition, and landscape context to the oak woodland to be removed to serve the same function and have similar habitat value. At a minimum, 1 acre of oak woodland habitat providing similar functions and values will be placed under conservation easement for every acre of oak woodlands habitat lost.	
Impact 3.4-3: Loss or Degradation of Federally Protected Wetlands Projected development under the General Plan Update may result in the loss or degradation of federally protected wetlands as defined by Section 404 of the CWA (including, but not limited to, marsh, streams, vernal pool, etc.) through direct removal, filling, hydrological interruption, or other means. Through project-level environmental review and compliance with existing applicable federal and state regulations protecting wetlands and other waters of the United States, and implementation of applicable General Plan Update policies and implementation programs, this impact would be less than significant.	LTS	No mitigation is required.	LTS
Impact 3.4-4: Disturbance or Loss of Animal Movement Corridors Projected development under the General Plan Update may interfere with the movement of any resident or migratory fish or wildlife species or with established resident or migratory wildlife corridors. This impact would be less than significant.	LTS	No mitigation is required.	LTS
Impact 3.4-5: Potential Conflict with Local Policies or Ordinances Protecting Biological Resources Projected development under the General Plan Update would not conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance. This impact would be less than significant.	LTS	No mitigation is required.	LTS

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Impact 3.4-6: Potential Conflict with an Adopted Conservation Plan Projected development under the General Plan Update would not conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan. There are no adopted local, regional, or state habitat conservation plans in Tuolumne County. Therefore, there would be no impact.	N	No mitigation is required.	N
3.5 Cultural and Tribal Cultural Resources			
Impact 3.5-1: Change in the Significance of a Historical or Unique Archaeological Resource Projected development under the General Plan Update could adversely affect historical or unique archaeological resources. The General Plan Update includes policies to protect resources, however, avoidance of these historical or unique archaeological resources may not be possible. Impacts would be potentially significant.	PS	The General Plan Update includes implementation programs requiring cultural resources surveys to be prepared by qualified professionals for all discretionary projects and that the reports would be prepared in compliance with State and Federal standards including the Secretary of the Interior's Standards and Guidelines for Identification, Evaluation, Documentation, Registration, Historical Documentation, Architectural and Engineering Documentation, and Archaeological Documentation. Proposed Implementation Program 13.B.3 would require that determinations of impacts, significance, and mitigation be made by qualified archaeological or historical consultants and that discretionary development projects be designed to avoid potential impacts to significant cultural resources whenever possible. However, avoidance may not always be feasible. No further mitigation is available other than to deny a project if historical or unique archaeological resources would be affected. As discussed in Chapter 6, "Alternatives," this EIR analyzes a Historic Structure Preservation Alternative. Under that alternative, policy provisions would be included that would prohibit, with some exceptions, demolition or substantial alteration of a significant historic structure.	SU
Impact 3.5-2: Change In the Significance of Paleontological Resources Projected development under the General Plan Update could have the potential to destroy, directly or indirectly, a unique paleontological resource. The General Plan Update includes policies to protect previously unknown resources. Implementation of these policies and protection programs would reduce potential impacts to a less-than-significant level.	LTS	No mitigation is required.	LTS
Impact 3.5-3: Accidental Discovery of Human Remains Previously undiscovered human remains could be discovered when soils are disturbed during construction of cultivation and processing sites for projected development under the General Plan Update. Compliance with Health and Safety Code Sections 7050.5 and 7052 and Public Resources Code Section 5097 would make this impact less than significant.	LTS	No mitigation is required.	LTS

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Impact 3.5-4: Change In the Significance of a Tribal Cultural Resource No tribes that are culturally affiliated with Tuolumne County have formally requested notification under AB 52. Therefore, there is no trigger for consultation, and consequently no resources have been identified as tribal cultural resources as described under AB 52. However, recognizing the timeframe of General Plan Update, there is a potential that tribes may request consultation in the future and that tribal cultural resources could be identified during the implementation period of the General Plan. Therefore, although no resources have been identified that meet the criteria for a tribal cultural resource under Public Resources Code Section 21074, because tribes may request notification in the future, it is too speculative to determine the potential for impacts at this time.	cannot be determined at this time	No mitigation is required at this time.	LTS
3.6 Energy			
Impact 3.6-1: Wasteful, Inefficient, or Unnecessary Consumption of Energy during Construction or Operation Projected development under the General Plan Update would increase electricity and propane consumption. Buildings developed under the General Plan Update would comply with Title 24, Part 6 of the California Building Efficiency Standards. Policies and implementation programs in the General Plan Update address transit-oriented development, improved accessibility for alternative modes of transportation, and increased transit availability that would reduce VMT. Building energy would be reduced through increased use of solar photovoltaics and energy efficiency, as required under the 2019 Title 24 Building Energy Efficiency Standards and as indicated through implementation programs under the General Plan Update. The development and implementation of a climate action plan through Policy 18.A.1 would further reduce both transportation- and building energy-related energy consumption. Construction-related energy consumption would be temporary and not require additional capacity or increase peak or base period demands for electricity or other forms of energy. Thus, energy consumption associated with projected development under the General Plan Update would not result in wasteful, inefficient, or unnecessary consumption of energy. This impact would be less than significant.	LTS	No mitigation is required.	LTS

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3.7 Geology			
Impact 3.7-1: Exposure of People and Structures to Primary Seismic Hazards The General Plan Update would result in development subject to future seismic events that could produce ground shaking, fault rupture, and ground failure within Tuolumne County that could damage structures and/or create adverse health and safety effects. However, with implementation of General Plan Update policies and required building codes, impacts would be less than significant.	LTS	No mitigation is required.	LTS
Impact 3.7-2: Increase Risks Associated with Liquefaction of Soils and Land Subsidence Future seismic events could result in liquefaction of soils in portions of the County. However, because of the nature of the soils, groundwater conditions, and low seismicity in the County, the risk and danger of liquefaction and subsidence occurring within the County is considered to be minimal. With implementation of General Plan Update policies, impacts would be less than significant.	LTS	No mitigation is required.	LTS
Impact 3.7-3: Impacts from Mass Wasting Events Landslides have the potential to damage and destroy structures, roadways, and other improvements, as well as deflect or block drainage channels, causing accelerated erosion and more damage. However, with implementation of General Plan Update policies, impacts would be less than significant.	LTS	No mitigation is required.	LTS
Impact 3.7-4: Risks Associated with Placement of Structures On Expansive Soils The General Plan Update would potentially result in development on expansive soils. Expansive soil conditions could result in foundation and building distress problems and cracking of concrete slabs. However, with implementation of General Plan Update Natural Hazards Element policies and applicable provisions of the Tuolumne County Ordinance Code, impacts relating to soil expansion would be less than significant.	LTS	No mitigation is required.	LTS
Impact 3.7-5: Risk of Erosion from New or Redevelopment The General Plan Update would result in development that would require grading and other vegetation removal, which could increase potential for soil erosion, especially in areas with steep slopes. However, compliance with applicable policies of the General Plan Update Natural Hazards Element and applicable provisions of the Tuolumne County Ordinance Code would reduce the potential for substantial erosion. Impacts would be less than significant.	LTS	No mitigation is required.	LTS

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3.8 Global Climate Change			
Impact 3.8-1: Generation of GHG Emissions, either Directly or Indirectly Projected development under the General Plan Update would include construction and operational activities associated with the development of new land uses, both resulting in the generation of GHG emissions. Projected development under the General Plan Update would result in annual GHG emissions of 5.2 $MTCO_2e$ per service population in Tuolumne County by 2040 and would remain above the 2040 statewide target of 3.1 $MTCO_2e$ per service population established for this analysis. As a result, the General Plan Update would result in a considerable increase in GHG emissions and would conflict with the state's 2017 Scoping Plan which was adopted for the purpose of reducing GHG emissions. The General Plan Update includes a number of goals, policies, and implementation programs which would reduce GHG emissions associated new land uses. Policy 18.A.1 in the Climate Change chapter requires the development of a CAP with a target of reducing GHG emissions consistent with statewide targets. However, it is unknown whether the CAP would be fully implemented and, in turn, reduce countywide emissions consistent with state targets. Therefore, this impact would be significant.	S	**Mitigation Measure 3.8-1: Revise Implementation Program 18.A.a** The County will revise Implementation Program 18.A.a as follows to include the following GHG emissions reduction measures in the list of potential measures to include in the CAP. ◢ **Implementation Program 18.A.a**: Include specific GHG emissions reduction measures in the CAP. Examples include: ◤ Foster land use intensity near, along with connectivity to, retail and employment centers and services to reduce vehicle miles travelled and increase the efficiency of delivery services through adoption and implementation of smart growth principles and policies; ◤ Improve the local jobs/housing balance to reduce vehicle miles travelled; ◤ Incentivize energy efficiency improvements in existing buildings; ◤ Require energy audits for major additions to or alterations of existing buildings; ◤ Require compliance with CALGreen Tier 1 Green Building standards and Tier 1 Building Energy Efficiency Standards for eligible alterations or additions to existing buildings; ◤ Require compliance with CALGreen Tier 1 Green Building standards and Tier 1 standards for all new construction, and phase in Zero Net Energy (ZNE) standards for new construction; ◤ Require new or replacement residential water heating systems to be electrically powered and/or alternatively fueled systems; ◤ Expand current renewable energy and green energy incentives and update local ordinances; ◤ Develop a program to offset project GHG emissions by retrofitting existing income-qualified homes and buildings; ◤ Support waste-to-energy programs at landfills; ◤ Increase availability and accessibility of transit information; ◤ Support alternatives to private vehicle travel for visitors, such as shuttles; ◤ Increase the supply of electric vehicle charging stations; ◤ Promote telecommuting at office-based businesses; ◤ Encourage expansion of composting programs;	SU

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		◤ Establish a waste diversion goal that exceeds the State's 2020 75 percent target; ◤ Identify potential sites for renewable energy facilities and transmission lines; ◤ Promote recycling to reduce waste and energy consumption; ◤ Identify appropriate sites for waste recovery facilities to minimize escape of GHGs; ◤ Convert all stationary diesel or gas-powered irrigation pumps to electric pumps; ◤ Require Tier 4 equipment for all construction activity and forestry/mining operations by 2030; ◤ Adopt a new water conservation ordinance for commercial and residential land uses limiting outdoor watering; ◤ Expedite and/or reduce permit fees associated with water conservation installations in existing facilities; ◤ Require water audits for large new commercial or industrial projects and significant expansions of existing facilities; ◤ Conserve natural lands for carbon sequestration; ◤ Establish targets and enhanced programs for oak woodland and coniferous forest preservation and mandatory replanting; ◤ Refine protection guidelines for existing riparian lands to establish a no-net-loss goal; ◤ Develop a program to require repurposing of usable lumber from trees removed due to land conversion to avoid wood burning; ◤ Promote the sale and consumption of locally-grown foods and/or products; ◤ Establish and local carbon offset program; ◤ Identify lands suitable for wind power generation; ◤ Promote alternatives to open burning of biomass, including exploring the feasibility of the development of a biomass power plant in the County; ◤ Provide economic incentives and creative financing for renewable energy projects; ◤ Pursue incentives, grants, and creative financing for projects that improve energy efficiency; ◤ Prepare and implement a comprehensive plan to improve energy efficiency of	

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		municipal facilities; ◤ Develop a program to promote forest health and enhance the carbon sequestration potential of forests in the County. ◤ Establish a coordinated, creative public outreach campaign, including publicizing the importance of reducing GHG emissions and steps community members can take to reduce their individual impacts; ◤ Install renewable energy systems at municipal facilities including solar photovoltaic systems on municipal roofs and solar water heating; ◤ Ensure that County staff receive appropriate training and support to implement objectives and policies to reduce GHG emissions included in the County CAP; ◤ Evaluate the feasibility and effectiveness of using Community Choice Aggregation as a model for providing renewable energy to meet the community's electricity needs, including potential partnerships with other jurisdictions; ◤ Identify and remove or otherwise address barriers to renewable energy production including revisions to the County's building and development codes, design guidelines, and zoning ordinances; ◤ Provide information, marketing, training and technical assistance regarding green building practices and renewable energy systems; ◤ Identify and remove regulatory or procedural barriers to implementing green building practices within the County, such as updating codes, guidelines, and zoning, and ensure that all plan review and building inspection staff are trained in green building materials, practices, and techniques; and ◤ Establish menus and check-lists for developers and contractors to ensure water-efficient infrastructure and technology are used in new construction, including low-flow toilets and shower heads, moisture-sensing irrigation, and other such advances.	
Impact 3.8-2: Conflict with Any Applicable Plan, Policy, or Regulation for Reducing the Emission of GHGs Projected development under the General Plan Update would result in GHG emissions associated with temporary construction activity and long-term operational activity. The General Plan Update includes a series of policies which would reduce GHG emissions. These policies have been shown to be consistent the GHG reduction goals in the 2016 RTP and would not conflict with this plan. However, CARB's 2017 Scoping Plan states that plan-	S	No mitigation is available.	SU

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level projects should demonstrate reductions in GHG emissions levels consistent with statewide targets. The General Plan Update does include policies that would help to reduce overall GHG emissions in the County to support achievement of the statewide GHG reduction targets. However, it is unknown at this time what level of GHG reductions these General Plan policies would achieve. Projected development under the General Plan would result in annual GHG emissions of 5.2 $MTCO_2e$ per service population in Tuolumne County by 2040 and would remain above the 2040 statewide threshold of 3.1 $MTCO_2e$ per service population which demonstrates how plan-level projects would remain consistent with the statewide reduction targets. Therefore, implementation of the General Plan Update would potentially conflict with an applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of GHGs, specifically the 2017 Scoping Plan. This impact would be significant.			
3.9 Hazards and Hazardous Materials			
Impact 3.9-1: Create a Significant Hazard to the Public or the Environment Through the Routine Transport, Use, or Disposal of Hazardous Materials or Reasonably Foreseeable Upset of Known Hazards Potential development near known hazardous material users, construction in areas with existing hazardous materials, or accidental releases of hazardous materials during transportation could expose individuals to health risks due to soil/groundwater contamination or emission of hazardous materials into the air. However, compliance with federal, state, and local regulations would reduce the potential for substantial hazardous or upset conditions. This is a less-than-significant impact.	LTS	No mitigation is required.	LTS
Impact 3.9-2: Expose People or Structures to a Significant Risk of Loss, Injury, or Death Involving Wildland Fires Projected development under the General Plan Update would introduce residential land uses into areas designated as Moderate or High Wildland Fire Hazard areas. However, because development in accordance with the General Plan Update would be largely within identified communities and compliance with General Plan Update policies and state and local regulations would require development standards, defensible space, and other features to reduce the potential for wildland fire hazards, projected development under the General Plan Update would result in less-than-significant impacts.	LTS	No mitigation is required.	LTS

Table ES-1 Summary of Impacts and Mitigation Measures

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
N = No Impact LTS = Less than significant PS = Potentially significant S = Significant SU = Significant and Unavoidable			
Impact 3.9-3: Result In a Safety Hazard for People Residing or Working Within an Airport Land Use Plan or In the Vicinity of a Private Airstrip Public and private airports in Tuolumne County could create safety hazards for nearby development. Careful land use planning in accordance with General Plan Update policies and continued coordination with the ALUCP would reduce the potential for airport-related safety hazards. Impacts would be less than significant.	LTS	No mitigation is required.	LTS
Impact 3.9-4: Impair Implementation of, or Physically Interfere with, an Adopted Emergency Response Plan or Emergency Evacuation Plan Projected development under the General Plan Update would not impair implementation of, or physically interfere with an adopted emergency response plan or emergency evacuation plan because the General Plan Update policies would limit the potential for hazards, particularly associated with wildfire potential and emergency access. Impacts would be less than significant.	LTS	No mitigation is required.	LTS
3.10 Hydrology and Water Quality			
Impact 3.10-1: Impacts Related to Flooding Some areas within the County adjacent to waterbodies are located within the 100-year flood zone. Existing federal, state, and local regulations address the hazards associated with locating development in these zones. In addition, some of the policies and implementation programs in the General Plan Update restrict development within flood zones and strive to reduce hazards to existing development. Impacts related to flooding would be less than significant.	LTS	No mitigation is required.	LTS
Impact 3.10-2: Risk of Dam Inundation Portions of the County are located within an identified dam inundation zone; therefore, within the County, there is potential to expose people and structures to associated dam inundation hazards. However, dam safety monitoring and maintenance programs exist for dams of notable size and capacity, and the General Plan Update would not facilitate development in dam inundation areas. Therefore, impacts related to dam inundation would be less than significant.	LTS	No mitigation is required.	LTS

Table ES-1 Summary of Impacts and Mitigation Measures

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
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Impact 3.10-3: Impacts to Waterways Associated with Stormwater and Point Source Contamination Projected development under the General Plan Update could generate new sources of surface water and groundwater pollution, including both point and non-point sources. Point sources would include industrial or commercial facilities, while non-point sources would include new impervious or otherwise disturbed surfaces capable of generating an increase in stormwater runoff. Compliance with existing regulations and implementation of General Plan Update policies would result in less-than-significant impacts.	LTS	No mitigation is required.	LTS
Impact 3.10-4: Substantially Deplete Groundwater Supplies or Interfere Substantially with Groundwater Recharge The General Plan Update would not substantially deplete groundwater supplies because TUD's pumping rate would not change and construction of new private wells would be limited, dispersed throughout the County, and subject to permits that require appropriate setback distances and other special requirements. Furthermore, existing regulations, General Plan Update policies, and land ownership would limit development of impervious surfaces in areas of potential recharge. Impacts would be less than significant.	LTS	No mitigation is required.	LTS
3.11 Land Use and Planning			
Impact 3.11-1: Conflict with an Applicable Regional Plan The Tuolumne Tomorrow Regional Blueprint and the 2016 RTP are the regional plans that, in addition to the General Plan Update, apply to the County. The General Plan Update includes policies that are designed to be consistent with the Regional Blueprint and the RTP. Therefore, the General Plan Update would not conflict with the Tuolumne Tomorrow Regional Blueprint or the 2016 RTP. Impacts would be less than significant.	LTS	No mitigation is required.	LTS
Impact 3.11-2: Physically Divide an Established Community Projected development under the General Plan Update would not physically divide any established communities. Instead, policies and land use changes under the General Plan Update would facilitate and direct growth and expansion of existing identified communities in an efficient and orderly manner. The General Plan Update also includes policies that would minimize potential incompatible land uses in identified communities. Impacts would be less than significant.	LTS	No mitigation is required.	LTS

Table ES-1 Summary of Impacts and Mitigation Measures

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
N = No Impact LTS = Less than significant PS = Potentially significant S = Significant SU = Significant and Unavoidable			
3.12 Noise			
Impact 3.12-1: Expose New Sensitive Land Uses to Traffic Noise Projected development under the General Plan Update would include the construction of future residences and other noise-sensitive land uses in close proximity to existing transportation noise sources and would be exposed to noise levels exceeding the maximum allowable range. In some cases, roadway noise levels reach 74.7 dBA CNEL and would require new development to achieve an approximate 15 dBA reduction in noise to meet exterior noise standards of 60 dBA CNEL. General Plan Update policies and implementation programs would require new development to conduct site-specific acoustical analysis and include measures to minimize noise exposure and meet County noise standards. However, at the County-wide scale of this analysis, without knowing the specific location, design, orientation, and type of development projects, it cannot be determined with certainty whether adequate noise reduction could be achieved, and this impact would be significant.	S	No mitigation is available.	SU
Impact 3.12-2: Expose Existing Sensitive Receptors to Traffic-Noise Increases Projected development under the General Plan Update would increase traffic and associated noise levels along area highways and roadways in Tuolumne County, thereby exposing existing land uses to increased traffic noise. Within the General Plan Update's 2040 planning horizon, receptors along County roadways could experience noise level increases that exceed thresholds. Transportation-related policies aim to reduce automobile use and increase the use of alternatives modes of transit. Traffic noise would still result in a 3 dB increase on one County road segment. While this is a very limited area, compared to the overall County, that would experience this type of noise increase, this impact would be significant.	S	No mitigation is available.	SU
Impact 3.12-3: Expose Sensitive Receptors to Construction Noise Levels That Exceed Applicable Standards Construction of individual projects under the General Plan Update could produce noise levels ranging from 90.9 to 96.6 dBA L_{max} at 50 feet from the source. Depending the location, intensity, and timing of future construction activities, existing or new sensitive receptors could be exposed to disruptive nighttime construction activity. General Plan Update policies would require construction activities to implement all available noise reducing measures but would not ensure nighttime noise levels would not exceed thresholds in all cases. This impact would be significant.	S	**Mitigation Measure 3.12-3a: Establish Construction Noise Standards** The following revision to General Plan Update Policy 5.A.5 is recommended to reduce noise impacts from construction as follows: ◢ **Policy 5.A.5:** Require that construction activity and temporary construction impacts do not expose existing noise-sensitive land uses to excessive noise levels. Require all new construction activities to implement all feasible noise-reducing measures as necessary to limit construction noise exposure at receiving occupied land uses to within acceptable County noise levels identified in Figure 5.3. Should nighttime construction activities be required (between the hours of 7 p.m. and 7 a.m.), exterior	SU

Table ES-1 Summary of Impacts and Mitigation Measures

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
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		noise levels shall not exceed 65 dBA L_{max}, based on FICAN's 65 dBA SEL level for sleep disturbance (but conservatively using L_{max}, which is more appropriate for construction activities). ~~night time noise maximum noise levels established for various land uses in [General Plan] Figure 5.3, [See Table 3.12-5 of this EIR.]~~ **Mitigation Measure 3.12-3b: Increase Construction Noise Buffer** The following revision to General Plan Implementation Program 5.A.e is recommended to increase the distance construction activities are allowed from sensitive uses before additional measures are required: ◢ **Implementation Program 5.A.e:** The County shall ensure that, where residences or other noise sensitive uses are located within ~~800~~1,900 feet of construction sites, appropriate measures shall be implemented to limit noise exposure from construction. Specific techniques may include, but are not limited to, restrictions on construction timing, use of sound blankets on construction equipment, and the use of temporary walls and noise barriers to block and deflect noise.	
Impact 3.12-4: Expose Sensitive Receptors to Construction Vibration Levels That Exceed Applicable Standards Projected development under the General Plan Update could produce vibration levels that could potentially affecting adjacent sensitive land uses. Such vibration could cause temporary disturbance to nearby receptors. These impacts would be significant.	S	**Mitigation Measure 3.12-4: Establish Blasting Restrictions** The following Implementation Program is recommended to reduce vibration and noise exposure from construction-related blasting to nearby sensitive land uses. ◢ Implementation Program 5.A.i: Require, prior to approval of development or construction activities that would include blasting activities, proof of contract with a State licensed contractor if blasting is required for any construction activities. Blasting shall not be allowed during the sensitive night time hours (7 p.m. to 7 a.m.). In addition, prior to approval of construction/grading permits, Tuolumne County will review all proposed blasting activities and require construction contractors to implement available noise reduction measures, including alternatives to blasting.	SU
Impact 3.12-5: Expose Noise-Sensitive Land Uses to Airport Noise That Exceeds the Standards in the Tuolumne County ALUCP Projected development under the General Plan Update could result in exposure of existing and future residences and other noise-sensitive land uses to air-traffic-related noise levels exceeding the "acceptable" range and noise standards as listed in the Tuolumne County ALUCP. However, implementation of policies in the General Plan Update to enforce noise standards for new development would reduce impacts to a less-than-significant level.	LTS	No mitigation is required.	LTS

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Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
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Impact 3.12-6: Expose Noise-Sensitive Land Uses to Operational Stationary Noise That Exceeds Applicable Standards Projected development under the General Plan Update could potentially result in exposure of future residences and other noise-sensitive land uses to noise impacts generated from operational stationary noise sources, especially from mining, timberland production, sawmills, and agricultural operations. Implementation of policies in the General Plan Update to enforce noise standards for new development would ensure that acceptable standards would not be exceeded in most cases. However, noise associated with operational stationary noise sources from agritourism uses could exceed applicable standards at nearby receptors, especially during the more noise-sensitive nighttime hours. These impacts would be significant.	S	Mitigation Measure 3.12-6: Restriction of outdoor gathering hours for agritourism uses and prohibition of exterior amplified sound The following implementation programs will be added to the General Plan Update under Policy 5.A.1 to reduce noise exposure from operational stationary noise sources of agritourism uses to nearby sensitive land uses. ◢ Implementation Program 5.A.x [specific numbering to be provided in Final General Plan Update]: Outdoor gatherings associated with normal, day-to-day agritourism uses shall be limited to daytime hours (7:00 a.m. to 10:00 p.m.). Exceptions may be allowed with review and approval by the County. As part of the County review and approval, such exceptions shall include an operation noise plan prepared by an acoustical engineer that evaluates potential for outdoor gatherings occurring during nighttime hours to exceed County noise standards. If needed, the noise plan shall include noise minimization measures (such as siting/orientation of the gathering) to minimize sound exposure of any nearby residences such that County noise standards (Table 3.12-7 of this EIR) are not exceeded. The applicant shall demonstrate through the plan how the nighttime gathering would not exceed applicable County noise standards. After the noise plan is approved by the County for the agritourism operation, no additional noise plan would be required, unless the agritourism operation proposes changes to its nighttime outdoor uses that could meaningfully affect exterior noise levels (e.g., changes in location/orientation of gatherings, location of access/parking, and type of gatherings, and/or substantial change in typical number of guests). ◢ Implementation Program 5.A.x [specific numbering to be provided in Final General Plan Update]: No exterior amplified sound systems (e.g., public address systems) will be allowed as part of any agritourism use. Exceptions may be allowed with review and approval by the County with the submittal of a plan analyzing the noise from the speakers/amplification. As part of the County review and approval, the applicant shall submit a speaker/amplification noise plan prepared by an acoustical engineer, that evaluates the potential for the proposed amplified sound to exceed County noise standards (Table 3.12-7 of this EIR). If necessary, the noise plan shall include protocols for siting, orientation, and operation of speakers (including potential volume limits) that would be implemented to reduce the effect of noise levels generated by on-site stationary noise sources. The applicant shall demonstrate through the plan how the speaker/amplification system would not exceed applicable County noise standards (Table 3.12-7 of this EIR). After the noise plan is approved by the County for the agritourism operation, no additional	LTS

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		speaker/amplification noise plan would be required, unless the agritourism operation proposes changes to the speaker/amplification system that could meaningfully affect noise levels (e.g. changes to the location, orientation, or volume of the amplification system).	
Impact 3.12-7: Expose Noise-Sensitive Land Uses to Railroad Noise and Vibration that Exceeds Applicable Standards Projected development under the General Plan Update could result in exposure of future residences and other noise-sensitive land uses to railroad-related noise and vibration levels exceeding the "acceptable" range and noise standards. Implementation of policies in the General Plan Update to enforce noise standards for new development would generally reduce impacts. Impacts due to railroad-related noise and vibration levels would be less than significant.	LTS	No mitigation is required.	LTS
3.13 Population and Housing			
Impact 3.13-1: Result in Displacement that Necessitates the Construction of Replacement Housing The General Plan Update would facilitate the development of new housing in accordance with state and local housing requirements. Although future redevelopment projects could displace residents temporarily during construction activities, this displacement would not be wide-spread. Impacts would be less than significant.	LTS	No mitigation is required.	LTS
Impact 3.13-2: Induce substantial population growth Implementation of the General Plan Update would facilitate new residential development in Tuolumne County, which would accommodate an increase in the population to approximately 63,243 by the year 2040. This growth would be expected to occur without adoption of the proposed General Plan Update. Because projected development under the General Plan Update would result in population growth consistent with regional population projections, impacts would be less than significant.	LTS	No mitigation is required.	LTS
3.14 Public Services			
Impact 3.14-1: Increase the demand for fire protection and emergency services Projected development under the General Plan Update would increase demand for fire protection service; however, excess capacity exists within the TCFD and new or expanded facilities would not be needed. Review of subsequent development by the Fire Department pursuant to existing County development review practices, the required provision of	LTS	No mitigation is required.	LTS

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emergency access, and payment of impact mitigation fees would ensure that potential impacts are less than significant.			
Impact 3.14-2: Increase the demand for law enforcement service Projected development under the General Plan Update would increase demand for law enforcement services, but would not result in the need to construct new law enforcement facilities. Therefore, impacts would be less than significant.	LTS	No mitigation is required.	LTS
Impact 3.14-3: Increase the demand for public schools Projected development under the General Plan Update could increase student enrollment. However, the payment of state-mandated school impact fees is deemed full mitigation by the State of California. Therefore, impacts to schools would be less than significant.	LTS	No mitigation is required.	LTS
3.15 Recreation			
Impact 3.15-1: Require the Construction or Expansion of Recreational Facilities The General Plan Update includes a proposed policy that would change the County's goal of 30 acres of recreational facilities per 1,000 residents to 5 acres of parkland per 1,000 residents. This policy change is consistent with the requirements of the Quimby Act and is also in line with standards of other Sierra/foothill counties. Furthermore, the availability of recreation opportunities provided by state and federal public lands further minimizes demand for County parks and reduces the potential for physical deterioration of existing parks as a result of overuse. Impacts to parks as a result of the policy change would be less than significant.	LTS	No mitigation is required.	LTS
Impact 3.15-2: Physical Impacts to Existing Parks Resulting from Inadequate Park Provision Projected development under the General Plan Update would increase the County's population; however, parks would be provided that would meet the County's proposed standard of 5 acres of recreation facilities per 1,000 residents. (See Impact 3.15-1 above that evaluates potential impacts associated with the proposed change in the County's park provision standard.) Policies and implementation programs in the General Plan Update would contribute to the development of additional parkland. Furthermore, state and federal public lands located within Tuolumne County provide County residents substantial alternatives to County recreation facilities, which reduces demand for County parks as well as the potential for their overuse. Impacts from the overuse and deterioration of existing park and recreational facilities would be less than significant.	LTS	No mitigation is required.	LTS

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3.16 Transportation and Circulation			
Impact 3.16-1: Impacts to Roadway Segment Operations Projected development under the General Plan Update would generate vehicle trips that would result in LOS deficiencies to roadway segments within the local circulation system based on a threshold of LOS D. The fiscally constrained roadway improvements planned in the 2016 RTP (Tier 1a, 1b, and 1c) are intended to address projected deficiencies for roadway segments within the County. However, after the identified improvements are implemented, fifteen roadways segments could still operate at deficient LOS. Impacts are potentially significant.	PS	Mitigation Measure 3.16-1: Roadway Improvements As part of its update of the Tuolumne County Countywide Traffic Circulation Improvement Program, the County shall evaluate the following improvements for inclusion in the Program, thus allowing for funding through the Tuolumne County Traffic Impact Mitigation Fee program. The improvements shall be incorporated into the Program if they are considered feasible and consistent with General Plan policies. If further analysis demonstrates that an alternative improvement would be adequate to achieve the target LOS, that alternative improvement shall be incorporated into the Program if feasible and consistent with General Plan policies. Roadway 3, Roadway 4, Roadway 5, and Roadway 23 – Widen the Segments to Four Lanes Widen the following segments to four lane expressways, consistent with FCEP-CIP Tier 3 projects, to improve conditions to LOS A in 2030 and 2040: ◢ Roadway 3 - SR 108 between O'Byrnes Ferry Road and SR 120 (Yosemite Junction) ◢ Roadway 4 - SR 108 between SR 120 (Yosemite Junction) and SR 49 (Montezuma Junction) ◢ Roadway 5 - SR 108 between SR 49 (Stockton Road) and S. Washington Street/Lime Kiln Road ◢ Roadway 23 - SR 49 between SR 49 (Montezuma Junction) and Bell Mooney Road Roadway 24 and Roadway 27 – Widen the Segment to Five Lanes Widen the following segments to five lanes, consistent with FCEP-CIP Tier 2 projects, to improve conditions to LOS C in 2030 and 2040: ◢ Roadway 24 - SR 49 between Bell Mooney Road and South Junction Main Street ◢ Roadway 27 - SR 49 between Fifth Avenue and Stockton Road/SR 108 Roadway 32, Roadway 33, and Roadway 34 - Construct the North-South Connector Phase 1 Construct the North-South Connector Phase 1 Greenley Road Extension to SR 49, consistent with FCEP-CIP Tier 2, by year 2030 to improve operating conditions along the following roadway segments: ◢ Roadway 32 - SR 49 north of Dodge Street, ◢ Roadway 33 - SR 49 south of N. Washington Street/Columbia Way	SU

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		◢ Roadway 34 - SR 49 north of N. Washington Street/Columbia Way If the aforementioned roadway improvement is deemed infeasible, or if further analysis demonstrates it will not result in acceptable operating conditions along the applicable roadway segment, the following improvements shall be incorporated: ◢ Construct the Western Bypass that would extend from SR 108/49 (south of Jamestown) to Rawhide Road. The Western Bypass is projected to further divert and reduce traffic on this segment of SR 49. ◢ Improve alternative modes of transportation along Roadways 32, 33, and 34, such as transit service or bicycle and pedestrian infrastructure. Roadway 35 – Construct Left Turn Lane Construct a continuous two-way-left-turn median lane to improve conditions to an acceptable LOS D in the year 2040 to improve operating conditions along Roadway 35 - SR 49 east of Parrots Ferry Road (Pedro Wye) If the aforementioned roadway improvement is deemed infeasible, or if further analysis demonstrates it will not result in acceptable operating conditions along the applicable roadway segment, the following improvements shall be incorporated: ◢ Widen the segment to five lanes to improve conditions to LOS A in the year 2040. ◢ Improve alternative modes of transportation along this roadway segment, such as transit or bicycle and pedestrian infrastructure. Roadway 52 and Roadway 116 - Construct the North-South Connector Phase 2 Construct the North-South Connector Phase 2, consistent with FCEP-CIP's Tier 2 and Tier 3, that would extend Fir Drive from Mono Way to the Greenley Road Extension, which may reduce traffic on the following segments: ◢ Roadway 52 - Mono Way west of Sanguinetti Road ◢ Roadway 116 - S. Washington Street between Restano Way and Church Street If the aforementioned roadway improvement is deemed infeasible, or if further analysis demonstrates it will not result in acceptable operating conditions along the applicable roadway segment, the following improvement shall be incorporated: ◢ Improve alternative modes of transportation along Roadways 52 and 116, such as transit service, bicycle and pedestrian infrastructure. Roadway 77 - Widen the Segment to Five Lanes Widen to five lanes Roadway 77 - Tuolumne Road from Mono Way to Lambert Lake Road to	

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		improve conditions to an acceptable LOS D in the year 2040. If the aforementioned roadway improvement is deemed infeasible, or if further analysis demonstrates it will not result in acceptable operating conditions along the applicable roadway segment, the following improvement shall be incorporated: ◢ Improve alternative modes of transportation along this roadway segment, such as transit service or bicycle and pedestrian infrastructure. Roadway 31 - Construct the North-South Connector Phase 2 Consistent with the FCEP-CIP's Tier 2 and Tier 3, construct the North-South Connector Phase 2 from Fir Drive Extension to SR 108, by the year 2040. If the aforementioned roadway improvement is deemed infeasible, or if further analysis demonstrates that it will not result in acceptable operating conditions along the applicable roadway segment, the following improvements shall be incorporated: ◢ Construct the Western Bypass that would extend from SR 108/49 (south of Jamestown) to Rawhide Road. The Western Bypass is projected to further divert and reduce traffic on this segment of SR 49, or ◢ Improve alternative modes of transportation along Roadway 31, such as transit service or bicycle and pedestrian infrastructure. Roadway 69 – Construct the North-South Connector Phase 2 Consistent with the FCEP-CIP's Tier 2 and Tier 3, construct the North-South Connector Phase 2 from Fir Drive Extension to SR 108, to improve conditions to an acceptable LOS by the year 2040 on Roadway 69 - Greenley Road between Cabezut Road/Morning Star Road and Delnero Drive. If the aforementioned roadway improvement is deemed infeasible, or if further analysis demonstrates it will not result in acceptable operating conditions along the applicable roadway segment, the following improvement shall be incorporated: ◢ Construct the Cabezut Road Extension from the Fir Drive Road Extension to Phoenix Lake Road, to further divert and reduce traffic on this segment of Greenley Road.	
Impact 3.16-2: Impacts to Intersection Operations Projected development under the General Plan Update would increase traffic volumes at intersections throughout Tuolumne County. Intersection improvements planned in the 2016 RTP are intended to address projected deficiencies intersections within the County. The fiscally constrained roadway improvements planned in the 2016 RTP (Tier 1a, 1b, and	PS	Mitigation Measure 3.16-2: Intersection Improvements As part of its update of the Tuolumne County Countywide Traffic Circulation Improvement Program, the County shall evaluate the following improvements for inclusion in the Program, thus allowing for funding through the Tuolumne County Traffic Impact Mitigation Fee program. The improvements shall be incorporated into the Program if they are considered	SU

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1c) are intended to address projected deficiencies at intersections within the County. However, after the identified improvements are implemented, three intersections could still operate at deficient LOS. Impacts are potentially significant.		feasible and consistent with General Plan policies. If further analysis demonstrates that an alternative improvement would be adequate to achieve the target LOS, that alternative improvement shall be incorporated into the Program if feasible and consistent with General Plan policies. Intersection 11 - Installation of a Traffic Signal or Conversion to a High-T Type Intersection Improve the intersection of SR 49-SR 108/SR 108 and SR 49 (Stockton Road) by year 2030 to a High-T type intersection or install a traffic signal at the intersection. Intersection 23 – Construct a Southbound Right-Turn Pocket A southbound right-turn pocket shall be constructed at the intersection of S. Washington Street/SR 49 (S. Washington Street) and SR 49 (Stockton Road) to improve conditions to an acceptable LOS in the year 2040, with some movements operating at a LOS F. If this is not feasible due to the existing right-of-way, alternative modes of transportation shall be improved along this roadway segment, such as transit service, bicycle and pedestrian infrastructure. If the aforementioned roadway improvement is deemed infeasible, or if further analysis demonstrates it will not result in acceptable operating conditions at the applicable intersection, the following improvements shall be incorporated: ◢ Construct the North-South Connector Phase 2 (Fir Drive Extension), which would extend Fir Drive from Mono Way to the Greenley Road Extension, intersecting with Cabezut Road and Lyons Bald Mountain Road in between, may reduce traffic on this segment of SR 49 by up to 5%. ◢ Construct the Western Bypass that would extend from SR 108/49 (south of Jamestown) to Rawhide Road. The Western Bypass is projected to divert traffic away from downtown Sonora and may reduce traffic at this intersection. ◢ Improve alternative modes of transportation along this roadway segment, such as transit service, bicycle and pedestrian infrastructure. Intersection 24 – Installation of a Traffic Signal and Restricting Right-Turn Movements A traffic signal shall be installed at the intersection of South Washington Street and Church Street. If this is not feasible due to the proximity of another signalized intersection, then the westbound Church Street approach shall be converted to right-turn-only during peak hours. The eastbound approach is currently restricted to right-turn-only during peak hours.	

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Impact 3.16-3: Hazards Due to a Design Feature or Incompatible Uses, including Agritourism Uses The implementation of General Plan Update policies relating to traffic calming and enhancing bicycle and pedestrian facilities would help improve safety of the overall circulation network within Tuolumne County. Additionally, any future circulation improvements associated with projected development under the General Plan Update would be subject to all applicable County and Caltrans design and safety standards. Additionally, the General Plan Update contains policies related to the compatibility of future development with existing airport land use compatibility and master plans; thus, ensuring incompatible uses in the vicinity of the existing airports would not occur. However, agritourism-related special events that would be allowed under the proposed text changes to the County Ordinance Code could result in temporary traffic hazards. This would be considered a potentially significant impact.	PS	**Mitigation Measure 3.16-3: Revise proposed Title 17 text to require traffic mitigation plans.** The proposed text changes to Title 17 of the Ordinance Code shall be revised as follows: **17.52.220 Commercial events on agricultural land** Commercial events are the use of land and/or facilities for meetings, gatherings and events, including, but not limited to, weddings, parties and similar uses, for which a fee is charged. A. An annual ministerial permit may be acquired from the County to allow ~~U~~up to 40 commercial events ~~may~~ to be held per calendar year for up to 300 guests on a parcel zoned AE-37, AE-80 or AE-160 subject to the standards in paragraph C. B. An annual ministerial permit may be acquired from the County to allow ~~U~~up to two commercial events ~~may~~ to be held per calendar year for up to 500 guests on a parcel zoned AE-37, AE-80 or AE-160 subject to the standards in paragraph C. C. Standards for commercial events: 1. The event venue shall be located on a parcel that complies with the cul-de-sac road standards specified in Section 11.12.040 of this code. 2. The event venue, excluding parking areas, shall be located at least 200 feet from the boundary of the nearest parcel zoned R or RE. 3. The event parking areas shall be located at least 20 feet from the boundary of any parcel zoned R or RE. 4. Prior to issuance of the annual special event permit, a traffic management plan (TMP) shall be submitted and approved by the Community Resources Agency for events exceeding 100 guests. The TMP shall be prepared by a qualified transportation engineer/consultant and shall include appropriate techniques to provide safe ingress and egress from event facilities without resulting in substantial congestion of roadways, or otherwise cause traffic-related hazards. Such techniques may include (but may not be limited to): ◤ Temporary caution and directional signage; ◤ Clearly defined points of ingress/egress; ◤ Cones or other clear markers placed to help direct vehicle flow define parking areas and driveways; and ◤ Flag persons to help direct vehicle flow and minimize congestion. [subsequent items to be renumbered]	LTS

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Impact 3.16-4: Impacts to Alternative Transportation Implementation of the General Plan Update and the associated circulation improvements and policies is expected to improve the availability of, and access to bicycle and pedestrian facilities. Additionally, while the County's population would increase as projected development under the General Plan Update occurs, the policies and planned improvements under the General Plan Update would improve transit options within Tuolumne County, including efficiency and capacity of the transit system. Therefore, impacts related to alternative transportation would be less than significant.	LTS	No mitigation is required.	LTS
Impact 3.16-5: Impacts to Emergency Access Projected development under the General Plan Update would be subject to review by the County and responsible emergency service agencies; thus, ensuring any future development under the General Plan Update would be designed to meet all County emergency access and design standards. Therefore, adequate emergency access would be provided and impacts to emergency access would be less than significant.	LTS	No mitigation is required.	LTS
3.17 Utilities and Service Systems			
Impact 3.17-1: Exceed Water Supply Infrastructure Capacity or Entitlements such that New or Expanded Infrastructure or Entitlements would be Required Projected development under the General Plan Update would result in an increase in water demand. Although areas served by TUD would have adequate supplies of water without new or expanded infrastructure or entitlements, it is inconclusive with available data to determine if areas served by other water purveyors would have adequate capacity to serve new connections. Further, new development or expanded service encouraged through the General Plan Update may require new or expanded water supply infrastructure. However, with implementation of policies that require the provision of water prior to development, and because subsequent infrastructure expansion projects would be subject to separate environmental review, impacts related to water supply would be less than significant.	LTS	No mitigation is required.	LTS
Impact 3.17-2: Prevent Achievement of Water Quality Treatment Standards or Result in Significant Environmental Effects due to the Construction of New or Expanded Wastewater Capacity Projected development under the General Plan Update would increase wastewater generation above existing conditions. However, existing wastewater treatment facilities have adequate capacity to accommodate new development, and General Plan Update policies would further reduce potential impacts. Therefore, impacts would be less than significant.	LTS	No mitigation is required.	LTS

Table ES-1 Summary of Impacts and Mitigation Measures

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
N = No Impact LTS = Less than significant PS = Potentially significant S = Significant SU = Significant and Unavoidable			
Impact 3.17-3: Result in Significant Environmental Effects due to the Construction of New or Expanded Storm Water Infrastructure Projected development under the General Plan Update would incrementally increase the amount of impervious surfaces within the County, which could result in increased storm water runoff and the need for additional storm water infrastructure. However, the County's existing Water Quality Plan and policies and implementation programs in the General Plan Update would require adequate facilities and minimize the potential for adverse effects. Therefore, impacts would be less than significant.	LTS	No mitigation is required.	LTS
Impact 3.17-4: Result in Need for Additional Landfill Capacity Projected development under the General Plan Update would result in an overall increase in the amount of solid waste generated in the County. However, existing landfills would adequately serve development throughout the planning horizon of the General Plan Update, and policies in the Utilities Element would further reduce solid waste. Therefore, impacts would be less than significant.	LTS	No mitigation is required.	LTS

1 INTRODUCTION

This Recirculated Draft Environmental Impact Report (Recirculated Draft EIR) is part of the ongoing environmental review process for the Tuolumne County General Plan Update (proposed project) and was prepared in accordance with the California Environmental Quality Act (CEQA) to evaluate the potential environmental impacts associated with the implementation of the project (State Clearinghouse Number 2015082027). This document is prepared in conformance with CEQA (California Public Resources Code, Section 21000, et seq.) and the CEQA Guidelines (California Code of Regulations, Title 14, Section 15000, et seq.). For purposes of clarity, this document is referred to as the Recirculated Draft EIR, and the previously circulated Draft Environmental Impact Report is referred to as the Draft EIR.

Tuolumne County (County) circulated the Draft EIR on December 4, 2015. During its review of comments on the Draft EIR, the County identified potentially significant new information that would need to be added to the Draft EIR. Additionally, the General Plan Update was revised to reduce redundancies in policies and programs and improve the organization of the document. Policies were clarified where appropriate in response to comments received during the circulation of the Draft EIR, such as in the Natural Resources Element. In order to provide a comprehensive analysis of potentially significant impacts from the updated version of the General Plan Update and to fully address areas of concern raised in public comments on the Draft EIR, the County has prepared this Recirculated Draft EIR. As explained in more detail in Section 1.3, the County decided to recirculate the Draft EIR pursuant to Section 15088.5 of the CEQA Guidelines.

This Recirculated Draft EIR evaluates the potential environmental effects associated with implementation of the draft Tuolumne County General Plan Update (also called the "General Plan Update" within this Recirculated Draft EIR). The General Plan Update encompasses revisions to the existing General Plan Elements including changes to the Land Use diagrams. The General Plan Update includes goals, policies and implementation programs that will guide the development of Tuolumne County through the year 2040.

This section: (1) provides an overview of the background behind the existing 1996 General Plan; (2) summarizes the process involved in developing the General Plan Update; (3) describes the purpose of and legal authority of the EIR document; (4) summarizes the scope and content of the EIR; (5) lists lead, responsible, and trustee agencies for the EIR; (6) describes the intended uses of the EIR; and (7) provides a synopsis of the environmental review process required under CEQA.

The contents of other EIR sections are as follows:

- Chapter 2, "Project Description," provides a detailed discussion of the General Plan Update.
- Chapter 3, "Environmental Impact Analysis," describes the potential environmental effects associated with the preferred land use scenario.
- Chapter 4, "Cumulative," includes an analysis of the potential cumulative environmental effects associated with the preferred land use scenario for each of the resources analyzed in Chapter 3.
- Chapter 5, "Other CEQA Discussions," discusses issues such as growth inducement and significant irreversible environmental effects.
- Chapter 6, "Alternatives," discusses alternatives to the General Plan Update, including the CEQA-required "no project" alternative.
- Chapter 7, "References," lists informational sources for the EIR.
- Chapter 8, "List of Preparers," lists persons involved in the preparation of the document.

1.1 OVERVIEW OF THE GENERAL PLAN

The existing Tuolumne County General Plan was adopted on December 26, 1996. The Tuolumne County General Plan Update is a comprehensive effort to update the existing 1996 General Plan and respond to current local and regional conditions, as well as changes in state law that may not have been in place when the General Plan was last updated.

State law (Government Code Section 65300) requires that each city and county adopt a comprehensive general plan. The General Plan Update fulfills this requirement by updating the County's existing General Plan. The General Plan Update defines the framework by which the County's physical and economic resources are to be managed and used in the future. The General Plan Update's planning horizon is the year 2040. County decision-makers will use the plan as a road map for:

- choices about the use of land;
- protection of environmental resources;
- conservation of existing, and development of new, housing;
- provision of supporting infrastructure and public and human services; and
- protection of people and property from natural and human-made hazards.

The General Plan Update clarifies and articulates the County's intentions with respect to the rights and expectations of the various communities, including residents, property owners, and businesses. Through the General Plan, the County informs these groups of its goals, policies, and standards, thereby communicating expectations of the public and private sectors for meeting community objectives. In addition, the General Plan includes Community Plans that specifically address growth and resource concerns within five of the County's identified communities.

Since the General Plan and Community Plans are the constitution for all future development in a municipality, any decision by a county affecting land use and development must be consistent with the respective plan. This includes any development projects proposed in the future. An action, program, or project is consistent with the General Plan if, considering all its aspects, it will further the objectives and policies of the General Plan and will not inhibit or obstruct their attainment (Governor's Office of Planning and Research 2017:255).

Each of the General Plan Elements and Community Plans contain statements of goals, policies, and implementation programs, which constitute Tuolumne County's policies for land use, development and environmental quality. These statements are defined as follows:

- Goal - The ultimate purpose of an effort stated in a way that is general in nature and immeasurable.

- Policy - A specific statement in text or diagram guiding action and implying clear commitment to a goal.

- Implementation Program - An action, procedure, program, or technique that carries out General Plan policy.

1.2 GENERAL PLAN UPDATE PROCESS

Since 2007, the County of Tuolumne has been participating in Tuolumne Tomorrow, a Regional Blueprint planning process for directing future growth and enhancing the quality of life in the County over the planning horizon of 2040. Through this coordinated effort, the City of Sonora, Tuolumne County, Tuolumne County Transportation Council, and community members developed Guiding Principles for growth and development, and studied the potential effects of the likely land use development pattern and possible alternative growth scenarios on the transportation system, housing, local economy, quality of life, natural resources, and the environment. As a result of this effort, the Distinctive Communities Growth Scenario was selected and adopted

by the Board of Supervisors in August 2012 as the preferred growth scenario for Tuolumne County (see Chapter 2, "Project Description," for a further explanation of the Distinctive Communities Growth Scenario).

Tuolumne County's General Plan Update has been formulated to reflect this preferred growth scenario. Within the Distinctive Communities Growth Scenario each community contains a well-defined, cohesive, and compact community built around an appropriately-scaled urban core and community gathering places.

The General Plan Update includes the update of the seven mandatory General Plan elements. Government Code Sections 65302 and 65301(a) require a General Plan to have both a Conservation Element and an Open Space Element, but also authorize these elements to be combined. Due to the similar themes of these elements, they have been combined in the General Plan Update as the Natural Resources Element to minimize redundancy. The mandatory elements included in the General Plan Update are as follows:

- Community Development and Design Element (equivalent to a land use element),
- Transportation Element (equivalent to a circulation element),
- Housing Element,
- Natural Resources Element (equivalent to a combined open space and conservation element),
- Noise Element, and
- Natural Hazards Element (equivalent to a safety element).

In addition to the mandatory elements discussed above, the comprehensive update of Tuolumne County's General Plan includes the following optional elements:

- Utilities Element,
- Economic Development Element,
- Managed Resources Element,
- Agriculture Element,
- Healthy Communities Element,
- Parks and Recreation Element,
- Education and Libraries Element,
- Cultural Resources Element,
- Water Supply Element,
- Air Quality Element,
- Public Safety Element, and
- Climate Change Element.

Finally, there are plans for five of Tuolumne County's individual communities, which include:

- Jamestown Community Plan,
- Columbia Community Plan,
- East Sonora Community Plan,
- Tuolumne Community Plan, and
- Mountain Springs Community Plan.

The key features of each Element of the General Plan Update are further summarized in Chapter 2, "Project Description."

Public participation is a necessary element to a comprehensive general plan update, and public involvement meetings were held throughout the General Plan Update process. The Board of Supervisors Planning Committee has been designated by the Board of Supervisors to serve as the steering committee for the General Plan Update project. The Board of Supervisors Planning Committee conducted 10 meetings, all of which were open to the public. In February 2015, the County held two public workshops (scoping meetings), one in the City of Sonora with the Board of Supervisors and another in the community of Groveland with County staff. At the workshops, the various elements of the General Plan were presented and the Board had an opportunity to discuss the various elements and provide direction to staff for any additional amendments.

In addition, the public was invited to provide initial comments on the General Plan Update and the Tuolumne County Planning Commission conducted a workshop on April 15, 2015 where the public was also invited to provide comments on the General Plan Update. In addition, property owners on those properties with proposed land use designation changes were notified by County Staff by written notice and Staff was available to discuss questions and clarifications regarding proposed land use changes with individual property owners. As part of the written notice, Staff informed property owners how to utilize the General Plan Update website, including a tool that enables property owners to view an interactive map that shows the proposed changes to the land use diagrams, including individual property, as well as the proposed text changes to the General Plan Elements.

Beginning in 2017, County staff met with stakeholder groups, which included Tuolumne County Farm Bureau, Farms of Tuolumne County, Tuolumne County Business Council, Tuolumne Band of Me-Wuk Indians, Chicken Ranch Rancheria of Me-Wuk Indians, Tuolumne Heritage Committee, Central Sierra Environmental Resource Center, Tuolumne-Stanislaus Integrated Regional Water Management Group, and Citizens for Responsible Growth. In the spring of 2018, Community Resources Agency staff sent notices to over 4,000 property owners with parcels that may be impacted by land use changes as well as notifying them of a series of informational sessions that were planned for Board of Supervisors meetings. These sessions were also advertised on the County's General Plan website and in the Union Democrat. These information sessions discussed the following topics:

- General Plan/EIR 101,
- Community Plans,
- General Plan Implementation, and
- How to comment on the General Plan/EIR.

Community Resources Agency staff also made presentations at the Tuolumne Rural Action Coalition, the Tuolumne County Board of Realtors, and several town hall meetings.

1.3 OVERVIEW OF THE CEQA PROCESS

1.3.1 Legal Authority and Recirculation

In response to the public comments received and to clarify and expand upon the analysis in the Draft EIR, circulated on December 4, 2015, the County has decided to prepare a Recirculated Draft EIR.

A lead agency must recirculate an EIR when significant new information is added to the EIR after public notice is given of the availability of the Draft EIR for public review, but before certification (CEQA Guidelines, Section 15088.5). The term "information" can include changes in the project or environmental setting, as well as additional data or other information. New information added to an EIR is not "significant" unless the EIR is changed in a way that deprives the public of a meaningful opportunity to comment upon a substantial adverse environmental effect of the project or a feasible way to mitigate or avoid such an effect (including a feasible project alternative) that the project's proponents have declined to implement. "Significant new information" requiring recirculation includes, for example, a disclosure showing that:

(1) A new significant environmental impact would result from the project or from a new mitigation measure proposed to be implemented.

(2) A substantial increase in the severity of an environmental impact would result unless mitigation measures are adopted that reduce the impact to a level of insignificance.

(3) A feasible project alternative or mitigation measure considerably different from others previously analyzed would clearly lessen the environmental impacts of the project, but the project's proponents decline to adopt it.

(4) The Draft EIR was so fundamentally and basically inadequate and conclusory in nature that meaningful public review and comment were precluded.

As required under CEQA, the County submitted a Notice of Preparation (NOP) to the State Clearinghouse on August 12, 2015. In February 2015, the County held two public workshops (scoping meetings), one in the City of Sonora with the Board of Supervisors and another in the community of Groveland with County staff. At the workshops, the various elements of the General Plan were presented and the Board had an opportunity to discuss the various elements and provide direction to staff for any additional amendments. In addition, the public was invited to provide initial comments on the General Plan Update. The Tuolumne County Planning Commission conducted a workshop on April 15, 2015 where the public was also invited to provide comments on the General Plan Update. The Draft EIR was released on December 7, 2015 for a 60-day public comment period, which concluded on February 5, 2016. A total of 57 written comments were received.

Additionally, the General Plan Update was revised to reduce redundancies in policies and programs and improve the organization of the document. Policies were clarified where appropriate in response to comments received during the circulation of the Draft EIR, such as in the Natural Resources Element. In order to provide a comprehensive analysis of potentially significant impacts from the updated version of the General Plan Update and to fully address areas of concern raised in public comments on the Draft EIR, the County has prepared this Recirculated Draft EIR.

The environmental impacts of the General Plan Update are analyzed in this Recirculated Draft EIR to the degree of specificity appropriate, in accordance with CEQA Guidelines Section 15146. As with the original Draft EIR, the Recirculated Draft EIR addresses the potentially significant adverse environmental impacts that may be directly or indirectly associated with implementation of the General Plan Update. CEQA does not require the EIR to be as detailed as an EIR on specific projects that might follow. This EIR is intended to serve as an informational document for the County decision makers and the public regarding the possible future implications of projected development under the General Plan Update.

1.3.2 Type and Use of This EIR

This EIR fulfills the requirements for a Program EIR. Although the legally required contents of a Program EIR are the same as those of a Project EIR, Program EIRs typically cover broad programs or large projects, such as a general plan, and contain a more general discussion of impacts, alternatives, and mitigation measures than a Project EIR. As provided in Section 15168 of the *CEQA Guidelines*, a Program EIR may be prepared on a series of actions that may be characterized as one large project. Impacts may be generally characterized, and mitigation measures may include programs and performance standards that address the impacts. Use of a Program EIR provides the County (as Lead Agency) with the opportunity to consider broad policy alternatives and program-wide mitigation measures and provides the County with greater flexibility to address environmental issues and/or cumulative impacts on a comprehensive basis. Agencies generally prepare Program EIRs for programs or a series of related actions that are linked geographically, are logical parts of a chain of contemplated events, rules, regulations, or plans that govern the conduct of a continuing program, or are individual activities carried out under the same authority and having generally similar environmental effects that can be mitigated in similar ways. By its nature, a Program EIR considers the overall effects associated with implementing a program (such as a General Plan) and does not, and is not intended to, examine individual projects that may be implemented pursuant to the General Plan.

Once a Program EIR has been prepared, subsequent activities within the program must be evaluated to determine if additional CEQA documentation is required to address the significant impacts of such activities. Subsequent activities could be found to be within the Program EIR scope and additional environmental

documents may not be required (*CEQA Guidelines* Section 15168(c)). When a Program EIR is relied on for a subsequent activity, the Lead Agency must incorporate feasible mitigation measures and alternatives developed in the Program EIR into the subsequent activities (*CEQA Guidelines* Section 15168(c)(3)). If a subsequent activity could result in effects not within the scope of the Program EIR, including new or more severe significant impacts than identified in the Program EIR, the Lead Agency must prepare a Negative Declaration, Mitigated Negative Declaration, or a project-level EIR. An initial study checklist (See CEQA Guidelines Appendix G for an example) is used to determine if a subsequent activity is within the scope of the Program EIR and if not, what type of CEQA document is needed to address its effects. The *CEQA Guidelines* (Section 15168(b)) encourage the use of Program EIRs, citing five advantages:

1. Provide an occasion for a more exhaustive consideration of effects and alternatives than would be practical in an EIR on an individual action.

2. Ensure consideration of cumulative impacts that might be slighted in a case-by-case analysis.

3. Avoid duplicative reconsideration of basic policy considerations.

4. Allow the lead agency to consider broad policy alternatives and program wide mitigation measures at an early time when the agency has greater flexibility to deal with basic problems or cumulative impacts.

5. Allow reduction in paperwork.

It should be noted that as a program-level environmental document, the General Plan EIR uses appropriately programmatic thresholds as compared to the project-level thresholds that might be used for an EIR on a specific development project. Because the General Plan Update EIR is broad and general, it may not be ripe for consideration of environmental impacts that may occur on individual parcels or in connection with other projects that may be consistent with the General Plan. The process described above, initiated with preparation of an initial study, provides a road map for consideration of subsequent projects and the associated CEQA documentation.

1.4 SCOPE AND CONTENT OF THIS EIR

1.4.1 Response to Public Comments

In accordance with the *CEQA Guidelines*, an NOP of a Draft EIR was circulated to the public on August 12, 2015. Tuolumne County has reviewed and considered all comments received on the NOP for the proposed project and submitted on the Draft EIR. As relevant and appropriate, this Recirculated Draft EIR also addresses those comments.

The NOP, included in Appendix A, indicated that the following issues would be further evaluated in the Draft EIR:

- Aesthetics,
- Agricultural Resources,
- Air Quality,
- Biological Resources,
- Cultural Resources,
- Geology/Soils,
- Hazards & Hazardous Materials,
- Hydrology/Water Quality,
- Land Use/Planning,
- Noise,
- Population/Housing,
- Public Services,
- Recreation,
- Transportation and Circulation, and
- Utilities/Service Systems.

The County received 12 written responses to the NOP. The responses, included in Appendix A, are addressed as appropriate in the analysis contained in the various subsections of Chapter 3, "Environmental Impact Analysis." In February 2015, the County held two public workshops (scoping meetings), one in City of Sonora with the Board of Supervisors and another in the community of Groveland with County staff. Input from those meetings is also reflected in the EIR analysis.

On December 4, 2015, the County sent the Draft EIR to the State Clearinghouse. Although it was only required to circulate the Draft EIR for a 45-day period, the County circulated the 2015 Draft EIR for a 60-day public review period, which concluded on February 5, 2016. The County received 57 written responses to the Draft EIR.

1.4.2 Document Format

This document is a complete recirculation of the previous Draft EIR. The format is similar to the previous Draft EIR, with additional information and changes to analysis included, as appropriate. Due to the comprehensive nature of this document, changes and additions have not been marked with underline and strikethrough typeface. Thus, this recirculated Draft EIR may be considered anew by commenters.

1.5 LEAD, RESPONSIBLE, AND TRUSTEE AGENCIES

The County of Tuolumne is the Lead Agency under CEQA for this EIR because it has discretionary authority to determine whether or how to approve the General Plan Update.

"Responsible Agencies," are other agencies that are responsible for carrying out or implementing a specific component of the General Plan or for approving a project (such as an annexation) that implements the goals and policies of the General Plan. Section 15381 of the *State CEQA Guidelines* defines a "responsible agency" as:

> a public agency which proposes to carry out or approve a project, for which a Lead Agency is preparing or has prepared an EIR or Negative Declaration. For the purposes of CEQA, the term "Responsible Agency" includes all public agencies other than the Lead Agency which have discretionary approval power over the project.

The following two agencies may be responsible agencies, particularly for upgrades to State Highways and for potential annexations to cities and special districts within the County.

- The California Department of Transportation has responsibility for approving future improvements to the state highway system, including State Routes 49, 132, 108, and 120.
- The Local Agency Formation Commission of Tuolumne County has responsibility for approving any annexations within the County that might occur over the life of the General Plan.

Trustee agencies have jurisdiction over certain resources held in trust for the people of California but do not have a legal authority over approving or carrying out the project. The California Department of Fish and Wildlife is a trustee agency for the General Plan Update EIR due to the potential impacts to biological resources; California Department of Parks and Recreation is a trustee agency due to the presence of State Parks in the County; and California State Lands Commission if development were to occur on school lands or any beds of navigable waters such as the Tuolumne River or Stanislaus River.

1.6 EIR PROCESS

The environmental review process, as required under CEQA, is summarized below:

1. Notice of Preparation. After deciding that an EIR is required, the lead agency must file an NOP soliciting input on the EIR scope to the State Clearinghouse, other concerned agencies, and parties previously requesting notice in writing (*CEQA Guidelines* Section 15082; Public Resources Code Sections 21080.4 and 21092.2). The NOP must be posted in the County Clerk's office for 30 days.

2. Draft EIR. The Draft EIR must contain: (a) table of contents or index; (b) summary; (c) project description; (d) environmental setting; (e) discussion of significant impacts (direct, indirect, cumulative, growth-inducing and unavoidable impacts); (f) a discussion of alternatives; (g) mitigation measures; and (h) discussion of irreversible changes.

3. Notice of Completion. Upon completion of a Draft EIR, the lead agency must file a Notice of Completion (NOC) with the State Clearinghouse and prepare a Public Notice of Availability of a Draft EIR. The lead agency must place the notice in the County Clerk's office for 30 days (Public Resources Code Section 21092.3) and send a copy of the notice to anyone requesting it (CEQA Guidelines Section 15087; Public Resources Code Section 21092.2). In addition, public notice of the availability of the Draft EIR must be given through at least one of the following procedures: (a) publication in a newspaper of general circulation; (b) posting on and off of the project site; or (c) direct mailing to owners and occupants of contiguous properties and others who have requested such notification. The lead agency must solicit comments from the public, responsible agencies, trustee agencies, and other relevant public agencies, and respond in writing to all written comments received (Public Resources Code Sections 21091 and 21153). The minimum public review period for a Draft EIR is 30 days. When a Draft EIR is sent to the State Clearinghouse for review, the public review period must be 45 days (Public Resources Code Section 21091).

4. Final EIR. Following the close of the Draft EIR review period, a Final EIR is prepared. The Final EIR must include: (a) the Draft EIR; (b) copies of comments received during public review; (c) a list of persons and entities commenting; and (d) responses to comments.

5. Final EIR Certification. Prior to making a decision on a proposed project, the lead agency must certify that: (a) the Final EIR has been completed in compliance with CEQA; (b) the Final EIR was presented to the decision-making body of the lead agency; and (c) the decision-making body reviewed and considered the information in the Final EIR prior to approving the project (*CEQA Guidelines* Section 15090).

6. Lead Agency Project Decision. Upon certification of an EIR, the lead agency makes a decision on the project analyzed in the EIR. A lead agency may: (a) disapprove a project because of its significant environmental effects; (b) require changes to a project to reduce or avoid significant environmental effects; or (c) approve a project despite its significant environmental effects, if the proper findings and statement of overriding considerations are adopted (*CEQA Guidelines* Sections 15042 and 15043).

7. Findings/Statement of Overriding Considerations. In approving a project, for each significant impact of the project identified in the EIR, the lead or responsible agency must find, based on substantial evidence, that either: (a) the project has been changed to avoid or substantially reduce the magnitude of the impact; (b) changes to the project are within another agency's jurisdiction and such changes have or should be adopted; or (c) specific economic, social, or other considerations make the mitigation measures or project alternatives infeasible *(CEQA Guidelines* Section 15091). If an agency approves a project with unavoidable significant environmental effects, it must prepare a written Statement of Overriding Considerations that sets forth the specific social, economic, or other reasons supporting the agency's decision and explains why the project's benefits outweigh the significant environmental effects.

8. Mitigation Monitoring/Reporting Program. When an agency makes findings on significant effects identified in the EIR, it must adopt a reporting or monitoring program for mitigation measures that were adopted or made conditions of project approval to mitigate significant effects.

1.6.1 Review of the Recirculated Draft EIR

As discussed above, Tuolumne County has elected to prepare a Recirculated Draft EIR to address refinements to the General Plan Update that have occurred since publication of the 2015 Draft EIR and to provide additional analysis. Upon completion of this Recirculated Draft EIR, Tuolumne County filed an NOC with the Governor's Office of Planning and Research to begin the public review period (Public Resources Code Section 21161). Concurrent with the NOC, this Recirculated Draft EIR has been distributed to responsible and trustee agencies, other affected agencies, surrounding counties, and interested parties, as well as to all parties requesting a copy of the Recirculated Draft EIR, in accordance with Public Resources Code Section 21092(b)(3).

During the 45-day public review period, the Recirculated Draft EIR, including the technical appendices, is available for review at the Tuolumne County offices, located at the address provided below, and online at: https://www.tuolumnecounty.ca.gov/889/General-Plan-Update. All agencies, organizations, and interested parties, have the opportunity to comment on the Recirculated Draft EIR during the public review period on the Recirculated Draft EIR. Section 15088.5 of the CEQA Guidelines provides that when an agency recirculates an entire EIR, the agency need not respond to comments received during the earlier circulation period. Although comments received during the earlier circulation period are part of the administrative record, CEQA does not require a written response to those comments in the Final EIR. New comments must be submitted for the revised EIR.

Written comments on this Recirculated Draft EIR should be addressed to:

Quincy Yaley, AICP
Community Resource Agency
Assistant Director – Development
2 S. Green Street
Sonora, CA 95370

Phone: (209) 533-5633
Fax: (209) 533-5616
Email: qyaley@co.tuolumne.ca.us

Submittal of electronic comments in Microsoft Word or Adobe PDF format is encouraged. Upon completion of the public review period, written responses to comments on the Recirculated Draft EIR will be prepared and made available for review, as required by CEQA, as well as at web address identified above, by the commenting agencies at least 10 days before the decision hearing at which the certification of the Final EIR will be considered.

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2 PROJECT DESCRIPTION

The proposed project is a comprehensive update to the Tuolumne County General Plan (hereinafter referred to as the "General Plan Update"). The General Plan Update, which updates the 1996 General Plan, establishes the community's vision for the development of Tuolumne County and will serve as the fundamental land use policy document for the County. The General Plan Update consists of two components: the Countywide General Plan and Community Plans, which relate to the communities of Jamestown, Columbia, East Sonora, Tuolumne, and Mountain Springs. The General Plan Update includes goals, policies, and implementation programs to guide the development of Tuolumne County through the year 2040. Consistent with Policies 8.D.1, 8.E.2, and 8.E.3 and Implementation Programs 8.D.a and 8.E.c in the Agriculture Element, the General Plan Update also includes proposed amendments to Title 17 of the Ordinance Code, which would expand the range of economic activities allowed on land zoned for agriculture. The amendments to Title 17 are described further below under the description of the Agriculture Element, and the actual proposed text amendments (in strike-through/underline) are included as Appendix F of this Draft EIR.

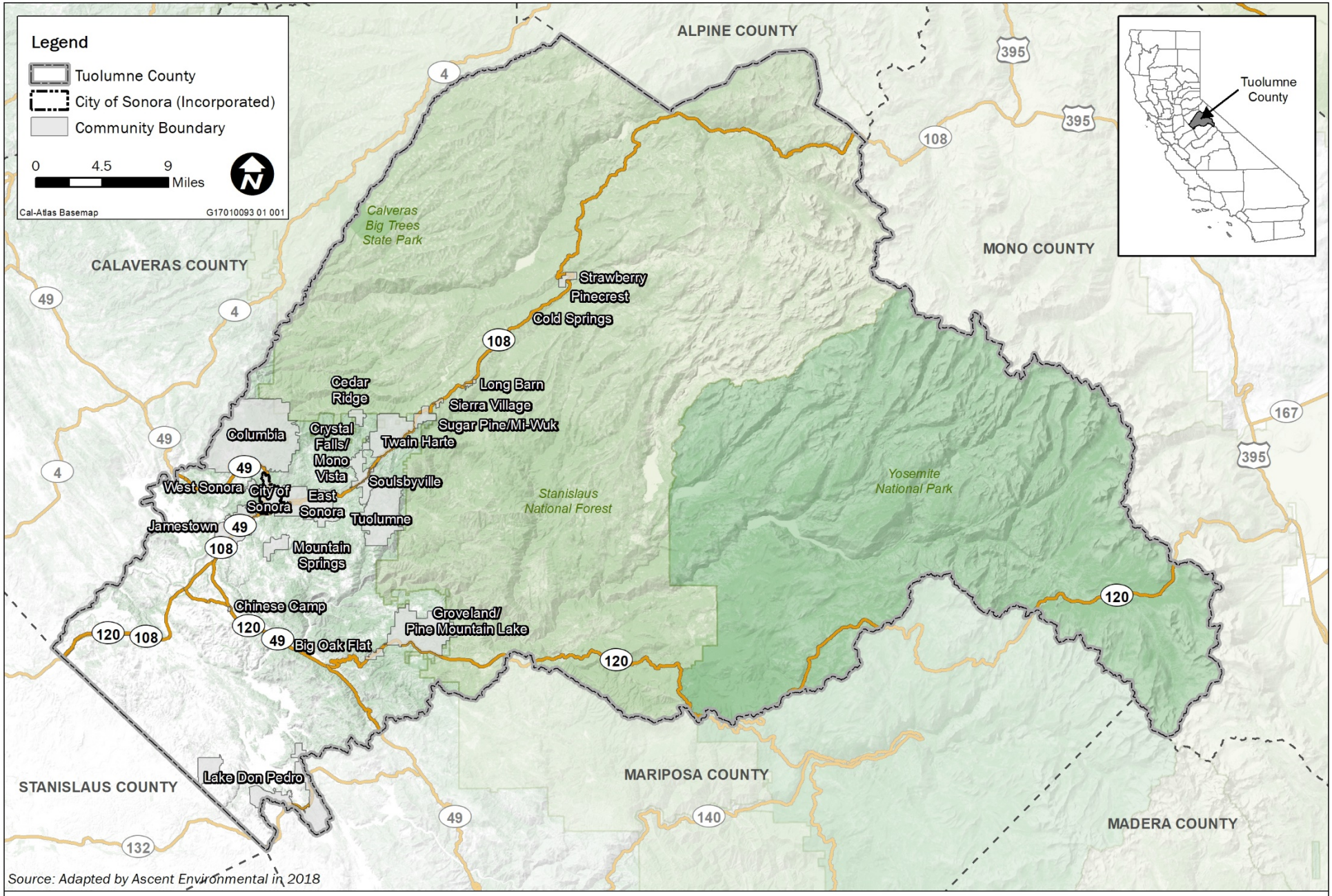
This chapter of the EIR describes the key characteristics of the General Plan Update, including the geographic extent of the plan, project objectives, development forecasted for the plan area, and required approvals.

2.1 GEOGRAPHIC EXTENT OF THE GENERAL PLAN AREA

Tuolumne County is located in the center of the California Mother Lode along the western slope of the Sierra Nevada. The County is bordered on the north by Calaveras County, on the south by Mariposa and Merced counties, on the west by Stanislaus County, and on the east by Alpine and Mono counties. Sonora, the County seat, is the only incorporated city. Tuolumne County encompasses 2,274 total square miles, or 1,455,360 acres. Exhibit 2-1 shows a regional map of the County, its major highways, its incorporated city and unincorporated communities, and its relationship to adjacent counties.

Tuolumne County's diverse terrain and land uses include the Columbia State Historic Park, Railtown 1897 State Historic Park, lands under the jurisdiction of the U.S. Bureau of Land Management and U.S. Bureau of Reclamation, and much of the Stanislaus National Forest and Yosemite National Park. Tribal lands of the Tuolumne Band of Me-Wuk Indians and Chicken Ranch Band of Me-Wuk Indians are located within Tuolumne County. Calaveras Big Trees State Park, with its world-renowned giant sequoia trees, is found mainly within the County's borders. The County is also home to the two highest highway mountain passes through the Sierra Nevada: Tioga Pass (9,945 feet) and Sonora Pass (9,628 feet). Approximately 77 percent of Tuolumne County is under the jurisdiction of a government agency, such as the U.S. Forest Service, National Park Service, U.S. Bureau of Land Management, schools, California Department of Parks and Recreation, California Department of Transportation, or irrigation districts. Thus, the General Plan Update acknowledges that Tuolumne County has limited jurisdiction over those lands.

As described above, Sonora is the only incorporated city within Tuolumne County. However, several unincorporated communities (called "identified communities" in the General Plan Update) are also located within the County. The General Plan would apply to the unincorporated areas of Tuolumne County, including the identified communities (thus, Sonora is not included within the General Plan's policy area).



Source: Adapted by Ascent Environmental in 2018

Exhibit 2-1 **Regional Location**

2.2 1996 GENERAL PLAN

The Tuolumne County General Plan serves as the primary policy document that guides land use decisions in the unincorporated areas of the County. The latest comprehensive update of the general plan for the County was adopted on December 26, 1996.

The 1996 Tuolumne County General Plan consists of the following elements, as well as five Community Plans:

- Agricultural Resources Element,
- Air Quality Element,
- Circulation Element,
- Community Identity Element,
- Conservation and Open Space Element,
- Cultural Resources Management Element,
- Economic Development Element,
- Housing Element,
- Land Use Element,
- Noise Element,
- Public Facilities and Services Element,
- Recreation Element, and
- Safety Element.

2.3 DISTINCTIVE COMMUNITIES GROWTH SCENARIO

Since 2007, the County of Tuolumne has been participating in Tuolumne Tomorrow, a Regional Blueprint planning process aimed at directing future growth and enhancing the quality of life in the County over the planning horizon of 2040. Through this coordinated effort, the City of Sonora, Tuolumne County, the Tuolumne County Transportation Council (TCTC), and community members developed Guiding Principles for growth and development and studied the potential effects of the likely land use development pattern and possible alternative growth scenarios on the transportation system, housing, local economy, quality of life, natural resources, and the environment. This planning process utilized growth forecasts derived from calculations conducted utilizing the U-Plan model and the Tuolumne County Regional Travel Demand Model. The U-Plan land use forecasting model is a rule-based model that is not calibrated on historical data and that simply projects the detailed footprint of development for various land use types. A detailed description of how the U-Plan model was used to develop the growth projections and patters in this General Plan Update can be found in the Tuolumne Tomorrow: Tuolumne County Regional Blueprint Project Report.

The Distinctive Communities Growth Scenario, one of the growth scenarios developed through this effort, was selected and adopted by the Board of Supervisors in August 2012 as the preferred growth scenario for Tuolumne County. Within the Distinctive Communities Growth Scenario, each community contains a well-defined, cohesive, and compact community built around an appropriately scaled community core and community gathering places. The General Plan Update has been formulated to reflect this preferred growth scenario.

The Distinctive Communities Growth Scenario would create and provide for a mixture of residential, retail, entertainment, office, and commercial uses near each other, encouraging active communities. By having more compact communities, auto dependency would be reduced, and walking, bicycling, and transit use could become increasingly popular forms of transportation. Urban development is centralized, with rural development beyond the urban development areas and between identified community boundaries. Surrounding rural development would serve as buffers between communities and help meet the functional needs of the natural environment and nearby agriculture production. Rural development may be primarily

located on the fringe of identified communities, but clustered or grouped together to make the best use of infrastructure and avoid disruption to agricultural lands and environmentally sensitive areas.

Under this scenario, no changes to land use designations would be made that reduce allowable density on any parcels (i.e., down-zone), and development outside communities would continue to be allowed in the rural areas of the County. Transportation investments are used to link communities and to support a wide range of mobility choices within individual communities. More than one downtown, community center, or pedestrian-oriented center is possible in each community, providing a 5-minute walk (0.25 mile) between home and the core of a community, jobs, recreation, community facilities, and transit. Local government policies and programs would work in concert to encourage more complete and economically self-sufficient communities, where residents can live, work, and shop in the same community.

Because the General Plan Update is based on the Distinctive Communities Scenario that was created during the Regional Blueprint planning process, the General Plan Update includes policies that would help guide and direct the foreseeable development and growth that would occur in the County by 2040. In other words, the policies in the General Plan Update are more likely to shape rather than to cause the foreseeable growth in the County.

2.4 GENERAL PLAN UPDATE

2.4.1 Overall Objectives

The General Plan Update is intended to function as a policy document to guide land use decisions within Tuolumne County's planning area through the year 2040. As discussed above, Tuolumne County's General Plan Update has been formulated to reflect the preferred growth scenario (the Distinctive Communities Growth Scenario of the Tuolumne Tomorrow Blueprint). Based on the general philosophy and input from the community and County decision makers, the General Plan Update includes the following overall objectives:

- Adopt a County-wide General Plan that reflects the current values and vision of the communities in the County and reflects the latest legal, statutory, scientific, and technical changes and advancements.
- Update the County General Plan to achieve and enable maximum flexibility for development within the bounds of state and federal law as well as an ever-evolving legal, cultural and environmental landscape.
- Promote the delivery of efficient and cost-effective public services.
- Enhance the unique nature of identified communities while providing services and amenities for residents, businesses, and visitors on a County-wide basis.
- Minimize or eliminate restrictions and requirements that can increase delays and/or the cost to development.
- Promote development within the County that is designed to fit the needs of the County's residents, businesses, and visitors.
- Promote the stewardship of the County's natural resources, which includes providing for the productive use of natural resources, and management to reduce risks of wildland fires.
- Conserve the County's historic resources and recognize their unique value to the County's social and economic fabric.
- Allow residents and property owners to use their land to the maximum extent of the law, while respecting the values of the community.

Individual General Plan Update elements include specific goals, policies, and implementation programs. These are further discussed below and within each of the resource sections in Chapter 3, "Environmental Impact Analysis."

2.4.2 Growth Projections

The existing (year 2015) population of Tuolumne County, including the City of Sonora, is 54,337. The unincorporated area of Tuolumne County represents approximately 91–92 percent of this total population figure, while the City of Sonora makes up approximately 8–9 percent. The General Plan Update is based upon growth projections published by TCTC to maintain consistency with the Regional Blueprint planning process. TCTC adopted a population projection of 63,243 residents in Tuolumne County (including incorporated Sonora)[1] by the year 2040 after considering the California Department of Finance forecasts, U.S. Census Bureau population projections, and past TCTC-adopted population projections. This represents an increase of 8,906 people over the 25-year (2015–2040) forecast period, or 16 percent, which would be a growth rate of around 0.6 percent per year.

This low annual growth rate is somewhat reflective of historic growth trends in the County. Based on U.S. Census data, the County had a 1990 population of 48,456, which grew to 54,522 people by 2000—a 12-percent growth rate (1.2 percent per year) over this 10-year period. The population of Tuolumne County reached a peak of 56,788 in 2005 and declined to 55,365 by 2010—a 1.5-percent increase over the 2000 population (less than 0.2 percent annual growth). By 2015, population declined further, to 54,337 individuals, 4.5 percent fewer people than lived in the County in 2005. The most recent California Department of Finance data indicate that the County's population recently grew slightly, to 54,740 (as of January 1, 2018). With this 0.2-percent increase over 2015 population levels, the County has roughly the same population level it had in 2000.

ANALYSIS OF GROWTH IN THIS RECIRCULATED DRAFT EIR

The General Plan Update and this Recirculated Draft EIR are based upon the assumption that the population of Tuolumne County (including the City of Sonora) will reach the projected population of 63,243 residents by year 2040. However, this assumes an annual projected growth rate of 0.6 percent that is much higher than the rate of growth that has occurred over the past 20 years. It is further noted that this rate of growth, from a foreseeable environmental impact perspective, is considered a conservative growth rate. This 0.6 percent rate of projected annual growth is also higher than what the California Department of Finance has projected. The California Department of Finance forecasts show a relatively flat population for Tuolumne County, growing to only 55,400 people (a growth of around 1,000) between 2015 and 2040 (California Department of Finance 2018). Therefore, the EIR assumes a generous growth rate that may not be reflective of the foreseeable level of growth. [2]

This EIR bases its analysis on the total net population growth in the County, including Sonora. Assuming that population growth will occur at the same rate in both unincorporated and incorporated (City of Sonora) areas, therefore, the analysis of projected development under the General Plan Update uses projections that are 8–9 percent higher than anticipated for the unincorporated area due to inclusion of the City of Sonora. As shown in Table 2-1, based on the existing 2015 population and TCTC's future projected population, the increase in population in Tuolumne County is estimated to be 8,906 people by 2040. Although conservative, TCTC's total population projection is used in this analysis to maintain consistency with previously released analyses, specifically the TCTC analysis that forms the basis of the analysis of potential effects related to

[1] For purposes of this Recirculated Draft EIR, the population of the Sierra Conservation Center is excluded.

[2] The California Department of Finance forecasts population growth using a variety of factors, including birth projections, death projections, and migration projections. The projections rely on trends and relationships from the past, and overall modeling. It is noted that, at the same time Tuolumne County population growth is projected by the Department of Finance to be flat, overall growth in California between 2015 and 2040 is projected to grow from 39 million to 47 million people—20-percent total growth and a rate of 0.8 percent per year (California Department of Finance 2018).

traffic and associated (air quality, noise) impacts and because the proportion of growth in the City of Sonora could change over time.

Table 2-1 Existing and Projected Population

County/City	Population	Percentage of County
Unincorporated	49,458	91
City of Sonora (Incorporated)	4,879	9
Total Existing Population (Year 2015)[1]	**54,337**	**100**
Total Projected Population (Year 2040)[2]	**63,243**	
Net Increase	**8,906**	

Notes:

1. California Department of Finance, E-5 City/County Population and Housing Estimates, 1/1/2015.
2. TCTC's Distinctive Communities Growth Scenario forecasts for population, 2013.

Sources: California Department of Finance 2015, TCTC 2013

Table 2-2 provides an estimate of the various land use acreages in the County, comparing the existing designations (under the 1996 General Plan) to those proposed in the General Plan Update. Based on the net changes in acreage for land use designations, this Recirculated Draft EIR also uses future forecasts (or projected development) for dwelling units and commercial and industrial uses based on the Tuolumne County Regional Travel Demand Model (TCTC 2015). As part of the Tuolumne County Regional Travel Demand Model Update – Model Development Report prepared by Wood Rodgers, existing base year and future year (2040) growth forecasts were estimated. These forecasts were used as part of the Tuolumne County General Plan and Regional Transportation Plan Update EIR Traffic Study (TCTC 2015) and are also used for this EIR analysis.

As shown in Table 2-2, the quantity of land in commercial and industrial land use designations would be roughly the same for the General Plan Update and the 1996 General Plan. There would be an increase in Low Density Residential, Estate Residential, and Rural Residential land use. There would also be an increase in land designated Public. There would be less land designated for Agriculture and Timber Production. The General Plan Update includes these changes to land use designations for several reasons. Foremost among these are to match the current zoning designation, to account for existing public ownership of land, and to shift toward a land use pattern wherein development is more likely to occur within identified communities. These land use designation changes would occur throughout the County, but would be more prevalent near the communities of Jamestown, Columbia, Tuolumne, Chinese Camp, and Groveland.

Table 2-2 Existing and Projected Land Use Acreage

Land Use Designation	1996 General Plan Acreage	General Plan Update Acreage	Net Change
Residential			
High Density Residential	610	781	171
Medium Density Residential	125	259	134
Low Density Residential	11,127	12,588	1,461
Estate Residential	12,649	15,315	2,666
Homestead Residential	6,290	4,710	-1,580
Rural Residential	31,567	34,372	2,805
Large Lot Residential	11,946	9,562	-2,385

Table 2-2 Existing and Projected Land Use Acreage

Land Use Designation	1996 General Plan Acreage	General Plan Update Acreage	Net Change
Residential Subtotal	**74,314**	**77,587**	**3,273**
Commercial			
Neighborhood Commercial	80	73	-7
General Commercial	719	678	-40
Heavy Commercial	111	106	-5
Special Commercial	572	578	6
Commercial Subtotal	**1,482**	**1,435**	**-46**
Industrial			
Business Park	674	319	-355
Light Industrial	503	565	62
Heavy Industrial	901	1,046	145
Industrial Subtotal	**2,078**	**1,930**	**-148**
Other Uses			
Mixed Use	277	389	113
Agricultural	160,697	156,277	-4,420
Timber Production	87,043	85,652	-1,391
Open Space	1,021	736	-285
Public	1,122,501	1,125,238	2,736
Parks and Recreation	5,092	5,287	195
Total County Acreage	**1,454,505**	**1,454,431**	**27[1]**

Notes:

1. The net change in total County acres does not account for the County's road network, as roadways are not a designated land use under the General Plan. With the inclusion of land devoted to the road network, the total County acreage would remain the same.

Source: Prepared by Ascent Environmental using GIS data provided by Tuolumne County in 2017

As shown in Table 2-3, incremental buildout of the General Plan Update would result in a net increase of approximately 5,159 dwelling units. In addition, as shown in Table 2-3, commercial uses would increase by approximately 938,000 square feet and industrial uses would increase by approximately 196,000 square feet in the entire County by 2040.

Table 2-3 Projected Development Under the General Plan Update

Land Use Designation	Existing (Year 2015)	Projected (Year 2040 with General Plan Update)	Net Change
Residential			
Single Family Residential	19,435 du	23,767 du	4,332 du
Multi-Family Residential	1,805 du	2,632 du	827 du
Residential Subtotal	**21,240 du**	**26,399 du**	**5,159 du**
Commercial	**4,624,000 sf**	**5,562,000 sf**	**938,000 sf**
Industrial	**1,718,000 sf**	**1,914,000 sf**	**196,000 sf**

Notes: du = dwelling units, sf = square feet

Source: TCTC 2015

In other words, this Recirculated Draft EIR uses the projected population figure of 63,243 people by year 2040 in its analysis of potential impacts of future development within unincorporated areas of the County because the County has decided to be conservative in its approach to the analysis and mitigation of environmental impacts. But the County's analysis in this EIR also considers the level of foreseeable growth throughout the County based in part upon consideration of where existing infrastructure is located and where previously-issued building permits and other land use approvals have been sought. Full buildout of every parcel in the County is not foreseeable. In fact, the term "buildout," when used in this EIR, refers only to projected development that would occur by 2040.

In summary, the County's assumptions and projections about future growth are based on: 1) historical data about past development in the County's unincorporated areas, 2) the constraints of existing infrastructure (e.g., water, electricity), and 3) the population projections of various agencies (e.g., Department of Finance, TCTC). The General Plan Update does not promote the growth of the County's population to that level. The philosophy of the General Plan Update is that the County will be prepared and able to accommodate projected growth, if it occurs, while adhering to policies that define where and how development will occur. The General Plan Update provides guidance in determining the appropriate or desirable locations for this growth, thereby preventing an unnecessarily scattered pattern of development, which often results in extraordinary demands on public services, above-average public service costs, and unnecessary and avoidable destruction or degradation of valuable resources.

2.4.3 Definition of Terms

This section defines key terms used in this EIR. Additional definitions can be found in the Technical Background Report for the General Plan Update.

- **Urban:** areas that are characterized by residential densities exceeding one dwelling unit per 2 acres and commercial development except on land designated on the General Plan land use diagrams as Special Commercial (SC).
- **Rural:** areas generally characterized by agricultural, timberland, open areas, and residential development that is less than one dwelling unit per 2 acres, and generally is not served by public water or sewer.
- **Infill:** the development of previously undeveloped parcels bounded on at least two sides by development. Infill development would generally occur within identified communities.
- **Identified Community:** one of 18 unincorporated communities in the County: Big Oak Flat, Cedar Ridge, Chinese Camp, Columbia, Crystal Falls/Mono Vista, East Sonora, Groveland/Pine Mountain Lake, Jamestown, Lake Don Pedro, Long Barn, Mountain Springs, Sierra Village, Soulsbyville, Strawberry, Sugar Pine/Mi-Wuk, Tuolumne, Twain Harte, and West Sonora. The identified communities are the same as the "defined communities" referenced in other County planning documents.
- **Community Boundary:** Community boundaries were established as part of the Regional Blueprint effort and are included in the Regional Transportation Plan and Tuolumne Tomorrow report. Where applicable, the community boundary is consistent with the boundary in the Community Plan. Boundaries for other unincorporated communities were defined by the Blueprint Committee.

2.4.4 Contents of the General Plan Update

The General Plan Update includes the update of the seven mandatory General Plan elements. Government Code Section 65302 requires a General Plan to have both a Conservation Element and an Open Space Element, but also authorizes these elements to be combined. Due to the similar themes of these elements,

they have been combined in the General Plan Update as the Natural Resources Element to minimize redundancy. The mandatory elements included in the General Plan Update are as follows:

- Community Development and Design Element (equivalent to a land use element),
- Transportation Element (equivalent to a circulation element),
- Housing Element,
- Natural Resources Element (equivalent to a combined open space and conservation element),
- Noise Element, and
- Natural Hazards Element (equivalent to a safety element).

In addition to the mandatory elements discussed above, the General Plan Update includes the following optional elements to guide the development of the County through 2040:

- Utilities Element,
- Economic Development Element,
- Managed Resources Element,
- Agriculture Element,
- Healthy Communities Element,
- Parks and Recreation Element,
- Education and Libraries Element,
- Cultural Resources Element,
- Water Supply Element,
- Air Quality Element,
- Public Safety Element, and
- Climate Change Element.

The key features of each element of the General Plan Update are summarized below. More detailed information regarding the policies in each element is discussed in the resource analysis sections in Chapter 3, "Environmental Impact Analysis."

Finally, there are plans for five of Tuolumne County's identified communities:

- Columbia Community Plan,
- East Sonora Community Plan,
- Jamestown Community Plan,
- Mountain Springs Community Plan, and
- Tuolumne Community Plan.

COMMUNITY DEVELOPMENT AND DESIGN ELEMENT

This element is the core of the General Plan because it essentially establishes what land uses can be conducted in which locations. A land use element must, at a minimum, include land use maps or diagrams, as well as population density and building intensity standards.

The Community Development and Design Element describes the general distribution, location, and extent of various land uses. It contains a statement of the standards of population density and building intensity, types of permissible uses, and special development and permit review requirements. Twenty primary designations have been established to provide a mixture of land uses for the 1.4 million acres comprising unincorporated Tuolumne County. Overlay designations have also been established to recognize areas that have constraints to development or opportunities for conserving valuable resources. To illustrate the distribution of the land use designations established by the General Plan Update, the 20 primary designations have been generalized into four categories: Public/Agriculture/Other, Commercial, Residential, and Industrial.

General Plan Update Land Use Diagrams

The purpose of the General Plan land use diagrams is to guide the general distribution, location, and extent of the various types of land uses throughout the County. The primary land use designations established by the General Plan, and depicted on the General Plan diagrams, are listed in Table 2-4 along with the approximate acreage and percent of total acreage in the County for each land use designation. The specific purpose and generally allowed uses within each land use category are described in Table 2-5. Exhibit 2-2 shows the existing Land Use designations. Exhibit 2-3 shows the Land Use Map under the General Plan Update. Exhibit 2-4 shows the parcels that would have a changed land use designation under the General Plan Update compared to the existing General Plan.

Table 2-4 General Plan Update Land Use Designations by Acreage

General Plan Designation	Acreage	Percent of Total Acreage
High Density Residential (HDR)	781	0.05
Medium Density Residential (MDR)	259	0.02
Low Density Residential (LDR)	12,588	0.86
Estate Residential (ER)	15,315	1.05
Homestead Residential (HR)	4,710	0.32
Rural Residential (RR)	34,372	2.36
Large Lot Residential (LR)	9,562	0.66
Agricultural (AG)	156,277	10.74
Timber Production (TPZ)	85,652	5.89
Open Space (O)	736	0.05
Public (P)	1,125,238	77.36
Parks and Recreation (R/P)	5,287	0.36
Neighborhood Commercial (NC)	73	<0.01
General Commercial (GC)	678	0.05
Heavy Commercial (HC)	106	0.01
Special Commercial (SC)	578	0.04
Business Park (BP)	319	0.02
Light Industrial (LI)	565	0.04
Heavy Industrial (HI)	1,046	0.07
Mixed Use (MU)	389	0.03
Total Acreage[1]	1,454,531	100

Notes: [1] Values may not sum to totals due to rounding, right-of-way, and inconsistencies in the digital data.

Source: Prepared by Ascent Environmental using GIS data provided by Tuolumne County in 2017

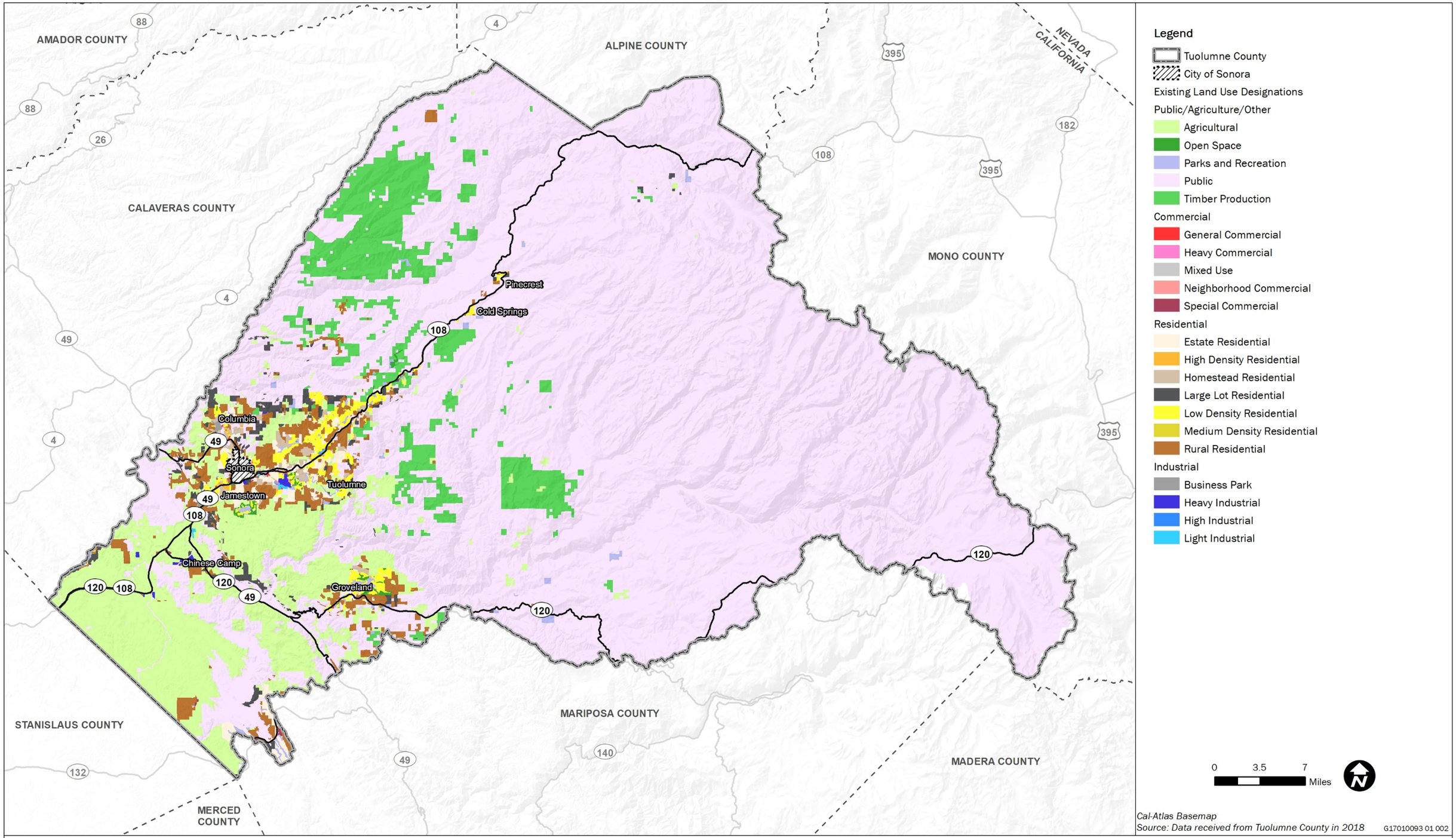
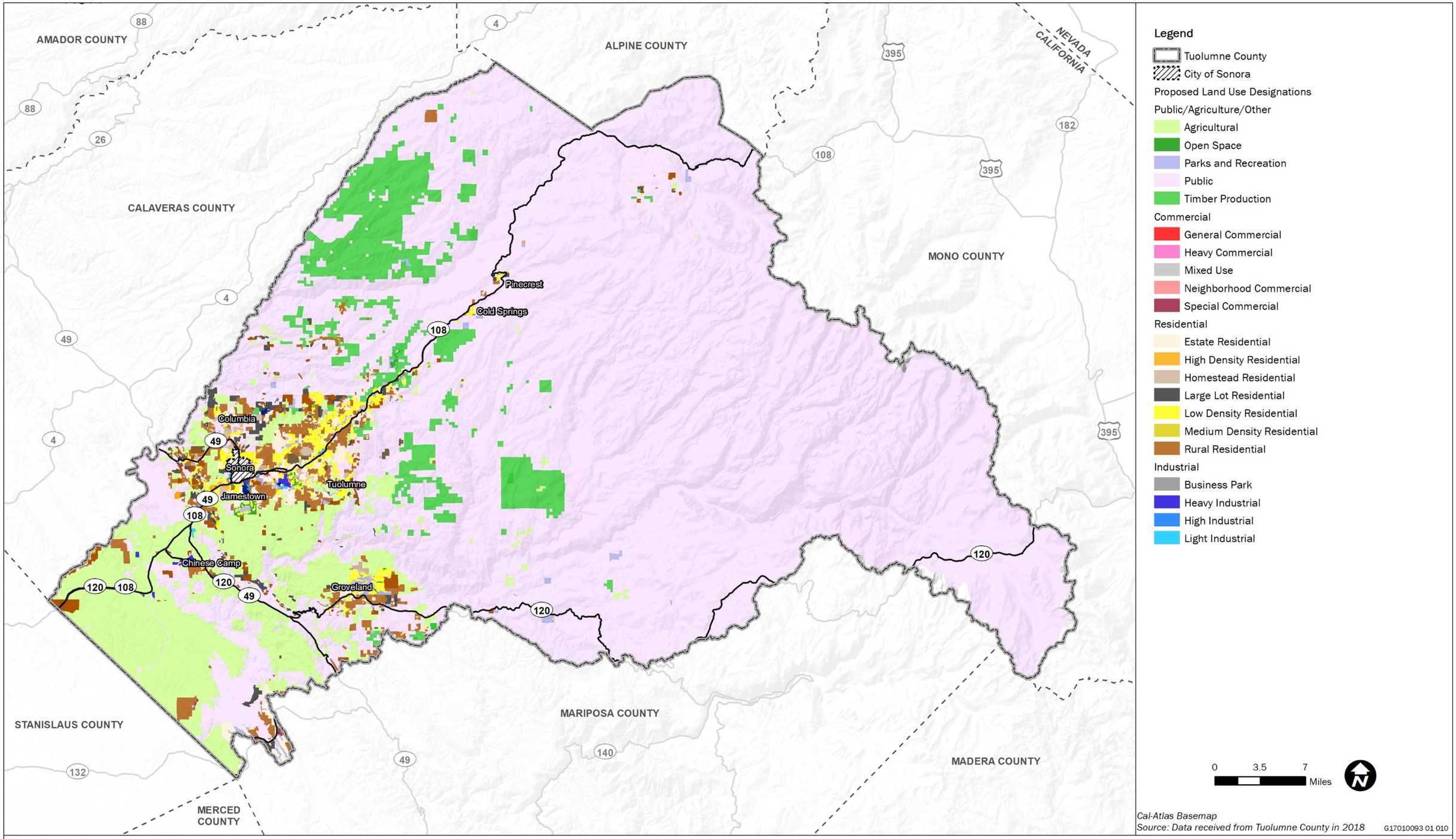


Exhibit 2-2

Existing 1996 General Plan Land Use Diagram



Cal-Atlas Basemap
Source: Data received from Tuolumne County in 2018

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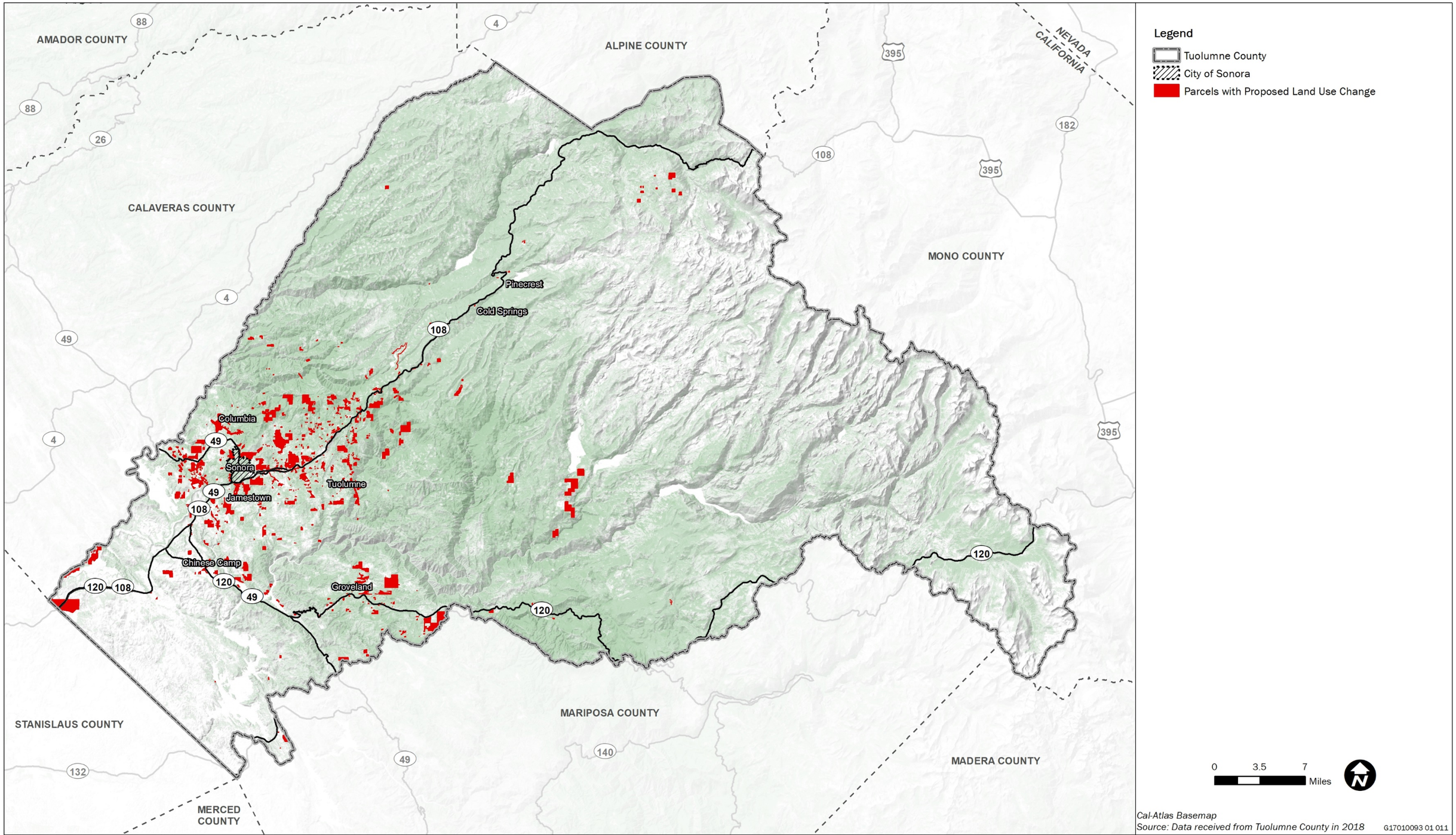
Exhibit 2-3

General Plan Update Land Use Diagram

ASCENT ENVIRONMENTAL



Cal-Atlas Basemap
Source: Data received from Tuolumne County in 2018

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Exhibit 2-4

Parcels with Proposed Changes in Land Use Designation

Table 2-5 Description of General Plan Land Use Designations

Urban	
HDR High Density Residential	The HDR designation provides for detached and attached single-family dwellings; secondary dwellings; all types of multiple-family dwellings, such as duplexes, apartments, and senior housing projects; residential accessory uses; parks; child care facilities; and public facilities. (Up to 5 du/acre)
MDR Medium Density Residential	The MDR designation provides for detached and attached single-family dwellings; smaller-scale multiple-family dwellings, such as duplexes, triplexes, and fourplexes; residential accessory uses; parks; child care facilities; and public facilities. (Up to X du/acre)
LDR Low Density Residential	The LDR designation provides for detached single-family dwellings, secondary dwellings, residential accessory uses, parks, child care facilities, and public facilities. (Up to X du/acre)
MU Mixed Use	The MU designation provides for detached and attached single-family dwellings; all types of multiple-family dwellings, such as duplexes, apartments, and senior housing projects; small-scale commercial facilities; parks; child care facilities; and public facilities.
NC Neighborhood Commercial	The NC designation provides for limited commercial uses in areas intended to serve the nearby residential areas. This designation is found within urban areas, near population centers, to provide small-scale retail and office operations, in enclosed buildings not exceeding 50 feet in height.
GC General Commercial	The GC designation provides for a variety of sales and service establishments that serve both the residents of Tuolumne County and its visitors. This designation is found within urban areas and along highway corridors to provide large-scale retail and office operations in buildings not exceeding 50 feet in height. Accessory outdoor storage and display areas are allowed under this designation. Establishments in this category have a larger market area and greater volume of customers than those under the NC designation.
HC Heavy Commercial	The HC designation provides for a variety of sales and service establishments, including outdoor sales and wholesale businesses, that serve both the residents of Tuolumne County and its visitors. This designation is found within urban areas to provide for wholesale and heavy commercial uses and services necessary within the County. In addition to the uses permitted in the NC and GC designations, the HC designation provides for limited uses that are light industrial in nature, such as general manufacturing, processing, and refining. Buildings in this designation are limited to 50 feet in height.
Non-Urban	
ER Estate Residential	The ER designation provides country estate–type living conditions while maintaining limited areas of open space dedicated to agricultural pursuits or to grazing or left undisturbed. This designation serves as a buffer between urban and urbanizing areas and areas where public services are limited.
HR Homestead Residential	The HR designation provides country estate–type living conditions while maintaining areas of open space dedicated to agricultural pursuits or to grazing or left undisturbed. This designation, with its maximum residential density of one (1) primary dwelling per three (3) acres, is intended to comply with the density restrictions of the Airport Land Use Compatibility Plan for the areas around the Columbia and Pine Mountain Lake Airports; consequently, this designation is concentrated within the jurisdictional boundaries of that plan for those airports but can also be found in other areas which have limited public services and where a buffer between urban and urbanizing areas and rural areas is desired.
RR Rural Residential	The RR designation provides country estate–type living conditions while maintaining large areas of open space dedicated to agricultural pursuits or to grazing or left undisturbed. This designation is found in areas that have limited public services and serves as a buffer between urban and urbanizing areas and agricultural land.
LR Large Lot Residential	The LR designation provides country estate–type living conditions while maintaining large areas of open space dedicated to agricultural pursuits or to grazing or left undisturbed. This designation is found in areas that have limited public services and serves as a buffer between urban and urbanizing areas and agricultural land.
AG Agricultural	The AG designation provides for the production of food, feed, fiber, nursery, and apiary commodities and other productive or potentially productive lands where commercial agricultural uses can exist without creating conflicts with other land uses or where potential conflicts can be minimized. This designation is found throughout the County but is concentrated in the western part of the County.
TPZ Timber Production	The TPZ designation provides for the growing and harvesting of timber and other forest products in concert with limited, low-intensity public and private commercial recreational uses. This designation is found primarily in the eastern part of the County at elevations above 3,000 feet and is interspersed with federally owned land within the Stanislaus National Forest and Yosemite National Park.

Table 2-5 Description of General Plan Land Use Designations

O Open Space	The O designation provides for the protection of important natural and cultural resources, serves as a buffer between incompatible land uses, and limits development in hazardous areas. This designation can be used throughout the County to preserve scenic resources, archaeological resources, unique topography, vegetation, habitat, stream corridors, prominent ridgetops, and watersheds and to limit development in floodplains, unstable slopes, and fault zones.
P Public	The P designation identifies lands that are owned by public agencies and recognizes that these lands are exempt from County land use regulations. This designation applies to lands such as the Stanislaus National Forest, Yosemite National Park, Columbia State Historic Park, Railtown 1897 State Historic Park, and lands under the jurisdiction of the U.S. Bureau of Land Management, U.S. Bureau of Reclamation, public schools, public utilities, and other public agencies, as well as the County's own property.
R/P Parks and Recreation	The R/P designation provides for recreational uses of a commercial nature to serve the tourist industry and provides leisure activities for the County's residents. This designation is found primarily along the County's highway corridors and is also interspersed in the Stanislaus National Forest and Yosemite National Park.
SC Special Commercial	The SC designation provides for a variety of sales and service establishments that serve both the residents of Tuolumne County and its visitors in areas that do not have public water and/or sewer service. This designation is found primarily along highway corridors to provide commercial facilities that are easily accessible to the County's tourists.
BP Business Park	The BP designation provides for a mixture of industrial and commercial land uses with an emphasis on manufacturing, processing, assembly, storage, distribution, wholesale businesses, and research and development activities in campus-like business or industrial park settings. This designation is applied to areas with good access to major truck transportation routes and rail lines, located near concentrated residential areas so that employee commute times and distances are minimized.
LI Light Industrial	The LI designation provides for industrial land uses with an emphasis on manufacturing, processing, assembly, storage, distribution, and research and development activities. This designation is applied to areas with good access to major truck transportation routes and rail lines, located near concentrated residential areas so that employee commute times and distances are minimized.
HI Heavy Industrial	The HI designation provides for all the same uses as the LI designation but also provides for uses that are normally considered incompatible with residential development. This designation is applied to areas with good access to major truck transportation routes and rail lines that are located away from concentrated residential areas to minimize impacts to the County residents.
Overlay Designations	
MPZ Mineral Preserve (Overlay)	The MPZ overlay designation provides for the extraction and processing of mineral resources. This overlay is used to identify land that has been classified as either Mineral Resource Zone MRZ-2a or MRZ-2b by the State Mining and Geology Board under the State Classification System and meets criteria for relationship to surrounding land uses, access, and other issues. The -MPZ overlay designation is found along the Mother Lode gold ore zone, the carbonate belt from Columbia to Algerine, and the Table Mountain basalt as an aggregate source. This overlay designation will be used to direct the development potential of the designated properties towards the types of development that are compatible with possible mineral resource extraction.
AIR Airport (Overlay)	The AIR overlay designation provides for the orderly development of land surrounding the public use airports within the County to the extent that these areas are not already devoted to incompatible uses. The purpose of this designation is to protect public health, safety, and welfare by minimizing the public's exposure to excessive noise and safety hazards associated with use of the airports. Development within this designation must comply with the Tuolumne County Airport Land Use Compatibility Plan in addition to other requirements applicable to land development in Tuolumne County. The -AIR designation is found in the areas surrounding the County's public use airports, specifically encompassing all area within the airport influence area boundaries as defined in the Airport Land Use Compatibility Plan.

TRANSPORTATION ELEMENT

The purpose of the Transportation Element is to determine a baseline of existing transportation and circulation conditions in Tuolumne County, establish projected future circulation needs through 2040, and provide policy direction and implementation efforts to ensure the continued efficient movement of people and goods while simultaneously striving toward reduced vehicle emissions and associated greenhouse gases.

The Transportation Element reflects the goals, policies, and programs of the Community Development and Design Element and the land use diagrams. This integration of the Community Development and Design and Transportation Elements has been accomplished by identifying transportation needs associated with the growth and development identified in the Community Development and Design Element and formulating circulation improvements to accommodate that growth. Conversely, the growth projected in the Community Development and Design Element has been directed to areas that currently can, or have the potential to, accommodate increased demands on the circulation system.

The goals of the Transportation Element and changes to policies aim to preserve the County's existing transportation infrastructure and provide for the long-range planning and development of the County's transportation system for the safe and efficient movement of people and goods. It also aims to encourage the use of alternative means of transportation by providing safe bicycle and pedestrian facilities within and between communities with high traffic volumes, thereby reducing road congestion and improving circulation, health and air quality within the County. Exhibit 2-5 provides a regional map of the proposed circulation network.

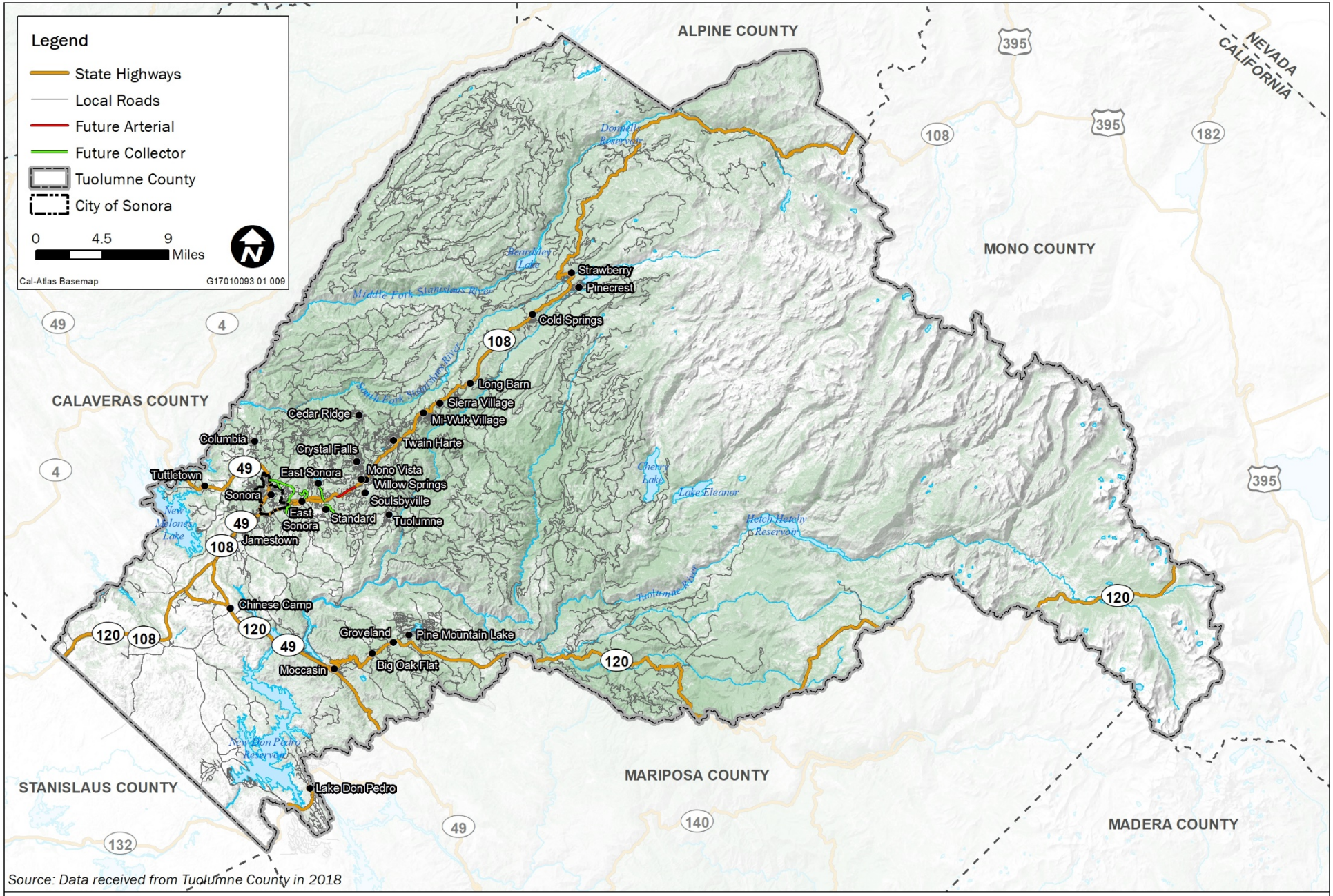
HOUSING ELEMENT

The Housing Element describes a variety of policies and programs intended to conserve the existing supply of housing in unincorporated Tuolumne County, including affordable housing, as well as to provide capacity for the development of new housing in accordance with the County's Regional Housing Needs Assessment (RHNA) allocation. Tuolumne County's RHNA allocation for the 2014–2019 period is 450 new units. This total includes 176 units in the "extremely low," "very low," and "low" income categories. As shown in Table 2-6, Tuolumne County has designated more than sufficient land for potential housing units to meet the housing needs for the planning period. As part of the General Plan Update, additional acres are proposed to be designated for High Density Residential, Medium Density Residential, and Mixed Use zoning. Thus, Tuolumne County provides ample capacity to develop residential units in the "extremely low," "very low," "low," moderate," and "above moderate" categories based on the number of remaining vacant lots in the County.

Table 2-6 Tuolumne County Total Potential Affordable Housing Units and 2014–2019 RHNA Allocation

Land Use Designation	Total Potential Affordable Units	2014–2019 Tuolumne County RHNA Allocation
HDR	1,106	
MDR	49	
MU	286	
Total	1,441	450

An important goal of the Housing Element is to ensure that Tuolumne County continues to grow and develop as a clean and safe County where residents have access to adequate, dignified, and affordable housing without overcrowding, where population density is in balance with resources, and where land use planning, zoning, and building code enforcement carry out this expressed vision.



Source: Data received from Tuolumne County in 2018

Exhibit 2-5

Countywide Circulation Network

NATURAL RESOURCES ELEMENT

To ensure the maximum coordination between the management and use of natural resources and open spaces in Tuolumne County, the state-required Conservation Element and Open Space Element are combined into this single Natural Resources Element. This element establishes policies related to open space lands for the preservation of natural resources, open space used for the managed production of resources, social-use open spaces, and open space for public health and safety. Natural resources considered include forests, soils, fisheries, wildlife, plants, energy, minerals, and viewsheds. It should be noted that changes to the Natural Resources Element from the previous General Plan include establishing new policies for protecting oak woodlands and revising the thresholds of significance for oak woodland conversion. These potential revisions and the impacts associated with the revisions are discussed further in Section 3.4, "Biological Resources."

NOISE ELEMENT

The purpose of the Noise Element is to identify the existing and projected future noise environment in Tuolumne County, and provide policy direction and implementation efforts to protect County residents from exposure to excessive noise levels. This element provides the basis for comprehensive local policies to control and abate environmental noise from stationary and mobile noise sources and reduce conflicts between noise and noise-sensitive land uses. California Government Code Section 65302 also requires that noise contours be identified for all of these sources and stated in terms of community noise equivalent level or day-night average sound level. The noise contours must be prepared on the basis of noise monitoring or following generally accepted noise modeling techniques for various noise sources. The Noise Element was developed using noise modeling instead of extensive noise monitoring. Based upon this modeling, standards for noise levels for land use compatibility have been formulated. The noise contour maps are shown in Section 3.12, "Noise."

NATURAL HAZARDS ELEMENT

The intent of the Natural Hazards Element is to reduce or eliminate long-term risk to people and property. This element concentrates on those hazards and community factors that are within the responsibility of the County to mitigate. These include land use decisions and patterns of development that directly and indirectly affect the health, well-being, and personal/property protection of County residents, and the mitigation of potential natural hazards.

OPTIONAL ELEMENTS

Utilities Element

The purpose of the Utilities Element is to address the public facilities and services necessary to support the current and future residents and visitors of Tuolumne County. The focus of this element is on those services provided by the County of Tuolumne and other local agencies related to public water, sewer, and solid waste, and how the need for those services relates to future growth.

Economic Development Element

In 1990, the City of Sonora and County of Tuolumne jointly adopted an Economic Development Policy. One of the measures included in that policy was to develop and adopt an Economic Development Element for the General Plan. The purpose of the Economic Development Element is to outline a policy framework and implementation programs whereby economic development benefits local citizens, businesses, public, private, and non-profit sectors. Policies of the Economic Development Element that facilitate economic development in Tuolumne County could result in physical developments and improvements, particularly within identified communities. Under Implementation Program 6.A.i, land development applications for the expansion of existing or construction of new facilities for commercial, industrial, or recreational enterprises

would be prioritized. The Economic Development Element also supports and encourages development or expansion of communications and airport facilities.

Managed Resources Element

The Managed Resources Element establishes policies and implementation programs to promote the stability and productivity of the County's timber and mineral lands and related industries. This element is intended to provide clear guidelines for land use decisions in timberland areas and express policies that promote and protect the current and future needs of Tuolumne County's timberland resources. The Managed Resources Element recognizes that working landscapes provide stewardship values for the County's natural environment and that stewardship of the County's natural resources includes the productive use of resources.

Agriculture Element

The Agriculture Element addresses the important agricultural industries in the County and identifies measures to protect agricultural lands from the encroachment of development and incentives to retain these lands in agricultural production, including increased flexibility to allow more agritourism uses to support agricultural operations. This element is intended to provide clear guidelines for decisions in agricultural areas and to promote the stability and productivity of the County's agricultural lands.

Consistent with Policies 8.D.1, 8.E.2, and 8.E.3 and Implementation Programs 8.D.a and 8.E.c in the Agriculture Element, the General Plan Update also includes amendments to Title 17 of the Tuolumne County Ordinance Code, which would expand the range of activities allowed on land zoned for agriculture. The proposed changes to Title 17 can be generalized into the following categories:

1. Administrative/non-substantive changes to align the ordinance code with current regulations.

2. Addition/revisions to the definitions in Chapter 17.04, such as the definition of "general farming and ranching" and modifying the definition of "agricultural labor housing."

3. The addition/modification of permitted and conditional agritourism land uses with similar land development impacts as what is currently listed as permitted/conditional uses as well as the removal of land uses in the following zoning districts: AE-37, A-20, A-10, RE-1, RE-2, RE-3, RE-5 and RE-10.

4. The addition of two new zoning districts, including Chapter 17.07 Exclusive Agricultural, one hundred sixty-acre minimum (AE-160) and Chapter 17.08 Exclusive Agricultural, eighty acre minimum (AE-80). These proposed zoning districts are intended to allow property owners engaged in large-scale agricultural operations to down-zone property to further protect agricultural operations in the County by increasing the minimum parcel size. Larger minimum parcel sizes could also result in increased efficiencies in agriculture operations.

5. New language in Chapter 17.52, General Provisions and Exception, regarding the operation of commercial events on agricultural land. These commercial events are permitted uses in the A-20, AE-37, AE-80, and AE-160 and conditional uses in the A-10, RE-10, and RE-5 zoning districts. Section 17.52.220 outlines the requirements that these commercial events must comply with, in addition to a list of performance standards which includes the provision of sanitation facilities, the hours of operation, permissible noise levels, parking requirements, signage, waste management, and building requirements. Use permits would also be able to be secured to increase the size of events, allow additional events, or request modifications to the performance standards.

The full-text of the proposed amendments to Title 17 can be seen in Appendix F of this Draft EIR.

Healthy Communities Element

Tuolumne County is committed to promoting the health and well-being of all its residents. Therefore, the Healthy Communities Element was created to address three public health and land use issues: physical

activity, access to healthy foods and nutrition, and smoke-free living. Potential physical development that may result from the Healthy Communities Element would be related to policies that promote constructing pedestrian routes, sidewalks, bicycle lanes, and mixed-use development and orienting development near street infrastructure to encourage walkability.

Parks and Recreation Element

The Parks and Recreation Element contains an assessment of the recreational needs of residents and tourists of Tuolumne County. Goals and policies have been formulated for providing the recreational facilities identified as being needed through that assessment. Another important aspect of this element is the identification of sources of funding for acquisition, development, and maintenance of new parks and recreational facilities. Physical development that may occur as a result of the Parks and Recreation Element policies include the acquisition or construction of new parks and the construction of bicycle and pedestrian trails near the County's major population centers and transportation networks. It should be noted that the General Plan Update includes an update to the previous standard for providing parks. The 1996 General Plan established a goal of providing 30 acres of parks per 1,000 residents. This standard has been demonstrated to be infeasible; therefore, the County is proposing a revised standard of 5 acres of parks per 1,000 residents. This amount of parkland is consistent with the Quimby Act (Government Code Section 66477), which generally requires that jurisdictions set aside 3–5 acres of recreational lands for every 1,000 residents. The Parks and Recreation Element policies would also amend the Tuolumne County zoning ordinance to include bicycle rental facilities and other such facilities as permitted uses within commercial and recreational zoning districts.

Education and Libraries Element

The purpose of the Education and Libraries Element is to address the public facilities and educational services necessary to support the current and future residents and visitors of Tuolumne County. This element also identifies mechanisms for funding these important services for new and existing development.

Cultural Resources Element

The Cultural Resources Element includes a priority system for protection of cultural resources based on significance criteria and policies for management of these resources. This element also identifies means of streamlining the review process by identifying when cultural resource studies are required.

Water Supply Element

The Water Supply Element includes policies designed to ensure access to County water; diversify the County water portfolio; achieve adequate water storage; and ensure secure, safe, and sustainable water and sewer infrastructure. The driving force is to ensure adequate water supplies to meet the diverse needs of a healthy and economically viable community. Such water supply needs include domestic consumption; fire protection; economic development; base industries, such as recreation and agriculture; and habitat protection. Potential physical development as a result of the Water Supply Element would be related to policies that encourage new development to be located in areas where public water and sewer services are available or can be developed and measures that promote water conservation, such as landscaping standards.

Air Quality Element

The Air Quality Element was drafted in consultation with the Tuolumne County Air Pollution Control District and focuses on development standards to minimize pollution of the County's air. Key provisions of the Air Quality Element include reducing vehicular emissions and greenhouse gases through land use planning and transportation planning that promote public transit, pedestrian, and bicycle access to homes, businesses, schools, and civic centers; siting sources of industrial air pollutants away from residences and other sensitive receptors; and minimizing wood smoke from woodstoves and burning activities associated with fire hazard reduction and forest management practices.

Public Safety

The Public Safety Element is the primary vehicle for relating local safety planning to County land use decisions. While the Community Development and Design Element identifies areas where hazardous land uses may be located, the Public Safety Element contains policies for determining acceptable levels of public risk imposed by these land uses, as well as policies for mitigating the effects of man-made catastrophes. Potential development that could occur under the Public Safety Element would be associated with the implementation programs that would require new developments to install prevention and protection measures and mitigation against fires, flooding, and other hazards. This element, while focusing on fire, also addresses other public safety issues relevant to Tuolumne County, including emergency services, crime, and hazardous waste.

Climate Change Element

The Climate Change Element is intended to guide regional and local land use and transportation decisions toward sustainability, while meeting residents' needs and providing a high quality of life. The Climate Change Element identifies policies and programs that the County can implement to reduce greenhouse gas emissions consistent with state greenhouse gas targets and promotes the adaptation and resiliency of the County's communities in a changing climate.

COMMUNITY PLANS

Plans for five of Tuolumne County's individual communities (Jamestown, Columbia, East Sonora, Tuolumne, and Mountain Springs) have been included in the General Plan Update to provide goals and policies to address the unique character of those communities. These plans address the issues discussed in the individual General Plan elements on a community level. Each plan has been prepared to reflect the character of the community. For example, the Columbia plan emphasizes historic preservation while the East Sonora plan focuses on design standards and creating a sense of place. These plans are not intended to be stand-alone documents, but rather to provide a close-up of the community within the context of the General Plan Update. Additional community plans may be formulated as individual communities seek specific development goals, policies, and standards to guide the future growth of their unique areas. The formulation of these plans will be undertaken by the County in response to requests from the communities. The County will not initiate such plans without the support and participation of a community's residents, property owners, and businesses.

The General Plan Update revises the Community Plans only to ensure internal consistency and improve clarity. Upon the completion of the General Plan Update process, the County intends to engage stakeholders and conduct community outreach through a comprehensive community plan process.

2.5 REQUIRED DISCRETIONARY ACTIONS

As the lead agency under CEQA, Tuolumne County is responsible for considering the adequacy of the EIR and determining if the overall project should be approved. Following the completion of the Final EIR, the Tuolumne County Planning Commission will conduct a public hearing and make a recommendation on the General Plan Update to the Tuolumne County Board of Supervisors. The Tuolumne County Board of Supervisors will then conduct a separate public hearing to consider:

- Certification of the Final EIR on the General Plan Update,
- Approval of the 2018 Tuolumne County General Plan, and
- Adoption of the amendments to Title 17 of the Tuolumne County Ordinance Code.

3 ENVIRONMENTAL IMPACT ANALYSIS

This chapter discusses the possible environmental effects of projected development within unincorporated areas of the County under the Tuolumne County General Plan Update. It also discusses some of the basic considerations used to inform the environmental impact analysis. This chapter is organized by environmental resource category; each resource section provides a 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.

Sections 3.1 through 3.17 follow the same general format:

- The **"Environmental Setting"** section presents the existing environmental conditions, in accordance with State CEQA Guidelines Section 15125. This setting generally serves as the baseline against which environmental impacts are evaluated. The study area evaluated is generally the overall County; however, the extent of the environmental setting area evaluated differs among resources, depending on the locations where impacts would be expected. For example, air quality impacts are assessed for the air basin.

- The **"Regulatory Setting"** section 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.

- The **"Impact Analysis"** section identifies the thresholds of significance used to determine the level of significance of the environmental impacts for each resource topic, in accordance with State CEQA Guidelines Sections 15126, 15126.2, and 15143. The thresholds of significance used in this Recirculated Draft EIR are based on the checklist presented in Appendix G of the State CEQA Guidelines; best available data; and regulatory standards of Tuolumne County, as well as federal and state agencies. The level of each impact is determined by comparing the effects of projected development under the General Plan Update to the environmental setting, with a focus on how land uses may be developed with implementation of General Plan Update policies and implementation programs.

The evaluation of environmental impacts focuses on the potential impacts of development within unincorporated areas of the County under the General Plan Update through year 2040. This is a 25-year horizon from the baseline year of 2015 (when the NOP was circulated and Draft EIR was initiated) and over 20 years from when approval of the General Plan Update is expected. This is a reasonably foreseeable forecast period.

As described in Chapter 2, "Project Description," of this Draft EIR (particularly Section 2.4.2) population in the County and the City of Sonora is projected to grow from 54,337 (2015) to 63,243 (2040), an increase of 8,906 people countywide. This population projection includes the incorporated City of Sonora, which is not included in the scope of the County General Plan Update. In other words, future development within the City of Sonora is not part of the "project" analyzed in this Recirculated Draft EIR. Nonetheless, this Recirculated Draft EIR uses the projected population figure of 63,243 people by year 2040 in its analysis of potential impacts of future development within unincorporated areas of the County because the County has decided to be conservative in its approach to the analysis and mitigation of environmental impacts. To the extent that this Recirculated Draft EIR bases the analysis and proposed mitigation of particular impacts on the estimate of 63,243 people by year 2040, that analysis and mitigation is not intended to cover future development within the City of Sonora. Additionally, this projection by the Tuolumne County Transportation Council (TCTC) is used in this analysis to maintain consistency with previously released analyses, specifically the TCTC analysis that forms the basis of the analysis of potential effects related to traffic and associated (air quality, noise) impacts.

A growth from 54,337 people in 2015 to 63,243 people in 2040 is a 16-percent increase in total population of the County and the City of Sonora over a 25-year period, or an average increase of 0.6 percent per year. Population had increased from 48,456 to 54,337 over the prior 25-year period (1990–2015), a 12-percent increase (0.5 percent per year). The forecast is reasonable, based on other modeling, and reflects a conservative (in terms of estimating environmental impacts) level of growth. This is particularly the case given that the County's population has experienced a decrease over the last decade-plus and the California Department of Finance forecasts virtually no growth in the County over the 25-year forecast period.

While overall population growth is forecasted in the General Plan Update in the County, some of that growth is expected to occur in the incorporated City of Sonora, which is covered by its own general plan. Of the County's 2015 population of 54,337, 4,879 or these people (9 percent of the total) resided in Sonora. It is expected that countywide growth over the General Plan Update horizon will follow this same relative share of population (91 percent of population in unincorporated areas, 9 percent in Sonora). The annual rate of growth, 0.6 percent, is expected to apply to the County (and the City) and is one of the assumptions underlying the analysis in this Recirculated Draft EIR. The environmental analysis also considers the following factors:

- The General Plan Update provides policies and implementation programs, including consideration of incentives, to encourage growth to occur within "identified communities," where housing, commercial uses, and employment already are concentrated, rather than in more rural areas.
- Land use changes proposed in the General Plan Update are intended to increase residential, commercial, and employment uses in identified communities, rather than in more rural areas. The only instances where housing designations are added outside of an identified community are where the land use map is changed to conform to existing zoning.
- A number of policies are intended to reduce the environmental impact of development. When considering whether potential development that may occur under the General Plan Update may result in an environmental impact, relevant proposed policies in the General Plan Update are first applied. This is discussed more fully below.
- Although the General Plan Update encourages development in identified communities, it does not discourage, prohibit, nor alter where development may occur in rural areas. Low-density housing may occur in rural areas, as is the case under the existing 1996 General Plan. Other key methods and assumptions used to frame and conduct the impact analysis, as well as issues or potential impacts not discussed further (such as issues for which projected development under the General Plan Update would have no impact), are described in each resource section.

Additionally, the County's analysis in this Recirculated Draft EIR considers the level of foreseeable growth throughout the County based in part upon consideration of where existing infrastructure is located and where previously-issued building permits and other land use approvals have been sought. Full buildout of every parcel in the County is not foreseeable.

In summary, the County's assumptions and projections about future growth are based on: 1) historical data about past development in the County's unincorporated areas, 2) the constraints of existing infrastructure (e.g., water, electricity), and 3) the population projections of various agencies (e.g., Department of Finance, Tuolumne County Transportation Council) described above and in Section 2.4.2.

Impacts are organized numerically in each subsection (e.g., Impact 3.2-1, Impact 3.2-2, Impact 3.2-3). A summary of each impact, including the level of significance presented in bold type, precedes the detailed discussion of each impact. The discussion that follows the impact summary includes the substantial evidence supporting the impact significance conclusion.

Physical environmental effects that could result from projected development under the General Plan Update are generally evaluated, consistent with Program EIR requirements. General Plan Update policies and implementation programs applicable to the specific resource are provided in the impact analyses. Policies and implementation programs contained in the Community Plans are not addressed separately in this analysis, as they are considered extensions of the General Plan. Where policies and implementation programs are specifically intended to mitigate the environmental effects associated with future growth in the County, they are discussed as part of the General Plan Update in the overall impact analysis.

"Significant effect on the environment" is defined by State CEQA Guidelines Section 15382 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. An economic or social change by itself shall not be considered a significant effect on the environment. A social or economic change related to a physical change may be considered in determining whether the physical change is significant.

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." In those cases where the mitigation measure for an impact could have a significant environmental impact in another issue area, this impact is discussed as a residual effect.

Please refer to the Executive Summary for this Recirculated Draft EIR, which clearly summarizes all impacts and mitigation measures that apply to implementing the General Plan Update.

An important consideration for all CEQA documents, but especially for lead agency–sponsored projects, is the ruling in the 2015 Supreme Court case *California Building Industry Association v. Bay Area Air Quality Management District (CBIA v. BAAQMD)*, which adjusted the approach to CEQA analysis as specified in the CEQA Guidelines. Prior to this case, the CEQA Guidelines required consideration of impacts to the environment as well as from exposure to environmental hazards. The court clarified that impacts on a project's future residents or users from exposure to environmental hazards were not to be considered significant effects unless a project exacerbated the risks of such impacts. The court specifically used seismic hazards as an example of an inappropriate application of CEQA to review the potential impact of the environment on a project. However, the court gives authority to lead agencies to include a review of potential impacts of the environment on a project when the project is undertaken by the lead agency. The General Plan is the type of project for which a lead agency has the discretion to consider exposure to existing hazards as environmental impacts. The General Plan is a visionary document that broadly establishes policy related not only to the environment but to public health and safety. Therefore, this Recirculated Draft EIR considers potential impacts caused by the environment.

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3.1 AESTHETICS

This section analyzes the potential impacts of projected development under the General Plan Update with respect to aesthetics. Specifically, changes in visual character, impacts to scenic vistas, and impacts related to light and glare are discussed.

Several commenters on the 2015 Draft EIR expressed concerns related to aesthetics, including effects on community character, development assumptions, light generated by potential development, and the general assessment of impacts. These concerns are addressed below, as appropriate.

3.1.1 Environmental Setting

The scenic resources of Tuolumne County are valuable both in that they are a primary determinant of quality of life for area residents and in their capacity to promote tourism. In particular, visitors are attracted to Yosemite National Park; the Stanislaus National Forest; and historic Gold Rush communities, including Columbia and Jamestown. Private vehicles are the primary mode of transportation within the County and views from area roadways are particularly important in defining the aesthetic experience of residents and recreational visitors.

VISUAL CHARACTER

The visual character within the unincorporated County is predominantly rural, as shown in the photographs in Exhibit 3.1-1, with dispersed small-town communities surrounded by open expanses consisting of agriculture, native vegetation, and low-density residential development. Natural features strongly contribute to this visual landscape. The spectacular topographic diversity of Tuolumne County, ranging from the mountainous landscape and steep canyons of the High Sierra in the east (see Photo 4 in Exhibit 3.1-1) to the foothills and gently undulating plains in the west (see Photos 1–3), adds visual interest. Deep river canyons are cut into the western slope of the Sierra Nevada in Tuolumne County. In their upper reaches in the higher Sierra, rivers and glacial sculpturing have carved massive granite cliffs most prominently seen in eastern Tuolumne County in the Emigrant Wilderness. Native vegetation and tree cover are important ingredients in the visual character of Stanislaus National Forest and Yosemite National Park in the eastern portion of the County, as well as in agricultural rangeland.

Prominent water resources also contribute to the rural visual character of Tuolumne County, including rivers, streams, creeks, lakes, and large reservoirs. Lake Don Pedro, New Melones Reservoir, Lake Tulloch to the west and the Hetch Hetchy, Beardsley, Lyons, and Pinecrest reservoirs in the eastern County are important water features. Connecting these lakes and reservoirs are the Stanislaus, Tuolumne, and Clavey Rivers with their deep canyons and steep cliffs. Flowing through the County are numerous lushly vegetated streams and creeks, such as Sullivan Creek and Curtis Creek, which contribute to the County's visual character.

The visual character of established communities in Tuolumne County is influenced by surrounding natural features, as well as their built environments. The Red Hills provide a serpentine backdrop to Chinese Camp, limestone outcrops and remnant marble deposits are scattered throughout Columbia, and the lava cliffs of Table Mountain are visible from Jamestown and Columbia. Within the built environment, individual historic structures and entire historic districts, as discussed in Section 3.5, "Cultural Resources," have visual appeal as living examples of the Gold Rush era, other periods of the County's history, and a diverse set of architectural styles. (Refer to Exhibit 3.1-2 for photographs of exemplary historic structures and sites and to Section 3.5, "Cultural Resources," for a more detailed discussion of historic resources.) Other visually important examples of the built environment include bridges or overpasses, landscaped roadways, and locations where historic events occurred.

Photo 1: Eastward view of Sierra Nevada foothills from historic schoolhouse near Columbia.

Photo 2: View of mature oak trees and grazing lands along Jamestown Road.

Photo 3: View of grazing lands near Chinese Camp.

Photo 4: Rim of the World vista point overlooking the Tuolumne River on State Route 120, one year after the Rim Fire. (Photo Credit: Nerds for Nature - Flickr)

Photographs provided by Tuolumne County in 2018

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Exhibit 3.1-1

Visual Character of the Rural Environment

Photo 1: A Gold Rush-era store in Columbia State Historic Park.

Photo 2: A brick public schoolhouse in Columbia State Historic Park.

Photo 3: The Emporium building, listed on the National Register of Historic Places, on Main Street in Jamestown.

Photo 4: A convenience store at Chinese Camp on State Route 49.

Photographs provided by Tuolumne County in 2018

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Exhibit 3.1-2

Visual Character of the Built Environment

SCENIC VISTAS

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. While scenic views of the Sierra Nevada are prevalent across much of Tuolumne County, principal travel corridors are important to an analysis of scenic vistas because they define the vantage point for the largest number of viewers. These travel corridors include scenic roadways, primarily, as well as Wild and Scenic Rivers.

Scenic Roadways

Roads and highways in Tuolumne County traverse areas of great scenic beauty, offering enjoyable experiences for passing motorists, cyclists, and hikers. Portions of State Routes (SRs) 49, 108, and 120 are eligible for designation as State Scenic Highways (Caltrans 2018). Although the County does not currently have any officially designated State Scenic Highways, the existing 1996 Tuolumne County Circulation Element identifies portions of SR 49, 108, and 120 as locally designated scenic routes, as shown in Exhibit 3.1-3. The status of a State Scenic Highway changes from eligible to officially designated when the local jurisdiction adopts a scenic corridor protection program, applies to the California Department of Transportation (Caltrans) for scenic highway approval, and receives notification from Caltrans that the highway has been designated as a State Scenic Highway.

State Route 49

This highway traverses the western foothills and Mother Lode and connects many historical sites and towns. As shown in Photo 1 in Exhibit 3.1-4, typical views from SR 49 consist of agricultural rangeland on rolling hills. According to the County's existing Circulation Element and Natural Resources Element, SR 49 is a locally designated scenic route from the Mariposa County line to SR 120 near Moccasin Creek, and from SR 120 at Chinese Camp to the Calaveras County line, exclusive of the City of Sonora. This section of SR 49 also is eligible for designation as a State Scenic Highway (Caltrans 2018).

State Route 108

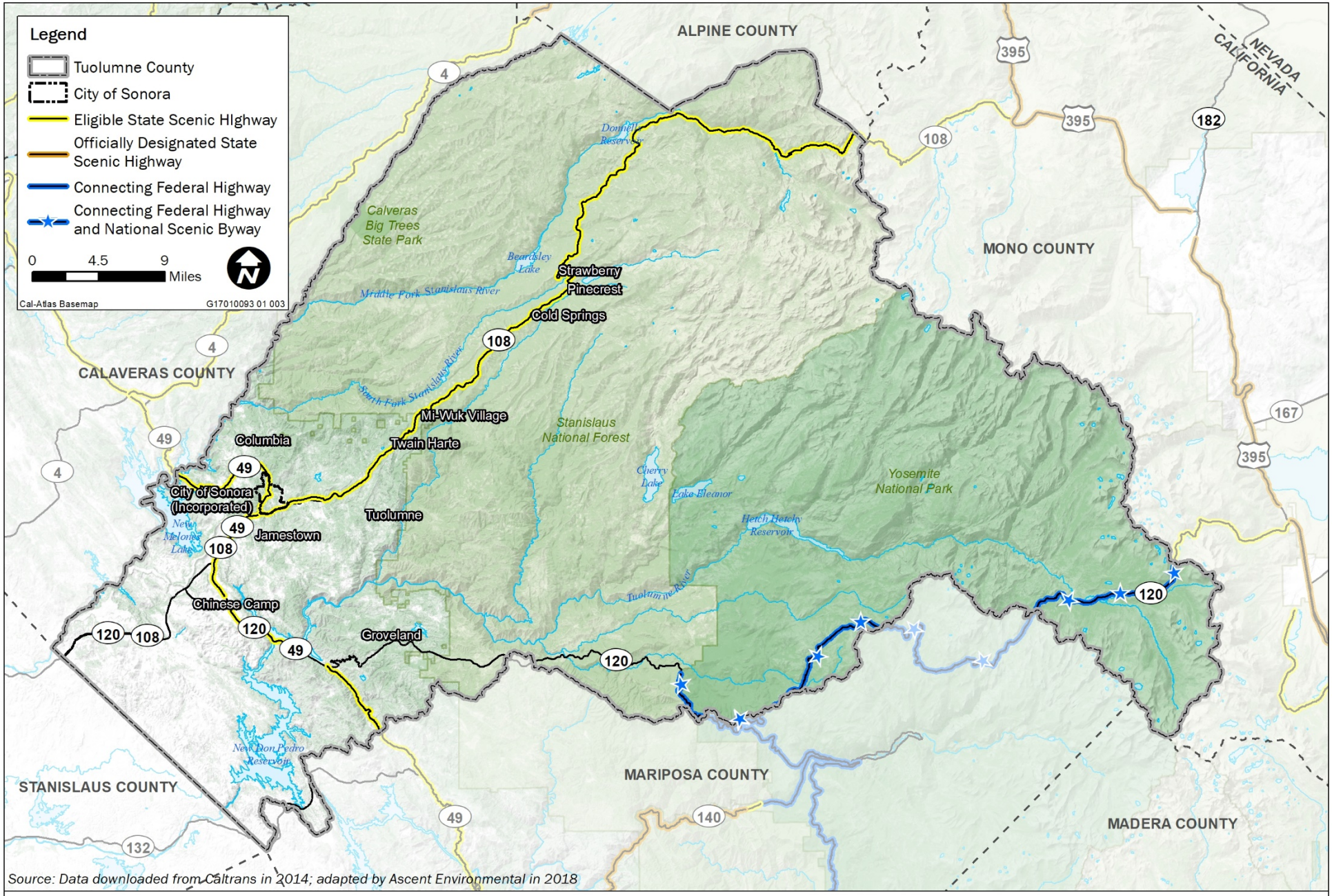
The portion of SR 108 from SR 49 near the City of Sonora easterly to the Mono County line is a locally designated scenic route, part of the Sonora Pass Highway, and eligible for designation as a State Scenic Highway (Tuolumne County 1996; Caltrans 2018). This route leads northeasterly from the Central Valley into the historic gold mining communities of Jamestown and Sonora. Views consist of long stretches of grassy plains, to flattop buttes, to the foothills that eventually reach the mountain roads with views into the Stanislaus National Forest. Photo 2 in Exhibit 3.1-4 shows representative views of forested hills near the community of Twain Harte.

State Route 120

From SR 49 near Chinese Camp easterly to SR 49 near Moccasin Creek, SR 120 is a locally designated scenic route (Tuolumne County 1996). Don Pedro Reservoir can be viewed from this particular stretch of SR 120. In addition, SR 120 is a connecting Federal Highway and National Scenic Byway throughout Yosemite National Park that offers a spectacular passage over the Sierra Nevada (Caltrans 2018). The byway also traverses Sierra National Forest, Stanislaus National Forest, Humboldt-Toiyabe National Forest, and Inyo National Forest. Views include towering granite peaks, pristine lakes, wildflower-covered meadows, and lush evergreen forests with giant sequoia groves.

Vista Points

Although the County has many areas of scenic beauty, only three vista points officially designated by Caltrans are located in the County. These vista points are located on SR 120 at post miles (PMs) 19, 21, and 44. PMs 19 and 21 can be found at Don Pedro Lake, and PM 44, the Rim of the World vista point, overlooks the canyon containing the South Fork of the Tuolumne River. The Rim Fire of 2013, which burned approximately 400 square miles, has altered the scenic character of this overlook by reducing the amount of vegetative cover (see Photo 4 in Exhibit 3.1-1).



Source: Data downloaded from Caltrans in 2014; adapted by Ascent Environmental in 2018

Exhibit 3.1-3 **Scenic Routes and Byways**

Photo 1: Eastward view of grazing lands along State Route 49/Montezuma Road.

Photo 2: Eastward view on State Route 108 toward the community of Twain Harte.

Photographs provided by Tuolumne County in 2018

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Exhibit 3.1-4 **Scenic Routes Photographs**

Wild and Scenic Rivers

The National Park Service has designated a portion of the Tuolumne River as a Wild and Scenic River Corridor. Pursuant to the Wild and Scenic Rivers Act, a designated river has outstandingly remarkable values, or unique characteristics that make it worthy of special protection. The Tuolumne River is an important visual resource that draws tourists to the area for recreational opportunities within designated Wilderness in Yosemite National Park and Stanislaus National Forest.

The Tuolumne River alternately meanders across wide meadows and cascades down steep canyons in a glacially carved, snow-capped landscape and creates magnificent scenery with a unique character, including the following notable scenic views:

- the largest glacier on the western flank of the Sierra Nevada is part of the high-country views from the Lyell Fork;
- views along the Lyell Fork, Dana Fork, and Tuolumne Meadows encompass the meandering river, adjacent meadows, glacially carved domes, and rugged mountain peaks;
- views within the Grand Canyon of the Tuolumne include steep canyon walls, hanging valleys, and cascades of falling water; and
- the stretch of river below Hetch Hetchy Reservoir offers stunning views of fertile meadows, a glacially carved bedrock valley, large river pools, dramatic canyon walls, and a constricted slot canyon.

LIGHT AND GLARE

In Tuolumne County, sources of light and glare are generally limited to major transportation corridors and clusters of development that include commercial and industrial uses. Nighttime lighting is necessary to provide safe environments (e.g., roadways, sidewalks, and parking lots) and promote nighttime activities (e.g., signs for movie theaters and restaurants).

Light Pollution

“Light pollution” refers to all forms of unwanted light in the night sky, including glare, light trespass, sky glow, and over-lighting. Views of the night sky can be an important part of the natural environment, particularly in communities surrounded by extensive open space, such as mountain communities in Tuolumne County. Excessive light and glare can also be visually disruptive to humans and nocturnal animal species.

There are two primary sources of light intrusion: (1) light emanating from structural interiors and passing through windows and (2) light from exterior sources, such as street lighting, building illumination, security lighting, traffic headlights, and landscape lighting. Uses such as residences, hospitals, and hotels are considered light-sensitive since they are typically occupied by persons who have expectations for privacy during evening hours and who are subject to disturbance by bright light sources. Glare results mainly from sunlight reflection off flat building surfaces with glass and reflective metal surfaces typically contributing to the highest degree of reflectivity.

At night, light pollution is present in and around the County; however, light pollution is primarily confined to the identified communities, as the vast majority of the County consists of agricultural, natural resource conservation, and open space uses. Specific sources of nighttime illumination include streetlights and vehicular lights associated with roadways, as well as commercial buildings and residences. Urban lighting associated with the City of Sonora in Tuolumne County also affects nearby unincorporated areas, including the community of East Sonora. Glare within the area is created by exterior building materials, surface paving materials, and vehicles traveling or parked on roads and driveways. Any highly reflective facade materials are of particular concern, as buildings reflect sunlight.

Electric lighting also increases night sky brightness and is the human-made source of sky glow. Light that is either emitted directly upward by luminaires or reflected from the ground is scattered by dust and gas molecules in the atmosphere, producing a luminous background. It has the effect of reducing one's ability to view the stars. Sky glow is highly variable depending on immediate weather conditions, quantity of dust and gas in the atmosphere, amount of light directed skyward, and the direction from which it is viewed. In poor weather conditions, more particles are present in the atmosphere to scatter the upward-bound light.

3.1.2 Regulatory Setting

FEDERAL

Wild and Scenic Rivers Act

The National Wild and Scenic Rivers System was created by Congress in 1968 to preserve certain rivers with outstanding natural, cultural, and recreational values in a free-flowing condition for the enjoyment of present and future generations. The Wild and Scenic Rivers Act is notable for safeguarding the special character of these rivers, while also recognizing the potential for their appropriate use and development.

Each river in the National System is administered with the goal of protecting and enhancing the values that caused it to be designated. Designation neither prohibits development nor gives the federal government control over private property. Recreation, agricultural practices, residential development, and other uses may continue. Protection of the river is provided through voluntary stewardship by landowners and river users and through regulation and programs of federal, state, local, or tribal governments.

STATE

California Scenic Highway Program

California's Scenic Highway Program was created by the California Legislature in 1963 and is managed by Caltrans. 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.

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 on a 3-year cycle. The last update will take effect in 2020. These requirements vary according to which "Lighting Zone" in which the equipment is located. The standards contain lighting power (i.e., maximum zonal lumens) allowances for newly installed equipment and specific alterations that are dependent on which Lighting Zone the project is located. Existing outdoor lighting systems are not required to meet these lighting power allowances. However, alterations that increase the connected load, or replace more than 50 percent of the existing luminaires for each outdoor lighting application that is regulated by the standards must meet the lighting power allowances for newly installed equipment.

The allowed lighting power is based on the brightness of existing lighting in the surrounding area. This is because the human eye adapts to darker surrounding conditions, and less light is needed to properly see; when the surrounding conditions get brighter, more light is needed to 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 designated Lighting Zone 1; rural areas are designated Lighting Zone 2; and urban areas are designated Lighting Zone 3. Lighting Zone 4 is a special use district that may be adopted by a local government.

Mills Act Property Tax Abatement Program

Enacted in 1972, the Mills Act legislation grants participating local governments (cities and counties) authority to enter into contracts with owners of qualified historic properties who actively participate in the restoration and maintenance of their historic properties while receiving property tax relief. A formal agreement, generally known as a Mills Act or Historical Property Contract, is executed between the local government and the property owner for a minimum 10-year term. Contracts are automatically renewed each year and are transferred to new owners when the property is sold. Property owners agree to restore, maintain, and protect the property in accordance with specific historic preservation standards and conditions identified in the contract. Periodic inspections by city or county officials ensure proper maintenance of the property. Local authorities may impose penalties for breach of contract or failure to protect the historic property. The contract is binding to all owners during the contract period.

LOCAL

Tuolumne County General Plan

The 1996 General Plan provides the main regulatory framework for addressing aesthetic issues in the County. As the proposed project would update the 1996 General Plan, this document will be discussed in the context of the update within the impact analysis. The Community Identity Element and the Scenic Resources Section of the Natural Resources Element include policy statements to conserve scenic vistas, preserve buffer areas of open space around communities, and enhance the visual quality of urban communities. The community plans for Jamestown, Columbia, East Sonora, and Tuolumne contain similar policies to protect visual resources and include requirements for design review for projects within design review areas. As discussed above, the Circulation Element identifies sections of SR 49, 108, and 120 as locally designated scenic routes. Specific General Plan Update policies related to aesthetics are identified below under Section 3.1.3, “Impact Analysis.”

Tuolumne County Ordinance Code

The Tuolumne County Ordinance Code implements the General Plan by establishing setbacks, parking and sign standards, building height limits, and building densities. Chapter 17.46 of the Ordinance Code requires design review as part of the discretionary entitlement process for land development projects located within a Design Review Combining zoning district that would result in a change in the appearance of a parcel. The design review process is intended to conserve the County’s rural character, scenic built environment, natural environment, and cultural resources. Four Design Review Districts, along with corresponding adopted design guidelines, implement this process in Tuolumne County for the communities of Columbia, Jamestown, Tuolumne, and Twain Harte. In addition, the County adopted Design Guidelines in May 2009 for the East Sonora area.

The Ordinance Code requires that a minimum area of 10 percent of a project site be landscaped for commercial, industrial, and multiple-family residential development projects that are subject to a planned unit development permit, site development permit, site review permit, conditional use permit, building permit, or grading permit on land zoned C, M, BP, M-U, R-3, or R-2 (Section 15.28.030 of the Tuolumne County Ordinance Code). Existing vegetation and areas zoned O (Open space) or O-1 (Open space–1) count toward meeting this requirement. For multiple-family residential, mobile home park, recreational vehicle park, and campground projects, 15 percent of the project site must be provided as Open Space or recreation areas (Sections 17.56.080 and 17.64.100 of the Tuolumne County Ordinance Code).

Chapter 17.68 of the Ordinance Code includes the guidelines for issuance of use permits, which allows the Community Resources Director or Planning Commission to make a finding that a proposed development is in conformity with the intent and provisions of the Ordinance Code. These guidelines also are intended to protect the public welfare by ensuring the minimization of adverse effects of a project on surrounding property. They include considerations relative to the health, safety, and general welfare of persons residing or working in the neighborhood. In addition, Chapter 17.68 provides guidelines for approval of site development permits and site review permits to ensure that proposed developments achieve a desirable design.

Development Guidelines

The County maintains guidelines specific to scenic routes, hillside development, and landscaping. The 1998 *Guidelines for Development along Scenic Routes* illustrates design elements that can be incorporated when siting, designing, and constructing land development projects located along an identified scenic route (Tuolumne County 1998). The guidelines provide recommendations to assist the County and property owners in conserving views from designated scenic routes, minimizing alteration of natural land forms, provide visual compatibility with the character of the surrounding area, and restore and enhance the visual quality of degraded areas. The *Hillside and Hilltop Development Guidelines* provide a framework to minimize visible changes to the County's hillsides and hilltops resulting from land development (Tuolumne County 1998b). These guidelines are intended to inform and educate the public. Property owners can choose whether to utilize the guidelines to mitigate impacts on visual resources resulting from development. The 2016 *Landscape Guidelines* are intended to assist developers with meeting the landscape requirements established in the Tuolumne County Ordinance Code.

3.1.3 Impact Analysis

METHODS OF ANALYSIS

The General Plan is a policy document that would guide development and conservation of land throughout the County. Adoption of the plan would not result in any changes to existing conditions; however, the policies could allow for or encourage future activities that may affect the aesthetic qualities of the County. Impacts are evaluated assuming anticipated development of the plan area through 2040. In determining the extent and implications of the visual changes, consideration was given to:

- existing visual qualities of the affected environment;
- the visual context of the affected environment;
- the extent to which the affected environment contains places or features that provide unique visual experiences or that have been designated in plans and policies for protection or special consideration; and
- the sensitivity of viewers, access of viewers, their activities, and the extent to which these activities are related to the aesthetic qualities that could be affected.

The assessment of aesthetic impacts involves qualitative analysis that is inherently subjective in nature. Different viewers react to viewsheds and aesthetic conditions differently.

THRESHOLDS OF SIGNIFICANCE

According to Appendix G of the *State CEQA Guidelines,* an impact is considered significant if the project 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.

GENERAL PLAN UPDATE POLICIES

The following policies and implementation programs from the General Plan Update are applicable to the evaluation of effects related to visual resources:

Community Development and Design Element

- **Policy 1.A.4:** Focus urban growth in identified communities, emphasizing infill development and the intensified use of existing development.
  - **Implementation Program 1.A.c**: Designate land between identified communities for non-urban land uses to protect the individual character of each community and to maintain distinct boundaries between communities.
  - **Implementation Program 1.A.d**: Maintain the County's rural character by utilizing transitional land uses around urban areas as buffers between communities and agricultural areas and timberlands, including rural density development, recreation areas, cluster developments, and natural features such as streams, ridgetops and large stands of trees.
- **Policy 1.A.12:** Identify special features or characteristics, such as unique topography, critical view sheds, or sensitive habitat, in areas throughout the County that affect development potential or opportunities for conservation.
- **Policy 1.B.3:** Require new commercial development to be designed to minimize the visual impact of parking areas on public roads and on public viewsheds.
  - **Implementation Program 1.B.g:** Require proponents of new commercial development to locate parking areas behind buildings or sufficiently screen them from public roads and public viewsheds, or, if locating behind buildings and screening are determined to be infeasible, provide other landscaping or design features to visually enhance the parking areas.
- **Policy 1.B.5:** Preserve the existing nighttime environment by limiting the illumination of areas surrounding new development. New lighting that is part of residential, commercial, industrial, or recreational development shall be oriented away from off-site sensitive uses, and shall be hooded, shielded, and located to direct light downward and prevent glare.
- **Policy 1.E.4:** Maintain development standards for housing projects that reflect and consider natural and cultural features, noise exposure of residents, fire hazard, circulation, access and the relationship of the development to surrounding land uses. These requirements determine residential densities and patterns which may result in a density that is less than the maximum specified by General Plan designations.
- **Policy 1.F.3:** Encourage commercial development to be designed to be compatible with the scale and architectural style of historic buildings located in the community.
  - **Implementation Program 1.F.c:** Establish design guidelines for new commercial development in communities desiring design review to be compatible with the scale and architectural style of the

existing buildings and integrate where appropriate natural and cultural amenities such as creeks, hillsides, scenic views, historic buildings and structures, and archaeological sites.

- **Implementation Program 1.F.d**: Encourage street frontages in historic communities to reflect the historic "Main Street" character and ambiance.

- **Policy 1.F.4:** Encourage commercial development to be designed in an architectural style that reflects the County's indigenous materials or is compatible with the historic Mother Lode design features or is consistent with the architectural guidelines in communities with design review.

- **Policy 1.F.5:** Amend the Uniform Zoning Ordinance, Title 17 of the Tuolumne County Ordinance Code, to provide for off-site parking in historic districts to encourage parking for new commercial development to be consolidated in well-designed and landscaped lots or parking structures instead of on-site and to recognize the limitations of constructing parking facilities on undersized historic parcels.

- **Policy 1.G.4:** Encourage new industrial development to design parking areas that are sufficiently screened from public roads and surrounding public viewsheds.

- **Policy 1.G.5:** Establish design guidelines for new industrial development in or immediately adjacent to historic communities desiring design review to be designed to be compatible with the scale and architectural style of the historic buildings.

<u>Cultural Resources Element</u>

- **Policy 13.A.1**: Initiate, adopt, and promote the availability of monetary and other incentive programs to encourage the retention, reuse and restoration of historic structures.

  - **Implementation Program 13.A.a**: Continue to implement the Mills Act in Tuolumne County and update Resolution 171-92 to reflect legislative changes to the Mills Act when necessary to provide reductions in property taxes through historic preservation. The Mills Act program will aid in encouraging the adaptive reuse of historic structures for business enterprises.

  - **Implementation Program 13.A.b**: Prepare a list of properties in Tuolumne County, as local community cultural resource inventories are completed, which could benefit from the 1986 Tax Reform Act and notify and assist property owners with information for taking advantage of this Act which provides Federal income tax credit for income producing properties on or eligible for the National Register of Historic Places.

  - **Implementation Program 13.A.c**: Identify an existing and/or support formation of an agency to accept resource donations for tax deductions or tax credits. The agency should carry an IRS 501(c)(3) designation and should be able to accept facade easement dedications, acquire property as gifts, implement restoration projects, raise funds for restoration through donations, and operate fund-raising projects. The agency should, to the extent feasible, be a multi-purpose organization which could receive both cultural and natural resource dedications.

  - **Implementation Program 13.A.d**: Support implementation of the Marks Historical Rehabilitation Act in Tuolumne County. Health and Safety Code Sections 37600 et seq. authorize Tuolumne County and other local agencies to issue bonds for the rehabilitation of historic properties.

  - **Implementation Program 13.A.e**: Upon completion of each cultural resources inventory pursuant to Policy 13.C.1, provide each participating parcel owner with a copy of his or her property evaluation. For those properties determined potentially eligible for listing in the National Register, provide a listing of incentive programs available for the property upon listing the property on the National Register or Tuolumne County Register of Cultural Resources.

- **Policy 13.B.2**: Assist in retaining the special character of historic districts and promote compatible development within historic districts by reducing, adapting and/or modifying some development standards within historic districts.

  - **Implementation Program 13.B.j**: Maintain the current provisions for waiving fees for requests to zone to H and HDP and for waiving fees for Mills Act applications. Consider expanding the fee waiver provisions to include waiving development permit fees for site review, site development, and conditional use permits for work done on Tuolumne County Register and National Register structures that is consistent with the Secretary of the Interior's Standards for Treatment of Historic Properties With Guidelines for Preserving, Rehabilitating, Restoring and Reconstructing Historic Buildings. Reduce or waive building fees for structures using the State Historical Building Code.

  - **Implementation Program 13.B.k**: Continue to provide for reduced and/or modified development standards on land zoned H and HDP or for buildings or structures classified as Priority 1, 2 or 3 in Figure 13.D: *Priority Classification System for Historic Buildings and Structures* in any zoning district.

  - **Implementation Program 13.B.l**: Continue to protect cultural resource features important to the context or setting of cultural resources such as mature trees and vegetation, retaining walls, and fences when considering development projects within H and HDP zoning districts.

  - **Implementation Program 13.B.m**: Continue to implement Title 14 so that buildings on the Tuolumne County Register of Cultural Resources shall be deemed "qualifying structures," eligible to use the State Historical Building Code pursuant to Section 18955 of the Health and Safety Code.

  - **Implementation Program 13.B.p**: Continue to require the Secretary of the Interior's Standards for Treatment of Historic Properties With Guidelines for Preserving, Rehabilitating, Restoring and Reconstructing Historic Buildings as a guide for evaluating development proposals involving cultural resources, such as restoration, alteration of, and, additions to existing historic structures.

  - **Implementation Program 13.B.s**: Continue to streamline the development application review process by eliminating review by the Historic Preservation Review Commission for projects and alterations that have been listed as acceptable to that Commission and are consistent with the Secretary of the Interior's Standards for Treatment of Historic Properties With Guidelines for Preserving, Rehabilitating, Restoring and Reconstructing Historic Buildings and grant authority to the Community Resources Agency Director to approve such projects in-house without additional review from the Tuolumne County Historic Preservation Review Commission. The project list should include these projects where consistent with the Secretary of the Interior's Standards for Treatment of Historic Properties With Guidelines for Preserving, Rehabilitating, Restoring and Reconstructing Historic Buildings:

    - color schemes acceptable for repainting (including acceptable trim combinations);
    - maintenance projects involving replacement with like materials and like colors; and
    - replacement of doors or windows with doors or windows of the same size and of similar appearance.

- **Policy 13.C.3:** Identify historic districts and structures.

  - **Implementation Program 13.C.k**: Designate corridors, or portions of corridors, which:

    1. are examples of historic trade, water distribution or transportation routes, conveyance systems or trails, or
    2. are lined with visible cultural resources, or

3. pass through historic or design review districts, or

4. are representative of a major period in Tuolumne County or California history.

Designation of Heritage Corridors shall only be approved by the Board of Supervisors after consent of the owners of a minimum of 51 percent of the property area and 51 percent of the property owners included within a proposed Heritage Corridor. The determination of the consent of the property owners for the formation of Heritage Corridors shall be based upon each parcel having one vote. In conjunction with the designation of a Heritage Corridor, a cultural resources conservation program for the area within the proposed corridor shall be formulated as a cooperative effort by the owners of the property within the corridor and the County and adopted by the Board of Supervisors.

Natural Resources Element

- **Policy 16.A.1:** Recognize that agricultural and timberlands have historically defined the rural character and scenic beauty of Tuolumne County.

- **Policy 16.A.2:** Conserve the natural scenic quality and rural character along scenic routes in the County.

  - **Implementation Program 16.A.b:** Continue to recognize the following sections of State Highways which traverse an area of outstanding scenic quality as local or State Scenic Route:

Scenic Route	Description
State Highway Route 49	This route traverses the western foothills and Mother Lode and connects many historical sites and towns. This highway shall be designated as a Scenic Route from the Mariposa County line to Route 120 near Moccasin Creek and from Route 120 at Chinese Camp to the Calaveras County line, exclusive of the City of Sonora. This highway is included in the "Master Plan for State Scenic Highways."
State Highway Route 108	The Sonora Pass Highway, from Route 49 easterly into Mono County. This, like State Route 49 described above, gives access and exposure to spectacular mountain country. This route is also in the "Master Plan for State Scenic Highways."
State Highway Route 120	From Route 49 near Chinese Camp easterly to Route 49 near Moccasin Creek. This route is also in the "Master Plan for State Scenic Highways."
The land use restrictions on Scenic Routes and lands adjacent to them as outlined in the Streets and Highways Code of the State of California shall only apply to lands designated as non-urban on the General Plan land use diagrams. Land designated as TPZ or AG when the parcel is 37 acres or larger and supports an agricultural or residential land use or is vacant shall be exempt from these restrictions.	

  - **Implementation Program 16.A.d**: Encourage the conservation of the County's scenic resources along the transportation routes identified as Scenic by maintaining guidelines which provide recommendations for integrating new development with the surrounding landscape and natural topography. The guidelines should address the retention of trees and other native vegetation, screening of outdoor storage areas, landscaping and revegetation, signage, architectural design and materials, lighting and retention of landscape features.

- **Policy 16.A.3:** Conserve the natural scenic quality of hillsides and hilltops throughout Tuolumne County.

  - **Implementation Program 16.A.e**: Encourage hillside development to be designed and located to be compatible with, rather than imposed on, the landscape and environment by minimizing the amount of grading and topographical alteration it necessitates.

  - **Implementation Program 16.A.f**: Maintain hillside development guidelines which provide recommendations for integrating new construction with hillsides and hilltops. The guidelines should address fire-safe construction techniques, color and building materials, vegetation retention, retaining wall enhancement, alternative road construction techniques to reduce cuts and fills, and illustrate techniques for blending new construction with the surrounding hillsides and hilltops.

- **Implementation Program 16.A.g**: Encourage the design of new development to blend with the natural contour of the land and the natural vegetation.

- **Implementation Program 16.A.h**: Regulate signage in terms of size, quantity and location in commercial and industrial portions of the County in order to improve the visual attractiveness and appeal of the County to new business, and to protect and enhance its visitor-serving and recreational activities.

- **Policy 16.A.4:** Support the efforts of identified communities which desire to promote compatibility of new development with their historical character through the development of design guidelines or other means.

- **Policy 16.A.5:** Conserve scenic resources, landmarks and the natural landscape.

  - **Implementation Program 16.A.i**: Provide flexibility in development standards to facilitate the clustering of new development in order to encourage the retention of scenic resources, landmarks and the natural landscape.

  - **Implementation Program 16.A.j**: Recognize that Table Mountain has significant cultural, scenic and natural resource values and is a County landmark and, as such, adopt regulations and incentives for protecting the area of Table Mountain.

- **Policy 16.A.6:** Encourage the protection of clusters of native trees and vegetation and outstanding individual native and non-native trees which help define the character of Tuolumne County.

  - **Implementation Program 16.A.k**: Establish an incentive program to retain existing vegetation, such as Heritage Trees, stands of oak woodlands, or clusters of native shrubs within new development.

  - **Implementation Program 16.A.l**: Maintain the Premature Removal of Native Oak Trees Ordinance.

  - **Implementation Program 16.A.m**: Establish a Heritage Tree Program which:

    - Establishes criteria for identifying individual or groves of native and non-native trees and street trees as heritage trees, based on outstanding scenic, historic or biological value and/or the status of the tree as unique in terms of age and/or size when compared to other trees of the same species. Trees considered local landmarks and those contained in the National Register of Big Trees also should be considered as heritage trees.

    - Creates programs encouraging the preservation of heritage trees including recognition and public education programs and participation in inter-county and interstate competitions.

    - Addresses health and safety issues associated with trees located adjacent to local airports.

- **Policy 16.A.7:** Encourage and support the voluntary conservation of scenic resources through recognition programs and the provision of incentives, such as flexibility in development standards or reductions in appropriate County fees.

PROJECT IMPACTS

This section presents a programmatic-level analysis of potential impacts associated with visual resources from projected development under the General Plan Update. Evaluation of environmental impacts associated with the General Plan Update considers the development that would be facilitated by the General Plan Update, in accordance with goals, policies, and implementation programs, to accommodate projected growth in the County. It should be noted that the County's population is projected to grow by 0.6 percent

annually over the planning horizon (2040). As discussed in detail in Chapter 2, "Project Description," and the introduction to Chapter 3, this is a relatively low amount of growth.

Impact 3.1-1: Impacts to a Scenic Vista or Scenic Resource Visible from a Visually Sensitive Location

The General Plan Update would facilitate development visible from locally designated scenic routes. General Plan Update policies also would protect scenic vistas along locally designated scenic routes. With implementation of these policies, projected development under the General Plan Update would not be expected to substantially alter views of important scenic resources from visually sensitive areas. Therefore, impacts to vistas and scenic resources viewed from key locations, including designated roadways, would be **less than significant**.

New development associated with the General Plan Update could result in changes to important scenic resources as seen from visually sensitive locations. Visually sensitive public locations include viewpoints where a change to the visibility of an important scenic resource, or a visual change to the resource itself, would affect the general public. These locations include principal travel corridors; public plazas; trails; parks; parkways; and designated, publicly available, and important scenic corridors (such as rivers). This analysis of the potential for effects on scenic vistas or resources focuses on views from primary transportation corridors and considers the overall potential for a substantial adverse change to scenic vistas or resources.

It should be noted that additional agritourism-related uses under the proposed General Plan Update and changes to Title 17 of the County Ordinance Code would allow a wider range of uses related to agritourism, such as private stables, demonstration gardens, seasonal crop mazes, pumpkin patches, etc. However, these uses would complement the primary agricultural use and would generally be size restricted. Further, as a matter to practice, agritourism facilities are designed to enhance the agricultural heritage associated with the properties' use, so facilities tend to be complementary of the agricultural use and attractive to the public. Therefore, agritourist facilities allowed under the General Plan and revised code would not differ substantially from the existing character of the agricultural properties and would not be expected to visually detract from the viewshed in these typically rural areas as seen from scenic roads.

Residents and visitors access Tuolumne County via SRs 49, 108, and 120. While Tuolumne County has no designated State Scenic Highways, portions of SRs 49, 108, and 120 are eligible for such designation. Furthermore, the County's existing Circulation Element and Natural Resources Element identify these roadways as locally designated scenic routes, and the updated elements maintain these designations. As discussed above, SR 49 provides views of the western foothills of the Sierra Nevada and historical sites; SR 108 traverses grassy plains, flattop buttes, foothills, and mountainous landscapes in the Stanislaus National Forest; and SR 120 overlooks Don Pedro Reservoir.

However, the General Plan Update is intended to focus future development within identified communities rather than along scenic routes in rural areas, even if development in rural areas would still be permitted. This land use scenario would tend to minimize impacts to two scenic vistas designated by Caltrans on a rural section of SR 120 near the Don Pedro Reservoir. The third scenic vista designated by Caltrans in Tuolumne County, the Rim of the World overlook of the Tuolumne River, is located inside Stanislaus National Forest and would not be affected by development under the General Plan Update.

In addition, the General Plan Update generally promotes the conservation of scenic resources, landmarks, and the natural landscape through Policy 16.A.5. This includes both the distinct character of the historic communities traversed by the County's principal roadways and the natural environment that provides both the background to these built environments and a variety of scenic vistas. Implementation Program 16.A.i allows for flexibility in development standards to achieve Policy 16.A.5. Policy 16.A.7 encourages voluntary conservation of scenic resources through recognition programs and provision of incentives. As stated above, many of the County's principal transportation routes traverse the "main streets" of historic communities, and policies have been designed to preserve these scenic resources.

For example, the General Plan Update includes policies to limit the visual effects of commercial and industrial development (Policies 1.B.3, 1.F.3, and 1.F.4; Implementation Programs 1.B.g, 1.F.c, and 1.F.d). Identification of historic structures and districts would occur under Policy 13.C.3. Policy 13.A.1 encourages the retention of existing historic structures, and associated implementation policies (13.A.a through 13.A.e) are designed to guide the identification of historic structures and the funding of their restoration and reuse. Policy 13.B.2 and Implementation Programs 13.B.j through 13.B.s would also protect cultural resources and their surroundings. Historic corridors, particularly in areas where the resources are highly visible, would be designated through Implementation Program 13.C.k. These corridors and associated cultural resources conservation programs would be driven by citizen participation.

Policy 16.A.3 in the Natural Resources Element would conserve the character and scenic quality along scenic routes through Implementation Programs 16.A.b and 16.A.d, which include land restrictions and guidelines that recommend ways in which development can be integrated into the existing environment. Implementation Program 16.A.d would encourage conservation of the County's scenic resources along locally designated scenic routes by maintaining guidelines on how to integrate new development with the surrounding landscape and natural topography. These guidelines "address the retention of trees and other native vegetation, screening of outdoor storage areas, landscaping and revegetation, signage, architectural design and materials, lighting and retention of landscape features." In addition, Policy 16.A.3 and Implementation Programs 16.A.e through 16.A.g would maintain guidelines that provide recommendations for integrating new construction with scenic hillsides and hilltops, by minimizing the amount of grading and topographical changes. Implementation Program 16.A.j would require adoption of regulations and incentives specifically designed to protect the Table Mountain area, which is visible from many of the County's scenic roadways. The community plans for Jamestown, Columbia, East Sonora, Mountain Springs, and Tuolumne also have policies addressing scenic resources. In addition, the County's development guidelines provide a framework for development along scenic routes.

Although there are no state-designated scenic highways in the County, the County has numerous scenic corridors, including trails and rivers. The General Plan Update includes policies and implementation programs intended preserve the historic and natural resources in these areas. Policies related to preservation of resources include requirements that provide enough assurance to determine that the overall aesthetic of scenic resources, as viewed from key viewing locations, would be maintained. Because projected development under the General Plan Update would not substantially alter views of important scenic resources from visually sensitive areas, this impact would be **less than significant**.

Mitigation Measures

No mitigation is required.

Impact 3.1-2: Substantial Degradation of Existing Visual Character or Quality

The General Plan Update would promote development within and near identified communities, which would minimize changes to the County's predominantly rural character. Policies in the General Plan Update would encourage new development to be compatible with the scale and character of existing development and would enhance the distinct visual identities of communities and preserve aesthetic quality. General Plan Update policies also would protect the visual character of communities with historic buildings. Impacts would be **less than significant**.

The General Plan Update would minimize changes to the County's predominantly rural visual character. This road map for land uses in Tuolumne County, as codified in the updated land use map, would focus growth within identified communities. Infill would reduce the pressure for development that encroaches upon agricultural rangeland and other undeveloped land, thus minimizing the potential for the development of these lands throughout the County. Rural areas of the County would continue to serve as buffers between identified communities. Although agritourism-related uses allowed under the proposed General Plan Update and changes to Title 17 of the County Ordinance Code would allow a wider range of uses related to agritourism, such as private stables, demonstration gardens, seasonal crop mazes, pumpkin patches, etc.,

these uses would supplement the primary agricultural use and would generally be size restricted. They would be intended to be visually compatible with the underlying agricultural use, as a matter of practice. Therefore, agritourist facilities allowed under the General Plan and revised Ordinance Code would not differ substantially from the existing character of the agricultural properties. The most substantial changes to visual character would be expected to occur within identified communities, where mixed-use and higher density residential development would occur, especially on vacant and underutilized sites. Changes to visual character could also occur outside identified communities. However, the overall rate of growth in the County is projected to be low, such that the quantity of development outside of the identified communities, and the associated potential to substantially degrade the existing visual character or quality of the County, would be limited. While some lower density development would occur in rural areas, this development would be single-family residential development on multiple-acre lots, which would be visually consistent with a rural setting.

Incremental buildout to 2040 under the General Plan Update would be expected to result in a maximum net increase of 5,159 dwelling units, 938,000 square feet of commercial development, and 196,000 square feet of industrial development in the County above existing conditions (year 2015). This represents a 24-percent increase in dwelling units, 20-percent increase in commercial development, and 11-percent increase in industrial development in the County above existing conditions. The intensification of land use anticipated to occur in established communities may be considered an adverse effect to some viewers because of the presence of larger buildings and the corresponding reduction in vacant land within the County. However, as detailed below, policies in the General Plan Update would encourage new development to be compatible with the scale and character of existing development and would enhance the distinct visual identities of communities. Other policies would protect historic sites and their surroundings, which are a signature aspect of the visual character of Tuolumne County's unincorporated communities.

As indicated above, there are several policies and implementation programs in the Cultural Resources Element that encourage the protection of historic structures and corridors, which are key aspects of Tuolumne County's character. Although impacts to individual resources may occur with implementation of the General Plan Update, the policies and implementation programs identified in the General Plan Update, in conjunction with established regulations, would serve to substantially reduce the potential effects of development on the historic character of established communities. For further evaluation of effects on historic resources, refer to Impact 3.5-1 in Section 3.5, "Cultural Resources."

In addition to established communities, agricultural areas and timberlands have historically defined the rural character and scenic beauty of Tuolumne County. This is stated in Policy 16.A.1. Effects on agricultural and timber resources are addressed in Section 3.2, "Agricultural and Forest Resources."

The General Plan Update also includes policies to limit the visual effects of new residential, commercial, and industrial development. Policy 1.A.4 and Implementation Programs 1.A.c and 1A.d guide growth to identified communities by designating land between communities for non-urban land uses and utilizing transitional land uses as buffers. Housing developments are regulated by development standards, which are maintained through Policy 1.E.4 and require that density be based on surrounding conditions, including the relationship of the development to surrounding land use.

Policy 1.B.3 and Implementation Program 1.B.g would require new commercial development to minimize the visual impact of parking on public views through screening. This would limit the visual effects of parking where commercial areas are located within the viewshed of designated scenic roadways. In addition, Policy 1.F.3 would encourage commercial development to maintain an aesthetic that is consistent with the style of historic structures in the community. Implementation Program 1.F.c would establish design guidelines for new commercial development in communities desiring design review. Implementation Program 1.F.d would encourage street frontages in historic communities to reflect the historic character and ambiance. Policy 1.F.4 would encourage commercial development to be designed in a style that reflects the County's indigenous materials or is compatible with historic design features. Many of the policies and implementation programs encourage consistency with the historic community character without establishing County-wide policy requirements. With the exception of the parking policy, such specific requirements would be addressed at the community level through existing and future design guidelines established under

Implementation Program 1.F.c. Similarly, Policies 1.G.4 and 1.G.5 encourage the screening of parking associated with new industrial areas and the establishment of design guidelines for new industrial development in or immediately adjacent to historic communities. Implementation Program 16.A.h would regulate the size, quantity, and location of signage in commercial and industrial portions of the County.

As stated above, the General Plan Update also includes policies and implementation programs that promote the overall conservation of natural scenic resources in the Natural Resources Element. Policy 16.A.3 is specific to conserving the quality of hillside and hilltops, Implementation Programs 16.A.e and 16.A.g encourage minimization of grading and designing development to blend with the natural contour of the land, and Implementation Program 16.A.f would maintain the hillside development guidelines that provide recommendations for developing on hillsides. Policy 16.A.6 and Implementation Programs 16.A.k through 16.A.m protect trees through existing ordinances and the creation of a Heritage Tree Program. Policy 16.A.2 in the Natural Resources Element would conserve the character and scenic quality along scenic routes through Implementation Programs 16.A.b and 16.A.d, which include land restrictions and guidelines that recommend ways that development can be integrated into the existing environment.

In addition, the County would support the efforts of communities that desire to promote compatibility of new development with their historical character through the development of design guidelines or other means. Five communities—Columbia, Jamestown, Tuolumne, Twain Harte, and East Sonora—also have existing design guidelines that are intended to conserve the County's rural character, scenic built environment, natural environment, and cultural resources. For future discretionary entitlements in these communities, design review would be implemented on a project-by-project basis as required by the individual Community Plans.

As illustrated above, projected development under the General Plan Update would not substantially alter community character or quality. The General Plan Update policies and implementation programs would guide growth to identified communities and preserve natural areas, while largely maintaining consistency with the visual character of identified communities through policies related to preservation of historic structures and preserving aesthetic quality through policies related to parking and signage. Impacts would be **less than significant**.

Mitigation Measures

No mitigation is required.

Impact 3.1-3: New Substantial Light or Glare That Would Adversely Affect Daytime or Nighttime Views

The General Plan Update would facilitate development that would introduce new sources of light and glare, which would increase overall ambient nighttime light and daytime glare from building materials. Dark sky standards for the communities of Tuolumne and Jamestown would minimize light spillover and glare in those planning areas, and the General Plan Update includes standards for light and glare in other identified communities. Impacts to existing development would be **less than significant**.

The General Plan Update would facilitate development that would increase the ambient nighttime lighting within unincorporated areas of the County. New residential, mixed-use, and other types of development would generate increased lighting and glare, especially within the identified communities where future development would be expected to be concentrated.

Nighttime lighting levels would increase incrementally with future projects in developed areas. New light sources would include new residential developments, street lighting, parking lot lights, and security-related lighting for nonresidential uses. These new light sources could result in adverse effects to adjacent land uses through the "spilling over" of light into these areas and "sky glow" conditions. In addition, implementation of the General Plan Update would result in intensified nighttime lighting levels associated with increased traffic volumes and further residential and commercial development. Daytime glare could be produced by the increase in commercial, industrial, and residential structures, which could reflect sunlight.

Light dissipates with increased distance from the source. By encouraging growth inside of the identified communities instead of in other areas of the County, the General Plan Update would likely reduce potential development, and related new light and glare, in rural areas that have relatively dark nighttime skies. General Plan Update policies and implementation programs also would minimize these impacts. In the updated Natural Resources Element, Policy 16.A.4 calls for the County to work with those communities that wish to establish design guidelines for new development, which should address lighting among other aesthetic considerations. Policy 1.B.5 would require that new development shield or hood new light, and that new sources of light are directed away from sensitive uses. In addition, the Community Plans for Tuolumne and Jamestown include policies intended to minimize and avoid light pollution. New development would also be consistent with the California Energy Commission's Building Energy Efficiency Standards for outdoor lighting that limit the intensity of lights installed in new developments.

Light sources that are directed to illuminate specific areas are less likely to spill over onto other areas. The design of new development would be required to comply with relevant General Plan policies and attendant building code requirements.

Special events allowed as part of the County's proposed expanded agritourism policies and Ordinance Code could potentially include nighttime lighting on properties designated and zoned for agricultural use; however, the proposed Title 17 text includes standards for these events that would require lighting be limited only to the level necessary to provide safety and that lighting be low-level, low-intensity, and directed downward to avoid creating glare for residents and passing motorists. Also, events would be limited to 40 per year or fewer depending on the zoning, and outdoor events would be limited to the hours of 10:00 a.m. and 10:00 p.m. Therefore, the lighting would only be periodic and would not occur late into the night. Lighting associated with special events would not substantially affect nighttime views.

Through incorporation of policies specifically designed to regulate lighting style, as well as more comprehensive design guidelines at the community level, the implementation of the General Plan Update would have a **less-than-significant** impact on light and glare conditions.

Mitigation Measures

No mitigation is required.

3.2 AGRICULTURAL AND FOREST RESOURCES

This section contains an analysis of the potential environmental impacts of projected development under the General Plan Update related to agricultural and forest resources. Several public comments related to agricultural resources were provided in response to the Draft EIR. These related primarily to conservation easements and potential impacts related to agritourism.

3.2.1 Environmental Setting

California agriculture ranks first in the nation in productivity, and its 76,700 farms and ranches received $46.04 billion for their products in 2016 (California Department of Food and Agriculture 2017). California produces over 400 commodities and nearly half of all U.S. grown fruits, nuts, and vegetables on its 25.5 million acres of farmland.

COUNTYWIDE AGRICULTURAL RESOURCES

California Department of Conservation, Farmland Mapping and Monitoring Program

Typically, agricultural land is considered under CEQA in terms of its designation as Important Farmland under the Farmland Mapping and Monitoring Program (FMMP), which is maintained by the California Department of Conservation (DOC). The FMMP defines "Important Farmland" as Prime Farmland, Unique Farmland, and Farmland of Statewide Importance, based on soil conditions. Agricultural land under the FMMP is rated according to soil quality and irrigation status. The maps are updated every two years with the use of a computer mapping system, aerial imagery, public review, and field reconnaissance. Mapping pursuant to the FMMP has not been prepared for Tuolumne County (DOC 2018).

United States Department of Agriculture, Natural Resources Conservation Service

Prime farmland resources data are also maintained by the U.S. Department of Agriculture, Natural Resources Conservation Service (NRCS). NRCS prime farmland is considered to have the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops and is also available for these uses. It has the soil quality, growing season, and moisture supply needed to produce economically sustained high yields of crops when treated and managed according to acceptable farming methods, including water management. In Tuolumne County, this database covers only Stanislaus National Forest and Yosemite National Park and does not extend to the western foothills region.

Tuolumne County Agricultural Rating System Matrix

Tuolumne County has prepared an Agricultural Rating System Matrix (Table 3.2-1), which is used to determine the relative value of agricultural land. The Agricultural Rating System Matrix was adopted to evaluate the value of agricultural land based on the parcel size, productivity, availability of water, physical characteristics, adjacent land uses, adjacent roads, and proximity to utilities. Applications for land development projects on or adjacent to agricultural lands require use of the Rating System Matrix for the purpose of applying the policies and implementation programs contained in the Agricultural Resources Element of the Tuolumne County General Plan.

Currently, land development applications that are on or adjacent to parcels that have a General Plan land use designation of Agricultural are referred to the Agricultural Advisory Committee for review. Projects for parcels that have a land use designation other than Agricultural are referred to the Committee for review only if a change in the land use is proposed that could affect adjacent agricultural operations. The project planner for each application conducts the evaluation using the Agricultural Rating System Matrix. Once all the boxes in the matrix are circled with the corresponding information regarding the parcel being evaluated, the circled number is multiplied by the Rating Weight number. This number is then entered into the Score column. All the numbers are added up to obtain a Total at the bottom of the Score column. The maximum

Table 3.2-1 Agricultural Rating System

Factor	Low 2	Medium 4	High 6	Very High 8	Rating Weight	Score
Production Acres (Select as many as apply) Rangeland Hay/Irrigated Pasture Orchards/Vineyards/Intensive/Specialized	<37 Ac <16 Ac <10 Ac	37-79 Ac 16-36 Ac 10-19 Ac	80-300 Ac 37-79 Ac 20-37 Ac	>300 Ac >79 Ac >37 Ac	8	(maximum total score of 64 using maximum factor score of 8 multiplied by rating weight of 8)
Long Term Ag Use (based on soil type)	UNSUITED TO LOW	LOW-MEDIUM	MEDIUM	MEDIUM-HIGH	2	(maximum score of 16)
Water Availability Natural Water	None	Intermittent stream	Pond or spring	Perennial stream	2	(maximum score of 16)
Developed Water	None	Groundwater or stock pond	Reservoir	Contracted water*	4	(maximum score of 32)
Physical Characteristics Terrain	Steep terrain prevalent, slopes greater than 30 percent	Some steep terrain, slopes range from 20-30 percent	Gentle to rolling terrain, slopes range from 10-20 percent	Level to gentle terrain, slopes range from nearly level to 10 percent	2	(maximum score of 16)
Natural Vegetation	Significant northern aspects. vegetation exemplified by chamise and manzanita.	Some northern aspects. vegetation exemplified by Live Oaks.	Mostly southern or western aspect. Vegetation exemplified by Blue Oaks, Annual Grassland	Vegetation exemplified by Blue Oaks /Valley Oaks, annual grassland.	2	(maximum score of 16)
Adjacent Use Number of non-agricultural or non-open space parcels adjacent (does not include RE-10 for purposes of this matrix).	>4	3-4	1-2	None	4	(maximum score of 32)
Number of agricultural parcels adjacent (includes A-10, A-20, A-E, and TPZ)	None	1-2	3-4	>4	4	(maximum score of 32)
Adjacent Roads	Arterial road	Collector road	Local road	None	2	(maximum score of 16)
Public Services (available for development)	All Public Services available (potable water, sewer and power at site)	Most Public Services available (potable water and power at site)	Public Services difficult to access (power only at site)	Public Services generally not available.	4	(maximum score of 32)

Note: This matrix contains updates from the 1996 General Plan and is part of the General Plan Update.

* e.g., Tuolumne Utilities District Ditch System, Pacific Gas and Electric Company Ditch System, Hetch Hetchy, effluent.

possible score is 240 points. Additional notes can be added such as “intermittent stream on the site,” “stock pond,” “site contains 10 acres of vineyards,” etc.

The Total Score indicates the relative value of the land as follows:

- High-value Agricultural Lands are those parcels that receive a score of 175 or higher as determined by the Agricultural Rating System Matrix.
- Agricultural Lands of Local Importance are those parcels which receive a score of at least 125 but not more than 174 as determined by the Agricultural Rating System Matrix.
- Agricultural Lands of Limited Importance are those parcels which receive a score of 124 or lower as determined by the Agricultural Rating System Matrix.

The final determination of the value of the agricultural land being rated can be added to the Notes section of the Agricultural Rating System Matrix.

Production Value

The value of agricultural commodities produced in Tuolumne County was estimated at approximately $35.4 million in 2016, the latest year for which data are available (Tuolumne County Department of Agriculture 2017). Between 2005 and 2017, the annual value of agricultural commodities has ranged from approximately $20 million to nearly $40 million. Table 3.2-2 summarizes agricultural revenue by type of agricultural product in Tuolumne County for the year 2016.

Table 3.2-2 Tuolumne County 2016 Agricultural Value Summary

Category	Total Gross Values
Livestock and Poultry	$22,644,000
Timber	$7,737,000
Field Crops	$4,007,000
Fruit and Vegetables	$535,000
Apiary and Nursery	$373,000
Livestock and Poultry Products	$145,000
Total	**$35,440,000**

Source: Tuolumne County Department of Agriculture 2017

Yearly changes in environmental conditions can affect agricultural productivity. Two major environmental events, the Rim Fire in the summer of 2013 and an ongoing drought, have played substantial roles in Tuolumne County production values (Tuolumne County Department of Agriculture 2013). The Rim Fire burned thousands of acres of summer grazing range, while the drought reduced forage production on rangeland.

Designated Agricultural Land Acreage and Lands with Existing Agricultural Use

Currently 156,277 acres in unincorporated Tuolumne County are designated as Agricultural land, which accounts for approximately 10 percent of total land in the County. Not all lands that have a general plan designation of Agricultural are in active agricultural use.

Agricultural uses, such as general farming and ranching, also occur on lands that are not designated Agricultural because the existing General Plan allows agricultural use for land use designations other than Agriculture, such as Rural Residential (RR) and Homestead Residential (HR). Approximately 120,083 acres are currently enrolled in Williamson Act contracts (DOC 2016), 5,379 acres of which have filed non-renewal notices, and 131,313 acres are located within designated Agricultural Preserves. The Williamson Act, the County Agricultural Preserves, and Agricultural Preserve Combining Districts are discussed in greater detail below in Section 3.2.2, “Regulatory Setting.”

Although the exact number of acres that are in agricultural use is not known, it is reasonable to assume for purposes of establishing a CEQA baseline that agricultural use exists on no more than 156,277 acres in the County. This assumption is based on the following: (a) some amount less than 156,277 acres of Agricultural-designated lands are actually in agricultural use; (b) in 2012, landowners of less than 88,000 acres, with various land use designations, self-identified as producing income from agricultural operations; (c) approximately 120,000 acres of agricultural lands are protected in Williamson Act contracts; (d) agricultural use is not allowed on lands designated Public lands, which comprise approximately 77 percent of all lands in the County; and (e) County staff's experience with processing applications for land use approvals.

Agritourism Operations

Tuolumne County has a growing agritourism industry, with agritourism operations in the County primarily centered on animal products and activities, followed by event venues, apple production, Christmas tree production, wine production, and beer production. The County's expert consultant prepared a study to document historic economic and market forces that have shaped agritourism in the County and to provide a range of estimated outcomes for the future number of agritourism operations that coincide with the County's General Plan Update and related proposed zoning revisions. The study indicates that agritourism business has been expanding in the County, increasing from one in 2002 to 18 operations in 2012 (based on USDA Census of Agricultural data) and 26 operations in 2018 (based on an inventory conducted in June 2018). Countywide, approximately 4.6 percent of farms currently operate agritourism businesses (Lisa Wise Consulting 2018). This is a trend that has manifested in many agricultural areas of the state and is likely a byproduct of farmers seeking added revenue to enhance the viability of their agricultural operations. See Impact 3.2-4 for additional discussion related to this study.

Conversion of Agricultural Land

Rising land values and cost of inputs (e.g., water, fuel, fertilizer) have contributed to an increase in the conversion of agricultural land to non-agricultural uses throughout California as well as the intensification of agricultural land uses, whereby lower value products are replaced by high-value crops (e.g., grazing or dry farming replaced with row crops, orchards, or vineyards). Since 1984, nearly 1.4 million acres of agricultural land in California have been converted to non-agricultural purposes (DOC 2014:4). From the 2006–2008 reporting period to the 2008–2010 period, the rate of conversion slowed from 203,000 acres (DOC 2011, Table C-3:78) to 168,000 acres statewide (DOC 2014, Table C-3:83). Because the DOC does not maintain data on the acreage of farmland in Tuolumne County, it is not possible to accurately evaluate County-wide trends in the conversion of important farmland. NRCS also maintains a national soils database on the Web Soils Survey, which catalogues indices of soil quality such as prime farmland and Capability Class; in Tuolumne County, however, this database covers only Stanislaus National Forest and Yosemite National Park and does not extend to the western foothills region. A comprehensive soil survey for Tuolumne County is not available.

FOREST RESOURCES

Tuolumne County is home to a variety of hardwood, coniferous, and mixed woodlands and forests (Exhibit 3.4-1). The following are those types of tree-dominated habitats that occur within Tuolumne County. Descriptions of these habitat types can be found in Appendix B.

- Aspen Forest
- Blue Oak-Foothill Pine Woodland
- Blue Oak Woodland
- Closed-Cone Pine-Cypress Forest
- Douglas Fir Forest
- Eastside Pine Forest
- Jeffrey Pine Forest
- Juniper Woodland
- Lodgepole Pine Forest
- Montane Hardwood Forest
- Montane Riparian Forest
- Valley Oak Woodland
- Montane Hardwood-Coniferous Forest
- Pinyon-Juniper Woodland
- Ponderosa Pine Forest
- Red Fir Forest
- Sierran Mixed Conifer Forest
- Subalpine Conifer Forest
- White Fir Forest

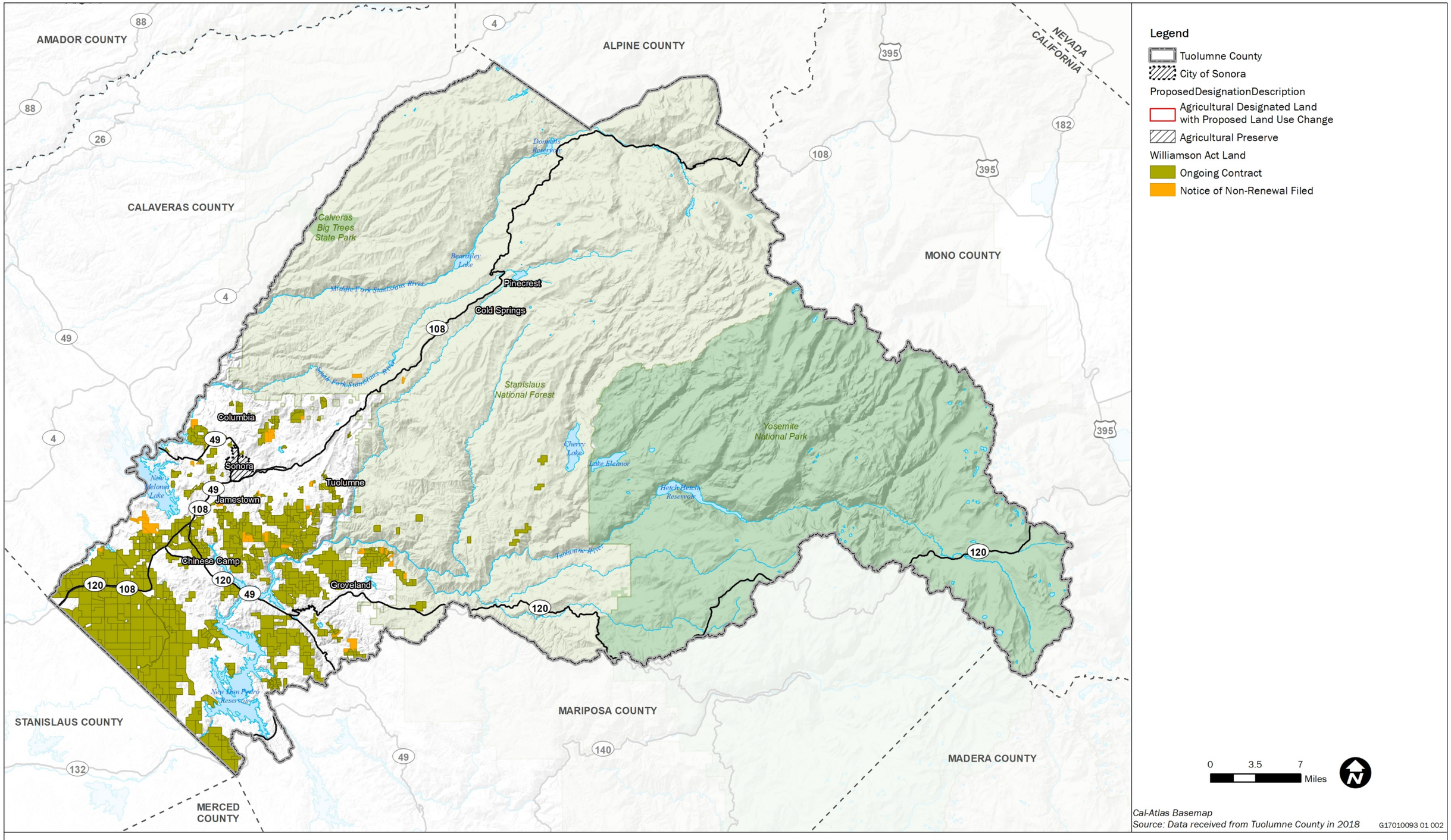


Exhibit 3.2-1

Williamson Act Contract Lands

The County contains approximately 690,000 acres of conifer forest/woodland, 231,000 acres of hardwood forest/woodland, and 53,000 acres of mixed conifer and hardwood forest and woodlands. The impact related to conversion of oak woodland is discussed in Section 3.4, "Biological Resources." There is no specific land use designation for forest land in Tuolumne County.

Tuolumne County designates areas as Timber Production (which are consistent with Timber Production Zones [TPZs]) in areas where the growing and harvesting of timber and other forest products occur in concert with limited, low-intensity public and private commercial recreational uses. The Timber Production designation is found primarily in the eastern portion of the County at elevations above 3,000 feet. Land designated Timber Production is interspersed with federally owned land within the Stanislaus National Forest and Yosemite National Park. Geographic information system data indicate that 87,043 acres of Timber Production land are located within the County. Exhibit 2-2 shows areas currently designated Timber Production.

3.2.2 Regulatory Setting

FEDERAL

No federal regulations apply to the General Plan Update as it relates to agriculture and forest resources.

STATE

California Land Conservation Act

The California Land Conservation Act of 1965 (Government Code Section 51200 et seq.), commonly known as the Williamson Act, provides a tax incentive for the voluntary enrollment of agricultural and open space lands in contracts between local government and landowners. The Act allows local governments to assess agricultural land based on the income-producing value of the property, rather than the "highest and best use" value, which had previously been the rule. The contract enforceably restricts the land to agricultural and open space uses and compatible uses defined in state law and local ordinances. An agricultural preserve, which is established by local government, defines the boundary of an area within which a city or county will enter into contracts with landowners. Local governments calculate the property tax assessment based on the actual use of the land instead of the potential land value assuming full development.

Terms of Williamson Act contracts are 10 years and longer, as established by each county. Tuolumne County contracts provide for a 10-year term. The contract is automatically renewed each year, maintaining a constant 10-year contract, unless the landowner or local government files to initiate nonrenewal. A "notice of nonrenewal" starts the 9-year nonrenewal period. During the nonrenewal process, the annual tax assessment gradually increases. At the end of the 9-year nonrenewal period, the contract is terminated. Only a landowner can petition for a contract cancellation. Tentative contract cancellations can be approved only after a local government makes specific findings and determines the cancellation fee to be paid by the landowner.

The State of California has the following policies regarding public acquisition of, and locating public improvements on, lands in agricultural preserves and on lands under Williamson Act contracts (Government Code Sections 51290–51295):

- State policy is to avoid locating federal, state, or local public improvements and improvements of public utilities, and the acquisition of land in agricultural preserves.
- State policy is to locate public improvements that are in agricultural preserves on land other than land under Williamson Act contract.

- State policy is that any agency or entity proposing to locate such an improvement, in considering the relative costs of parcels of land and the development of improvements, give consideration to the value to the public of land, particularly prime agricultural land, in an agricultural preserve.

Since 1998, another option in the Williamson Act Program has been established with the creation of Farmland Security Zone contracts (Government Code Section 51296 et seq.). A Farmland Security Zone is an area created within an agricultural preserve by a board of supervisors upon the request of a landowner or group of landowners. Farmland Security Zone contracts offer landowners greater property tax reduction and have a minimum initial term of 20 years. Like Williamson Act contracts, Farmland Security Zone contracts renew annually unless a notice of nonrenewal is filed.

State funding was provided in 1971 by the Open Space Subvention Act (Government Code Section 16140 et seq.), which created a formula for allocating annual payments to local governments based on acreage enrolled in the Williamson Act Program. Subvention payments were made through fiscal year 2009, but have been suspended in more recent years because of revenue shortfalls. Properties in the County under Williamson Act contract, including those properties for which non-renewal has been filed, are shown in Exhibit 3.2-1.

Assembly Bill 1265 of 2011

Assembly Bill 1265 (Chapter 90, Statutes of 2011) was approved in the summer of 2011 and essentially reinstated parts of the Williamson Act, Revenue & Tax Code, and Open Space and Subvention Act that allowed eligible counties to recapture 10 percent of the property tax benefits provided to their owners of Williamson Act lands by decreasing the duration of the Land Conservation Act and Farmland Security Zone contracts by 1 and 2 years, respectively. Senate Bill 1353 (Chapter 322, Statutes of 2014), approved by the Governor on September 15, 2014, eliminates the January 1, 2016, sunset clause and makes the option for participating counties to recapture portions of foregone tax revenue permanent.

FOREST PRACTICE ACT

The California Department of Forestry and Fire Protection enforces the laws that regulate logging on privately owned lands in California. These laws are found in the Z'berg-Nejedly Forest Practice Act of 1973 (Public Resources Code Section 4511 et seq.), which was enacted to ensure logging is done in a manner that will protect natural resources. The removal of commercial timber species from areas of pending new construction, and from the area around existing structures, is included in these regulations. In Tuolumne County, commercial timber species includes Ponderosa Pine, Jeffrey Pine, Sugar Pine, Western White Pine, White Fir, Red Fir, Douglas Fir, Lodgepole Pine, and Incense Cedar.

LOCAL

Right to Farm Ordinance

Where non-agricultural land uses, especially residential development, occur adjacent to agricultural areas, agricultural operations may become the subject of nuisance complaints. Tuolumne County's "Right to Farm Ordinance," located in Chapter 5.20 of the Ordinance Code, is intended to reduce the loss of agricultural resources by limiting the circumstances under which agricultural operations may be considered a nuisance.

Further, the Right to Farm Ordinance is intended to promote a "good neighbor policy" between agriculturalists and residents by advising purchasers and residents of nearby property of inherent potential problems such as sounds, odors, dust, and chemicals from agricultural operations. Neighbors also are notified that they should be prepared to accept such inconveniences or discomforts as a normal and necessary aspect of living in a county with a strong rural character and a healthy agricultural sector.

Agricultural Preserves and Agricultural Preserve Combining District

The purpose of Agricultural Preserves and the Agricultural Preserve (AP) Combining District is to implement the provisions of the Williamson Act, discussed above under "California Land Conservation Act." This district is intended to promote agricultural productivity and the preservation and protection of agricultural or open space values from encroaching development and at the same time prevent inclusion of land in agricultural preserves that is not suitable for future use in the production of food, fiber, forage, and livestock or wildlife habitat. For a parcel to be zoned under the AP District, it must meet the requirements for inclusion in an agricultural preserve or qualify for a land conservation (Williamson Act) contract subject to approval by the Board of Supervisors.

Tuolumne County General Plan

The 1996 General Plan provides a framework for addressing issues related to agricultural resources in the County. As the proposed project would update the 1996 General Plan, this document will be discussed in the context of the update within the impact analysis. The Agriculture Element and Managed Resources Element contain goals, policies, and implementation programs that would conserve agricultural and timber production land and protect agricultural and timber harvest operations. Specific policies and implementation programs are identified in Section 3.2.3, "Impact Analysis."

3.2.3 Impact Analysis

METHODS OF ANALYSIS

This section evaluates the potential for impacts to agricultural land based on consideration of existing regulations that pertain to its identification, consideration of the proposed land use map, and policies included in the General Plan Update.

Important Farmland is primarily found within California's Central Valley, where optimal soil quality, growing season, moisture supply, and irrigation are available. These conditions are not typical in Tuolumne County, where rock outcroppings and thinner soil mantles are common, and land designated for agricultural use is primarily used as grazing lands. No NCRS or FMMP farmland data are available for land within the County (Tuolumne County is one of 11 of the 58 counties in the state that are not mapped); no other sources of comprehensive data similar to these resources are available to determine farmland quality in the County. Therefore, an accurate assessment of land that may be considered Important Farmland, as defined by Appendix G of the CEQA Guidelines, is not possible. However, in areas of the state covered by the FMMP, grazing land is identified as its own category, and is not included in land designated as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (collectively referred to as Important Farmland). Important Farmland is generally used for irrigated crops. According to the County's 2016 Crop and Livestock Report, there are 269 acres of reported fruit and vegetable crops in the County, and 1,400 acres of reported field crops (Tuolumne County 2016). For reference, Mariposa County (which is located adjacent to Tuolumne County to the south; has an east-to-west geographical position similar to Tuolumne County's; and has similar climate, elevation profile, and topography) includes less than 300 acres of Important Farmland County-wide (outside of Yosemite National Park) with fewer than 20 acres classified as Prime Farmland (DOC 2018). It is thus unlikely that substantial acreage of land that would qualify as Important Farmland, as defined by the FMMP, is present in the County.

Regardless, Tuolumne County has developed the Agricultural Rating System Matrix, which is used by the Board of Supervisors to evaluate the relative value of agricultural land in the County. Because the state has not defined Important Farmland in Tuolumne County, and because CEQA allows public agencies to define their own thresholds of significance, this impact analysis considers the effects on agricultural land in terms of a parcel's score summed from the Agricultural Rating System Matrix. Note that the threshold of significance that typically addresses FMMP Important Farmland in Appendix G of the CEQA Guidelines has been modified for this EIR to consider High-Value Agricultural Land.

THRESHOLDS OF SIGNIFICANCE

The thresholds of significance listed below are based upon the environmental checklist in Appendix G of the CEQA Guidelines as modified by Tuolumne County's definition of high-value farmland (see above). An impact is considered significant if physical changes that could be facilitated by implementation of the General Plan Update would result in one or more of the following conditions:

- result in a change of rating from High-Value Agricultural Lands to Agricultural Lands of Local Importance or Limited Importance, using Tuolumne County's Agricultural Rating System;
- conflict with existing zoning for agricultural use or a Williamson Act contract;
- conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220(g)), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104(g));
- result in the loss of forest land or conversion of forest land to non-forest use; and/or
- involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use.

This section also addresses potential land use conflicts between community (i.e., residential, commercial, and industrial) and agricultural uses.

GENERAL PLAN UPDATE POLICIES

The following policies and implementation programs from the General Plan Update are applicable to the evaluation of effects related to agriculture and forest resources:

<u>Community Development and Design Element</u>

- **Policy 1.B.1:** Protect existing land uses from the infringement of and impacts associated with incompatible land uses.
  - Implementation Program 1.B.a: Designate, where possible, land around existing non-residential land uses, such as agriculture, timberlands, mining preserves and industry, for new development that is compatible with these existing uses.
  - Implementation Program 1.B.b: Designate, where possible, land around existing residential neighborhoods for uses that are compatible with residences. Designate areas for new urban residential development away from existing incompatible land uses, such as agriculture, mining, industry, solid waste facilities, airports and sewage treatment facilities.
  - Implementation Program 1.B.c: Separate new urban residential development from land uses that potentially conflict with housing, such as agriculture, mining, industry, airports and sewage treatment facilities.

<u>Managed Resources Element</u>

- **Policy 7.A.1:** Encourage the conservation and management of timberlands through incentive programs while conforming with California forest practice law.
  - **Implementation Program 7.A.a:** Encourage retention of existing, and management of new timberlands by continuing to provide tax incentives to timberland owners, such as TPZ zoning or

Williamson Act land conservation contracts, or other State or Federal incentive programs that may be offered to conserve timberlands.

- **Implementation Program 7.A.b:** Encourage owners of timberlands which do not qualify for property tax incentives, such as Timberland Production (TPZ) zoning, to continue timber production through such incentives as recognition programs, or other local, State or Federal incentive programs that may become available.

- **Policy 7.A.2:** Minimize the potential for conflicts between timberland and non-timber related uses.

  - **Implementation Program 7.A.c**: Encourage the siting of proposed residential development (HDR, MDR, LDR and MU land use designations) on land that is not adjacent to commercial timberlands.

  - **Implementation Program 7.A.d:** Reduce potential conflicts between timber management activities and non-timber related land uses by discouraging the development of new non-timberland uses on land adjacent to commercial timberlands. Allow flexibility in development regulations so that the overall density of the proposed development project can be concentrated in the portion of the parcel away from the timberland boundary.

  - **Implementation Program 7.A.e:** Maintain Chapter 5.20 of the Tuolumne County Ordinance Code, the Right to Farm Ordinance, so that it clearly includes timber management and harvesting activities within protected agricultural uses, in order to protect these timber activities, as well as the growing of timber.

    1. Maintain the "management and harvesting of timber" as an agricultural use in Section 5.20.030 to prohibit an existing timber management activity from being declared a nuisance when land uses in the surrounding areas change and a conflict arises.

    2. Maintain the "management and harvesting of timber" as an agricultural use in Section 5.20.040 to require a notice to purchasers of real property filing any grant deed or land sale contract with the County Recorder that discloses the potential for timber management activities in their area, and that normal timber practices may involve operations that inconvenience local residents or generate dust, smoke, noise, lawful and proper use of chemical pesticides and herbicides, and truck traffic, and that adjacent landowners should be prepared to accept such inconveniences or discomforts as a normal and necessary aspect of living in Tuolumne County which has a strong rural character and a healthy timber sector.

    3. Maintain the grievance procedures in Chapter 5.20 of the Tuolumne County Ordinance.

- **Policy 7.A.3:** Encourage well planned timber related uses in commercial timberland areas.

  - **Implementation Program 7.A.f:** Consider expanding the permitted uses in the Timberland Production (TPZ) zoning district and agricultural zoning districts to include facilities which are integrally related to the growing, harvesting and processing of forest products.

  - **Implementation Program 7.A.g:** Consider expanding the conditionally permitted uses in the Timberland Production (TPZ) zoning district, and agricultural zoning districts to include timber support services or timber compatible uses.

  - **Implementation Program 7.A.h:** Develop programs that encourage enhanced carbon storage in forests, use of durable wood products, and use of wood biomass for energy, while maintaining healthy forest ecosystems.

Agriculture Element

- **Policy 8.A.1:** Avoid the conversion of agricultural lands from the Agricultural General Plan land use designation and compatible zonings.
  - **Implementation Program 8.A.a:** Encourage the protection of agricultural lands through programs such as the voluntary purchase of development rights. This could be accomplished by establishing a conservation easement on the land. The easement could take the form of a deed restriction or be placed in a trust a specific period of time or in perpetuity.
- **Policy 8.A.2:** Exempt the following agricultural lands from Policies 8.A.1, 8.A.3 and 8.A.4:
  - Areas of land designated Agricultural that are less than 160 acres in size and are surrounded by land designated other than Agricultural or Public that is managed for open space uses. These areas may contain more than one parcel and ownership of the parcels may be by different owners.
  - Parcels that meet all of the following criteria: (1) the parcel is less than 80 acres in area; (2) the parcel is located within 500 feet of a public water main; and (3) the parcel is situated adjacent to land designated High Density Residential (HDR), Medium Density Residential (MDR), Low Density Residential (LDR), Mixed Use (MU), Neighborhood Commercial (NC), General Commercial (GC) or Heavy Commercial (HC) by the General Plan land use diagrams.

  These agricultural lands may be converted from Agricultural to an appropriate land use designation as determined by the Board of Supervisors.
- **Policy 8.A.3:** Grant exceptions to Policy 8.A.1 regarding conversion of agricultural land only where the locational relationship of the land, together with the use proposed, would provide a public benefit of such magnitude as to justify the exception.
  - **Implementation Program 8.A.b:** Grant exceptions to the policies and implementation programs regarding conversion of agricultural land contained in this Element only when such exception is approved by the Board of Supervisors.
  - **Implementation Program 8.A.c:** Utilize the Agricultural Rating System matrix only to evaluate applications proposing exceptions to Policy 8.A.2.
    - High-value Agricultural Lands are those parcels which receive a score of 175 or higher as determined by the Agricultural Rating System Matrix.
    - Agricultural Lands of Local Importance are those parcels which receive a score of at least 125 but not more than 174 as determined by the Agricultural Rating System Matrix.
    - Agricultural Lands of Limited Importance are those parcels which receive a score of 124 or lower as determined by the Agricultural Rating System Matrix.
- **Policy 8.A.4:** Development proposed adjacent to land designated Agricultural by the General Plan land use diagrams shall provide a buffer from the agricultural land. The buffer shall be 200 feet in width and located on the development site. No residential or non-agricultural buildings may be erected in the buffer area as long as the adjacent land remains designated Agricultural. The buffer may be reduced in width by the Board of Supervisors after considering the recommendation of the Agricultural Advisory Committee if such a reduction is determined appropriate based upon the topography, vegetation, roads or other physical features of the buffer area or other factors considered by the Committee. If the General Plan land use designation of the adjacent land is amended in the future to a designation other than Agricultural, the need for the buffer area will be eliminated and the land use restrictions imposed pursuant to this Policy will cease at that time.

- **Policy 8.B.1:** Limit intrusion of urban development into agricultural areas.
  - **Implementation Program 8.B.a:** Make one of the following findings before approving expansion of identified community boundaries established on the General Plan land use diagrams:

    (a) the proposed development would not result in reduced productivity or increased costs of an agricultural operation;

    (b) the proposed development would not contribute to the deterioration of the rural setting, agricultural landscape, and operation practices of the adjacent agricultural areas; or

    (c) the community's need for the development in the proposed location is so important as to justify an exception to the policies and implementation programs contained within this Element.
- **Policy 8.B.2:** Protect and encourage productive use of valuable agricultural lands and areas that provide buffers between identified communities.
- **Policy 8.B.3:** Reduce economic pressure for conversion of agricultural land.
  - **Implementation Program 8.B.b:** Allow uses accessory or complementary to agricultural operations as permitted or conditional uses in order to make agricultural operations more profitable and reduce pressure to convert agricultural land.
- **Policy 8.B.4:** Limit the intrusion of growth-inducing public services, such as public sewer systems and potable public water, into agricultural areas.
- **Policy 8.B.5:** Encourage development of non-agricultural lands before development of land designated Agricultural by the General Plan land use diagrams.
- **Policy 8.B.6:** Refer applications for discretionary land use entitlements submitted to the Community Resources Agency proposing development of parcels that are zoned AE (AE-37, AE-80 or AE-160), are at least 37 gross acres in area and are located adjacent to land designated for agricultural use to the Agricultural Advisory Committee for review and recommendation regardless of the General Plan land use designation of the parcel to allow an opportunity to comment on impacts to adjacent agricultural land.
- **Policy 8.C.1:** Allow agriculturalists to manage their operations in an efficient, economic manner while minimizing conflict with non-agricultural uses.
  - **Implementation Program 8.C.a:** Apply the provisions of the "Right to Farm" Ordinance (Tuolumne County Ordinance Code, Chapter 5.20) to minimize conflict and resolve disputes between agricultural operations and nearby non-agricultural land uses.
  - **Implementation Program 8.C.b:** Minimize impacts to existing agricultural operations or use and resolve potential conflicts between agricultural operations and new development through conditions of approval made a part of such new development.
  - **Implementation Program 8.C.c:** Require that maintenance of preexisting common fence lines be the joint responsibility of the existing agricultural use and adjacent new development through conditions of approval made a part of such new development.
- **Policy 8.C.2:** Establish a buffer between agricultural land uses and residential/non-agricultural land uses. It shall be the obligation of the party seeking the land use change to ensure that a sufficient buffer is established between the parcels. The buffer shall favor protection of the agricultural land.

- **Implementation Program 8.C.d:** Implement the standards for buffer zones between new non-agricultural development and land designated for agricultural use established in Policy 8.A.4.

- **Policy 8.D.3:** Recognize that it is the express intent of this Goal to not conflict with or supersede any conditions set forth under state laws, County ordinances, or resolutions adopted pursuant to the California Land Conservation Act (Williamson Act) of 1965, as amended. Where conflicts exist between development regulations and Williamson Act contracts, the more restrictive requirements will prevail.

- **Policy 8.E.2:** Allow agritourism activities on land zoned for agriculture (A or AE) or land that is subject to the Williamson Act land conservation program when such activities are accessory to the primary agricultural use of the land.

  - **Implementation Program 8.E.c:** Amend the Uniform Zoning Ordinance, Title 17 of the Tuolumne County Ordinance Code, to allow agritourism activities as permitted or conditional uses on land zoned for agriculture when such uses are accessory to the agricultural use of the land.

  - **Implementation Program 8.E.d:** Amend Resolution 106-04 to allow agritourism activities as compatible or conditional uses on land in the Williamson Act land conservation program when such activities are consistent with the Williamson Act.

PROJECT IMPACTS

This section presents a programmatic-level analysis of potential impacts associated with agricultural and forest from development facilitated by implementation of the proposed General Plan Update. Evaluation of environmental impacts associated with the General Plan Update considers the development that would be facilitated by the General Plan Update, in accordance with goals, policies, and implementation programs, to accommodate projected growth in the County. It should be noted that the County's population is projected to grow by 0.6 percent annually over the planning horizon (2040). As discussed in detail in Chapter 2, "Project Description," and the introduction to Chapter 3, this is a relatively low amount of growth.

Impact 3.2-1: Loss of High-Value Agricultural Land

The General Plan Update would re-designate 4,509 acres, of a total 160,735 acres, of land designated for Agriculture to residential or commercial uses. While policies in the General Plan Update would limit development in agricultural areas and minimize the potential for indirect conversion of agricultural land to other uses, re-designation of Agricultural land may occur on parcels that would be considered High-Value Agricultural Land, according to the Tuolumne County Agricultural Rating System Matrix. The re-designation of Agricultural Land to residential or commercial use would remove barriers to conversion of agricultural land to non-agricultural uses. This would reduce the value of agricultural land under the Agricultural Rating System. Because the quantity and location of potential High-Value Agricultural Land is currently unknown, based on readily available data and the site-by-site evaluation needed under the System Matrix, the extent of the potential conversion cannot be determined at this time; however, the loss of High-Value Agricultural Land would be **significant**.

As discussed in Section 3.2.1, "Environmental Setting," 160,735 acres of land in unincorporated Tuolumne County are currently designated as Agricultural Land. The General Plan Update designates a total of 156,226 acres of Agricultural Land, which would result in re-designation of 4,509 acres (2.8 percent) of Agricultural Land to other uses. Of this re-designated land, approximately 286 acres are located on public land under the jurisdiction of another local, state, or federal agency and 370 acres are being re-designated to TPZ to reflect the current zoning and land use. One hundred and thirty-six parcels, totaling 3,589 acres, are being redesigned to ER, HR, RR, and LR land use designations, which are rural residential designations that allow general farming and ranching in addition to a residence and other compatible land uses, with minimum parcel sizes ranging from two to ten acres in size. Sixty-three parcels, totaling 241 acres, are being re-designated to urban land uses, such as LDR and MDR. Approximately 21 acres are changing to R/P and 2

acres to NC, to reflect the current zoning on those properties. Generally, parcels that would be re-designated from Agricultural to residential or commercial uses would be located within or adjacent to existing communities and therefore, if developed, would tend to channel growth toward identified communities and away from rural areas.

The General Plan Update contains policies to limit development in agricultural areas (Policy 8.B.1). These policies include limitations on expansion of public services, such as water and sewer systems into agricultural areas (Policy 8.B.4), and encourage development of non-agricultural lands before development of lands used for agricultural purposes (Policy 8.B.5). Policy 8.B.1 would limit intrusion of urban development into agricultural areas, and Implementation Program 8.B.a requires the County to make findings prior to approving expansion of identified community boundaries, that productivity would not decrease or cost increase and that the development would not contribute to deterioration of the rural setting or agricultural landscape. In addition, policies included in the General Plan Update would generally require that a 200-foot-wide buffer is maintained between proposed developments and agricultural lands (Policies 8.A.4, 8.B.2, and 8.C.2). These policies would minimize the potential for indirect conversion of agricultural lands that could result from creating land use conflicts and nuisance issues (between agricultural operators and residents) and also from increased development pressure resulting from increased property value. Policy 8.A.4 provides a process for the buffer to be reduced by the Board of Supervisors after considering the recommendation of the Agricultural Advisory Committee. However, appropriate requests, per Policy 8.A.4, would be based on factors such as topography, vegetation, roads or other physical features of the buffer area or other factors and would thus be limited.

The proposed project also includes amendments to Title 17 of the Tuolumne County Ordinance Code, consistent with Policies 8.E.1 through 8.E.3 in the Agriculture Element, which would expand the range of economic activities allowed on land zoned for agriculture. These amendments would allow agritourism activities that complement local agricultural production and special events that are “accessory to the agricultural use of the land.” This would not convert agricultural lands to non-agricultural uses. Rather, the intent is to increase economic viability of agricultural land by adding additional economic activity that is based on agriculture, and thereby reduce the pressure to convert the land to an otherwise more profitable non-agricultural use.

As discussed above, the General Plan Update would re-designate 4,509 acres of land from Agricultural to residential or commercial use. Some of these properties have long been zoned for residential or commercial uses, even though the General Plan land use map has designated them for Agriculture. Some of these parcels may be rated as High-Value Agricultural Land, once they are evaluated under the Tuolumne County Agricultural Rating System Matrix. The General Plan Update contains policies that are protective of agricultural land and limit the potential for future pressure of conversion of agricultural land to non-agricultural uses, as described above. Even though many of these parcels are already zoned for non-agricultural development, changing the General Plan land use designation from an agricultural use to residential or commercial use would remove barriers to conversion of agricultural land to non-agricultural uses. If developed with a non-agricultural use, this could reduce the value of some farmland under the Agricultural Rating System Matrix from High-Value Agricultural Land to Agricultural Lands of Local Importance or Limited Importance. This could occur through development of parcels previously designated for Agriculture, or through actions that would change value factors, such as provision for public services (e.g., potable water, sewer, power), changes to parcel size, or construction of adjacent roadways. Because the quantity and location of potential High-Value Agricultural Land is currently unknown based on readily available data, the extent of the potential conversion cannot be determined at this time. The loss of High-Value Agricultural Land would be a **significant** impact.

Mitigation Measures

Mitigation Measure 3.2-1: Evaluate Land Using Tuolumne County's Agricultural Rating System Matrix and Conserve High-Value Agricultural Land at a 1:1 Ratio

The County will include the following as a new implementation program of the General Plan Update.

Implementation Program 8.A.x [Specific numbering to be provided with Final General Plan Update]: Establish a new procedure for evaluating development on lands with an Agricultural land use designation that includes the following requirements:

> For any proposed non-agricultural development on land designated Agricultural (according to the land use diagram in the General Plan Update), the County shall require, prior to issuing a completeness letter, the submittal to and approval by the Tuolumne County planning staff of the Tuolumne County Agricultural Rating System Matrix to determine whether the land proposed for development qualifies as High-Value Agricultural Land. If the results of the Tuolumne County Agricultural Rating System Matrix provided in Exhibit 3.2-1 of the Recirculated Draft EIR indicate that the land proposed for development does not qualify as High-Value Agricultural Land, no further action is required. If the results of the Tuolumne County Agricultural Rating System Matrix indicate that the land proposed for development does qualify as High-Value Agricultural Land, the County, consistent with Implementation Program 8.A.a, shall require the applicant to purchase agricultural conservation easements at a 1:1 ratio (acres preserved : acres converted), commensurate with the type of High-Value Agricultural Land (e.g., grazing land) that would be converted by the project. Proof of the purchase shall be provided to the County prior to issuance of grading permits.

Significance after Mitigation

Implementation of Mitigation Measure 3.2-1 would compensate for the conversion of any High-Value Agricultural Land to Agricultural Lands of Local Importance or Limited Importance. However, although compensation would prevent other existing High-Value Agricultural Land from future conversion, it would not replace the lost High-Value Agricultural Land. Therefore, this impact would be **significant and unavoidable**.

Impact 3.2-2: Conflict with Land Zoned as Forest Land, Timberland, or Timber Production Zone

Although the General Plan Update would redesignate 1,194 acres of land designated Timberland to Public Land, this change corrects a previous error in the land use map and constitutes a "paper change" with no resulting physical effect. General Plan Update policies also would protect timber resources from development. Impacts from the rezoning or loss of timber land would be **less than significant**.

The General Plan Update would channel growth toward identified communities and away from rural areas, which is intended to reduce pressure for development of productive timberland. Under the Community Development and Design Element, 85,848 acres would be designated as Timberland, a reduction of 1,194 acres (1.4 percent) from the 87,042 acres designated under the 1996 General Plan. The acreage of designated Timberland would primarily decrease because the land use map would be updated to correctly reflect lands under public ownership, the Public land use designation. This designation identifies lands that are owned by public agencies and recognizes that these lands are exempt from County land use regulations. This designation applies to lands, such as the Stanislaus National Forest, Yosemite National Park, Columbia State Historic Park, Railtown 1897 State Historic Park, and lands under the jurisdiction of the U.S. Bureau of Land Management, U.S. Bureau of Reclamation, public schools, public utilities and other public agencies, as well as the County's own property. This decrease in acreage of land designated as Timberland reflects a correction in the land use map from Timberland to Public Land, which constitutes a "paper change" with no resulting physical effect because the underlying property ownership (along with the actual agency jurisdiction) and existing land management responsibility would not change.

Areas designated as Timber Production are consistent with TPZ lands because the growing and harvesting of timber and other forest products occurs in concert with limited, low-intensity public and private commercial recreational uses. Exhibit 3.2-2 shows areas that would be designated for timber production.

Under the General Plan Update, one parcel (under 2 acres) would be re-designated from Timberland Production (or TPZ) to Low Density Residential. The remaining 85,848 acres of designated Timberland would still be available for timber production subject to federal land management policies. Under Implementation Programs 7.A.f and 7.A.g, the County will consider expanding the permitted uses and conditionally permitted uses in the TPZ zoning district. This would allow for inclusion of facilities that are integrally related to the growing, harvesting, and processing of forest products, as well as other support services, to be zoned as TPZ. Because these uses would support and protect timber production, conflicts with TPZ lands or the Timberland Productivity Act would not likely occur.

The General Plan Update encourages the conservation and management of timberlands through incentive programs (Policy 7.A.1), including tax incentives (Implementation Program 7.A.a) and recognition programs (Implementation Program 7.A.b). For example, Implementation Program 7.A.b encourages owners of timberlands which do not qualify for property tax incentives under the Timberland Productivity Act to continue timber production through such incentives as recognition programs, or other local, State, or Federal incentive programs that may become available. Conflicts between timberland and non-timber-related uses would be minimized (Policy 7.A.2) through actions such as strategically siting residential development (Implementation Programs 7.A.c and 7.A.d) and maintaining the Right to Farm Ordinance (Implementation Program 7.A.e). In addition, the General Plan Update encourages well-planned timber-related uses in commercial timberland areas (Policy 7.A.3, Implementation Programs 7.A.f, 7.A.g, and 7.A.h).

Thus, because the General Plan Update would not decrease the availability of timber resources and would encourage conservation of timber resources, decrease conflicts between timberland and non-timber-related uses, and encourage timber-related uses in commercial timberland areas, this impact would be **less than significant**.

Mitigation Measures

No mitigation is required.

Impact 3.2-3: Conflict with Williamson Act Contracts, Agricultural Preserves, or Agricultural Preserve Overlay Districts

Future development under the General Plan Update could conflict with Williamson Act contracts and lands within agricultural preserves on some properties. If land under a Williamson Act contract is proposed for development, the property owner could either allow the contract to expire under a notice of non-renewal or obtain a cancellation. Land under agricultural preserves would need to be re-zoned to remove the County's AP Combining District or approved by the Board of Supervisors to be removed from a preserve. No development would be allowed until the Williamson Act contract is expired or cancelled and the parcel is removed from an agricultural preserve; therefore, direct conflicts with Williamson Act contracts would not occur. However, the overarching purpose of the Williamson Act is to promote voluntary farmland conservation; therefore, the redesignation of land currently under Williamson Act contracts to non-agricultural uses would constitute a conflict with the overall intent of the Williamson Act. This impact would be **significant**.

As shown in Exhibit 3.2-1, a substantial portion of western Tuolumne County is under Williamson Act contracts for the preservation of agricultural land. Properties under Williamson Act contract are generally located in rural areas, although a small number of properties occur in the vicinity of communities such as East Sonora, Jamestown, and Tuolumne. Based on the locations of Williamson Act parcels shown in Exhibit 3.2-1 and of the parcels with proposed land use changes, the General Plan Update would redesignate individual Agricultural parcels that are currently under Williamson Act contracts to residential uses. Of the 122,905 acres currently under a Williamson Act contract in the County, 134 acres would be re-designated

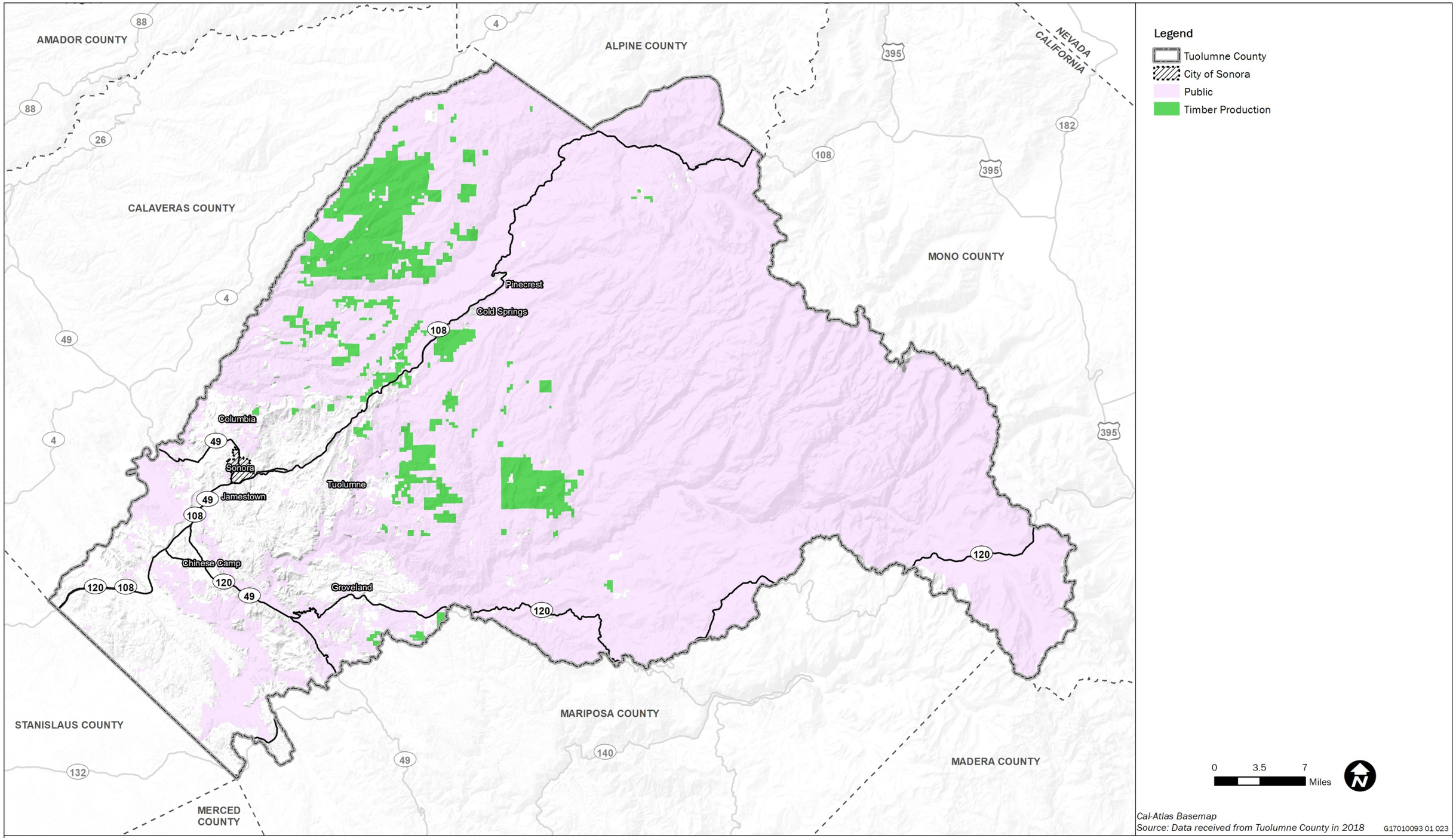
from agricultural land to a non-agricultural use, 63 acres of which the property owners have filed non-renewal notices.

Establishment of the agricultural preserve, under the County's AP Combining District, is a prerequisite for landowners to enter into land conservation contracts with the County. Under the General Plan Update, 1,397 acres of land in Tuolumne County are currently within an agricultural preserve that would be re-designated from Agricultural Land to a non-agricultural use. Similar to changes in land designation for parcels under Williamson Act contracts, a change in zoning would be required before development could occur on parcels zoned as an agricultural preserve. Land not meeting the requirements of the AP Combining District may be removed from an agricultural preserve upon request from the land owner and approval by the Board of Supervisors.

As discussed above under Impact 3.2-1, the General Plan Update contains various policies that are aimed to limit the conversion of agricultural lands to non-agricultural uses including limiting intrusion of urban development into agricultural areas (Policy 8.B.1); requiring findings to be made prior to approval of identified community boundary expansion that protect agricultural operations and rural/agricultural settings (Implementation Program 8.B.a); limiting expansion of public services, such as water and sewer systems into agricultural areas (Policy 8.B.4); encouraging development of non-agricultural lands before development of agricultural lands (Policy 8.B.5); and requiring of a 200-foot-wide buffer between proposed developments and agricultural lands (Policies 8.A.4, 8.B.2, and 8.C.2). Policy 8.A.4 provides a process for the buffer to be reduced by the Board of Supervisors after considering the recommendation of the Agricultural Advisory Committee. Requests, per Policy 8.A.4, would be based on topography, vegetation, roads or other physical features of the buffer area or other factors and would thus be limited. Because these policies would limit conversion of agricultural land, there would be limits to conflicts with Williamson Act contract. The General Plan Update also recognizes laws and regulations adopted to address the Williamson Act and requires that the more restrictive requirements be maintained if conflicts arise.

In addition, the General Plan Update would expand agritourism activities compatible with the Williamson Act land conservation program, thereby encouraging maintenance of Williamson Act contracts, as appropriate. Implementation Program 8.E.d provides that the County will amend Resolution 106-04 to allow agritourism activities as compatible or conditional uses on land in the Williamson Act land conservation program only when such activities are consistent with the Williamson Act. The Williamson Act defines "'compatible use' as any use determined by the county or city…pursuant to Section 51231, 51238, or 51238.1 or by this act to be compatible with the agricultural, recreational, or open-space use of land within the preserve and subject to contract," including agricultural use, recreational use or open-space use (Gov. Code Section 51201(e)). Conditional uses are compatible uses that require a conditional use permit, which would allow the County to evaluate the proposed use on a case-by-case basis and impose additional restrictions (or deny the permit altogether) if necessary. Implementation of proposed Implementation Program 8.E.d would result in amending Resolution 106-04 to allow agritourism activities as compatible or conditional uses on land in the Williamson Act land conservation program when such activities are consistent with the Williamson Act. Although the specific amendments to Resolution 106-04 have not been finalized yet, the impacts of the proposed expansion of agritourism-related uses are evaluated throughout this Draft EIR.

If land under a Williamson Act contract is proposed for development of a non-agricultural use (or other use not compatible with the Williamson Act contract), the property owner could either allow the contract to expire under a notice of non-renewal or obtain a cancellation. A landowner may obtain a cancellation of the Williamson Act contract by demonstrating that the cancellation is consistent with the purposes of the Act and that it is in the public interest. The grounds for cancellation are codified in Government Code Section 51282, and cancellation is subject to discretionary approval by the County. If this were to occur, the landowner would be required to pay a fee of 12.5 percent of the unrestricted value of the property. Therefore, although the General Plan Update designates several parcels currently under Williamson Act contracts for residential development, the Williamson Act contracts for each parcel would need to be cancelled or allowed to expire (with all pertinent fees paid and other requirements met) prior to approval of development of any project that would conflict with the provisions of the Williamson Act contract. Therefore, direct conflicts with Williamson Act contracts would not occur.



Cal-Atlas Basemap
Source: Data received from Tuolumne County in 2018

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Exhibit 3.2-2

Proposed Timber Production Designation

However, the primary purpose of the Williamson Act is to establish a voluntary farmland conservation program by providing landowners tax incentives for agreeing to not develop their property for a period of time. The redesignation of 134 acres of land currently under Williamson Act contracts, approximately 63 acres of which the landowners have filed non-renewal notices for, to a non-agricultural use would counteract the intent of the Williamson Act by changing the underlying land use designation. This would remove an obstacle to development. Therefore, although the General Plan Update would not result in direct conflicts with a Williamson Act Contract (because such a contract would need to be expired or cancelled for development to occur), the proposed redesignation of 134 acres of Agriculture land currently under Williamson Act contract would conflict with the overarching intent of the Williamson Act. Additionally, the proposed redesignation of 1,397 acres of land in Tuolumne County that are currently within an agricultural preserve would conflict with the protective intent of Agricultural Preserve Overlay Districts. This impact would be **significant**.

Mitigation Measure: 3.2-3 Adopt an Implementation Program to Limit Growth-Inducing Public Services

The County shall add the following implementation program under Policy 8.B.4 of the General Plan Update:

Implementation Program 8.B.x [Specific numbering to be provided with Final General Plan Update]: Establish development standards to provide County staff with discretion to deny development that proposes to introduce growth-inducing public services like public sewer systems and potable public water into agricultural areas.

Significance after Mitigation

Mitigation Measure 3.2-3 requires the County to adopt an implementation program to establish development standards to provide staff with discretion to deny development that may result in the introduction of growth-inducing public services into agricultural areas. This mitigation would reduce the potential for conflicts with Williamson Act contracts, Agricultural Preserves, or Agricultural Preserve Overlay Districts. However, to reduce this impact to a less-than-significant level, the County would need to prohibit cancellation of Williamson Act Contracts. Prohibiting cancellation of Williamson Act contracts would violate the provision of the California Land Conservation Act. Thus, because no feasible mitigation measures exist to reduce this impact to a less-than-significant level, the impact would be **significant and unavoidable**.

Impact 3.2-4: Conflicts with Agricultural Land Uses

The General Plan Update would alter the present land use pattern in portions of the County and may result in incompatibilities where community and agricultural uses would be located in close proximity to each other. The proposed allowance of special events on agricultural land also may result in incompatibilities with nearby agricultural operations. However, potential conflicts would be reduced through the proposed policies that guide growth to identified communities, the review process for Conditional Use Permits, and application of the County's Right to Farm Ordinance. Therefore, impacts that would occur from development and commercial events would be **less than significant**.

The General Plan Update would focus future development within identified communities and their urban development boundaries. As discussed under Impact 3.2-1, the General Plan Update would re-designate approximately 4,509 acres of land that is currently designated Agricultural, and mostly located within or adjacent to identified communities, to residential uses.

The following discussion focuses on impacts to agricultural uses and residential uses that could occur with implementation of the General Plan Update because these land uses are generally more sensitive and prone to conflict with adjacent agricultural land uses than commercial or industrial land uses. In addition, where conversion of Agricultural Land is anticipated, most of the conversion would be to residential land use. Development adjacent to agricultural uses may generate land use conflicts that could adversely affect both types of uses. In addition, the proposed allowance of commercial events on agricultural properties could generate land use conflicts with surrounding agricultural operations.

Impacts to Agricultural Uses

The placement of residences and other sensitive land uses (such as schools) adjacent to cultivated agriculture can create incompatibilities that reduce the economic viability of agriculture. Buffers that restrict application of pesticides, noise and dust complaints, and pilfering of produce can all affect agriculture. Some farmers whose operations may be sensitive to nearby residences voluntarily limit their hours of operation and do not intensively use the portions of their property closest to sensitive land uses, in effect establishing informal buffer zones on their own property. This has the effect of lowering crop yields, which can potentially affect the long-term economic viability of the agricultural operation. This could ultimately result in pressure to convert agricultural if the economic impacts become severe enough. However, harvest crops are minimal in Tuolumne County, and agricultural land is primarily used as grazing land, which requires large areas for livestock foraging and causes fewer compatibility issues. In addition, the General Plan Update would require a 200-foot-wide buffer to be created on the parcel proposing development (not existing agricultural lands) and to be situated between proposed developments and agricultural lands (Policies 8.A.4, 8.B.2, and 8.C.2), unless exceptions are granted due to local circumstances. Policy 8.A.4 provides a process for the buffer to be reduced by the Board of Supervisors after considering the recommendation of the Agricultural Advisory Committee. Appropriate requests for reductions, per Policy 8.A.4, include site specific conditions such as topography, vegetation, roads or other physical features of the buffer area or other factors and would thus be limited to the appropriate context. These policies would limit potential conflicts with agricultural land. Thus, the placement of residential and other sensitive lands near agricultural land that exists in Tuolumne County might cause occasional incompatibilities, it is not expected that this would be substantial, given the type of agriculture common to the County and the buffers and other factors resulting from implementation of General Plan Update policies. Therefore, it is not expected that the General Plan Update would result in incompatibilities that lead to pressure for substantial land conversion, and conflicts would be not be considered substantial. See, also, the discussion regarding residential uses, below.

Impacts to Residential Uses

Those residing adjacent to agricultural land commonly cite odor nuisance impacts, noise from equipment, dust, and pesticide spraying as typical land use conflicts. Pesticide use on nearby crops and the suspension of dust from operation of equipment and earth-moving activities could create health concerns for residents. Additionally, odors from fertilizers, herbicides, pesticides, and equipment exhaust can be incompatible with residential uses. Agricultural equipment can generate substantial noise levels. In addition, the development of residential uses near timber land could result in exposure to normal industry practices that generate dust, smoke, noise, chemical pesticides and herbicides, and truck traffic.

The General Plan Update contains implementation programs that allow agriculturalists to manage their operations in an efficient, economic manner while minimizing conflicts with non-agricultural uses (Policy 8.C.1). These implementation programs consist of provisions in the County's Right to Farm Ordinance (Implementation Program 8.C.a) and use of conditions of approval made as part of new development (Implementation Program 8.C.b). The Right to Farm Ordinance promotes a "good neighbor policy" between agriculturalists and residents by advising purchasers and residents of nearby property of inherent potential problems such as sounds, odors, dust, and chemicals from agricultural operations. Neighbors also are notified that they should be prepared to accept such inconveniences or discomforts as a normal and necessary aspect of living in a county with a strong rural character and a healthy agricultural sector. In addition, the General Plan Update would require a 200-foot-wide buffer between proposed developments and agricultural lands (Policies 8.A.4, 8.B.2, and 8.C.2), with some exceptions, which would minimize land use conflicts. Policy 8.A.4 provides a process for the buffer to be reduced by the Board of Supervisors after considering the recommendation of the Agricultural Advisory Committee. However, appropriate requests for reductions, per Policy 8.A.4, include site specific conditions such as topography, vegetation, roads or other physical features of the buffer area or other factors and thus appropriate reductions would be limited to those related to the conditions of the land. These policies would limit potential conflicts between agricultural land and residential uses.

The existing agricultural industries located within the plan area are a major contributor to the County's economy, and to protect the viability of this valuable industry, the General Plan Update encourages productive use of valuable agricultural lands (Policy 8.B.2), and reduces economic pressures for conversion

of agricultural lands (Policy 8.B.3) by allowing accessory or complementary uses to agricultural operations (Implementation Program 8.B.b). The General Plan Update also includes amendments to Title 17 of the County's Ordinance Code, consistent with Policies 8.E.1 through 8.E.3 in the updated Agriculture Element, which would expand the range of economic activities allowed on land zoned for agriculture. These amendments would allow agritourism activities that complement local agricultural production and special events that are "accessory to the agricultural use of the land."

Specifically, the amendments to Title 17 (See Appendix F) would allow the following permitted uses in the Exclusive Agricultural, Thirty-Seven Acre Minimum (AE-37), Exclusive Agricultural, Eighty Acre Minimum (AE-80) and Exclusive Agricultural, One Hundred Sixty Acre Minimum (AE-160) zoning districts:

- one guesthouse per parcel;
- agricultural marketing facilities or activities;
- agricultural by-product processing facilities accessory to agricultural operations, including commercial composting facilities;
- U-pick operations;
- bed and breakfast establishments within a permitted single-family dwelling, not to exceed six guest bedrooms;
- farm stay, not to exceed six guest bedrooms;
- guest ranch, not to exceed six guest bedrooms or accommodations for 20 persons, whichever is less;
- educational workshops, craft demonstrations, or demonstration gardens accessory to the agricultural use;
- commercial events, subject to the events standards in Section 17.52.220;
- seasonal activities such as crop mazes, pumpkin patches, and berry harvests;
- petting zoo accessory to the primary agricultural use;
- roadside stand up to 1,500 square feet in area;
- energy-generating facilities accessory to the agricultural use; and
- reservoirs for storage of water by a public utility.

As discussed above in Section 3.2.1, "Environmental Setting," a study was prepared to examine how the number of agritourism operations may increase from the current number in the County through 2040. The study's findings are based on an evaluation of historic growth in the local agritourism economy, changes in the rate of farms participating in agritourism, projected changes in local population, and composition of the current agritourism sector in the state. The study concluded that the proposed changes under the General Plan Update in the amount of land designated for agricultural use would not be sufficient to affect the local market for agritourism in the County. The study forecasts that, based on historic growth rates in the high end of the possible range, agritourism operations may increase from 26 in 2018 to a total of between 46 and 85 in 2040. The study predicts a moderate range of 28 to 43 operations in 2040 (based on an evaluation of the percentage of farms engaged in agritourism in comparison counties) and concludes that the moderate range is considered the most likely scenario. Of the 26 agritourism operations existing in 2018, some occur on lands that are not designated or zoned for agricultural uses. The average site size of each agritourism operation is 43.88 acres. Thus, at the high end of the moderate projection, a total of approximately 1,890 acres of agricultural lands (for 43 operations) would be engaged in some kind of agritourism activity by year

2040; at the low end of the projection, less than 1,230 acres would be engaged in some kind of agritourism (for 28 operations). (Note that these totals include existing agritourism operations.) The majority of these businesses would be expected to be centered on animal products and activities and miscellaneous products and services, followed by event venues, such as wedding sites. Proposed Title 17 Ordinance Code Section 17.52.220 restricts the size and frequency of special events associated with agritourism uses and requires specific standards, including standards for parking, noise, lighting. (See Appendix F for the specific proposed standards.) Other types of agritourism businesses could include apple, Christmas tree, wine, and beer production. Although the percentage of farms engaged in agritourism in the County (4.6 percent) is higher than the state average (2.18 percent) or the Sierra Mountains Region average (3.14 percent), the existing and forecasted number of agritourism operations is relatively low compared to a high of 135 agritourism operations in Sonoma County in year 2012 (Lisa Wise Consulting 2018).

The construction of additional agricultural facilities that relate to agritourism operations, such as guesthouses, roadside stands, energy-generating facilities, and composting facilities, would limit conversion of farmland by enhancing the economic viability of agriculture. The proposed changes to Title 17 of the County Ordinance Code restrict the size of bed and breakfast establishments, farm stays, and roadside stands by requiring that other new agricultural facilities be accessory to the primary agricultural use. Furthermore, agritourism uses would be expected to increase the economic value of land as an agricultural use and could result in a long-term decrease in pressure for urban development because maintenance of agricultural uses alongside these types of businesses would be incentivized. Thus, increased allowance of agritourism in the County would be protective of agricultural land uses. Impacts associated with promotion of agritourism are addressed in this EIR. Please see Sections 3.12, “Noise,” and 3.16, “Transportation and Circulation,” for specific information regarding potential noise- and traffic-related impacts associated with increases in agritourism resulting from General Plan Update policies.

Thus, because new residential uses in the County would not be expected to adversely affect existing agricultural practices due to policies and programs that limit conflicts to agricultural uses, establishment of buffer zones between most agricultural and non-agricultural uses, and minimization of agricultural land conversion through allowance of agritourism, the potential for conflicts would be minimal.

Conclusion

As discussed above, it is not expected that the General Plan Update would result in incompatibilities that lead to pressure for substantial land conversion, and conflicts with agricultural uses would not be considered substantial. Likewise, impacts associated with agricultural operations would also not result in substantial conflicts with residential uses. This impact would be **less than significant**.

Mitigation Measures

No mitigation is required.

3.3 AIR QUALITY

This section includes a discussion of the existing air quality conditions, and relevant environmental and regulatory settings pertaining to air quality within Tuolumne County. In addition, this section analyzes the effects of projected development under the General Plan Update on air quality emissions and the associated impacts. It discusses both temporary air quality impacts relating to construction activity and long-term air quality impacts associated with projected development under the General Plan Update. Comments were received on the Draft EIR regarding the assessment of environmental impacts and the effects of agritourism on air quality. The effects of additional vehicle trips, including those associated with agritourism, are evaluated in Impact 3.3-4.

3.3.1 Environmental Setting

LOCAL CLIMATE AND AIR QUALITY

Tuolumne County is located within the Mountain Counties Air Basin (MCAB), along with Amador, Calaveras, El Dorado (western), Mariposa, Nevada, Placer (central), Sierra, and Plumas counties. The general climate of the MCAB varies considerably with elevation and proximity to mountain peaks. The terrain features of the MCAB make it possible for various climates to exist within the general area. The pattern of mountains and hills is primarily responsible for the wide variations of rainfall, temperatures, and localized winds that occur throughout the region. Temperature variations have an important influence on MCAB wind flow, dispersion along mountain ridges, vertical mixing, and photochemistry. The Sierra Nevada receives large amounts of precipitation from storms moving over the continent from the Pacific Ocean. Precipitation in the MCAB is highly variable, depending on elevation and location. Areas in the eastern portion of the MCAB have relatively high elevations and receive the most precipitation. Precipitation levels decline toward the western areas of the MCAB. Climates vary from alpine in the high elevations of the eastern areas to more arid at the western edge of the MCAB.

POLLUTANTS

Primary criteria pollutants are emitted directly from a source (e.g., vehicle tailpipe, an exhaust stack of a factory) into the atmosphere. Primary criteria pollutants include carbon monoxide (CO), reactive organic gases (ROG), oxides of nitrogen (NO_X), respirable and fine particulate matter (PM_{10} and $PM_{2.5}$), sulfur dioxide (SO_2), and lead. Secondary criteria pollutants are created by atmospheric chemical and photochemical reactions; ROG together with NO_X form the building blocks for the creation of photochemical (secondary) pollutants. Secondary criteria pollutants include oxidants, ozone, and sulfate and nitrate particulates (smog). The characteristics, sources, and effects of the criteria air pollutants of most concern are described below.

Carbon Monoxide

CO is a local pollutant that is found in high concentrations only near the source. The major source of CO, a colorless, odorless, poisonous gas, is automobile traffic. Elevated concentrations, therefore, are usually found only near areas of high traffic volumes. CO's health effects are related to its affinity for hemoglobin in the blood. At high concentrations, CO reduces the amount of oxygen in the blood, causing heart difficulties in people with chronic diseases, reduced lung capacity, and impaired mental abilities.

Ozone

Ozone is produced by a photochemical reaction (triggered by sunlight) between NO_X and ROG. NO_X is formed during the combustion of fuels, while ROG is formed during combustion and evaporation of fossil fuels and organic solvents. Because ozone requires sunlight to form, it mostly occurs in concentrations considered serious between the months of April and October. Ozone is a pungent, colorless, toxic gas with direct health

effects on humans, including respiratory and eye irritation and possible changes in lung functions. Groups most sensitive to ozone include children, the elderly, people with respiratory disorders, and people who exercise strenuously outdoors.

Nitrogen Dioxide

NO_2 is a byproduct of fuel combustion, with the primary source being motor vehicles and industrial boilers and furnaces. The principal form of NO_X produced by combustion is NO, but NO reacts rapidly to form NO_2, creating the mixture of NO and NO_2 commonly called NO_X. NO_2 is an acute irritant. A relationship between NO_2 and chronic pulmonary fibrosis may exist, and an increase in bronchitis in young children at concentrations below 0.3 part per million may occur. NO_2 absorbs blue light and causes a reddish-brown cast to the atmosphere and reduced visibility. It can also contribute to the formation of PM_{10} and acid rain.

Respirable and Fine Particulate Matter

PM_{10} is respirable particulate matter (PM) measuring no more than 10 microns in diameter, while $PM_{2.5}$ is fine PM measuring no more than 2.5 microns in diameter. PM_{10} and $PM_{2.5}$ are mostly dust particles, nitrates, and sulfates. Both PM_{10} and $PM_{2.5}$ are byproducts of fuel combustion and wind erosion of soil and unpaved roads and are directly emitted into the atmosphere through these processes. They are also created in the atmosphere through chemical reactions. The characteristics, sources, and potential health effects associated with respirable particulates (those between 2.5 and 10 microns in diameter) and fine particulates ($PM_{2.5}$) can be very different. Respirable particulates generally come from windblown dust and dust kicked up from mobile sources. Fine particulates are generally associated with combustion processes and are formed in the atmosphere as a secondary pollutant through chemical reactions. $PM_{2.5}$ is more likely to penetrate deeply into the lungs and poses a health threat to all groups, but particularly to the elderly, children, and those with respiratory problems. More than half of the PM_{10} and $PM_{2.5}$ that is inhaled into the lungs remains there. These materials can damage health by interfering with the body's mechanisms for clearing the respiratory tract or by acting as carriers of an absorbed toxic substance.

Sulfur Dioxide

SO_2 is a colorless, pungent, irritating gas formed primarily by the combustion of sulfur-containing fossil fuels. In humid atmospheres, SO_2 can form sulfur trioxide and sulfuric acid mist, with some of the latter eventually reacting to produce sulfate particulates. This contaminant is the natural combustion product of sulfur or sulfur-containing fuels. Fuel combustion is the major source, while chemical plants, sulfur recovery plants, and metal processing are minor contributors. At sufficiently high concentrations, SO_2 irritates the upper respiratory tract. At lower concentrations, when in conjunction with particulates, SO_2 appears able to do still greater harm by injuring lung tissues. Sulfur oxides, in combination with moisture and oxygen, can yellow the leaves of plants, dissolve marble, and eat away iron and steel. Sulfur oxides can also react to form sulfates, which reduce visibility.

Lead

Lead is a metal found naturally in the environment as well as in manufactured products. The major sources of lead emissions have historically been fuels in on-road motor vehicles (such as cars and trucks) and industrial sources. Today, the highest levels of lead in air are usually found near lead smelters. The major sources of lead emissions to the air today are ore and metals processing and piston-engine aircraft operating on leaded aviation gasoline. Depending on the level of exposure, lead can adversely affect the nervous system, kidney function, immune system, reproductive and developmental systems, and the cardiovascular system. Lead exposure also affects the oxygen-carrying capacity of the blood. Lead is persistent in the environment and accumulates in soils and sediments through deposition from air sources, direct discharge of waste streams to water bodies, mining, and erosion.

CURRENT AMBIENT AIR QUALITY

The local Air Pollution Control Districts (APCDs) and Air Quality Management Districts (AQMDs) are required to monitor air pollutant levels to ensure that air quality standards are met and, if they are not met, to develop strategies to meet the standards. Depending on whether the standards are met or exceeded, the local air basin is classified as being in "attainment" or "nonattainment." The MCAB violates the state ozone standard due to transport (i.e., air migration across air district lines) from the Sacramento Valley, the San Joaquin Valley, and the San Francisco Bay Area. The region is in attainment for the federal 1-hour standard, except for the western portions of El Dorado and Placer counties, which are part of the Sacramento federal nonattainment area. Because the California Air Resources Board (CARB) has determined that the region's ozone violations are the result of transport of emissions into the MCAB (CAPCOA 2015), requirements in the California Clean Air Act (CCAA) that would affect the air quality planning process of the local air districts have not been triggered. Instead, the region will benefit principally from emission reductions in the upwind areas through the application of "all feasible measures" (CARB 2001).

The Tuolumne County portion of the MCAB is a nonattainment area for the state standards for ozone (CARB 2017) and is unclassified or in attainment for the federal standards for ozone and for the federal and state standards for CO, nitrogen dioxide, SO_2, PM_{10}, $PM_{2.5}$, and lead (CARB 2015). The Tuolumne County Air Pollution Control District (TCAPCD) is responsible for implementing emissions standards and other requirements of federal and state laws regarding most types of stationary emission sources. CARB has determined that the ozone levels in Tuolumne County are caused by "overwhelming transport" of emissions into the air district (CAPCOA 2015). Therefore, the TCAPCD is relieved from preparing an attainment plan for ozone, and no other criteria air pollutant levels are high enough to require an attainment plan. Although there are no required attainment plans, or other local plans specifically addressing air quality, Tuolumne County must conform to existing state and federal air quality standards. Air quality data from the Sonora-Barretta Street monitoring station, which is located in the City of Sonora, are summarized in Table 3.3-1. As shown in Table 3.3-1, the state and federal 8-hour ozone standards were exceeded multiple times between 2014 and 2016.

Table 3.3-1 Ambient Air Quality Data

Pollutant	2014	2015	2016
Ozone, ppm, 1-hour			
Number of days of state exceedances (>0.09 ppm)	0	1	3
Ozone, ppm, 8-hour			
Number of days of state exceedances (>0.070 ppm)	16	11	45
Number of days of federal exceedances (>0.075 ppm)	2	4	25

Notes: ppm = parts per million.

Data obtained from the Sonora-Barretta Street Monitoring Station, 251 S. Barretta Street, Sonora CA.

Source: CARB 2018

SENSITIVE RECEPTORS

Ambient air quality standards have been established to represent the levels of air quality considered sufficient, with an adequate margin of safety, to protect public health and welfare. They are designed to protect that segment of the public most susceptible to respiratory distress, such as children under 14, the elderly over 65, persons engaged in strenuous work or exercise, and people with cardiovascular and chronic respiratory diseases. The majority of sensitive receptor locations are therefore residences, schools, and hospitals. Sensitive receptors are located throughout Tuolumne County.

3.3.2 Regulatory Setting

FEDERAL

U.S. Environmental Protection Agency

The U.S. Environmental Protection Agency (EPA) has been charged with implementing national air quality programs. EPA's air quality mandates are drawn primarily from the federal Clean Air Act (CAA), which was enacted in 1970. The most recent major amendments to the CAA were made by Congress in 1990.

Criteria Air Pollutants

The CAA required EPA to establish national ambient air quality standards (NAAQS). As shown in Table 3.3-2, EPA has established primary and secondary NAAQS for the following criteria air pollutants: ozone, CO, NO_2, SO_2, PM_{10}, $PM_{2.5}$, and lead. The primary standards protect public health, and the secondary standards protect public welfare. The CAA also required each state to prepare a state implementation plan (SIP) for attaining and maintaining the NAAQS. The federal Clean Air Act Amendments of 1990 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

Toxic air contaminants (TACs), or in federal parlance, hazardous air pollutants (HAPs), are a defined set of airborne pollutants that may pose a present or potential hazard to human health. 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.

A wide range of sources, from industrial plants to motor vehicles, emit TACs. The health effects associated with TACs are quite diverse and generally are assessed locally, rather than regionally. TACs can cause long-term health effects, such as cancer, birth defects, neurological damage, asthma, bronchitis, or genetic damage, or short-term acute affects, such as eye watering, respiratory irritation (a cough), runny nose, throat pain, and headaches.

For evaluation purposes, TACs are separated into carcinogens and noncarcinogens based on the nature of the physiological effects associated with exposure to the pollutant. Carcinogens are assumed to have no safe threshold below which health impacts would not occur. This contrasts with criteria air pollutants for which acceptable levels of exposure can be determined and for which the ambient standards have been established (Table 3.3-2). Cancer risk from TACs is expressed as excess cancer cases per one million exposed individuals, typically over a lifetime of exposure.

EPA regulates HAPs through its National Emission Standards for Hazardous Air Pollutants. The standards for a particular source category require the maximum degree of emission reduction that the EPA determines to be achievable. These standards, which are known as the Maximum Achievable Control Technology standards, are authorized by Section 112 of the 1970 CAA, and the regulations are published in 40 Code of Federal Regulations Parts 61 and 63.

STATE

CARB is the agency responsible for coordination and oversight of state and local air pollution control programs in California and for implementing the CCAA. The CCAA, which was adopted in 1988, required CARB to establish California ambient air quality standards (CAAQS) (Table 3.3-2).

Table 3.3-2 Ambient Air Quality Standards

Pollutant	Averaging Time	California (CAAQS) [a,b]	National (NAAQS)[c]	
			Primary[b,d]	Secondary[b,e]
Ozone	1-hour	0.09 ppm (180 µg/m^3)	–[e]	Same as primary standard
	8-hour	0.070 ppm (137 µg/m^3)	0.070 ppm (147 µg/m^3)	
Carbon monoxide (CO)	1-hour	20 ppm (23 mg/m^3)	35 ppm (40 mg/m^3)	Same as primary standard
	8-hour	9 ppm[f] (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 (188 µg/m^3)	–
Sulfur dioxide (SO_2)	24-hour	0.04 ppm (105 µg/m^3)	–	–
	3-hour	–	–	0.5 ppm (1300 µg/m^3)
	1-hour	0.25 ppm (655 µg/m^3)	75 ppb (196 µg/m^3)	–
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	12.0 µg/m^3	15.0 µg/m^3
	24-hour	–	35 µg/m^3	Same as primary standard
Lead [f]	Calendar quarter	–	1.5 µg/m^3	Same as primary standard
	30-day average	1.5 µg/m^3	–	–
	Rolling 3-month average	-	0.15 µg/m^3	Same as primary standard
Hydrogen sulfide	1-hour	0.03 ppm (42 µg/m^3)	No national standards	
Sulfates	24-hour	25 µg/m^3		
Vinyl chloride [f]	24-hour	0.01 ppm (26 µg/m^3)		
Visibility-reducing particulate matter	8-hour	Extinction of 0.23 per km		

Notes: µg/m^3 = micrograms per cubic meter; km = kilometers; ppb = parts per billion; ppm = parts per million.

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

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

[c] NAAQS (other than ozone, particulate matter, and those based on annual averages or annual arithmetic means) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest 8-hour concentration in a year, averaged over 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 one. The $PM_{2.5}$ 24-hour standard is attained when 98 percent 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.

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

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

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

Source: CARB 2016

Criteria Air Pollutants

CARB has established CAAQS for sulfates, hydrogen sulfide, vinyl chloride, visibility-reducing PM, 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 attain and maintain the CAAQS by the earliest date practical. The CCAA specifies that local air districts should focus particular 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

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 CARB to designate substances as TACs. Research, public participation, and scientific peer review are required before CARB can designate a substance as a TAC. To date, CARB has identified more than 21 TACs and adopted EPA's list of HAPs as TACs. Most recently, PM exhaust from diesel engines (diesel PM) was added to CARB's list of TACs.

After a TAC is identified, CARB then adopts a control measure for applicable sources. 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 to minimize TAC emissions.

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

AB 617 of 2017 aims to help protect air quality and public health in communities around industries subject to the state's cap-and-trade program for greenhouse gas (GHG) emissions. AB 617 imposes a new state-mandated local program to address nonvehicular sources (e.g., refineries, manufacturing facilities) of criteria air pollutants and TACs. AB 617 requires CARB to identify high-pollution communities and directs air districts to focus air quality improvement efforts through adoption of community emission reduction programs within these identified areas. Currently, air districts review individual sources and impose emissions limits on emitters based on best available control technology, pollutant type, and proximity to nearby existing land uses. This bill addresses the cumulative and additive nature of air pollutant health effects by requiring community-wide air quality assessment and emission reduction planning. The bill requires CARB, in consultation with the air districts, communities, and other stakeholders, to select initial communities by October 1, 2018, and annually thereafter. It is not known at this time whether Tuolumne County includes any high-pollution communities.

CARB 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 CARB's Risk Reduction Plan, it is expected that diesel PM concentrations will be 85 percent less in 2020 in comparison to year 2000 (CARB 2000). Adopted regulations are also expected to continue to reduce formaldehyde emissions emitted by cars and light-duty trucks. As emissions are reduced, it is expected that risks associated with exposure to the emissions will also be reduced.

LOCAL

Tuolumne County Air Pollution Control District

The TCAPCD is the primary agency responsible for planning to meet NAAQS and CAAQS in the County. CARB is the agency responsible for coordination and oversight of state and local air pollution control programs in California and for implementing the CCAA. California law authorizes CARB to set ambient (outdoor) air pollution standards (California Health and Safety Code Section 39606) in consideration of public health, safety, and welfare (CAAQS). The TCAPCD is responsible for implementing emissions standards and other requirements of federal and state laws regarding most types of stationary emission sources. The TCAPCD has also set emissions thresholds for certain pollutants for the purposes of the California Environmental Quality Act (CEQA), which are discussed in more detail in the "Thresholds of Significance" section.

The TCAPCD includes Rule 205, which states, "A person shall not discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons, or to the public, or which endanger the comfort, repose, health or safety of any such persons, or the public, or which cause to have a natural tendency to cause injury or damage to business or property." Rule 205 does not apply to odors emanating from agriculture operations necessary for the growing of crops or raising of fowl or animals, which are addressed in Chapter 5.20 of the Tuolumne County Ordinance Code, discussed below.

Tuolumne County General Plan

As the proposed project would update the 1996 General Plan, this document will be discussed in the context of the update within the impact analysis. The General Plan Update, specifically the Air Quality Element, discusses how pollutant emissions will be addressed in the plan area. The policies and implementation programs in the Air Quality Element provide details on how pollutant emissions would be reduced through the implementation of the General Plan Update. The Transportation Element and the Climate Change Element also include policies and implementation programs that would reduce pollutant emissions; they are included below. Specific General Plan Update policies and implementation programs are identified in Section 3.3.3, "Impact Analysis," below.

Tuolumne County Ordinance Code

Chapter 5.20 of the Tuolumne County Ordinance Code, entitled Right to Farm, is a County policy that serves to conserve, protect, and encourage the development and improvement of the County's agricultural land and to specifically protect those lands for exclusive agricultural use or uses that do not interfere with agricultural operations. Section 5.20.030 states,

> No preexisting or future agricultural operation, including the management and harvesting of timber, or any of its appurtenances conducted or maintained for commercial purposes, and in a manner consistent with proper and accepted customs and standards on agricultural land, shall become or be a nuisance, private or public, due to any changed condition of adjacent land uses in or about the locality thereof, provided that the provisions of this chapter shall not apply whenever a nuisance results from the negligent or improper operation of any such agricultural operation or its appurtenances; or if the agricultural activity of appurtenances obstructs the free passage or use in the customary manner of any navigable lake, river, stream, canal or basin or any public park, square, street or highway.

The ordinance also includes a requirement for the County to give notice of rules of this ordinance to any buyers of real property within the County.

3.3.3 Impact Analysis

METHODS OF ANALYSIS

Short-Term Construction Emissions Methodology

Emissions from construction activities represent temporary impacts that are typically short in duration, depending on the size, phasing, and type of development. Air quality impacts can nevertheless be acute during construction periods, resulting in significant localized impacts to air quality. Construction-related emissions are difficult to quantify at the general plan level because such emissions are dependent on the characteristics of individual development projects. However, because construction associated with 2040 development under General Plan Update would generate temporary criteria pollutant emissions, primarily due to the operation of construction equipment (e.g., PM_{10} from grading) and truck trips, emissions have been estimated in this analysis, and are based on the anticipated amount of development in the General Plan Update.

The quantitative analysis of construction-related emissions of criteria air pollutants and precursors were estimated using the California Emissions Estimator Model (CalEEMod) Version 2016.3.2 computer program (CAPCOA 2017). Modeling was based on the total net change in dwelling units and land use types included in Table 2-6 in the Chapter 2, "Project Description," of this EIR. (See Appendix C for all land uses included in the modeling.) The projected development in Table 2-6 includes both the unincorporated areas of the County and the City of Sonora. Future development in the City of Sonora is not part of the project analyzed in this EIR because the City is not under the jurisdiction of, or covered by, the County's General Plan Update. Consequently, the analysis and mitigation in this section is based on a conservative overestimation of future development in the unincorporated areas of the County.

The horizon year of the General Plan Update is 2040. The modeling conducted for this analysis assumes that construction emissions could occur over a period of 21 years (i.e., the period between the potential adoption of the General Plan Update in 2019 and 2040). Although the exact timing of construction activity over this period is unknown, for the purposes of modeling, it was assumed that development would occur gradually in equal annual increments (approximately 5 percent of projected development annually) over this time period. It was also assumed that an average of six single-family homes (1,000 square feet each) would be demolished annually over the horizon of the General Plan, as a result of older houses being replaced (Yaley, pers. comm., 2018). Where project-specific information was not available, default values in CalEEMod were used based on the land use designations and types included in the General Plan Update.

Long-Term Operational Emissions Methodology

Operational emissions of criteria air pollutants and precursors were also estimated using CalEEMod. Modeling used land use-specific information where available, including assumptions associated with all land use designations and types that would be developed as part of the General Plan Update. Where such information was not available, default values in CalEEMod based on the project's location and land use types were used. Operational emissions were estimated using CalEEMod for the following sources: area sources (e.g., landscaping-related), energy use (i.e., electricity use), water use, and solid waste.

Tuolumne County uses propane, heating oil, and woodstoves for space heating. However, CalEEMod assumes that buildings use electricity and natural gas based on energy use averages by location. Future propane use in the County was estimated based on CalEEMod default natural gas use, by land use type. Future heating oil use was estimated based on existing data available in the Tuolumne County Regional Blueprint Greenhouse Gas Study (Rincon Consultants 2012:2-3). Additionally, future projections of area source emissions associated with the use of fireplaces were estimated based on existing wood-burning data available in the Tuolumne County Regional Blueprint Greenhouse Gas Study (Rincon Consultants 2012:2-3).

Mobile-source emissions were estimated using projected annual vehicle miles traveled (VMT) estimates included in the project's traffic study and vehicle emissions factors specific to Tuolumne County, generated

using CARB's EMFAC 2017 emission software. The project-generated annual VMT estimates were derived from the Tuolumne County Transportation Council Travel Demand Model and were included in the project traffic study (Wood Rodgers 2016). VMT estimates were generated for the baseline (2015) and target year (2040), based on the land uses included in the General Plan Update. See Appendix C for the complete traffic study. CO impacts were assessed based on available screening criteria from the Sacramento Metropolitan Air Quality Management District (SMAQMD). SMAQMD screening criteria were used to identify potential CO hotspots caused by project-related increases in traffic congestion at affected intersections because these criteria are valid for efficient consideration of multiple intersections and the TCAPCD does not provide screening criteria. These screening criteria were used along with data included in the General Plan-related traffic study (Appendix C).

The level of health risk from exposure to construction- and operation-related TAC emissions was assessed qualitatively. This assessment was based on the proximity of TAC-generating construction activity to off-site sensitive receptors, the number and types of diesel-powered construction equipment being used, and the duration of potential TAC exposure.

THRESHOLDS OF SIGNIFICANCE

The TCAPCD has established specific thresholds for air quality impacts evaluated under CEQA. Pursuant to the State CEQA Guidelines, air quality impacts related to the projected development under the General Plan Update would be significant if the project would:

- conflict with or obstruct implementation of the applicable air quality plan;
- violate any air quality standard or contribute substantially to an existing or project air quality violation—for the purposes of the project locations, result in construction or operations of a project that generated emissions in excess of the following thresholds, except CO, used by the TCAPCD (2017):
  - ROG – 1,000 pounds per day or 100 tons per year
  - NO_X – 1,000 pounds per day or 100 tons per year
  - PM_{10} – 1,000 pounds per day or 100 tons per year
  - CO – result in an affected intersection experiencing more than 31,600 vehicles per hour. The CO threshold is discussed more below.
- result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed qualitative thresholds for ozone precursors);
- expose sensitive receptors to a substantial incremental increase in TAC emissions that exceed 10 in 1 million for carcinogenic risk (i.e., the risk of developing cancer) and/or a noncarcinogenic hazard index of 1.0 or greater; or
- create objectionable odors affecting a substantial number of people;
- The TCAPCD thresholds are intended to address individual projects, rather than overall development under the General Plan Update. However, because ROG, NO_X, and PM_{10} are regional pollutants—they either are suspended in the air matrix or interact at a more atmospheric level—the project-level thresholds are used to address overall development in the General Plan Update. CO, however, is a local pollutant that effects recipients when concentrated at an individual intersection or roadway. TCAPCD has a project-level CO threshold of 1,000 pounds per day/100 tons per year, which may be indicative of a localized impact when this level of CO is produced by an individual project, but is inappropriate for a countywide general plan, where these CO levels would be dispersed throughout the county. This concept was coordinated with TCPACD staff (pers. comm. Bill Sandman 2018). Therefore, while the TCAPCD CO threshold may be appropriate at an individual project level, the threshold would overstate impacts of the

General Plan Update, because these pollutants would be dispersed throughout the County. A more accurate threshold at the general plan level is tied to congestion at a particular roadway intersection coupled with a high volume of cars. Therefore, the threshold of project-affected intersections experiencing more than 31,600 vehicles per hour, based on SMAQMD's CO hotspot screening methodology is used in this EIR. SMAQMD's threshold was selected because it is indicative to CO concentrations expected from the sources of CO pollution that may occur in Tuolumne County, and the TCAPCD's CO thresholds are inapt for a general plan analysis, as described herein.

GENERAL PLAN UPDATE POLICIES

The following policies and implementation programs from the General Plan Update are specifically relevant to air quality:

Community Development Element

- **Policy 1.B.1:** Protect existing land uses from the infringement of and impacts associated with incompatible land uses.
  - **Implementation Program** 1.B.a – Designate, where possible, land around existing non-residential land uses, such as agriculture, timberlands, mining preserves and industry, for new development that is compatible with these existing uses.
  - **Implementation Program** 1.B.b – Designate, where possible, land around existing residential neighborhoods for uses that are compatible with residences. Designate areas for new urban residential development away from existing incompatible land uses, such as agriculture, mining, industry, solid waste facilities, airports and sewage treatment facilities.
  - **Implementation Program** 1.B.c – Separate new urban residential development from land uses that potentially conflict with housing, such as agriculture, mining, industry, airports and sewage treatment facilities.
  - **Implementation Program** 1.B.d – Consider buffer areas around existing industrial land uses to protect them from infringement of new residential and other potentially incompatible land uses. These buffer areas may include building setbacks and/or limiting land uses within an established distance of these existing land uses.

Transportation Element

- **Policy 4.B.1:** Develop a modern transportation system that incorporates alternative transportation modes into the system design.
  - **Implementation Program 4.B.b** – Plan for a balanced multimodal transportation network that meets the needs of all users of roads, including bicyclists, pedestrians, and transit users. Incorporate bicycle, pedestrian and transit improvements when designing roadway improvements where appropriate. Support the efforts of the TCTC to develop and Active Transportation Grant for Tuolumne County, the State Route 49 Complete Streets and State Route 49 Congested Corridor Plan.
  - **Implementation Program 4.B.c** – Provide multi-modal access to activity centers such as public facilities, commercial centers and corridors, employment centers, transit stops, schools, parks, recreation areas, and tourist attractions.
  - **Implementation Program 4.B.d** – Promote walking and bicycling through education and outreach programs and activities such as commute campaigns, classes that teach cycling skills, and providing route maps.

- **Policy 4.B.2:** Expand and improve pedestrian sidewalks and facilities focusing on safety, connectivity, and accessibility.
  - **Implementation Program 4.B.e** – Develop a Sidewalk Priority Plan identifying all existing sidewalks as well as future sidewalks throughout the County. Prioritize retrofitting existing and constructing new sidewalks that connect residents to schools, bus lines and other transit stops, and parks and community centers.
  - **Implementation Program 4.B.f** – Require safe and adequate crossing facilities that minimize pedestrian exposure to vehicular traffic, such as curb extensions or refuge islands, wherever feasible.
  - **Implementation Program 4.B.g** – Develop new or revised street and street crossing design standards to improve pedestrian safety, convenience, and comfort, both as a part of routine public works projects and as a part of ongoing development.
  - **Implementation Program 4.B.h** – Update the local street design standards for urban areas, where practicable, to include Universal Design criteria for street infrastructure such as sidewalks, pedestrian curb ramps, crosswalks, street lighting, shade trees, and curb extensions to accommodate all users, including people with disabilities and other special needs.
- **Policy 4.B.3:** Expand and improve the bikeways within Tuolumne County, focusing on safety, connectivity, and accessibility.
  - **Implementation Program 4.B.i** – Pursue state and federal funds earmarked for new bicycle paths and transit improvements.
  - **Implementation Program 4.B.j** – Encourage provisions for bicycle facilities at transit nodes, recreational facilities and public spaces.
- **Policy 4.B.4:** Encourage the use of alternative modes of transportation by incorporating public transit, bicycle and pedestrian modes in County transportation planning and by requiring new development to provide adequate pedestrian and bikeway facilities at suitable locations.
- **Policy 4.B.5:** Maintain and expand, where possible and appropriate, the system of non-motorized connections that link neighborhoods to larger roadways, activity centers and nodes, businesses, community services, parks and recreational facilities, and transit stops and stations.
- **Policy 4.B.6:** Actively investigate and seek alternative funding sources for bicycle and pedestrian facilities.

<u>Agriculture Element</u>

- **Policy 8.A.4:** Development proposed adjacent to land designated Agricultural by the General Plan land use diagrams shall provide a buffer from the agricultural land. The buffer shall be 200 feet in width and located on the development site. No residential or non-agricultural buildings may be erected in the buffer area as long as the adjacent land remains designated Agricultural. The buffer may be reduced in width by the Board of Supervisors after considering the recommendation of the Agricultural Advisory Committee if such a reduction is determined appropriate based upon the topography, vegetation, roads or other physical features of the buffer area or other factors considered by the Committee. If the General Plan land use designation of the adjacent land is amended in the future to a designation other than Agricultural, the need for the buffer area will be eliminated and the land use restrictions imposed pursuant to this Policy will cease at that time.

- **Policy 8.C.2:** Establish a buffer between agricultural land uses and residential/non-agricultural land uses. It shall be the obligation of the party seeking the land use change to ensure that a sufficient buffer is established between the parcels. The buffer shall favor protection of the agricultural land.
  - **Implementation Program 8.C.d** – Implement the standards for buffer zones between new non-agricultural development and land designated for agricultural use established in Policy 8.A.4.

<u>Air Quality Element</u>

- **Policy 15.A.1:** Accurately determine and fairly mitigate the local and regional air quality impacts of land development projects proposed in the County.
  - **Implementation Program 15.A.a:** Coordinate and cooperate with other local, regional and State agencies to develop a consistent and effective approach to air quality planning and management.
- **Policy 15.A.2:** Integrate land use planning, transportation planning, and air quality planning to make the most efficient use of public resources and to create a more livable environment.
  - **Implementation Program 15.A.b:** Require an air quality impact evaluation for development projects, as necessary, pursuant to the requirements of the Tuolumne County Air Pollution Control District. The air quality impact evaluation shall be the responsibility of the developer or proponent and prepared by a qualified consultant at their expense.
  - **Implementation Program 15.A.c:** Require project applicants to identify alternatives or amendments for proposed projects that would reduce emissions of air pollutants, if air pollutant emissions exceed applicable air quality standards. Require all air quality mitigation to be real, feasible, cost effective, and enforceable.
  - **Implementation Program 15.A.d:** Require project applicants to implement innovative mitigation measures that include best available control technology and/or best management practices as needed to reduce air quality impacts.
  - **Implementation Program 15.A.e:** Require proposed new development projects to analyze their contribution to increased traffic and to implement, as needed, transportation demand management measures or other improvements to reduce vehicle miles traveled, which, in turn, reduces air pollutant and GHG emission.
  - **Implementation Program 15.A.f:** Work cooperatively with major local employers to offer incentives and services which decrease auto commuting, such as telecommuting and alternative work schedules.
- **Policy 15.A.3:** Avoid converting land designated for industrial use to non-industrial land use designations where that change would result in land where sensitive receptors could be located in in proximity to industry, and avoid converting land to industrial use where the existing surrounding land uses support sensitive receptors, to minimize the health risks to the public resulting from criteria and toxic air pollutant emissions.
  - **Implementation Program 15.A.g:** Establish buffer zones to separate new residential development projects and projects categorized as sensitive receptors (e.g., hospitals, convalescent homes, day care facilities, and schools) from existing industrial sites and/or sites that emit criteria and toxic air pollutants.
  - **Implementation Program 15.A.h:** Establish buffer zones to create an adequate distance between new air pollution point and area sources such as industrial, manufacturing and processing facilities, and residential areas and sensitive receptors.

- **Implementation Program 15.A.i:** Avoid locating new urban residential development projects and other projects categorized as sensitive receptors (e.g., hospitals, convalescent homes, day care facilities, and schools) within 500 feet from industrial sites and/or sites that may emit criteria or toxic air pollutants. If a 500-foot buffer is not feasible, compliance with Implementation Program 15.A.j shall be required.

- **Implementation Program 15.A.j:** When a criteria pollutant or toxic generating source (e.g., industrial sources, distribution centers, dry cleaning facilities, gas stations, major roadways, large combustion sources, etc.) and potentially other sources of diesel particulate matter and other known carcinogens is proposed within 500 feet of a sensitive receptor, require the project applicant to retain a qualified consultant to prepare a health risk assessment in accordance with CARB and the Office of Environmental Health and Hazard Assessment requirements to determine the exposure of project residents/occupants/users to stationary and mobile air quality polluters prior to issuance of a demolition, grading, or building. The health risk assessment shall be submitted to the County for review and approval. The County shall implement any approved health risk assessment recommendations to a level which would not result in exposure of sensitive receptors to substantial pollutant concentrations.

- **Policy 15.A.4:** Reduce air emissions from project construction.

  - **Implementation Program 15.A.k**: Require the following dust-control measures during all project-related site preparation activities (i.e., grading, excavation and associated materials hauling) to reduce air quality impacts:

    - Exposed soils shall be watered as needed to control wind borne dust.
    - Exposed piles of dirt, sand, gravel, or other construction debris shall be enclosed, covered and/or watered as needed to control wind borne dust.
    - Vehicle trackout shall be minimized through the use of rumble strips and wheel washers for all trucks and equipment leaving the site.
    - Sweep streets once a day if visible soil materials are carried to adjacent streets (recommend water sweepers with reclaimed water).
    - On-site vehicle speed shall be limited to 15 miles per hour on unpaved surfaces.
    - Loads on all haul/dump trucks shall be covered securely or at least two feet of freeboard shall be maintained on trucks hauling loads.
    - Construction equipment shall be maintained and tuned at the interval recommended by the manufacturers to minimize exhaust emissions.
    - Equipment idling shall be kept to a minimum when equipment is not in use.
    - Construction equipment shall be in compliance with the California Air Resources Board off-road and portable equipment diesel particulate matter regulations.

  Alternative construction-related air quality measures may be adopted by the decision-making body after considering a project-specific air quality analysis prepared by a qualified consultant.

- **Policy 15.B.1**: Create a land use pattern that will encourage people to walk, bicycle or use public transit for a significant number of their daily trips.

- **Implementation Program 15.B.a:** Encourage pedestrian oriented development to reduce the use of motor vehicles.
- **Implementation Program 15.B.b:** Establish an incentive program to encourage transit-oriented development, including, where appropriate, exempting such projects from traffic impact mitigation fees.
- **Implementation Program 15.B.c:** Support the development of high density housing, commercial and offices along high priority transit routes.
- **Implementation Program 15.B.d:** Work with Caltrans, transit providers, and property owners to identify park-and-ride sites with convenient access to public transit.
- **Implementation Program 15.B.e:** Seek funding for park-and-ride facilities and develop, or support the development of such facilities, within the identified communities, and permit park-and-ride facilities in commercial and industrial zoning districts.
- **Implementation Program 15.B.f:** Create additional, and improve existing, car-sharing and ride-sharing programs and promote them within the region.
- **Implementation Program 15.B.g:** Work with Caltrans and other agencies to establish transportation demand management programs, such as park-and-ride facilities, transit incentives and telecommute centers.

- **Policy 15.B.2:** Develop a modern transportation system that incorporates alternative transportation modes into the system design.
- **Policy 15.C.1:** Require development to reduce criteria and toxic air pollutant emissions from the use of wood burning appliances, through low emission technology and maximize the use of energy conservation and clean or renewable energy sources.
  - **Implementation Program 15.C.a:** Continue to require the installation of only low-emitting, EPA-certified fireplaces, woodstoves or pellet stoves where such wood-burning devices are desired by the developers and/or future homeowners, except in areas with poor air quality or dispersion, or where otherwise prohibited.
  - **Implementation Program 15.C.b:** Develop and implement a wood burning stove and fireplace change-out program to install non-wood burning, or EPA-certified wood burning, stoves and fireplaces.
- **Policy 15.D.1:** Work closely with federal, state and local agencies to minimize the emissions and smoke impacts fire hazard reduction and forest management burn activities and during wildlife episodes.
  - **Implementation Program 15.D.a:** Encourage alternative methods of disposal of vegetative matter, including, but not limited to, composting, mulching or transporting the material to biomass facilities that are capable of generating energy and designed to reduce emissions.
  - **Implementation Program 15.D.b:** Establish community programs that reduce residential open burning, such as local pick-up and delivery of vegetative matter to biomass facilities or composting projects that do not create a public nuisance.
  - **Implementation Program 15.D.c:** Provide public information through the media and the Air Pollution Control District Burn Day Phone Recorder regarding best management practices for burning, burn permit requirements, burn hours and local and state fire restrictions.

- **Implementation Program 15.D.d:** Where feasible and appropriate, require alternative methods of fire hazard reduction on private and public lands, including, but not limited to, selective thinning of timber stands, mastication and chipping of slash for fuel in biomass facilities.

- **Implementation Program 15.D.e:** Coordinate and cooperate with other agencies to plan and monitor prescribed fires to minimize the impact on public health, taking into consideration the size and location of the proposed burn and the expected weather conditions, among other parameters.

- **Implementation Program 15.D.f:** Participate in committees and task forces that are established for the purpose of developing and discussing smoke management policies and practices necessary to meet the requirements of the Clean Air Act while effectively managing the resources of California.

- **Implementation Program 15.D.g:** Enforce applicable Federal, State and local open burning regulations related to agriculture, wildland vegetation management, forest management, range improvement and fire hazard reduction.

<u>Climate Change Element</u>

- **Policy 18.A.5:** Promote energy efficiency and alternative energy while reducing energy demand.

  - **Implementation Program 18.A.j**: Facilitate voluntary energy efficient retrofits in existing structures by connecting home and business-owners with technical and financial assistance, such as Federal, State, and utility rebates, and tax credits, through the County's or Tuolumne County Transportation Council's website.

  - **Implementation Program 18.A.k**: Work with Pacific Gas and Electric Company and other electric utility providers to promote voluntary upgrades to energy-efficient technology and products through campaigns targeted at residents and local businesses, ENERGY STAR® appliance change-out programs, and incentives, such as give-a-ways or Federal/State/utility rebates.

  - **Implementation Program 18.A.l**: Work with Pacific Gas and Electric Company and other electric utility providers to encourage local businesses and public agencies to install energy conserving technologies, such as occupancy sensors, and implement energy conserving policies, such as "lights out at night."

  - **Implementation Program 18.A.m**: Reduce the energy demand of public facilities and conserve electricity through the following: a) retrofitting County owned or operated street, traffic signal, and other outdoor lights with energy efficient light emitting diode (LED) lamps; b) retrofitting heating and cooling systems to optimize efficiency, such as replacing HVAC systems; and c) replacing old appliances and technologies with ENERGY STAR® products. Obtain funding for and install renewable energy technologies on public property.

  - **Implementation Program 18.A.n**: Work with Pacific Gas and Electric Company and other electric utility providers to educate residents and businesses about Smart Meters, how to monitor electricity use, and the potential benefits associated with Smart Meters.

  - **Implementation Program 18.A.o**: Work with Pacific Gas and Electric Company and other electric utility providers to promote the use of financial incentives, such as Federal/State/utility rebate and, tax credits, for the voluntary installation of "cool roofs" on existing structures, such as ENERGY STAR® roof products, that have a high solar and thermal reflectance.

  - **Implementation Program 18.A.p**: Encourage the use of electric lawnmowers and leaf blowers over those powered by gasoline.

- **Implementation Program 18.A.q**: Encourage the incorporation of energy conservation into the design of residential and commercial buildings; such as Tier 1 and Tier 2 of the Green Building Code.
- **Implementation Program 18.A.r**: Encourage the use of deciduous landscape trees near new development to provide shade during the hot summer months and allow solar warming during the cold winter months.
- **Implementation Program 18.A.s**: Support the use of alternative energy vehicles by encouraging new development to install electric charging stations for passenger vehicles, in particular at high use and density areas.
- **Implementation Program 18.A.t**: Support development of electric charging stations for passenger vehicles, in particular near transit stop locations and high use parking areas.

PROJECT IMPACTS

This section presents a programmatic-level analysis of potential impacts associated with air quality from projected development under the General Plan Update. Evaluation of environmental impacts associated with the General Plan Update considers the development that would be facilitated by the General Plan Update, in accordance with goals, policies, and implementation programs, to accommodate projected growth in the County. It should be noted that the County's population is projected to grow by 0.6 percent annually over the planning horizon (2040). As discussed in detail in Chapter 2, "Project Description," and the introduction to Chapter 3, this is a relatively low amount of growth.

Impact 3.3-1: Generation of Construction-related Emissions that Would Violate an Existing Air Quality Standard

Projected development under the General Plan Update would result in construction activities associated with the development of new land uses in the County. Construction activity associated with the development of these new land uses would result in emissions of ROG, NO_X, PM_{10}, and $PM_{2.5}$ that would not exceed the daily or annual emissions thresholds established by TCAPCD. Therefore, construction activity associated with projected development under the General Plan Update would not violate an existing air quality standard and this impact would be **less than significant**.

Implementation of the General Plan Update would involve the development of new land uses over the horizon of the plan between 2019 and 2040. Development of these new land uses would result in construction activity that would generate emissions of criteria air pollutants and precursors, including ROG, NO_X, PM_{10}, and $PM_{2.5}$, from site preparation (e.g., excavation, clearing), off-road equipment, material delivery, worker commute trips, and other miscellaneous activities (e.g., building construction, asphalt paving, application of architectural coatings). Typical construction activities that could occur with land use development include all-terrain forks, fork lifts, cranes, pick-up and fuel trucks, compressors, loaders, backhoes, excavators, dozers, scrapers, pavement compactors, welders, concrete pumps, concrete trucks, and off-road haul trucks, as well as other diesel-fueled equipment, as necessary. Fugitive dust emissions of PM_{10} and $PM_{2.5}$ are associated primarily with site preparation and vary as a function of soil silt content, soil moisture, wind speed, acreage of disturbance, and mobile sources. Emissions of ozone precursors are emitted in the exhaust of construction equipment and on-road vehicles. Paving and the application of architectural coatings also results in off-gas emissions of volatile organic compounds. PM_{10} and $PM_{2.5}$ are also contained in equipment and vehicle exhaust. As discussed previously, specific construction phasing and intensity are unknown. The levels of emissions generated through these activities would depend on the characteristics of individual development projects, including the size and type of land uses being developed, which would determine the length and intensity of construction activity.

Construction activities were estimated to occur incrementally (approximately 5 percent per year) over the remaining General Plan horizon period of 21 years. Table 2-6 in Chapter 2, "Project Description," of this

Recirculated Draft EIR details the projected development under the General Plan Update. Note that development projections included in Table 2-6 are derived from TCTC estimates that include the City of Sonora. Based on Table 2-6, construction emissions estimates were modeled (see Table 3.3-3). For the reasons provided above, these calculations are based on conservative growth estimations.

Table 3.3-3 Modeled Daily Maximum Construction Emissions of Criteria Air Pollutants and Precursors

Construction Phase	Maximum Daily Emissions (lb/day)			
	ROG	NO_X	PM_{10}	$PM_{2.5}$[1]
Demolition	4	37	3	12
Site Preparation	5	46	21	12
Grading	5	55	30	8
Building Construction	8	39	5	3
Paving	2	15	1	1
Architectural Coating	91	2	1	1
Maximum Daily Emissions	91	55	30	12
TCAPCD Thresholds	**1,000**	**1,000**	**1,000**	N/A
Exceed Significance Threshold?	No	No	No	N/A

Notes: CO = carbon monoxide; lb/day = pounds per day; NO_X = oxides of nitrogen; PM2.5 = fine particulate matter; PM_{10} = respirable particulate matter; ROG = reactive organic gases; TCAPCD = Tuolumne County Air Pollution Control District.

[1] TCAPCD has not identified a threshold of significance for $PM_{2.5}$; therefore, this information is presented for informational purposes.

See Appendix C for detailed input parameters and modeling results.

Source: Modeling performed by Ascent Environmental in 2018

In addition to daily emissions thresholds, TCAPCD has established annual mass emissions thresholds for certain criteria air pollutants. Table 3.3-4 provides annual emissions from construction activity, as well as the annual thresholds established by TCAPCD.

Table 3.3-4 Modeled Annual Construction Emissions of Criteria Air Pollutants and Precursors

Construction Phase	Annual Emissions (Tons/Year)			
	ROG	NO_X	PM_{10}	$PM_{2.5}$[1]
Demolition	0.02	0.18	0.02	0.05
Site Preparation	0.02	0.18	0.08	0.05
Grading	0.05	0.52	0.29	0.08
Building Construction	0.73	3.85	0.55	0.24
Paving	0.01	0.11	0.01	0.01
Architectural Coating	7.06	0.02	0.01	0.00
Annual Emissions	**7.88**	**4.86**	**0.95**	**0.42**
TCAPCD Thresholds	100	100	100	N/A
Exceed Significance Threshold?	No	No	No	N/A

Notes: CO = carbon monoxide; lb/day = pounds per day; NO_X = oxides of nitrogen; $PM_{2.5}$ = fine particulate matter; PM_{10} = respirable particulate matter; ROG = reactive organic gases; TCAPCD = Tuolumne County Air Pollution Control District; tons/year = tons per year.

[1] TCAPCD has not identified a threshold of significance for $PM_{2.5}$; therefore, this information is presented for informational purposes.

See Appendix C for detailed input parameters and modeling results.

Source: Modeling performed by Ascent Environmental in 2018

As shown above, construction activity associated with the General Plan Update would not generate emissions in exceedance of the established maximum daily (Table 3.3-3) or annual emissions thresholds (Table 3.3-4) for ROG, NO_X, and PM_{10}; therefore, there is not potential for violation of an existing air quality standard. It should be noted that $PM_{2.5}$ is a subset of PM_{10} and TCAPCD has not identified a separate threshold for $PM_{2.5}$; therefore, impacts related $PM_{2.5}$ are considered to be consistent with impacts related to PM_{10} (for which TCAPCD does have a threshold of significance).

In addition, the Air Quality Element of the General Plan Update includes policies and implementation programs that specifically focus on reducing criteria air pollutant and precursor emissions from construction activity. Implementation Program 15.A.k includes specific measures for reducing criteria air pollution and precursor emissions associated with construction activity. Measures in Implementation Program 15.A.k to reduce emissions of PM_{10} and $PM_{2.5}$ include dust suppression techniques, such as watering or covering exposed surfaces, rumble strips and wheel washers for trucks and equipment to reduce dust levels leaving project sites, reduced vehicle speeds for construction equipment on unpaved surfaces, and the covering of material for trucks hauling loads. Implementation Program 15.A.k would reduce emissions of NO_X, and PM_{10} by requiring limited idling times for equipment when not in use, regular maintenance and tuning of construction equipment to reduce exhaust emissions, and compliance with the CARB off-road and portable equipment diesel PM regulations.

As shown in Table 3.3-3 and Table 3.3-4, construction emissions of criteria air pollutants and precursors would be below the daily and annual emissions thresholds established by TCAPCD. Additionally, Implementation Program 15.A.k would help further reduce ROG, NO_X, PM_{10}, and $PM_{2.5}$ emissions from construction activity. Annual construction activity associated with the General Plan Update would not violate an existing air quality standard, and therefore this impact would be **less than significant**.

Mitigation Measures

No mitigation is required.

Impact 3.3-2: Generation of Long-term Operational Emissions of Criteria Air Pollutants and Precursors that would Violate an Existing Air Quality Standard

Implementation of the General Plan Update would result in operational activities associated with the development of new land use in the County. These activities would result in emissions of ROG, NO_X, PM_{10}, and $PM_{2.5}$, but emissions of these pollutants would not exceed the thresholds set by TCAPCD of 1,000 lb/day or 100 tons/year. In addition, the General Plan Update includes policies and implementation programs in the Transportation, Climate Change, and Air Quality Elements that would reduce emissions of air pollutants in the County. The General Plan Update would not exceed TCAPCD's air pollutant thresholds and, therefore, would not violate an existing air quality standard. This impact would be **less than significant**.

Implementation of the General Plan Update would include the development of new land uses in Tuolumne County, resulting in long-term operational emissions of ROG, NO_X, PM_{10}, and $PM_{2.5}$. Operational emissions would be generated from area sources (e.g., landscaping-related fuel combustion sources, the periodic application of architectural coatings, woodstoves/fireplaces, and the use of consumer products), energy use (e.g., propane, heating oil), and from additional vehicle trips associated with all new land use development. Table 3.3-5 summarizes the maximum daily operation-related emissions of criteria air pollutants and precursors and the daily significance thresholds established by TCAPCD. Table 3.3-6 summarizes the maximum annual operation-related emissions of criteria air pollutants and precursors and includes the annual significance thresholds established by TCAPCD. See Impact 3.3-4 for a discussion of CO.

Table 3.3-5 Summary of Maximum Operational Emissions of Criteria Air Pollutants and Precursors in 2040

Source Type	Maximum Daily Emissions (lb/day)			
	ROG	NO_X	PM_{10}	$PM_{2.5}$[1]
Area[2]	880	92	105	105
Energy	2	21	1	1
Mobile	109	131	38	16
Total	**991**	**244**	**144**	**122**
TCAPCD Threshold	1,000	1,000	1,000	N/A
Exceed Significance Threshold?	No	No	No	N/A

Notes: Total values may not add correctly due to rounding.

CO = carbon monoxide; lb/day = pounds per day; N/A = not applicable; NO_X = oxides of nitrogen; PM_{10} = respirable particulate matter; $PM_{2.5}$ = fine particulate matter; ROG = reactive organic gases; TCAPCD = Tuolumne County Air Pollution Control District.

1. TCAPCD has not identified a threshold of significance for $PM_{2.5}$; therefore, this information is presented for informational purposes.

2 Area-source emissions include emissions from landscaping, application of architectural coatings, and consumer products, which were estimated based on default model settings. Area-source emissions are also generated by the use of fireplaces/woodstoves; these emissions were estimated using information on the annual wood burned for area heating included in the Tuolumne County Regional Blueprint Greenhouse Gas Study (Rincon Consultants 2012:2-3).

See **Appendix C** for detailed input parameters and modeling results.

Source: Modeling performed by Ascent Environmental in 2018

Table 3.3-6 Summary of Annual Operational Emissions of Criteria Air Pollutants and Precursors in 2040

Source Type	Maximum Annual Emissions (tons/year)			
	ROG	NO_X	PM_{10}	$PM_{2.5}$[1]
Area[1]	78	4	5	5
Energy	<1	4	<1	<1
Mobile	20	24	7	3
Total	**98**	**31**	**12**	**8**
Tuolumne County APCD Threshold	100	100	100	N/A
Exceed Significance Threshold?	No	No	No	N/A

Notes: Total values may not add correctly due to rounding.

CO = carbon monoxide; lb/day = pounds per day; N/A = not applicable; NO_X = oxides of nitrogen; PM_{10} = respirable particulate matter; $PM_{2.5}$ = fine particulate matter; ROG = reactive organic gases; TCAPCD = Tuolumne County Air Pollution Control District.

1. TCAPCD has not identified a threshold of significance for $PM_{2.5}$; therefore, this information is presented for informational purposes.

2 Area-source emissions include emissions from landscaping, application of architectural coatings, and consumer products, which were estimated based on default model settings. Area-source emissions are also generated by the use of fireplaces; these emissions were estimated using information on the annual wood burned for area heating included in the Tuolumne County Regional Blueprint Greenhouse Gas Study (Rincon Consultants 2012:2-3).

See **Appendix C** for detailed input parameters and modeling results.

Source: Modeling performed by Ascent Environmental in 2018

As shown in Table 3.3-5 and Table 3.3-6, operation-related activities would result in emissions ROG, NO_X, PM_{10}, and $PM_{2.5}$. However, emissions of these pollutants would not exceed the project thresholds set by TCAPCD of 1,000 lb/day or 100 tons/year level (even though this analysis covers development within the entire General Plan Update). In addition, the General Plan Update includes policies and implementation programs in the Transportation, Climate Change, and Air Quality Elements that would reduce emissions of air pollutants in the County. In the Air Quality Element, Policy 15.A.2 and its associated implementation program would address air quality impacts associated with future development in the County. Policy 15.A.2 and its

associated implementation programs also focus on promoting integrated land use planning, transportation planning, and air quality planning to increase the efficient use of land and public resources and, in turn, would result in improvements in air quality by reducing VMT. Policy 15.B.1 and its associated implementation programs are intended to promote the development of land use patterns that encourage trips made by biking, walking, and public transit, reducing mobile source emissions. Policy 4.B.1 and its associated implementation programs in the Transportation Element include strategies to prioritize the development of active transportation facilities and promote trips made by walking and biking. These two policies would help reduce air quality impacts, particularly NO_x, PM_{10}, and $PM_{2.5}$ emissions, associated with mobile source activity through reductions in vehicle use.

As discussed above, implementation of the General Plan Update would result in emissions of ROG, NO_X, and PM_{10}. However, as shown in Table 3.3-5 and Table 3.3-6, emissions of these pollutants associated with entire buildout of the General Plan Update by 2040 would not exceed the project-level thresholds set by TCAPCD of 1,000 lb/day or 100 tons/year and would, therefore, not violate any existing air quality standard. The General Plan Update also includes policies and implementation programs in the Transportation, Climate Change, and Air Quality Elements that would reduce emissions of air pollutants in the County. The General Plan Update would not exceed the TCAPCD's thresholds for ROG, NO_X, and PM_{10} and, therefore, would not violate an existing air quality standard. (As discussed under Impact 3.3-1, $PM_{2.5}$ is a subset of PM_{10} and TCAPCD has not identified a separate threshold for $PM_{2.5}$; therefore, impacts related $PM_{2.5}$ are considered to be consistent with impacts related to PM_{10}.) This impact would be **less than significant**.

Mitigation Measures

No mitigation is required.

Impact 3.3-3: Exposure of Sensitive Receptors to TACs

The development of new land uses would result in TAC emissions of diesel PM from the exhaust of off-road heavy-duty diesel equipment used during construction. These emissions could expose nearby existing sensitive receptors to TACs, particularly diesel PM exhaust emissions. The General Plan Update would also allow for the development of residential land uses in close proximity to local roadways and other potential sources of TACs. As a result, existing and new sensitive receptors could be exposed to TACs that may cause health risks. The General Plan Update includes policies and implementation programs specifically for mitigating exposure of existing and new sensitive receptors to TACs. Additionally, all new development undergoing discretionary review would be required to evaluate existing TAC exposure and incorporate available reduction measures, if necessary. Therefore, implementation of the General Plan Update would not result in the exposure of existing or new sensitive receptors to a substantial increase in TAC emissions, and this impact would be **less than significant**.

Diesel PM was identified as a TAC by CARB in 1998. The potential cancer risk from the inhalation of diesel PM outweighs the potential for all other health impacts (i.e., noncancer chronic risk, short-term acute risk) and health impacts from other TACs (CARB 2003). Thus, diesel PM is the focus of this analysis. With regards to exposure of diesel PM, the dose to which receptors are exposed is the primary factor used to determine health risk. Dose is a function of the concentration of a substance or substances in the environment and the duration of exposure to the substance. Dose is positively correlated with time, meaning that a longer exposure period would result in a higher level of health risk for any exposed receptor. According to Office of Environmental Health Hazard Assessment's (OEHHA's) 2015 guidance, exposure of sensitive receptors to TAC emissions should be based on a 30-year exposure period for estimating cancer risk at the Maximum Exposed Individual (MEI), with 9- and 70-year exposure periods at the MEI as supplemental information. Furthermore, a 70-year exposure period is required for estimating cancer burden or providing an estimate of population-wide risk (OEHHA 2015:8-1).

Construction Emissions

Construction activities that would result from implementation of the General Plan Update would generate temporary, intermittent emissions of diesel PM from the exhaust of off-road heavy-duty diesel equipment

used for site preparation (e.g., demolition, clearing, grading), paving, application of architectural coatings, on-road truck travel, and other miscellaneous activities.

Existing sensitive receptors are located throughout the plan area. However, at the general plan scale, individual sensitive receptors were not identified. In addition, studies show that diesel PM is highly dispersive and that concentrations of diesel PM decline with distance from the source (e.g., 500 feet from a freeway, the concentration of diesel PM decreases by 70 percent) (Roorda-Knape et al. 1999; Zhu et al. 2002a, cited in CARB 2005:9). These studies illustrate that diesel PM is highly dispersive and that receptors must be near emission sources for a long period to experience exposure at concentrations of concern. Given the temporary and intermittent nature of construction activities likely to occur within specific locations in the plan area (i.e., construction is not likely to occur in any one part of the plan area for an extended time), the dose of diesel PM of any one receptor is exposed to would be limited. Therefore, considering the relatively short duration of diesel PM-emitting construction activity at any one location of the plan area and the highly dispersive properties of diesel PM, sensitive receptors would not be exposed to substantial concentrations of construction-related TAC emissions.

Further, the General Plan Update includes policies and implementation programs that would help to reduce TAC emissions from construction activity. Specifically, Implementation Program 15.A.k includes measures for reducing criteria air pollution and precursor emissions associated with construction activity. Measures in Implementation Program 15.A.k to reduce emissions of diesel PM_{10} emissions include limiting idling times for equipment when not in use, regular maintenance and tuning of construction equipment to reduce exhaust emissions, and compliance with the CARB off-road and portable equipment diesel PM regulations. This implementation program would serve to reduce TAC emissions associated with construction activity and would reduce the potential impact on nearby sensitive receptors during construction activity.

Operation Emissions

Proximity to highways increases cancer risk and exposure to PM. Similarly, proximity to heavily travelled transit corridors and intersections would expose residents to higher levels of diesel PM. CARB recommends avoiding siting new sensitive land uses, such as residences, schools, daycare centers, playgrounds, or medical facilities, within 500 feet of a freeway, urban roads with 100,000 vehicles per day, or rural roads with 50,000 vehicles per day (CARB 2005). As shown in Table 3.16-6 of Section 3.16, “Transportation and Circulation” of this Recirculated Draft EIR, there are no urban roads with 100,000 vehicles per day or rural roads with 50,000 vehicles per day within Tuolumne County. The most heavily travelled roadways in Tuolumne County are two-lane highways, including State Routes (SRs) 49, 108, and 120. The existing (2014) average daily traffic (ADT) on SRs 49, 108, and 120 did not exceed 23,500 ADT (see Table 3.16-3 in Section 3.16, “Transportation and Circulation”), and future (2040) ADT volumes would not exceed 29,879 (see Table 3.16-5 in Section 3.16, “Transportation and Circulation”). Due to the relatively low ADT of roadways within Tuolumne County, new sensitive receptors placed close to existing or new roadways would not experience the adverse health effects identified by CARB.

Implementation of the General Plan Update would result in new land uses that could generate new sources of TACs from commercial and industrial land uses (e.g., gasoline dispensing facilities and dry cleaners). Per TCAPCD Rule 427, land uses that would construct or reconstruct stationary emissions from a major source would be required to obtain a permit and would have to install best available control technology for toxics, if deemed applicable by the TCAPCD. Due to the programmatic level of this analysis, specific land use types and location of future development are not available. However, it is possible that future development as a result of the General Plan Update could result in new stationary sources associated with commercial and industrial land use development that could result in TAC exposure to existing or future planned sensitive land uses. However, the Air Quality Element includes policies and implementation programs focused specifically on addressing exposure of sensitive receptors to TACs. Policy 15.A.2 focuses on addressing air quality impacts from new development through requirements for air quality impact evaluations and implementation of innovative mitigation measure to reduce air quality impacts. Policy 15.A.3 provides land use compatibility guidance for the siting of new residential land uses near existing industrial land use designations with the goal of minimizing health risks to people from industrial toxic or TAC emissions. These General Plan Update policies would serve to reduce risk of exposing new and existing sensitive receptors to

TAC emissions. Further, new stationary TAC sources would be subject to Rule 427 and would be required install best available control technology for toxics to receive permitting for the project. New stationary TAC sources that do not meet TCAPCD Rule 427 would not receive permits and would ultimately not be approved for development, ensuring receptors would not be exposed to substantial concentrations of TACs.

Summary

As discussed above, implementation of the General Plan Update could result in exposure of sensitive receptors to construction-related TACs. However, given that development of new land uses under the General Plan Update would occur between 2019 and 2040 and would occur in various areas throughout the County, it is unlikely that any one sensitive receptor would be exposed to construction-related TACs for extended periods of time. Therefore, construction activity as a result of the General Plan Update would not result in the exposure of existing or new sensitive receptors to a substantial increase in TAC emissions. The General Plan Update would also result in an increase in VMT along local roadways within the County as a result of the development of new land uses. Given the relatively low daily traffic volumes on roadways within the County under existing and projected future conditions, existing and new sensitive receptors would not be exposed to roadway traffic levels that could result in adverse health effects from TACs. Regarding stationary sources of TACs, as discussed above, the General Plan Update includes policies and implementation programs that would limit exposure of new sensitive receptors to TACs from stationary sources such as industrial land uses. Additionally, all new development undergoing discretionary review would be required to evaluate existing TAC exposure and incorporate available reduction measures in accordance with TCAPCD requirements, if necessary. In consideration of these factors, implementation of the General Plan Update would not result in the exposure of existing or new sensitive receptors to a substantial increase in TAC emissions. This impact would be **less than significant**.

Mitigation Measures

No mitigation is required.

Impact 3.3-4: Generation of Long-term Mobile-Source CO Concentrations that would Violate an Existing Air Quality Standard

Long-term operational mobile-source emissions of CO potentially generated by vehicle trips associated with projected development under the General Plan Update would not violate or contribute substantially to localized concentrations of CO that exceed the CAAQS or NAAQS for CO. Additionally, the traffic volume increase under the General Plan Update would not result in affected intersections experiencing more than 31,600 vehicles per hour and, therefore, would not exceed CO hotspot concentration thresholds. As a result, this impact would be **less than significant**.

Local mobile-source CO emissions near roadway intersections are a direct function of traffic volume, vehicle speed, and traffic delay. A CO hotspot is an area of localized CO pollution that is caused by severe vehicle congestion on major roadways, typically near intersections. Transport of CO is extremely limited because it disperses rapidly with distance from the source under normal meteorological conditions. However, under stable meteorological conditions, CO concentrations near roadways and/or intersections may reach unhealthy levels, adversely affecting nearby sensitive land uses, such as residential units, hospitals, schools, and childcare facilities. CO is a pollutant of localized concern and, therefore, is analyzed at the local level. Construction activities are rarely a cause of localized CO impacts because they do not typically result in substantial traffic increases at any one location. The TCAPCD does not currently have guidance on analyzing exposure to CO hotspots. However, SMAQMD has developed a screening criteria methodology for exposure to CO hotspots and it is a valid approach to use in Tuolumne County because it is based on health exposure criteria.

Under the first tier of SMAQMD screening criteria, a project would result in a less-than-significant impact to air quality for local CO if traffic generated by the proposed project will not result in deterioration of intersection level of service (LOS) to LOS E or F and the project will not contribute additional traffic to an intersection that already operates at LOS E or F. Based on the traffic study prepared for the General Plan Update, numerous intersections would experience LOS deteriorations to LOS D, E, and F. See Table 3.16-6 in

Section 3.16, "Transportation and Circulation," which includes a list of all intersections affected by the project that were included in the project traffic study. Based on the LOS modeling included in the traffic study, the intersection that would experience the largest degradation in LOS would be South Washington Street and Church Street, which would experience a decrease from LOS E to F for the a.m. peak hour and would continue to experience LOS F during the p.m. peak hour. The intersection of South Washington Street and Church Street is in the City of Sonora. Under SMAQMD criteria, if the first tier of SMAQMD screening criteria is exceeded, then the second tier of screening criteria is examined. Under the second screening tier, a project would result in a less-than-significant CO impact if the project would not cause an affected intersection to experience more than 31,600 vehicles per hour (SMAQMD 2016). Based on the traffic study prepared for the General Plan Update, the intersection that would experience the highest traffic volumes as a result of implementation of the General Plan Update would be Greenley Road and Mono Way, which would have a p.m. peak hour volume of 3,157 vehicles per hour (Appendix Figure 3 of Wood Rogers 2016). SMAQMD's established screening criteria for CO hotspots is 31,600 vehicles per hour, which means that the peak hourly volume of traffic at this intersection would be less than threshold required to be considered a CO hotspot. As this is the intersection where the highest traffic volumes are anticipated, all other intersections (including the intersection of South Washington Street and Church Street) would, likewise, not exceed the 31,600 vehicle per hour threshold. Implementation of the General Plan Update would not result in traffic contributions to any intersection in the County that would result in a CO hotspot.

The screening criteria established by SMAQMD were based on existing background levels of CO within the Sacramento region and based on the needed total vehicle volume that, when combined with existing CO levels, could trigger a CO hotspot. Therefore, the screening criteria are adaptable to other locations within California if CO background levels within these other areas are similar to or below those that were used in the modeling conducted by SMAQMD. For locations with CO background levels similar to or below those in the Sacramento region, the same or more vehicle volumes would be needed to generate a CO hotspot and result in similar impacts as identified in the SMAQMD screening criteria. Given that Tuolumne County is currently in attainment for CO and is not projected to exceed CAAQS or NAAQS, it is highly unlikely that implementation of the General Plan Update would result in localized CO hotspot impacts from increased vehicle volumes.

Using established CO impact screening methodologies, traffic study results for the project show that future vehicle volumes at affected intersections would not exceed CO hotspot concentration thresholds established by SMAQMD and would, therefore, not result in local CO hotspot impacts. Project-generated local mobile-source CO emissions would not result in, or substantially contribute to, concentrations of CO that exceed the 1-hour or 8-hour CAAQS and NAAQS. As a result, this impact would be **less than significant**.

Mitigation Measures

No mitigation is required.

Impact 3.3-5: Expose Sensitive Receptors to Odors

Projected development under the General Plan Update could result in construction activities that would introduce new odor sources into the plan area (e.g., temporary diesel exhaust emissions during construction and delivery trucks associated with commercial land uses). However, these odor sources would be temporary and intermittent and would largely come from mobile sources. Projected development under the General Plan Update could result in new sensitive receptors being located near existing odor emitting land uses and could potentially cause a nuisance. However, the Community Development and Design Element and Agriculture Element of the General Plan Update both include policies regarding the siting of incompatible land uses that would consider potential odor impacts. Further, except for agricultural operations, TCAPCD Rule 205 prohibits the emission of any material that may cause a nuisance to a person or the public. As a result, projected development under the General Plan Update would not result in odor impacts on new or existing sensitive receptors; therefore, this impact would be **less than significant**.

Implementation of the General Plan Update would result in the development of new land uses in the County that could expose existing sensitive receptors to new land uses that could include odor sources and may cause a nuisance. Additionally, new sensitive receptors could be exposed to existing land uses that include odors and may result in a nuisance. The occurrence and severity of odor impacts depends on numerous factors, including the nature, frequency, and intensity of the source; wind speed and direction; and the sensitivity of the affected receptors. While offensive odors rarely cause any physical harm, they still can be very unpleasant, leading to considerable distress among the public, and they often generate citizen complaints to local governments and regulatory agencies. TCAPCD Rule 205 states: "A person shall not discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons, or to the public, or which endanger the comfort, repose, health or safety of any such persons, or the public, or which cause to [sic] have a natural tendency to cause injury or damage to business or property." Enforcement of TCAPCD Rule 205 would serve to mitigate odor-generating new land uses other than agricultural operations developed as a result of the General Plan Update that may cause a nuisance to nearby sensitive receptors.

In regard to odors generated from agricultural operations, Tuolumne County's Ordinance Code includes a "Right to Farm" ordinance (Tuolumne County Ordinance Code Chapter 5.20). The ordinance serves to protect and support agricultural land and operations within the County. Section 5.20.030 states,

> No preexisting or future agricultural operation, including the management and harvesting of timber, or any of its appurtenances conducted or maintained for commercial purposes, and in a manner consistent with proper and accepted customs and standards on agricultural land, shall become or be a nuisance, private or public, due to any changed condition of adjacent land uses in or about the locality thereof, provided that the provisions of this chapter shall not apply whenever a nuisance results from the negligent or improper operation of any such agricultural operation or its appurtenances; or if the agricultural activity of appurtenances obstructs the free passage or use in the customary manner of any navigable lake, river, stream, canal or basin or any public park, square, street or highway.

To deter from potential conflicts with existing agricultural land uses, as part of the ordinance, the County is required to give notice of this ordinance to buyers of real property located in the County. The County also has a seven-member agricultural grievance committee that has been established to arbitrate and mediate any disputes involving agricultural land uses and issue opinions on whether certain agricultural operations constitute a nuisance. The County's "Right to Farm" ordinance serves to mitigate issues regarding exposure of sensitive receptors to odors from agricultural land and operations while protecting agricultural land uses in the County. This ordinance would serve to protect agricultural lands in the County during implementation of the General Plan Update and mitigate issues regarding exposure of sensitive receptors to odors from agricultural land and operations that may be considered a nuisance.

The Community Development and Design Element of the General Plan Update includes Policy 1.B.1, which addresses the protection of existing land uses from the impacts associated with the siting of new incompatible land uses. Implementation programs included under Policy 1.B.1 provide specific guidance for appropriately siting land uses surrounding residences so as to not result in impacts on sensitive receptors. Implementation Program 1.B.d specifically addresses buffer areas for industrial land uses to mitigate impacts on new residential and other potentially incompatible land uses. The Agriculture Element also includes policies that address the siting of new residential land uses adjacent to agricultural land uses. Policy 8.A.4 requires new nonagricultural development to provide a 200-foot buffer from adjacent agricultural lands. Policy 8.C.2 requires the establishment of a buffer between agricultural land uses and residential/nonagricultural land uses, which would reduce potential impacts on sensitive receptors. The inclusion of these policies in the General Plan Update would serve to reduce potential odor impacts from the siting of new sensitive receptors in the County. The policies would also reduce potential impacts on existing sensitive receptors from the siting of new land uses that may generate odor and could cause a nuisance.

Minor odors from the use of heavy-duty diesel equipment and the laying of asphalt during construction activities would be intermittent and temporary. Due to the characteristics of diesel exhaust emission, odors generated from the use of heavy-duty diesel equipment would dissipate rapidly within 150 meters (492 feet) (Zhu et al. 2002a, cited in CARB 2005; Zhu et al. 2002b). While construction would occur intermittently

between 2019 and 2040, these types of odor-generating activities would not occur at any single location, or within close proximity to the same off-site receptors, for an extended period of time and would not result in permanent odor sources. Therefore, construction is not anticipated to result in substantial odors.

Future nonresidential land uses or specific facilities in the County could generate odor emissions that could be a nuisance. However, the Community Development and Design Element and Agriculture Element in the General Plan Update include land use compatibility policies that would serve to reduce potential impacts from development of odor generating land uses and reduce potential odor impacts from the siting of new sensitive receptors near existing odor sources. Additionally, TCAPCD Rule 205 regulates nonagricultural uses that potentially emit odors, further reducing the potential for odor impacts on existing and new sensitive receptors in the County. As a result, implementation of the General Plan Update would not result in odor impacts on existing sensitive receptors or future sensitive receptors. Therefore, this impact would be **less than significant**.

Mitigation Measures

No mitigation is required.

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3.4 BIOLOGICAL RESOURCES

This section addresses biological resources known or with potential to occur in Tuolumne County. The analysis includes a description of the existing biological resource conditions and provides a brief overview of applicable federal and state plans, policies, and laws and local plans, policies, and regulations pertaining to the protection of biological resources in Tuolumne County. The analysis identifies the potential impacts of projected development under the General Plan Update on biological resources and identifies mitigation measures, when available, to reduce the level of impact to less than significant.

The primary issues raised in comments received on the Draft EIR that pertain to terrestrial biological resources included conversion of oak woodland and other habitats, impacts to sensitive species, and open space conservation.

3.4.1 Environmental Setting

HABITATS

Tuolumne County contains a wide diversity of tree (hardwood and coniferous forests, oak woodlands), shrub (chaparrals), and herbaceous (grasslands) habitat types. Thirty-four habitat types were mapped using the Northern Sierra Nevada Foothills Vegetation Project data (Aerial Information Systems 2011) and the California Wildlife Habitat Relationships (CWHR) habitat classification system within Tuolumne County (CDFW 2008). For purposes of displaying the broad distribution of habitats across the County, these 34 habitat types were aggregated into nine general habitat categories shown in Exhibit 3.4-1. A description of each of the 34 habitats adapted from *A Guide to Wildlife Habitats of California* (Mayer and Laudenslayer 1988) is presented below. The vegetation classifications from *A Manual of California Vegetation, Second Edition* (Sawyer et al. 2009) that most closely resemble those classified by the CWHR are also presented in each description. It should be noted that these habitats are generalized and that site-specific variation is potentially present. Also, the CWHR classification system maps habitats from a broad perspective and in many areas, it is expected that two or more habitats may blend with one another. Habitats that occur within populated areas can also show variation because of a greater exposure to anthropogenic influences such as the introduction of exotic plant species.

Tree-Dominated Habitats

Tuolumne County includes a variety of hardwood, coniferous, and mixed woodlands and forests (Exhibit 3.4-1). These tree-dominated habitats can support diverse wildlife populations. Riparian habitats, which are often tree-dominated, are generally the terrestrial areas adjacent to fresh water bodies forming a vegetated corridor from stream edge to floodplain edge. Riparian habitats occur along the rivers, creeks, streams, and ravines in the County. Riparian areas are rich in wildlife species, providing foraging, migration, roosting, and nesting/breeding habitat. The following are those types of tree-dominated habitats that occur within Tuolumne County. Descriptions of these habitat types are provided in Appendix B.

- Aspen Forest
- Blue Oak-Foothill Pine Woodland
- Blue Oak Woodland
- Closed-Cone Pine-Cypress Forest
- Douglas Fir Forest
- Eastside Pine Forest
- Jeffrey Pine Forest
- Juniper Woodland
- Lodgepole Pine Forest
- Montane Hardwood Forest
- Montane Riparian Forest
- Valley Oak Woodland
- Montane Hardwood-Coniferous Forest
- Pinyon-Juniper Woodland
- Ponderosa Pine Forest
- Red Fir Forest
- Sierran Mixed Conifer Forest
- Subalpine Conifer Forest
- White Fir Forest

Shrub-Dominated Habitats

Shrub-dominated habitats, such as various chaparral communities, are composed primarily of woody, evergreen shrubs and occur predominantly in the western portion of Tuolumne County. The following types of shrub-dominated habitats occur within Tuolumne County. Descriptions of these habitat types are provided in Appendix B.

- Alpine Dwarf-Shrub
- Chamise-Redshank Chaparral
- Low Sage Shrubland
- Mixed Chaparral
- Montane Chaparral
- Sagebrush Shrubland

Herbaceous-Dominated Habitats

Herbaceous-dominated habitats are generally composed of areas dominated by grasses and other non-woody species. The majority of this habitat in Tuolumne County is characterized by non-native grasslands located in the lowlands of the western portion of the County. The following types of herbaceous-dominated habitats occur within Tuolumne County. Descriptions of these habitat types are provided in Appendix B.

- Annual Grasslands
- Perennial Grassland
- Wet Meadow

Developed and Sparsely/Non-Vegetated Habitats

Developed habitats are usually sparsely or non-vegetated and are associated with urban and agricultural areas and are highly disturbed. Species that occur in these areas are typically adapted to anthropogenic disturbance and/or comprised of ornamental species. Sparsely vegetated habitats also tend to be associated with rock outcrops and cliffs. The following are types of developed and sparsely/non-vegetated habitats that occur within Tuolumne County. Descriptions of these habitat types can be found in Appendix B.

- Cropland
- Deciduous Orchard
- Urban
- Barren

DRAINAGES AND WETLANDS

Drainages

The County contains two principal rivers and their watersheds: Stanislaus River and Tuolumne River. Several creeks and tributaries are associated with each one of these watersheds (Exhibits 3.4-2a, 3.4-2b and 3.4-2c). The drainages within these watersheds provide valuable foraging habitat, breeding habitat, and movement habitat for a wide variety of animal species, including sensitive species such as Paiute cutthroat trout (*Oncorhynchus clarkii seleniris*) and California red-legged frog (*Rana draytonii*). Information regarding each watershed is provided below.

Stanislaus River: This river is an approximately 65-mile-long waterway that flows from the Sierra Nevada to the San Joaquin River in the eastern part of the Central Valley and is one of the largest tributaries of the San Joaquin River. The Stanislaus River Watershed covers an area of approximately 904 square miles. The river originates as North, Middle, and South Forks in the Stanislaus National Forest in the Sierra Nevada. The confluence of these forks northeast of New Melones Lake forms the Stanislaus River. The North Fork forms the northwestern boundary of the County.

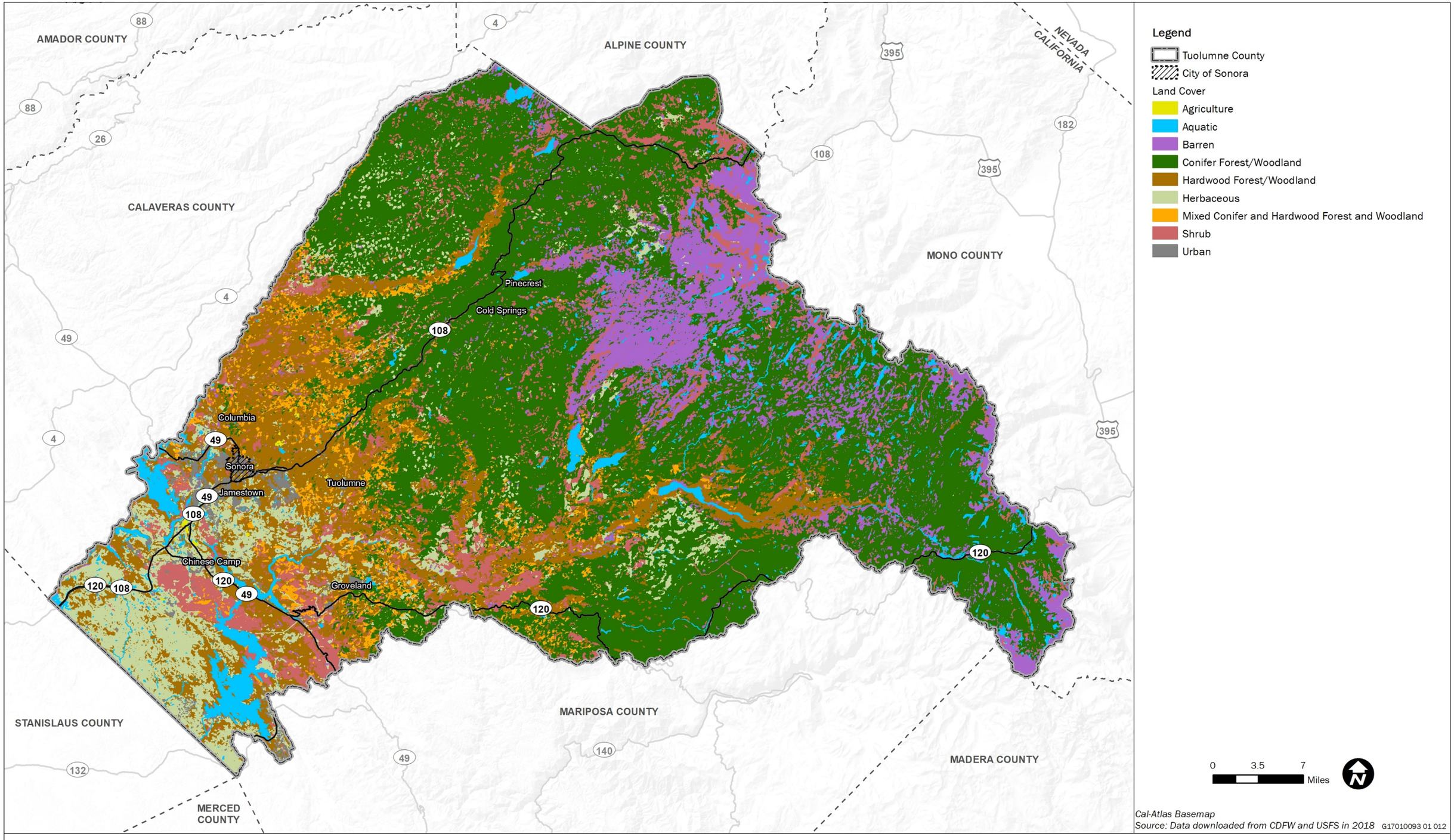
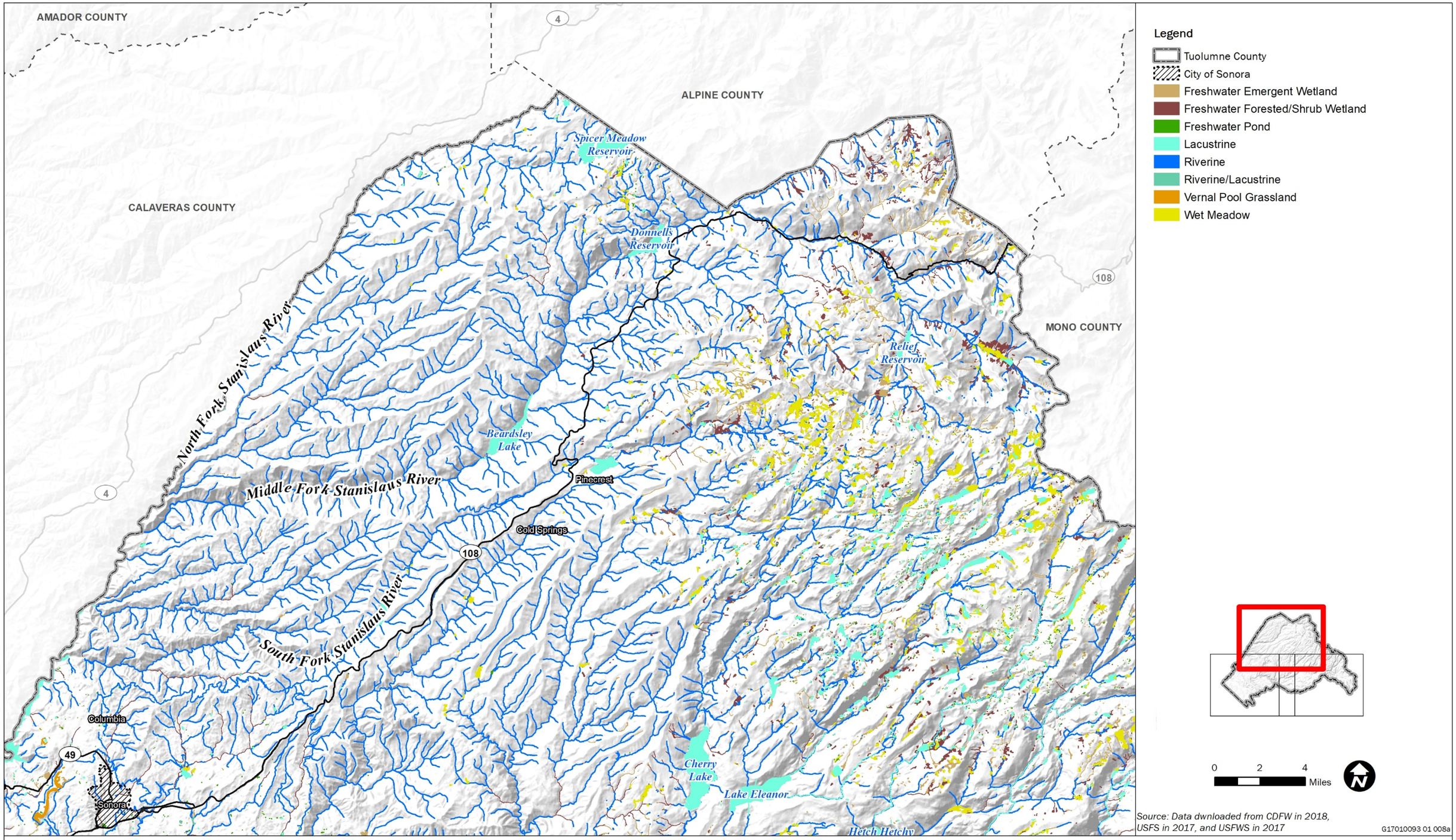


Exhibit 3.4-1

Land Cover



Source: Data dwnloaded from CDFW in 2018, USFS in 2017, and USFWS in 2017

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Exhibit 3.4-2a

National Wetlands Inventory

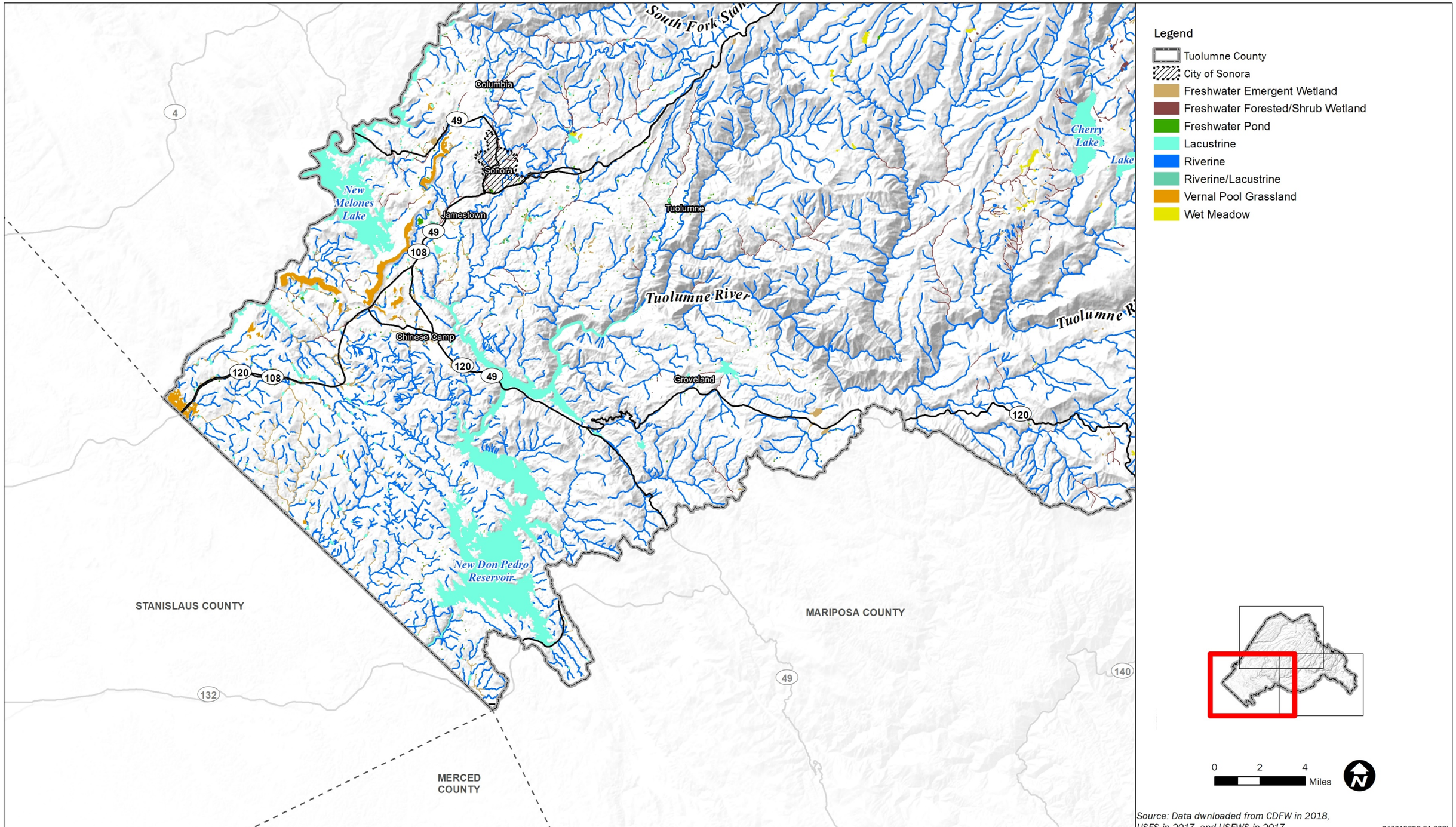
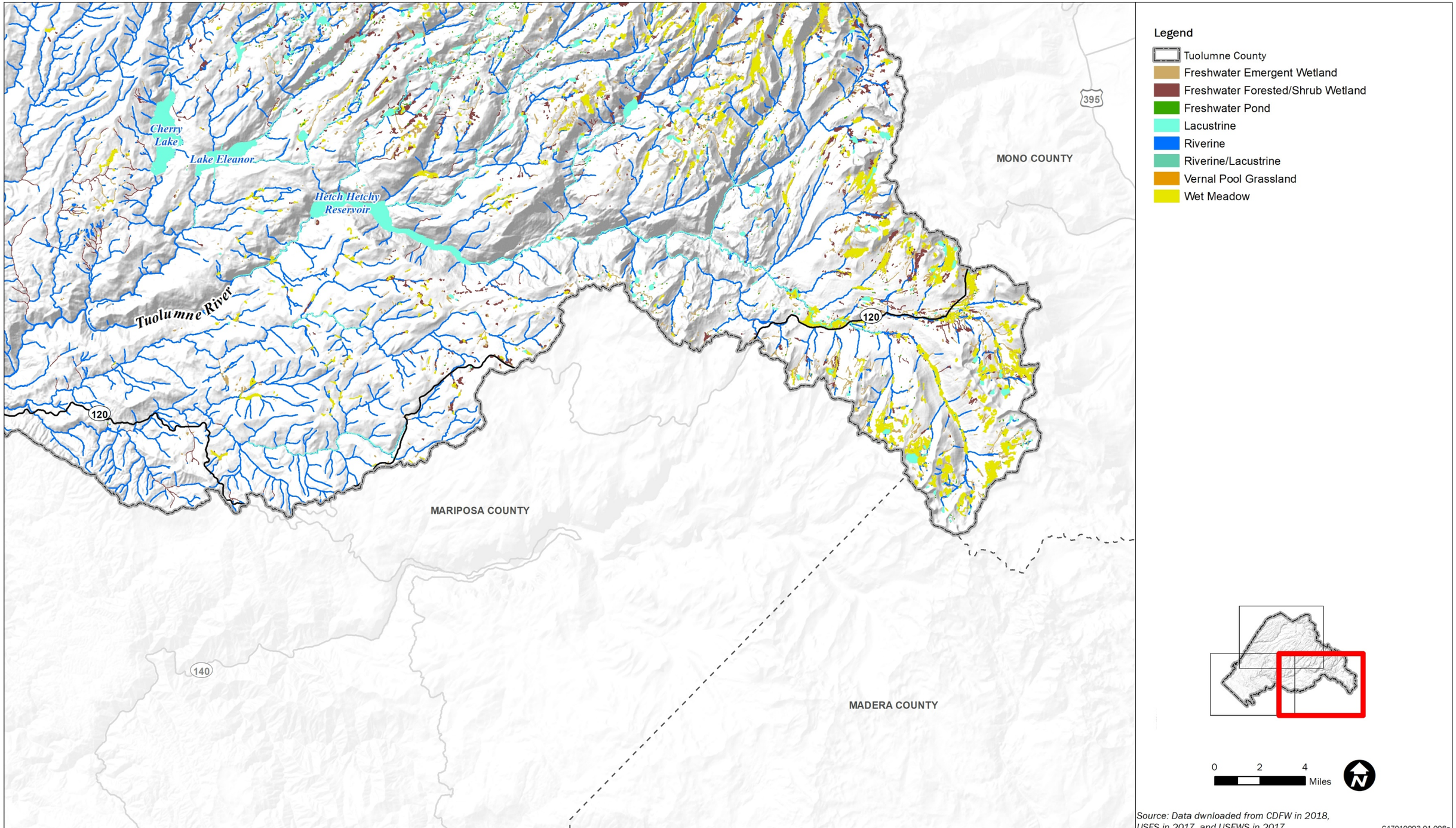


Exhibit 3.4-2b

National Wetlands Inventory

ASCENT ENVIRONMENTAL



Source: Data dwnloaded from CDFW in 2018, USFS in 2017, and USFWS in 2017

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Exhibit 3.4-2c

National Wetlands Inventory

Tuolumne River: The headwaters of this river originate in the High Sierra at the eastern edge of Tuolumne Meadows in Yosemite National Park. The watershed area covers approximately 1,533 square miles. The Tuolumne River flows through Yosemite National Park and into Hetch Hetchy Valley, which was flooded behind the O'Shaughnessy Dam in 1923, and then into the Stanislaus National Forest. At the O'Shaughnessy Dam, approximately 33 percent of the river's flow is diverted to the San Francisco Bay Area, where it provides drinking water for nearly 2.5 million people.

Wetlands

Wetlands are important biological resources both because of their rarity and because they serve a variety of functional values. Several types of wetlands exist in the County, including freshwater marshes, vernal pools, and riparian habitats.

Vernal Pools

These seasonal wetlands are small depressions that fill with water during the winter, gradually drying during the spring and becoming completely dry in the summer. These pools are found in only a few places in the world outside of California. Vernal pool vegetation is characterized by herbaceous plants that begin their growth as aquatic or semi-aquatic plants and transition to a dry land environment as the pool dries. Most vernal pool plants are annual herbs.

In addition to vernal pools, several areas within the County are mapped by the U.S. Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) (USFWS 2015a). A general description of each of the classifications is provided below. Of those wetland types mapped by the NWI, freshwater emergent wetland, riverine and lacustrine habitats are also mapped by the CWHR.

Freshwater Emergent Wetlands

Freshwater emergent wetlands include all non-tidal waters dominated by emergent herbaceous plant species, mosses, and/or lichens. Wetlands of this type are also low in salinity. Wetlands which lack vegetation can be included in this class if they are less than 20 acres, do not have an active wave-formed or bedrock shoreline feature, and have a low water depth less than 6.6 feet. This wetland type is also mapped by the CWHR. Freshwater emergent wetlands are characterized by erect, rooted herbaceous hydrophytes. Dominant vegetation is generally perennial monocots. All emergent wetlands are flooded frequently, enough so that the roots of the vegetation prosper in an anaerobic environment. The vegetation may vary in size from small clumps to vast areas covering several kilometers.

Freshwater Forested/Shrub Wetlands

These wetlands include non-tidal waters which are dominated by trees and shrubs, with emergent herbaceous plants, mosses and/or lichens. Wetlands which lack vegetation can be included in this class if they also exhibit the same criteria as described for freshwater emergent wetlands. The vegetation found in freshwater forested/shrub wetlands are generally dominated by woody vegetation such as shrubs and trees.

Freshwater Ponds

Freshwater ponds include non-tidal waters with vegetative cover along its edges such as trees, shrubs, emergent herbaceous plants, mosses, and/or lichens. Freshwater ponds can be man-made or natural and typically consist of an area of standing water with variable amounts of shoreline. These wetlands and deep-water habitats are dominated by plants that grow on or below the surface of the water. This wetland type is also mapped by the CWHR and categorized as lacustrine habitat which includes vernal pools.

Lakes

Lakes are a lacustrine system that includes wetlands and deep-water habitats that are located in a topographic depression or dammed river channel. These areas tend to be greater than 20 acres. Vegetation cover within this habitat is generally less than 30 percent and often occurs in the form of emergent or surface vegetation. Substrates are composed of at least 25 percent cover of particles smaller than stones. This wetland type is also mapped by the CWHR and categorized as lacustrine habitat which also includes vernal pools.

Riverine

Riverine habitats are a riverine system that includes all wetlands and deep-water habitats contained in natural or artificial channels that contain periodically or continuously flowing water. This system may also form a connecting link between two bodies of standing water. Substrates generally consist of rock, cobble, gravel or sand.

Wet Meadow

Wet meadows often occur as ecotones between fresh emergent wetland and perennial grassland or mesic meadow types. Where wet meadows merge with fresh emergent wetlands, slight differences in water depth control the species present. 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; however, they may be an important feature of the meadow edge.

SPECIAL-STATUS SPECIES AND SENSITIVE COMMUNITIES

Special-status species are plants and animals that are legally protected or otherwise considered sensitive by federal, state, or local resource conservation agencies and organizations. In this Recirculated Draft EIR, special-status species are defined as:

- species listed or proposed for listing as threatened, rare, or endangered under the federal Endangered Species Act (ESA) or California Endangered Species Act (CESA);
- species considered as candidates for listing under the ESA or CESA;
- wildlife species designated by the California Department of Fish and Wildlife (CDFW) as Species of Special Concern;
- animals fully protected under the California Fish and Game Code; and
- plants considered by CDFW to be “rare, threatened, or endangered in California” (California Rare Plant Ranks [CRPR] of 1A, presumed extinct in California and not known to occur elsewhere; 1B, considered rare or endangered in California and elsewhere; 2A, presumed extinct in California, but more common elsewhere and 2B, considered rare or endangered in California but more common elsewhere).

Special-status CRPR List 3 and List 4 plant species are typically not considered for analysis under the California Environmental Quality Act (CEQA) except where they are designated as rare or otherwise protected by local government. Therefore, these plant species are not included in subsequent impact analysis. CRPR List 1B and 2 species are typically regarded as rare, threatened, or endangered under CEQA by lead agencies and were considered in impact analysis.

Queries of the USFWS Information for Planning and Consultation (IPaC) system (USFWS 2015b), USFWS Critical Habitat Portal (USFWS 2015c), California Natural Diversity Database (CNDDB) (CDFW 2015), and California Native Plant Society (CNPS) *Online Inventory of Rare, Threatened and Endangered Plants of California* (CNPS 2015) were conducted. The queries were conducted to obtain comprehensive information regarding state and federally listed species, sensitive communities and federally designated Critical Habitat known or with potential to occur within Tuolumne County. The CNDDB and CNPS Inventory data are species occurrence records reported voluntarily and do not represent a comprehensive inventory of special-status species in an area. Additionally, these sources include historical occurrences for species that may no longer be extant at a given location. Accordingly, the CNDDB and CNPS are useful tools for determining species occurrences that have been voluntarily reported but are not intended to confirm presence or absence of a species in an area.

Sensitive Natural Communities and Habitats

Sensitive habitats are defined as habitats with particularly high ecological values or functions, of limited distribution, or otherwise of concern to federal, state, and/or local resource agencies. Sensitive habitats are often designated because they are declining regionally or statewide. Sensitive habitats are of special concern because they have high potential to support special-status plant and animal species and can provide other important ecological functions, such as enhancing flood and erosion control and maintaining water quality. Sensitive habitats include Natural Communities of Special Concern that are identified by CDFW (e.g., having a high priority for inventory by the CNDDB or those afforded specific consideration through CEQA, Section 1602 of the California Fish and Game Code, California's Porter-Cologne Act, or Section 404 of the Clean Water Act (CWA)).

Sensitive habitats in Tuolumne County consist of the wetland and aquatic types described previously (vernal pools, freshwater emergent wetland, freshwater forested/shrub wetland, freshwater pond, lakes, riverine, and wet meadow). These habitats would be subject to regulation by the U.S. Army Corps of Engineers (USACE) and the Central Valley Regional Water Quality Control Board (RWQCB) under Sections 404 and 401 of the CWA or under the Porter-Cologne Act, and/or by CDFW under California Fish and Game Code. Other sensitive habitats in the County include valley oak woodland, valley foothill riparian, montane riparian forest, aspen forest, and California buckeye groves.

Special-Status Plants and Animals

Tuolumne County is home to several species protected by federal and state agencies. Important animal species can be found in a variety of habitats in the County. The CNDDB (CDFW 2015), CNPS (2015), and USFWS IPaC (USFWS 2015b) together list 177 special-status animal (42 species) species and plant (135 species) known or with potential to occur within Tuolumne County. The status and habitat requirements for each of these species are presented in Tables 1 and 2 respectively in Appendix B.

Critical Habitat

USFWS has designated critical habitat in Tuolumne County for eight threatened and endangered plant and animal species: Sierra Nevada yellow-legged frog (*Rana sierrae*), Yosemite toad (*Anaxyrus canorus*), Sierra Nevada bighorn sheep (*Ovis canadensis sierrae*), Steelhead – Central Valley Distinct Population Segment (*Oncorhynchus mykiss irideus*), Colusa grass (*Neostapfia colusana*), Fleshy owl's-clover (*Castilleja campestris* ssp. *succulenta*), Hoover's spurge (*Chamaesyce hooveri*), Greene's Tuctoria (*Tuctoria greenei*). Exhibit 3.4-3 shows the distribution of federally designated critical habitat in Tuolumne County.

WILDLIFE MOVEMENT CORRIDORS

Wildlife movement corridors, or habitat linkages, are generally defined as connections between habitat patches that allow for physical and genetic exchange between otherwise isolated animal populations. Such linkages may serve a local purpose, such as providing a linkage between foraging and denning areas, or they may be regional in nature. Some habitat linkages may serve as migration corridors, wherein animals periodically move away from an area and then subsequently return. Others may be important as movement routes for dispersing animals. A group of habitat linkages in an area can form a wildlife corridor network.

The habitats within the link do not necessarily need to be the same as the habitats that are being linked. Rather, the link merely needs to contain sufficient cover and forage to allow temporary inhabitation by ground-dwelling species. Typically, habitat linkages are contiguous strips of natural areas, though dense plantings of landscape vegetation can be used by certain disturbance-tolerant species. Depending upon the species using a corridor, specific physical resources (such as rock outcroppings, vernal pools, or oak trees) may need to be located within the habitat link at certain intervals to allow slower-moving species to traverse the link. For highly mobile or aerial species, habitat linkages may be discontinuous patches of suitable resources spaced sufficiently close together to permit travel along a route in a short period of time.

Corridors usually connect one large habitat area with another, and while there is no pre-defined size limit for such areas, they most often are on the scale of mountain ranges, valleys, rivers and creeks, or clearly

delimited ecological situations (e.g., vernal pools). The *Missing Linkages: Restoring Connectivity to California Landscape* (Penrod et al. 2001) conference refers to such corridors as "landscape linkages." These are specifically defined in that report as:

> "large, regional connections between habitat blocks ("core areas") meant to facilitate animal movement and other essential flows between different sections of a landscape (taken from Soulé and Terborgh 1999). These linkages are not necessarily constricted, but are essential to maintain connectivity function in the ecoregion."

Wildlife movement corridors can be both large and small scale. Tuolumne County contains one landscape linkage identified by the above reference. Regionally, Tuolumne County is located within two Essential Connectivity Areas (ECAs) as mapped in the report, California Essential Habitat Connectivity Project: A Strategy for Conserving a Connected California (Spencer et al. 2010). One is located in the northern portion of the County and the other in the lower elevation portion of the western County (see Exhibit 3.4-4). ECAs represent principal connections between Natural Landscape Blocks, which are large remaining areas of intact habitat. ECAs are regions in which land conservation and management actions should be prioritized to maintain and enhance ecological connectivity. ECAs are mapped based on coarse ecological condition indicators, rather than the needs of particular species and thus serve the majority of species in each region. Small scale habitat corridors, though, can also be present on sites and include drainages and other topographic features that facilitate movement such as those in the mountainous regions of the County. The drainages found within the range, as mapped in Exhibits 3.4-2a and 3.4-2b, may provide opportunities for small scale regional connections for a number of wildlife species.

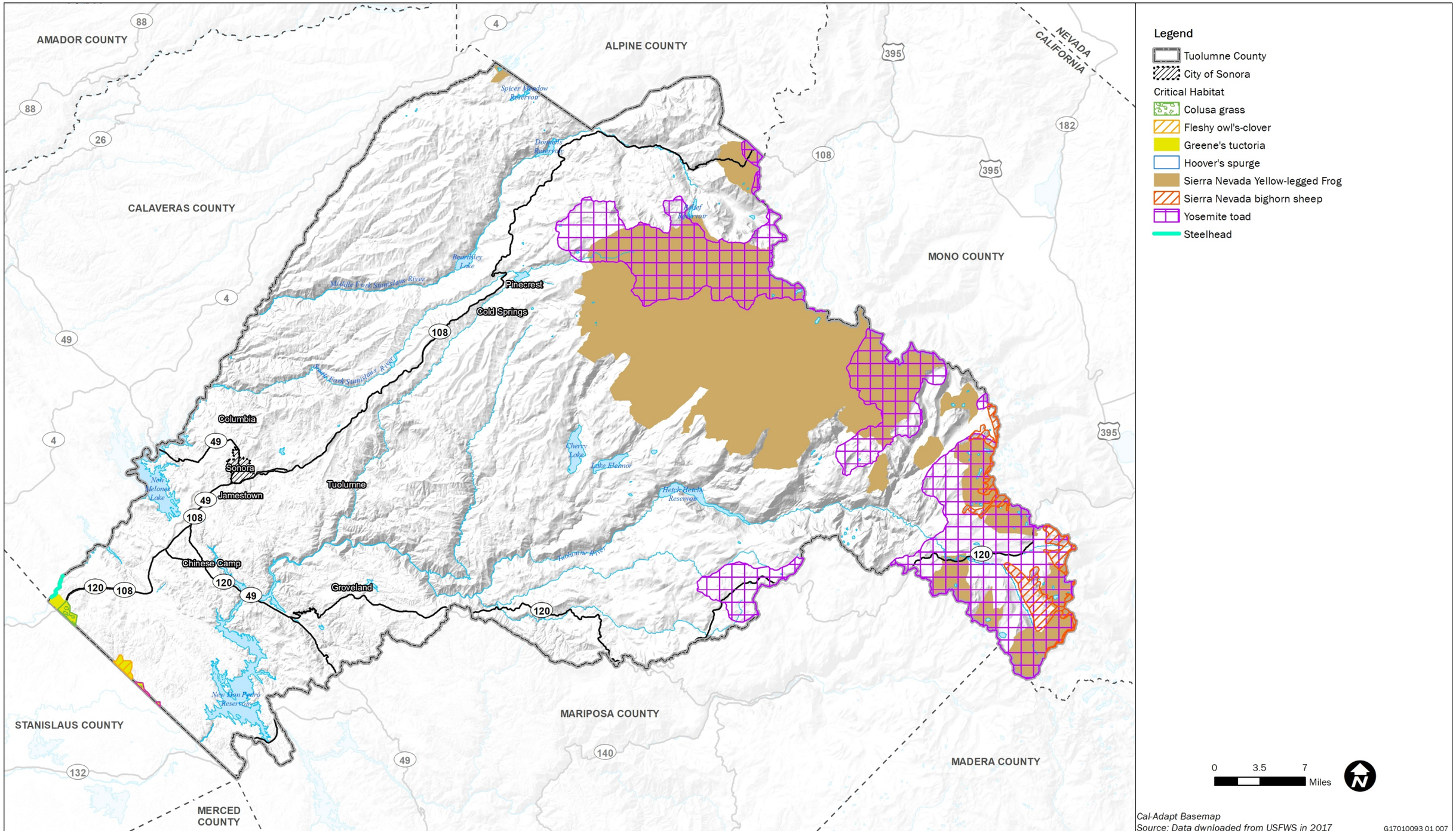
3.4.2 Regulatory Setting

Federal, state, and local authorities under a variety of statutes and guidelines share regulatory authority over biological resources. The primary authority for general biological resources lies within the land use control and planning authority of local jurisdictions, which in this instance is the County of Tuolumne. The CDFW is a trustee agency for biological resources throughout the State under CEQA and also has direct jurisdiction under the California Fish and Game Code, which includes, but is not limited to, resources protected by the State of California under CESA.

FEDERAL

U.S. Fish and Wildlife Service

The USFWS implements the Migratory Bird Treaty Act (16 U.S. Code [USC] Section 703 et seq.) and the Bald and Golden Eagle Protection Act (16 USC Section 668 et seq.). The USFWS and National Marine Fisheries Service (NMFS) share responsibility for implementing the ESA (16 USC § 1531 *et seq.)*. The USFWS generally implements the ESA for terrestrial and freshwater species, while the NMFS implements the ESA for marine and anadromous species. Projects that would result in "take" of any federally listed threatened or endangered species are required to obtain permits from the USFWS and/or NMFS through either Section 7 (interagency consultation with a federal nexus) or Section 10 (Habitat Conservation Plan) of ESA, depending on the involvement by the federal government in permitting and/or funding of the project. The permitting process is used to determine if a project would jeopardize the continued existence of a listed species and what measures would be required to avoid jeopardizing the species. "Take" under federal definition means to harass, harm (which includes habitat modification), pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct. Proposed or candidate species do not have the full protection of ESA; however, the USFWS and NMFS advise project applicants that they could be elevated to listed status at any time.



Cal-Adapt Basemap
Source: Data dwnloaded from USFWS in 2017

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Exhibit 3.4-3

Critical Habitat

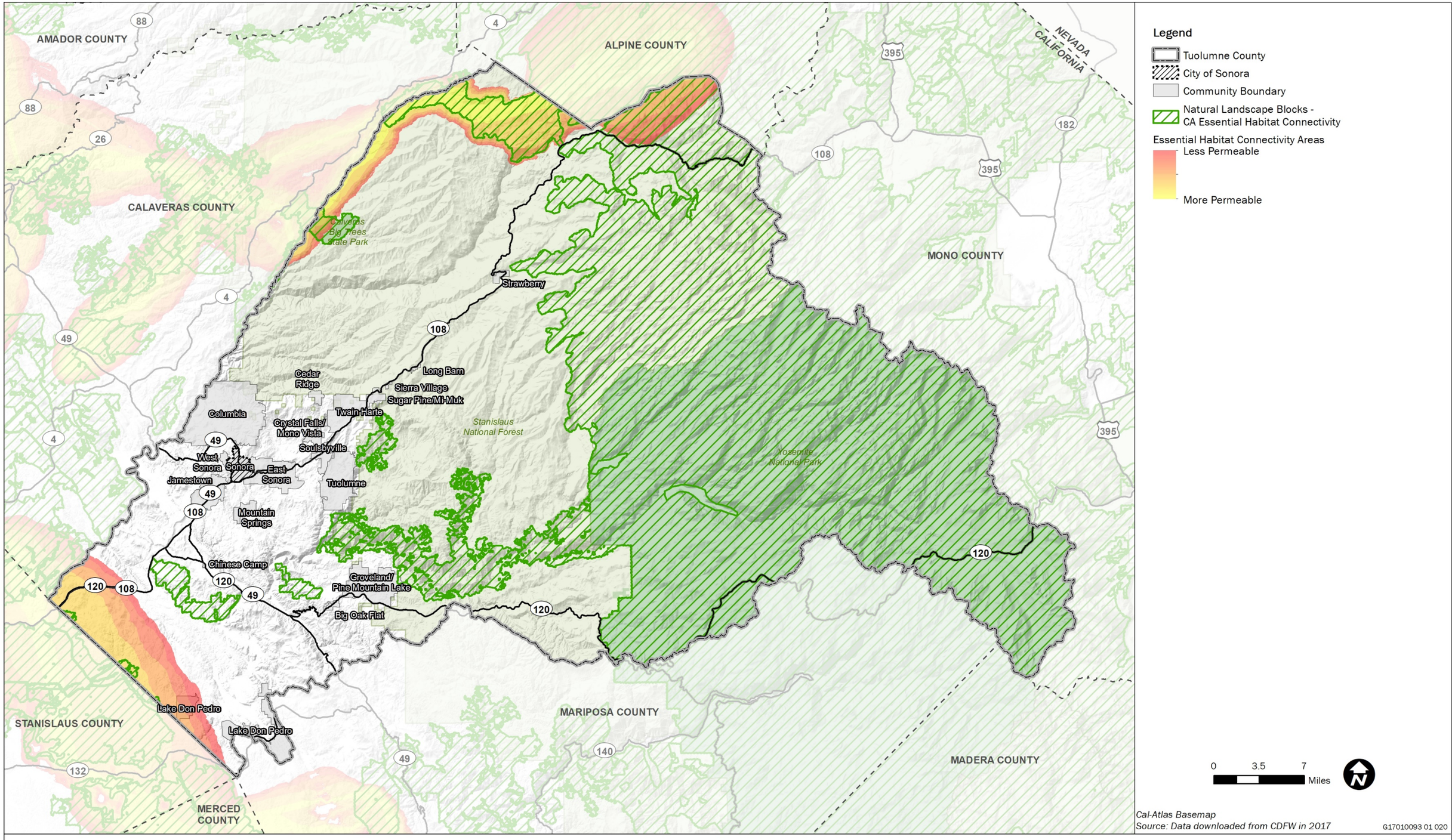

Exhibit 3.4-4

Essential Connectivity Areas

United States Army Corps of Engineers

Under Section 404 of the CWA, the USACE has authority to regulate activities that result in discharge of dredged or fill material into wetlands or other "waters of the United States." Perennial and intermittent creeks are considered waters of the United States if they are hydrologically connected to other jurisdictional waters. The USACE also implements the federal policy embodied in Executive Order 11990, which is intended to result in no net loss of wetlands. In achieving the goals of the CWA, the USACE seeks to avoid adverse impacts and offset unavoidable adverse impacts on existing aquatic resources. Any discharge into wetlands or other "waters of the United States" that are hydrologically connected and/or demonstrate a significant nexus to jurisdictional waters would require a permit from the USACE prior to the start of work. Typically, when a project involves impacts to waters of the United States, the goal of no net loss of wetlands is met through compensatory mitigation involving creation or enhancement of similar habitats.

STATE

California Department of Fish and Wildlife

The CDFW derives its authority from the Fish and Game Code. CESA (Fish and Game Code Section 2050 *et. seq.)* prohibits take of State-listed threatened and endangered species. Take under CESA is restricted to direct harm of a listed species and does not prohibit indirect harm by way of habitat modification. The CDFW additionally prohibits take for species designated as Fully Protected under the Fish and Game Code under various sections.

California Fish and Game Code Sections 3503, 3503.5, and 3511 describe unlawful take, possession, or destruction of birds, nests, and eggs. Fully protected birds (Fish and Game Code Section 3511) may not be taken or possessed except under specific permit. Section 3503.5 of the Code protects all birds-of-prey and their eggs and nests against take, possession, or destruction of nests or eggs. Species of Special Concern is a category used by the CDFW for those species which are considered to be indicators of regional habitat changes or are considered to be potential future protected species. Species of Special Concern do not have any special legal status except that which may be afforded by the Fish and Game Code as noted above. The Species of Special Concern category is intended by the CDFW for use as a management tool to include these species into special consideration when decisions are made concerning the development of natural lands, and these species are consider sensitive as described under the CEQA Appendix G questions. The CDFW also has authority to administer the Native Plant Protection Act(Fish and Game Code Section 1900 *et seq.*). The act requires the CDFW to establish criteria for determining if a species, subspecies, or variety of native plant is endangered or rare. Under Section 1913(c) of the act, the owner of land where a rare or endangered native plant is growing is required to notify the CDFW at least 10 days in advance of changing the land use to allow for salvage of the plant(s).

Perennial and intermittent streams and associated riparian vegetation, when present, also fall under the jurisdiction of the CDFW. Fish and Game Code Section 1600 et seq. (Lake and Streambed Alteration Agreements) gives the CDFW regulatory authority over work within the stream zone (which could extend to the 100-year flood plain) consisting of, but not limited to, the diversion or obstruction of the natural flow or changes in the channel, bed, or bank of any river, stream or lake.

Regional Water Quality Control Board

The State Water Resources Control Board (SWRCB) and each of nine local RWQCBs has jurisdiction over "waters of the State" pursuant to the Porter-Cologne Water Quality Control Act, Water Code Section 13000 et seq., which are defined as any surface water or groundwater, including saline waters, within the boundaries of the State. The SWRCB has issued general Waste Discharge Requirements regarding discharges to "isolated" waters of the State (Water Quality Order No. 2004-0004-DWQ, *Statewide General Waste Discharge Requirements for Dredged or Fill Discharges to Waters Deemed by the U.S. Army Corps of Engineers to be Outside of Federal Jurisdiction*). The local RWQCB enforces actions under this general order for isolated waters not subject to federal jurisdiction and is also responsible for the issuance of water quality certifications pursuant to Section 401 of the CWA for waters subject to federal jurisdiction.

California Department of Transportation - California Streets and Highways Code Section 156.3

Assessments and remediation of potential barriers to fish passage for transportation projects using State or federal transportation funds are required. Such assessments must be conducted for any projects that involve stream crossings or other alterations and must be submitted to the CDFW.

Oak Woodlands Conservation Act and California Senate Bill 1334/Public Resources Code Section 21083.4

In 2001, the California legislature enacted the Oak Woodlands Conservation Act (Assembly Bill 242), which established requirements for the preservation and protection of oak woodlands and trees, and allocated funding managed by the Wildlife Conservation Board. In order to qualify to use these funds, counties and cities must adopt an oak conservation management plan. In 2004, to expand these conservation efforts, the legislature passed Senate Bill 1334 (*Oak Woodlands Conservation: Environmental Quality*), which added Section 21083.4 to the Public Resources Code. This statute requires that a county must determine whether a project would result in a significant impact on oak woodlands and, if it is determined that a project may result in a significant impact on oak woodlands, then the County shall require one or more of the following mitigation measures:

- conserve oak woodlands through the use of conservation easements;
- plant an appropriate number of trees, including maintenance of plantings and replacement of failed plantings;
- contribute funds to the Oak Woodlands Conservation Fund for the purpose of purchasing oak woodlands conservation easements; or
- other mitigation measures developed by the county.

LOCAL

Tuolumne County General Plan

The existing Tuolumne County General Plan was adopted on December 26, 1996. It has a planning horizon of 25 years. The Conservation and Open Space element contains goals and policies related to the protection of biological resources.

Tuolumne County Ordinance Code

Chapter 9.24 of the County's Ordinance Code, Premature Removal of Native Oak Trees, provides requirements intended to discourage the premature removal of oak trees. Chapter 9.24 stipulates that the removal of native oak trees from a project site within the five (5) years preceding the submittal of an application for a discretionary entitlement from the County of Tuolumne for a land development project on that site is deemed premature removal and sets forth penalties and requirements for mitigation. Chapter 9.24 specifies that removals that qualify include:

a. Removal of native oak trees resulting in a 10 percent or more (>10 percent) average decrease in native oak canopy cover within an oak woodland;

b. Removal of any old growth oak trees, defined as any native oak tree that is 24" or greater in diameter at breast height (dbh);

c. Removal of any Valley Oak measuring 5" or greater dbh.

The premature removal of native oak trees is subject to penalties, including withholding approval of an application for a discretionary entitlement on the site for a period of up to five years, and monetary penalties as high as three times the in-lieu fee established by the Board of Supervisors.

Tuolumne County Oak Woodland Conservation Fund

In 2008, the Tuolumne County Board of Supervisors adopted Resolution 14-08, establishing the Tuolumne County Oak Woodland Conservation Fund for the collection of fees to mitigate impacts to oak woodlands and net loss of old growth oaks. The money collected in the fund may only be allocated by the Board of Supervisors. The fund may be used to purchase land in fee or conservation easements for the protection of native oak woodlands or for other measures that will restore or enhance native oak woodlands, or otherwise mitigate the impacts associated with the conversion of oak woodlands or impacts to old growth oaks (Tuolumne County 2018).

3.4.3 Impact Analysis

METHODS OF ANALYSIS

The following analysis is programmatic and is not developed for specific projects. Thus, project specific impacts to biological resources are unknown and a qualitative analysis is presented herein. Data used for this analysis include aerial photographs, topographic maps, the CNDDB, the CNPS online inventory of rare and endangered plants, and accepted scientific texts to identify species. Federal special-status species inventories maintained by the USFWS were reviewed in conjunction with the CNDDB and CNPS online inventory. Other data on biological resources were collected from numerous sources, including relevant literature, maps of natural resources, and data on special-status species and sensitive habitat information obtained from CDFW CNDDB (2015), the CWHR (CDFW 2008), the CNPS online *Inventory of Rare, Threatened, and Endangered Plants of California* (2015), and the USFWS IPaC system (2015b). The USFWS Critical Habitat Mapper (2015c) and NWI (2015a) were also queried.

THRESHOLDS OF ANALYSIS

The following thresholds are based on Appendix G of the *State CEQA Guidelines*. Impacts would be significant if projected development under the General Plan Update would result in any of the following:

- have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the 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 the CDFW or USFWS;
- have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the CWA (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means;
- interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites;
- conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; and/or
- conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

GENERAL PLAN UPDATE POLICIES

General Plan Update policies related to biological resources and, specifically, the thresholds of significance identified above, include the following:

Managed Resources Element

- **Policy 7.A.1:** Encourage the conservation and management of timberlands through incentive programs while conforming with California forest practice law.
  - **Implementation Program 7.A.a:** Encourage retention of existing, and management of new timberlands by continuing to provide tax incentives to timberland owners, such as TPZ zoning or Williamson Act land conservation contracts, or other State or Federal incentive programs that may be offered to conserve timberlands.
  - **Implementation Program 7.A.b:** Encourage owners of timberlands which do not qualify for property tax incentives, such as Timberland Production (TPZ) zoning, to continue timber production through such incentives as recognition programs, or other local, State or Federal incentive programs that may become available.

Agriculture Element

- **Policy 8.A.1:** Avoid the conversion of agricultural lands from the Agricultural General Plan land use designation and compatible zonings.
  - **Implementation Program 8.A.a:** Encourage the protection of agricultural lands through programs such as the voluntary purchase of development rights. This could be accomplished by establishing a conservation easement on the land. The easement could take the form of a deed restriction or be placed in a trust a specific period of time or in perpetuity.
- **Policy 8.A.2:** Exempt the following agricultural lands from Policies 8.A.1, 8.A.3 and 8.A.4:
  - Areas of land designated Agricultural that are less than 160 acres in size and are surrounded by land designated other than Agricultural or Public that is managed for open space uses. These areas may contain more than one parcel and ownership of the parcels may be by different owners.
  - Parcels that meet all of the following criteria: (1) the parcel is less than 80 acres in area; (2) the parcel is located within 500 feet of a public water main; and (3) the parcel is situated adjacent to land designated High Density Residential (HDR), Medium Density Residential (MDR), Low Density Residential (LDR), Mixed Use (MU), Neighborhood Commercial (NC), General Commercial (GC) or Heavy Commercial (HC) by the General Plan land use diagrams.

These agricultural lands may be converted from Agricultural to an appropriate land use designation as determined by the Board of Supervisors.

- **Policy 8.A.3:** Grant exceptions to Policy 8.A.1 regarding conversion of agricultural land only where the locational relationship of the land, together with the use proposed, would provide a public benefit of such magnitude as to justify the exception.
  - **Implementation Program 8.A.b:** Grant exceptions to the policies and implementation programs regarding conversion of agricultural land contained in this Element only when such exception is approved by the Board of Supervisors.
  - **Implementation Program 8.A.c:** Utilize the Agricultural Rating System matrix only to evaluate applications proposing exceptions to Policy 8.A.2.

- High-value Agricultural Lands are those parcels which receive a score of 175 or higher as determined by the Agricultural Rating System Matrix.
- Agricultural Lands of Local Importance are those parcels which receive a score of at least 125 but not more than 174 as determined by the Agricultural Rating System Matrix.
- Agricultural Lands of Limited Importance are those parcels which receive a score of 124 or lower as determined by the Agricultural Rating System Matrix.

- **Policy 8.A.4:** Development proposed adjacent to land designated Agricultural by the General Plan land use diagrams shall provide a buffer from the agricultural land. The buffer shall be 200 feet in width and located on the development site. No residential or non-agricultural buildings may be erected in the buffer area as long as the adjacent land remains designated Agricultural. The buffer may be reduced in width by the Board of Supervisors after considering the recommendation of the Agricultural Advisory Committee if such a reduction is determined appropriate based upon the topography, vegetation, roads or other physical features of the buffer area or other factors considered by the Committee. If the General Plan land use designation of the adjacent land is amended in the future to a designation other than Agricultural, the need for the buffer area will be eliminated and the land use restrictions imposed pursuant to this Policy will cease at that time.

- **Policy 8.B.1:** Limit intrusion of urban development into agricultural areas.
  - **Implementation Program 8.B.a:** Make one of the following findings before approving expansion of identified community boundaries established on the General Plan land use diagrams:

    (a) the proposed development would not result in reduced productivity or increased costs of an agricultural operation;

    (b) the proposed development would not contribute to the deterioration of the rural setting, agricultural landscape, and operation practices of the adjacent agricultural areas; or

    (c) the community's need for the development in the proposed location is so important as to justify an exception to the policies and implementation programs contained within this Element.

- **Policy 8.B.2:** Protect and encourage productive use of valuable agricultural lands and areas that provide buffers between identified communities.

- **Policy 8.B.3:** Reduce economic pressure for conversion of agricultural land.
  - **Implementation Program 8.B.b:** Allow uses accessory or complementary to agricultural operations as permitted or conditional uses in order to make agricultural operations more profitable and reduce pressure to convert agricultural land.

- **Policy 8.B.4:** Limit the intrusion of growth-inducing public services, such as public sewer systems and potable public water, into agricultural areas.

- **Policy 8.B.5:** Encourage development of non-agricultural lands before development of land designated Agricultural by the General Plan land use diagrams.

<u>Natural Resources Element</u>

- **Policy 16.A.5:** Conserve scenic resources, landmarks and the natural landscape.

- **Implementation Program 16.A.i:** Provide flexibility in development standards to facilitate the clustering of new development in order to encourage the retention of scenic resources, landmarks and the natural landscape.

- **Implementation Program 16.A.j:** Recognize that Table Mountain has significant cultural, scenic and natural resource values and is a County landmark and, as such, adopt regulations and incentives for conserving Table Mountain.

- **Policy 16.A.6:** Encourage the protection of clusters of native trees and vegetation and outstanding individual native and non-native trees which help define the character of Tuolumne County.

  - **Implementation Program 16.A.k:** Establish an incentive program to retain existing vegetation, such as Heritage Trees, stands of oak woodlands, or clusters of native shrubs within new development

  - **Implementation Program 16.A.l:** Maintain the Premature Removal of Native Oak Trees Ordinance.

  - **Implementation Program 16.A.m:** Establish a Heritage Tree Program which:

    - Establishes criteria for identifying individual or groves of native and non-native trees and street trees as heritage trees, based on outstanding scenic, historic or biological value and/or the status of the tree as unique in terms of age and/or size when compared to other trees of the same species. Trees considered local landmarks and those contained in the National Register of Big Trees also should be considered as heritage trees.

    - Creates programs encouraging the preservation of heritage trees including recognition and public education programs and participation in inter-county and interstate competitions.

    - Addresses health and safety issues associated with trees located adjacent to local airports.

- **Policy 16.B.1:** Recognize and map the variety of open space types and areas that are located within the county, including natural resources, recreation areas, geologic hazards, floodplains, groundwater recharge areas, managed resource areas and other open areas that support biological resources.

- **Policy 16.B.2:** Recognize that agricultural and timberlands may be compatible with conservation of biological resources.

  - **Implementation Program 16.B.a:** Recognize that the open area provided by land designated as Agricultural or Timber Production on the General Plan land use diagrams that supports an agricultural, timber management or residential land use or is unimproved may be used to provide on-site or off-site mitigation for development projects, such as conservation easements, mitigation banks for plant and wildlife species impacts, and other in perpetuity mitigation options.

- **Policy 16.B.3:** Require property owner consent prior to designating areas as Open Space on the General Plan land use diagrams, or zoning areas to Open Space or Open Space-1.

- **Policy 16.B.4:** Recognize that wildlife, fish and their habitats provide opportunities for recreational uses and educational pursuits and are a source of revenue to the County.

  - **Implementation Program 16.B.b:** Encourage the preservation of open areas for recreational activities, including provision of an appropriate balance of facilities suitable for intensive use (e.g. playgrounds, sports fields) and low intensity use (e.g., hiking, camping) that meet the needs of residents and visitors. Preservation of open areas that provide cultural, historical and educational opportunities for residents and visitors should also be encouraged.

- **Implementation Program 16.B.c:** Allow trails, other recreational uses and educational pursuits in areas conserved for biological resources if the effects of such uses are determined to be compatible with conservation of the resources.

- **Implementation Program 16.B.d:** Design parks and trails incorporating scenic resources and biological and water resource areas consistent with the goals and policies of this Element of the General Plan.

- **Implementation Program 16.B.e:** Review all revisions of the Recreation Master Plan prior to adoption for consistency with this Element of the General Plan. In addition, design plans for all trails, especially those adjacent to creeks, shall require the input and review of the Tuolumne County Community Resources Agency and the California Department of Fish and Wildlife for consistency with this Element.

- **Implementation Program 16.B.f:** To provide recreational use in water resource areas, continue to conditionally permit, in the O (Open Space) and O-1 (Open Space -1) zoning districts, recreational uses where such uses do not adversely impact water resources, such as beaches, picnic areas, non-motorized pedestrian and equestrian trails and other recreational uses.

- **Policy 16.B.5:** Evaluate and mitigate impacts to biological resources in accordance with the requirements of State and Federal law.

  - **Implementation Program 16.B.g:** Maintain the Tuolumne County Wildlife Maps to assist in evaluating the effects of land development projects.

  - **Implementation Program 16.B.h:** Provide the following information to assist in the evaluation of biological resources:

    - Tuolumne County Wildlife Maps
    - Deer Herd Maps and Management Plans
    - California Wildlife Habitat Relationships habitat typing and mapping
    - U.S. Department of Agriculture Forest Service Calveg mapping data

  - **Implementation Program 16.B.i:** Require development that is subject to a discretionary entitlement from the County and to environmental review under the California Environmental Quality Act (CEQA) to evaluate potential impacts to biological resources and mitigate significant impacts for the following or as otherwise required by State or Federal law:

    - species listed or proposed for listing as threatened, rare, or endangered under the federal Endangered Species Act (ESA) or California Endangered Species Act (CESA)

    - species considered as candidates for listing under the ESA or CESA

    - wildlife species designated by CDFW as Species of Special Concern

    - animals fully protected under the California Fish and Game Code

    - plants considered by CDFW to be “rare, threatened, or endangered in California” (California Rare Plant Ranks [CRPR] of 1A, presumed extinct in California and not known to occur elsewhere; 1B, considered rare or endangered in California and elsewhere; 2A, presumed extinct in California, but more common elsewhere and 2B, considered rare or endangered in California but more common elsewhere).

- Sensitive natural communities, including wetlands under Federal and/or State jurisdiction, other aquatic resources, riparian habitats, and valley oak (*Quercus lobata*) woodland.
- Important wildlife movement corridors and breeding sites.
- Oak woodlands, as provided in Implementation Programs 16.B.j and 16.B.l.

- **Implementation Program 16.B.j:** Establish thresholds of significance under the California Environmental Quality Act (CEQA) for the conversion of oak woodlands in Tuolumne County. The following provides the County's recommended standard guidelines for determining whether a project may result in a significant impact to oak woodlands, for purposes of review under CEQA and Public Resources Code Section 21083.4:
  - An oak woodland is defined in the General Plan as a woodland stand with 10% or greater native oak canopy cover. Tree removal from parcels with less than 10% native oak canopy cover is not considered a significant conversion or loss of oak woodland.
  - For parcels with 10% or greater native oak canopy cover (i.e., parcels with oak woodland, as defined in the General Plan), a significant impact to oak woodland includes tree removal that reduces the total oak canopy cover onsite to below 10% (i.e., conversion to non-oak woodland), or a loss of 10% or greater of oak canopy woodland stand on the parcel, if the conversion or loss is determined to be substantial in consideration of, but not limited to, the following:
    - Total acres and amount of woodland stand removed or disturbed, and amount retained onsite.
    - Pattern of development or habitat loss onsite (e.g., clustered vs. dispersed).
    - Existing habitat functions and quality (e.g., intact/high-quality, moderately degraded, or severely degraded).
    - Stand age- or size-class structure.
    - Rarity.
    - Landscape position in relation to larger wildlife corridors, stream systems, or other important natural features.
    - Loss of valley oak (*Quercus lobata)* woodland, which is a sensitive habitat.
    - Proximity to other oak woodland patches and connectivity to large blocks of intact habitat.
    - Contribution to a cumulative loss, degradation, or fragmentation of oak woodland across the County.

- **Policy 16.B.6:** Allow property owners to utilize the Tuolumne County Wildlife Handbook, which may be updated periodically, to assist in designing mitigation for impacts to biological resources resulting from new development.
  - **Implementation Program 16.B.k:** Periodically update the Tuolumne County Wildlife Handbook in accordance with changes in State and Federal laws and environmental review standards, recognizing that state and federal laws may require mitigation beyond what is adopted in the Wildlife Handbook.

- **Policy 16.B.7:** Encourage development in identified communities to minimize impacts to biological resources.
  - **Implementation Program 16.B.l:** Evaluate, on a project by project basis, the appropriateness of exempting projects in identified communities from **Implementation Program 16.B.j** to encourage development in identified communities and minimize impacts to biological resources outside of identified communities.
  - **Implementation Program 16.B.m:** When evaluating land development projects proposed in identified communities, recognize that there may be reduced impacts to biological resources from concentrating new development within identified communities.
  - **Implementation Program 16.B.n:** Conserve areas, such as wildlife habitat and corridors, wetlands, watersheds, and groundwater recharge areas, that provide carbon sequestration benefits and other biological functions.
  - **Implementation Program 16.B.o:** Within identified communities, retain oak woodland habitat as much as practical, such as incorporating oak woodland into landscaped or public spaces to enhance project site aesthetics, using oak woodland as visual buffers between land uses, and using oak woodland habitat to maintain slopes and reduce on-site runoff.
- **Policy 16.B.8:** Balance the conservation of biological resources with the need to reduce wildland fire hazards.
  - **Implementation Program 16.B.p:** Encourage vegetation removal for fire protection purposes or as otherwise required by the Tuolumne County Fire Department in the Open Space zoning district or other areas conserved through zoning, provided such vegetation removal is addressed in a management plan and approved following review under the California Environmental Quality Act.
- **Policy 16.B.9:** Encourage the eradication of invasive plant species to protect native habitats, conserve agricultural land, support ecological diversity and reduce the wildland fire hazard.
  - **Implementation Program 16.B.q:** Discourage the sale of invasive plant species and noxious weeds identified by the State.
  - **Implementation Program 16.B.r:** Support efforts to control, and where possible, eradicate, invasive plant species in the County.
  - **Implementation Program 16.B.s:** Seek grant and other funding sources for programs to eradicate invasive plant species from the County.
  - **Implementation Program 16.B.t:** Refer applications for discretionary land development entitlements to the Agricultural Commissioner to identify potential impacts from invasive plant species and recommend appropriate mitigation measures.
  - **Implementation Program 16.B.u:** Encourage eradication of invasive plant species in biological resource conservation areas provided such eradication is addressed in a management plan prepared by a biologist on the County's list of approved environmental consultants and approved by the County following review under the California Environmental Quality Act.
  - **Implementation Program 16.B.v:** Develop a programmatic approach to vegetation removal for the eradication of invasive plant species.
  - **Implementation Program 16.B.w:** Develop an incentive program to encourage the eradication of invasive plant species and the removal of vegetation for fire protection.

- **Policy 16.B.10:** Encourage planting of native species or other drought tolerant species.
  - **Implementation Program 16.B.x:** Encourage the use of native species and other drought tolerant species listed on the Tuolumne County Landscape Guidelines to promote water efficiency and reduce impacts associated with the introduction of exotic species.
- **Policy 16.B.11:** Expand the list of permitted uses in the Open Space-1 zoning district in Title 17 of the Tuolumne County Ordinance Code for the conservation and utilization of the County's water resources to include such uses as water monitoring installations, excluding wells, improvements to aquatic, plant and wildlife habitat, erosion control projects, and vegetation removal for flood control.
- **Policy 16.C.1:** Develop a Natural Resources Division within the Community Resources Agency to centralize County efforts and involvement in issues and projects involving natural resources.
- **Policy 16.C.2:** Develop incentive programs to encourage private property owners to conserve areas that support high value biological resources.
  - **Implementation Program 16.C.a:** Create a voluntary register of high value biological resources, such as habitat for rare, threatened and endangered species; habitats that are particularly valuable to wildlife and/or rare in the County; and undisturbed oak woodlands. Listing on the register shall only occur at the request of the property owner. Prior to listing an area on the register, the area shall be surveyed by County Staff or a biologist on the County's list of approved environmental consultants to verify the value of the biological resources thereon. Surveys conducted on private property shall occur only with prior written permission from the property owner. The register would assist in implementing voluntary preservation efforts, assist in reducing the cost of new development associated with identifying biological resources and identifying areas which may be acquired and/or managed as off-site areas to mitigate impacts of new development. Lands listed on the register may qualify the owner for incentive programs, be acquired from willing sellers, or be managed in cooperation with willing property owners. Oak woodlands listed on the register could be purchased by the County or conserved through an easement using the Tuolumne County Oak Woodlands Conservation Fund.
  - **Implementation Program 16.C.b:** Identify agencies to accept and/or manage land dedications, donations and conservation easements.
- **Policy 16.C.3:** Support efforts to identify and protect high value biological resource areas on private lands from willing owners, especially on land that provides additional public benefits including educational, recreational and scenic opportunities.
  - **Implementation Program 16.C.c:** Notify owners of high value biological resources of available incentive programs including tax incentives and the California Forest Stewardship Program.
  - **Implementation Program 16.C.d:** Assist willing property owners to enter into conservation programs through coordination with outside stewardship programs and accessing financing programs to conserve biological resources.
  - **Implementation Program 16.C.e:** Apply for grants from local, state and federal sources to assist in funding the acquisition of high value biological resources, such as habitat for rare, threatened and endangered species, habitats that are particularly valuable to wildlife and/or rare in the County, and undisturbed oak woodlands.
  - **Implementation Program 16.C.f:** Protect biodiversity and habitats from climate change effects by cooperating with other agencies to acquire or otherwise protect open space areas that provide key habitat linkages and wildlife movement corridors on a regional level.

- **Policy 16.C.4:** Support educational programs that describe methods of habitat conservation, encourage voluntary efforts to protect and enhance biological resources, provide opportunities for ongoing study by local students, and provide opportunities for recreation and enjoyment by the community.

- **Policy 16.C.5:** Encourage the conservation of oak woodlands and the preservation of heritage trees.

  - **Implementation Program 16.C.g:** Plant native trees throughout Tuolumne County.

  - **Implementation Program 16.C.h:** Make the Tuolumne County Oak Woodland Voluntary Management Guidelines available to property owners upon request to assist them with voluntary conservation of oak woodlands.

  - **Implementation Program 16.C.i:** Cooperate with agencies and entities in their efforts to encourage voluntary stewardship of tree resources including:

    - Providing brochures, produced by these and other interested agencies, illustrating protection methods for construction near native trees.

    - Distributing handouts promoting the retention of tree quality and quantity throughout the County by providing guidelines for replacing native trees removed during construction, including size and quantity.

    - Promoting elementary and secondary school programs providing education on the benefits of native trees and including acorn and tree planting programs.

PROJECT IMPACTS

This section presents a programmatic-level analysis of potential impacts to sensitive biological resources from development facilitated by implementation of the proposed General Plan Update. Evaluation of environmental impacts associated with the General Plan Update considers the projected development under the General Plan Update, in accordance with goals, policies, and implementation programs, to accommodate projected growth in the County. It should be noted that the County's population is projected to grow by 0.6 percent annually over the planning horizon (2040). As discussed in detail in Chapter 2, "Project Description," and the introduction to Chapter 3, this is a relatively low amount of growth.

Impact 3.4-1: Disturbance or Loss of Special-Status Plant and Animal Species

Projected development under the General Plan Update may result in the disturbance or loss of special-status plant and animal species. However, the compliance with state and federal law, as well as implementation of the General Plan Update's policies and implementation programs, would reduce potential impacts of projected development under the General Plan Update and require project-level environmental review and mitigation, if needed. This impact would be **less than significant**.

For the purposes of this analysis, special-status plant and animal species include those designations described in Section 3.4.1, "Environmental Setting," above. Under the General Plan Update new development is being directed towards the 18 identified communities, including the five Community Plan areas (Jamestown, Columbia, East Sonora, Tuolumne, and Mountain Springs). However, the identified community boundaries may be expanded to allow appropriate new projects to occur near existing community nodes.

As mentioned above and presented in Tables 1 and 2 (Appendix B), 177 special-status species are known or have potential to occur within Tuolumne County, 76 percent of which are plant species. Thirty-one of these species (21 animal species and 10 plant species) are given high levels of protection by the federal government through listing under ESA and/or by the State government through listing under CESA or as Fully Protected under the Fish and Game Code. CEQA requires analysis of the remaining species shown in Tables

1 and 2 (Appendix B) and mitigation if impacts are significant and mitigation is feasible. Most special-status species have very limited ranges within Tuolumne County and have specific habitat requirements, such as specific soil, moisture, or other biophysical requirements (e.g., serpentine soils, mesic/wet microhabitats). Special-status species may also be associated with sensitive habitats, such as riparian habitats, oak woodlands, and drainages.

Because of the programmatic nature of the General Plan Update, a precise, project-level analysis of the specific effects of individual projects on special-status species is not possible at this time; the analysis is maintained at the County level. Although projected development would be limited and would be encouraged to be concentrated in and around identified communities, which would minimize or avoid potential disturbance or loss of special-status species, some special-status species may occur within identified communities, such as in appropriate natural habitats at the fringe of the communities or within drainages. Development may also occur outside identified communities, despite policies that incentivize development within identified communities.

Projected development under the General Plan Update that occur in the vicinity of rivers and creeks may be within suitable habitat for species such as California red-legged frog (*Rana draytonii*) (federally listed threatened and California species of special concern) and Paiute cutthroat trout (*Oncorhynchus clarkii seleniris*) (federally listed threatened). In addition to the rivers and creeks that may be disturbed, projected development under the General Plan Update could disturb upland habitats and the sensitive plant and animal species that may occupy them. Furthermore, the wide variety of habitats within Tuolumne County, including those already largely developed, can support many species of nesting birds, including sensitive species such as burrowing owl (*Athene cunicularia*) (California species of special concern) as well as many common bird species that are protected by the Migratory Bird Treaty Act and Fish and Game Code. Disturbance of special-status plants such as the federally listed threatened and state-listed endangered Chinese camp brodiaea (*Brodiaea pallida*) could result in reductions in local population size, habitat fragmentation, or lower reproductive success.

Potential direct impacts to special-status species include injury or mortality that may occur during projected development under the General Plan Update. Direct impacts also include habitat modification and loss that results in the mortality or otherwise alters the foraging and breeding behavior substantially enough to cause injury. Indirect impacts could be caused by the spread of invasive non-native species that out-compete native species and/or alter habitat towards a state that is unsuitable for special-status species. For example, the spread of certain weed species can reduce the biodiversity of native habitats, potentially eliminating special-status plant species and reducing the availability of suitable forage and breeding sites for special-status animal species. However, for discretionary projects, the County requires implementation of BMPs to prevent or reduce the construction-related introduction or spread of invasive plants. Indirect impacts could also result from increased access by humans and domestic animals, particularly in areas where trails, bike paths, and other transportation infrastructure would be located.

Although habitat for special-status plant and animal species may be directly or indirectly affected, potential disturbances or loss as a result of projected development under the General Plan Update are expected to be focused within the identified communities. Additionally, under the General Plan Update, each discretionary project that could affect biological resources would require project-specific environmental review. For species listed as threatened or endangered under ESA or CESA, which are considered the species rarest and most vulnerable to disturbance or loss as a result of development, existing state and federal laws address potential impacts through site-specific environmental review and permitting requiring development and implementation of project-specific conservation measures to minimize or avoid impacts through the design process, and providing compensatory or other mitigation for any adverse effects on these species as a condition of project approval. Specifically, USFWS and CDFW would not permit a project that would degrade habitat or result in take of a state or federally listed species without compensatory mitigation to fully mitigate for the significant impact. The County will require project applicants to obtain any required take permits prior to project implementation.

For other special-status species with less formal regulatory protection (e.g., California species of special concern, rare plants not protected by CESA or ESA), project-level planning and environmental analysis for CEQA review would identify potentially significant impacts, based on the type and location of the project; minimize or avoid those impacts through the design process (e.g., conducting surveys and modifying projects to avoid special-status species, if feasible); and provide mitigation for any significant impacts as a condition of project approval (e.g., implementing limited operating periods for construction and/or operations, compensatory habitat enhancement/restoration). Because development would be encouraged to be concentrated in and around the 18 identified communities and most of Tuolumne County would continue to support large blocks of habitat and undeveloped land under the General Plan Update (e.g., 77.8 percent of land in public, open space, and parks and recreation designations, and 16.6 percent in agricultural and timber production designations; see Table 2-1 and Exhibit 2-2 in Chapter 2, "Project Description"), the potential disturbance or loss of special-status species not formally protected by state and federal laws is expected to be limited and mitigation can be used to avoid substantial impacts using standard measures regularly implemented for these types of species. Project-specific mitigation measures would be developed consistent with applicable state and federal requirements. For those species for which published mitigation guidance exists, developed mitigation measures would follow the guidance provided in these publications or provide a similar level of protection. If previous published guidance does not exist, mitigation would be developed in consultation with the appropriate agencies (e.g., CDFW for species of special concern and CRPR-ranked species). If mitigation was not adopted at an individual project level, County decision-makers would be required to adopt a statement of overriding considerations, as required by CEQA, allowing significant unavoidable impacts at a project level. This level of specificity and speculation regarding future decision-making is beyond the reasonable scope of a General Plan program EIR.

In addition to existing state and federal laws and permitting processes, the General Plan Update includes several policies and implementation programs intended to further reduce potential impacts to habitats and special-status species and require project-level environmental review and mitigation for significant effects (see "General Plan Update Policies," above). For example, Policies 16.A.6, 16.B.1, 16.B.2, 16.B.4, 16.B.7, 16.B.9, 16.B.10, 16.C.1, 16.C.2, 16.C.3, and 16.C.5 address tree retention, open space conservation and encouraging development to occur within identified communities, invasive species eradication, native species establishment, incentives for conserving sensitive habitats, and conservation of oak woodlands and preservation of heritage trees. Policy 16.B.5 requires development that is subject to a discretionary entitlement from the County and to environmental review under CEQA to evaluate potential impacts to biological resources and mitigate significant impacts to special-status plant and animal species. Policy 16.B.6 allows property owners to utilize the Tuolumne County Wildlife Handbook to assist in designing mitigation for impacts to special-status species and biological resources, recognizing that mitigation requirements for projects may exceed the options presented in the Wildlife Handbook.

Development within five of the identified communities would be guided additionally by Community Plans, which include additional policies and implementation programs designed to minimize the disturbance or loss of habitats and species. For example, the Jamestown Community Plan includes the following policy that would reduce potential impacts to habitats and special-status species within the Jamestown plan area.

- **Policy 14.F.6:** Minimize the inherent conflict between development and wildlife habitat by encouraging future development to locate in the less sensitive, or less important habitat areas or on sites adjacent to previously developed and disturbed areas.

The Columbia Community Plan includes the following policy that would reduce potential impacts to special-status species within the Columbia plan area.

- **Policy 15.E.3:** Minimize conflicts between development and wildlife habitat by encouraging future development to locate in less sensitive, or lower priority habitat areas or on sites adjacent to previously developed and disturbed areas.

The East Sonora Community Plan includes the following policies that would reduce potential impacts to special-status species within the East Sonora plan area.

- **Policy 16.C.1:** Minimize the existing conflict between development and wildlife habitat within East Sonora.
- **Policy 16.C.3:** Encourage new development to capitalize on the use of native vegetation for aesthetic and functional purposes.

The Tuolumne Community Plan includes the following implementation program that would reduce potential impacts to special-status species within the Tuolumne plan area.

- **Implementation Program 17.F.d:** Revegetation. For revegetation efforts, promote the application of native seed mixes for consistency with the naturally occurring vegetation and emphasizing the use of native grasses. Promote the use of native plants from locally grown stock (e.g., the Tuolumne Band of Me-Wuk Native Plant Nursery) for revegetation efforts requiring trees, shrubs and other perennials.

Conclusion

Although habitat for special-status plant and animal species may be directly or indirectly affected, potential disturbances or loss as a result of projected development under the General Plan Update are expected to be limited and focused within the identified communities. Additionally, under the General Plan Update, each discretionary project that could affect biological resources would require project-specific environmental review. Compliance with state and federal law, as well as implementation of the General Plan Update's policies and implementation programs, would reduce potential impacts of projected development under the General Plan Update and require project-level environmental review and mitigation, if needed. For example, implementation of Policy 16.B.5 and its implementation programs requires development that is subject to a discretionary entitlement from the County and environmental review under CEQA to evaluate potential impacts to biological resources and mitigate significant impacts to special-status plant and animal species. Additional policies and implementation programs focus on reducing the prevalence of non-native species and encouraging avoidance of high-quality habitat areas. Compliance with existing federal and state regulations, and implementation of the General Plan Update policies and implementation programs to protect special-status species, particularly Policy 16.B.5, would ensure impacts to special-status species are **less-than-significant**.

Mitigation Measures

No mitigation is required.

Impact 3.4-2: Loss or Degradation of Riparian, Oak Woodland, and Other Sensitive Natural Communities

Projected development under the General Plan Update may result in the loss or degradation of riparian habitat, oak woodlands, or other sensitive natural communities identified in local or regional plans, policies, or regulations, or by CDFW or USFWS. This impact would be **potentially significant**.

Because of the programmatic nature of the General Plan Update, a precise, project-level analysis of the specific impacts of individual development projects under the General Plan Update on riparian habitats and other sensitive communities is not possible at this time and the level of analysis is maintained at the County level. Projected development under the General Plan Update would be directed within the identified communities, which would minimize or avoid the impact to riparian areas, oak woodland, and other sensitive communities. Surrounding rural development would serve as buffers between identified communities and help meet the functional needs of the natural environment and nearby agriculture production. Rural development may be primarily located on the fringe of identified communities, but clustered or grouped together to make the best use of infrastructure and avoid disruption to agricultural lands and environmentally sensitive areas. Based on proposed land use designations and existing developed land, the total developable land within the County (excluding agricultural land) is approximately 163,000 acres, or 11

percent of the unincorporated land within the County. However, based on the County's annual growth projection of 0.6 percent, the projected total residential increase of 5,159 (average of around 250 units per year), the projected commercial increase of 938,000 square feet, and the projected industrial increase of 196,000 square feet through 2040, it is reasonable to assume that most of the developable land in the County would remain undeveloped through 2040.

The following discusses potential impacts of projected development under the General Plan Update on sensitive natural communities and habitats.

Riparian Habitat and Other Sensitive Natural Communities

Although the General Plan Update land use diagram and policy framework is intended to encourage and direct development in and around identified communities, some riparian areas and other sensitive habitats are expected to be encountered where development may occur within or adjacent to natural habitats such as at urban fringe areas or where creeks and rivers pass through identified communities. Thus, it is assumed that some sensitive resources would not be avoided by projected development under the General Plan Update.

In addition, projects in the vicinity of rivers and creeks may involve development along riparian corridors. Riparian areas provide wildlife habitat and movement corridors, enabling both terrestrial and aquatic organisms to move along river systems between areas of suitable habitat. Most riparian habitats in the County are located on public land and other land use designations where development would not occur. For example, approximately 98 percent (12,251 of 12,527 acres) of foothill riparian and montane riparian habitats mapped in the County are located in public, open space, parks and recreation, and agricultural land use designations under the General Plan Update. In addition to riparian habitats, oak woodland communities and other vegetation communities that are considered sensitive also occur within the County. Developments in the vicinity of these habitats are likely to occur due to the presence of some of these habitats on private lands in the County. (Impacts to oak woodlands are discussed in further detail, below.)

Projected development under the General Plan Update could directly and indirectly affect riparian and other sensitive habitats. Direct impacts to riparian and other sensitive habitats include permanent removal or disturbance during construction. Indirect impacts include habitat degradation caused by new introductions or spread of invasive plant species incidentally from construction equipment and through selection of invasive landscape plants, as well as erosion and sedimentation in disturbed riparian, aquatic, and other sensitive areas.

The General Plan Update includes several policies and implementation programs intended to reduce potential impacts to riparian, oak woodland, and other sensitive habitats, and require project-level environmental review and mitigation for significant effects (see "General Plan Update Policies," above). Specifically, Policy 16.B.5 requires development that is subject to a discretionary entitlement from the County and to environmental review under CEQA to evaluate potential impacts to biological resources and mitigate significant impacts to riparian and other sensitive habitats. Additionally, development within five of the identified communities would be guided by Community Plans, which include additional policies and implementation programs designed to minimize the disturbance or loss of sensitive habitats. For example, the Jamestown Community Plan includes the following policy and implementation programs that would reduce potential impacts to riparian habitat and other sensitive communities within the Jamestown plan area.

- **Policy 14.F.8:** Preserve natural resource and wildlife habitat areas, reduce exposure to risk in hazardous areas, and enable recreational opportunities to be maintained or provided by designating hazardous areas, such as floodways, and biological and water resources areas as Open Space.
    - **Implementation Program 14.F.c:** Limit Crossing of Waterways. Limit the number of road crossings of streams, creeks and other drainages and require the design of crossings to be perpendicular to Woods Creek and other drainages to minimize impacts of riparian habitat as a condition of approval of entitlements for new development.

- **Implementation Program 14.F.d:** Encourage Retaining Woods Creek in an Open Condition. Discourage, through the land development application review process, the culverting, piping or lining of Woods Creek by private entities unless no alternative is feasible. Where valuable riparian habitat is destroyed by such necessary action, alternate habitat improvements may be required on or off-site.

- **Implementation Program 14.F.e:** Habitat Conservation and Recreational Opportunities along Woods Creek. Require appropriate mitigation for impacts to biological resources from new development along Woods Creek and encourage the design of such new development to accommodate the provision of trails along the Creek for recreational opportunities. The future provision of easements and trails along Woods Creek shall not in any manner, authorize trespass upon private property, or increase the right of public agencies to gain access to private property unless expressly authorized by the property owner.

The Columbia Community Plan includes the following policy and implementation program that would reduce potential impacts to riparian habitat and other sensitive communities within the Columbia plan area.

- **Policy 15.E.8:** Encourage protection of vegetation noteworthy within the Columbia area, such as stands of mature ponderosa and sugar pine trees.

  - **Implementation Program 15.E.c:** Woods Creek and Mormon Creek. Require appropriate mitigation for impacts to biological resources from new development along Woods Creek and Mormon Creek and encourage the design of such development to accommodate the provision of non-motorized trails along the creeks for recreational opportunities. Encourage the dedication of public access easements to capitalize on the recreational opportunities of Mormon Creek and Woods Creeks.

The East Sonora Community Plan includes the following policy and implementation program that would reduce potential impacts to riparian habitat and other sensitive communities within the East Sonora plan area.

- **Policy 16.C.6:** Encourage and support voluntary efforts to protect and enhance Sullivan Creek, Elsey's Pool, Curtis Creek, Sonora Creek and associated riparian vegetation for scenic and recreational values.

  - **Implementation Program 16.C.e:** Limit Crossing of Waterways. Limit the number of road crossings of streams, creeks and other tributaries of Sullivan, Sonora and Curtis Creeks to minimize impacts of riparian habitat as a condition of approval of entitlements for new development.

The Tuolumne Community Plan includes the following implementation program that would reduce potential impacts to riparian habitat and other sensitive communities within the Tuolumne plan area.

  - **Implementation Program 17.F.h:** Retain Turnback Creek in an Open Condition. Discourage, through the land development application review process, the culverting, piping, or lining of Turnback Creek by private entities. Where valuable riparian habitat is destroyed by unavoidable actions, revegetation plans designed and monitored by qualified individuals should be undertaken.

<u>Oak Woodlands</u>

The lower and middle elevations of Tuolumne County contain approximately 115,010 acres of oak woodland, including blue oak woodland (72,025 acres), blue oak-foothill pine (11,236 acres), interior live oak woodland (30,724 acres), and valley oak woodland (1,025 acres). Of this amount, approximately 21,262 acres (18.5 percent) are on potentially developable parcels (i.e., residential, commercial, mixed use, business park) throughout the entire County; and, 10,808 acres (9 percent) are located specifically within identified community boundaries. Approximately 81 percent of oak woodland in Tuolumne County is located within agricultural (68,863 acres) and public (24,015 acres) land use designations. An additional 164,883 acres of montane hardwood and montane hardwood-conifer are distributed in the middle to upper elevations of the County. Although montane hardwood and montane hardwood-conifer habitats may contain a substantial oak element, the amount of oak cover is typically variable and oaks are often not the dominant species.

Disturbance, loss, and fragmentation of oak woodland from projected development under the General Plan Update could result from direct loss of trees (either individuals or entire stands). The amount of woodland actually subject to removal will depend on market conditions and the growth pattern in the County, the types and magnitude of development projects on parcels that support oak woodland, effectiveness of General Plan Update policies that encourage oak conservation, and other factors. The greatest potential for oak woodland loss would be in the residential land use designations, including rural, estate, large lot, and the urban land use designations, because development will be directed to the identified communities where these land use designations generally occur.

Although a total of 21,262 acres (18.5 percent) of oak woodland canopy are on potentially developable parcels, half of that amount (10,808 acres [9 percent]) is located within identified communities where the majority of development is incentivized by the General Plan Update. Additionally, projected development allowable on parcels that support oak woodland are not expected to eliminate all oak canopy; and, Policy 16.B.5 requires development that is subject to a discretionary entitlement from the County and to environmental review under CEQA to evaluate potential impacts to oak woodland and mitigate significant impacts. Therefore, the amount of oak woodland ultimately removed by projects under the General Plan Update is expected to be small relative to the amount available in Tuolumne County. It should also be noted, as discussed above, that only a portion of the developable land in the County would be developed to accommodate the 0.6-percent annual growth anticipated to occur in the County through 2040.

According to Public Resources Code Section 21083.4, a county shall determine whether a project within its jurisdiction may result in a conversion of oak woodlands that will have a significant effect on the environment. If a county determines that there may be a significant effect to oak woodlands, the county shall require one or more oak woodlands mitigation alternatives to mitigate the significant effect of the conversion of oak woodlands such as acquisition of conservation easements, planting, and contribution of funds to an Oak Woodlands Conservation Fund. General Plan Update Policy 16.B.5 addresses this requirement by establishing thresholds of significance for conversion of oak woodlands based on acreage affected, habitat quality, and other ecological factors, and by requiring mitigation for significant conversion of oak woodland.

Conclusion

For the reasons discussed above, potential loss or degradation of sensitive habitats as a result of projected development under the General Plan Update is expected to be limited relative to the amount available in the County and concentrated primarily within the identified communities. Other than oak woodlands, riparian and aquatic and habitats are the most abundant and widely distributed sensitive habitats in Tuolumne County. Compliance with existing state and federal regulations and permitting requirements during project-level environmental review would minimize the loss of these sensitive habitats during construction and provide habitat compensation for the unavoidable loss of riparian and aquatic habitats through CWA Section 404 and Fish and Game Code Section 1600 et seq. permitting/review processes. These existing regulations require that compensation for unavoidable project-related losses or degradation of these sensitive habitats is achieved in a manner that results in no net loss. Therefore, the potential permanent loss or disturbance of riparian, wetland, and aquatic habitats as a result of projected development under the General Plan Update is not expected to be substantial.

In addition to existing state and federal regulations that protect some sensitive habitats (e.g., riparian and aquatic resources), General Plan Update policies and implementation programs, and policies established in the five Community Plans, address minimizing impacts and protecting sensitive habitats; and establish requirements for project-level environmental review and mitigation for significant impacts to riparian, oak woodland, and other sensitive habitats. For example, Policies 16.A.6, 16.B.1, 16.B.4, 16.B.7, 16.B.9, 16.B.10, 16.C.1, 16.C.2, 16.C.3 and 16.C.5 address tree retention, open space conservation and encouraging development within identified communities, invasive species eradication, native species establishment, incentives for conserving sensitive habitats, and conservation of oak woodlands and preservation of heritage trees. Policy 16.B.5 requires development that is subject to a discretionary entitlement from the County and to environmental review under CEQA to evaluate potential impacts to biological resources and mitigate significant impacts to riparian, oak woodland, and other sensitive habitats.

Policy 16.B.5 also establishes the County's recommended guidelines for determining whether a loss of oak woodland would be significant at a project level or cumulatively. Policy 16.B.6 allows property owners to utilize the Tuolumne County Wildlife Handbook to assist in designing mitigation for impacts to biological resources, recognizing that mitigation requirements for projects may exceed the options presented in the Wildlife Handbook.

Although the amount of oak woodland conversion from projected development under the General Plan Update is expected to be a relatively small proportion of that available in Tuolumne County, the total acreage and quality of oak woodland ultimately affected is unknown and may be substantial. Without measures or guidelines identified to adequately mitigate a potentially substantial loss, degradation, or fragmentation of oak woodland, this impact is considered **potentially significant**.

Mitigation Measures

For projects that may cause a significant loss of oak woodland, as defined in Policy 16.B.5 and Implementation Program 16.B.j, the following mitigation measure is recommended to reduce and compensate for significant impacts to oak woodland.

Mitigation Measure 3.4-2: Implement Oak Woodland Mitigation Guidelines

The following new implementation programs shall be added under General Plan Policy 16.B.5:

Implementation Program 16.B.x [specific numbering to be provided in the Final General Plan Update]: When considering discretionary development proposals, the County, through CEQA reviews, will require that project applicants map oak woodland resources on the project site and, where feasible, establish buffers around existing oak woodland stands to prevent adverse effects. For mapping purposes, project applicants may use the County's existing oak woodland map (developed for the Recirculated Draft EIR) as an initial base map for project-specific ground-truthing/field verification. The County will require implementation of BMPs while working near retained oak woodlands to avoid inadvertent damage to oak trees. BMPs will include establishment of no-disturbance buffers around the outer canopy edge to prevent root and crown damage, soil compaction, and standard management practices to reduce introduction and spread of invasive species and other indirect effects.

For those impacts on oak woodland that cannot be avoided, the County will require the project applicant to minimize adverse effects. If substantial conversion of oak woodland will occur based on Implementation Program 16.B.j, the County will require one or more of the following mitigation measures be implemented to mitigate the impact from loss of oak woodland habitat pursuant to Public Resources Code Section 21083.4, (which specifies certain projects, including commercial agricultural production, are exempt from the requirements of Section 21083.4):

- Conserve oak woodlands through the purchase of conservation easements.
- Plant acorns and container stock from a local seed source to replace oak woodland removed. The following parameters will be applied:
  - Plant an appropriate number of trees, including maintaining plantings and replacing dead or diseased trees.
  - Maintain trees for seven years after the trees are planted.
  - Planting may not account for more than 50 percent of the required mitigation and must occur on lands that are subject to conservation easements, zoned open space, or similarly restricted from development.
  - Mitigation through planting may be used to restore former or degraded oak woodlands.

- Contribute funds to the Oak Woodlands Conservation Fund, as established under subdivision (a) of Section 1363 of the Fish and Game Code, for the purpose of purchasing oak woodland conservation easements, the Tuolumne County Oak Woodland Conservation Fund, or other appropriate established oak woodland conservation fund.

Implementation Program 16.B.x [specific numbering to be provided in the Final General Plan Update]: The County will require project applicants to develop a mitigation and monitoring plan to compensate for the loss of oak woodland habitat. The mitigation and monitoring plan will describe in detail how loss of oak woodlands shall be avoided or offset, including details on restoration and creation of habitat, compensation for the temporal loss of habitat, success criteria ensuring habitat function goals and objectives are met, performance standards to ensure success, remedial actions if performance standards are not met, and requirements for reporting implementation actions and progress to the County. The plan will include detailed information on the habitats present within the preservation and mitigation areas, the long-term management and monitoring of these habitats, legal protection for the preservation and mitigation areas (e.g., conservation easement, declaration of restrictions), and funding mechanism information (e.g., endowment).

If planting is used as part of compensatory mitigation, an oak planting plan will be developed by a qualified professional such as a professional biologist, arborist, or registered professional forester using the best available science and will clearly state all mitigation measures required.

Implementation Program 16.B.x [specific numbering to be provided in the Final General Plan Update]: Oak woodlands habitat placed under conservation easements will be at appropriate ratios to offset the loss of habitat functions and values of the oak woodland to be lost. Oak woodland habitat preserved this way should have similar tree sizes and densities, species composition, site condition, and landscape context to the oak woodland to be removed to serve the same function and have similar habitat value. At a minimum, 1 acre of oak woodland habitat providing similar functions and values will be placed under conservation easement for every acre of oak woodlands habitat lost.

Significance after Mitigation

Implementation of Mitigation Measure 3.4-2, in combination with existing state and federal regulations, the General Plan Update policies and implementation programs, Community Plan policies, existing Oak Woodlands Conservation Fund established by the County, and Tuolumne County Ordinance Code Chapter 9.24 (Premature Removal Of Native Oak Trees) would reduce impacts associated with projected development under the General Plan Update to riparian habitats, oak woodlands, and other sensitive communities. Specifically, implementation of Mitigation Measure 3.4-2 would ensure impacts to oak woodlands resulting from projected development under the General Plan Update are **less-than-significant** because it would require impact avoidance or minimization through feasible project design modification or mitigation at a ratio sufficient to offset the loss of oak woodland habitat function and values.

Impact 3.4-3: Loss or Degradation of Federally Protected Wetlands

Projected development under the General Plan Update may result in the loss or degradation of federally protected wetlands as defined by Section 404 of the CWA (including, but not limited to, marsh, streams, vernal pool, etc.) through direct removal, filling, hydrological interruption, or other means. Through project-level environmental review and compliance with existing applicable federal and state regulations protecting wetlands and other waters of the United States, and implementation of applicable General Plan Update policies and implementation programs, this impact would be **less than significant**.

Under the General Plan Update, projected development is encouraged and directed to occur in the identified communities, including five Community Plan areas (Jamestown, Columbia, East Sonora, Tuolumne, and Mountain Springs). Because of the programmatic nature of the General Plan Update, a precise, project-level analysis of the specific impacts of individual projects on wetlands as defined by Section 404 of the CWA is not possible at this time and the level of analysis is maintained at the County level. Projected development under the General Plan Update would be incentivized in identified communities, which would generally

minimize or avoid the loss of wetlands. However, some wetlands, creeks, and rivers, are expected to occur in locations where development is allowed within or adjacent to natural habitats such as at community fringe areas or where creeks and rivers pass through identified communities.

The locations, extent, and severity of potential disturbances to wetlands is not known at this time; however, examples of potential impacts include, but are not limited to, development occurring in close proximity to waterways such as Woods Creek and Turnback Creek. Transportation and other infrastructure improvements that may occur to accommodate projected development in the County also have potential to impact wetlands, especially future proposed bridge projects. Indirect impacts caused by projected development under the General Plan Update could include degradation of water quality from increased erosion and sedimentation.

Although federally protected wetlands may be directly or indirectly affected, potential disturbances or loss as a result of projected development under the General Plan Update are expected to be limited and encouraged primarily within the identified communities. Compliance with existing state and federal regulations and permitting requirements during project-level environmental review would minimize the loss of wetlands and other waters of the United States during construction and provide habitat compensation for the unavoidable loss of wetland habitats through CWA Section 404 and Fish and Game Code Section 1600 et seq. permitting/review processes. These existing regulations require that compensation for unavoidable project-related losses or degradation of these sensitive habitats is achieved in a manner that results in no net loss. Therefore, the potential permanent loss or disturbance of wetlands and other waters of the United States as a result of projected development under the General Plan Update is not expected to be substantial.

In addition to compliance with existing federal and state laws protecting wetlands, the General Plan Update includes several policies and implementation programs intended to reduce potential impacts to wetlands and other sensitive habitats and require project-level environmental review and mitigation for significant effects (see “General Plan Update Policies,” above). For example, Policies 16.A.6, 16.B.1, 16.B.2, 16.B.4, 16.B.7, 16.B.9, 16.B.10, 16.C.1, 16.C.2, 16.C.3, and 16.C.5 address vegetation retention, open space conservation and encouraging development within identified communities, invasive species eradication, native species establishment, incentives for conserving wetlands and other sensitive habitats, and conservation of oak woodlands and preservation of heritage trees. Policy 16.B.5 requires development that is subject to a discretionary entitlement from the County and to environmental review under CEQA to evaluate potential impacts and mitigate significant impacts to wetland habitats. Policy 16.B.6 allows property owners to utilize the Tuolumne County Wildlife Handbook to assist in designing mitigation for impacts to habitats, recognizing that mitigation requirements for projects may exceed the options presented in the Wildlife Handbook.

Development within five of the identified communities would be guided additionally by Community Plans, which include additional policies and implementation programs designed to minimize the disturbance or loss of wetlands and other habitats. For example, the Jamestown Community Plan includes the following implementation programs that would reduce potential impacts to wetlands within the Jamestown plan area.

- **Implementation Program 14.F.b:** Require Filtration of Surface Runoff Entering Woods Creek. Require as a condition of approval of discretionary entitlements for new development that surface runoff from the development be filtered through sedimentation basins, or similar devices, as needed, prior to discharge into downstream drainages to minimize degradation, related to the water quality and quantity, of downstream water bodies.

- **Implementation Program 14.F.c:** Limit Crossing of Waterways. Limit the number of road crossings of streams, creeks and other drainages and require the design of crossings to be perpendicular to Woods Creek and other drainages to minimize impacts of riparian habitat as a condition of approval of entitlements for new development.

- **Implementation Program 14.F.d:** Encourage Retaining Woods Creek in an Open Condition. Discourage, through the land development application review process, the culverting, piping or lining of Woods Creek by private entities unless no alternative is feasible. Where valuable riparian habitat is destroyed by such necessary action, alternate habitat improvements may be required on or off-site.

- **Implementation Program 14.F.e:** Habitat Conservation and Recreational Opportunities along Woods Creek. Require appropriate mitigation for impacts to biological resources from new development along Woods Creek and encourage the design of such new development to accommodate the provision of trails along the Creek for recreational opportunities. The future provision of easements and trails along Woods Creek shall not in any manner, authorize trespass upon private property, or increase the right of public agencies to gain access to private property unless expressly authorized by the property owner.

The Columbia Community Plan includes the following policy and implementation program that would reduce potential impacts to wetlands in the Columbia plan area.

- **Policy 15.E.4:** Encourage and support efforts to protect and enhance Woods Creek, Mormon Creek and the Dondero Trail for scenic and recreational values.

  - **Implementation Program 15.E.c:** Woods Creek and Mormon Creek. Require appropriate mitigation for impacts to biological resources from new development along Woods Creek and Mormon Creek and encourage the design of such development to accommodate the provision of non-motorized trails along the creeks for recreational opportunities. Encourage the dedication of public access easements to capitalize on the recreational opportunities of Mormon Creek and Woods Creek.

The East Sonora Community Plan includes the following policy and implementation programs that would reduce potential impacts to wetlands in the East Sonora plan area.

- **Policy 16.C.6:** Encourage and support voluntary efforts to protect and enhance Sullivan Creek, Elsey's Pool, Curtis Creek, Sonora Creek and associated riparian vegetation for scenic and recreational values.

  - **Implementation Program 16.C.d:** Require Filtration of Surface Runoff. Require as a condition of approval of discretionary entitlements for new development that surface runoff from that development be filtered through sedimentation basins, sand/oil separators or similar devices prior to discharge into Sullivan, Sonora and Curtis Creeks to minimize degradation of their waters.

  - **Implementation Program 16.C.e:** Limit Crossing of Waterways. Limit the number of road crossings of streams, creeks and other tributaries of Sullivan, Sonora and Curtis Creeks to minimize impacts of riparian habitat as a condition of approval of entitlements for new development.

The Tuolumne Community Plan includes the following policies and implementation program that would reduce potential impacts to wetlands in the Tuolumne plan area.

- **Policy 17.F.7:** Protect Turnback Creek and its watershed as a valuable educational, cultural, open space, recreational, wildlife corridor, and scenic resource.

- **Policy 17.F.9:** Discourage construction within floodplains.

  - **Implementation Program 17.F.h:** Retain Turnback Creek in an Open Condition. Discourage, through the land development application review process, the culverting, piping, or lining of Turnback Creek by private entities. Where valuable riparian habitat is destroyed by unavoidable actions, revegetation plans designed and monitored by qualified individuals should be undertaken.

Conclusion

For the reasons discussed previously, potential disturbances or loss of wetlands as a result of projected development under the General Plan Update are expected to be limited because growth is encouraged

primarily within the identified communities. Additionally, compliance with existing state and federal regulations and permitting requirements during project-level environmental review would minimize the loss of wetlands and other waters of the United States during construction and provide habitat compensation for the unavoidable loss of wetland habitats through CWA Section 404 and Fish and Game Code Section 1600 et seq. permitting/review processes. These existing regulations require that compensation for unavoidable project-related losses or degradation of these sensitive habitats is achieved in a manner that results in no net loss. Therefore, the potential permanent loss or disturbance of wetlands and other waters of the United States as a result of projected development under the General Plan Update is not expected to be substantial.

In addition to compliance with existing regulations, Policy 16.B.5 and its implementation programs would require development that is subject to a discretionary entitlement from the County and to environmental review under CEQA to evaluate potential impacts to biological resources and mitigate significant impacts to wetlands. Additional policies and implementation programs are aimed at avoiding impacts to wetlands including creeks, and require development to filter run-off to maintain water quality. Compliance with existing federal and state regulations, and implementation of the General Plan Update policies and implementation programs to protect wetlands, particularly Policy 16.B.5, would ensure impacts to wetlands are **less than significant**.

Mitigation Measures

No mitigation is required.

Impact 3.4-4: Disturbance or Loss of Animal Movement Corridors

Projected development under the General Plan Update may interfere with the movement of any resident or migratory fish or wildlife species or with established resident or migratory wildlife corridors. This impact would be **less than significant**.

Under the General Plan Update, the land use diagram and policy framework encourage projected development to occur in identified communities, including five Community Plan areas (Jamestown, Columbia, East Sonora, Tuolumne, and Mountain Springs). Because of the programmatic nature of the General Plan Update, a precise, project-level analysis of the specific impacts of individual projects on wildlife movement is not possible at this time and the level of analysis is maintained at the County level. As discussed in Section 3.4.1, the County contains ECAs and linkage areas that were identified as important landscape blocks that are integral in maintaining connectivity on a regional level. As projected development under the General Plan Update occurs, the quality of habitat within and around new development would be expected to lower in value to wildlife and some fragmentation of the landscape may occur, especially in areas along the community fringe where interruption to natural habitat caused by projected development may limit or obstruct wildlife movement. Development of parcels within identified communities is not likely to substantially affect wildlife movement unless the parcels contain a feature, such as a creek or drainage, that facilitates important movement within the developed area and would be removed or degraded. Corridors for movement such as riparian areas, drainages and other natural features become increasingly important for exchange of individuals and subsequently genetic material between wildlife populations. In addition, as projected development further encroaches upon wildlife habitat, increases in human activity in areas where sensitive biological resources could occur would be expected.

Direct impacts to wildlife include incremental fragmentation of the landscape, disturbance from increased noise and human presence, as well as increased trash, which may attract predators and discourage wildlife use of surrounding natural habitat. Indirect impacts include invasion of natural habitats by non-native species and increased presence of humans and domestic animals over the long-term. In addition, projected development could include segments of fencing, walls or other structures that would hinder wildlife movement.

Although animal movement corridors may be directly or indirectly affected, potential disturbances or loss as a result of projected development under the General Plan Update are expected to be limited and encouraged primarily within the identified communities. Nearly all of the ECAs and linkage areas that were identified as important landscape blocks in Tuolumne County are located away from the identified communities (see Appendix B). Additionally, the General Plan Update includes several policies and implementation programs intended to reduce potential impacts to open space and require project-level environmental review and mitigation for significant effects on wildlife movement (see "General Plan Update Policies," above). For example, Policies 16.A.6, 16.B.1, 16.B.2, 16.B.4, 16.B.7, 16.B.9, 16.B.10, 16.C.1, 16.C.2, 16.C.3, and 16.C.5 address tree retention, conservation of wildlife corridors and encouraging development within identified communities, invasive species eradication, native species establishment, incentives for conserving important biological areas, and conservation of oak woodlands and preservation of heritage trees. Policy 16.B.5 requires development that is subject to a discretionary entitlement from the County and to environmental review under CEQA to evaluate potential impacts and mitigate significant impacts to animal movement. Policy 16.B.6 allows property owners to utilize the Tuolumne County Wildlife Handbook to assist in designing mitigation for impacts to biological resources, recognizing that mitigation requirements for projects may exceed the options presented in the Wildlife Handbook.

Because projected development under the General Plan Update would be limited and encouraged primarily within or adjacent to identified communities and outside of ECAs, and with implementation of the applicable General Plan Update policies and implementation programs, particularly Policy 16.B.5, impacts to animal movement and corridors would be **less than significant**.

Mitigation Measures

No mitigation is required.

Impact 3.4-5: Potential Conflict with Local Policies or Ordinances Protecting Biological Resources

Projected development under the General Plan Update would not conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance. This impact would be **less than significant**.

Tuolumne County Ordinance Code Chapter 9.24 (Premature Removal Of Native Oak Trees) stipulates that the removal of native oak trees from a project site within the five (5) years preceding the submittal of an application for a discretionary entitlement from the County for a land development project on that site is deemed premature removal and sets forth penalties and requirements for mitigation.

Chapter 9.24 specifies that removals that qualify include:

a. Removal of native oak trees resulting in a 10 percent or more (>10 percent) average decrease in native oak canopy cover within an oak woodland;

b. Removal of any old growth oak trees, defined as any native oak tree that is 24" or greater dbh;

c. Removal of any Valley Oak measuring 5" or greater dbh.

While some oak trees could be damaged or removed by projected development under the General Plan Update, the scope of premature removals cannot be anticipated based on the programmatic level of analysis of this Recirculated Draft EIR. Nevertheless, because it is reasonable to assume that applicants for projects requiring discretionary entitlement will abide by the restrictions in and implement mitigation based on Chapter 9.24 of the County Ordinance Code, projected development under the General Plan Update is not expected to conflict with Chapter 9.24. In addition, the County Oak Woodland Preservation Fund was established for the collection of fees to mitigate impacts to oak woodlands and net loss of old growth oaks. No conflicts with this Fund are expected from projected development under the General Plan Update. Therefore, impacts related to

potential conflicts with local policies or ordinances protecting biological resources would be **less than significant**.

Mitigation Measures

No mitigation is required.

Impact 3.4-6: Potential Conflict with an Adopted Conservation Plan

Projected development under the General Plan Update would not conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan. There are no adopted local, regional, or state habitat conservation plans in Tuolumne County. Therefore, there would be **no impact**.

No Habitat Conservation Plan, Natural Community Conservation Plan, or other local, regional, or state habitat conservation plan has been adopted or approved in Tuolumne County. Therefore, projected development under the General Plan Update would result in **no impact** related to conflicts with existing local, regional, or state conservation plans.

Mitigation Measures

No mitigation is required.

3.5 CULTURAL RESOURCES

This section analyzes the potential impacts of projected development under the General Plan Update with respect to cultural resources. 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. This section also includes a discussion of tribal cultural resources pursuant to Public Resources Code Sections 21074, 21080.3.1, 21080.3.2, and 21082.3.

Comments were received on the Draft EIR related to historic structures and resources, evaluation of resources, and consultation with Native American Tribes. These concerns are addressed, as appropriate, in the following discussion.

3.5.1 Environmental Setting

Cultural resources include prehistoric resources, historic resources, Native American resources, and paleontological resources. Prehistoric resources represent the remains of human occupation prior to European settlement. Historic resources represent remains after European settlement and may be part of a "built environment," including man-made structures used for habitation, work, recreation, education and religious worship. Native American resources include ethnographic elements pertaining to Native American issues and values. Paleontological resources include fossils, pollen, and spores that provide evidence of prehistoric ecology and evolution.

PREHISTORIC AND HISTORICAL BACKGROUND

The County's indigenous peoples, the Central Sierra Me-Wuks, arrived between 2,000 and 600 years ago. Year-round Me-Wuk villages were usually located on ridges near a major spring or drainage confluence below the heavy snow line (about 3,500–4,000 feet in elevation). Summer brought movement into higher elevations where seasonal camps were established convenient to summer gathering and hunting. Tuolumne County's lower elevations were known as an area used intensely for gathering. There were numerous temporary camps that existed for hunting, fishing, and gathering locales throughout the County. It is estimated that there were 35 pre-1848 villages in the County. This number of villages indicates that the County was a significant residential and resource procurement area for the Central Sierra Me-Wuk.

Few pre-1848 accounts of historic excursions into Tuolumne County have survived. Gabriel Moraga and his fellow explorers are the earliest known non-Indians to venture into what became Tuolumne County. Little information remains about any historic settlements or other resources from this era, or remains of any settlements of the early Sonoran miners. Historic activity began intensely soon after the widely publicized 1848 discovery of gold. This discovery forever changed the face of Tuolumne County's physical and cultural landscape.

Non-Indian intrusions into the Central Sierra Me-Wuk territory probably occurred sporadically prior to the Gold Rush of 1848. By the Gold Rush period, valley tribes had been seriously reduced in numbers and the foothills were affected by movement of surviving Indian refugees into their areas. Former traditions were completely disrupted and settlement patterns were altered due to high mortality and the encroachment of white setters on the land. Villages were abandoned or moved because of the decreased number of residents or because of forced removal by non-Indians. During the post-Gold Rush period, villages contracted and consolidated.

It is believed that gold was discovered in Tuolumne County in 1848 by Benjamin F. Wood and his party in Jamestown. However, there is conflicting information stating that gold was discovered on Mormon Creek near Tuttletown by a group of Mormons before the arrival of Mr. Wood in the County. Miners invaded the

area, developed water systems, and constructed settlements in the rich mining areas. The most visible remnants of the County's past are found in its Gold Rush Era buildings and artifacts dating from 1848 (Tuolumne County 2013). In the early 1850s, Columbia, known as "The Gem of the Southern Mines," was established as a "tent and shanty" town. What started as home to a handful of miners, grew into a community of several thousand with more than 500 buildings and over 150 businesses serving Columbia and nearby mining camps. The County has identified the townsite at Columbia State Historic Park as an outstanding historic resource that demonstrates life during the California Gold Rush.

When the easily mined gold gave out, Jamestown remained a trade and supply depot for mining higher in the foothills, with a prime location on the roads from the Central Valley. Due to the depletion of gold fields and six major fires between 1854 and 1866, Columbia's population dwindled from more than 10,000 to less than 500. By the mid-1860s the placer gold deposits were exhausted, and the technology for extracting deep veins of gold was not yet well-developed. The mining industry leveled off in Tuolumne County, and many mining families moved to other settlements outside the County. During this time, between the years 1860 and 1870, the County's population decreased by nearly 50 percent.

From the late 1880s to World War I, advancements in mining technology and an infusion of foreign capital produced a second Gold Rush in Tuolumne County. Renewed mining efforts allowed for the influx of settlers into Sonora and Jamestown. Other locations within the booming towns were reopened with investment capital and large modern stamp mills were erected. Mining was once again a profitable venture in Tuolumne County and its supporting industries developed closely behind. A large increase of assessed valuation allowed the County to construct new public services and generally stimulate County services. Businesses and commerce prospered, agriculture became a major local industry, many homes were built to house the increased population, and whole communities were established or enlarged.

The timber industry emerged in response to a need for timbers to support the hard rock mines, to build stamp mills and to construct buildings in the mining camps. By 1900, the industry developed into a major industrial base in the County. It provided the momentum for growth and development of the Sierra, Sugar Pine, West Side and Cherry Valley railways. The industry also created hundreds of jobs for loggers and other professions closely intertwined with the timber industry. The agriculture industry was also initially created to support the mining operations and its workforce. Railroads for logging, freight and passenger services created more economic opportunities and made it possible for the expansion of the agriculture industry. The Sierra Railroad was constructed in 1897 and hauled machinery and supplies to the mines, ore, lumber, a variety of agricultural products, passengers and merchandise for stores and businesses.

The driving force of tourism in the County was the construction of the railroads from Stockton to Milton in 1871. The railroad greatly increased tourism by reducing traveling time while increasing traveling comfort. The influx of tourism was seasonal and after the completion of the Sierra Railway, many locations in the County became destinations for vacationers. As the demand for tourist facilities increased, recreational home subdivisions began to be developed in the hills east of Sonora in the 1920s. There was not a great demand for full public services until the 1980s when the trend began for the conversion of these vacation homes into year-round residences.

By World War I, most of the mines in Tuolumne County were once again inactive and many people moved to work in war-related industries in the San Francisco Bay Area. The arrival of automobiles and truck transportation shifted the balance of imports and exports in the agriculture industry. Many agricultural products and manufactured items were imported instead of being produced locally. The Great Depression, which began in 1929, hindered the productivity of local industry including agriculture and timber. Due to the increased price of gold and low operating costs during the Depression, a small mining boom occurred again during the mid to late 1930s. However, the start of World War II effectively put an end to any major reopening. All mines were then ordered closed in 1942 by the federal government, and thus ended the historic presence of mining operations in the County.

Table 3.5-1 presents historical resources in Tuolumne County. Included in the table are sites listed on the National Register of Historic Places (NRHP) and the Tuolumne County Register of Cultural Resources and

designated as California State Historic Landmarks. Due to the sensitivity of many prehistoric, ethnohistoric, and historic archaeological sites, the resources listed in the following table include only those that are available for access by the general public. In Tuolumne County, there are 19 NRHP listings, 12 listings on the County Register, and 20 California Historical Landmarks. In honor of its historic resources, the federal government has named Tuolumne County a Preserve America Community, which recognizes the County's efforts to protect and celebrate its heritage, use historic assets for economic development and community revitalization, and encourage people to experience and appreciate local historic resources.

Table 3.5-1 Tuolumne County Historical Resources

Location	Resource Name	NRHP	State Landmark	TC Register
Big Oak Flat	Big Oak Flat		X	
Big Oak Flat	Gamble Building	X		
Chinese Camp	Chinese Camp		X	
Chinese Camp area	Jacksonville		X	
Chinese Camp area	Montezuma		X	
Chinese Camp	Wells Fargo Express Company Building		X	
Columbia	1925 Craftsman Bungalow and 1940 Garage			X
Columbia	Columbia State Historic Park		X	
Columbia area	Parrotts Ferry		X	
Columbia area	Sawmill Flat		X	
Columbia area	Shaw's Flat		X	
Columbia area	Springfield		X	
Dardenelle	Baker Highway Maintenance Station	X		
East Sonora	Belli Ranch House			X
East Sonora	Sullivan Creek Park (Elsey's Pool)			X
Groveland area	Second Garrote		X	
Groveland	Groveland		X	
Groveland	Groveland Hotel	X		
Groveland	Hotel Charlotte	X		
Groveland	Watts & Tannahill Company Store	X		
Jamestown	Emporium	X		
Jamestown	Jamestown		X	
Jamestown	Jamestown Community Hall (Old Justice Court)			X
Jamestown	Ramirez-Preston Building			X
Long Barn	Quail Site	X		
Pinecrest area	Leighton Encampment	X		
Sonora	Tuolumne County Courthouse	X		
Sonora	Tuolumne County Jail	X		
Soulsbyville	Gessford Home			X
Soulsbyville	Soulsbyville		X	
Strawberry	Chinaman Mortar Site	X		
Strawberry	Cooper Cabin	X		

Table 3.5-1 Tuolumne County Historical Resources

Location	Resource Name	NRHP	State Landmark	TC Register
Strawberry	Old Strawberry Road Bridge			X
Strawberry	Stanislaus Branch, California Forest and Range Experiment Station	X		
Sugar Pine	Sonora-Mono Road		X	
Tuolumne area	Cherokee		X	
Tuolumne	Dungan House			X
Tuolumne	Niagara Camp	X		
Tuolumne	Summersville (Tuolumne)		X	
Tuolumne	Superintendent's House			X
Tuolumne	Veterans Memorial Hall			X
Tuolumne	West Side Memorial Park			X
Tuttletown	Ewert/Aguire/Jackson Property (Tuttletown Stage Stop)			X
Tuttletown area	Mark Twain Cabin		X	
Tuttletown	Tuttletown		X	
Yosemite National Park	Frog Creek Cabin	X		
Yosemite National Park	Glen Aulin High Sierra Camp	X		
Yosemite National Park	Lake Vernon Snow Survey Shelter	X		
Yosemite National Park	Sachse Spring Snow Survey Shelter	X		
Yosemite	Great Sierra Wagon Road	X		

Notes: NRHP = National Register of Historic Places; TC Register = Tuolumne County Register of Cultural Resources.

Sources: National Park Service 2018; California Office of Historic Preservation 2018; Tuolumne County Register of Cultural Resources 2010.

PALEONTOLOGICAL BACKGROUND

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 3.5-2). 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.

Table 3.5-2 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

Tuolumne County is located primarily within the Sierra Nevada geomorphic province, with an extremely small portion (less than 10 percent) of the western boundary creeping into the Great Valley province. Based on geologic mapping, the majority of the County, especially in the Sierra Nevada Mountains, is underlain by granitic and volcanic rocks which are generally not fossil-bearing (Ludington et al. 2007). Paleozoic marine rocks occur in the western portion of the County and may contain fossils of marine invertebrates. A pocket of Plio-Pleistocene and Pliocene loose consolidated deposits also occurs along State Route 108 southwest of Jamestown and northwest of Chinese Camp. This area may contain evidence of Pleistocene-era large mammals. Records of paleontological finds maintained by the University of California Museum of Paleontology state that there are 72 localities at which fossil remains have been found in Tuolumne County. These occur primarily in the Mehrten geologic formations (UCMP 2018).

3.5.2 Regulatory Setting

FEDERAL

Section 106 of the National Historic Preservation Act

Federal protection of resources is legislated by (1) the National Historic Preservation Act of 1966 as amended by 16 U.S. Code 470, (2) the Archaeological Resource Protection Act of 1979, and (3) the Advisory Council on Historical Preservation. These laws and organizations maintain processes for determination of the effects on historical properties eligible for listing in the NRHP.

Section 106 of the National Historic Preservation Act and accompanying regulations (36 Code of Federal Regulations [CFR] Part 800) constitute the main federal regulatory framework guiding cultural resources investigations and require consideration of effects on properties that are listed in or may be eligible for listing in the NRHP.

National Register of Historic Places

The NRHP is the nation's master inventory of known historic resources. It is administered by the National Park Service and includes listings of buildings, structures, sites, objects, and districts that possess historic, architectural, engineering, archaeological, and cultural districts that are considered significant at the national, state, or local level.

The formal criteria (36 CFR 60.4) for determining NRHP eligibility are as follows:

1. The property is at least 50 years old (however, properties under 50 years of age that are of exceptional importance or are contributors to a district can also be included in the NRHP);

2. It retains integrity of location, design, setting, materials, workmanship, feeling, and associations; and

3. It possesses at least one of the following criteria:

    A. Association with events that have made a significant contribution to the broad patterns of history (events).

    B. Association with the lives of persons significant in the past (persons).

    C. Distinctive characteristics of a type, period, or method of construction, or represents the work of a master, or possesses high artistic values, or represents a significant, distinguishable entity whose components may lack individual distinction (architecture).

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

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.

STATE

California Register of Historical Resources

The California Register of Historical Resources (CRHR) is an authoritative guide in California used by state and local agencies, private groups, and citizens to identify the state's historical resources and to indicate which properties are to be protected, to the extent prudent and feasible, from substantial adverse change (Public Resources Code Section 5024.1). A resource is eligible for listing on the CRHR if it meets any of the following criteria for listing (Section 5024.1(c)):

A. It is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;

B. It is associated with the lives of persons important in our past;

C. It embodies the distinctive work of an important creative individual, or possesses high artistic values; or

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

The CRHR may also include properties listed in "local registers" of historic properties. A "local register of historic resources" is broadly defined in Public Resources Code Section 5020.1(k) as "a list of properties officially designated or recognized as historically significant by a local government pursuant to a local ordinance or resolution." Local registers of historic properties come in two forms: (1) surveys of historic resources conducted by a local agency in accordance with Office of Historic Preservation procedures and standards, adopted by the local agency and maintained as current; and (2) landmarks designated under local ordinances or resolutions (Public Resources Code Sections 5024.1, 21084.1; State CEQA Guidelines Section 15064.5).

By definition, the CRHR also includes all "properties formally determined eligible for, or listed in, the [NRHP]," and certain specified State Historical Landmarks. The majority of formal determinations of NRHP eligibility occur when properties are evaluated by the State Office of Historic Preservation in connection with federal environmental review procedures (Section 106 of the National Historic Preservation Act of 1966). Formal determinations of eligibility also occur when properties are nominated to the NRHP, but are not listed due to owner objection. The minimum age criterion for the NRHP and the CRHR is 50 years. Properties less than 50 years old may be eligible for listing on the NRHP if they can be regarded as "exceptional," as defined by the NRHP procedures, or in terms of the CRHR, if "it can be demonstrated that sufficient time has passed to understand its historical importance."

California Environmental Quality Act

CEQA requires public agencies to consider the effects of their actions on "historical resources," "unique archaeological resources," and "tribal cultural resources." Pursuant to Public Resources Code 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." "Substantial adverse change in the significance of an historical resource means physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historical resource would be materially impaired" (CEQA Guidelines, Section 15064.5, subd. (b)(1).).

Pursuant to Public Resources Code Section 21084.2, a "project with an effect that may cause a substantial adverse change in the significance of a tribal cultural resource is a project that may have a significant effect on the environment." Public Resources Code Section 21083.2 requires agencies to determine whether projects would have effects on unique archaeological resources.

Historical Resources

"Historical resource" is a term with a defined statutory meaning (Public Resources Code 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 CRHR (Public Resources Code 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 CRHR (Public Resources Code Section 5024.1).

4. The fact that a resource is not listed in or determined to be eligible for listing in the CRHR, 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 a historical resource as defined in Public Resources Code Sections 5020.1(j) or 5024.1.

Unique Archaeological Resources

CEQA also requires lead agencies to consider whether projects will affect 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.

Section 21083.2 also includes direction on how to mitigate impacts to archaeological resources. For example, subdivision (c) states:

> To the extent that unique archaeological resources are not preserved in place or not left in an undisturbed state, mitigation measures shall be required as provided in this subdivision. The project applicant shall provide a guarantee to the lead agency to pay one-half the estimated cost of mitigating the significant effects of the project on unique archaeological resources. In determining payment, the lead agency shall give due consideration to the in-kind value of project design or expenditures that are intended to permit any or all archaeological resources or California Native American culturally significant sites to be preserved in place or left in an undisturbed state. When a final decision is made to carry out or approve the project, the lead agency shall, if necessary, reduce the specified mitigation measures to those which can be funded with the money guaranteed by the project applicant plus the money voluntarily guaranteed by any other person or persons for those mitigation purposes. In order to allow time for interested persons to provide the funding guarantee referred to in this subdivision, a final decision to carry out or approve a project shall not occur sooner than 60 days after completion of the recommended special environmental impact report required by this section.

Section 21083.2, subdivisions (d)–(f) provide additional guidance.

Tribal Cultural Resources

CEQA also requires lead agencies to consider whether projects will affect tribal cultural resources. Public Resources Code Section 21074 states the following:

a) "Tribal cultural resources" are either of the following:

   1) Sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are either of the following:

      A) Included or determined to be eligible for inclusion in the California Register of Historical Resources.

      B) Included in a local register of historical resources as defined in subdivision (k) of Section 5020.1.

2) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Section 5024.1. In applying the criteria set forth in subdivision (c) of Section 5024.1 for the purposes of this paragraph, the lead agency shall consider the significance of the resource to a California Native American tribe.

b) A cultural landscape that meets the criteria of subdivision (a) is a tribal cultural resource to the extent that the landscape is geographically defined in terms of the size and scope of the landscape.

c) A historical resource described in Section 21084.1, a unique archaeological resource as defined in subdivision (g) of Section 21083.2, or a "nonunique archaeological resource" as defined in subdivision (h) of Section 21083.2 may also be a tribal cultural resource if it conforms with the criteria of subdivision (a).

California Native American Historical, Cultural, and Sacred Sites Act

The California Native American Historical, Cultural, and Sacred Sites Act (Public Resources Code Section 5097.9 et seq.) applies to both state and private lands. The act requires that upon discovery of human remains, construction or excavation activity cease and the County coroner be notified. If the remains are of a Native American, the coroner must notify the Native American Heritage Commission (NAHC), which notifies and has the authority to designate the Most Likely Descendant of the deceased. The act stipulates the procedures the descendants may follow for treating or disposing of the remains and associated grave goods.

Health and Safety Code Sections 7052 and 7050.5

Health and Safety Code Section 7052 states that the disturbance of Native American cemeteries is a felony. Health and Safety Code 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 NAHC.

Public Resources Code Section 5097.98

Public Resources Code Section 5097.98 specifies the procedures to be followed in the event of the unexpected discovery of human remains on nonfederal land. The disposition of Native American remains falls within the jurisdiction of the NAHC. Public Resources Code Section 5097.5(e) requires that the procedures set forth in Section 5097.9 be followed if human remains that are determined to be Native American are recovered as a result of an action brought pursuant to Section 5097.5.

Public Resources Code Section 5097.5(a) states the following regarding unlawful excavation:

> A person shall not 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, rock art, or any other archaeological, paleontological or historical feature, situated on public lands, except with the express permission of the public agency having jurisdiction over the lands.
>
> A violation of Public Resources Code Section 5097.5 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". AB 52, as provided in Public Resources Code Sections 21080.3.1, 21080.3.2, and 21082.3, requires that lead agencies undertaking CEQA review must, upon written request of a California Native American Tribe, begin consultation once the lead agency determines that the application for the project is complete, prior to the issuance of a Notice of Preparation 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 creates a new category for tribal cultural resources.

Senate Bill 18

Senate Bill (SB) 18 requires that, before the adoption or amendment of a city or county general plan or specific plan, the city or county shall consult with California Native American tribes that are on the contact list maintained by the NAHC. SB 18 applies to the project because it involves a general plan amendment, which is the trigger for SB 18 compliance; however, SB 18 compliance is not a CEQA requirement and, therefore, is not discussed further.

LOCAL

Tuolumne County General Plan

The 1996 General Plan provides a framework for addressing issues related to cultural resources. As the proposed project would update the 1996 General Plan, this document will be discussed in the context of the update within the impact analysis. The Cultural Resources Element contains goals and policies related to cultural resources. Specific General Plan Update policies related to cultural resources are identified below under Section 3.5.3, "Impact Analysis."

Tuolumne County Register of Cultural Resources

Since the Tuolumne County Board of Supervisors adopted requirements for the County Register of Cultural Resources in July 1992, it has designated 17 properties on this register. The 12 properties that occur in the unincorporated County are listed in Table 3.5-1. Pursuant to Implementation Program 9.C.e in the County's Cultural Resources Management Element, the County Register of Cultural Resources applies to all properties contained within cultural resources inventories which have been or are assigned an NRHP designation of 1 (listed on the NRHP), 2 (determined eligible for listing by formal process involving federal agencies), 3 (appears to be eligible for listing in the judgment of the person completing the form), 4 (might become eligible for listing), or 5 (ineligible for listing, but of local interest and eligible for the Tuolumne County Register of Cultural Resources). Inclusion on the register qualifies properties to use the State Historical Building Code, to enter into a Mills Act Contract for qualifying rehabilitations and maintenance, and for alternative development standards.

3.5.3 Impact Analysis

METHODS OF ANALYSIS

The impact analysis considers the known cultural resource environmental setting in the plan area, the potential for previously undocumented resources, including human remains, and physical effects (i.e., disturbance, material alteration, demolishment) to known and previously undocumented resources that could result from projected development under the General Plan Update. Because the specific locations of some cultural resources are not mapped, and the exact extent of ground disturbance associated with projected development under the General Plan Update is unknown at this time, it is not possible to assess impacts to specific cultural resources. Accordingly, neither project-specific reviews nor field studies are feasible or necessary for this program Recirculated Draft EIR. 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

The significance of a cultural resource, and subsequently the significance of any impacts, is determined by whether or not that resource can increase our knowledge of the past. The determining factors are site content and degree of preservation. Where the significance of a site is unknown, it is presumed to be significant for the purposes of this Recirculated Draft EIR. A finding of archaeological significance follows the criteria established in the State CEQA Guidelines.

According to Appendix G of the CEQA Guidelines, projected development under the General Plan Update would have significant impacts on cultural resources if the project would:

- cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5;
- cause a substantial adverse change in the significance of a unique archaeological resource pursuant to Section 15064.5;
- directly or indirectly destroy a unique paleontological resource or site or unique geologic feature;
- disturb any human remains, including those interred outside of dedicated cemeteries; or
- cause a substantial adverse change in the significance of a tribal cultural resource as defined in Public Resources Code Section 21074. (AB 52, 2014.)

According to the CEQA Guidelines Section 15126.4(b)(3) public agencies should, whenever feasible, seek to avoid damaging effects on any historical resource of an archaeological nature. The following factors shall be considered for a project involving such an archaeological site:

- Preservation in place (avoidance) is the preferred manner of mitigating impacts to archaeological sites. Preservation in place maintains the relationship between artifacts and the archaeological context. Preservation may also avoid conflict with religious or cultural values of groups associated with the site.
- Preservation in place may be accomplished by, but is not limited to, the following:
  - planning construction to avoid archaeological sites;
  - incorporating sites within parks, greenspace, or other open space;
  - covering the archaeological sites with a layer of chemically stable soil before building tennis courts, parking lots, or similar facilities on the site; or
  - deeding the site into a permanent conservation easement.
- When data recovery through excavation is the only feasible mitigation, a data recovery plan, which makes provision for adequately recovering the scientifically consequential information from and about the historical resource, shall be prepared and adopted prior to any excavation being undertaken. Such studies shall be deposited with the California Historical Resources Regional Information Center. Archaeological sites known to contain human remains shall be treated in accordance with the provisions of Section 7050.5 Health and Safety Code. If an artifact must be removed during project excavation or testing, curation may be an appropriate mitigation.
- Data recovery shall not be required for a historical resource if the lead agency determines that testing or studies already completed have adequately recovered the scientifically consequential information from and about the archaeological or historical resource, provided that the determination is documented and that the studies are deposited with the California Historical Resources Regional Information Center.

(CEQA Guidelines, § 15126.4, subds. (b)(3)(A)–(D).)

If projected development under the General Plan Update causes substantial adverse change in the significance of a historical resource or archaeological resource, implementation of the General Plan Update would have a significant effect on the environment. Section 15064.5 of CEQA pertains to the determination of the significance of impacts to archaeological and historic resources. Section 15126.4 of CEQA provides guidelines for administering to archaeological resources that may be adversely affected by development.

Achieving CEQA compliance with regard to treatment of impacts to significant cultural resources requires that a mitigation plan be developed for the resource(s). Preservation in place is the preferred manner of mitigating impacts to significant archaeological resources.

Direct impacts may occur by:

- physically damaging, destroying, or altering all or part of the resource;
- altering characteristics of the surrounding environment that contribute to the resource's significance;
- neglecting the resource to the extent that it deteriorates or is destroyed. Indirect impacts primarily result from the effects of project-induced population growth. Such growth can result in increased construction as well as increased recreational activities that can disturb or destroy cultural resources; or
- incidentally discovering cultural resources without proper notification.

Direct impacts can be assessed by identifying the types and locations of projected development under the General Plan Update, determining the exact locations of cultural resources, assessing the potential significance of the resources that may be affected, and determining the appropriate mitigation.

Indirect impacts primarily result from the effects of population growth facilitated under the General Plan Update. Such growth can result in increased construction, as well as increased recreational activities that can disturb or destroy cultural resources. Indirect impacts differ from direct impacts in that they are not always as obvious or immediate as construction-related direct impacts and could include impacts that occur away from the areas of proposed development.

GENERAL PLAN UPDATE POLICIES

The following policies and implementation programs from the General Plan Update are applicable to the evaluation of effects related cultural resources:

<u>Cultural Resources Element</u>

- **Policy 13.A.1:** Initiate, adopt, and promote the availability of monetary and other incentive programs to encourage the retention, reuse and restoration of historic structures.
  - **Implementation Program 13.A.a**: Continue to implement the Mills Act in Tuolumne County and update Resolution 171-92 to reflect legislative changes to the Mills Act when necessary to provide reductions in property taxes through historic preservation. The Mills Act program will aid in encouraging the adaptive reuse of historic structures for business enterprises.
  - **Implementation Program 13.A.b**: Prepare a list of properties in Tuolumne County, as local community cultural resource inventories are completed, which could benefit from the 1986 Tax Reform Act and notify and assist property owners with information for taking advantage of this Act which provides Federal income tax credit for income producing properties on or eligible for the National Register of Historic Places.
  - **Implementation Program 13.A.c**: Identify an existing and/or support formation of an agency to accept resource donations for tax deductions or tax credits. The agency should carry an IRS 501(c)(3) designation and should be able to accept facade easement dedications, acquire property as gifts, implement restoration projects, raise funds for restoration through donations, and operate fund-raising projects. The agency should, to the extent feasible, be a multi-purpose organization which could receive both cultural and natural resource dedications.

- **Implementation Program 13.A.d**: Support implementation of the Marks Historical Rehabilitation Act in Tuolumne County. Health and Safety Code Sections 37600 et seq authorize Tuolumne County and other local agencies to issue bonds for the rehabilitation of historic properties.

- **Implementation Program 13.A.e**: Upon completion of each cultural resources inventory pursuant to Policy 13.C.1, provide each participating parcel owner with a copy of his or her property evaluation. For those properties determined potentially eligible for listing in the National Register, provide a listing of incentive programs available for the property upon listing the property on the National Register or Tuolumne County Register of Cultural Resources.

- **Policy 13.B.1**: Adopt flexible and consistent environmental review procedures for new development entitlements including provisions for monitoring and enforcement.

  - **Implementation Program 13.B.a:** Require a cultural resource assessment for discretionary development projects based on criteria established in Title 14 of the Tuolumne County Ordinance Code. The assessment shall be prepared by a qualified professional before construction activities begin. The assessment would include preparing archaeological and historical survey reports and conducting a paleontological record search using an appropriate database, such as the University of California, Museum of Paleontology. Archaeological and historical sites and materials shall be evaluated and recorded on standard DPR 523-series forms in accordance with National Register and California Register criteria. The evaluation report shall be completed by a qualified archaeologist, architectural historian, or historical architect who meets the Secretary of the Interior's Professional Qualifications for Archaeology and Historic Preservation, as appropriate, and submitted to Tuolumne County.

  - **Implementation Program 13.B.b:** Require that discretionary development projects are designed to avoid potential impacts to significant cultural resources whenever possible. Determinations of impacts, significance, and mitigation shall be made by qualified archaeological, historical, or paleontological consultants (in coordination with culturally-affiliated tribes), depending on the type of resource in question.

  - **Implementation Program 13.B.c**: Require that cultural resource studies be conducted by qualified professionals with experience appropriate to the study being conducted. Continue to require specific standards for performing cultural resource investigations and contents of reports in compliance with State and Federal standards including the Secretary of the Interior's Standards and Guidelines for Identification, Evaluation, Documentation, Registration, Historical Documentation, Architectural and Engineering Documentation, and Archaeological Documentation. Require submission of results of these investigations to the Central California Information Center per State guidelines.

  - **Implementation Program 13.B.d** – Require a paleontological investigation for discretionary development projects proposed in an area underlain by geologic formations that have the potential to contain paleontological resources. In such cases, the project proponent shall, in coordination with the Community Resources Agency, hire a qualified paleontologist approved by the County to perform an investigation consisting of:

    - A walk-over site survey;

    - A review of publications and reports on the geology or paleontology of the area;

    - Analysis of all available soils information; and

    - Evaluation of the relationship of the project site to known or potential fossil-producing areas identified in available records.

The paleontologist shall submit to the County a written report describing findings and making recommendations to minimize impacts on any identified resources. This report shall be considered as part of the CEQA review process and, if appropriate, its recommendations shall be included as mitigation measures and conditions of approval for the project. Provision shall be made for the deposit of scientifically valuable paleontological materials which are removed from the site with responsible public or private institutions. Amend Title 14 of the Tuolumne County Ordinance Code to incorporate this program to protect paleontological resources.

- **Implementation Program 13.B.e**: Include, for projects with conditions of approval related to management of cultural resources, a requirement for preconstruction meetings with project contractors, the developer or his representative, Native American representatives, the project's qualified cultural resources professional, the Community Resources Agency and other agencies responsible for overseeing the construction phase of a development project as part of written procedures for conducting cultural resources investigations in Tuolumne County as required in Implementation Programs 13.B.a through 13.B.d. Further, continue to require, as part of the County Ordinance Code, the existing requirement for stopping work and evaluating a resource pursuant to CEQA when a cultural resource is identified during the construction phase of a project.

- **Implementation Program 13.B.f**: Continue to condition discretionary entitlements for any new development which requires review under CEQA and which has the potential to impact subsurface cultural resources to require such development to comply with the provisions of Sections 21083.2 and 21084.1 of CEQA. Also require that if subsurface cultural resources are discovered during the construction process, construction shall cease until a qualified professional as defined in Title 14 of the Tuolumne County Ordinance Code has evaluated the site. If the resource is determined to be a unique archaeological resource, then the provisions of mitigation for impacts to archaeological resources contained in Section 21083.2 of CEQA shall be implemented. Construction work may continue on other parts of the construction site while archaeological evaluation and mitigation are being implemented.

- **Implementation Program 13.B.g**: Continue to utilize written procedures for establishing when to conduct cultural resources reviews based on guidelines in Figure 13.A, 13.B, and Table 13.1; listing available resources to be consulted for existing cultural resources information and including a list of advisory agencies to be notified during the CEQA consultation process including, at a minimum, the Tuolumne Band of Me-Wuk Indians, the Chicken Ranch Band of the Me-Wuk Indians, the Tuolumne County Historical Society Landmarks Committee, the Tuolumne Southern County Historical Society, the Tuolumne Heritage Committee and the Central California Information Center.

- **Implementation Program 13.B.h:** The County shall coordinate with the Tuolumne Band of Me-Wuk Indians, the Chicken Ranch Band of the Me-Wuk Indians, and other culturally-affiliated tribes through AB 52 and SB 18, as applicable, to encourage the preservation, protection, and mitigation for impacts to cultural sites.

- **Implementation Program 13.B.i**: Continue to implement the County Ordinance Code to provide both criminal and civil penalty procedures and/or a penalty fee with mandatory monetary penalties for noncompliance with management standards and practices and for anticipatory demolition.

- **Policy 13.B.2**: Assist in retaining the special character of historic districts and promote compatible development within historic districts by reducing, adapting and/or modifying some development standards within historic districts.

  - **Implementation Program 13.B.j**: Maintain the current provisions for waiving fees for requests to zone to H and HDP and for waiving fees for Mills Act applications. Consider expanding the fee waiver provisions to include waiving development permit fees for site review, site development, and conditional use permits for work done on Tuolumne County Register and National Register structures that is consistent with the Secretary of the Interior's Standards for Treatment of Historic Properties

With Guidelines for Preserving, Rehabilitating, Restoring and Reconstructing Historic Buildings. Reduce or waive building fees for structures using the State Historical Building Code.

- **Implementation Program 13.B.k**: Continue to provide for reduced and/or modified development standards on land zoned H and HDP or for buildings or structures classified as Priority 1, 2 or 3 in Table 13.2 and 13.3 in any zoning district.

- **Implementation Program 13.B.l**: Continue to protect cultural resource features important to the context or setting of cultural resources such as mature trees and vegetation, retaining walls, and fences when considering development projects within H and HDP zoning districts.

- **Implementation Program 13.B.m**: Continue to implement Title 14 so that buildings on the Tuolumne County Register of Cultural Resources shall be deemed "qualifying structures," eligible to use the State Historical Building Code pursuant to Section 18955 of the Health and Safety Code.

- **Implementation Program 13.B.n**: Continue to provide for well, septic, building, and other ministerial permits to become discretionary for the purposes of CEQA when a significant cultural resource may be impacted.

- **Implementation Program 13.B.o**: Continue to utilize the classification system and corresponding development standards contained in Figure 13.D: Priority Classification System for Historic Buildings and Structures into the County Ordinance Code.

- **Implementation Program 13.B.p**: Continue to require the Secretary of the Interior's Standards for Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring and Reconstructing Historic Buildings as a guide for evaluating development proposals involving cultural resources, such as restoration, alteration of, and, additions to existing historic structures.

- **Implementation Program 13.B.q**: Continue to require approval of a new development plan and issuance of required grading and/or building permits and review by the Historic Preservation Review Commission or documentation of an imminent safety hazard (as defined by the Health and Safety Code) prior to issuance of a demolition permit in the H and HDP zoning districts. The Historic Preservation Review Commission shall also review all demolition permits for buildings 50 years of age or older in any zoning district or a cultural resource study shall be required prior to approval of a demolition permit.

- **Implementation Program 13.B.r**: Review and recommend amendments to existing design guidelines which affect historic structures for consistency between local design guidelines and the Secretary of the Interior's Standards for Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring and Reconstructing Historic Buildings and consider preparing a design guide for new development in undesignated historic districts.

- **Implementation Program 13.B.s**: Continue to streamline the development application review process by eliminating review by the Historic Preservation Review Commission for projects and alterations that have been listed as acceptable to that Commission and are consistent with the Secretary of the Interior's Standards for Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring and Reconstructing Historic Buildings and grant authority to the Community Resources Agency Director to approve such projects in-house without additional review from the Tuolumne County Historic Preservation Review Commission. The project list should include these projects where consistent with the Secretary of the Interior's Standards for Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring and Reconstructing Historic Buildings:

  - Color schemes acceptable for repainting (including acceptable trim combinations);

- Maintenance projects involving replacement with like materials and like colors; and
- Replacement of doors or windows with doors or windows of the same size and of similar appearance.

- **Implementation Program 13.B.t**: Section 106 projects include activities involving direct or indirect Federal assistance or involvement either monetarily or through issuance of Federal permits at various stages of the activity. Housing and Urban Development (HUD) monies, which include Community Development Block Grants, are subject to this consultation. The Historic Preservation Review Commission will identify and contact Federal agencies involved in Section 106 projects related to rehabilitation and restoration of housing units in Tuolumne County and request the opportunity to comment on these projects during the Section 106 consultation process. This request will exclude projects on Federal lands and all projects on private lands not related to housing.

- **Policy 13.C.1:** Survey, record, inventory, maintain and regularly update databases and archives of historic, architectural, and archeological resources for informational purposes.

  - **Implementation Program 13.C.a**: Continue to implement the County Ordinance Code to enable the County to pursue its preservation policies through implementation of the programs described herein.

  - **Implementation Program 13.C.b**: Complete the Twain Harte inventory and supplement existing inventories of Columbia State Historic Park, Groveland, Big Oak Flat, Chinese Camp, Jamestown, Soulsbyville, Tuolumne, and Railtown 1897 State Park with inventories of the following community, thematic and miscellaneous inventories. Note: Parcel owner notification shall be required to inventory all private properties. Property owner's consent shall be required prior to entry upon the property. This requirement is specified in the Cultural Resources Ordinance.

    <u>Communities</u>

    - High Country: Strawberry communities and including a 500 foot wide corridor on either side of Highway 108, measured from the centerline of the highway, between the two communities
    - Jamestown Supplement: Areas not included in previous inventories.
    - Columbia supplement: Areas not included in previous studies.
    - Groveland/Big Oak Flat Supplement: Areas not included in previous studies.
    - Confidence
    - Shaw's Flat
    - Standard
    - East Sonora
    - Other communities as may be recommended as appropriate to the Board of Supervisors by the Tuolumne County Historic Preservation Review Commission
    - Update existing inventories

    <u>Thematic Inventories</u>

    - Transportation and Communications (Early Routes and Roads, Railroads, Communication)

- Gold Mining
- Water Development
- Ethnicity and Social Systems
- Agriculture
- Industry, Commerce and Tourism including logging, limestone and marble quarrying and non-gold mining
- Recreational residences (including second and retirement homes)
- Other themes as may be recommended as appropriate to the Board of Supervisors by the Tuolumne County Historic Preservation Review Commission.

<u>Other</u>

- County-owned properties including bridges, buildings, old roadways
- Property under the jurisdiction of the City and County of San Francisco

Inventory standards shall be as established by the State Office of Historic Preservation. This requirement and these procedures are included in the County Ordinance Code.

- **Implementation Program 13.C.c**: Upon completion of each cultural resource inventory, create a list of properties within Tuolumne County eligible for nomination to the National Register of Historic Places and provide written notice to property owners of these historic properties advising them of the benefits of the National Register program and of local incentives available for their properties.

- **Implementation Program 13.C.d**: Add to the Tuolumne County Register of Cultural Resources, by resolution, all properties contained within existing and future cultural resources inventories which have been or are assigned a National Register designation of 1 (listed on the National Register), 2 (determined eligible for listing by formal process involving Federal agencies), 3 (appears to be eligible for listing in the judgment of the person completing the form), 4 (might become eligible for listing) or 5 (ineligible for listing, but of local interest and eligible for the Tuolumne County Register of Cultural Resources). The resolution shall specify that inclusion on the Register qualifies properties to use the State Historical Building Code, to enter into a Mills Act Contract for qualifying rehabilitations and maintenance, and for alternative development standards. Individual property owners shall be notified of the Resolution prior to public hearing and those submitting written notifications to withhold properties from the Register shall be honored.

- **Implementation Program 13.C.e**: Maintain, expand and update the existing GIS cultural resources database to include all areas inventoried within the County, all individual parcels known to include cultural resources and regions and parcels with a high potential for containing cultural resources based on natural landscape, historic maps, and oral histories.

- **Implementation Program 13.C.f**: In consultation with the Tuolumne County Historical Society, Tuolumne County Historian, Tuolumne County Museum Board of Governors and Tuolumne County Historic Preservation Review Commission, locate and designate a repository for cultural resources documents, maps, surveys, photos, and other information and provide staffing to organize, maintain, make accessible and update information received at this archive.

- **Policy 13.C.3:** Identify historic districts and structures.

- **Implementation Program 13.C.i**: Upon completion and distribution of completed cultural resources inventories, identify potential historic districts. Schedule public hearings to gauge community interest in forming historic districts. When community support is forthcoming for a proposal, pursue HDP (historic district) zoning. This procedure is included in the County Ordinance Code.

- **Implementation Program 13.C.j**: Continue to require parcel owner consent prior to zoning property to the H zoning district and require consent of a simple majority of property owners within a proposed HDP zoning district prior to zoning the property to HDP. The determination of a majority of the property owners for zoning to HDP shall be based upon each parcel having one vote.

- **Implementation Program 13.C.k**: Designate corridors, or portions of corridors, which:

  1. are examples of historic trade, water distribution or transportation routes, conveyance systems or trails, or
  2. are lined with visible cultural resources, or
  3. pass through historic or design review districts, or
  4. are representative of a major period in Tuolumne County or California history.

  Designation of Heritage Corridors shall only be approved by the Board of Supervisors after consent of the owners of a minimum of 51% of the property area and 51% of the property owners included within a proposed Heritage Corridor. The determination of the consent of the property owners for the formation of Heritage Corridors shall be based upon each parcel having one vote. In conjunction with the designation of a Heritage Corridor, a cultural resources conservation program for the area within the proposed corridor shall be formulated as a cooperative effort by the owners of the property within the corridor and the County and adopted by the Board of Supervisors.

- **Policy 13.F.1:** Promote good cultural resources management practices by demonstrating proper stewardship of the County's cultural resources.

  - **Implementation Program 13.F.a**: Retain the Tuolumne County Historic Preservation Review Commission as an advisory agency to review County projects with the potential to impact cultural resources.

  - **Implementation Program 13.F.b**: Enlist the Tuolumne County Historic Preservation Review Commission to prepare applications for listing all eligible County-owned properties to the National, California and Tuolumne County Registers.

  - **Implementation Program 13.F.c**: Enlist the Tuolumne County Historic Preservation Review Commission to inventory all County-owned properties in excess of 45 years old.

  - **Implementation Program 13.F.d**: Formulate best preservation practice standards in consultation with the Tuolumne County Historic Preservation Review Commission and implement them in storing all County owned property that is in excess of 45 years of age and has been deemed significant by the Historic Preservation Review Commission.

  - **Implementation Program 13.F.e:** Use the Secretary of the Interior Standards and Guidelines for Historic Preservation Projects and the State Historical Building Code in maintaining or restoring County owned buildings that are in excess of 45 years of age.

PROJECT IMPACTS

This section presents a programmatic-level analysis of potential impacts to cultural resources from projected development under the General Plan Update. Evaluation of environmental impacts associated with the General Plan Update considers the development that would be facilitated by the General Plan Update, in

accordance with goals, policies, and implementation programs, to accommodate projected growth in the County. It should be noted that the County's population is projected to grow by 0.6 percent annually over the planning horizon (2040). As discussed in detail in Chapter 2, "Project Description," and the introduction to Chapter 3, this is a relatively low amount of growth.

Impact 3.5-1: Change in the Significance of a Historical or Unique Archaeological Resource

Projected development under the General Plan Update could adversely affect historical or unique archaeological resources. The General Plan Update includes policies to protect resources, however, avoidance of these historical or unique archaeological resources may not be possible. Impacts would be **potentially significant**.

Projected development under the General Plan Update could occur in areas of cultural resource sensitivity, such as the communities of Columbia, Groveland, Jamestown, and Tuolumne for known historical resources, and along waterways, alluvial flats, and inland valleys for unique archaeological resources. Projected development under the General Plan Update could be located on properties that contain known or unknown archaeological resources and grading and excavation activities during construction could disturb unique archaeological resources.

Projected development under the General Plan Update also could have direct or indirect adverse effects on known historical resources – including 17 NRHP listings and 20 California Historical Landmarks. Designated historical resources occur in the communities of Columbia, Groveland, Jamestown, and Tuolumne, where development on infill and underutilized sites may occur under the General Plan Update. Projected development under the General Plan Update also could have direct or indirect adverse effects on structures that have not been evaluated for NRHP or CRHR eligibility. Damage to or destruction of a building or structure that is a designated historic resource, or is eligible for listing as a historic resource, could result in the change in its historical significance.

General Plan Update policies and existing regulations pertaining to the protection of cultural resources would reduce impacts to such resources. The Cultural Resources Element includes the following policies and implementation programs, described in full above, intended to address potential impacts to historical and archaeological resources.

Policy 13.B.1 protects archaeological resources by requiring environmental review procedures for new development entitlements. This Policy is supported by a series of implementation programs, which require specific actions be taken to fulfill the Policy, including completion of surveys and assessments prior to construction activities, as well as monitoring requirements, and protection measures. Specifically, Implementation Program 13.B.a requires that cultural resource assessments be prepared by a qualified professional before construction activities begin. Implementation Program 13.B.b requires that discretionary development projects are designed to avoid potential impacts to significant cultural resources whenever possible. Implementation Program 13.B.e requires preconstruction meetings with project contractors, Native American representatives, and the project's qualified cultural resources professional. The implementation program also calls for stopping work and evaluating a resource pursuant to CEQA when a cultural resource is identified during the construction phase of a project. Additionally, Implementation Program 13.B.f contains additional requirements related to cultural finds during construction, such as hiring a qualified professional as defined in Title 14 of the Tuolumne County Ordinance Code to evaluate the site.

Policy 13.B.2 addresses the retention of the special character of historic districts by reducing, adapting and/or modifying some development standards within historic districts. This Policy is supported by several implementation programs that protect historic structures. Specifically, Implementation Program 13.B.p requires the use of the Secretary of the Interior's Standards as a guide for evaluating development proposals involving cultural resources, such as restoration, alteration of, and, additions to existing historic structures. Implementation Program 13.B.q requires review by the Historic Preservation Review Commission prior to issuance of a demolition permit in the H and HDP zoning districts.

While the General Plan Update policies and implementation programs are aimed at protecting resources, as noted under Implementation Program 13.B.b, it may not be feasible to design a development project such that it avoids significant historical or unique archaeological resources. As previously discussed, preservation in place is the preferred manner of mitigating impacts to significant archaeological resources. Additionally, State CEQA Guidelines Section 15126.4(b)(2) notes that in some circumstances, documentation of a historical resource will not mitigate the effects of demolition of that resource to a less-than-significant level because the historic resources would no longer exist. Therefore, impacts associated with projected development under the General Plan Update would be **potentially significant**.

Mitigation Measures

The General Plan Update includes implementation programs requiring cultural resources surveys to be prepared by qualified professionals for all discretionary projects and that the reports would be prepared in compliance with State and Federal standards including the Secretary of the Interior's Standards and Guidelines for Identification, Evaluation, Documentation, Registration, Historical Documentation, Architectural and Engineering Documentation, and Archaeological Documentation. Proposed Implementation Program 13.B.3 would require that determinations of impacts, significance, and mitigation be made by qualified archaeological or historical consultants and that discretionary development projects be designed to avoid potential impacts to significant cultural resources whenever possible. However, avoidance may not always be feasible. No further mitigation is available other than to deny a project if historical or unique archaeological resources would be affected. As discussed in Chapter 6, "Alternatives," this EIR analyzes a Historic Structure Preservation Alternative. Under that alternative, policy provisions would be included that would prohibit, with some exceptions, demolition or substantial alteration of a significant historic structure.

Significance after Mitigation

Policies and implementation programs identified in the General Plan Update would reduce impacts to historic and archaeological resources to the extent feasible because actions would be taken to record, evaluate, avoid, or otherwise treat the resource appropriately, in accordance with pertinent laws and regulations. However, avoidance of these historical or unique archaeological resources may not always be feasible, and recordation of a significant historic resource does not constitute adequate mitigation for a substantial adverse change to that resource. Therefore, because the potential for permanent loss of a known cultural resource or its integrity cannot be precluded, the project's impacts would be **significant and unavoidable**.

Impact 3.5-2: Change in the Significance of Paleontological Resources

Projected development under the General Plan Update could have the potential to destroy, directly or indirectly, a unique paleontological resource. The General Plan Update includes policies to protect previously unknown resources. Implementation of these policies and protection programs would reduce potential impacts to a **less-than-significant** level.

Based on geologic mapping, the majority of the County is not considered sensitive for paleontological resources. Paleozoic marine rocks occur in the western portion of the County and may contain fossils of marine invertebrates. A pocket of Plio-Pleistocene and Pliocene loose consolidated deposits also occurs along State Route 108 to southwest of Jamestown and northwest of Chinese Camp. This area may contain evidence of Pleistocene-era large mammals. Projects involving excavation, grading, or soil removal in previously undisturbed areas have the greatest likelihood to encounter these resources. The degree and extent of impacts would depend upon subsequent project-specific locations, and as such, project-specific analysis would be required to determine the precise area of impact and the importance of any paleontological or geologic resource identified within a proposed project area.

As discussed under Impact 3.5-1, the General Plan Update proposes policies and implementation programs to address potential impacts to cultural resources. In addition to the policies and implementation programs described under Impact 3.5-1, Implementation Program 13.B.d requires a paleontological investigation be completed by a qualified paleontologist for discretionary development projects proposed in an area

underlain by geologic formations that have the potential to contain paleontological resources. The implementation program also requires that the paleontologist submit a written report describing findings and its recommendations be included as mitigation measures and conditions of approval for the project. Under the implementation program, provision would be made for the deposit of scientifically valuable paleontological materials which are removed from the site with responsible public or private institutions.

These General Plan Update policies and implementation programs would reduce impacts of projected development under the General Plan Update to paleontological resources because professionally accepted and legally compliant procedures for the survey, discovery, and recordation of paleontological resources would be implemented. Impacts would be **less than significant.**

Mitigation Measures

No mitigation is required.

Impact 3.5-3: Accidental Discovery of Human Remains

Previously undiscovered human remains could be discovered when soils are disturbed during construction of cultivation and processing sites for projected development under the General Plan Update. Compliance with Health and Safety Code Sections 7050.5 and 7052 and 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. Projected development under the General Plan Update could include residential, commercial, professional/office, public schools, and public parks. These activities would result in soil disturbance; therefore, the potential exists for previously undiscovered human remains to be discovered.

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 Health and Safety Code Sections 7050.5 and 7052 and Public Resources Code Section 5097.98.

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 Tuolumne County coroner and the NAHC immediately, according to Public Resources Code Section 5097.98 and the 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, the NAHC-designated Most Likely Descendant, and the landowner, 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 Public Resources Code Section 5097.98.

Compliance with Health and Safety Code Sections 7050.5 and 7052 and Public Resources Code Section 5097.98 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 is required.

Impact 3.5-4: Change in the Significance of a Tribal Cultural Resource

No tribes that are culturally affiliated with Tuolumne County have formally requested notification under AB 52. Therefore, there is no trigger for consultation, and consequently no resources have been identified as tribal cultural resources as described under AB 52. However, recognizing the timeframe of General Plan Update, there is a potential that tribes may request consultation in the future and that tribal cultural resources could be identified during the implementation period of the General Plan. Therefore, although no resources have been identified that meet the criteria for a tribal cultural resource under Public Resources Code Section 21074, because tribes may request notification in the future, it is too speculative to determine the potential for impacts at this time.

The County of Tuolumne regularly coordinates informally with Native American Tribes, including Buena Vista Rancheria, Chicken Ranch Rancheria of Me-Wuk, and the Tuolumne Band of Me-Wuk during the processing of discretionary entitlements. The General Plan Update proposes Implementation Program 13.B.g, which establishes procedures to conduct cultural resources reviews and includes a list of advisory agencies to be notified during the CEQA consultation process including, the Tuolumne Band of Me-Wuk Indians and the Chicken Ranch Band of the Me-Wuk Indians.

Under Public Resources Code Section 21080.3.1, a lead agency shall begin consultation with a California Native American tribe that is traditionally and culturally affiliated with the geographic area of the proposed project if the California Native American tribe requested to the lead agency, in writing, to be informed by the lead agency through formal notification of proposed projects in the geographic area that is traditionally and culturally affiliated with the tribe. No tribes that are traditionally or culturally affiliated with Tuolumne County, including Buena Vista Rancheria, Chicken Ranch Rancheria of Me-Wuk, or the Tuolumne Band of Me-Wuk, have requested to be informed of proposed projects; therefore, there is no trigger to begin consultation under AB 52, resulting in no resources identified as tribal cultural resources. (It should also be noted that no tribes responded to the County's consultation request pursuant to SB 18.) However, there is always the potential that tribes could request consultation in the future. At such time the County would consult with tribes regarding individual projects in compliance with AB 52. Therefore, while no resources have been identified that meet the criteria for a tribal cultural resource under Public Resources Code Section 21074, tribes may request notification within the 2040 planning horizon, and, through the consultation process, tribal cultural resources could be identified if any exist in the County. Pursuant to Public Resources Code Section 21074, as part of its determination of the significance of a potential tribal cultural resource, the County must consider the significance of such a resource to the individual tribe, which would require coordination with the tribe. Because no tribes have requested notification and no potential tribal cultural resources have been identified, it is too speculative at this time to determine the potential for impacts to tribal cultural resources to be identified in the 2040 planning horizon.

Mitigation Measures

No mitigation is required at this time.

3.6 ENERGY

This section was prepared pursuant to State CEQA Guidelines Section 15126 and Appendix F of the State CEQA Guidelines, which requires that EIRs include a discussion of the potential energy impacts of projects, with emphasis on considering whether implementing the project would result in inefficient, wasteful, and unnecessary consumption of energy. This section discusses the energy impacts of projected development under the General Plan Update. The capacity of existing and proposed infrastructure to serve the County is evaluated in Section 3.17, "Utilities and Service Systems."

Energy related to projected development under the General Plan Update would include energy directly consumed for space heating and cooling, and electricity- and gas-powered equipment (including industrial equipment), and interior and exterior lighting of buildings (residential and nonresidential) in the plan area. Indirect energy consumption would be associated with the generation of electricity at power plants and the energy used for the treatment of water. Transportation-related energy consumption includes the use of fuels and electricity to power cars, trucks, and public transportation. Energy would also be consumed by equipment and vehicles used during construction of projected development under the General Plan Update.

3.6.1 Environmental Setting

PHYSICAL SETTING

Energy Facilities and Services in the Plan Area

Electric service in Tuolumne County is provided by Pacific Gas and Electric Company (PG&E). There is no natural gas consumption in Tuolumne County; however, there is propane consumption.

Energy Types and Sources

California relies on a regional power system composed of a diverse mix of natural gas, petroleum, renewable, hydroelectric, and nuclear generation resources. Natural gas provides one third of the electricity used in California, coming from both California-based power plants, as well as Pacific Northwest- and Southwest-based power plants outside the state. After natural gas generation, electricity in California is mostly generated by renewables (29 percent), large hydroelectric (15 percent), and nuclear (9 percent) (CEC 2018a). The contribution of in- and out-of-state power plants depends on the precipitation that occurred in the previous year, the corresponding amount of hydroelectric power that is available, and other factors. PG&E is the primary electricity supplier in Tuolumne County. As of 2016, PG&E was powered by 33 percent renewables (CPUC 2018).

Alternative Fuels

A variety of alternative fuels are used to reduce demand for petroleum-based fuel. The use of these fuels is encouraged through various statewide regulations and plans (e.g., Low Carbon Fuel Standard, Assembly Bill [AB] 32 Scoping Plan). Conventional gasoline and diesel may be replaced (depending on the capability of the vehicle) with many transportation fuels, including:

- biodiesel,
- electricity,
- ethanol (E-10 and E-85),
- hydrogen,
- natural gas (methane in the form of compressed and liquefied natural gas),
- propane,
- renewable diesel (including biomass-to-liquid),
- synthetic fuels, and
- gas-to-liquid and coal-to-liquid fuels.

California has a growing number of alternative fuel vehicles through the joint efforts of the California Energy Commission (CEC), California Air Resources Board (CARB), local air districts, federal government, transit agencies, utilities, and other public and private entities. As of June 2018, Tuolumne County contained nine alternative fueling stations (AFDC 2018).

COMMERCIAL AND RESIDENTIAL ENERGY USE

Homes built between 2000 and 2015 used 14 percent less energy per square foot than homes built in the 1980s, and 40 percent less energy per square foot than homes built before 1950. However, the increase size of newer homes has offset these efficiency improvements. Primary energy consumption in the residential sector total 21 quadrillion Btu in 2009 (the latest year the U.S. Energy Information Administration's [EIA's] *Residential Energy Consumption Survey* was completed), equal to 54 percent of consumption in the buildings sector and 22 percent of total primary energy consumption in the U.S. Energy consumption increased 24 percent from 1990 to 2009. However, because of projected improvements in building and appliance efficiency, the EIA 2017 Annual Energy Outlook forecast a 5-percent increase in energy consumption from 2016 to 2040 (EIA 2017).

In aggregate, commercial buildings consumed 46 percent of building energy consumption and approximately 19 percent of U.S. energy consumption. In comparison, the residential sector consumed approximately 22 percent of U.S. energy consumption (EIA 2012).

ENERGY USE FOR TRANSPORTATION

On-road vehicles use about 90 percent of the petroleum consumed in California. Based on the most recently available information, in 2008, the California Department of Transportation (Caltrans) projected 41.5 million gallons of gasoline and diesel would be consumed in Tuolumne County in 2015, an increase of approximately 4.7 million gallons of fuel from the projected 2010 levels (Caltrans 2008).

ENERGY USE AND CLIMATE CHANGE

Scientists and climatologists have produced evidence that the burning of fossil fuels by vehicles, power plants, industrial facilities, residences, and commercial facilities has led to an increase of the earth's temperature. For an analysis of greenhouse gas (GHG) production and the General Plan Update's impacts on climate change, refer to Section 3.8, "Global Climate Change."

3.6.2 Regulatory Setting

Federal and state agencies regulate energy consumption through various policies, standards, and programs. At the local level, individual cities and counties establish policies in their general plans and climate action plans related to the energy efficiency of new development and land use planning and to the use of renewable energy sources.

Energy conservation is embodied in many federal, state, and local statutes and policies. At the federal level, energy standards apply to numerous products (e.g., the U.S. Environmental Protection Agency's [EPA's] EnergyStar™ program) and transportation (e.g., fuel efficiency standards). At the state level, Title 24 of the California Code of Regulations sets forth energy standards for buildings. Further, the state provides rebates/tax credits for installation of renewable energy systems, and offers the Flex Your Power program, which promotes conservation in multiple areas.

FEDERAL

Energy Policy and Conservation Act, and CAFE Standards

The Energy Policy and Conservation Act of 1975 established nationwide fuel economy standards to conserve oil. Pursuant to this Act, the National Highway Traffic and Safety Administration, part of the U.S. Department of Transportation, is responsible for revising existing fuel economy standards and establishing new vehicle economy standards.

The Corporate Average Fuel Economy (CAFE) program was established to determine vehicle manufacturer compliance with the government's fuel economy standards. Compliance with CAFE standards is determined based on each manufacturer's average fuel economy for the portion of their vehicles produced for sale in the EPA calculates a CAFE value for each manufacturer based on the city and highway fuel economy test results and vehicle sales. The CAFE values are a weighted harmonic average of the EPA city and highway fuel economy test results. Based on information generated under the CAFE program, the U.S. Department of Transportation is authorized to assess penalties for noncompliance. Under the Energy Independence and Security Act of 2007 (described below), the CAFE standards were revised for the first time in 30 years.

Energy Policy Act (1992 and 2005) and Energy Independence and Security Act of 2007

The Energy Policy Act of 1992 was passed to reduce the country's dependence on foreign petroleum and improve air quality. The act includes several parts intended to build an inventory of alternative fuel vehicles in large, centrally fueled fleets in metropolitan areas. The Energy Policy Act of 2005 provides renewed and expanded tax credits for electricity generated by qualified energy sources, such as landfill gas; provides bond financing, tax incentives, grants, and loan guarantees for clean renewable energy and rural community electrification; and establishes a federal purchase requirement for renewable energy.

The Energy Independence and Security Act of 2007 increased the supply of alternative fuel sources by setting a mandatory Renewable Fuel Standard requiring fuel producers to use at least 36 billion gallons of biofuel annually by 2022, which represents a nearly five-fold increase over current levels and reduces U.S. demand for oil by setting a national fuel economy standard of 35 miles per gallon by 2020—an increase in fuel economy standards of 40 percent. By addressing renewable fuels and CAFE standards, the Energy Independence and Security Act of 2007 will build on progress made by the Energy Policy Act of 2005 in setting out a comprehensive national energy strategy for the 21st century.

STATE

State of California Energy Plan

CEC is responsible for preparing the State Energy Plan, which identifies emerging trends related to energy supply, demand, conservation, public health and safety, and the maintenance of a healthy economy. The current plan is the 1997 California Energy Plan. The plan calls for the state to assist in the transformation of the transportation system to improve air quality, reduce congestion, and increase the efficient use of fuel supplies with the least environmental and energy costs. To further this policy, the plan identifies strategies such as aiding public agencies and fleet operators in implementing incentive programs for zero-emission vehicles and addressing their infrastructure needs, and encouraging urban design that reduces vehicle miles traveled (VMT) and accommodates pedestrian and bicycle access.

Senate Bill 1078: California Renewables Portfolio Standard Program

Senate Bill (SB) 1078 (Chapter 516, Statutes of 2002) establishes a renewables portfolio standard (RPS) for electricity supply. The RPS originally required retail sellers of electricity, including investor-owned utilities and community choice aggregators to provide 20 percent of their supply from renewable sources by 2017, but SB 1078 moved that date forward to require compliance by 2010, although the state did not meet the target. In addition, electricity providers subject to the RPS must increase their renewable share by at least 1 percent

each year. As of 2016, the state sourced 34.8 percent of its electricity from certified renewable sources (CPUC 2018). The outcome of this legislation will affect regional transportation powered by electricity.

SB X1-2 of 2011 set 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. The state met the 2016 target and is on track to meet the 2020 target.

Senate Bill 350: Clean Energy and Pollution Reduction Act of 2015

The Clean Energy and Pollution Reduction Act of 2015 (SB 350) requires the amount of electricity generated and sold to retail customers per year from eligible renewable energy resources to be increased to 50 percent by December 31, 2030. This act also requires doubling of the energy efficiency savings in electricity and natural gas for retail customers through energy efficiency and conservation by December 31, 2030.

Assembly Bill 1007: State Alternative Fuels Plan

AB 1007 (Chapter 371, Statutes of 2005) required CEC to prepare a state plan to increase the use of alternative fuels in California. CEC prepared the State Alternative Fuels Plan in partnership with CARB and in consultation with other state, federal, and local agencies. The plan presents strategies and actions California must take to increase the use of alternative non-petroleum fuels in a manner that minimizes the costs to California and maximizes the economic benefits of in-state production. It assessed various alternative fuels and developed fuel portfolios to meet California's goals to reduce petroleum consumption, increase alternative fuel use, reduce GHG emissions, and increase in-state production of biofuels without causing a significant degradation of public health and environmental quality.

Executive Order S-06-06

Executive Order (EO) S-06-06, signed on April 25, 2006, establishes targets for the use and production of biofuels and biopower, and directs state agencies to work together to advance biomass programs in California while providing environmental protection and mitigation. The EO establishes the following target to increase the production and use of bioenergy, including ethanol and biodiesel fuels made from renewable resources: produce a minimum of 20 percent of its biofuels within California by 2010, 40 percent by 2020, and 75 percent by 2050. The EO also calls for the state to meet a target for use of biomass electricity. The 2011 Bioenergy Action Plan identifies barriers and recommends actions to address them so that the state can meet its clean energy, waste reduction, and climate protection goals. The 2012 Bioenergy Action Plan updates the 2011 plan and provides a more detailed action plan to achieve the following goals:

- increase environmentally and economically sustainable energy production from organic waste;
- encourage development of diverse bioenergy technologies that increase local electricity generation, combined heat and power facilities, renewable natural gas, and renewable liquid fuels for transportation and fuel cell applications;
- create jobs and stimulate economic development, especially in rural regions of the state; and
- reduce fire danger, improve air and water quality, and reduce waste.

As of 2015, 3.2 percent of the total electricity system power in California was derived from biomass.

Senate Bill 375

SB 375, signed in September 2008, aligns regional transportation planning efforts, regional GHG emission reduction targets, and land use and housing allocation. SB 375 requires metropolitan planning organizations (MPOs) to adopt a Sustainable Communities Strategy or Alternative Planning Strategy, showing prescribed land use allocation in each MPO's Regional Transportation Plan. CARB, in consultation with the MPOs, is to provide each affected region with reduction targets for GHGs emitted by passenger cars and light trucks in their respective regions for 2020 and 2035. Implementation of SB 375 will have the co-benefit of reducing

California's dependency of fossil fuels and making land use development and transportation systems more energy efficient.

The Tuolumne County Transportation Council (TCTC) serves as the federally designated rural transportation agency and the state-designated regional transportation planning agency for Tuolumne County. While the TCTC is required to prepare a Regional Transportation Plan, it is not required to prepare a Sustainable Communities Strategy, as it is not a federally designated MPO. However, the TCTC's *2016 Final Regional Transportation Plan* includes an optional Rural Sustainable Strategies chapter to help Tuolumne County comply with AB 32 and to reduce GHG emissions.

California Green Building Standards

California Code of Regulations, Title 24, Part 6, is California's Energy Efficiency Standards for Residential and Non-Residential Buildings. Title 24 Part 6 was established by CEC in 1978 in response to a legislative mandate to create uniform building codes to reduce California's energy consumption and provide energy-efficiency standards for residential and nonresidential buildings. In 2013, CEC updated Title 24 standards with more stringent requirements, effective July 1, 2014. All buildings for which an application for a building permit is submitted on or after July 1, 2014, must follow the 2013 standards. Energy-efficient buildings require less electricity; therefore, increased energy efficiency reduces fossil fuel consumption and decreases GHG emissions. The CEC *Impact Analysis for California's 2013 Building Energy Efficiency Standards* estimates that the 2013 standards are 23.3 percent more efficient than the previous 2008 standards for residential construction and 21.8 percent more efficient for nonresidential construction. In 2016, CEC updated Title 24 standards again, effective January 1, 2017. CEC estimates that the 2016 standards are 28 percent more efficient than 2013 standards for residential construction (CEC n.d.) and are approximately 5 percent more efficient for nonresidential construction (CEC 2015).

The 2019 Title 24 Part 6 Building Energy Efficiency Standards were adopted by the CEC on May 9, 2018 and will take effect on January 1, 2020. The standards are designed to move the state closer to its zero net energy goals for new residential development. It does so by requiring all new residences to install enough renewable energy to offset all the site electricity needs of each residential unit (California Code of Regulations, Title 24, Part 6, Section 150.1(c)14). CEC estimates that the combination of mandatory on-site renewable energy and prescriptively required energy efficiency features will result in new residential construction that uses 53 percent less energy than the 2016 standards. Nonresidential buildings are anticipated to reduce energy consumption by 30 percent compared to the 2016 standards primarily through prescriptive requirements for high-efficacy lighting (CEC 2018b). The building efficiency standards are enforced through the local plan check and building permit process. Local government agencies may adopt and enforce additional energy standards for new buildings as reasonably necessary in response to local climatologic, geologic, or topographic conditions, provided that these standards are demonstrated to be cost effective and exceed the energy performance required by Title 24 Part 6.

Assembly Bill 32, Climate Change Scoping Plan and Update

In December 2008, CARB adopted its Climate Change Scoping Plan, which contains the main strategies California will implement to achieve reduction of approximately 118 million metric tons of carbon dioxide–equivalent ($MMTCO_2e$) emissions, or approximately 21.7 percent from the state's projected 2020 emission level of 545 $MMTCO_2e$ under a business-as-usual scenario (this is a reduction of 47 $MMTCO_2e$, or almost 10 percent, from 2008 emissions). In May 2014, CARB 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 progress that has been made between 2000 and 2012 (CARB 2014:4–5). 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 (CARB 2014:ES-2). The update also reports the trends in GHG emissions from various emissions sectors (e.g., transportation, building energy, agriculture).

After releasing multiple versions of proposed updates in 2017, CARB adopted the final version titled *California's 2017 Climate Change Scoping Plan* (2017 Scoping Plan), which lays out the framework for achieving the 2030 reductions as established in more recent legislation (discussed below). The 2017

Scoping Plan identifies the GHG reductions needed by each emissions sector to achieve a statewide emissions level that is 40 percent below 1990 levels before 2030.

The measures identified in the 2017 Scoping Plan will have the co-benefit of reducing California's dependency on fossil fuels and making land use development and transportation systems more energy efficient. More details about the statewide GHG reduction goals and scoping plan measures are provided in the regulatory setting of Section 3.8, "Global Climate Change."

Executive Order B-30-15

On April 20, 2015, Governor Edmund G. Brown Jr. signed EO B-30-15 to establish a California GHG reduction target of 40 percent below 1990 levels by 2030. The Governor's EO aligns California's GHG reduction targets with those of leading international governments such as the 28-nation European Union which adopted the same target in October 2014. California is on track to meet or exceed the target of reducing GHG emissions to 1990 levels by 2020, as established in the California Global Warming Solutions Act of 2006 (AB 32, discussed above). California's new emission reduction target of 40 percent below 1990 levels by 2030 will make it possible to reach the ultimate goal of reducing emissions 80 percent below 1990 levels by 2050. This is in line with the scientifically established levels needed in the U.S. to limit global warming to below 2 degrees Celsius, the warming threshold at which major climate disruptions are projected, such as super droughts and rising sea levels.

Senate Bill 32 and Assembly Bill 197 of 2016

In August 2016, Governor Brown signed SB 32 and AB 197, which serve to extend California's GHG reduction programs beyond 2020. SB 32 amended the Health and Safety Code to include Section 38566, which contains language to authorize CARB to achieve a statewide GHG emission reduction of at least 40 percent below 1990 levels by no later than December 31, 2030. SB 32 codified the targets established by EO B-30-15 for 2030, which set the next interim step in the state's continuing efforts to pursue the long-term target expressed in EOs S-3-05 and B-30-15 of 80 percent below 1990 emissions levels by 2050. Achievement of these goals will have the co-benefit of reducing California's dependency of fossil fuels and making land use development and transportation systems more energy efficient.

Advanced Clean Cars Program

In January 2012, CARB 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. The new rules strengthen the GHG standard for 2017 models and beyond. This will be achieved through existing technologies, the use of stronger and lighter materials, and more efficient drivetrains and engines. The program's zero-emission vehicle regulation requires battery, fuel cell, and/or plug-in hybrid electric vehicles to account for up to 15 percent of California's new vehicle sales by 2025. The program also includes a clean fuels outlet regulation designed to support the commercialization of zero-emission hydrogen fuel cell vehicles planned by vehicle manufacturers by 2015 by requiring increased numbers of hydrogen fueling stations throughout the state. The number of stations will grow as vehicle manufacturers sell more fuel cell vehicles. 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 (CARB 2016).

LOCAL

Tuolumne County General Plan

The 1996 General Plan provides a framework for addressing issues related to energy efficiency (Tuolumne County 1996). As the proposed project would update the 1996 General Plan, this document will be discussed in the context of the update within the impact analysis. The Community Development and Design, Housing, Transportation, Economic Development, Water, Air Quality, and Climate Change Elements contain goals and policies that would reduce energy consumption. Specific General Plan Update policies related to energy are identified below under Section 3.6.3, "Impact Analysis."

3.6.3 Impact Analysis

METHODS OF ANALYSIS

Levels of construction- and operation-related energy consumption by projected development under the General Plan Update were estimated, including the number of megawatt-hours of electricity, therms of natural gas, gallons of gasoline, and gallons of diesel fuel. Modeling was based on project-specific information, including the total square footage of nonresidential land uses and the number of new residential units to be built as part of the General Plan Update. The estimated buildout of the land uses included in the General Plan Update would occur between 2019 and 2040. For the purposes of modeling, it was assumed that projected development would occur incrementally over this time period, with construction activity occurring in equal annual increments (approximately 5 percent annually). See Table 2-6 in Chapter 2, "Project Description," for a full list of new land uses. The buildout of the General Plan Update in 2040 assumes all new land uses are operational and energy consumption was quantified for all new development.

Energy consumption estimates were calculated using the California Emissions Estimator Model (CalEEMod) version 2016.3.2 computer program, CARB's Emission Factor 2017 model (EMFAC2017), and the Tuolumne County Regional Blueprint Greenhouse Gas Study. CalEEMod was used to determine energy consumption associated with construction, building energy, and area sources (e.g., fireplaces, architectural coatings). Where specific information about the land uses that would be developed under the General Plan Update was not known, CalEEMod default values based on location were used. Because there is no natural gas consumption in Tuolumne County, the CalEEMod default natural gas consumption was converted to propane use. EMFAC2017 was used to determine fuel consumption associated with construction commute and haul trips and operational mobile sources. The Tuolumne County Regional Blueprint Greenhouse Gas Study was used to derive fuel wood and heating oil consumption using a per capita comparison between the 2010 baseline and the net increase in County population (including the City of Sonora) for the projected development under the General Plan Update through 2040. The impact analysis summarizes the levels of energy consumption for each year of construction and for the first year of operation at 2040 buildout. It also summarizes the gasoline and diesel consumption estimated for construction and operational mobile trips in the County.

THRESHOLDS OF SIGNIFICANCE

The following significance criteria is based on CEQA Guidelines Appendix F (Energy Conservation), under which the General Plan Update would have a potentially significant adverse impact if it would:

- result in wasteful, inefficient, or unnecessary consumption of energy.

However, neither CEQA nor the CEQA Guidelines establish thresholds that define wasteful, inefficient, or unnecessary use. Therefore, this section includes a qualitative discussion of the potential for the project to result in the unnecessary, inefficient, or wasteful consumption of energy.

GENERAL PLAN UPDATE POLICIES

The following policies and implementation programs from the General Plan Update are specifically relevant to energy consumption within the plan area:

<u>Community Development and Design Element</u>

- **Policy 1.D.1:** Encourage pedestrian oriented development to reduce the use of motor vehicles.
  - **Implementation Program 1.D.b:** Work with transit providers and developers to encourage construction of affordable housing developments that use transit-oriented and pedestrian-oriented design principles.

- **Implementation Program 1.D.c:** Encourage building site designs that cater to transit riders, pedestrians and cyclists, as well as those arriving by car.

- **Policy 1.D.2:** Promote neighborhood commercial development that provides retail stores and service businesses within walking distance of residential areas.

  - **Implementation Program 1.D.e:** Designate land for neighborhood commercial development within walking distance of residential areas to encourage alternative methods of transportation and eliminate the dependence on automobile transportation.

  - **Implementation Program 1.D.f:** Encourage new commercial centers to be designed to facilitate pedestrian circulation within and between commercial sites and nearby residential areas.

  - **Implementation Program 1.D.g:** Promote development within identified communities that meets a walkability standard of a quarter- to half-mile for access to daily retail needs, schools, transit stops and recreational facilities.

- **Policy 1.D.3:** Encourage urban residential development projects in identified communities to be located within a quarter mile of a transit stop.

  - **Implementation Program 1.D.h:** Designate areas for new higher-density residential uses and appropriate support services within walking distance of public transportation facilities.

  - **Implementation Program 1.D.i:** Designate areas for new mixed-use, high and medium density residential development and appropriate support services within walking distance of public transportation facilities.

- **Policy 1.D.4:** Encourage transit oriented development by providing planning tools, such as design guidelines, and incentives, such as a streamlined permitting process, increased densities or reduced on-site parking requirements.

  - **Implementation Program 1.D.j:** Provide incentives to encourage high and medium density residential development projects located within a quarter mile of a transit stop. Incentives could include a streamlined permitting process, increased densities or reduced on-site parking requirements.

  - **Implementation Program 1.D.k:** Provide incentives, such as reduced parking requirements and permit streamlining, and remove zoning and other barriers to mixed-use and higher intensity development at transit nodes and along transit corridors.

- **Policy 1.D.5:** Promote the provision of multi-modal access to activity centers such as public facilities, commercial centers and corridors, employment centers, transit stops, schools, parks, recreation areas, and tourist attractions.

- **Policy 1.D.6**: Promote a balance between commercial, industrial, recreational, residential and mixed-use land uses in identified communities to optimize the potential for the use of alternative modes of transportation.

  - **Implementation Program 1.D.l:** Designate land for integrated mixed-use areas including residential, retail, office, recreational, open space and public uses to facilitate travel by transit, bicycle or foot, as well as automobile.

  - **Implementation Program 1.D.n:** Designate land within identified communities for mixed use in areas that are close to public transportation routes, commercial centers and community facilities, such as parks. Consider allowing additional commercial facilities in the Mixed Use (M-U) zoning district of the Tuolumne County Ordinance Code. Provide incentives to encourage the creation of mixed use

development. Incentives could include a streamlined permitting process, density bonuses, or reduced parking requirements. Promote flexibility in the application of parking standards to support mixed-use and transit-oriented development.

Housing Element

- **Policy 2.F.1:** Promote land use patterns that encourage energy efficiency. Promote higher density residential development where existing public services are available.
  - **Implementation Program 2.F.a:** Encourage new development that includes energy efficient land use. This may include compact urban form, access to public transit, water efficient landscaping and other energy efficient measures.
- **Policy 2.F.2:** Promote green design in residential construction and rehabilitation.
  - **Implementation Program 2.F.b:** (1) Encourage safe sustainability practices through the collection of rainwater and the use of grey water systems in order to reduce the impact on the environment, promote water conservation and improve the longevity of septic systems. Post information on the County website concerning grey water and rainwater design and permit procedures. (2) Continue to enforce the most current California Green Building Standards Code and California Energy Code as adopted by the California Building Standards Commission.
  - **Implementation Program 2.F.c:** Provide information to the public on the County website regarding the efficient use of energy in the home and ways to improve the energy efficiency of new construction. Topics may include energy saving techniques, xeriscaping, green retrofitting and the availability of low-interest energy loan programs.
- **Policy 2.F.3:** Investigate programs and funding sources for solar panels, green retrofitting of existing housing, weatherization and energy conservation improvements in apartments and homes and make this information available to the public.
  - **Implementation Program 2.F.d:** Encourage the use of solar energy, green building components and accessibility features in the County's First Time Homebuyer and Owner Occupied Rehabilitation Programs. Look for additional funding sources to cover the cost of green upgrades in rental and owner-occupied housing.
  - **Implementation Program 2.F.e:** Evaluate the feasibility of offering incentives such as streamlined and expedited processing of development applications to property owners to encourage weatherization upgrades to existing buildings such as window retrofits, the use of solar systems and upgrades to insulation. Weatherizing and retrofitting existing buildings should be done in a manner that is compatible with the character of the building.

Transportation Element

- **Policy 4.B.1:** Develop a modern transportation system that incorporates alternative transportation modes into the system design.
  - **Implementation Program 4.B.b:** Plan for a balanced multimodal transportation network that meets the needs of all users of roads, including bicyclists, pedestrians, and transit users. Incorporate bicycle, pedestrian and transit improvements when designing roadway improvements where appropriate. Support the efforts of the TCTC to develop an Active Transportation Plan for Tuolumne County, the State Route 49 Complete Streets and State Route 49 Congested Corridor Plan.

- **Implementation Program 4.B.c:** Provide multi-modal access to activity centers such as public facilities, commercial centers and corridors, employment centers, transit stops, schools, parks, recreation areas, and tourist attractions.

- **Implementation Program 4.B.d:** Promote walking and bicycling through education and outreach programs and activities such as commute campaigns, classes that teach cycling skills, and providing route maps.

- **Policy 4.B.4:** Encourage the use of alternative modes of transportation by incorporating public transit, bicycle and pedestrian modes in County transportation planning and by requiring new development to provide adequate pedestrian and bikeway facilities at suitable locations.

  - **Implementation Program 4.B.l:** Require, where appropriate and warranted, new development to contribute to, or construct, bicycle and pedestrian facilities. New development zoned R-1, R-2, R-3, C-O, C-1, C-2, C-K and M-U occurring within a two mile radius of a school, shopping center, life enrichment facility or work concentration area and located along a major or minor collector or arterial shall be targeted for providing bicycle and pedestrian facilities within the new development. If existing conditions prohibit development from constructing warranted facilities, such developments should set aside sufficient room along the project frontage and pay in-lieu fees to construct bicycle and pedestrian facilities.

  - **Implementation Program 4.B.m:** Where appropriate, require new development outside of identified communities to provide and stripe minimum four-foot wide shoulders within the development to accommodate pedestrians unless average lot sizes are greater than two acres.

  - **Implementation Program 4.B.n:** Encourage a continuous and interconnected pedestrian friendly system of paths that lead to transit stops, by encouraging all new residential and commercial development to include a pedestrian circulation system that is connected to existing (and where possible, planned) transit stops.

  - **Implementation Program 4.B.o:** Require, where appropriate, new commercial, high density residential and recreational development to provide and maintain bicycle storage facilities.

  - **Implementation Program 4.B.p:** Provide and plan for pedestrian access routes to designated transit corridors in new development.

  - **Implementation Program 4.B.q:** Consider an impact fee program whereby all development would contribute towards the construction of pedestrian facilities to reduce vehicle miles traveled consistent with the California Environmental Quality Act.

  - **Implementation Program 4.B.r:** Require local roads serving new development to include, where feasible, bicycle and pedestrian infrastructure that links to existing bicycle and pedestrian facilities.

  - **Implementation Program 4.B.s:** Require, where appropriate and warranted, dedication of right-of-way for and/or construction of bicycle and pedestrian facilities along routes identified in the priority and non-priority lists contained in the Non-Motorized Element of the County of Tuolumne Regional Transportation Plan.

- **Policy 4.B.5:** Maintain and expand, where possible and appropriate, the system of non-motorized connections that link neighborhoods to larger roadways, activity centers and nodes, businesses, community services, parks and recreational facilities, and transit stops and stations.

  - **Implementation Program 4.B.t:** Require all new community plans to include a bicycle and pedestrian routes plan. These bicycle and pedestrian route plans should illustrate an integrated connection to the existing bicycle, roadway and pedestrian network outside of the community, either through

connections to urban centers and workplace locations or through connections to recreation infrastructure identified in the Recreation Master Plan.

- **Implementation Program 4.B.u:** Support private efforts to construct bicycle and pedestrian facilities between high use areas as a means to reduce vehicle miles traveled. Consider crediting the cost of such facilities towards traffic impact mitigation fees.

- **Implementation Program 4.B.v:** New bicycle and pedestrian facilities should be designed to accommodate preferred safe routes to the school from nearby population centers.

- **Implementation Program 4.B.w**: Encourage the construction of pedestrian facilities and Class I and Class II bicycle facilities, such as widened and striped shoulders or completely separate facilities.

- **Implementation Program 4.B.x:** Identify routes from new bicycle and/or pedestrian facilities to link existing residential development to nearby commercial areas and community centers and facilities, such as schools, and to link existing and new identified communities to one another where feasible.

- **Implementation Program 4.B.y:** Integrate pedestrian routes, sidewalks and bicycle lanes into continuous networks within identified communities.

- **Policy 4.C.1:** Support the development of all public and social service transportation systems as outlined in the Tuolumne County Transit Development Plan.

  - **Implementation Program 4.C.c:** Promote coordination among all public and social service transportation operations to provide the highest level of efficiency and cost-effectiveness possible.

  - **Implementation Program 4.C.e:** Require new development projects to analyze their contribution to increased use of public transit and to contribute towards improvements if significant impacts are identified.

- **Policy 4.C.5:** Support the development of medium and high-density housing, commercial and offices along transit routes.

  - **Implementation Program 4.C.s:** Encourage the following land use designations in areas served by transit: low density residential land use designations within ¾ mile of a transit corridor, medium density residential designations within 2 ¼ mile of transit corridors.

  - **Implementation Program 4.C.t:** Coordinate transit system development with community planning and development efforts by implementing the following land use policies:

    - Encourage new facilities which may have public transit impacts to locate within ½ mile of high frequency service areas, with pedestrian access to current bus stops.

    - Encourage any new large developments, such as urban density subdivisions, multi-family housing complexes, commercial centers or business parks, to provide amenities, such as shelters and benches, for transit users.

    - Encourage low income/senior/disabled housing projects within ½ mile from existing high frequency service corridors.

<u>Economic Development Element</u>

- **Policy 6.E.5:** Encourage development of alternative energy-producing facilities which conserve the County's natural resources.

- **Implementation Program 6.E.l:** Support biomass energy facilities as an alternative to traditional forms of energy.

- **Implementation Program 6.E.m:** Plan development so as not to preclude the future utilization of significant energy producing minerals or water resources necessary for hydroelectric facilities.

- **Implementation Program 6.E.n:** Actively participate and be engaged in State and Federal water policy and Federal Energy Regulatory Commission relicensing of hydroelectric projects in the County.

- **Implementation Program 6.E.o:** Encourage land uses which maximize the efficient use of energy and facilitate the use of renewable energy resources in order to reduce dependence on imported and non-renewable energy supplies.

- **Implementation Program 6.E.p:** Expedite all permits under the County's jurisdiction which are necessary for the development of energy generating facilities using renewable resources and enterprises which are engaged in other types of energy conservation programs, such as biomass co-generation facilities, businesses which utilize recycled products and materials, and recycling facilities.

<u>Water Supply Element</u>

- **Policy 14.B.1:** Support water districts in establishing conservation standards to reduce demand for water.

  - **Implementation Program 14.B.a:** Support the efforts, such as funding applications and inter-agency coordination, of water agencies and districts to prevent the depletion of water resources and promote the conservation and reuse of water.

- **Policy 14.B.2:** Increase water conservation efforts to maximize water use efficiency within Tuolumne County through conservation, recycling and education.

  - **Implementation Program 14.B.b:** Encourage water reuse programs in new development to conserve raw or potable water supplies consistent with State Water Resources Control Board guidelines through the application review process.

  - **Implementation Program 14.B.c:** Support the efforts of water purveyors to rehabilitate water delivery systems to reduce lost water and increase the efficient use and availability of water.

  - **Implementation Program 14.B.d:** Encourage water reuse/recycling through the treatment and distribution of treated wastewater by working with new development to identify ways to incorporate reuse/recycling into projects.

  - **Implementation Program 14.B.e:** Ensure the conservation of water through the implementation of the Tuolumne County Landscaping Requirements, Chapter 15.28 of the Tuolumne County Ordinance Code, which provide for the use of xeriscape landscaping plants and materials to conserve water, the use of water conserving irrigation systems for landscaping, and the use of reclaimed or reused water for irrigation.

  - **Implementation Program 14.B.n:** Utilize water-efficient plumbing fixtures and irrigation systems on publicly owned property.

  - **Implementation Program 14.B.o:** Support development of new technology to improve efficient use of water.

- **Implementation Program 14.B.p:** Encourage plumbing retrofits to be installed in existing buildings to reduce water use by working with water purveyors to inform their customers about the permit process to facilitate such retrofits.

Air Quality Element

- **Policy 15.B.1:** Create a land use pattern that will encourage people to walk, bicycle or use public transit for a significant number of their daily trips.
  - **Implementation Program 15.B.a:** Encourage pedestrian oriented development to reduce the use of motor vehicles.
  - **Implementation Program 15.B.b:** Establish an incentive program to encourage transit-oriented development, including, where appropriate, exempting such projects from traffic impact mitigation fees.
  - **Implementation Program 15.B.c:** Support the development of high density housing, commercial and offices along high priority transit routes.
  - **Implementation Program 15.B.d:** Work with Caltrans, transit providers, and property owners to identify park-and-ride sites with convenient access to public transit.
  - **Implementation Program 15.B.e:** Seek funding for park-and-ride facilities and develop, or support the development of such facilities, within the identified communities, and permit park-and-ride facilities in commercial and industrial zoning districts.
  - **Implementation Program 15.B.f:** Create additional, and improve existing, car-sharing and ride-sharing programs and promote them within the region.
  - **Implementation Program 15.B.g:** Work with Caltrans and other agencies to establish transportation demand management programs, such as park-and-ride facilities, transit incentives and telecommute centers.
- **Policy 15.B.2:** Develop a modern transportation system that incorporates alternative transportation modes into the system design.
- **Policy 15.C.1:** Require development to reduce criteria and toxic air pollutant emissions from the use of wood burning appliances, through low emission technology, and maximize the use of energy conservation and clean or renewable energy sources.

Climate Change Element

- **Policy 18.A.1:** Prepare a Climate Action Plan (CAP), or similar GHG emission reduction plan, that establishes a GHG reduction target consistent with the Senate Bill (SB) 32 goal to reduce statewide GHG emissions to 40 percent below 1990 levels by 2030. The CAP shall identify specific measures to reduce countywide emissions consistent with the established target and will also include adaptation strategies for the County to appropriately adjust to the environmental effects of climate change. Many of the measures in the CAP will overlap with and help implement goals, policies, and implementation programs identified in this General Plan.
  - **Implementation Program 18.A.a:** Include specific GHG emissions reduction measures in the CAP. Examples include, but are not limited to, the following:
    - Incentivize energy efficiency improvements in existing buildings;

- Require energy audits for major additions to or alterations of existing buildings;
- Require compliance with CALGreen Tier 1 Green Building standards and Tier 1 Building Energy Efficiency Standards for eligible alterations or additions to existing buildings;
- Require compliance with CALGreen Tier 1 Green Building standards and Tier 1 standards for all new construction, and phase in Zero Net Energy (ZNE) standards for new construction;
- Require new or replacement residential water heating systems to be electrically powered and/or alternatively fueled systems;
- Expand current renewable energy and green energy incentives and update local ordinances;
- Develop a program to offset project GHG emissions by retrofitting existing income-qualified homes and buildings;
- Support waste-to-energy programs at landfills;
- Increase availability and accessibility of transit information;
- Support alternatives to private vehicle travel for visitors, such as shuttles;
- Increase the supply of electric vehicle charging stations;
- Promote telecommuting at office-based businesses;
- Encourage expansion of composting programs;
- Establish a waste diversion goal that exceeds the State's 2020 75 percent target;
- Promote alternatives to open burning of biomass;
- Convert all stationary diesel or gas-powered irrigation pumps to electric pumps;
- Require Tier 4 equipment for all construction activity and forestry/mining operations by 2030;
- Adopt a new water conservation ordinance for commercial and residential land uses limiting outdoor watering;
- Expedite and/or reduce permit fees associated with water conservation installations in existing facilities;
- Require water audits for large new commercial or industrial projects and significant expansions of existing facilities;
- Establish targets and enhanced programs for oak woodland and coniferous forest preservation and mandatory replanting;
- Refine protection guidelines for existing riparian lands to establish a no-net-loss goal;
- Develop a program to require repurposing of usable lumber from trees removed due to land conversion to avoid wood burning;
- Promote the sale and consumption of locally-grown foods and/or products; and

- Establish and local carbon offset program.

- **Implementation Program 18.A.b:** Include specific adaptation strategies in the CAP. Examples include, but are not limited to the following:
  - Identify critical infrastructure vulnerable to extreme heat events;
  - Develop outreach programs for outdoor workers to prevent heat-related illness;
  - Educate residents on heat-related illness prevention;
  - Encourage installation of cool roof technologies and rooftop gardens;
  - Explore options to incorporate cool pavement technology;
  - Improve parking lot shading and landscaping;
  - Establish an Excessive Heat Emergency Response Plan;
  - Identify locations that are newly at risk or at higher risk for wildland fire hazard;
  - Identify critical infrastructure vulnerable to wildland fire;
  - Evaluate vulnerabilities of water supply systems and networks;
  - Consider innovative options to meet future water demand;
  - Promote use of rainwater catchment and storage systems;
  - Collaborate with agencies to identify future water supplies and explore alternative supply sources; and
  - Pursue grant funding for water resource planning projects.

- **Policy 18.A.3:** Continue to implement the policies and strategies identified in the *2016 Final Regional Transportation Plan,* including the Rural Sustainable Strategies.

- **Policy 18.A.5:** Promote energy efficiency and alternative energy while reducing energy demand.
  - **Implementation Program 18.A.j:** Facilitate voluntary energy efficient retrofits in existing structures by connecting home and business-owners with technical and financial assistance, such as Federal, State, and utility rebates, and tax credits, through the County's or Tuolumne County Transportation Council's website.
  - **Implementation Program 18.A.k:** Work with PG&E and other electric utility providers to encourage local businesses and public agencies to install energy conserving technologies, such as occupancy sensors, and implement energy conserving policies, such as "lights out at night."
  - **Implementation Program 18.A.m:** Reduce the energy demand of public facilities and conserve electricity through the following: a) retrofitting County owned or operated street, traffic signal, and other outdoor lights with energy efficient light emitting diode (LED) lamps; b) retrofitting heating and cooling systems to optimize efficiency, such as replacing HVAC systems; and c) replacing old appliances and technologies with Energy Star® products. Obtain funding for and install renewable energy technologies on public property.

- **Implementation Program 18.A.n:** Work with PG&E and other electric utility providers to educate residents and businesses about Smart Meters, how to monitor electricity use, and the potential benefits associated with Smart Meters.

- **Implementation Program 18.A.o:** Work with PG&E and other electric utility providers to promote the use of financial incentives, such as Federal/State/utility rebate and, tax credits, for the voluntary installation of "cool roofs" on existing structures, such as Energy Star® roof products, that have a high solar and thermal reflectance.

- **Implementation Program 18.A.p:** Encourage the use of electric lawnmowers and leaf blowers over those powered by gasoline.

- **Implementation Program 18.A.q:** Encourage the incorporation of energy conservation into the design of residential and commercial buildings; such as Tier 1 and Tier 2 of the Green Building Code.

- **Implementation Program 18.A.r:** Encourage the use of deciduous landscape trees near new development to provide shade during the hot summer months and allow solar warming during the cold winter months.

- **Implementation Program 18.A.s:** Support the use of alternative energy vehicles by encouraging new development to install electric charging stations for passenger vehicles, in particular at high use and density areas.

- **Implementation Program 18.A.t:** Support development of electric charging stations for passenger vehicles, in particular near transit stop locations and high use parking areas.

- **Policy 18.A.6:** Encourage the use of solar power and other innovative energy sources as alternative to more traditional forms of energy.

  - **Implementation Program 18.A.u:** Promote Federal, State, and utility incentives, such as rebates, vouchers, and tax credits, and consider participating in a Property Assessed Clean Energy (PACE) program under AB 811 to provide property owners financing for solar photovoltaic systems.

  - **Implementation Program 18.A.v:** Assist landowners wishing to utilize solar power and other alternatives by offering information on the requirements for their use in building codes.

  - **Implementation Program 18.A.w:** Promote Federal, State, and utility financial incentives, such as rebates, vouchers and tax credits, to facilitate the installation of solar water heaters in homes.

- **Policy 18.A.7:** Encourage reduced consumption of fossil fuel energy by promoting alternative transportation methods and encouraging pedestrian oriented development to reduce the use of motor vehicles.

PROJECT IMPACTS

This section presents a programmatic-level analysis of potential impacts associated with energy from projected development under the General Plan Update. Evaluation of environmental impacts associated with the General Plan Update considers the development that would be facilitated by the General Plan Update, in accordance with goals, policies, and implementation programs, to accommodate projected growth in the County. It should be noted that the County's population (including the City of Sonora) is projected to grow by 0.6 percent annually over the planning horizon (2040). As discussed in detail in Chapter 2, "Project Description," and the introduction to Chapter 3, this is a relatively low amount of growth.

Impact 3.6-1: Wasteful, Inefficient, or Unnecessary Consumption of Energy during Construction or Operation

Projected development under the General Plan Update would increase electricity and propane consumption. Buildings developed under the General Plan Update would comply with Title 24, Part 6 of the California Building Efficiency Standards. Policies and implementation programs in the General Plan Update address transit-oriented development, improved accessibility for alternative modes of transportation, and increased transit availability that would reduce VMT. Building energy would be reduced through increased use of solar photovoltaics and energy efficiency, as required under the 2019 Title 24 Building Energy Efficiency Standards and as indicated through implementation programs under the General Plan Update. The development and implementation of a climate action plan through Policy 18.A.1 would further reduce both transportation- and building energy-related energy consumption. Construction-related energy consumption would be temporary and not require additional capacity or increase peak or base period demands for electricity or other forms of energy. Thus, energy consumption associated with projected development under the General Plan Update would not result in wasteful, inefficient, or unnecessary consumption of energy. This impact would be **less than significant.**

Appendix F of the State CEQA Guidelines requires the consideration of the energy implications of a project. CEQA requires mitigation measures to reduce "wasteful, inefficient, and unnecessary" energy usage (Public Resources Code Section 21100(b)(3)). Neither the law nor the State CEQA Guidelines establish criteria that define wasteful, inefficient, or unnecessary use. Compliance with the 2016 and 2019 California Building Energy Efficiency Standards and future iterations of the standards would result in energy-efficient buildings. Through the federal CAFE standards and the state's Low Carbon Fuel Standards, fuel consumption would be reduced as development occurs under the General Plan Update and becomes operational. However, compliance with building codes and vehicle/fuel standards does not adequately address all potential energy impacts during construction and operation.

Construction-Related Energy

Energy would be required to construct, operate, and maintain construction equipment and to produce and transport construction materials associated with the construction of the projected development under the General Plan Update. The one-time energy expenditure required to construct the physical buildings and infrastructure associated with the development would be nonrecoverable. Most energy consumption would result from operation of construction equipment and vehicle trips associated with commutes by construction workers and haul trucks supplying materials.

An estimated total of 305,135,390 gallons of gasoline and 8,814,436 gallons of diesel would be consumed for the projected construction under the General Plan Update within the 2040 planning horizon, as shown in Table 3.6-1 below. The energy needs for this construction would be temporary. Construction contractors are financially motivated to complete construction projects in an efficient manner to meet project schedules and minimize cost. Thus, it would not be typical for fuel to be consumed in a wasteful manner during construction of the projected development under the General Plan. Use of construction equipment and associated energy consumption would be typical of that associated with construction of new residential, commercial, and industrial projects in a rural setting elsewhere in California.

Table 3.6-1 Construction Energy Consumption over the 2040 Planning Horizon

	Gasoline (Gallons)	Diesel (Gallons)
Annual	14,530,257	419,735
Total[1]	**305,135,390**	**8,814,436**

Notes: Gasoline gallons include on-road gallons from worker trips. Diesel gallons include off-road equipment and on-road gallons from worker and vendor trips.

1. Total indicates annual construction fuel consumption for the years 2019-2040.

Source: Calculations by Ascent Environmental in 2018, see Appendix C

Transportation Energy

Fuel use estimates were calculated from the combination of fuel consumption rates and fuel mix by vehicle class from CARB's EMFAC2017 model with overall VMT and mode share by vehicle class based on CalEEMod defaults for Tuolumne County. State and federal regulations regarding standards for vehicles in California are designed to reduce wasteful, unnecessary, and inefficient use of energy for transportation. Implementing the General Plan Update would reduce VMT through improved bicycle and pedestrian facilities, transit-oriented development, high density development along transit corridors, and increased transit availability.

The estimated daily VMT for the baseline conditions is 1,829,654, as reported in the 2016 Regional Transportation Plan (TCTC 2017). Additional daily VMT associated with 2040 buildout would be 323,192, an increase of approximately 18 percent over baseline, while population is anticipated to increase by 16 percent (between the baseline year, 2015, and the buildout year, 2040). Annual VMT associated with projected growth under the General Plan Update would be 117,965,080 and would consume 3,289,413 gallons of gasoline and 617,180 gallons of diesel per year (Table 3.6-2). It is important to note that the VMT estimate for the 2040 buildout of the General Plan Update includes pass-by trips for those traveling through the County and the City of Sonora for the growth in VMT between the baseline year of 2015 and the buildout year of 2040. This results in a more conservative estimate in fuel consumption.

Table 3.6-2 Gasoline and Diesel Consumption in 2040

Vehicle Category	Gasoline (gal/year)	Diesel (gal/year)
Passenger Vehicles	2,739,186	32,970
Trucks	521,965	527,812
Buses	28,262	56,398
Total (All Vehicle Types)	**3,289,413**	**617,180**

Notes: gal/year = gallons per year.

Source: Calculations by Ascent Environmental in 2018

The General Plan Update includes numerous policies and associated implementation programs that would reduce VMT through land use planning decisions. These policies and implementation programs could result in a decrease in energy consumption through promoting alternative modes of transit and efficiency of land use design (i.e., Policy 1.D.4 through Policy 2.F.1, Policy 15.B.1), which would potentially reduce fossil fuel–based transportation energy by encouraging residents and visitors to bike, walk, or take public transit to travel to destinations; improving bicycle and pedestrian facilities (i.e., Policy 4.B.1 through Policy 4.B.6), which also would reduce gasoline and diesel consumption by reducing the amount residents and visitors drive; seeking funding sources and coordination to improve transit accessibility and efficiency (i.e., Policy 4.C.1 through 4.C.5), which could (if successful) reduce gasoline and diesel consumption from individual autos and reduce fuel consumption from transit through more efficient routes and reduced congestion; and accommodating electric vehicles (i.e., Policy 18.A.5), which would reduce gasoline and diesel consumption while increasing electricity consumption. Electricity in the County is provided by PG&E, which is currently procuring 33 percent of its electricity through renewable resources, as described above in Section 3.6.1, "Environmental Setting." Reducing VMT would translate to a reduction in fossil-fuel consumption.

Building Energy

Operation of residential, commercial, and industrial buildings in the plan area would include typical use of electricity and propane for lighting, space and water heating, appliances, and landscape maintenance activities. Indirect energy use would include wastewater treatment and solid waste removal. Projected development under the General Plan Update would increase electricity and propane consumption in the region relative to existing conditions.

Buildings constructed in the plan area would meet the California Building Efficiency Standards that are in effect at the time of construction. As future development occurs, consistent with the General Plan Update through 2040, individual buildings would be constructed to meet future California Building Energy Efficiency Standards. These standards are updated by the CEC on a triennial code cycle. The next scheduled update to the building energy codes is the 2019 Title 24 Building Energy Efficiency Standards, which will apply to projects that obtain building permits on January 1, 2020, or later. A notable requirement in the 2019 standards is that most low-rise residential construction three stories or fewer will be required to have solar photovoltaic systems, with some exemptions. Future iterations of Title 24 Part 6 standards may continue to require improved building energy efficiency standards that would apply to construction under the General Plan Update. Thus, anticipated building energy associated with the development of the land uses in the General Plan Update would likely decrease because of state requirements for improved efficiency and on-site solar generation. Table 3.6-3 below shows energy consumption associated with 2040 projected development under the General Plan Update.

Table 3.6-3 Operational Energy Consumption

Land Use/Energy Type	Energy Consumption	Units
Single Family Residential		
Electricity	37,950	MWh/year
Propane	574,696	GGE/year
Fuel Wood	257	Tons/year
Heating Oil	70,723	Gallons/year
Multi-Family Residential		
Electricity	3,936	MWh/year
Propane	97,788	GGE/year
Industrial		
Electricity	839	MWh/year
Propane	7,532	GGE/year
Commercial		
Electricity	11,151	MWh/year
Propane	158,018	GGE/year
All Land Uses		
Electricity	53,516	MWh/year
Propane	838,034	GGE/year

Notes:

MWh/year = megawatt-hours per year; GGE/year = gasoline gallon equivalent per year.

Source: Calculations by Ascent Environmental in 2018

The General Plan Update includes numerous policies and implementation programs that would reduce building energy consumption and increase renewable energy usage through enforcement of Green Building Standards and public information (i.e., Policy 2.F.2), which results in reduced propane and electricity consumption; encouragement of installing renewable energy generating facilities (i.e., Policy 2.F.3; Policy 6.E.5; Policy 18.A.6), which would increase the percentage of electricity that is derived from renewable resources and thus reduce fossil fuel–based electricity; development and encouragement of water conservation (i.e., Policy 14.B.1 and 14.B.2), which reduces the electricity demand for water treatment and distribution; development of a wood-burning device replacement program (i.e., Policy 15.C.1), which would

reduce the amount of wood fuel needed for heating and replace that fuel with a more energy-efficient and cleaner resource such as electricity; and other energy efficiency strategies (i.e., Policy 18.A.5).

Conclusion

Projected development under the General Plan Update would result in a temporary increase in fuel consumption. However, it is anticipated that fuel would not typically be consumed in a wasteful manner during construction of individual projects under the General Plan Update, as it is in the interest of construction contractors to meet project schedules and minimize costs through efficient energy use. Through the policies and actions of the General Plan Update, transportation-related energy would be reduced through improved facilities for alternative modes of transportation and transit-oriented development. Fuel consumption associated with vehicle trips generated by projected development under the General Plan Update would not be considered inefficient, wasteful, or unnecessary in comparison to that associated with other, similar rural counties. Building energy would be reduced through improvements in energy efficiency, as expressed in Policies 2.F.3, 6.E.5, and 18.A.6. Further, Policy 18.A.1 requires the County to prepare a climate action plan that would aim to reduce GHG emissions and conserve energy. Specific measures that accompany the climate action plan have not been established, but Implementation Measures 18.A.a and 18.A.b provide example measures and adaptation strategies that would likely result in a reduction in energy-related consumption from buildings and transportation.

The General Plan Update would not result in the wasteful, unnecessary, or inefficient use of energy and this impact would be **less than significant.**

Mitigation Measures

No mitigation is required.

3.7 GEOLOGY

This section describes the geologic, soils, and seismic conditions within Tuolumne County and expected impacts associated with projected development under the General Plan Update. Much of the background setting and analysis was based on information provided in the Tuolumne County Multi-Jurisdiction Hazard Mitigation Plan, which was initially adopted by the Tuolumne County Board of Supervisors on October 19, 2004, and revised in December 2017.

3.7.1 Environmental Setting

PHYSIOGRAPHY

The topography of Tuolumne County displays a wide range of landforms ranging from vertical cliffs to gently undulating plains. Combined with often complex underlying geology that gives rise to a wide range of surficial soil types, native topography can provide a challenging environment for safe development (Tuolumne County 2013).

REGIONAL GEOLOGY

Tuolumne County is located primarily within the Sierra Nevada geomorphic province, with an extremely small portion (less than 10 percent) of the western boundary within the Great Valley province. The Sierra is a tilted fault block nearly 400 miles long. Its east face is a high rugged multiple scarp, contrasting with the gentle western slope that disappears under the sediments of the Great Valley to the west. Deep river canyons are cut into the western slope. Their upper courses, especially in massive granites of the higher Sierra, have been modified by glacial activity, forming such scenic features as Yosemite Valley. The high crest in the Sierra culminates in Mt. Whitney with an elevation of 14,495 feet above sea level near the eastern scarp. The metamorphic bedrock contains gold-bearing veins in the northwest trending Mother Lode. The northern Sierra boundary is marked where bedrock disappears under the Cenozoic volcanic cover of the Cascade Range.

SEISMICITY

California contains a number of significant, active faults, and is highly susceptible to earthquakes, and therefore is predisposed to earthquake hazards. California has addressed these hazards to public safety and property through identification and regulations. Zones of required investigation for possible earthquake faulting, landslides, and liquefaction are delineated and distributed to cities, counties, and state construction agencies to help identify where higher building standards may be necessary for safe development.

Seismic hazards resulting from earthquakes include ground rupture along a fault line, also called surface rupture, ground shaking, liquefaction, subsidence, and mass wasting. Each of these potential hazards is discussed below.

Tuolumne County is located approximately 12 miles east of the Foothills fault system. The Foothills fault system is a complex, braided system of individual fault segments that extends for approximately 200 miles from Mariposa in the south to Lake Almanor in the north. There are two primary fault zones within the Foothills fault system: the Melones fault zone along the east side of the system and the Bear Mountain fault zone on the west. The Melones fault zone is classified as “active” (has demonstrated displacement within the last 100,000 years). The Bear Mountain fault zone is classified as “indeterminable active” (definitive evidence has not been established locally concerning its activity within the last 100,000 years). In addition, there are four “capable” faults (i.e., faults with tectonic displacement within the last 35,000 years which could produce a quake) located within Tuolumne County: Negro Jack Point, Bowie Flat, Rawhide Flat West,

and Rawhide Flat East (Tuolumne County 2018). Geologic hazards in Tuolumne County are primarily associated with potential seismic activity along the Foothills fault zone and associated ground shaking.

Historically, earthquake activity in Tuolumne County has been substantially below the California State average. The potential for ground shaking is discussed in terms of the percent probability of exceeding peak ground acceleration percent in the next 50 years. There is a roughly 28 percent probability that a 5.0 (Moderate) earthquake occurring in the County in the next 50 years. In Tuolumne County, the predicted peak acceleration for the developed portions of the County (i.e., Jamestown, Sonora) does not exceed 20 percent of gravity; for the remainder of the County, the peak ground acceleration is less than 20 percent (Tuolumne County 2018).

A total of four historical earthquake events with recorded magnitudes of 3.5 or greater (Richter Scale) occurred in or near Tuolumne County this past century. These earthquakes did not cause substantial damage due to their occurrence in mountainous and remote areas generally devoid of development or human presence. Tuolumne County's earthquake history is shown in Table 3.7-1 below.

Table 3.7-1 Tuolumne County Earthquake History 1930-2011

Date	Location	Magnitude (Richter Scale)	Richter Scale Description	Depth (km)	Latitude	Longitude
August 9, 1983	Southeast Tuolumne County, near Tuolumne/Mariposa County line	4	Light	2	37.9	-119.49
August 10, 1975	Southern Mariposa County	4	Light	N/A	37.37	-119.99
June 10, 1965	Eastern Mono County, near Tuolumne/Mono County line	3.5	Minor	N/A	38.2	-119.5
June 25, 1933	Eastern Mono County, near Tuolumne/Mono County line	6.1	Strong	N/A	38.08	-119.33

Source: Tuolumne County 2018

Based on the past history of minimally damaging earthquakes and the fact that Tuolumne County is located within a seismically inactive region, the County's Multi-Hazard Mitigation Plan rates the probability of an event low. However, given the properties at risk and the cascading effects, the plan indicated that the severity of the effects generated by seismic activity could be high (Tuolumne County 2018).

SOILS AND SOIL HAZARDS

Soil is the unconsolidated mixture of mineral grains and organic material that mantles the land surfaces of the earth. Soils can develop on unconsolidated sediments and weathered bedrock. The characteristics of a given soil type reflect the five major influences on its development: topography, climate, biological activity, parent source material, and time. Bedrock geology, along with agents of weathering such as erosion, soil chemistry, and human activity, all play a part in the soil type. The soils in Tuolumne County are generally shallow regolith veneers (i.e., a thin layer of weathered bedrock, organic accumulations, and glacial deposits) over bedrock.

Expansive Soils

Clays are present in some soils both as a weathering product and as native sediments. Clays have the potential for expansion and contraction when they go through wet/dry cycles. Expansive soils (also known as shrink-swell soils) are soils that contain expansive clays that can absorb significant amounts of water into their crystalline structure. The presence of clay makes the soil prone to large changes in volume in response to changes in water content. The quantity and type of expansive clay minerals affects the potential for the

soil to expand or contract. Wetting can occur naturally in a number of ways, (e.g., absorption from the air, rainfall, groundwater fluctuations, lawn watering and broken water or sewer lines). When an expansive soil becomes wet, water is absorbed, and it increases in volume, and as the soil dries it contracts and decreases in volume. This (often repeated) change in volume can produce enough force and stress on buildings and other structures to damage foundations and walls.

In hillside areas, as expansive soils expand and contract, gradual downslope creep may occur, eventually causing landslides (see below for more information on landslides and other forms of mass wasting). Clay soils also retain water and may act as lubricated slippage planes between other soil/rock strata, also producing landslides, often during earthquakes or by unusually moist conditions. The shrink-swell characteristics of soils can vary widely within short distances, depending on the relative amount and type of clay. Soils with clay content have been mapped throughout the County and may be susceptible to expansion (USDA 1964).

Subsidence

Land subsidence is the gradual settling or sinking of an area with very little horizontal motion. It occurs because of changes taking place underground. Subsidence can be induced by both natural and human phenomena. Natural phenomena include subsidence resulting from shifting of tectonic plates and dissolution of limestone resulting in sinkholes. Although there is carbonate rock in the vicinity of Columbia and Sonora, there has been no documented damage associated with subsidence (Tuolumne County 2018). Subsidence related to human activity includes pumping water, oil, or gas from underground reservoirs; collapse of underground mines; drainage of wetlands; and soil compaction. Sinkhole activity from abandoned mining activity has occurred, and could possible occur again, in the Jamestown and Sonora areas. However, the probability and potential severity of subsidence are considered low (Tuolumne County 2018).

Liquefaction

Liquefaction is the process by which saturated, unconsolidated soil or sand is converted into a quicksand-like suspension during an earthquake. Even well-constructed buildings may “sink” during a major earthquake if foundations are built on areas susceptible to liquefaction (alluvial soils and high-water content). Since liquefaction most likely would occur during or following an earthquake and severe earthquake risk is deemed to be low in the County, the risk and danger of liquefaction and subsidence occurring within the County is also considered to be minimal.

EROSION

Erosion is the process by which soil and rock at the earth’s surface is gradually broken down and transported to a different location. Erosive processes include rainfall, surface runoff, glacial activity, wind abrasion, chemical dissolution, and gravity in the form of mass wasting (described below). Under normal conditions, these erosive processes, together with physical characteristics of the material being eroded, control the rate at which erosion occurs. Development activities can accelerate that rate, causing excessive erosion and a wide variety of detrimental effects on the environment including sedimentation of waterways (see Section 3.10, “Hydrology and Water Quality”), slope instability, ground instability, loss of agricultural productivity through the removal of topsoil, or even desertification.

The potential for erosion increases as a function of slope steepness. Areas within the County where slopes exceed 30 percent are generally considered to have a high potential for erosion. The majority of development in Tuolumne County is not located on such terrain. Erosion problems in developed regions of the County are generally limited to areas where grading has resulted in steep slopes where deposits of fill have not stabilized, or where slope stabilization practices have not been employed following grading activities. Rain and runoff have also produced incidents of excessive erosion on burn scars that have not yet sufficiently revegetated. However, by comparison with other areas of the state, such as the coastal mountains, erosion has proven to be a modest hazard in Tuolumne County.

Mass Wasting and Landslides

Mass wasting refers to the collective group of processes that characterize down slope movement of rock and unconsolidated sediment overlying bedrock. These processes include landslides, slumps, rockfalls, flows, and soil creep. Such events can occur slowly or very suddenly, depending on the mechanisms of movement, and can cause damage or destruction to structures, roads, and utilities, and may even cause injuries or result in death. Many factors contribute to the potential for mass wasting, including geologic conditions as well as the drainage, slope, and vegetation of an area. Human activities, such as mining, road construction, and changes to surface drainage areas can also affect the potential for mass wasting. Landslides and mudflows are often triggered by other natural disasters such as floods, wildfires, and earthquakes.

Within the County, there is a considerable amount of area where the topography can be considered steep to very steep. In the vast majority of this area, the underlying rock formation is very stable, and the soil found on these slopes is shallow and held in place by deep-rooted vegetation. These slopes do not typically fail unless disturbed by grading or development. However, in the western foothills, the underlying rock is serpentine, which is more prone to slope failure. These areas do not typically slide unless disturbed (i.e., roadways in the area of Don Pedro Reservoir). In addition, the steep slopes of the Table Mountain area, as they naturally erode, occasionally shed large boulders and rocks, but major landslides are not common, and there is very little development in the area. Based on these conditions, the Tuolumne County Multi-Hazard Mitigation Plan determined that there is a low probability of landslide in the County. Should landsliding occur, the severity of impacts is expected to be low because the areas most susceptible are located away from identified communities (Tuolumne County 2018).

MINERAL RESOURCES

The California Geological Survey produces mineral land classification studies, which are required by the Surface Mining and Reclamation Act (SMARA), and identify areas with potentially important mineral resources that should be considered in local planning. The California Mineral Land Classification System represents the relationship between knowledge of mineral deposits and their economic characteristics (grade and size). Lands are classified into four main Mineral Resource Zones (MRZs): MRZ-1, areas where geologic information indicates no significant mineral deposits are present; MRZ-2, areas that contain identified mineral resources; MRZ-3, areas of undetermined mineral resource significance; and MRZ-4, areas of unknown mineral resource potential.

Tuolumne County has extensive mining history and resources. Current operating mines in Tuolumne County gather limestone and dolomite and various forms of crushed rock, gravel, and sand products. A number of properties have been classified as MRZs, including the Southern Half of the Bald Mountain/Browns Flat Gold Mining District (MRZ-2b), the Jamestown Mine (MRZ-2a, MRZ-2b, and MRZ-3a), and portions of the Rough and Ready Creek site (MRZ-2a and MRZ-2b). Various properties with precious metals, carbonate rock, and concrete-grade aggregate resources have been classified as MRZ-2a, and MRZ-2b, (California Division of Mines and Geology 1997). In addition, the California Department of Conservation, Division of Oil, Gas, and Geothermal Resources maintains records of the location and details of construction and abandonment of all oil and gas wells. Oil wells were not identified within Tuolumne County using the Division of Oil, Gas & Geothermal Resources Well Finder.

3.7.2 Regulatory Setting

FEDERAL

Earthquake Hazards Reduction Act

In October 1977, the U.S. Congress passed the Earthquake Hazards Reduction Act to reduce the risks to life and property from future earthquakes in the United States. To accomplish this, the Act established the National Earthquake Hazards Reduction Program (NEHRP). The mission of NEHRP includes improved

understanding, characterization, and prediction of hazards and vulnerabilities; improved building codes and land use practices; risk reduction through post-earthquake investigations and education; development and improvement of design and construction techniques; improved mitigation capacity; and, accelerated application of research results. The NEHRP designates the Federal Emergency Management Agency as the lead agency of the program and assigns several planning, coordinating, and reporting responsibilities. Other NEHRP agencies include the National Institute of Standards and Technology, National Science Foundation, and U.S. Geological Survey.

STATE

Surface Mining and Reclamation Act of 1975

SMARA (California Public Resources Code Section 2710 et seq.) provides for the classification of non-fuel mineral resources in the state to show where economically significant mineral resources occur or are likely to occur. Classification is carried out under the Mineral Land Classification Project under the direction of the State Geologist. Once lands have been classified, they may be designated by the State Mining and Geology Board as mineral-bearing areas of statewide or regional significance if they are located in areas where urban expansion or other irreversible land uses may occur that could restrict or preclude future mineral extraction. Designation is intended to prevent future land use conflicts and occurs only after consultation with lead agencies and other stakeholders.

The California Department of Conservation Division of Mines and Geology has developed guidelines for the classification and designation of mineral lands into MRZs and retains a list of publications of the SMARA Mineral Land Classification Project dealing with mineral resources in California.

Alquist-Priolo Earthquake Fault Zoning Act

The Alquist-Priolo Earthquake Fault Zoning Act of 1972 (Public Resources Code Section 2621 et seq.) intends to reduce the risk to life and property from surface fault rupture during earthquakes by regulating construction in active fault corridors and prohibiting the location of most types of structures intended for human occupancy across the traces of active faults. The Act defines criteria for identifying active faults, giving legal support to terms such as “active” and “inactive” and establishes a process for reviewing building proposals in Earthquake Fault Zones. Under the Alquist-Priolo Act, faults are zoned and construction along or across these zones is strictly regulated if they are “sufficiently active” and “well-defined.” There are no Alquist-Priolo Earthquake Fault Zones designated in Tuolumne County.

Seismic Hazards Mapping Act

The intention of the Seismic Hazards Mapping Act of 1990 (Public Resources Code Sections 2690–2699.6) is to reduce damage resulting from earthquakes. While the Alquist-Priolo Act addresses surface fault rupture, the Seismic Hazards Mapping Act addresses other earthquake-related hazards, including ground shaking, liquefaction, and seismically induced landslides. The act’s provisions are similar in concept to those of the Alquist-Priolo Act. The state is charged with identifying and mapping areas at risk of strong ground shaking, liquefaction, landslides, and other corollary hazards, and cities and counties are required to regulate development within mapped Seismic Hazard Zones. There are no Seismic Hazard Zones identified in Tuolumne County.

California Building Code

The California Building Code (CBC) (California Code of Regulations, Title 24, Part 2) is based on the International Building Code. The CBC has been modified from the International Building Code for California conditions with more detailed and/or more stringent regulations. Specific minimum seismic safety and structural design requirements are set forth in Chapter 16 of the CBC. The CBC identifies seismic factors that must be considered in structural design. Chapter 18 of the CBC regulates the excavation of foundations and retaining walls, while Chapter 18A regulates construction on unstable soils, such as expansive soils and areas subject to liquefaction. Appendix J of the CBC regulates grading activities, including drainage and erosion control.

The CBC contains a provision that provides for a preliminary soil report to be prepared to identify "…the presence of critically expansive soils or other soil problems which, if not corrected, would lead to structural defects" (CBC Chapter 18 Section 1803.1.1.1).

LOCAL

Tuolumne County Ordinance Code

The Tuolumne County Ordinance Code includes requirements pertinent to grading (Chapter 12.20) and on-site wastewater treatment systems (Chapter 13.08).

A soil engineering report is required by Section 12.20.140 that includes data regarding the nature, distribution and strength of existing soils, conclusions and recommendations for grading procedures and design criteria for corrective measures, including buttress fills, when necessary, and opinions and recommendations covering adequacy of sites to be developed by the proposed grading.

Chapter 13.08 of the Tuolumne County Ordinance Code describes requirements for septic tanks that would ensure soil conditions would adequately support such facilities. As part of the code requirements, any new disposal systems or modifications to an existing system require a permit from the County's Environmental Health Division, which would review the site and location of such systems and confirm that the installation of such a system at that location is feasible and would not result in significant impacts.

Tuolumne County General Plan

The 1996 General Plan provides a framework for addressing issues related to geology in the County. The County's Safety Element is intended to relate County land use policies to local safety planning and contains policies for determining acceptable levels of public risk imposed by these land uses, as well as policies for mitigating the effects of natural or manmade catastrophes. As the proposed project would update the 1996 General Plan, this document will be discussed in the context of the update within the impact analysis. Specific General Plan Update policies related to geology are identified below under Section 3.7.3, "Impact Analysis."

Tuolumne County Multi-Jurisdictional Hazard Mitigation Plan

The Tuolumne County Multi-Jurisdictional Hazard Mitigation Plan is based upon risk assessments that identified and evaluated natural and man-made hazards. The future probability of these identified hazards and their impact on each existing community is described. The risk and vulnerability assessments were used to determine mitigation goals and objectives to minimize long-term vulnerabilities to the identified hazards and are the foundation behind the development of a comprehensive range of specific attainable mitigation actions created for each jurisdiction.

An action plan was developed in 2004, updated in 2013, and updated again in 2017. This entails adopting, implementing, assigning responsibility, monitoring, and reviewing this hazard mitigation plan over time to ensure the goals and objectives are being achieved and the plan remains a relevant document.

3.7.3 Impact Analysis

METHODS OF ANALYSIS

The analysis in this section is based on review of existing plans, use of online mapping tools, review of GIS and other maps, and regulatory documents and requirements. The analysis considers the location of proposed land use designation as well as existing state regulations and General Plan Update policies and implementation programs that would protect development projects and residents from geologic hazards.

The General Plan Update is a policy document that would guide development and conservation of land throughout the County. Adoption of the plan would not result in any changes to existing conditions; however,

the policies could allow for or encourage future activities that may result in exposure of people and structures to seismic hazards, mass wasting events, or unstable soil conditions, or produce accelerated erosion and loss of topsoil. Impacts are evaluated based on projected development under the General Plan Update.

THRESHOLDS OF SIGNIFICANCE

The General Plan Update would result in potentially significant impacts if projected development under the General Plan would result in any of the following conditions, which are based upon the environmental checklist in Appendix G of the CEQA Guidelines:

- expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:
  - rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault;
  - strong seismic ground shaking;
  - seismic-related ground failure, including liquefaction;
  - landslides;
- result in substantial soil erosion or the loss of topsoil;
- be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse; or
- be located on expansive soil, as defined in Table 18-1-A of the CBC (1994), creating substantial risks to life or property.

Issues Not Discussed Further

The following thresholds also appear in Appendix G. But, as explained below, no impact with respect to these issues would occur and these issues are not discussed further in this section.

- have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water;
- result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state; or
- result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan.

Although some new development that requires the use of septic tanks or alternative waste water disposal systems could be constructed under the General Plan Update, Chapter 13.08 of the Tuolumne County Ordinance Code describes requirements for septic tanks that would ensure soil conditions would adequately support such facilities. As part of the code requirements, any new disposal systems or modifications to an existing system require a permit from the County's Environmental Health Division, which would review the site and location of such systems and confirm that the installation of such a system at that location is feasible and would not result in significant impacts. Therefore, this issue is not further discussed.

The General Plan Land Use Element designates lands as Mineral Preserve (-MPZ) overlay throughout the County including those lands identified above. The existing General Plan has a Conservation and Open Space Element describing the County's policies for the conservation and development of mineral resources. The General Plan Update would not remove or replace the programs and policies that protect mineral resources in the area. The only change would be the name of the element from "Conservation and Open Space" to "Natural Resources." Therefore, projected development under the General Plan Update would not result in the direct loss of availability of known mineral resources that would be of value to the region and the residents of the state or a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan. Thus, these issues are not further discussed.

GENERAL PLAN UPDATE POLICIES

The following policies and implementation programs from the General Plan Update are applicable to the evaluation of effects related to geology, soils, and seismicity:

Natural Hazards Element

- **Policy 17.A.1**: Increase Tuolumne County's capabilities to mitigate the effects of natural hazards.
  - **Implementation Program 17.A.a**: Implement the Tuolumne County Multi-Jurisdictional Hazard Mitigation Plan to protect life, safety, and property by reducing the potential for future damages and economic losses that result from geologic hazards.
- **Policy 17.A.2**: Enhance existing policies that will reduce the potential damaging effects of hazards without hindering other County goals.
  - **Implementation Program 17.A.b**: Update the County's General Plan and Ordinance Code as new Federal and State laws regarding geologic hazards and requirements are enacted.
- **Policy 17.A.3**: Protect Tuolumne County's most vulnerable populations, buildings and critical facilities through the implementation of cost-effective and technically feasible mitigation projects.
  - **Implementation Program 17.A.c**: Maximize the use of hazard mitigation grant programs to protect the most vulnerable populations and structures.
- **Policy 17.A.4**: Protect public health, safety and welfare by increasing the awareness of existing hazards and by fostering both individual and public responsibility in mitigating risks due to those hazards.
  - **Implementation Program 17.A.d**: Increase the level of knowledge and awareness for Tuolumne County residents on the hazards that routinely threaten the area. Educate property owners on the affordable, individual mitigation and preparedness measures that can be taken before the next hazard event.
- **Policy 17.A.5**: Enhance the County's capability to conduct hazard risk assessments, demonstrate funding needs, and track mitigation activities.
- **Policy 17.A.6**: Ensure that all new construction is completed in a way most resistant to loss or damage from natural hazards.
  - **Implementation Program 17.A.e**: Through the development review process, ensure that projects located in or near areas that may pose public health and safety hazards are designed to minimize potential impacts on people and property.
  - **Implementation Program 17.A.f**: Locate vital/critical facilities where they are protected from natural hazards, such as fault zones, flooding and inundation areas.

- **Policy 17.D.1**: Direct development away from areas with known seismic and geologic hazards as required by local, state, and federal codes.
  - **Implementation Program 17.D.a**: Designate areas within 100 feet of capable faults as non-urban, including, but not limited to, Open Space, Agriculture or Parks and Recreation on the General Plan land use diagrams and zone these areas for open space preservation, agriculture, recreation or other non-urban uses. For lands owned by a public agency, the designation of Public is also compatible.
- **Policy 17.D.2**: Map areas determined to be potentially seismically active or otherwise subject to geologic hazardous and apply restrictions to development within the affected areas.
  - **Implementation Program 17.D.b:** Apply zoning and other land use controls to regulate development in known hazardous areas capable of seismic activity.
  - **Implementation Program 17.D.c**: Require as part of the application review process when a potential hazard exists, a geologic, seismic, and/or geotechnical engineering report to be provided by the applicant.
  - **Implementation Program 17.D.d**: Establish a program for geologic, seismic, and geotechnical engineering reports required for proposed developments to be reviewed by a technically qualified consultant under contract to the County of Tuolumne.
  - **Implementation Program 17.D.e**: Identify the public costs which would be incurred if emergency or remedial actions became necessary in populated areas where seismic hazards exist.
  - **Implementation Program 17.D.f**: Review contingency plans for major disasters and emergencies and update as necessary to verify that the potential for damage and destruction due to earthquakes and geologically induced dam failure with accompanying flooding continues to be addressed.
  - **Implementation Program 17.D.g**: Use the General Plan's Geotechnical Interpretive Maps, which show the approximate boundaries of various hazard and resource zones (such as fault zones, erosive soil areas, limestone deposits, etc.) as a basis for future planning.
  - **Implementation Program 17.D.h**: Update the Geotechnical Interpretive Maps on a periodic basis to reflect new geologic and seismologic information.
  - **Implementation Program 17.D.i**: Increase public awareness of geoseismic hazards, their location, and their severity by making the Geotechnical Interpretive Maps readily available to the public.
- **Policy 17.D.3**: Incorporate criteria into the design for dams and other important structures possibly affected by capable fault zones that provide an acceptable level of safety.
  - **Implementation Program 17.D.j**: Require developers of dams and critical use and high occupancy structures within 100 feet of capable fault zones to submit plans to the County of Tuolumne demonstrating that the proposed design and construction can accommodate the expected fault offset of the design earthquake and the structure can continue to function. The capable fault zones are defined along presently identified capable faults on the Geotechnical Interpretive Maps.
  - **Implementation Program 17.D.k**: Establish design review procedures that address safety issues for structures proposed for human occupancy which are to be located within 100 feet of a capable fault zone.
  - **Implementation Program 17.D.l**: Apply special requirements to critical use and high occupancy structures proposed within 100 feet of capable fault zones. These requirements should:

- Require special geologic and seismic studies to accurately locate all capable fault traces.
- Establish requirements for existing critical use and high occupancy structures within the capable fault zones and initiate a special building inspection program whose purpose is to locate existing critical-use and high occupancy structures within 100 feet of the capable fault zones and to evaluate the safety of such structures under expected seismic conditions.
- Require necessary training for building inspectors to evaluate the safety (under probable earthquake accelerations) of critical-use and high occupancy structures.

- **Implementation Program 17.D.m**: Consider developing a hazardous structures mitigation program and enforcement regulations for critical use and high occupancy buildings located within 100 feet of a capable fault zone.

- **Policy 17.D.4**: Ascertain that existing or proposed structures, particularly critical-use and high occupancy structures, can withstand the ground motion of the design earthquake without catastrophic failure or loss of critical services.
  - **Implementation Program 17.D.n**: Review plans for existing and proposed structures to see that they are designed and built in accordance with the California Building Code standards for Seismic Category C or D.
  - **Implementation Program 17.D.o**: Require that critical use and high occupancy structures be designed and built to retain their structural integrity when subjected to probable ground accelerations generated by the design earthquake.
  - **Implementation Program 17.D.p**: Prior to approval of proposed critical use and high occupancy facilities, require that the plans demonstrate that the proposed building can withstand, without collapse, the probable ground acceleration generated by the design earthquake. Require development plans to show that critical facilities, such as utilities and access roads, for critical use and high occupancy structures are adequately designed and constructed to withstand the design earthquake. Also require plans to show that, in the event of the failure of these structures, potential hazards created by the loss of utilities, roads, etc. have been identified and mitigated.
  - **Implementation Program 17.D.q**: Periodically inspect existing critical use and high occupancy buildings within the County to identify and require correction of potential hazards in the event of a major earthquake.
  - **Implementation Program 17.D.r**: Develop a hazardous structures mitigation program and enforcement regulations for critical use and high occupancy buildings. This shall include a database of the identified critical-use and high occupancy buildings existing in the County that do not meet modern standards for earthquake safety, and are, therefore, considered “hazardous.” Descriptions of the buildings shall be included along with possible hazard mitigation measures.

- **Policy 17.D.5**: Monitor development to see that construction in landslide or unstable slope areas is accomplished safely.
  - **Implementation Program 17.D.s**: Require detailed engineering studies in unstable slope or landslide areas, including, but not limited to those areas delineated on the Geotechnical Interpretive Maps, prior to approval of urban development. The studies should identify the extent of instability or potential for landslides, and recommend design alterations, considerations or other features which could reduce the potential hazards to an acceptable level. The feasible recommendations from the study(s) shall be required as part of the project approval process.

- **Policy 17.D.6**: Reduce the potential for erosion and sedimentation from earthmoving and construction activities.
  - **Implementation Program 17.D.t**: Apply Chapter 12.20 of the Tuolumne County Ordinance Code, the Grading Ordinance, in order to protect soil stability and natural topography and to prevent soil erosion and creation of unstable slopes. Areas identified as having erosive soils, either by the Geotechnical Interpretive Maps or by other means, shall receive special consideration related to the erosive potential of grading and earthmoving activities.
  - **Implementation Program 17.D.u**: Apply Chapter 12.20 of the Tuolumne County Ordinance Code, the Grading Ordinance, to address the impacts of earth-disturbing development activities on any slope, whether or not it is shown as potentially unstable on the geotechnical maps.

PROJECT IMPACTS

This section presents a programmatic-level analysis of potential impacts associated geology from projected development under the General Plan Update. Evaluation of environmental impacts associated with the General Plan Update considers the development that would be facilitated by the General Plan Update, in accordance with goals, policies, and implementation programs, to accommodate projected growth in the County. It should be noted that the County's population is projected to grow by 0.6 percent annually over the planning horizon (2040). As discussed in detail in Chapter 2, "Project Description," and the introduction to Chapter 3, this is a relatively low amount of growth.

Impact 3.7-1: Exposure of People and Structures to Primary Seismic Hazards

The General Plan Update would result in development subject to future seismic events that could produce ground shaking, fault rupture, and ground failure within Tuolumne County that could damage structures and/or create adverse health and safety effects. However, with implementation of General Plan Update policies and required building codes, impacts would be **less than significant**.

The General Plan Update would promote a mixture of new residential, retail, entertainment, office and commercial uses near identified communities. No new development would occur on or immediately adjacent to known active fault lines, as there are none identified in Tuolumne County. Severe earthquake risk is deemed to be low in the County. Because new structures are required to be designed and built to withstand probable shaking without collapse, the biggest danger associated with a seismic event is the continued use of older structures that are not capable of withstanding earthquake forces.

Damage and injury resulting from geologic hazards can be reduced to acceptable levels through zoning and building permit review procedures and construction standards. New construction conforming to the standards of the CBC would provide adequate protection from seismic events. Dams, schools, and hospitals are more stringently regulated by state and federal agencies for protection against such hazards. New development within the County would be required by law to conform to the CBC. The planning and building division of the County ensures that all new construction complies with current codes and ordinances regarding earthquake safety (Tuolumne County 2018). Proper engineering, including compliance with the CBC, would minimize the risk to life and property. Furthermore, the General Plan Update Natural Hazards Element includes Policies 17.D.1 and 17.D.2 and Implementation Programs 17.D.a through 17.D.c intended to minimize primary hazards associated with ground shaking, fault rupture, and ground failure by identifying areas subject to these hazards or risks and directing development away from high-risk areas.

Adherence to existing regulations would ensure that projected development under the General Plan Update would be able to withstand seismic activity and be sited away from known seismically hazardous areas. The policies and implementation programs in the General Plan Update would further reduce the likelihood of impacts related to ground shaking, ground failure, and fault rupture. Impacts would be **less than significant**.

Mitigation Measures

No mitigation is required.

Impact 3.7-2: Increase Risks Associated with Liquefaction of Soils and Land Subsidence

Future seismic events could result in liquefaction of soils in portions of the County. However, because of the nature of the soils, groundwater conditions, and low seismicity in the County, the risk and danger of liquefaction and subsidence occurring within the County is considered to be minimal. With implementation of General Plan Update policies, impacts would be **less than significant**.

Since liquefaction would most likely occur during or following an earthquake and severe earthquake risk is deemed to be low in the County, the risk and danger of liquefaction occurring within the County are also low. Subsidence potential is also known to be minimal throughout Tuolumne County and most likely to occur in areas where substantial underground mining activity has occurred.

Some land use development associated with implementation of the General Plan Update could be located on geologic units or soils that are unstable, or that could become unstable and result in geologic hazards. Areas with underlying materials that include undocumented fills or loose debris could be inadequate to support development. Soils that exhibit expansive properties when exposed to varying moisture content over time could result in damage to foundations, walls, or other improvements. Structures, including residential units and commercial buildings, could be damaged as a result of settlement or differential settlement where structures are underlain by materials of varying engineering characteristics. Construction of new structures in the vicinity of relatively steep slopes could also provide additional loading, causing landslides or slope failure from unstable soils or geologic units. The potential hazards of unstable soil or geologic units would be largely addressed through the integration of geotechnical information in the planning and design process to determine the local soil suitability for specific projects in accordance with standard industry practices and state requirements, such as CBC requirements and CGS Special Publication 117A for liquefaction and landslide hazards in seismic hazard zones. Corrective measures such as structural reinforcement for unstable geologic units and using engineered fill to replace unstable soils would be required for the design of individual future projects.

Furthermore, the General Plan Update Natural Hazards Element includes policies intended to minimize the risks associated with liquefaction and subsidence by identifying areas subject to seismic or geologic hazard risk or activity and directing development away from areas that are subject to those hazards. For example, Implementation Program 17.D.a requires the County to designate areas within 100 feet of capable faults for non-urban uses. The General Plan Update would require, as part of the application review process, a geologic, seismic, and/or geotechnical engineering report to be prepared for proposed development when a potential hazard exists (Implementation Program 17.D.c). These reports would ensure that development is properly engineered to protect against unstable soil or ground conditions.

Hazards associated with unstable soils or geologic units are dependent on site- specific conditions, as well as the specific nature of the individual project proposed. With adherence to grading permit and building code requirements, including seismic design criteria as required by the CBC, Special Publication 117A, and local building code requirements, all improvements and development would be designed to minimize potential risks related to unstable soils and geologic units. Existing regulatory requirements specify mandatory and relatively prescriptive actions that must occur during project development, and would effectively reduce the inherent hazard. The probability and potential severity of subsidence and liquefaction in the County is low and existing regulations adequately address the potential hazards associated with construction in areas susceptible to this activity. Adherence to General Plan Update policies and implementation programs would ensure that any liquefaction or subsidence risks would be identified. Impacts related to liquefaction and subsidence would be **less than significant**.

Mitigation Measures

No mitigation is required.

Impact 3.7-3: Impacts from Mass Wasting Events

Landslides have the potential to damage and destroy structures, roadways, and other improvements, as well as deflect or block drainage channels, causing accelerated erosion and more damage. However, with implementation of General Plan Update policies, impacts would be **less than significant**.

Although there is a limited potential for landslides in the western portion of the County, the probability of mass wasting events is low at the County level and the effects of these events are anticipated to be minimal because there are fewer population centers in the western foothills (Tuolumne County 2018). As a result of the General Plan Update, a mixture of new residential, retail, entertainment, office, and commercial uses would be encouraged to be developed near identified communities. Development in areas with unstable slopes may increase risk of landslides, mudslides, or debris flows, which can damage buildings and infrastructure. With the County's low population density, few mass wasting events have affected communities or infrastructure, and populated areas of the County are not generally exposed to these types of hazards. The relatively low growth anticipated through the life of the General Plan (2040) is not anticipated to substantially change these conditions.

The County's building code requires that site-specific investigations be performed for development located in hillside areas. Investigations and practices typically required for hillside development include the following:

- Conduct thorough geologic/geotechnical studies by qualified geotechnical engineers and engineering geologists.
- Require both engineering geologists and geotechnical engineers during construction to confirm preliminary findings reported during initial studies.
- Require certification of the proposed building site stability in relation to the diverse effects of rain and earthquakes prior to the issuance of building permits.
- Mandate coordination between the civil engineer and the project engineering geologist and geotechnical engineer during construction grading.
- Require mitigation of on-site hazards caused by grading that may affect adjoining properties, including erosion and slope instability.

The effects of mass wasting activities are generally reduced by the standard development review process. With existing regulations, and given the low potential for landslides, projected development under the General Plan Update is not anticipated to substantially increase the potential for mass wasting events. Further, the policies included in the General Plan Update would require detailed engineering studies in unstable slope or landslide areas before approval of development (Policy 17.D.2 and Implementation Programs 17.D.b through 17.D.i). The studies would specifically identify the extent of instability or potential for landslides and recommend design alterations, considerations, or other features that could reduce the potential hazards to an acceptable level. Study recommendations would be required as part of the project approval process. Development would also be monitored to ensure that construction in landslide or unstable slope areas is accomplished safely (Policy 17.D.5 and Implementation Program 17.D.s). Therefore, projected development under the General Plan Update would not expose people or structures to undue risk from landslides or other slope failures, and impacts would be **less than significant**.

Mitigation Measures

No mitigation is required.

Impact 3.7-4: Risks Associated with Placement of Structures On Expansive Soils

The General Plan Update would potentially result in development on expansive soils. Expansive soil conditions could result in foundation and building distress problems and cracking of concrete slabs. However, with implementation of General Plan Update Natural Hazards Element policies and applicable provisions of the Tuolumne County Ordinance Code, impacts relating to soil expansion would be **less than significant**.

Soils that contain high proportions of clay are referred to as expansive soils, due to the high shrink-swell potential of clay. The shrink-swell potential is based primarily on the moisture content of the clay. Soils with a high clay content occur in the County; therefore, development under the General Plan update has the potential to occur on expansive soils. Roads and building foundations built on clay soils may be affected by changes in soil volumes over time as the soils go through wet/dry cycles.

Implementation Program 17.D.c would minimize risk associated with expansive soils because the potential for expansive soils would be identified, and recommendations provided by a qualified consultant to address any expansive soils risk before approval of new developments. In addition, new development under the General Plan Update may also be subject to a soil engineering report if required by the Community Resources Agency under Section 12.20.160 of the Tuolumne County Ordinance Code:

> The soil engineering report required by Section 12.20.140 shall include data regarding the nature, distribution and strength of existing soils, conclusions and recommendations for grading procedures and design criteria for corrective measures, including buttress fills, when necessary, and opinions and recommendations covering adequacy of sites to be developed by the proposed grading. Where applicable in the opinion of the qualified professional, the report shall also include a description of the geology of the site, conclusions and recommendations regarding the effect of geologic conditions on the proposed development, and opinion in the adequacy for the use of the sites to be developed by the proposed grading, as affected by geologic factors. Recommendations included in the report and approved by the Department shall be incorporated in the grading or stockpiling plans or specifications.

For developments subject to the CBC, Section 1808.6 of the CBC requires design features for foundations of buildings and structures in areas subject to expansive soils. Section R403.1.7.2 of the California Residential Code also refers to Section 1808.6 of the CBC for foundation design requirements. Furthermore, under Section 66490 of the Subdivision Map Act, a preliminary soils report prepared by a civil engineer registered in California, and based upon adequate test borings, would be required for every subdivision for which a final map is required by such a division. If the preliminary soils report indicates the presence of critically expansive soils or other soil problems that would lead to structural defects, a soils investigation of each lot in the subdivision would be required (Tuolumne County Ordinance Code Section 16.26.020).

Typical measures to treat expansive soils involve removal, proper fill selection, and compaction. Expansion would not be a substantial constraint to development of individual sites provided that adequate soil and foundation studies are performed before construction and that recommendations in any soil engineering reports made by a qualified professional are followed.

Adherence to Sections 12.20.160 and 16.26.020 in the Tuolumne County Ordinance Code and other state regulations would adequately address the potential effects on expansive soils. Policies and implementation programs in the General Plan Update would be generally consistent with these regulations and further decrease the potential for hazards associated with expansive soils, This impact would be **less than significant**.

Mitigation Measures

No mitigation is required.

Impact 3.7-5: Risk of Erosion from New or Redevelopment

The General Plan Update would result in development that would require grading and other vegetation removal, which could increase potential for soil erosion, especially in areas with steep slopes. However, compliance with applicable policies of the General Plan Update Natural Hazards Element and applicable provisions of the Tuolumne County Ordinance Code would reduce the potential for substantial erosion. Impacts would be **less than significant**.

Areas in the County with slopes that exceed 30 percent are considered to have a high potential for erosion. However, there are numerous state and local regulations that limit the potential for development to substantially increase erosion. For example, the County requires erosion control permits and Chapter 12.20 of the Tuolumne County Ordinance Code includes the following sections:

- Section 12.20.150(H). An erosion control plan, showing the type and exact locations of measures to be taken, shall be supplied when determined necessary by the Department.
- 12.20.330(A). All drainage facilities shall be designed to carry waters to the nearest practicable natural drainage way approved by the Department as a safe place to deposit such waters. Erosion of ground in the area of discharge shall be prevented by installation of non-erosive down drains or other devices.
- 12.20.340. Interceptor drains shall be installed along the top of all cut slopes where the tributary drainage area above slopes towards the cut and has a drainage path greater than forty feet measured horizontally. The dimensions and slope of interceptor drains shall be approved by the Department. Interceptor drains shall be paved to protect against erosion by paving, concrete, gunite or other approved measures.
- Section 12.20.350. The faces of cut and fill slopes shall be prepared and maintained to control against erosion. This control may consist of effective planting. The protection of the slopes shall be installed as soon as practicable and before calling for final approval. If, in the opinion of the Department, the protection for the slopes is not subject to erosion due to the erosion-resistant character of the materials, such protection may be omitted.
- Section 12.20.360. When necessary, check dams, cribbing, rip rap or other devices or methods shall be employed to control erosion and provide safety.

Further, as described in Section 3.10, “Hydrology and Water Quality,” the Regional Water Quality Control Board would require a project-specific storm water pollution prevention plan (SWPPP) for each project that disturbs an area 1 acre or more. The SWPPPs would include project-specific best management practices designed to control drainage and erosion. These best management practices would be required as part of each individual project permit and would mitigate potential impacts of soil erosion as a result of construction or grading.

In addition, the General Plan Update includes policies and implementation measures to further reduce erosion potential. Policy 17.D.6 requires the County to reduce the potential for erosion and sedimentation from earthmoving and construction activities. This policy would be supported by Implementation Programs 17.D.t and 17.D.u, which require implementation of County Ordinance Code 12.20 (described above) and require special consideration to be given to areas having erosive soils. Adherence to General Plan Update policies and implementation programs, as well as other state and County regulatory programs would ensure impacts related to unstable slopes and erosion are **less than significant**.

Mitigation Measures

No mitigation is required.

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3.8 GLOBAL CLIMATE CHANGE

This section examines the potential impacts of projected development under the General Plan Update on greenhouse gas (GHG) emissions, the potential for conflicts with GHG reduction planning efforts, and mitigation measures to reduce these impacts. The section also includes a discussion of the relevant environmental and regulatory settings pertaining to climate change and GHG emissions within the plan area. Several comment letters were received on the Draft EIR that raised concerns about global climate change, including concerns about the impact analysis and the potential for a reduction of GHG emissions. These comments are addressed below, as appropriate.

3.8.1 Environmental Setting

CLIMATE CHANGE AND GREENHOUSE GASES

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

Prominent GHGs contributing to the greenhouse effect are carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6). Human-caused emissions of these GHGs in excess of natural ambient concentrations are found to be responsible for intensifying the greenhouse effect and leading to a trend of unnatural warming of the earth's climate, known as global climate change or global warming. It is "extremely likely" that more than half of the observed increase in global average surface temperature from 1951 to 2010 was caused by the anthropogenic increase in GHG concentrations and other anthropogenic forcing (IPCC 2014).

Climate change is a global problem. GHGs are global pollutants, unlike criteria air pollutants and toxic air contaminants, which are pollutants of regional and local concern. Whereas most pollutants with localized air quality effects have relatively short atmospheric lifetimes (about 1 day), GHGs have long atmospheric lifetimes (1,000 to several thousand years). GHGs persist in the atmosphere long enough to be dispersed around the globe. Although the lifetime of any 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 estimated to be sequestered through ocean and land uptake every year, averaged over the last 50 years, whereas the remaining 45 percent of human-caused CO_2 emissions remains stored in the atmosphere (IPCC 2013).

The quantity of GHGs in the atmosphere that ultimately result in climate change is not precisely known but is enormous; no single project alone would measurably contribute to an incremental change in the global average temperature or to global or local climates or to microclimates. Thus, from the standpoint of the California Environmental Quality Act (CEQA), GHG impacts relative to global climate change are inherently cumulative.

Carbon Dioxide

The global carbon cycle is made up of large carbon flows and reservoirs. Billions of tons of carbon in the form of CO_2 are absorbed by oceans and living biomass (i.e., sinks) and are emitted to the atmosphere

annually through natural processes (i.e., sources). When in equilibrium, carbon fluxes among these various reservoirs are roughly balanced (EPA 2012). CO_2 was the first GHG demonstrated to be increasing in atmospheric concentration, with the first conclusive measurements being made in the last half of the 20th century. Concentrations of CO_2 in the atmosphere have risen approximately 40 percent since the industrial revolution. The global atmospheric concentration of CO_2 has increased from a pre-industrial value of about 280 parts per million (ppm) to 391 ppm in 2011 (IPCC 2007, NOAA 2010). The average annual CO_2 concentration growth rate was larger between 1995 and 2005 (average: 1.9 ppm per year) than it has been since the beginning of continuous direct atmospheric measurements (1960–2005 average: 1.4 ppm per year), although there is year-to-year variability in growth rates (NOAA 2010). Currently, CO_2 represents an estimated 82.8 percent of total GHG emissions (EIA 2012). The largest source of CO_2, and of overall GHG emissions, is fossil fuel combustion.

Methane

CH_4 is an effective absorber of radiation, though its atmospheric concentration is less than that of CO_2 and its lifetime in the atmosphere is limited to 10 to 12 years. It has a global warming potential (GWP) approximately 21 times that of CO_2. Over the last 250 years, the concentration of CH_4 in the atmosphere has increased by 148 percent (IPCC 2007), although emissions have declined from 1990 levels. Anthropogenic sources of CH_4 include enteric fermentation associated with domestic livestock, landfills, natural gas and petroleum systems, agricultural activities, coal mining, wastewater treatment, stationary and mobile combustion, and certain industrial processes (EPA 2012).

Nitrous Oxide

Concentrations N_2O began to rise at the beginning of the industrial revolution and continue to increase at a relatively uniform growth rate (NOAA 2010). N_2O is produced by microbial processes in soil and water, including those reactions that occur in fertilizers that contain nitrogen, fossil fuel combustion, and other chemical processes. Use of these fertilizers has increased over the last century. Agricultural soil management and mobile source fossil fuel combustion are the major sources of N_2O emissions. The GWP of N_2O is approximately 310 times that of CO_2.

Fluorinated Gases

Fluorinated gases, such as HFCs, PFCs, and SF_6, are powerful GHGs that are emitted from a variety of industrial processes. Fluorinated gases are used as substitutes for ozone-depleting substances such as chlorofluorocarbons (CFCs), hydrochlorofluorocarbons, and halons, which have been regulated since the mid-1980s because of their ozone-destroying potential and are phased out under the Montreal Protocol (1987) and Clean Air Act Amendments of 1990. Electrical transmission and distribution systems account for most SF_6 emissions, while PFC emissions result from semiconductor manufacturing and as a by-product of primary aluminum production. Fluorinated gases are typically emitted in smaller quantities than CO_2, CH_4, and N_2O, but these compounds have much higher GWPs. SF_6 is the most potent GHG the IPCC has evaluated.

STATEWIDE GREENHOUSE GAS EMISSIONS INVENTORY

Based upon the California Air Resources Board's (CARB's) California GHG Inventory for 2000-2016, California produced 429.4 million metric tons of CO_2 equivalent ($MMTCO_2e$) in 2016. The major source of GHG in California is transportation, contributing 41 percent of the state's total GHG emissions. Industrial sources are the second largest source of the state's GHG emissions (CARB 2018). California emissions are due in part to its large size and large population compared to other states. However, a factor that reduces California's per capita fuel use and GHG emissions, as compared to other states, is its relatively mild climate. Between 2015 and 2016, statewide emissions decreased by 12 MMTCO2e, which represents an overall decrease of 13 percent since peak statewide emissions levels in 2004. In addition, in 2016, California achieved reductions 2 MMTCO2e below the 1990 level and has achieved the state's 2020 reduction target of 431 million metric tons four years ahead of schedule (CARB 2018).

POTENTIAL EFFECTS OF CLIMATE CHANGE

According to the Intergovernmental Panel on Climate Change, which was established in 1988 by the World Meteorological Organization and the United Nations Environment Programme, global average temperature is expected to increase by 3–7 degrees Fahrenheit (°F) by the end of the century, depending on future GHG emission scenarios (IPCC 2007). According to the California Natural Resources Agency (CNRA), temperatures in California are projected to increase by 2–5°F by 2050 and by 4–9°F by 2100 (CNRA 2009).

Other environmental resources could be indirectly affected by the accumulation of GHG emissions and resulting rise in global average temperature. In the recent years, California has been marked by extreme weather and its effects. According to CNRA's report *Safeguarding California Plan: 2018 Update* (CNRA 2018), from 2012 through 2015, California experienced the driest 4-year statewide precipitation on record; the warmest years on average in 2014, 2015, and 2016; and the smallest and second smallest Sierra snowpack on record in 2015 and 2014 (CNRA 2018). In contrast, the northern Sierra Nevada experienced its wettest year on record in 2016 (CNRA 2018). The changes in precipitation exacerbate wildfires throughout California with increasing frequency, size, and devastation. As temperatures increase, the increase in precipitation falling as rain rather than snow also could lead to increased potential for floods because water that would normally be held in the snowpack of the Sierra Nevada and Cascade Range until spring would flow into the Central Valley concurrently with winter rainstorm events. This scenario would place more pressure on California's levee/flood control system (CNRA 2018). Furthermore, in the extreme scenario involving the rapid loss of the Antarctic ice sheet, sea level along the California's coastline could rise by 10 feet by 2100, which is approximately 30–40 times faster than sea level rise experienced over the last century (CNRA 2018).

Changes in temperature, precipitation patterns, extreme weather events, and sea-level rise have the potential to affect and decrease the efficiency of thermal power plants and substations, decrease the capacity of transmission lines, disrupt electrical demand, and threaten energy infrastructure with the increased risk of flooding (CNRA 2018).

The California Department of Transportation (Caltrans) owns and operates more than 51,000 miles along 265 highways, as well as three of the busiest passenger rail lines in the nation. Sea level rise, storm surge, and coastal erosion are imminent threats to highways, roads, bridge supports, airports, transit systems and rail lines near sea level and seaports. Shifting precipitation patterns, increased temperatures, wildfires, and increased frequency in extreme weather events also threaten transportation systems across the state. Temperature extremes and increased precipitation can increase the risk of road and railroad track failure, decrease transportation safety, and increase maintenance costs (CNRA 2018).

Water availability and changing temperatures, which affect the prevalence of pests, disease, and species, directly affect crop development and livestock production. Other environmental concerns include decline in water quality, groundwater security, and soil health (CNRA 2018). Vulnerabilities of water resources also include risks of degradation of watersheds, alteration of ecosystems and loss of habitat, impacts on coastal areas, and ocean acidification (CNRA 2018). The ocean absorbs approximately one-third of the CO_2 released into the atmosphere every year from industrial and agricultural activities, changing the chemistry of the ocean by decreasing the pH of seawater. This ocean acidification is harmful to marine organisms, especially calcifying species, such as oysters, clams, sea urchins, and corals (CNRA 2018).

LOCAL EFFECTS OF CLIMATE CHANGE

Although there is strong scientific consensus that global climate change is occurring and is influenced by human activity, there is less certainty as to the timing, severity, and potential consequences of the climate phenomena. Scientists have identified several ways in which global climate change could alter the physical environment in California (CNRA 2009, California Department of Water Resources 2006, IPCC 2007). These include:

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

Cal-Adapt is a planning tool developed by the California Energy Commission (CEC) to evaluate climate change impacts, consistent with emissions scenarios identified in the IPCC Fifth Assessment Report (IPCC 2014). The IPCC Fifth Assessment Report uses future emissions scenarios known as Representative Concentration Pathways (RCPs) to estimate scenarios in which varying (higher or lower) levels of GHGs would be emitted in the future. The RCP scenarios take into account various socio-economic assumptions which affect GHG emissions with higher RCP scenarios assuming higher rates of GHG emissions through the end of the century. Emissions scenarios used in the Cal-Adapt are based on two RCP scenarios, RCP 4.5 and RCP 8.5. The RCP 4.5 scenario assumes that global GHG emissions would peak around 2040 and decline between 2040 and 2100. The RCP 8.5 scenario assumes that global GHG emissions would continue to rise through 2050 and peak around 2100. According to Cal-Adapt, Tuolumne County is projected to experience a temperature increase of 4.3°F by 2050 and 6°F by 2099 under the RCP 4.5 scenario and an increase of 5.5°F by 2050 and 9.1°F by 2099 under the RCP 8.5 scenario.

Cal-Adapt also includes a Wildfire tool, which provides modeling projections for increases in the annual average area burned (10-year annual average) for regions throughout California over the next century. The tool uses a statistical model based on historical data of climate, vegetation, population density, and fire history within various regions in California to model projected increases in annual mean hectares burned by wildfire through 2099. According to the Cal-Adapt Wildfire tool, Tuolumne County is projected to experience an increase of 5,651 annual mean acres burned by wildfire by 2050 and 9,155 annual mean acres burned by wildfire by 2099 under the RCP 4.5 scenario. Under the RCP 8.5 scenario, Tuolumne County is projected to experience an increase of 8,473 annual mean acres burned by wildfire by 2050 and 21,506 annual mean acres burned by wildfire by 2099.

Further, certain factors such as sea level rise would not have a direct impact to the Tuolumne County region which is located more than approximately 80 miles inland of the Pacific Ocean. See Supplemental Discussion at the end of Section 3.8.3 for a discussion of wildfire risks in Tuolumne County.

3.8.2 Regulatory Setting

The following regulations address both climate change and GHG emissions.

FEDERAL

Supreme Court Ruling

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

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

In October 2012, EPA and the National Highway Traffic Safety Administration, on behalf of the U.S. Department of Transportation, issued final rules to further reduce GHG emissions and improve corporate average fuel economy (CAFE) standards for light-duty vehicles for model years 2017 and beyond (77 Federal

Register 62624). The CAFE standards have been enacted under the Energy Policy and Conservation Act since 1978. This national program requires automobile manufacturers to build a single light-duty national fleet that meets all requirements under both federal programs and the standards of California and other states. This program would increase fuel economy to the equivalent of 54.5 miles per gallon limiting vehicle emissions to 163 grams of CO_2 per mile for the fleet of cars and light-duty trucks by model year 2025 (77 Federal Register 62630).

In January 2017, EPA signed a determination to maintain the current GHG emissions standards for model year 2022–2025 vehicles. However, on April 2, 2018, the new EPA Administrator and U.S. Department of Transportation Secretary announced a final determination that the current standards are not appropriate and should be revised. It is not yet known when these revisions are anticipated to occur (EPA 2018a).

Clean Power Plan

The Clean Power Plan was unveiled August 3, 2015. The plan aims to reduce CO_2 emissions from electrical power generation by 32 percent within 25 years relative to 2005 levels. On March 28, 2017, Executive Order (EO) 13783 was signed, mandating the EPA to review the plan. EPA is proposing to repeal the Clean Power Plan because of a change to the legal interpretation of section 111(d) of the CAA, on which the Clean Power Plan was based. EPA accepted public comments on the proposal until April 26, 2018 (EPA 2018b). No update has been provided by EPA.

STATE PLANS, POLICIES, LAWS, AND REGULATIONS

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

Executive Order S-3-05

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

This EO was the subject of a California Supreme Court decision, *Cleveland National Forest Foundation v. San Diego Association of Governments* (SANDAG) (July 13, 2017) 3 Cal.5th 497. The case addressed the adequacy of the GHG analysis in the EIR SANDAG prepared for its 2011 Regional Transportation Plan (RTP). The Supreme Court decided a singular question in its decision, ruling that SANDAG did not abuse its discretion by declining "to adopt the 2050 goal as a measure of significance in light of the fact that the Executive Order does not specify any plan or implementation measures to achieve its goal."

The Supreme Court decision reveals useful guidance for agencies charged with CEQA compliance. In addition to concluding that an EIR need not use the EO's 2050 goal for determining significance, the Court described several principles relevant to CEQA review of GHG impacts, including: (1) that the 2050 target is "grounded in sound science," in that it is "based on the scientifically supported level of emissions reduction needed to avoid significant disruption of the climate"; and (2) that "agencies … must ensure that CEQA analysis stays in step with evolving scientific knowledge and state regulatory schemes." Interestingly, even in the absence of a statutory statewide 2050 target, the Court treated "state policy" as "deeming" that the 2050 target as "necessary to stabilize the climate." The Court also ruled that "an EIR's designation of a particular adverse environmental effect as 'significant' does not excuse the EIR's failure to reasonably describe the nature and magnitude of the adverse effect."

The Court further recognized that the 40 percent reduction in 1990 GHG levels by 2030 is "widely acknowledged" as a "necessary interim target to ensure that California meets its longer-range goal of reducing greenhouse gas emissions 80 percent below 1990 levels by the year 2050." On this subject, the Court acknowledged the Legislature's 2016 enactment of Senate Bill (SB) 32 (discussed below), which put

the 2030 target into statute. The Court said that SB 32 "reaffirms California's commitment to being on the forefront of the dramatic greenhouse gas emission reductions needed to stabilize the global climate. The legislation directs California Air Resources Board (CARB) to craft regulations to implement its goal (Health and Safety Code, Section 38566). These regulations may further clarify the way forward for public agencies to meet the state's 2050 climate goals. This regulatory clarification, together with improved methods of analysis, may well change the manner in which CEQA analysis of long-term greenhouse gas emission impacts is conducted."

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

In September 2006, the California Global Warming Solutions Act of 2006, Assembly Bill (AB) 32, was signed into law. AB 32 establishes regulatory, reporting, and market mechanisms to achieve quantifiable reductions in GHG emissions and a cap on statewide GHG emissions. AB 32 requires that statewide GHG emissions be reduced to 1990 levels by 2020. AB 32 also requires that (a) the statewide GHG emissions limit shall remain in effect unless otherwise amended or repealed; (b) the statewide GHG emissions limit continue in existence and be used to maintain and continue reductions in emissions of GHGs beyond 2020; and (c) CARB shall make recommendations to the Governor and the Legislature on how to continue reductions of GHG emissions beyond 2020 (Health and Safety Code Section 38551.).

Advanced Clean Cars Program

In January 2012, CARB 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 (ZEVs), into a single package of regulatory standards for vehicle model years 2017 through 2025. The new regulations strengthen the GHG standard for 2017 models and beyond. This will be achieved through existing technologies, the use of stronger and lighter materials, and more efficient drivetrains and engines. The program's ZEV regulation requires battery, fuel cell, and/or plug-in hybrid electric vehicles to account for up to 15 percent of California's new vehicle sales by 2025. The program also includes a clean fuels outlet regulation designed to support the commercialization of zero-emission hydrogen fuel cell vehicles planned by vehicle manufacturers by 2015 by requiring increased numbers of hydrogen fueling stations throughout the state. The number of stations will grow as vehicle manufacturers sell more fuel cell vehicles. By 2025, when the rules will be fully implemented, the statewide fleet of new cars and light trucks will emit 34 percent fewer GHGs and 75 percent fewer smog-forming emissions than the statewide fleet in 2016 (CARB 2016).

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

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

Executive Order B-30-15

On April 20, 2015, EO B-30-15 was signed into law and established a California GHG reduction target of 40 percent below 1990 levels by 2030. The Governor's EO aligns California's GHG reduction targets with those of leading international governments such as the 28-nation European Union, which adopted the same target in October 2014. This 2030 target sets the next interim step in the state's continuing efforts to pursue the long-term target expressed under EO S-3-05 to reach the goal of reducing emissions 80 percent below 1990 levels by 2050. This is in line with the scientifically-established levels needed in the U.S. to limit global

warming below 2 degrees Celsius, the warming threshold at which major climate disruptions are projected, such as super droughts and rising sea levels.

Senate Bill 32 and Assembly Bill 197 of 2016

In 2016, SB 32 and AB 197 were signed into law and serve to extend California's GHG reduction programs beyond 2020. SB 32 amended the Health and Safety Code to include Section 38566, which contains language to authorize CARB to achieve a statewide GHG emission reduction of at least 40 percent below 1990 levels by no later than December 31, 2030. SB 32 codified the targets established by EO B-30-15 for 2030, which set the next interim step in the state's continued 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.

Senate Bill 375 of 2008

In September 2008, SB 375 was signed into law and aligns regional transportation planning efforts, regional GHG emission reduction targets, and land use and housing allocation. SB 375 requires metropolitan planning organizations (MPOs) to adopt a Sustainable Communities Strategy or Alternative Planning Strategy, showing prescribed land use allocation in each MPO's RTP. CARB, in consultation with the MPOs, is to provide each affected region with reduction targets for GHGs emitted by passenger cars and light trucks in their respective regions for 2020 and 2035. The Tuolumne County Transportation Council (TCTC) is the regional transportation planning agency in Tuolumne County, but because of its size is not considered an MPO. Therefore, TCTC is not subject to the vehicle miles traveled (VMT) reduction targets established in SB 375. However, TCTC, in its most recent RTP (2016), has chosen to include a Rural Sustainable Strategy chapter within the plan which provides an alternative sustainability plan that is more feasible to Tuolumne County and possibly other rural agencies for compliance with the state's long-term GHG reduction targets. TCTC's Rural Sustainable Strategy is discussed in more detail in the local regulatory setting section.

California Building Efficiency Standards of 2016 (Title 24, Part 6)

Buildings in California are required to comply with California's Energy Efficiency Standards for Residential and Nonresidential Buildings established by CEC in Title 24, Part 6 of the California Code of Regulations. These standards were first adopted in 1978 in response to a legislative mandate to reduce California's energy consumption and are updated on an approximately 3-year cycle to allow consideration and possible incorporation of new energy efficient technologies and methods. All buildings for which an application for a building permit is submitted on or after January 1, 2017, must follow the 2016 standards (CEC 2015). Energy efficient buildings require less electricity; therefore, increased energy efficiency reduces fossil fuel consumption and decreases GHG emissions.

The 2019 Title 24 Part 6 Building Energy Efficiency Standards were adopted by CEC on May 9, 2018, and will take effect on January 1, 2020. The standards are designed to move to the state closer to its zero net energy goals for new residential development. It does so by requiring all new residences to install enough renewable energy to offset all the site electricity needs of each residential unit (California Code of Regulations, Title 24, Part 6, Section 150.1(c)14). CEC estimates that the combination of mandatory on-site renewable energy and prescriptively-required energy efficiency features will result in new residential construction that uses 53 percent less energy than the 2016 standards. Nonresidential buildings are anticipated to reduce energy consumption by 30 percent compared to the 2016 standards primarily through prescriptive requirements for high-efficacy lighting (CEC 2018). The building efficiency standards are enforced through the local plan check and building permit process. Local government agencies may adopt and enforce additional energy standards for new buildings as reasonably necessary in response to local climatologic, geologic, or topographic conditions, provided that these standards are demonstrated to be cost effective and exceed the energy performance required by Title 24 Part 6.

Low Carbon Fuel Standard

In January 2007, EO S-01-07 established a Low Carbon Fuel Standard (LCFS). The EO calls for a statewide goal to be established to reduce the carbon intensity of California's transportation fuels by at least 10 percent by 2020, and that a LCFS for transportation fuels be established for California. The LCFS applies to

all refiners, blenders, producers, or importers ("Providers") of transportation fuels in California, including fuels used by off-road construction equipment (Wade, pers. comm., 2017). The LCFS is measured on the total fuel cycle and may be met through market-based methods (e.g., Providers exceeding the performance required by an LCFS receive credits that may be applied to future obligations or traded to Providers not meeting LCFS).

In June 2007, CARB adopted the LCFS as a Discrete Early Action item under AB 32 pursuant to Health and Safety Code Section 38560.5, and in April 2009, CARB approved the new rules and carbon intensity reference values with new regulatory requirements taking effect in January 2011. The standards require Providers of transportation fuels to report on the mix of fuels they provide and demonstrate they meet the LCFS intensity standards annually. This is accomplished by ensuring that the number of "credits" earned by providing fuels with a lower carbon intensity than the established baseline (or obtained from another party) is equal to or greater than the "deficits" earned from selling higher intensity fuels.

After some disputes in the courts, CARB re-adopted the LCFS regulation in September 2015, and the LCFS went into effect on January 1, 2016.

Climate Change Scoping Plan

In December 2008, CARB adopted its first version of its *Climate Change Scoping Plan*, which contained the main strategies California will implement to achieve the mandate of AB 32 to reduce statewide GHG emissions to 1990 levels by 2020. It has updated the plan since, and most recently adopted the *California's 2017 Climate Change Scoping Plan* (2017 Scoping Plan) (CARB 2017). The 2017 Scoping Plan indicates that California is on track to achieve the 2020 statewide GHG target mandated by AB 32 (CARB 2017:9). It also lays out the framework for achieving the mandate of SB 32 of 2016 to reduce statewide GHG emissions to at least 40 percent below 1990 levels by the end of 2030 (CARB 2017). The 2017 Scoping Plan identifies the GHG reductions needed by each emissions sector.

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

Senate Bill 743 of 2013

SB 743 changes the way that public agencies evaluate the transportation impacts of projects under CEQA, from delay to VMT. One of the main impetuses of the bill was to align transportation and climate change goals. To that end, the Governor's Office of Planning and Research (OPR) was tasked with developing potential metrics to measure transportation impacts and replace the use of delay and level of service.

In November 2017, OPR released its proposed changes to the CEQA Guidelines, including the addition of Section 15064.3 that would implement SB 743 (OPR 2017a:77–90a). In support of these changes, OPR also published its *Technical Advisory on Evaluating Transportation Impacts in CEQA*, which recommends that the transportation impact of a project be based on whether it would generate a level of VMT per capita (or VMT per employee) that is 15 percent lower than existing development in the region (OPR 2017b:12–13). OPR's technical advisory explains that this criterion is consistent with Public Resources Code Section 21099, which states that the criteria for determining significance must "promote the reduction in greenhouse gas emissions" (OPR 2017b:18). It is also consistent with the statewide per capita VMT reduction target developed by Caltrans in its Strategic Management Plan, which calls for a 15 percent reduction in per capita VMT, compared to 2010 levels, by 2020 (Caltrans 2015:11).

At the time of writing this EIR document, CNRA not yet adopted OPR's proposed addition of Section 15064.3 to the CEQA Guidelines, and the guidelines would not take effect until 2020 if adopted as written.

Executive Order B-48-18: Zero-Emission Vehicles

In January 2018, EO B-48-18 was signed, requiring all state entities to work with the private sector to have at least 5 million ZEVs on the road by 2030, as well as install 200 hydrogen fueling stations and 250,000 electric vehicle charging stations by 2025. It specifies that 10,000 of the electric vehicle charging stations should be direct current fast chargers. This order also requires all state entities to continue to partner with local and regional governments to streamline the installation of ZEV infrastructure. The Governor's Office of Business and Economic Development is required to publish a *Plug-in Charging Station Design Guidebook* and update the *2015 Hydrogen Station Permitting Guidebook* (Eckerle and Jones 2015) to aid in these efforts. All state entities are required to participate in the updating the *2016 Zero-Emissions Vehicle Action Plan* (Governor's Interagency Working Group on Zero-Emission Vehicles 2016) to help expand private investment in ZEV infrastructure with a focus on serving low-income and disadvantaged communities. Additionally, all state entities are to support and recommend policies and actions to expand ZEV infrastructure at residential land uses, through the LCFS Program, and recommend how to ensure affordability and accessibility for all drivers.

LOCAL

As required by state law, the Natural Resources Agency amended the CEQA Guidelines in 2010 to address GHG emissions. The adopted CEQA Guidelines provide general regulatory guidance on the analysis and mitigation of GHG emissions in CEQA documents but contain no suggested thresholds of significance for GHG emissions. Instead, they give lead agencies the discretion to set quantitative or qualitative thresholds for the assessment and mitigation of GHGs and climate change impacts. The general approach to developing a threshold of significance for GHG emissions is to identify the emissions level for which a project would not be expected to substantially conflict with existing California legislation, adopted for the purpose of reducing statewide GHG emissions sufficiently to move the state towards climate stabilization. If a project would generate GHG emissions above the threshold level, its contribution to cumulative impacts would be considered significant.

Tuolumne County General Plan

The 1996 General Plan provides a policy framework for guiding development in the County. As the proposed project would update the 1996 General Plan, this document will be discussed in the context of the update within the impact analysis. The General Plan Update, specifically the Climate Change Element, discusses how GHG emissions and climate adaptation will be addressed in the plan area. The policies and implementation programs in the Climate Change Element provide details on how GHG emissions would be reduced through the implementation of the General Plan Update and provide specific strategies to prepare and adapt to the impacts of climate change. The Transportation Element and the Air Quality Element also include policies and implementation programs which would reduce GHG emissions and are included below. Specific General Plan Update policies and implementation programs are identified in Section 3.8.3, "Impact Analysis," below.

Tuolumne County Regional Blueprint Greenhouse Gas Study

In 2012, TCTC conducted a regional blueprint planning effort which presented the results of a countywide (including incorporated and unincorporated areas) GHG emissions inventory, which evaluated existing (2010) GHG emissions, and projected (2020, 2030, and 2040) emissions for three growth scenarios, including the scenario used to develop the General Plan Update. It also identified policies and measures Tuolumne County and land use project applicants can implement to reduce GHG emissions consistent with AB 32 and prepare for the potential impacts of climate change. In 2010, Tuolumne County emitted approximately 782,846 metric tons of CO_2 equivalent GHG emissions ($MTCO_2e$) as a result of activities and operations that took place within the transportation, residential (energy consumption), non-residential (energy consumption), off-road vehicles and equipment, agriculture and forestry, wastewater, and solid waste sectors. This equates to 9.8 $MTCO_2e$ per resident and employee in Tuolumne County's service population (service population is defined as the total County resident population + people employed in the County).

The study identified a countywide target to reduce Tuolumne County's GHG emissions 15 percent below 2010 levels by 2020 (equivalent to 665,419 $MTCO_2e$) and policies that can be implemented to meet the target. The policies are organized into six categories: 1) Energy, 2) Transportation, 3) Resource Conservation, 4) Off-Road Vehicles and Equipment, 5) New Development, and 6) Adaptation. The study also identified a project-level threshold of 4.6 $MTCO_2e$ per service population per year that can be applied evenly to future land development applications countywide to ensure that new development reduces its share of emissions consistent with AB 32 and the countywide reduction target (TCTC 2012). The Tuolumne County Regional Blueprint Greenhouse Gas Study and associated project-level thresholds were adopted by the County Board of Supervisors in January 2012.

Tuolumne County Multi-Jurisdictional Hazard Mitigation Plan

Tuolumne County's Multi-Jurisdictional Hazard Mitigation Plan was mostly recently updated in 2018 and serves as the County's primary planning document for assessing potential hazards as well as establishing goals and objectives to mitigate the impact of hazards in the County and increase disaster preparedness. The plan includes goals, objectives, and mitigation actions for each type of hazard within the County. The following goals, objectives, and mitigation actions included in the plan would help to address the specific climate change impacts anticipated to affect the County over the coming century, as discussed in the Environmental Settings section.

GOAL 5: Minimize the level of damage and losses to people, existing and future critical facilities and infrastructure due to wildland fires.

Objective 5.1: Continue the comprehensive approach to reducing the level of damage and losses due to wildland fires through vegetation management, code enforcement, GIS mapping, and planning processes.

> **Mitigation Action 5.1A:** Prevent wildfires through collaborative code enforcement efforts by working with Engine Company Captains and Fire Prevention staff to increase the education and enforcement of PRC 4291, defensible space rules.
>
> **Mitigation Action 5.1B:** In order to assist fire prevention efforts and to better manage large fires when they occur, continue to improve GIS mapping and tracking efforts by gathering and maintaining relevant GIS data layers and imagery and utilizing the best available mapping applications and software.
>
> **Mitigation Action 5.1C:** Continue to work with the Hwy 108 Fire Safe Council and SWIFT to initiate fuel thinning and chipping projects in high priority areas. Collaborate with property owners and regulatory agencies in order to utilize prescribed fire on private and state-owned lands in the county.
>
> **Mitigation Action 5.1D:** Work with the Hwy 108 Fire Safe Council and SWIFT to update as needed the Community Wildfire Protection Plans for the County so that they will continue to:
>
> - Assess the fire hazard in the County
> - Prioritize treatment areas
> - Enhance collaboration amongst all fire agencies and stakeholders
> - Streamline environmental review processes
>
> **Mitigation Action 5.1E:** Improve water supply and storage for firefighting use at the Curtis Creek Campus.
>
> **Mitigation Action 5.1F:** Develop a wildfire evacuation plan which includes sheltering in place, at both the Curtis Creek and Sullivan Creek campuses and Columbia Union Elementary and Belleview Elementary.

Mitigation Action 5.1G: Work with the Tuolumne Utilities District to improve fire flow, system reliability and redundancy, and increased water supply in their responsibility areas.

Mitigation Action 5.1H: Protect water conveyance system by reducing fuels adjacent to wooden flumes.

Objective 5.2: Enhance collaboration amongst all fire agencies and stakeholders.

Mitigation Action 5.2A: Encourage participation of all Fire Agencies in the monthly Fire Chief Association meetings and support, when possible, efforts by the Association to improve fire protection and preventions efforts in the County.

Mitigation Action 5.2B: Encourage participation in cooperative automatic and mutual aid agreements between Districts, the County and the City of Sonora

Tuolumne County Transportation Council Regional Transportation Plan

In 2016, TCTC adopted its most recent RTP, which serves as the County's transportation policy, action, and financial planning document. TCTC is the regional transportation planning agency in Tuolumne County, which is not considered an MPO and, therefore, not subject to the VMT reduction targets set for MPOs in SB 375. However, TCTC has chosen to include a Rural Sustainable Strategy chapter which sets GHG reduction goals for the County consistent with SB 375, AB 32, and EO B-30-15. The chapter provides an alternative sustainability plan that is feasible for Tuolumne County to remain consistent with the statewide GHG reduction goals. It includes the following policies, which specifically address GHG reductions:

GOAL 1: Ensure the balance of environmental, economic, and social equity metrics in making transportation decisions.

Objective: Implement the Rural Sustainable Strategies.

- **Policy 1:** Utilize the Rural Sustainable Project Level Performance Assessment tool for funding transportation projects.
- **Policy 2:** Facilitate and identify new funding opportunities through TCTC's List of Rural Sustainable Strategies
- **Policy 3:** Support and prioritize the Greenhouse Gas Emission Reduction Policies.

GOAL 2: Integrate land use and transportation decisions by prioritizing infrastructure investments within the Defined Community Boundaries that strikes a balance between development, available infrastructure, conserves natural resources, and provides for a high quality of life.

Objective: Increase funding towards transportation projects that support the land uses within the Defined Community Boundaries (Regional Blueprint Greenhouse Gas Study).

- **Policy 1:** Support land use and transportation decisions which encourage growth in the Defined Community Boundaries and avoid rural sprawl (RTP Evaluation & Analysis Plan & Regional Blueprint Greenhouse Gas Study).
- **Policy 2:** Provide a variety of transportation choices by adopting policies that promote more alternative modes of transportation.
- **Policy 3:** Ensure new developments are providing their fair share towards transportation impacts.

GOAL 3: Practice environmental stewardship by protecting air quality, natural resources, and historical and cultural assets.

Objective: Identify and mitigate potential environmental impacts from the transportation system.

- **Policy 1:** Improve air quality in the region by coordinating transportation infrastructure with air quality planning.
- **Policy 2:** Reduce air quality emissions and greenhouse gas emissions from the transportation sector (Regional Blueprint Greenhouse Gas Study).
- **Policy 3:** Reduce vehicle miles traveled (VMT's) by increasing the use of alternative modes of transportation.
- **Policy 4:** Identify potential climate change impacts affecting the transportation system and find reasonable solutions.
- **Policy 5:** Identify and implement Context Sensitive Solutions in the Defined Community Boundaries.
- **Policy 6:** Support the planning and construction of plug-in electric vehicle charging stations.

3.8.3 Impact Analysis

METHODS OF ANALYSIS

Construction Emissions

Construction-related emissions of GHGs were calculated using the California Emissions Estimator Model (CalEEMod) Version 2016.3.2 computer program (CAPCOA 2017). Modeling was based on available information (e.g., land uses, acreage, number of units); reasonable assumptions based on typical construction activities; and default values in CalEEMod that are based on the project's location and land use type. Construction emissions modeling used CalEEMod default assumptions regarding the number and types of heavy duty construction equipment used for the development of various land uses. Construction-related GHG emissions estimates assumed that projected development under the General Plan Update would occur at a constant annual rate through the General Plan Update horizon year of 2040. This annual emissions total was then multiplied by the number of years in the planning horizon of the General Plan Update (21 years) to generate a total construction emissions estimate for development of all the land uses through 2040. For further details regarding modeling inputs and assumptions refer to Appendix C.

Operational Emissions

CalEEMod was used to estimate operation-related emissions of GHG for the following sources: area sources (e.g., landscaping-related), energy use (i.e., electricity, propane, heating oil), water use, and solid waste. Indirect emissions associated with electricity use were estimated using GHG emissions factors from PG&E which is the electricity utility for Tuolumne County. GHG emissions associated with space heating were modeled for future heating oil using data on current conditions from the Tuolumne County Regional Blueprint Greenhouse Gas Study (Tuolumne County 2012:2-3). Propane use was based on default natural gas demand in CalEEMod. GHG emissions associated with the use of fireplaces were also estimated from existing data included in the Tuolumne County Regional Blueprint Greenhouse Gas Study (Tuolumne County 2012:2-3).

Mobile-source emissions were estimated using General Plan Update annual VMT estimates included in the General Plan Update's traffic study and vehicle emissions factors specific to Tuolumne County for the year 2040, generated with CARB's EMFAC 2017 emission software. The project-generated annual VMT estimates were generated from the TCTC Travel Demand Model and were included in the project traffic study (Wood

Rodgers 2016). VMT estimates were generated for the baseline (2015) and target year (2040), based on the projected development under the General Plan Update. (See Appendix D for the complete traffic study.)

THRESHOLDS OF SIGNIFICANCE

Global climate change is inherently a cumulative issue, as the GHG emissions of individual projects cannot be shown to have any material effect on global climate. Thus, the impact of the projected development under the General Plan Update to climate change is addressed only as a cumulative impact.

CEQA Guidelines Section 15064 and relevant portions of Appendix G recommend that a lead agency consider a project's consistency with relevant, adopted plans, and discuss any inconsistencies with applicable regional plans, including plans to reduce GHG emissions. In Appendix G of the State CEQA Guidelines, two questions are provided to help assess if the project would result in a potentially significant impact on climate change. These questions ask whether the project would:

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

In November 2017, CARB released California's 2017 Scoping Plan which serves as the planning document that demonstrates how the state will reach the goals set forth in SB 32 of reducing statewide GHG emissions to 40 percent below 1990 levels by 2030 and the longer-term state emissions reduction goal of 80 percent below 1990 levels by 2050 set forth by EO S-3-05. Chapter 5, "Achieving Success," of the 2017 Scoping Plan recommends several approaches for local plan-level projects to show consistency with state targets. As an overall goal, "CARB recommends statewide targets of no more than six metric tons CO_2e per capita by 2030 and no more than two metric tons CO_2e per capita by 2050" (CARB 2017:99). However, because not all emissions sectors reductions can be achieved by jurisdictions at the local level, CARB includes the following recommendations for demonstrating how local jurisdictions can demonstrate consistency with statewide targets. The following language in the 2017 Scoping Plan is related to local plan-level CEQA analyses (CARB 2017:100):

> CARB advises that local governments also develop community-wide GHG emissions reduction goals necessary to reach 2030 and 2050 climate goals. Emissions inventories and reduction goals should be expressed in mass emissions, per capita emissions, and service population emissions. To do this, local governments can start by developing a community-wide GHG emissions target consistent with the accepted protocols as outlined in OPR's General Plan Guidelines Chapter 8: Climate Change. They can then calculate GHG emissions thresholds by applying the percent reductions necessary to reach 2030 and 2050 climate goals (i.e., 40 percent and 80 percent, respectively) to their community-wide GHG emissions target. Since the statewide per capita targets are based on the statewide GHG emissions inventory that includes all emissions sectors in the state, it is appropriate for local jurisdictions to derive evidence-based local per capita goals based on local emissions sectors and population projections that are consistent with the framework used to develop the statewide per capita targets. The resulting GHG emissions trajectory should show a downward trend consistent with the statewide objectives. The recommendation for a community-wide goal expands upon the reduction of 15 percent from "current" (2005-2008) levels by 2020 as recommended in the 2008 Scoping Plan.

As discussed above, the statewide per capita targets account for all emissions sectors in the state's GHG emissions inventory, statewide population forecasts recently prepared for 2030 and 2050, and all statewide reductions necessary to achieve the 2030 statewide target under SB 32 in all sectors. The per capita targets reported in the Scoping Plan are framed as targets that must be met on a statewide basis; however, this does not mean that the statewide per capita targets must be applied uniformly to every local jurisdiction.

Nevertheless, for this analysis, it has been determined that all emissions sectors included in the 2017 Scoping Plan would be applicable to the General Plan Update. For this analysis, a service population emissions threshold for Tuolumne County has been developed for the planned General Plan horizon year 2040. This threshold is used to analyze whether the General Plan Update would result in a substantial increase in GHG emissions or conflict with local or state plans adopted for the purpose of reducing GHG emissions.

The following discussion summarizes the methodology and equations used to establish a service population GHG efficiency threshold for Tuolumne County for 2040. The 2017 Scoping Plan includes a statewide mass emission target for 2030 and 2050. These statewide mass emission projections for 2030 and 2050 were interpolated to determine a statewide emissions goal for 2040. Using data from the California Department of Finance and Employment Development Department, statewide population and employment forecasts for the year 2040 were used to derive a statewide GHG service population threshold for the year 2040. This statewide emissions goal for 2040 is then divided by the 2040 statewide service population to derive a statewide service population GHG emissions threshold for 2040. Based on this equation, a statewide service population threshold of 3.1 $MTCO_2e$ for the year 2040 was derived. Therefore, based on the anticipated emissions reduction projected in the 2017 Scoping Plan to meet statewide targets, a plan or project that results in no more than 3.1 $MTCO_2e$ per service population by 2040 would not result in a substantial increase in GHGs or conflict with local or state plans adopted for the purpose of reducing GHG emissions. Project-generated mass emissions were divided by the projected 2040 Tuolumne County service population to compare to the project-specific emissions limit. County population increase is presented in the Project Description (Table 2-4) and employment estimates were provided by Tuolumne County from Caltrans's California County-Level Economic Forecast 2017-2050 (Caltrans 2017). See Appendix C for calculations.

This target setting approach is consistent with the California Supreme Court decision in *Center for Biological Diversity v. California Department of Fish and Wildlife and Newhall Land and Farming* (2015) 62 Cal.4th 204, which determined that the approach of assessing a project's consistency with statewide emission reduction goals must include a "reasoned explanation based on substantial evidence" that links the project's emission to the statewide Scoping Plan reduction goals. If the analysis demonstrates that the General Plan Update is consistent with the GHG reduction targets set in SB 32 and demonstrates progress towards the goals in EO S-3-05, the General Plan Update would not result in a substantial increase in GHGs or conflict with local or state plans adopted for the purpose of reducing GHG emissions.

GENERAL PLAN UPDATE POLICIES

The following goals, policies and implementation programs from the General Plan Update are specifically relevant to climate change and GHG emissions:

Transportation Element

- **Policy 4.B.1**: Develop a modern transportation system that incorporates alternative transportation modes into the system design.
- **Policy 4.B.2:** Expand and improve pedestrian sidewalks and facilities focusing on safety, connectivity, and accessibility.
- **Policy 4.B.3:** Expand and improve the bikeways within Tuolumne County, focusing on safety, connectivity, and accessibility.
- **Policy 4.B.4:** Encourage the use of alternative modes of transportation by incorporating public transit, bicycle and pedestrian modes in County transportation planning and by requiring new development to provide adequate pedestrian and bikeway facilities at suitable locations.

- **Policy 4.B.5:** Maintain and expand, where possible and appropriate, the system of non-motorized connections that link neighborhoods to larger roadways, activity centers and nodes, businesses, community services, parks and recreational facilities, and transit stops and stations.

- **Policy 4.B.6:** Actively investigate and seek alternative funding sources for bicycle and pedestrian facilities.

Public Safety Element

- **Policy 9.G.1:** Maintain County fire protection regulations that are consistent with Section 4290 or the equivalent of the California Public Resources Code and other applicable fire protection regulations.

  - **Implementation Program 9.G.a:** Utilize the following documents as reference in formulating County standards and ordinances for fire protection measures:

    - Tuolumne County Multi-Jurisdictional Hazard Mitigation Plan
    - California Public Resources Code, Section 4290
    - Tuolumne County Community Wildfire Protection Plan
    - CAL FIRE Strategic Fire Plan for the Tuolumne/Calaveras Unit
    - California Fire Code Current Edition
    - California Building Code Current Edition
    - Insurance Services Office Publication "Guide for the Determination of Fire Flow"
    - Insurance Services Office Standards
    - Strategic Fire and Resource Protection Planning
    - National Fire Protection Association (NFPA) fire and building safety standards adopted by the County
    - CAL FIRE Fire Hazard Severity Zone Map
    - Highway 108 Strategic Plan

  - **Implementation Program 9.G.b:** Consult with the Tuolumne County Fire Department (TCFD) and CAL FIRE in revising Titles 11, 15, and 16 of the Tuolumne County Ordinance Code in order to determine if the proposed revisions are consistent with Section 4290 of the California Public Resources Code and other applicable fire protection regulations. Such revisions shall be consistent with fire protection regulations in effect at the time of consideration by the Board of Supervisors.

- **Policy 9.G.2:** Require new residential development to have adequate fire protection, which may include design and maintenance features that contribute to the protection of the County from the losses associated with wildland fire. Periodically update the County's fire protection standards to reflect new information and technology concerning fire prevention in wildland areas.

  - **Implementation Program 9.G.c:** Revise the County's development standards as necessary to reflect contemporary fire prevention and protection practices and measures and to determine that needed fire protection infrastructure, including road networks and water systems, are installed and maintained.

- **Policy 9.G.3:** Determine the impact proposed development will have on the provision of fire protection services and maintain the established level of service as outlined in the current *Tuolumne County Fire Department Service Level Stabilization Plan*.

  - **Implementation Program 9.G.d:** Require that a public water system, having adequate fire flow, is available prior to development of land for which a zone change to an urban zoning district is approved. Public water need not be available on-site at the time of zoning, however, financial and other assurances must be provided to the County which will allow such improvements to be installed in a timely manner.

- **Policy 9.G.4:** Require that residential development provide for defensible space around structures.
  - **Implementation Program 9.G.e:** Revise and enforce County fire protection regulations that require residential development to provide defensible space for structural fire protection consistent with Section 4290 of the California Public Resources Code and Section 15.20.060 of the Tuolumne County Ordinance Code.
  - **Implementation Program 9.G.f:** Investigate incentive programs between insurance providers, fire protection agencies, and property owners, whereby financial incentives can be obtained by property owners who implement fire prevention and protection measures through homeowner's insurance reductions or other programs. Such research can be accomplished through contact with legislative offices and the Office of the State Fire Marshal, and review of grant availability lists and fire service technical journals.
  - **Implementation Program 9.G.g:** Encourage insurance companies to determine fire insurance rates based upon evaluation of individual parcels rather than using the CAL FIRE Forest and Resource Assessment Program "Fire Hazard Severity Zone Map," which was not developed for this use.
- **Policy 9.G.5:** Require that street and structural identification are provided to assist in emergency response.
  - **Implementation Program 9.G.h:** Revise and enforce County fire protection regulations to require new development to provide street signing and structural identification necessary to allow prompt response during emergency situations pursuant to Sections 15.20.045 and 12.12.080 of the Tuolumne County Ordinance Code. Strive to maintain street signs on County-maintained roads. Assist residents and communities to replace street signs where necessary on roads that are not County-maintained.
- **Policy 9.H.1:** Establish or redirect existing revenue sources to provide a stable, adequate level of funding for the Tuolumne County Fire Department.
  - **Implementation Program 9.H.a:** Review the County Services Impact Mitigation Fees on a regular basis to evaluate the adequacy of the fire protection component.
  - **Implementation Program 9.H.b:** Investigate and pursue all available and appropriate options for funding of fire protection facilities, equipment and services.
- **Policy 9.H.2:** Enforce the provisions found in Title 15 of the Tuolumne County Ordinance Code and the California Fire Code for built-in fire suppression equipment in all new development in order to improve fire safety and offset the need for increased fire department staffing and equipment.

<u>Air Quality Element</u>

- **Policy 15.B.1**: Create a land use pattern that will encourage people to walk, bicycle or use public transit for a significant number of their daily trips.
  - **Implementation Program 15.B.a**: Encourage pedestrian oriented development to reduce the use of motor vehicles.
  - **Implementation Program 15.B.b**: Establish an incentive program to encourage transit-oriented development, including, where appropriate, exempting such projects from traffic impact mitigation fees.
  - **Implementation Program 15.B.c** Support the development of high density housing, commercial and offices along high priority transit routes.

- **Implementation Program 15.B.d**: Work with Caltrans, transit providers, and property owners to identify park-and-ride sites with convenient access to public transit.

- **Implementation Program 15.B.e** Seek funding for park-and-ride facilities and develop, or support the development of such facilities, within the identified communities, and permit park-and-ride facilities in commercial and industrial zoning districts.

- **Implementation Program 15.B.f**: Create additional, and improve existing, car-sharing and ride-sharing programs and promote them within the region.

- **Implementation Program 15.B.g**: Work with Caltrans and other agencies to establish transportation demand management programs, such as park-and-ride facilities, transit incentives and telecommute centers.

- **Policy 15.B.2:** Develop a modern transportation system that incorporates alternative transportation modes into the system design.

Natural Hazards Element

- **Policy 17.E.1:** Reduce the exposure to risk from wildland fire to an acceptable level by only allowing development in high or very high fire hazard areas if it can be made safe by planning, construction, or other fire safety measures.

  - **Implementation Program 17.E.a**: Utilize the CAL FIRE Forest and Resource Assessment Program "Fire Hazard Severity Zone Map," including revisions thereto, as a basis for determining the significance of fire hazards when reviewing development applications.

  - **Implementation Program 17.E.b**: Recognize that new development, including urban or clustered development, is acceptable in moderate, high and very high fire hazard zones, provided that project design meets California Building and Fire Codes including Wildland-Urban Interface Building Codes. Such developments may be required to provide and maintain additional off-site fire defense improvements.

- **Policy 17.E.2:** Require the maintenance of defensible space setbacks in areas proposed for development if wildland fire hazards exist on adjacent properties.

- **Policy 17.E.3:** Require new development to have adequate fire protection and to include, where necessary, design and maintenance features that contribute to the protection of the County from the losses associated with wildland fire.

  - **Implementation Program 17.E.c**: Require new development to mitigate wildland fire hazards in such a manner that it minimizes the chance of wildland fire originating outside the development from entering the development and minimizes the chance of fire originating within the development escaping to adjoining property and adjacent wildland.

  - **Implementation Program 17.E.d**: Require developers to incorporate fire protection improvements into project designs where determined necessary by the Tuolumne County Fire Department and require maintenance of these improvements. Fuelbreaks, green belts, long-term comprehensive fuel management programs, access to developed water sources, strategic helispots (with water supply), and perimeter road systems can all serve to reduce the fire hazard on project sites as well as adjacent property.

  - **Implementation Program 17.E.e**: Require new development in areas subject to wildland fire to provide safe ingress and egress in accordance with Chapter 11.12 of the Tuolumne County Ordinance Code. Encourage new development that complies with Chapter 11.12 to provide multiple

access routes, especially in very high fire hazard severity zones or where one access route is susceptible to closure by landslide, loss of a bridge or other cause.

- **Implementation Program 17.E.f**: Support the efforts of the Tuolumne County Fire Department to prevent loss of life, property and resources. Refer land development applications which would permit structures in areas subject to wildland fire to the Tuolumne County Fire Department/CAL FIRE for review and identification of measures necessary to mitigate the fire hazard.

- **Implementation Program 17.E.g**: Consult the U.S. Forest Service, National Park Service and other federal land management agencies regarding applications for development on privately owned lands located adjacent to or within these agencies' boundaries to obtain comments regarding the impact of the project on the wildland fire protection mission of that agency.

- **Implementation Program 17.E.h**: Revise and enforce County fire protection regulations such that new development in areas subject to wildland fire provides for clearing adjacent to access roads in order to reduce radiant heat received by vehicles on the roadway and thereby facilitate safe evacuation of residents and response by emergency vehicles in the event of wildland fire.

- **Implementation Program 17.E.i**: Periodically update the County's fire protection standards to reflect new information and technology concerning fire prevention in wildland areas.

- **Implementation Program 17.E.j**: Locate new essential public facilities including, but not limited to, hospitals, health care facilities, emergency shelters, emergency operations centers and emergency communications facilities, outside very high fire hazard severity zones if feasible. If essential public facilities must be located in high or very high fire hazard severity zones, incorporate design, construction or other measures to minimize damage in the event of a wildland fire.

- **Policy 17.E.4:** Promote public awareness of wildland fire hazards present within the County, as well as proper fire prevention and protection practices.

  - **Implementation Program 17.E.k**: Actively seek funding to develop fire prevention public awareness and education programs.

  - **Implementation Program 17.E.l**: Educate residents in forested areas about wildfire hazards and the steps to avoid excessive risk.

- **Policy 17.E.5:** Maintain firefighting assets within the County at necessary levels.

  - **Implementation Program 17.E.m**: Support the operation of a fully-staffed CAL FIRE Columbia Air Attack Base at the Columbia Airport.

  - **Implementation Program 17.E.n**: Continue to make County airports available to facilitate fire suppression aircraft operations.

- **Policy 17.E.6:** Encourage rapid post-fire assessment and rehabilitation of burned lands to limit soil erosion, protect water quality, minimize flooding and restore damaged landscapes.

  - **Implementation Program 17.E.o**: Support the efforts of fire protection organizations and property owners to develop burn area recovery plans that include rapid post-fire assessment and implementation actions that encourage salvage of burned trees and reforestation activities, create resilient and sustainable landscapes and restore functioning ecosystems.

- **Policy 17.E.7:** Protect natural resources from the effects of wildland fire.
  - **Implementation Program 17.E.p**: In the event of major wildland fires that exceed the capability of local fire protection resources to control, implement the Wildland Fire Plan contained in the *Emergency Services Plan for Tuolumne County.*
  - **Implementation Program 17.E.q**: Coordinate revisions of the *Tuolumne County Community Wildfire Protection Plan* and individual community wildfire protection plans with the current version of the CAL FIRE *Strategic Fire Plan for the Tuolumne/Calaveras* Unit to include projects to reduce the wildland fire in the County.
  - **Implementation Program 17.E.r**: Utilize the *Tuolumne County Community Wildfire Protection Plan*, the *Highway 108 Strategic Plan*, the CAL FIRE *Strategic Fire Plan for the Tuolumne/Calaveras Unit* and other adopted fire prevention, protection and response plans to identify the maximum acceptable wildfire size and acceptable initial attack success rate for protection of wildland areas and provide the resources necessary to achieve these standards.
- **Policy 17.E.8:** Require property owners to maintain wildlands in a fire resistant manner consistent with Section 4291 of the Public Resources Code. Assist fire protection agencies in their efforts to enforce Section 4291.
  - **Implementation Program 17.E.s**: Maintain the County's policies concerning development in the Tuolumne County Ordinance Code in the wildland urban interface area to further reduce the risk of life and property loss from future wildfires.
  - **Implementation Program 17.E.t**: Require property owners to remove trees killed by drought, disease, insects and other pests to utilize the timber value and reduce the wildland fire hazard consistent with Section 4291 of the Public Resources Code unless a tree is determined to have significant wildlife habitat value by a qualified biologist.
- **Policy 17.E.9:** Consider effects on cultural resources, wildlife habitat and special status species when developing wildfire prevention, protection and recovery plans.
  - **Implementation Program 17.E.u**: Evaluate the effects on wildlife habitat and special status species when developing wildfire prevention, protection and recovery plans. Incorporate measures to mitigate potentially significant impacts into adopted plans.
  - **Implementation Program 17.E.v**: Incorporate the habitat needs of native wildlife species into wildfire prevention, protection and recovery plans. Utilize plant species native to the area when designing revegetation plans.
  - **Implementation Program 17.E.w**: Evaluate the effects on cultural resources when developing wildfire prevention, protection and recovery plans. Incorporate measures to mitigate potentially significant impacts into adopted plans.
- **Policy 17.E.10:** Identify assets that require protection from wildland fire and prioritize their protection needs.
  - **Implementation Program 17.E.x**: When updating the *Tuolumne County Community Wildlfire Protection Plan* or updating or preparing other community wildfire protection plans, include the following:
    1. A prioritization of physical assets that require protection from wildland fire; and

2. Fire defense strategies that provide fire protection without dependence on air attack and could serve as safety zones for the public or emergency support personnel.

- **Policy 17.E.11:** Encourage resolution of conflicts between wildland fire protection and habitat conservation for wildlife.
  - **Implementation Program 17.E.y**: Coordinate with CAL FIRE, the Tuolumne County Fire Department and the California Department of Fish and Wildlife to identify acceptable levels of wildland fuel reduction in areas conserved for biological resources to mitigate impacts of development.
- **Policy 17.E.12:** Acknowledge that wildland areas provide natural resource values to the citizens of the County, visitors and other persons throughout the state, including watershed resources, timber resources, visual resources, carbon sequestration, wildlife habitat and special status species habitat.

<u>Climate Change Element</u>

- **Policy 18.A.1**: Prepare a Climate Action Plan (CAP), or similar GHG emission reduction plan, that establishes a GHG reduction target consistent with the Senate Bill (SB) 32 goal to reduce statewide GHG emissions to 40 percent below 1990 levels by 2030. The CAP shall identify specific measures to reduce countywide emissions consistent with the established target and will also include adaptation strategies for the County to appropriately adjust to the environmental effects of climate change. Many of the measures in the CAP will overlap with and help implement goals, policies, and implementation programs identified in this General Plan.
  - **Implementation Program 18.A.a**: Include specific GHG emissions reduction measures in the CAP. Examples include, but are not limited to, the following:
    - Incentivize energy efficiency improvements in existing buildings;
    - Require energy audits for major additions to or alterations of existing buildings;
    - Require compliance with CALGreen Tier 1 Green Building standards and Tier 1 Building Energy Efficiency Standards for eligible alterations or additions to existing buildings;
    - Require compliance with CALGreen Tier 1 Green Building standards and Tier 1 standards for all new construction, and phase in Zero Net Energy (ZNE) standards for new construction;
    - Require new or replacement residential water heating systems to be electrically powered and/or alternatively fueled systems;
    - Expand current renewable energy and green energy incentives and update local ordinances;
    - Develop a program to offset project GHG emissions by retrofitting existing income-qualified homes and buildings;
    - Support waste-to-energy programs at landfills;
    - Increase availability and accessibility of transit information;
    - Support alternatives to private vehicle travel for visitors, such as shuttles;
    - Increase the supply of electric vehicle charging stations;
    - Promote telecommuting at office-based businesses;

- Encourage expansion of composting programs;
- Establish a waste diversion goal that exceeds the State's 2020 75 percent target;
- Promote alternatives to open burning of biomass;
- Convert all stationary diesel or gas-powered irrigation pumps to electric pumps;
- Require Tier 4 equipment for all construction activity and forestry/mining operations by 2030;
- Adopt a new water conservation ordinance for commercial and residential land uses limiting outdoor watering;
- Expedite and/or reduce permit fees associated with water conservation installations in existing facilities;
- Require water audits for large new commercial or industrial projects and significant expansions of existing facilities;
- Establish targets and enhanced programs for oak woodland and coniferous forest preservation and mandatory replanting;
- Refine protection guidelines for existing riparian lands to establish a no-net-loss goal;
- Develop a program to require repurposing of usable lumber from trees removed due to land conversion to avoid wood burning;
- Promote the sale and consumption of locally-grown foods and/or products; and
- Establish and local carbon offset program.

- Implementation Program 18.A.b: Include specific adaptation strategies in the CAP. Examples include, but are not limited to the following:
  - Identify critical infrastructure vulnerable to extreme heat events;
  - Develop outreach programs for outdoor workers to prevent heat-related illness;
  - Educate residents on heat-related illness prevention;
  - Encourage installation of cool roof technologies and rooftop gardens;
  - Explore options to incorporate cool pavement technology;
  - Improve parking lot shading and landscaping;
  - Establish an Excessive Heat Emergency Response Plan;
  - Identify locations that are newly at risk or at higher risk for wildland fire hazard;
  - Identify critical infrastructure vulnerable to wildland fire;
  - Evaluate vulnerabilities of water supply systems and networks;

- Consider innovative options to meet future water demand;
- Promote use of rainwater catchment and storage systems;
- Collaborate with agencies to identify future water supplies and explore alternative supply sources; and
- Pursue grant funding for water resource planning projects.

- **Implementation Program 18.A.c**: Consider preparing a CAP that meets the criteria for CEQA Guidelines section 15183.5, which provides for tiering and streamlining opportunities.
- **Implementation Program 18.A.d**: Adopt and begin implementing the CAP prior to 2020.

- **Policy 18.A.2**: Continue to implement, prior to adoption of the CAP, the Tuolumne County Regional Blueprint Greenhouse Gas Study (January 2012) (including any updates) to reduce GHG emissions to 1990 levels by 2020 pursuant to Assembly Bill 32. The 2012 Greenhouse Gas Study will be considered superseded by the CAP once it is adopted.
- **Policy 18.A.3**: Continue to implement the policies and strategies identified in the 2016 Final Regional Transportation Plan, including the Rural Sustainable Strategies.
- **Policy 18.A.4:** Recognize that climate change may affect air quality and water quality creating health and safety hazards.
  - **Implementation Program 18.A.e:** Adopt local policies and programs and seek funding and support efforts by local, regional, State and Federal agencies and others to develop policies and manage programs that allow the County to adapt to extreme climate change effects, such as prolonged drought and flooding.
  - **Implementation Program 18.A.f**: Prepare for potential climate change effects on water resources, such as prolonged drought and flooding, by working with water agencies to implement measures to reduce water consumption, expand water storage capacity, protect water quality, and explore and promote more diverse sources of water.
  - **Implementation Program 18.A.g**: Prepare for potential climate change effects on water resources by working to implement measures to reduce water consumption, expand emergency water storage capacity, protect water quality, and explore and promote more diverse sources of water.
  - **Implementation Program 18.A.h**: Participate in inter-agency and/or inter-jurisdictional meetings and planning activities to identify and periodically reassess regional climate change vulnerabilities.
  - **Implementation Program 18.A.i**: Collaborate with community-based organization partners, such as health care providers, mental health providers and public health advocates, to disseminate climate change health impact information, promote good health, and public preparedness and emergency response.
- **Policy 18.A.5**: Promote energy efficiency and alternative energy while reducing energy demand.
  - **Implementation Program 18.A.j:** Facilitate voluntary energy efficient retrofits in existing structures by connecting home and business-owners with technical and financial assistance, such as Federal, State, and utility rebates, and tax credits, through the County's or Tuolumne County Transportation Council's website.

- **Implementation Program 18.A.k:** Work with Pacific Gas and Electric Company and other electric utility providers to promote voluntary upgrades to energy-efficient technology and products through campaigns targeted at residents and local businesses, ENERGY STAR® appliance change-out programs, and incentives, such as give-a-ways or Federal/State/utility rebates.

- **Implementation Program 18.A.l:** Work with Pacific Gas and Electric Company and other electric utility providers to encourage local businesses and public agencies to install energy conserving technologies, such as occupancy sensors, and implement energy conserving policies, such as "lights out at night."

- **Implementation Program 18.A.m:** Reduce the energy demand of public facilities and conserve electricity through the following: a) retrofitting County owned or operated street, traffic signal, and other outdoor lights with energy efficient light emitting diode (LED) lamps; b) retrofitting heating and cooling systems to optimize efficiency, such as replacing HVAC systems; and c) replacing old appliances and technologies with ENERGY STAR® products. Obtain funding for and install renewable energy technologies on public property.

- **Implementation Program 18.A.n:** Work with Pacific Gas and Electric Company and other electric utility providers to educate residents and businesses about Smart Meters, how to monitor electricity use, and the potential benefits associated with Smart Meters.

- **Implementation Program 18.A.o:** Work with Pacific Gas and Electric Company and other electric utility providers to promote the use of financial incentives, such as Federal/State/utility rebate and, tax credits, for the voluntary installation of "cool roofs" on existing structures, such as ENERGY STAR® roof products, that have a high solar and thermal reflectance.

- **Implementation Program 18.A.p:** Encourage the use of electric lawnmowers and leaf blowers over those powered by gasoline.

- **Implementation Program 18.A.q:** Encourage the incorporation of energy conservation into the design of residential and commercial buildings; such as Tier 1 and Tier 2 of the Green Building Code.

- **Implementation Program 18.A.r:** Encourage the use of deciduous landscape trees near new development to provide shade during the hot summer months and allow solar warming during the cold winter months.

- **Implementation Program 18.A.s:** Support the use of alternative energy vehicles by encouraging new development to install electric charging stations for passenger vehicles, in particular at high use and density areas.

- **Implementation Program 18.A.t:** Support development of electric charging stations for passenger vehicles, in particular near transit stop locations and high use parking areas.

- **Policy 18.A.6**: Encourage the use of solar power and other innovative energy sources as alternatives to more traditional forms of energy.

  - **Implementation Program 18.A.u:** Promote Federal, State, and utility incentives, such as rebates, vouchers, and tax credits, and consider participating in a Property Assessed Clean Energy (PACE) program under AB 811 to provide property owners financing for solar photovoltaic systems.

    Implementation Program 18.A.v: Assist landowners wishing to utilize solar power and other alternatives by offering information on the requirements for their use in building codes.

    Implementation Program 18.A.w: Promote Federal, State, and utility financial incentives, such as rebates, vouchers and tax credits, to facilitate the installation of solar water heaters in homes.

- **Policy 18.A.7**: Encourage reduced consumption of fossil fuel energy by promoting alternative transportation methods and encouraging pedestrian oriented development to reduce the use of motor vehicles. See the Transportation Element and the Community Development and Design Element for a detailed listing of policies and implementation programs.

PROJECT IMPACTS

This section presents a programmatic-level analysis of potential impacts associated with global climate change from development facilitated by implementation of the proposed General Plan Update. Evaluation of environmental impacts associated with the General Plan Update considers the development that would be facilitated by the General Plan Update, in accordance with goals, policies, and implementation programs, to accommodate projected growth in the County. It should be noted that the County's population is projected to grow by 0.6 percent annually over the planning horizon (2040). As discussed in detail in Chapter 2, "Project Description," and the introduction to Chapter 3, this is a relatively low amount of growth.

Global climate change is inherently a cumulative issue, as the GHG emissions of individual projects cannot be shown to have any material effect on global climate. Thus, the impact of the projected development under the General Plan Update to climate change is addressed only as a cumulative impact.

Impact 3.8-1: Generation of GHG Emissions, either Directly or Indirectly

Projected development under the General Plan Update would include construction and operational activities associated with the development of new land uses, both resulting in the generation of GHG emissions. Projected development under the General Plan Update would result in annual GHG emissions of 5.2 $MTCO_2e$ per service population in Tuolumne County by 2040 and would remain above the 2040 statewide target of 3.1 $MTCO_2e$ per service population established for this analysis. As a result, the General Plan Update would result in a considerable increase in GHG emissions and would conflict with the state's 2017 Scoping Plan which was adopted for the purpose of reducing GHG emissions. The General Plan Update includes a number of goals, policies, and implementation programs which would reduce GHG emissions associated new land uses. Policy 18.A.1 in the Climate Change chapter requires the development of a CAP with a target of reducing GHG emissions consistent with statewide targets. However, it is unknown whether the CAP would be fully implemented and, in turn, reduce countywide emissions consistent with state targets. Therefore, this impact would be **significant**.

Projected development under the General Plan Update would result in the development of various new land uses in the County, resulting in an overall net increase in population, housing units, and commercial and industrial square footage. Table 2-6 in the Project Description of this EIR provides a full list of the land use increases that would occur as a result of the General Plan Update. Construction and operational emissions are shown below.

Construction Emissions

Development consistent with the General Plan Update would result in associated construction activities. The development of these land uses would generate GHG emissions from the use of heavy-duty construction equipment, haul truck trips to and from projects being developed, and construction worker commute trips. GHG emissions associated with construction activity would vary depending on the type and size of land uses being developed. Construction-related GHG emissions would be temporary and intermittent in nature for any given project but when considered for the projected development under the General Plan Update, construction emissions could be cumulatively considerable. Table 3.8-1 provides a summary of the total construction-related emissions that would occur as a result of new land uses.

Table 3.8-1 Construction Related GHG Emissions Through 2040

Scenario	$MTCO_2e$
Total Construction Emissions	19,255
Annual Construction Emissions 2019-2040	917

Note: $MTCO_2e$ = metric tons carbon dioxide equivalent per year.

Source: Modeling performed by Ascent Environmental in 2018

Operational Emissions

Projected development under the General Plan Update would include residential, commercial and industrial uses, as well as other development. Activity associated with the operation of these land uses would result in project-generated vehicle trips (i.e., project-generated VMT); area-source emissions from operation of landscape maintenance equipment; energy-source emissions from the consumption of electricity and natural gas; water-source emissions from water use and the conveyance and treatment of wastewater; and waste-source emissions from the transport and disposal of solid waste. GHG emissions associated with each land use would vary based on the activities that would occur and by the size and type of each land use. Table 3.8-2 provides a summary of the total operational GHG emissions at the 2040 horizon year of the General Plan Update.

Table 3.8-2 Operational Greenhouse Gas Emissions at Planning Horizon Year 2040

Category	$MTCO_2e$/year
Area	3,835
Energy Use	11,956
Mobile-Source	35,116
Waste Generation	2,337
Water-Related	1,316
Total Annual Operational Emissions	54,561
Amortized Construction Emissions	917
Total Annual Project Emissions	**55,478**

Notes: Totals may not add due to rounding.

CO_2e = carbon dioxide equivalent; MT = metric tons.

See Appendix C for detailed input parameters and modeling results.

Source: Modeling performed by Ascent Environmental in 2018

As discussed above and shown in Table 3.8-1 and Table 3.8-2, projected development under the General Plan Update would result in construction and operational GHG emissions totaling 55,478 $MTCO_2e$/year. As shown in Table 3.8-3, based on population projections included in Table 2-4 in Chapter 2, "Project Description," an increase of 8,906 new residents by 2040 is projected under the General Plan Update. Based on information provided by Tuolumne County staff, the General Plan Update would result in 1,735 jobs by 2040, resulting in a service population (residents plus employment) for the General Plan Update of 10,641. Based on estimated annual GHG emissions resulting from projected development under the General Plan Update, this would result in annual emissions of 5.2 $MTCO_2e$ per service population in Tuolumne County by 2040, above the 3.1 $MTCO_2e$ per service population target calculated as the threshold of significance for this Recirculated Draft EIR.

Table 3.8-3 General Plan Update - GHG per Service Population (2040)

Category	
Net Increase in County Population by 2040 (Residents)	8,906
Net Increase in County Employment by 2040 (Employees)	1,735
Total Service Population by 2040 (Residents + Employees)	10,641
Total Annual Project GHG Emissions ($MTCO_2e$/year)	55,478
GHG Emissions per Service Population ($MTCO_2e$/year)	5.2
Statewide Service Population Threshold for 2040 ($MTCO_2e$/year)	3.1

Notes: Totals may not add due to rounding; /year = per year; CO_2e = carbon dioxide equivalent; MT = metric tons.

See Appendix C for detailed input parameters and modeling results.

Source: Modeling performed by Ascent Environmental in 2018

Therefore, the General Plan Update would result in a substantial increase in GHG emissions and its GHG emissions trajectory would exceed what is needed to attain the statewide targets established in SB 32 and EO S-3-05. Although, the General Plan Update is estimated to result in an in increase GHG emissions, the General Plan Update also includes a number of policies that would reduce GHG emissions from the various emissions sources as the County continues to grow. The following discussions include the policies which would reduce the GHG emissions from each emissions source.

Mobile Source Emissions

As shown above, mobile source emissions are the largest emissions source associated with projected development under the General Plan Update and would emit an estimated 35,116 $MTCO_2e$/year. Mobile source emissions are associated with vehicle trips from new residents in the County, as well as trips to and from new non-residential land uses projected to be developed under the General Plan Update. As highlighted in the Methods of Analysis section, the General Plan Update includes policies that would specifically reduce mobile source GHG emissions. In the Transportation Element, Policy 4.B.1 through Policy 4.B.6 and associated implementation programs are focused on reducing VMT in the County and the promotion of alternative modes of transportation, such as biking and walking, through the incorporation of bicycle and pedestrian facilities into new development projects. Strategies from these policies include the development of bikeways throughout the County, requirements for pedestrian and other facilities in new development projects, and the promotion of new pedestrian and bicycle facility connections between identified communities in the County.

In the Air Quality Element, Policy 15.B.1 and Policy 15.B.2 focus on the promotion of new land uses that would reduce traffic congestion and VMT associated with future development. This includes prioritizing future development in identified communities in an effort to increase residential densities and encourage trips made by walking and biking. In the Climate Change Element, Policy 18.A.3 directs the continued implementation of the 2016 RTP, while Policy 18.A.7 calls for the reduction of fossil fuel use within the County's transportation system by promoting pedestrian-oriented development. The combination of these policies would serve to address transportation emissions as the County continues to grow during the planning horizon of the General Plan Update.

In addition to the policies included in the General Plan Update which would reduce transportation-related GHG emissions, current state regulations that address transportation-related GHG emissions, including AB 1403 (Clean Car Standards) and CARB's Advance Clear Car Program will also help to reduce transportation-related GHG emissions in the County. Based on information included in the traffic study conducted for this Recirculated Draft EIR (Woods Rodgers 2016), daily VMT in the County in 2015 was 1,829,654, resulting in annual emissions of 324,264 $MTCO_2e$. The projected daily VMT in the County for 2040, as shown in the traffic study and which incorporates projected development under the General Plan Update, would be 2,152,846, but would result in annual emissions of only 233,917 $MTCO_2e$, a reduction of 90,293 $MTCO_2e$.

Although the projected daily VMT in the County would increase over baseline conditions by 2040, the annual emissions associated with this VMT would decrease due to the implementation of the aforementioned state regulations.

Energy Use Emissions Policies

Projected development under the General Plan Update would result in GHG emissions associated with energy use, including indirect emissions from the consumption of electricity as well as the combustion of propane and heating oil. As shown in Table 3.8-2, projected development under the General Plan Update would generate 11,956 $MTCO_2e$/year related to energy use. However, in the Climate Change Element, Policy 18.A.3, Policy 18.A.5, and their associated implementation programs specifically address GHG emissions associated with energy consumption. These policies focus specifically on energy efficiency improvements and the use of renewable energy resources for existing and future land uses in the County.

County Climate Action Plan

The Climate Change Element includes policies to ensure the County remains consistent with the statewide GHG reduction targets. Goal 18.A is to "Reduce Greenhouse Gas (GHG) emissions from community activities and County government facilities and operations within the County to support the state's efforts under Assembly Bill 32 and other state and federal mandates to mitigate the County's GHG emissions impacts." Included under Goal 18.A, Policy 18.A.1 states that the County will:

> Prepare a Climate Action Plan (CAP), or similar GHG emission reduction plan, that establishes a GHG reduction target consistent with the Senate Bill (SB) 32 goal to reduce statewide GHG emissions to 40 percent below 1990 levels by 2030. The CAP shall identify specific measures to reduce countywide emissions consistent with the established target and will also include adaptation strategies for the County to appropriately adjust to the environmental effects of climate change.

The implementation programs under Policy 18.A.1 also provide a list of potential measures that would be included in the CAP and ensure the County endeavors to reduce countywide emissions consistent with the established statewide targets. Although a CAP or similar GHG reduction plan has not been developed yet, once adopted, the CAP will implement goals, policies, and implementation programs (identified through the CAP development process) that would put the County on track to meeting established GHG reduction targets. Additionally, in 2012, the County adopted the Tuolumne County Regional Blueprint Greenhouse Gas Study, which includes various GHG mitigation policies which are discussed in Section 3.8.2, "Regulatory Setting." The information and suggested strategies included the Tuolumne County Regional Blueprint Greenhouse Gas Study would also help to inform the policies included in the County's forthcoming CAP or similar GHG reduction plan.

Conclusion

As discussed above and highlighted in the Methods of Analysis section, the General Plan Update includes a number of policies which would reduce GHG emissions associated with transportation activity and energy use as a result of new land uses. However, it is unknown whether the policies would reduce GHG emissions to the degree needed to achieve the statewide 3.1 $MTCO_2e$ service population threshold by 2040. Therefore, projected development under the General Plan Update could result in an increase in GHG emissions and could conflict with state's 2017 Scoping Plan, which was adopted for the purpose of reducing GHG emissions.

Implementation of the General Plan Update and associated policies may result in some GHG reductions, although it is unknown whether these policies would achieve reductions consistent with statewide targets. Policy 18.A.1 of the General Plan Update requires the preparation of a CAP, or similar GHG reduction plan. As specified in the Policy 18.A.1, the CAP would include a set of measures, which when fully implemented, would ensure that countywide emissions would be reduced consistent with the SB 32 goals to reduce statewide GHG emissions to 40 percent below 1990 levels by 2030. If achieved, this would demonstrate efforts towards achieving the statewide reduction target for 2050. However, as of writing this document, a CAP or similar GHG reduction plan has not been adopted by the County and cannot therefore be relied upon

to attain the 2040 GHG targets. Projected development under the General Plan Update would result in a substantial increase in GHG emissions. This impact would be **significant**.

Mitigation Measures

Mitigation Measure 3.8-1 adds additional measures to these implementation programs for the County to consider including in its CAP.

Mitigation Measure 3.8-1: Revise Implementation Program 18.A.a

The County will revise Implementation Program 18.A.a as follows to include the following GHG emissions reduction measures in the list of potential measures to include in the CAP.

- **Implementation Program 18.A.a**: Include specific GHG emissions reduction measures in the CAP. Examples include:
  - Foster land use intensity near, along with connectivity to, retail and employment centers and services to reduce vehicle miles travelled and increase the efficiency of delivery services through adoption and implementation of smart growth principles and policies;
  - Improve the local jobs/housing balance to reduce vehicle miles travelled;
  - Incentivize energy efficiency improvements in existing buildings;
  - Require energy audits for major additions to or alterations of existing buildings;
  - Require compliance with CALGreen Tier 1 Green Building standards and Tier 1 Building Energy Efficiency Standards for eligible alterations or additions to existing buildings;
  - Require compliance with CALGreen Tier 1 Green Building standards and Tier 1 standards for all new construction, and phase in Zero Net Energy (ZNE) standards for new construction;
  - Require new or replacement residential water heating systems to be electrically powered and/or alternatively fueled systems;
  - Expand current renewable energy and green energy incentives and update local ordinances;
  - Develop a program to offset project GHG emissions by retrofitting existing income-qualified homes and buildings;
  - Support waste-to-energy programs at landfills;
  - Increase availability and accessibility of transit information;
  - Support alternatives to private vehicle travel for visitors, such as shuttles;
  - Increase the supply of electric vehicle charging stations;
  - Promote telecommuting at office-based businesses;
  - Encourage expansion of composting programs;
  - Establish a waste diversion goal that exceeds the State's 2020 75 percent target;
  - Identify potential sites for renewable energy facilities and transmission lines;
  - Promote recycling to reduce waste and energy consumption;

- Identify appropriate sites for waste recovery facilities to minimize escape of GHGs;
- Convert all stationary diesel or gas-powered irrigation pumps to electric pumps;
- Require Tier 4 equipment for all construction activity and forestry/mining operations by 2030;
- Adopt a new water conservation ordinance for commercial and residential land uses limiting outdoor watering;
- Expedite and/or reduce permit fees associated with water conservation installations in existing facilities;
- Require water audits for large new commercial or industrial projects and significant expansions of existing facilities;
- Conserve natural lands for carbon sequestration;
- Establish targets and enhanced programs for oak woodland and coniferous forest preservation and mandatory replanting;
- Refine protection guidelines for existing riparian lands to establish a no-net-loss goal;
- Develop a program to require repurposing of usable lumber from trees removed due to land conversion to avoid wood burning;
- Promote the sale and consumption of locally-grown foods and/or products;
- Establish and local carbon offset program;
- Identify lands suitable for wind power generation;
- Promote alternatives to open burning of biomass, including exploring the feasibility of the development of a biomass power plant in the County;
- Provide economic incentives and creative financing for renewable energy projects;
- Pursue incentives, grants, and creative financing for projects that improve energy efficiency;
- Prepare and implement a comprehensive plan to improve energy efficiency of municipal facilities;
- Develop a program to promote forest health and enhance the carbon sequestration potential of forests in the County.
- Establish a coordinated, creative public outreach campaign, including publicizing the importance of reducing GHG emissions and steps community members can take to reduce their individual impacts;
- Install renewable energy systems at municipal facilities including solar photovoltaic systems on municipal roofs and solar water heating;
- Ensure that County staff receive appropriate training and support to implement objectives and policies to reduce GHG emissions included in the County CAP;
- Evaluate the feasibility and effectiveness of using Community Choice Aggregation as a model for providing renewable energy to meet the community's electricity needs, including potential partnerships with other jurisdictions;
- Identify and remove or otherwise address barriers to renewable energy production including revisions to the County's building and development codes, design guidelines, and zoning ordinances;

- Provide information, marketing, training and technical assistance regarding green building practices and renewable energy systems;
- Identify and remove regulatory or procedural barriers to implementing green building practices within the County, such as updating codes, guidelines, and zoning, and ensure that all plan review and building inspection staff are trained in green building materials, practices, and techniques; and
- Establish menus and check-lists for developers and contractors to ensure water-efficient infrastructure and technology are used in new construction, including low-flow toilets and shower heads, moisture-sensing irrigation, and other such advances.

Significance after Mitigation

Because the County is rural with varied topography, and because 77 percent of the total land in the County is under the jurisdiction of a state or federal agency, certain types of GHG reduction measures, such as those tailored to high-density urban areas, are not appropriate or feasible in Tuolumne County.

The GHG reduction measures included in Mitigation Measure 3.8-1 are appropriately suited to the rural characteristics of the County and would more effectively achieve GHG reductions. The General Plan Update is the culmination of many years of planning and discussion during which the County carefully weighed competing interests in the County to create a proposed set of policies and programs that meet the County's particular objectives.

As discussed above, the General Plan Update includes a number of policies that would help to reduce GHG emissions associated with projected development under the General Plan Update. These include policies which would reduce GHG emissions from the two largest emissions sources, energy use and mobile source emissions. Additionally, Policy 18.A.1 of the General Plan Update requires the preparation of a CAP or similar GHG reduction plan that sets targets in line with those mandated by the state. The implementation of a County CAP would serve to further reduce emissions associated with the General Plan Update and serve as the best tool for reducing GHG emissions in the County. Mitigation Measure 3.8-1 includes a more extensive list of GHG reduction measures which are appropriate for the characteristics of the County and would serve to further reduce GHG emissions as part of the County's CAP. However, as mentioned above, as of writing this Recirculated Draft EIR, a CAP has not been adopted or implemented and estimated GHG emissions associated with the General Plan Update would result in a substantial increase in GHG emissions and, therefore could potentially conflict with state's 2017 Scoping Plan. For these reasons, this impact would be **significant and unavoidable**.

Impact 3.8-2: Conflict with Any Applicable Plan, Policy, or Regulation for Reducing the Emission of GHGs

Projected development under the General Plan Update would result in GHG emissions associated with temporary construction activity and long-term operational activity. The General Plan Update includes a series of policies which would reduce GHG emissions. These policies have been shown to be consistent the GHG reduction goals in the 2016 RTP and would not conflict with this plan. However, CARB's 2017 Scoping Plan states that plan-level projects should demonstrate reductions in GHG emissions levels consistent with statewide targets. The General Plan Update does include policies that would help to reduce overall GHG emissions in the County to support achievement of the statewide GHG reduction targets. However, it is unknown at this time what level of GHG reductions these General Plan policies would achieve. Projected development under the General Plan would result in annual GHG emissions of 5.2 $MTCO_2e$ per service population in Tuolumne County by 2040 and would remain above the 2040 statewide threshold of 3.1 $MTCO_2e$ per service population which demonstrates how plan-level projects would remain consistent with the statewide reduction targets. Therefore, implementation of the General Plan Update would potentially conflict with an applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of GHGs, specifically the 2017 Scoping Plan. This impact would be **significant.**

This impact discusses the consistency of the General Plan Update with available GHG-reduction plans. The analysis qualitatively compares the policies of the adopted local and statewide plans to the policies of the General Plan Update.

Tuolumne County Regional Blueprint Greenhouse Gas Study

In 2012, Tuolumne County prepared the *Tuolumne County Regional Blueprint Greenhouse Gas Study* which includes a countywide GHG inventory for the year 2010. In 2010, Tuolumne County, including the incorporated City of Sonora, generated 782,846 $MTCO_2e$. The emissions inventory included emissions in activity sectors including transportation, residential (energy consumption), non-residential (energy consumption), off-road vehicles and equipment, agriculture and forestry, wastewater, and solid waste sectors. The study also included suggested GHG reduction strategies which the County could implement to reduce GHG emissions to achieve the targets established in AB 32. Although these strategies provide guidance on how the County can achieve GHG reductions consistent with AB 32 and the County has adopted the document, the Blueprint GHG Study was not adopted with the specific intent of reducing GHG emissions and does not require specific measures. Rather, it "identifies policies and measures Tuolumne County and land use project applicants can implement to reduce GHG emissions consistent with AB 32 and prepare for the potential impacts of climate change" (Tuolumne County 2012:2-3). However, the strategies and information included in the study did inform the goals, objectives, and policies included in the 2016 RTP, which is discussed in more detail below.

Tuolumne County Transportation Council 2016 Regional Transportation Plan

In 2016, TCTC adopted its most recent RTP which includes the Rural Sustainable Strategy chapter intended to reduce transportation-related GHG emissions in the County. The goals, objectives and policies in this RTP focus primarily on reducing VMT in the County through various strategies. Goal 1 and its associated objective and policies focus on implementing the list of Rural Sustainable Strategies within the 2016 RTP, which include supporting active transportation modes, the design and development of streets for all roadway users, improvements in traffic operations to relieve traffic congestion, promoting the use of public transit, and supporting planning for the use of ZEVs. Goal 2 and its associated objective and policies focus on prioritizing transportation infrastructure investments within the identified communities in the County so as to encourage the use of active transportation modes within these communities. Goal 2 also encourages prioritizing new development within the identified communities to avoid rural sprawl and reduce increases in VMT in the future. Goal 3 and its associated objective and policies focus on protecting air quality and reducing transportation related GHG emissions in the County through reductions in VMT, countywide.

Consistent with the goal, objectives, and strategies in the 2016 RTP, Goal 4B and its associated policies in the Transportation Element focuses on the promotion of active transportation modes through the development of pedestrian and bicycle facilities in the County, particularly as part of new development projects. Policy 15.B.1 and Policy 15.B.2 in the Air Quality Element focus on incorporating active transportation facilities into the County's transportation system, as well as prioritizing development within identified communities to encourage trips made by biking and walking. Policy 15.B.2 also promotes other strategies to reduce GHG emissions including the use of public transit and rideshare and car-share programs. Finally, Policy 18.A.3 in the Climate Change Element specifically directs the continued implementation of the 2016 RTP, including the Rural Sustainable Strategies, as means to reduce transportation-related GHG emissions. As shown, many of the policies in the General Plan Update demonstrate a consistency with the goals, objectives, and policies in the 2016 RTP. The policies in General Plan Update support overall implementation of the 2016 RTP and further support the RTP's goals of reducing transportation related GHG emissions in the County.

CARB 2017 Scoping Plan

The 2017 Scoping Plan recommends that plan-level projects demonstrate GHG reductions consistent with the targets set forth in SB 32 and result in a GHG emissions trajectory that shows a downward trend consistent with the statewide 2050 reduction target. The 2017 Scoping Plan also suggests that local jurisdictions can demonstrate consistency with the statewide GHG reduction targets through per capita or per service population efficiency thresholds for plan-level projects. As shown in Table 3.8-3 and discussed in

Impact 3.8-1, projected development under the General Plan Update would result in annual GHG emissions of 5.2 $MTCO_2e$ per service population in Tuolumne County by 2040. Based on emissions reduction projections in the 2017 Scoping Plan, plan-level projects would have to be at or below the service population threshold of 3.1 $MTCO_2e$ by 2040 to demonstrate consistency with the statewide GHG reduction targets. Therefore, the projected development under General Plan Update would generate GHG emissions per service population above the statewide threshold of 3.1 $MTCO_2e$ and would conflict with state's 2017 Scoping Plan.

Nonetheless, as discussed under Impact 3.8-1, the General Plan Update also includes various policies which address GHG emissions in the County. Specifically, the Air Quality, Transportation, and Climate Change Elements include policies which address GHG emissions primarily from the transportation and energy sector. More specifically, Policy 18.A.1 of the General Plan Update requires the preparation of a CAP, or similar GHG reduction plan, which would be developed to ensure that countywide emissions would be reduced consistent statewide GHG emissions reduction targets. The implementation of Policy 18.A.1 and the subsequent implementation of the County's CAP would help the County demonstrate GHG reductions consistent with the statewide targets. However, considering that the CAP, as proposed in the General Plan Update, has not yet been developed and cannot be shown to demonstrate that the County would reduce GHG emission consistent with the statewide targets, projected development under the General Plan Update would result in GHG emissions inconsistent with statewide reduction targets and potentially conflict with an applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of GHGs.

Summary

As discussed above, the General Plan Update includes policies in the Transportation, Air Quality, and Climate Change Elements that specifically address transportation-related GHG emissions in the County. These policies are shown to be consistent with similar policies included in the 2016 RTP for the purpose of reducing transportation-related GHG emissions. As a result, the General Plan Update would not conflict with the GHG reduction goals in the in the 2016 RTP. The General Plan Update also includes policies that address overall GHG emissions in the County to support achievement of the statewide GHG reduction targets. However, it is unknown at this time what level of GHG reductions these General Plan Update policies would achieve. Based on available information, projected development under the General Plan Update would result in annual GHG emissions of 5.2 $MTCO_2e$ per service population in Tuolumne County by 2040 and would remain above the 2040 statewide threshold of 3.1 $MTCO_2e$ per service population/year, which would demonstrate how plan-level projects would remain consistent with the statewide reduction targets. Therefore, this impact would be **significant.**

Mitigation Measures

No mitigation is available.

Significance after Mitigation

Policy 18.A.1 of the General Plan Update requires the preparation of a CAP, or similar GHG reduction plan. The implementation of a County CAP, as part of the General Plan Update, that includes GHG reduction goals consistent with the statewide targets would ensure the County's General Plan would not conflict an applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of GHGs. Beyond the implementation of a CAP consistent with statewide reduction targets, there are no available mitigation measures for this impact. The County should ensure that Policy 18.A.1 of the General Plan Update is implemented to achieve this goal. However, at the time of writing this Draft EIR, a CAP has not yet been adopted or implemented and estimated GHG emissions levels associated with General Plan Update would conflict with an applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of GHGs, specifically the 2017 Scoping Plan. For these reasons and because no mitigation is available, this impact would be **significant and unavoidable**.

Supplemental Discussion: Impacts of Climate Change On the Project (for informational purposes only/ analysis not required by CEQA)

Climate change is expected to result in a variety of effects that would influence conditions in the County. These effects include increased temperatures, increased wildfire risk, and changes to timing and intensity of precipitation, resulting in increased stormwater runoff. However, numerous state and County programs and policies are in place to protect the County against, and respond to, wildland fire such that growth under the General Plan Update would not substantially change any climate change impacts on the County.

The discussion below is presented for informational purposes only. Under *California Building Industry Association v. Bay Area Air Quality Management District* (2015) 62 Cal.4th 369, CEQA generally does not require agencies to analyze the impact of existing environmental conditions on a project's future users or residents except where the project risks exacerbating those existing environmental hazards or conditions. By presenting this discussion, the County is not asserting that this is a potentially significant environmental impact. The County has also not adopted a significance threshold that is related to this impact.

Human-induced increases in GHG concentrations in the atmosphere have led to increased global average temperatures (climate change) through the intensification of the greenhouse effect, and associated changes in local, regional, and global average climatic conditions.

Although there is strong scientific consensus that global climate change is occurring and is influenced by human activity, there is less certainty as to the timing, severity, and potential consequences of the climate phenomena. Scientists have identified several ways in which global climate change could alter the physical environment in California (CNRA 2012, California Department of Water Resources 2006, IPCC 2007). These include:

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

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

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

Of the above-mentioned effects, increases in wildfire severity are of most concern in Tuolumne County, with the greatest potential to result in impacts to existing or new development, and is therefore the focus of this analysis. For additional discussion of wildfire hazards, refer to Impact 3.9-2 in Section 3.9, "Hazards and Hazardous Materials."

According to Cal-Adapt, Tuolumne County is projected to experience a temperature increase of 4.3°F by 2050 and 6°F by 2099 under the RCP 4.5 scenario and an increase of 5.5°F by 2050 and 9.1°F by 2099 under the RCP 8.5 scenario. According to the Cal-Adapt Wildfire tool, Tuolumne County is projected to experience an increase of 5,651 annual mean acres burned by wildfire by 2050 and 9,155 annual mean acres burned by wildfire by 2099 under the RCP 4.5 scenario. Under the RCP 8.5 scenario, Tuolumne County is projected to experience an increase of 8,473 annual mean acres burned by wildfire by 2050 and 21,506 annual mean acres burned by wildfire by 2099.

In 2004, the Tuolumne County Community Wildfire Protection Plan was prepared to identify risks to citizens and firefighters, assess wildland areas, identify key policy issues and develop recommendations for changes/additions to public policy, and establish the fiscal policy to monitor wildland fire protection in the County. In addition, the Tuolumne-Calaveras Unit Pre-Fire Management Plan was prepared in 2005. These plans identify high-risk areas and set pre-fire management priorities to prevent and manage fires in high fire prone areas. Policy 17.E.7 would ensure that updates and revisions to these plans are coordinated with the appropriate agencies (i.e., California Department of Forestry and Fire Protection [CAL FIRE]) and to continue to use these plans to manage fire risk.

The Tuolumne County Multi-Jurisdictional Hazard Mitigation Plan also includes policies and mitigation actions specific to addressing wildfires and serving to assess and reduce the impact of wildfires in the County. Mitigation Action 5.1F requires the County to develop a wildfire evacuation plan to include sheltering in place, at both the Curtis Creek and Sullivan Creek campuses and Columbia Union Elementary and Belleview Elementary. Mitigation Action 5.1B encourages improvements to GIS mapping and tracking efforts by gathering and maintaining relevant GIS data layers and imagery to better assess wildfire risk. Objective 5.2 and the associated mitigation actions encourages collaboration between all fire agencies and stakeholders in the County to improve resiliency to wildfires in the County.

In addition to preparing and maintaining fire prevention plans, the General Plan Update has numerous policies in place to combat fire risk by recognizing the importance of good site planning, requiring new development to incorporate fire mitigation features, establish funding requirements and promoting education about fire prevention, and continued coordination with fire protection agencies. Policy 17.E.1 and its associated implementation programs only allow development in high or very high fire hazard areas if safe planning and fire measures are implemented such as requiring that project design meets California Building and Fire Codes including Wildland-Urban Interface Building Codes, as well as providing additional off-site fire defense improvements. Further, Implementation Program 17.E.j requires that public facilities (e.g., hospitals, emergency shelters, health care facilities) be located outside very high fire hazard zones or they must incorporate design, construction or other measures to minimize damage in the event of a wildland fire.

In addition to good site planning, numerous policies require new development to incorporate appropriate design features to reduce fire risk. Policy 17.E.3 and its implementation programs require development to incorporate fuel breaks, green belts, long-term comprehensive fuel management programs, access to developed water sources, and safe access including multiple access routes. Further, the implementation of these measures would be reviewed and approved by the Tuolumne County Fire Department to ensure they would mitigate wildland fire hazards in such a manner that minimizes the chance of wildland fire originating outside the development from entering the development and minimizes the chance of fire originating within the development escaping to adjoining property and adjacent wildland. Implementation Programs 17.E.h and 17.E.l also require that the County update its fire protection regulations on a regular basis to keep them up to current requirements and recommendations from relevant agencies (e.g., CAL FIRE. U.S. Forest Service). In addition, Policy 17.E.8 requires property owners to maintain wildlands in a fire-resistant manner, assisting fire protection agencies in their efforts to enforce fires. Implementation Program 17.E.t requires property owners to remove trees killed by drought, disease, insects and other pests to utilize the timber value and reduce the wildland fire hazard. Policy 17.E.4 ensures that funding sources would be sought to develop fire prevention awareness and educational programs. Tuolumne County was recently awarded a federal disaster relief grant to plan and build two resilience centers. The centers would provide education seminars, emergency response services, and potentially provide space for emergency personnel and citizens to use during emergencies.

Finally, numerous policies are in place that would require the continued coordination between the County fire protection agencies. Policy 17.E.6 promotes the continued support from the County to develop burn area recovery plans that include rapid post-fire assessment and implementation actions that encourage salvage of burned trees and reforestation activities, create resilient and sustainable landscapes, and restore functioning ecosystems. In addition, Policy 17.E.5 requires the County to maintain firefighting assets within the County at necessary levels by supporting the CAL FIRE and making County airports available.

The Safety Element also includes several policies to decrease the risk of impact of wildfires on new development. California Public Resources Code Section 4290 requires local jurisdictions in California to adopt General Plan Safety elements that meet Section 4290 standards or, in lieu of this regiment, local jurisdictions must adopt local fire safe ordinances addressing issues including emergency access, signing and building numbering, private water supply reserves for emergency fire use, and vegetation modification. The County currently has local fire safe ordinances in place in Titles 11, 15, and 16 of the Tuolumne County Ordinance Code. The California Board of Forestry and Fire Protection certified the County's fire safe ordinances in 2016. Policy 9.G.1 and its implementation programs requires the County to maintain these fire protection regulations and ensure they are consistent with California Public Resources Code Section 4290. Policy 9.G.2 requires new residential development to have adequate fire protection and requires the County to periodically update the County's fire protection standards to reflect new information and technology concerning fire prevention in wildland areas. Policy 9.G.3 requires the County to assess the impacts new development would have on the provision of fire protection services and use the *Tuolumne County Fire Department Service Level Stabilization Plan* to ensure that the established level of service in the plan is met. Policy 9.G.4 and its implementation programs require that new residential development in the County include defensible space around structures. Policy 9.G.5 and its implementation program require that street and structural identification are provided to assist in emergency response. Policy 9.H.1 directs the County to establish or redirect existing revenue sources to the Tuolumne County Fire Department to ensure a stable, adequate level of funding. Policy 9.H.2 requires all new development to include built-in fire suppression equipment pursuant to the provisions found in Title 15 of the Tuolumne County Ordinance Code and the California Fire Code.

Considering the number of policies included in the General Plan Update, the County's local fire safe ordinances in lieu of Section 4290, the policies included in Tuolumne County Multi-Jurisdictional Hazard Mitigation Plan, and the extensive pre-fire planning that Tuolumne County has and continues to participate in, adequate policies and programs are in place that would ensure the County has the ability to prepare for fire events and respond adequately when they do occur. In addition, the proposed land use pattern of the General Plan Update is focused on development in the identified communities. These factors, in combination with the numerous requirements in place to reduce fire risk at new development, indicate that Tuolumne County would be prepared, even as fire hazards become more intense or severe.

In conclusion, the proposed General Plan Update will not exacerbate existing environmental hazards or conditions.

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3.9 HAZARDS AND HAZARDOUS MATERIALS

This section analyzes the potential impacts of projected development under the General Plan Update associated with exposure to hazards and hazardous materials. Impacts relating to hazardous materials use or development on contaminated sites, transportation of hazardous materials, exposure to wildland fire hazards and airport safety hazards are addressed. Geological and hydrological hazards are described in Sections 3.7, "Geology," and 3.10, "Hydrology and Water Quality," of this Recirculated Draft Environmental Impact Report (EIR), respectively.

Several commenters on the 2015 Draft EIR expressed concerns related to wildfire. Comments also indicated that development near Jones Mill could create potentially hazardous conditions.

3.9.1 Environmental Setting

HAZARDOUS MATERIALS

Use, Storage, and Handling of Hazardous Materials

Numerous federal, state, and local regulations regarding use, storage, transportation, handling, processing and disposal of hazardous materials and waste have been adopted since the passage of the federal Resource Conservation and Recovery Act (RCRA) of 1976. The goal of RCRA is to ensure adequate tracking of hazardous materials from generation to proper disposal. California Fire Code (CFC) Chapter 50, which augments RCRA, provides the primary regulatory guidelines used to govern the storage and use of hazardous materials. The CFC also serves as the principal enforcement document from which corresponding violations are written.

Hazardous substances include both hazardous wastes and hazardous materials. In general, a material or waste is classified as hazardous if it is one of more than 700 chemicals specifically listed in the California Code of Regulations (CCR); if it contains one of these chemicals; or if it is reactive, ignitable, corrosive, or toxic. Because of their potential threat to public health and the environment, hazardous substances are closely regulated by federal, state, and local laws that focus on controlling their production, handling, storage, transportation, and disposal.

Federal and state environmental laws provide that all property owners be required to pay for cleanup, when necessary, of contamination by hazardous materials on or originating from their land. Because of the potential liability, purchasers or developers of commercial, industrial, or agricultural property should perform environmental assessments before development or purchase. In addition to being liable for cleanup, the owner can be responsible for toxic effects on human health, and measures should be taken to avoid exposing people to hazardous materials.

Household Products

By far the most common hazardous materials are those found or used in the home. Waste oil is a common hazardous material that is often improperly disposed of and can contaminate surface water through runoff. Other household hazardous wastes (used paint, pesticides, cleaning products and other chemicals) are common and often improperly stored in garages and homes. On February 11, 1992, Tuolumne County adopted the Household Hazardous Waste Element of the Tuolumne County Integrated Waste Management Plan to reduce the amount of household hazardous waste generated within Tuolumne County through reuse and recycling, to divert household hazardous waste from landfills, to promote alternatives to toxic household products, and to educate the public regarding household hazardous waste management. As part of compliance with this plan, the County operates recyclable household hazardous waste collection at the Cal Sierra Transfer Station in East Sonora and the Groveland Transfer Station in Groveland and collection events

for non-recyclable household hazardous waste, organized by the Solid Waste Division of the Community Resources Agency, to remove household hazardous wastes from the waste stream. The Solid Waste Division also operates a household hazardous waste collection facility at the former Jamestown Mine. This facility is open by appointment, 1 day per month.

Commercial and Industrial Uses

Users of hazardous materials include commercial manufacturing, petroleum exploration, industrial fabrication, biotechnology, and agribusinesses. Potentially hazardous materials used by businesses may include petroleum-based fuels, chlorinated solvents, acrylic coatings, corrosive or caustic additives, and to a lesser extent, chemical fertilizers, pesticides and herbicides. The majority of current users of hazardous materials include gas stations and other automotive service-related business, utilities, agribusinesses, and other commercial and industrial uses.

Businesses handling more than specified reportable quantities of any hazardous material are required to disclose certain information to the County Environmental Health Division via a hazardous materials business plan required pursuant to the Health and Safety Code. Risk Management Plans (RMPs) are required to be developed by certain businesses that handle more than a threshold quantity of certain regulated “acutely hazardous” substances (primarily toxic gases and pesticides) under the California Accidental Release Prevention (Cal ARP) program. The purpose of the Cal ARP program is to prevent the accidental releases of regulated substances.

Hazardous Materials Transportation

Major access routes to Tuolumne County include State Routes (SRs) 49, 108, and 120. Tuolumne County is served by the Sierra Railroad, which operates between Standard in Tuolumne County and Oakdale in Stanislaus County, where it connects to the Southern Pacific and Santa Fe Railroads. The Sierra Railroad has 49 miles of track that has been in operation since 1897. The Sierra Railroad is vital to the local economy, providing local industry with access to distant markets. Additionally, the railroad provides historical excursions and scenic opportunities. Despite the importance of the Sierra Railroad, the condition of the track has been in decline since 1980 when freight usage decreased significantly. Modern capacity freight cars are not able to access lumber mills and passenger train excursions have been curtailed, limiting access to Sonora, due to safety reasons.

Both the U.S. Environmental Protection Agency (EPA) and the U.S. Department of Transportation (DOT) regulate the overall transportation of hazardous waste and material, including transport via highway and rail. EPA administers permitting, tracking, reporting, and operations requirements established by the RCRA. DOT regulates the transportation of hazardous materials through implementation of the Hazardous Materials Transportation Act. This Act administers container design and labeling and driver training requirements. These established regulations are intended to track and manage the safe interstate transportation of hazardous materials and waste.

Transportation of hazardous materials on highways falls under federal legislation; however, authority is delegated to various state and local agencies that are focused on specific aspects of hazardous materials and transportation. The Hazardous Waste Control Act establishes the California Department of Health Services (DHS) as the lead agency in charge of the implementation of the RCRA program. State and local agencies such as the California Highway Patrol (CHP), California Department of Transportation (Caltrans), and the City and County Fire Departments are responsible for the enforcement of state and federal regulations and responding to hazardous materials transporting emergencies. The CHP establishes state and federal hazardous material truck routes and has lead responsibility over hazardous material spills on state highways.

Soil Contamination

Regulatory agencies such as EPA, the California Department of Toxic Substance Control (DTSC), and the California Department of Environmental Health Hazard Assessment set forth guidelines that list at what point concentrations of certain contaminants pose a risk to human health. EPA combines current toxicity

values of contaminants with exposure factors to estimate the maximum concentration of a contaminant that can be in environmental media before it is a risk to human health. These concentrations set forth by EPA are termed Preliminary Remediation Goals (PRGs) for various pollutants in soil, air, and tap water. PRG concentrations can be used to screen pollutants in environmental media, trigger further investigation, and provide an initial cleanup goal. PRGs for soil contamination have been developed for industrial sites and residential sites. Residential PRGs are more conservative and take into account the possibility of the contaminated environmental media coming into contact with sensitive receptor sites such as nurseries and schools. PRGs consider exposure to pollutants by means of ingestion, dermal contact, and inhalation, but do not consider impacts to groundwater.

Groundwater Contamination

Both EPA and DHS regulate the concentration of various chemicals in drinking water. The DHS thresholds are generally stricter than the EPA thresholds. Primary maximum contaminant levels (MCLs) are established for a number of chemical and radioactive contaminants (Title 22, Division 4, Chapter 15, CCR). They are often used by regulatory agencies to determine cleanup standards when groundwater is affected with contaminants.

Hazardous Materials Release Sites

Hazardous materials are routinely used, stored, and transported by businesses (including industrial and commercial/retail businesses), public and private institutions (such as educational facilities and hospitals), and households. For a variety of possible reasons (e.g., lack of awareness, accidental occurrences, intentional actions, and historical business practices that pre-date current regulatory standards), there are sites in the plan area where hazardous wastes were released to soil or groundwater during storage, use, transfer, and disposal. These include sites that were historically contaminated but have been remediated and sites that are known or believed to be contaminated that are currently being characterized or cleaned up. Releases can be localized, or may migrate and contaminate nearby areas.

The State Water Resources Control Board (SWRCB) regulates spills, leaks, investigation, and cleanup sites and maintains an online database, GeoTracker, to provide access to environmental data. The GeoTracker database tracks regulatory data about leaking underground storage tank (LUST) sites, fuel pipelines, and public drinking water supplies and presents it in a geographic information system format. GeoTracker contains 119 records for Tuolumne County, exclusive of the City of Sonora. The database indicates that there are 20 permitted underground storage tanks, 18 cleanup or disposal sites, and 80 LUST cleanup sites, most of which have been fully remediated. The majority of the open cases are associated with gas stations or other automotive service related uses, mini-markets, warehouses, or industrial sites. These open cases are mainly located in the larger communities of Columbia, Tuolumne, and Groveland. However, a few are located away from identified communities along SR 120 and SR 108 (SWRCB 2018).

DTSC also maintains a list of cleanup sites and hazardous waste permitted facilities on its EnviroStor database. The EnviroStor database has 17 records for the unincorporated area of Tuolumne County, three of which are active. One of these sites, located on SR 108 in Cold Springs, is currently undergoing corrective action. Soil on the site was found to contain excess soluble lead, copper, and antimony and constituents above hazardous waste levels from use as a logging and disposal site (DTSC 2018).

Other Sites of Potential Concern

In addition to the sites listed on databases maintained by regulatory agencies, there is potential for hazardous conditions throughout the County. Historical land uses, such as mines and lumber mills could contain residual chemicals that have not yet been documented. In addition, these sites often pose physical hazards due to weathered infrastructure and open shafts.

Asbestos

Asbestos is a highly friable (easily crumbled) material often found in older buildings (typically pre-1979), typically used as insulation in walls or ceilings. It was formerly popular as an insulating material; however, it can

pose a health risk when very small particles become airborne. In conformance with the Clean Air Act, EPA established the National Emissions Standards for Hazardous Air Pollutants (NESHAP) to protect the public. Under NESHAP, the Toxic Substances Control Act banned most spray-applied surfacing materials that contain asbestos beginning in 1973, as well as fireproofing or insulation for decorative purposes since 1978.

Asbestos exposure is a human respiratory hazard when the asbestos becomes friable because inhalation of airborne fibers is the primary mode of asbestos entry into the body. Asbestos-related health problems include lung cancer and asbestosis. Asbestos-containing building materials are considered hazardous by the California Division of Occupational Safety and Health (Cal/OSHA) when bulk samples contain more than 0.1 percent asbestos by weight. Asbestos can be evaluated only by sampling, performed by a certified technician, followed by laboratory analysis. These materials must be handled by a qualified contractor.

Lead-Based Paint

Prior to the enactment of federal regulations limiting their use in the late 1970s, lead-based paint (LBP) was often used in residential construction. Lead is a highly toxic metal that was used for many years in products found in and around homes. Lead may cause a range of health effects, from behavioral problems and learning disabilities, to seizures and death. The primary source of lead exposure in residences is deteriorating LBP. Lead dust can form when LBP is dry scraped, dry sanded, or heated. Dust also forms when painted surfaces bump or rub together. LBP that is in good condition is usually not a hazard. Regulations for LBP are contained in the Lead-Based Paint Elimination Final Rule 24 Code of Federal Regulations (CFR) 33, governed by the U.S. Department of Housing and Urban Development, requires sellers and lessors to disclose known LBP and LBP hazards to perspective purchasers and lessees. Additionally, all LBP abatement activities must comply with Cal/OSHA, federal Occupational Safety and Health Administration (OSHA), and DHS requirements. Only LBP trained and certified abatement personnel are allowed to perform abatement activities. All LBP removed from structures must be hauled and disposed of by a transportation company licensed to transport this type of material. In addition, the lead contaminated material must be taken to a landfill or receiving facility licensed to accept the waste.

WILDFIRE HAZARDS

The California Department of Forestry and Fire Protection (CAL FIRE) is responsible for identifying the governmental agencies responsible for preventing and suppressing fires in all areas of the state. Within Tuolumne County, areas outside of the Stanislaus National Forest, Yosemite National Park, the City of Sonora, and the unincorporated community of Tuolumne are state responsibility and CAL FIRE is responsible for wildland fire protection. Tuolumne County Fire Department has 13 fire stations throughout the County. Impacts related to the provision of fire protection services are addressed in Section 3.14, “Public Services.”

Wildfire outbreaks occur routinely during Tuolumne County’s dry season. Determination of wildland fire hazards is based on three major factors: fuel loading, weather conditions, and topography. In Tuolumne County, damaging fires are predominantly caused by vehicle and equipment use and arson. The local topography contains rugged terrain, including steep canyons, many of which are inaccessible. Severe fire weather occurs on 35 percent of the days during fire season in the majority of the County. This, combined with the terrain and high hazard fuels, increases the probability that large damaging fires will occur (Tuolumne County 2012). Wildland fires can wreak havoc on homes, recreational and commercial values, destroy fragile habitat, and threaten rare and endangered species. Wildland fires also damage scenic and aesthetic values in rural areas.

The area of Tuolumne County with the greatest wildland fire hazard, based on fuels, weather, and topography, is on the east side of the SR 49 corridor. However, almost every community in Tuolumne County has been threatened by wildfires. Exhibit 3.9-1 shows the Fire Hazard Severity Zones in Tuolumne County, as designated by CAL FIRE.

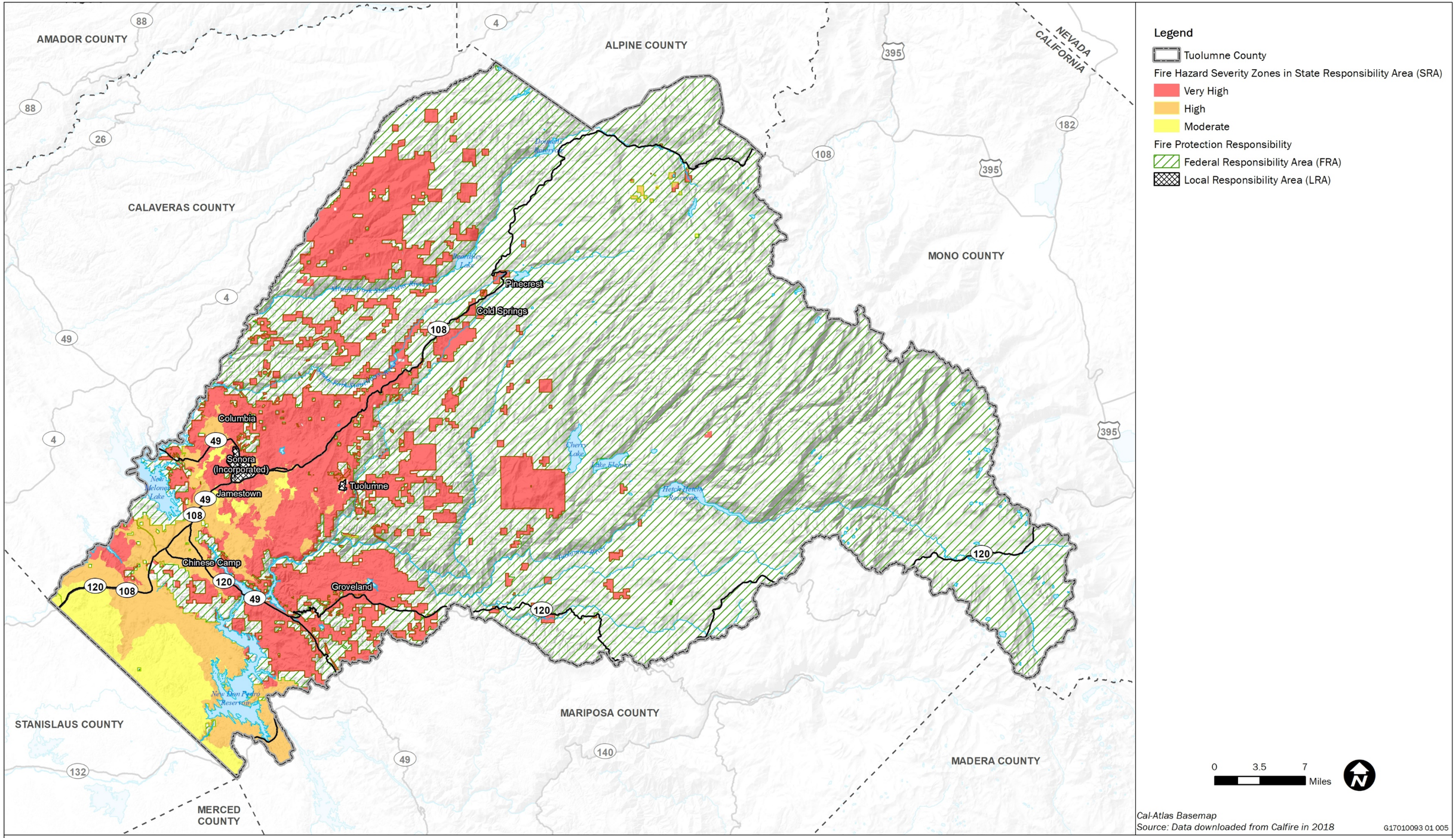


Exhibit 3.9-1

Tuolumne County Fire Hazard Severity Zones

Through the National Fire Plan, a list of "Communities at Risk" was developed to identify communities at risk from the threat of wildland fire. The list does not include the name of every small community or subdivision. Some of the communities listed cover broad geographic areas that encompass what the general public would assume to include several separate communities. Other communities were named based on their old town-site name, not the current subdivision or current commonly known name. Thirty-two communities within Tuolumne County are listed in the Strategic Fire Plan for the Tuolumne/Calaveras Unit as communities at risk from wildland fires. These communities include Columbia, East Sonora, Jamestown, Tuolumne, and Twain Harte, as listed below (CAL FIRE 2015).

- Arastraville
- Chinese Camp
- Confidence
- East Sonora
- Jamestown
- Lake Don Pedro
- Mi Wuk Village
- Phoenix Lake – Cedar Ridge
- Sonora
- Stent
- Tuttletown
- Buck Meadows
- Cold Springs
- Cow Creek
- Groveland –Big Oak Flat
- Jupiter
- Long Barn
- Moccasin
- Sierra Village
- Soulsbyville
- Tuolumne
- Twain Harte
- Bumble Bee
- Columbia
- Dardanelle
- Harden Flat
- Kennedy Meadow
- Mather
- Mono Village
- Smith Station
- Standard
- Tuolumne Rancheria

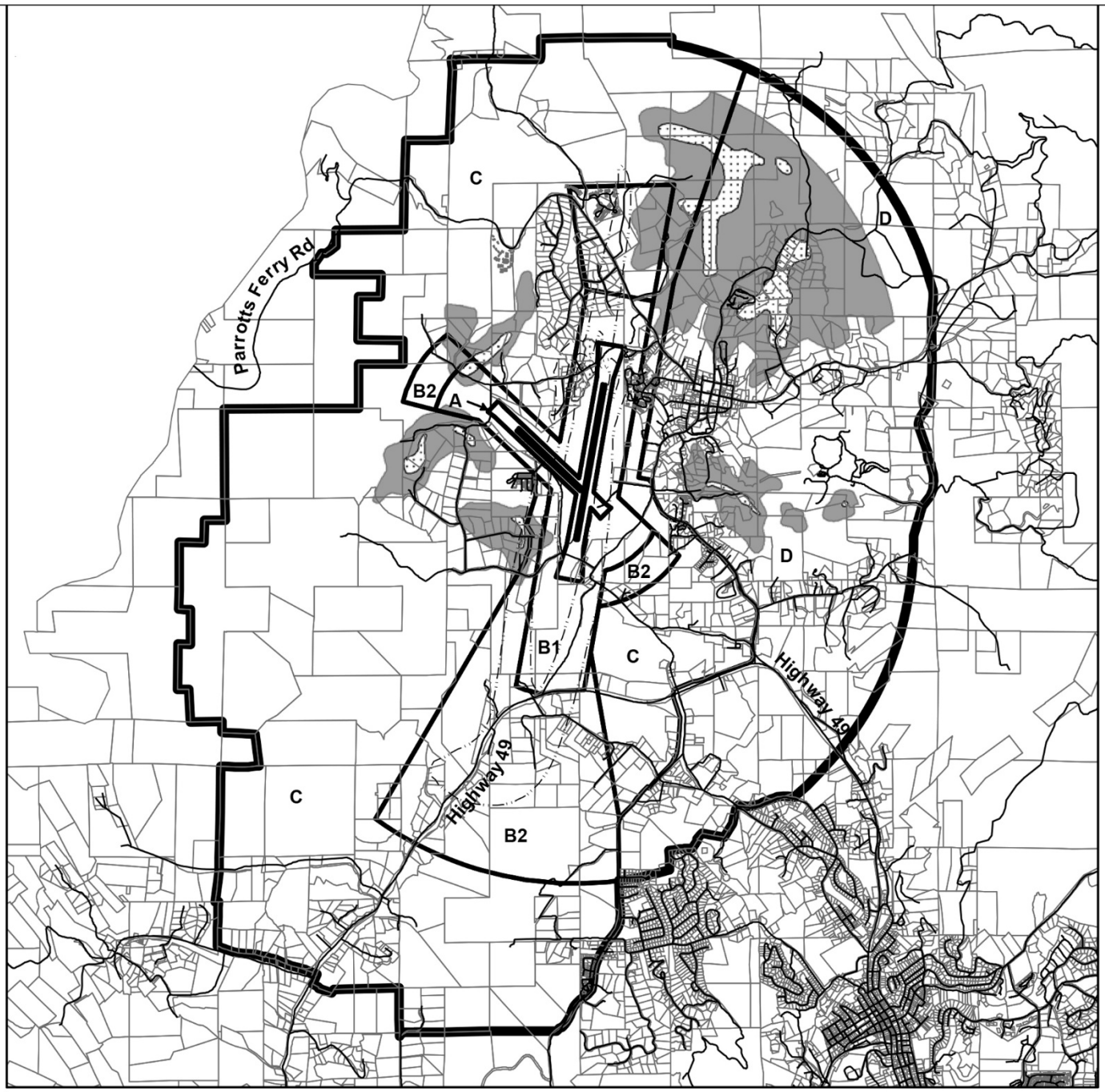
AIRPORT SAFETY HAZARDS

Two airports are located in Tuolumne County, Columbia Airport and Pine Mountain Lake Airport. The Federal Aviation Administration requires runway protection zones and height limits on structures near airports to reduce risks to the public. In addition, the Tuolumne County Airport Land Use Compatibility Plan (ALUCP) (Tuolumne County ALUC 2003) designates safety zones for the areas surrounding the two airports. The ALUCP promotes compatibility between the airports in Tuolumne County and the land uses that surround them. The ALUCP is limited to roughly a 2- to 3-mile vicinity around the two airports. The Land Use Compatibility Plans for Columbia Airport and Pine Mountain Lake Airport are shown in Exhibits 3.9-2 and 3.9-3. Land uses prohibited by the ALUCP zones are described in Table 3.9-1.

Table 3.9-1 Airport Land Use Compatibility Zones

Zone	Location	Prohibited Uses
A	Runway Protection Zone or Within Building Restriction Line	All structures except ones required by aeronautical function Assemblages of people Objects exceeding FAR Par 77 height limits Aboveground bulk storage of hazardous materials Hazards to flight
B1	Approach/Departure Zone and Adjacent to Runway	Children's schools, day care centers, libraries Hospitals, nursing homes Highly noise-sensitive uses (e.g., outdoor theaters) Above ground bulk storage of hazardous materials Hazards to flight
B2	Extended Approach/Departure Zone	
C	Common Traffic Pattern	Children's schools, day care centers, libraries Hospitals, nursing homes Hazards to flight
D	Other Airport Environs	Hazards to flight

Source: Tuolumne County ALUC 2003



A	Runway Protection Zone
B1	Approach - Departure Zone
B2	Extended Approach - Departure Zone
C	Common Traffic Pattern Zone
D	Other Airport Environs

Critical Height Zone Overlay

Height Caution Zone Overlay

Noise Impact Zones CNEL 55, 60, & 65 dBa

Runway

Roads

Source: Tuolumne County Ordinance Code, Chapter 18.24

X17010093 01 001

Exhibit 3.9-2 **Columbia Airport Land Use Compatibility Plan**

A Runway Protection Zone

B1 Approach - Departure Zone

B2 Extended Approach - Departure Zone

C Common Traffic Pattern Zone

D Other Airport Environs

Critical Height Zone Overlay

Height Caution Zone Overlay

Noise Impact Zones CNEL 55, 60, & 65 dBa

Runway

Roads

Source: Tuolumne County Ordinance Code, Chapter 18.24

X17010093 01 002

Exhibit 3.9-3 **Pine Mountain Lake Airport Land Use Compatibility Plan**

3.9.2 Regulatory Setting

FEDERAL

Toxic Substances Control Act

The 1976 Toxic Substances Control Act regulates the manufacturing, inventory, and disposition of industrial chemicals, including hazardous materials. The Model Accreditation Plan, adopted under Title II of the Act, requires that all persons who inspect for asbestos-containing material (ACM) or design or conduct response actions with respect to friable asbestos obtain accreditation by completing a prescribed training course and passing an exam. Section 403 of the Toxic Substances Control Act establishes standards for LBP hazards in paint, dust, and soil.

Resource Conservation and Recovery Act

RCRA (42 U.S. Code [USC] 6901 et seq.) is the law under which EPA regulates hazardous waste from the time the waste is generated until its final disposal ("cradle to grave"). EPA has authorized DTSC to enforce hazardous waste laws and regulations in California. Under RCRA, DTSC has the authority to implement permitting, inspection, compliance, and corrective action programs to ensure that people who manage hazardous waste follow state and federal requirements. Generators must ensure that their wastes are disposed of properly, and legal requirements dictate the disposal requirements for many waste streams (e.g., banning many types of hazardous wastes from landfills).

Superfund Amendments and Reauthorization Act

The Superfund Amendments and Reauthorization Act (SARA) of 1986 (Public Law 99-499; USC Title 42, Chapter 116), also known as SARA Title III or the Emergency Planning and Community Right-to-Know Act (EPCRA) of 1986, imposes hazardous materials planning requirements to help protect local communities in the event of accidental release.

EPCRA requires states and local emergency planning groups to develop community emergency response plans for protection from a list of extremely hazardous substances (40 CFR 355 Appendix A). In California, EPCRA is implemented through the Cal ARP program.

Hazardous Materials Transportation

DOT regulates transport of hazardous materials between states and is responsible for protecting the public from dangers associated with such transport. The federal hazardous materials transportation law, 49 USC 5101 et seq. (formerly the Hazardous Materials Transportation Act 49 USC 1801 et seq.) is the basic statute regulating transport of hazardous materials in the United States. Hazardous materials regulations are enforced by the Federal Highway Administration, the Federal Railroad Administration, and the Federal Aviation Administration.

Comprehensive Environmental Response, Compensation, and Liability Act

Brownfield sites are areas with actual or perceived contamination and that may have potential for redevelopment or reuse. Brownfields are often former industrial facilities that were once the source of jobs and economic benefits to the community, but lie abandoned due to fears about contamination and potential liability. The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), commonly known as Superfund, was enacted by Congress on December 11, 1980. This law created a tax on the chemical and petroleum industries and provided broad Federal authority to respond directly to releases or threatened releases of hazardous substances that may endanger public health or the environment. Over 5 years, $1.6 billion was collected and the tax went into a fund for cleaning up abandoned or uncontrolled hazardous waste sites. CERCLA was amended in January of 2002 with passage of the Small Business Liability Relief and Brownfields Revitalization Act. This Act provides some relief for small businesses from liability under CERCLA. It authorizes $200 million per fiscal year through 2006 to provide financial assistance for brownfield revitalization. CERCLA also facilitated a revision of the National Contingency Plan,

which provides the guidelines and procedures needed to respond to releases and threatened releases of hazardous substances, pollutants, or contaminants. The plan also established the generation of EPA's National Priorities List, a list of all the sites with known releases or threatened releases of hazardous substances, pollutants, or contaminants throughout the United States. According to the National Priorities List database, there are no Superfund sites within Tuolumne County (EPA 2018).

National Emissions Standards for Hazardous Air Pollutants

The asbestos regulations under NESHAP control work practices during the demolition and renovation of institutional, commercial, or industrial structures. Following identification of friable asbestos, OSHA requires that asbestos trained and certified abatement personnel perform asbestos abatement and all ACM removed from on-site structures shall be hauled to a licensed receiving facility and disposed of under proper manifest by a transportation company certified to handle asbestos.

Clean Water Act

The U.S. Environmental Protection Agency (EPA) is the federal agency primarily responsible for water quality management. The CWA establishes the basic structure for regulating discharges of pollutants into "waters of the United States." The Act specifies a variety of regulatory and non-regulatory tools to sharply reduce direct pollutant discharges into waterways, finance municipal wastewater treatment facilities, and manage polluted runoff. Some of these tools include:

Section 311 details the Spill Prevention and Countermeasure Control (SPCC) rule, which requires facilities to prepare and maintain a SPCC plan. A facility falls under federal jurisdiction and the SPCC rule if it has an aggregate aboveground oil storage capacity greater than 1,320 U.S. gallons or a completely buried storage capacity greater than 42,000 U.S. gallons and there is a reasonable expectation of an oil discharge into or upon navigable waters of the U.S. or adjoining shorelines. A SPCC plan describes oil handling operations, spill prevention practices, discharge or drainage controls, and the personnel, equipment, and resources at a facility that are used to prevent oil spills from reaching navigable waters or adjoining shorelines.

STATE

California Accidental Release Prevention Program

Cal ARP (CCR Title 19, Division 2, Chapter 4.5) covers certain businesses that store or handle more than a specified volume of regulated substances at their facilities. The Cal ARP program regulations became effective on January 1, 1997, and include the provisions of the federal Accidental Release Prevention program (Title 40, CFR Part 68), with certain additions specific to the state pursuant to Health and Safety Code Section 25531 et seq. The list of regulated substances is found in 19 CCR Section 2770.5 of the Cal ARP program regulations. Businesses that use a regulated substance above the noted threshold quantity must implement an accidental release prevention program, and some may be required to complete RMPs. An RMP is a detailed engineering analysis of the potential accident factors present at a business and the mitigation measures that can be implemented to reduce this accident potential. The purpose of an RMP is to decrease the risk of an off-site release of a regulated substance that might harm the surrounding environment and community. An RMP includes the following components: safety information, hazard review, operating procedures, training, maintenance, compliance audits, and incident investigation. The RMP must consider the proximity to sensitive populations located in schools, residential areas, general acute care hospitals, long-term health care facilities, and child day-care facilities, as well as external events such as seismic activity.

California Government Code Section 65962.5

California Government Code Section 65962.5 requires DTSC to compile and maintain lists of potentially contaminated sites located throughout the State of California. This "Cortese List" includes hazardous waste and substance sites from DTSC's database, LUST sites from the SWRCB's database, solid waste disposal sites with waste constituents above hazardous waste levels outside of the waste management unit, Cease

and Desist Orders and Cleanup and Abatement Orders concerning hazardous wastes, and hazardous waste facilities subject to corrective action pursuant to Section 25187.5 of the Health and Safety Code.

There are no sites in unincorporated Tuolumne County on DTSC's database of hazardous waste and substance sites, and there are no solid waste disposal sites in the County with waste constituents above hazardous waste levels outside of the waste management unit. There are six Cease and Desist Orders and Cleanup and Abatement Orders in the unincorporated County area, but none are apparently concerning hazardous waste. As described above, there are several records of LUST sites in the County (DTSC 2018).

Hazardous Waste Control Act

These regulations list more than 800 materials that may be hazardous and establish criteria for identifying, packaging, and disposing of such waste. Under the Hazardous Waste Control Act, Health and Safety Code Section 25100 et seq. and Title 26 of the CCR, the generator of hazardous waste must complete a manifest that accompanies the waste from generator to transporter to the ultimate disposal location. Copies of the manifest must be filed with DTSC.

Hazardous Materials Release Response Plans and Inventory Law

The Hazardous Materials Release Response Plans and Inventory Law, Health and Safety Code Section 25500 et seq., aims to minimize the potential for accidents involving hazardous materials and to facilitate an appropriate response to possible hazardous materials emergencies. The law requires businesses that use hazardous materials to provide inventories of those materials to designated emergency response agencies, to illustrate on a diagram where the materials are stored on site, to prepare an emergency response plan, and to train employees to use the materials safely.

Transport of Hazardous Materials and Hazardous Materials Emergency Response Plan

The State of California has adopted DOT regulations for the movement of hazardous materials originating within the state and passing through the state. State regulations are contained in Title 26 of the CCR. State agencies with primary responsibility for enforcing state regulations and responding to hazardous materials transportation emergencies are the CHP and Caltrans. Together, these agencies determine container types used and license hazardous waste haulers to transport hazardous waste on public roads.

The State of California has developed an emergency response plan to coordinate emergency services provided by federal, state, and local governments and private agencies. Response to hazardous materials incidents is one part of the plan. The plan is managed by the California Office of Emergency Services, which coordinates the responses of other agencies in the area.

Worker and Workplace Hazardous Materials Safety

Cal/OSHA is responsible for developing and enforcing workplace safety standards and assuring worker safety in the handling and use of hazardous materials. Among other requirements, Cal/OSHA obligates many businesses to prepare Injury and Illness Prevention Plans and Chemical Hygiene Plans. The Hazard Communication Standard requires that workers are informed of the hazards associated with the materials they handle. For example, manufacturers are to appropriately label containers, material safety data sheets are to be available in the workplace, and employers are to properly train workers.

California State Aeronautics Act

At the state level, Caltrans's Division of Aeronautics administers Federal Aviation Administration regulations. The division issues permits for hospital heliports and public-use airports, reviews potential and future school sites proposed within 2 miles of an airport and authorizes helicopter landing sites at or near schools. In addition, it administers noise regulation and land use planning laws, which regulate the operational activities and provides for the integration of aviation planning on a regional basis.

CAL FIRE Regulations

Title 14 of the CCR establishes regulations for CAL FIRE in areas where CAL FIRE is responsible for wildfire protection. These regulations constitute the basic wildland fire protection standards of the California Board of Forestry and Fire Protection. They have been prepared and adopted for the purpose of establishing minimum wildfire protection standards in conjunction with building, construction, and development in state recreation areas. Additionally, Title 14 sets forth the minimum standards for emergency access, fuel modification, setback, signage, and water supply.

Emergency Services Act

Under the Emergency Services Act, Government Code Section 8550 et seq., the state developed an emergency response plan to coordinate emergency services provided by federal, state, and local agencies. Rapid response to incidents involving hazardous materials or hazardous waste is an important part of the plan, which is administered by the California Office of Emergency Services. The office coordinates the responses of other agencies, including EPA, the CHP, regional water quality control boards, air quality management districts, and county disaster response offices.

International Building Code

In January of 2008, California officially switched from the Uniform Building Code to the International Building Code. The International Building Code specifies construction standards to be used in urban interface and wildland areas where there is an elevated threat of fire.

Government Code Section 66474.02

Before approving a tentative map (or a parcel map where a tentative map is not required) for an area located in a State Responsibility Area or a very high fire hazard severity zone, the County Board of Supervisors must find that: the design and location of each lot in the subdivision, and the subdivision as a whole, are consistent with any applicable regulations adopted by CAL FIRE pursuant to Public Resources Code Sections 4290 and 4291; structural fire protection and suppression services will be provided to the subdivision by a county, city, special district, or other entity organized solely to provide fire protection services, or CAL FIRE; and ingress and egress meets the road standards for fire equipment access adopted pursuant to Public Resources Code Section 4290 and any applicable local ordinance.

2010 Strategic Fire Plan for California

The 2010 Strategic California Fire Plan is the state's road map for reducing the risk of wildfire. By emphasizing fire prevention, the Fire Plan seeks to reduce firefighting costs and property losses, increase firefighter safety, and to contribute to ecosystem health.

LOCAL

Certified Unified Program Agency

Pursuant to Senate Bill 1082 (1993), the State of California adopted regulations to consolidate six hazardous materials management programs under a single, local agency, known as the Certified Unified Program Agency. In addition to conducting annual facility inspections, the Hazardous Materials Program is involved with hazardous materials emergency response, investigation of the illegal disposal of hazardous waste, public complaints, and storm water illicit discharge inspections. In January 1997, the Tuolumne County Environmental Health Division was designated as the Certified Unified Program Agency by the Secretary of the California Environmental Protection Agency for Tuolumne County. Accordingly, it is the Environmental Health Division's responsibility to prevent public health hazards in the community and to ensure the safety of water and food. The Environmental Health Division coordinates activities with federal, state, and regional agencies when planning programs that deal with the control of toxic materials, housing conditions, nuisance complaints, protection of food and water supply, public bathing areas, and sewage and solid waste.

Tuolumne County Multi-Jurisdictional Hazard Mitigation Plan

Implementation of the *Tuolumne County Multi-Jurisdictional Hazard Mitigation Plan* (HMP) (2018) is a coordinated effort between Tuolumne County, the City of Sonora, the Tuolumne Utilities District, the Sonora Union High School District, the Groveland Community Services District, Twain Harte Community Services District, Mi-Wuk Sugar Pine Fire Protection District, Belleview Elementary School District, Big Oak Flat-Groveland Unified School District, Jamestown Sanitary District, Columbia Fire Protection District, Columbia Union School District, Curtis Creek School District, Jamestown Elementary School District, Sonora Elementary School District, Summerville Elementary School District, Summerville Union High School District, Twain Harte Long Barn School District, and the Tuolumne Band of Me-Wuk Indians to effectively deal with natural catastrophes that affect the County. The HMP addresses risks associated with numerous hazards, including wildfire, earthquake, flooding, sinkholes, and extreme weather.

Tuolumne County Emergency Operations Plan

The Tuolumne County Emergency Operations Plan delineates the County's procedures and policies in response to a significant disaster, including extreme weather, flood or dam failure, earthquakes, hazardous materials, terrorism or civil disturbance, transportation accidents, and wildland fires. The Emergency Services Plan assists with emergency response through:

- establishing emergency response policy;
- identifying authorities and assigns responsibilities for planning and response activities;
- identifying the scope of potential hazards;
- identifying other jurisdictions and organizations to coordinate planning with;
- determining emergency organization structure;
- establishing policies for providing emergency information to the public;
- outlining preplanned response actions, describes the resources available to support response activities;
- outlining actions to return County operations to normal;
- guiding area governments through recovery;
- establishing responsibilities within the County for the maintenance of the overall emergency preparedness program;
- outlining the process for ordering and rendering mutual aid; and
- facilitating the continuity of governments.

County 4290 In Lieu Regulations

California Public Resources Code Section 4290 requires local jurisdictions in California to adopt General Plan Safety elements that meet Section 4290 standards or, in lieu of this regiment, local jurisdictions must adopt local fire safe ordinances addressing issues including emergency access, signing and building numbering, private water supply reserves for emergency fire use, and vegetation modification. The County currently has local fire safe ordinances in place in Titles 11, 15, and 16 of the Tuolumne County Ordinance Code. The California Board of Forestry and Fire Protection certified the County's fire safe ordinances in 2016.

Tuolumne County General Plan

The 1996 General Plan includes policies related to wildland fires, emergency services, and hazardous materials in the Safety Element. As the proposed project would update the 1996 General Plan, this document will be discussed in the context of the update within the impact analysis. The Public Safety Element contains goals, policies, and implementation programs address hazards and hazardous materials. Specific General Plan Update policies related to hazardous materials, airports, and wildfire are identified below under Section 3.9.3, "Impact Analysis."

3.9.3 Impact Analysis

METHODS OF ANALYSIS

The analysis of impacts associated with hazards and hazardous materials is based on available information, including a review of databases containing information on hazardous materials sites. The analysis assumes that future and existing development within the plan area would comply with all applicable laws, regulations, design standards, and plans.

THRESHOLDS OF SIGNIFICANCE

For the purpose of this analysis, a significant impact would occur if physical changes from projected development under the General Plan Update would result in the following conditions, listed in Appendix G of the CEQA Guidelines, without providing a mechanism to address potential site-specific impacts:

- create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials;
- create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment;
- emit hazardous emissions or handle hazardous or acutely hazardous materials, substances or waste within one-quarter mile of an existing or proposed school;
- be located on a site included on a list of hazardous material sites compiled pursuant to Government Code Section 65962.5 and, as a result, would create a significant hazard to the public or the environment;
- result in a safety hazard for people residing or working in the project area, if the project is located within an airport land use plan or in the vicinity of a private airstrip;
- impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan; or
- expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands.

GENERAL PLAN UPDATE POLICIES

The following policies and implementation programs from the General Plan Update are applicable to the evaluation of effects related to hazardous materials, airport compatibility, and wildfire:

<u>Community Development and Design Element</u>

- **Policy 1.B.1:** Protect existing land uses from the infringement of and impacts associated with incompatible land uses.

- **Implementation Program 1.B.b**: Designate, where possible, land around existing residential neighborhoods for uses that are compatible with residences. Designate areas for new urban residential development away from existing incompatible land uses, such as agriculture, mining, industry, solid waste facilities, airports and sewage treatment facilities.

- **Implementation Program 1.B.c**: Separate new urban residential development from land uses that potentially conflict with housing, such as agriculture, mining, industry, airports and sewage treatment facilities.

- **Policy 1.B.2:** Protect public facilities from the infringement of incompatible land uses.

  - **Implementation Program 1.B.e:** Designate land around the County's airports for uses that are consistent with the Tuolumne County Airport Land Use Compatibility Plan and airport master plans.

- **Policy 1.E.4:** Maintain development standards for housing projects that reflect and consider natural and cultural features, noise exposure of residents, fire hazard, circulation, access and the relationship of the development to surrounding land uses. These requirements determine residential densities and patterns which may result in a density that is less than the maximum specified by General Plan designations.

<u>Transportation Element</u>

- **Policy 4.C.7:** Support the use of public transit during emergency evacuations by coordinating efforts through the Emergency Operations Plan.

- **Policy 4.F.1:** Plan for future airport operations, considering possible expansion of airport operations, services and the proximity of adjacent land uses.

  - **Implementation Program 4.F.a:** Implement and periodically update the Columbia Airport Master Plan in order to update operational and safety procedures, reflect State and Federal mandates, better utilize Airport property and recommend land use compatibility standards for land surrounding the Airport.

  - **Implementation Program 4.F.b:** Implement and periodically update the Pine Mountain Lake Airport Master Plan to guide the development of the Pine Mountain Lake Airport. The master plan should reflect desired operational and safety procedures, State and Federal mandates, and the internal needs of the Airport.

- **Policy 4.F.2:** Encourage development in the vicinity of County airports that would not cause land use conflicts, hazards to aviation or hazards to the public.

  - **Implementation Program 4.F.d:** Require future County-owned, public-use airport facilities and surrounding land use zones to be master planned prior to operation in order to establish safe operation of the airport.

  - **Implementation Program 4.F.e:** Review General Plan Amendments, Zone Changes, and development applications within the referral area of a County airport for consistency with the Airport Land Use Compatibility Plan in order to continue safe operation of the airports.

<u>Public Safety Element</u>

- **Policy 9.A.1:** Actively involve fire protection agencies within Tuolumne County in land use planning decisions.

  - **Implementation Program 9.A.a:** Assess the effects of land development applications on fire protection capability during the review of applications. The assessment should incorporate

comments from all affected fire protection agencies, not just those with jurisdiction over the project site because wildland fire originating on the site could cross jurisdictional boundaries. Appropriate measures should be formulated and implemented to reduce the safety concerns and fire hazards which could result from approval of the application. Recommendations should specify the source of funding for implementation and maintenance of identified fire protection measures.

- **Implementation Program 9.A.b:** Actively involve all fire agencies, including local fire agencies, within the County when considering revisions to County fire protection regulations which may affect the districts.

- **Policy 9.A.2:** Encourage all fire protection agencies (Federal, State, and local) within the County to maintain communication with each other and with the Office of Emergency Services and the Community Resources Agency to promote an integrated approach to fire protection planning.

  - **Implementation Program 9.A.c:** Work cooperatively with CAL FIRE and local fire agencies to manage wildland fire hazards.

- **Policy 9.A.4:** Actively support efforts to maintain and improve Federal and State fire service capabilities.

  - **Implementation Program 9.A.d:** Support efforts of CAL FIRE, the U.S. Forest Service, the National Park Service, other government land management agencies, the Southwest Interface Team (SWIFT), the Highway 108 Fire Safe Council, the Yosemite Foothills Fire Safe Council and other regional fire safe entities, to secure adequate funding for their fire protection and fuel reduction programs, and support their efforts to reduce the wildland fire potential on lands under their jurisdiction within Tuolumne County.

- **Policy 9.A.5:** Consult with CAL FIRE, the U.S. Forest Service, the National Park Service and local fire agencies on fire prevention programs in order to maximize the distribution of information to the public.

  - **Implementation Program 9.A.e:** Work with the U.S. Forest Service, CAL FIRE, local fire agencies, the Southwest Interface Team (SWIFT), the Highway 108 Fire Safe Council, the Yosemite Foothills Fire Safe Council, and community fire prevention auxiliary groups within the County to distribute information regarding the wildland fire hazard present within the County, recommended fire prevention practices, and required fire protection measures.

- **Policy 9.A.6:** Support the Strategic Fire and Resource Protection Planning program within Tuolumne County.

- **Policy 9.B.1:** Maintain an effective Tuolumne County Emergency Operation Plan to direct the response for a natural disaster or other emergency.

  - **Implementation Program 9.B.a:** Periodically review and update Chapter 2.40 (Emergency Services) of the Tuolumne County Ordinance Code to evaluate consistency with State and Federal laws and regulations, to assess the current emergency response organization, and to ensure an accurate composition of the Tuolumne County Emergency Services Operational Area Committee.

  - **Implementation Program 9.B.b:** Ensure the Emergency Operations Plan for Tuolumne County is consistent with the provisions of Articles 1-8 of Division 2 of Title 19 of the California Code of Regulations regarding the Standardized Emergency Management System (SEMS) and with the National Incident Management System (NIMS). The Emergency Operations Plan for Tuolumne County should be reviewed every two years and updated as necessary, in order to incorporate changes in governmental regulations and operational practices.

- **Policy 9.B.5:** Ensure that current emergency services are adequate to protect public health and safety in the event of natural and manmade hazards, including terrorist incidents and public health pandemics.

- **Implementation Program 9.B.h:** Implement the Tuolumne County Multi-Jurisdictional Hazard Mitigation Plan to protect life, safety, and property by reducing the potential for future damages and economic losses that result from natural and manmade hazards.

- **Implementation Program 9.B.i:** Improve interdepartmental communications in order to coordinate fire emergency response between the Tuolumne County Office of Emergency Services, the Tuolumne County Fire Department, local fire agencies, CAL FIRE, the U.S. Forest Service, the National Park Service, the County Sheriff and other agencies.

- **Implementation Program 9.B.j:** Coordinate maintenance of and improvements to emergency communications systems in the County so that they are capable of supporting use by emergency services during large fire emergencies and incidents in the higher elevations of the County. Coordination should include the Stanislaus National Forest, Yosemite National Park and fire protection agencies responsible for areas located east of Twain Harte.

- **Policy 9.E.1:** Evaluate the circulation system to identify areas causing delay of emergency vehicle response and evacuation due to traffic congestion.

  - **Implementation Program 9.E.b:** Require that new development be provided with access roads that allow for safe and efficient response by emergency apparatus and the safe evacuation of residents in the event of structural or wildland fire.

  - **Implementation Program 9.E.c:** Consider roadways designated as arterials in the Transportation Element as primary evacuation routes on a County-wide basis. Such routes provide the highest vehicle capacity and serve as the primary means of egress from the County.

    The routes designated as collector routes shall be considered secondary evacuation routes on a Countywide basis. These routes provide egress from local neighborhoods and communities.

    Require new development to be served by roads which provide safe emergency vehicle response and safe evacuation routes to the nearest arterial or collector route in the event of wildland fire emergency pursuant to Chapter 11.12 of the Tuolumne County Ordinance Code.

- **Policy 9.E.3:** Require new development to be consistent with State and County regulations and policies regarding fire protection.

- **Policy 9.G.1:** Maintain County fire protection regulations that are consistent with Section 4290 or the equivalent of the California Public Resources Code and other applicable fire protection regulations.

- **Policy 9.G.2:** Require new residential development to have adequate fire protection, which may include design and maintenance features that contribute to the protection of the County from the losses associated with wildland fire. Periodically update the County's fire protection standards to reflect new information and technology concerning fire prevention in wildland areas.

  - **Implementation Program 9.G.c:** Revise the County's development standards as necessary to reflect contemporary fire prevention and protection practices and measures and to determine that needed fire protection infrastructure, including road networks and water systems, are installed and maintained.

- **Policy 9.G.4:** Require that residential development provide for defensible space around structures.

  - **Implementation Program 9.G.e:** Revise and enforce County fire protection regulations that require residential development to provide defensible space for structural fire protection consistent with Section 4290 of the California Public Resources Code and Section 15.20.060 of the Tuolumne County Ordinance Code.

- **Policy 9.I.1:** Ensure that the use, storage, transport, treatment and disposal of hazardous materials and hazardous wastes within Tuolumne County complies with Federal, State, and local regulations and safety standards.
  - **Implementation Program 9.I.a:** Implement the Tuolumne County Comprehensive Hazardous Waste Management Plan to protect life, safety, and property by reducing the potential for future damages and economic losses that result from hazardous materials and hazardous waste.
  - **Implementation Program 9.I.b:** Require that industrial plants, mining operations and other facilities which handle or use hazardous materials or hazardous waste be constructed and operated in compliance with current standards for safety and environmental protection.
  - **Implementation Program 9.I.c:** Review development applications for projects that would manufacture, process, or dispose of hazardous materials or hazardous waste for compliance with the Tuolumne County Comprehensive Hazardous Waste Management Plan.
  - **Implementation Program 9.I.d:** Provide for the review of applications for discretionary entitlements for projects which would utilize hazardous materials or generate hazardous wastes by the Tuolumne County Environmental Health Division and the Tuolumne County Fire Department for compliance with the latest adopted regulations for safety and environmental protection.
- **Policy 9.I.2:**Protect schools from the risks associated with facilities involved in the handling of hazardous materials or disposal of hazardous waste.

<u>Natural Hazards Element</u>

- **Policy 17.E.1:** Reduce the exposure to risk from wildland fire to an acceptable level by only allowing development in high or very high fire hazard areas if it can be made safe by planning, construction, or other fire safety measures.
  - **Implementation Program 17.E.a:** Utilize the CAL FIRE Forest and Resource Assessment Program "Fire Hazard Severity Zone Map," including revisions thereto, as a basis for determining the significance of fire hazards when reviewing development applications.
  - **Implementation Program 17.E.b:** Recognize that new development, including urban or clustered development, is acceptable in moderate, high and very high fire hazard zones, provided that project design meets California Building and Fire Codes including Wildland-Urban Interface Building Codes. Such developments may be required to provide and maintain additional off-site fire defense improvements.
- **Policy 17.E.2:** Require the maintenance of defensible space setbacks in areas proposed for development if wildland fire hazards exist on adjacent properties.
- **Policy 17.E.3:** Require new development to have adequate fire protection and to include, where necessary, design and maintenance features that contribute to the protection of the County from the losses associated with wildland fire.
  - **Implementation Program 17.E.c:** Require new development to mitigate wildland fire hazards in such a manner that it minimizes the chance of wildland fire originating outside the development from entering the development and minimizes the chance of fire originating within the development escaping to adjoining property and adjacent wildland.
  - **Implementation Program 17.E.d:** Require developers to incorporate fire protection improvements into project designs where determined necessary by the Tuolumne County Fire Department and require maintenance of these improvements. Fuelbreaks, green belts, long-term comprehensive fuel

management programs, access to developed water sources, strategic helispots (with water supply), and perimeter road systems can all serve to reduce the fire hazard on project sites as well as adjacent property.

- **Implementation Program 17.E.e:** Require new development in areas subject to wildland fire to provide safe ingress and egress in accordance with Chapter 11.12 of the Tuolumne County Ordinance Code. Encourage new development that complies with Chapter 11.12 to provide multiple access routes, especially in very high fire hazard severity zones or where one access route is susceptible to closure by landslide, loss of a bridge or other cause.

- **Implementation Program 17.E.f:** Support the efforts of the Tuolumne County Fire Department to prevent loss of life, property and resources. Refer land development applications which would permit structures in areas subject to wildland fire to the Tuolumne County Fire Department/CAL FIRE for review and identification of measures necessary to mitigate the fire hazard.

- **Implementation Program 17.E.g:** Consult the U.S. Forest Service, National Park Service and other federal land management agencies regarding applications for development on privately owned lands located adjacent to or within these agencies' boundaries to obtain comments regarding the impact of the project on the wildland fire protection mission of that agency.

- **Implementation Program 17.E.h:** Revise and enforce County fire protection regulations such that new development in areas subject to wildland fire provides for clearing adjacent to access roads in order to reduce radiant heat received by vehicles on the roadway and thereby facilitate safe evacuation of residents and response by emergency vehicles in the event of wildland fire.

- **Implementation Program 17.E.i:** Periodically update the County's fire protection standards to reflect new information and technology concerning fire prevention in wildland areas.

- **Implementation Program 17.E.j:** Locate new essential public facilities including, but not limited to, hospitals, health care facilities, emergency shelters, emergency operations centers and emergency communications facilities, outside very high fire hazard severity zones if feasible. If essential public facilities must be located in high or very high fire hazard severity zones, incorporate design, construction or other measures to minimize damage in the event of a wildland fire.

- **Policy 17.E.4:** Promote public awareness of wildland fire hazards present within the County, as well as proper fire prevention and protection practices.

  - **Implementation Program 17.E.k:** Actively seek funding to develop fire prevention public awareness and education programs.

  - **Implementation Program 17.E.l:** Educate residents in forested areas about wildfire hazards and the steps to avoid excessive risk.

- **Policy 17.E.7:** Protect natural resources from the effects of wildland fire.

  - **Implementation Program 17.E.p:** In the event of major wildland fires that exceed the capability of local fire protection resources to control, implement the Wildland Fire Plan contained in the *Emergency Services Plan for Tuolumne County.*

  - **Implementation Program 17.E.q:** Coordinate revisions of the *Tuolumne County Community Wildfire Protection Plan* and individual community wildfire protection plans with the current version of the CAL FIRE *Strategic Fire Plan for the Tuolumne/Calaveras* Unit to include projects to reduce the wildland fire in the County.

- **Implementation Program 17.E.r:** Utilize the *Tuolumne County Community Wildfire Protection Plan*, the *Highway 108 Strategic Plan*, the CAL FIRE *Strategic Fire Plan for the Tuolumne/Calaveras Unit* and other adopted fire prevention, protection and response plans to identify the maximum acceptable wildfire size and acceptable initial attack success rate for protection of wildland areas and provide the resources necessary to achieve these standards.

- **Policy 17.E.8:** Require property owners to maintain wildlands in a fire resistant manner consistent with Section 4291 of the Public Resources Code. Assist fire protection agencies in their efforts to enforce Section 4291.

  - **Implementation Program 17.E.s**: Maintain the County's policies concerning development in the Tuolumne County Ordinance Code in the wildland urban interface area to further reduce the risk of life and property loss from future wildfires.

  - **Implementation Program 17.E.t:** Require property owners to remove trees killed by drought, disease, insects and other pests to utilize the timber value and reduce the wildland fire hazard consistent with Section 4291 of the Public Resources Code unless a tree is determined to have significant wildlife habitat value by a qualified biologist.

PROJECT IMPACTS

This section presents a programmatic-level analysis of potential impacts associated with hazards and hazardous materials from projected development under the General Plan Update. Evaluation of environmental impacts associated with the General Plan Update considers the development that would be facilitated by the General Plan Update, in accordance with goals, policies, and implementation programs, to accommodate projected growth in the County. It should be noted that the County's population is projected to grow by 0.6 percent annually over the planning horizon (2040). As discussed in detail in Chapter 2, "Project Description," and the introduction to Chapter 3, this is a relatively low amount of growth.

Impact 3.9-1: Create a Significant Hazard to the Public or the Environment Through the Routine Transport, Use, or Disposal of Hazardous Materials or Reasonably Foreseeable Upset of Known Hazards

Potential development near known hazardous material users, construction in areas with existing hazardous materials, or accidental releases of hazardous materials during transportation could expose individuals to health risks due to soil/groundwater contamination or emission of hazardous materials into the air. However, compliance with federal, state, and local regulations would reduce the potential for substantial hazardous or upset conditions. This is a **less-than-significant** impact.

Projected development under the General Plan Update may result in infill and redevelopment, which could necessitate demolition of existing structures and could result in development of residential uses or schools in proximity to commercial or industrial uses that use or store hazardous materials. In addition, hazardous materials are routinely transported by trucks along the major state routes and roadways, and on railways throughout the County; however, transportation of such materials is highly regulated to ensure the safety of the public. Negligence during use, construction activities, or accidents involving the transport of these materials could result in the release of hazardous substances into the environment, creating an emergency situation that could be detrimental to the public or environment.

Older structures throughout the County could potentially contain ACM and/or LBP. If demolition of these structures occurs, ACM or LBP could be released, resulting in adverse health effects. Exposure pathways by which receptors could be exposed to hazardous materials include:

- direct dermal contact with hazardous materials;

- incidental ingestion of hazardous materials (e.g., if workers fail to wash their hands before eating, drinking, or smoking); and
- inhalation of airborne dust released from dried hazardous materials.

Various regulations and guidelines pertaining to abatement of, and protection from, exposure to asbestos and lead have been adopted for demolition activities. These requirements include: Construction Safety Orders 1529 (pertaining to asbestos) and 1532.1 (pertaining to lead) from Title 8 of the CCR; 40 CFR Part 61, Subpart M (pertaining to asbestos); and lead exposure guidelines provided by the U.S. Department of Housing and Urban Development. In California, asbestos and lead abatement must be performed and monitored by contractors with appropriate certifications from DHS. In addition, Cal/OSHA has regulations concerning the use of hazardous materials, including requirements for safety training, availability of safety equipment, hazardous materials exposure warnings, and emergency action and fire prevention plan preparation. Cal/OSHA enforces the hazard communication program regulations, which include provisions for identifying and labeling hazardous materials, describing the hazards of chemicals, and documenting employee-training programs. All demolition that could result in the release of lead and/or asbestos must be conducted according to Cal/OSHA standards.

In addition to the hazards associated with demolition, the grading, excavation, and dewatering of sites for new development may also expose construction workers and the public to known or previously unreported hazardous substances present in the soil or groundwater. As stated above, there are sites in the County that are listed the state's databases of identified sites where hazardous materials contamination may occur. In addition to these recorded sites, existing land uses in the County that may contain contamination include former mining facilities, industrial and commercial properties, and gas stations. It is also possible that old underground storage tanks that were in use prior to permitting and record keeping requirements may be present throughout the County.

Disturbance of sites with previously unknown hazardous material contamination could cause various short-term or long-term adverse health effects in persons exposed to the hazardous substances. If new development is proposed at or near a documented or suspected hazardous materials site, investigation, remediation, and cleanup of the site would be required before construction could begin. These activities would occur under the supervision of DTSC, the Regional Water Quality Control Board, and/or the Tuolumne County Environmental Health Division, depending on the particular characteristics of each site. If an unidentified underground storage tank were uncovered or disturbed during construction activities, it would be sealed and abandoned in place or removed. The extent to which groundwater may be affected depends on the type of contaminant, the amount released, and depth to groundwater at the time of the release. If groundwater contamination is identified, remediation activities would be required by the Regional Water Quality Control Board.

Schools are considered particularly sensitive receptors relative to hazardous material exposure because there is a concentration of children that is repeatedly exposed to environmental conditions at the school site for extended periods of time. During construction, demolition, and excavation activities, the projected development under the General Plan Update would potentially produce hazardous air emissions or involve the handling of extremely hazardous wastes. As discussed above, the subsequent projects would be required to comply with federal and state regulations that are designed to reduce the potential for release of hazardous materials and wastes into the environment or to limit such releases to an acceptable level. Existing protective measures and regulations would be sufficient to ensure that hazardous materials stored, used, transported, and disposed by projected development under the General Plan Update would not pose a significant hazard to the public or the environment, including children at schools, under normal conditions.

As mentioned in Section 3.9.1, "Environmental Setting," SWRCB's GeoTracker database identifies 98 cleanup or disposal or LUST cleanup sites, most of which have been fully remediated, and DTSC's EnviroStor database identifies 17 records for the unincorporated area of Tuolumne County, three of which are active. Most of the identified sites are associated with gas stations or other automotive service related uses, mini-markets, warehouses, or industrial sites. Any development on one of these sites would be required to

address the contamination to prevent the release of hazardous materials in compliance with existing regulations and under the oversight of the applicable regulatory body.

Throughout the life of the General Plan Update, hazardous materials would be used, transported, and stored throughout the plan area. Routine use and transport of hazardous materials is regulated by a number of federal, state, and local regulations. Most household and general commercial uses of hazardous materials would be very minor and would not result in a substantial increase in the risk of a hazardous materials incident. Businesses that use or store hazardous materials above reportable quantities would be required to complete a Hazardous Materials Business Plan. Potential incidents may include accidental spills or releases, intentional releases, and/or the release of hazardous materials during or following a natural disaster such as an earthquake or flood.

Project applicants, builders, contractors, business owners, and others would be required to use, store, and transport hazardous materials in accordance with local, state, and federal regulations, including Cal/OSHA and DTSC requirements and manufacturer's instructions, during project construction and operation. Transportation of hazardous materials on area roadways is also regulated by the CHP and Caltrans. Title 49 of the CFR, Hazardous Materials Regulations, includes requirements for the classification of materials, packaging, hazard communication, transportation, handling, hazardous materials employee training, and incident reporting. The California Department of Public Health regulates the haulers of hazardous waste. A valid registration issued by DTSC is required, unless specifically exempted, to transport hazardous wastes, and the California Department of Motor Vehicles requires all hazardous materials transporters to possess a commercial driver's license with a hazardous materials endorsement. Vehicle Code Section 31303 outlines general routing and parking restrictions for hazardous material and hazardous waste shipments, and the CHP publishes a list of restricted or prohibited highways. The Federal Motor Carrier Safety Administration also maintains a Hazmat Route Registry that describes the highway routes that must be utilized for the transport of certain classes of hazardous waste that is monitored and regulated by the administration's field office and the CHP. Facilities that would use hazardous materials on-site would be required to obtain permits and comply with appropriate regulatory agency standards designed to avoid hazardous waste releases, including preparation of a SPCC plan. Because projects would be required to implement and comply with existing hazardous material regulations, impacts related to the creation of significant hazards to the public or environment through the routine transport, use, and disposal of hazardous materials would be unlikely.

The General Plan Update's Public Safety Element contains several policies that would protect County residents and the environment from exposure to hazardous materials. Policy 9.I.1 would ensure that use, storage, treatment, and disposal of hazardous materials complies with federal, state, and local regulations through Implementation Programs 9.I.a through 9.I.d, which also implement the Tuolumne County Comprehensive Hazardous Waste Management Plan and provide for review of applications for discretionary elements of projects that would use or generate hazardous materials by the Tuolumne County Environmental Health Division and the Tuolumne County Fire Department. Policy 9.I.2 would protect schools from hazards associated with handling or disposal of hazardous materials. Policy 9.B.5 and Implementation Program 9.B.h would protect public health and safety through implementation of the HMP.

Projected development under the General Plan Update could result in an increased potential for use, transport, and disposal of hazardous materials during construction and operation of development. As discussed above, there are existing regulations that address hazardous materials use, transport, and disposal, as well as the remediation of sites where contamination has occurred. The General Plan Update policies would generally support the implementation of these existing regulations and promote local oversight of discretionary projects. Therefore, the potential for projected development under the General Plan Update to create a significant hazard through the routine transport, use, or disposal of hazardous materials or reasonably foreseeable upset of known hazards would result in a **less-than-significant** impact because of the existing regulatory environment, the relatively limited number of sites with existing contamination, and the General Plan Update policies that ensure compliance with existing regulations.

Mitigation Measures

No mitigation is required.

Impact 3.9-2: Expose People or Structures to a Significant Risk of Loss, Injury, or Death Involving Wildland Fires

Projected development under the General Plan Update would introduce residential land uses into areas designated as Moderate or High Wildland Fire Hazard areas. However, because development in accordance with the General Plan Update would be largely within identified communities and compliance with General Plan Update policies and state and local regulations would require development standards, defensible space, and other features to reduce the potential for wildland fire hazards, projected development under the General Plan Update would result in **less-than-significant** impacts.

Fire hazards in Tuolumne County range from moderate in the far western portion of the County to very high in the central portion (see Exhibit 3.9-1). Communities in the very high fire hazard zone include Twain Harte, Moccasin, Columbia, and Harden Flat. These communities are surrounded by grass, brush, and timber lands. The eastern portion of Tuolumne County, approximately 70 percent of the County, is federally owned and consists of forest lands. Given the combinations of fuels, weather, and topography, as well as the past fire history of the County, the Tuolumne County Multi-Jurisdictional HMP (2018) indicates that the probability of significant wildfire occurring in the future is high. The risk for personal injury and loss of life, and the potential losses of structures and personal property, is also rated as high.

Projected development under the General Plan Update would occur primarily in and around the identified communities. Many of these communities are included on CAL FIRE's list of Communities at Risk and are located in wildland fire hazard areas. To decrease the hazard of fire in these areas, the Strategic Fire Plan for the Tuolumne/Calaveras Unit provides guidance to reduce structural ignitability. Adherence to the California Building Code Chapter 7A, Fire Hazard Severity Zones and Building Standards and Materials, and Public Resource Code 4291, requiring property owners to maintain clearance of flammable vegetation of 100 feet from structures, would also reduce the risk of fire.

The General Plan Update includes several policies and implementation programs related to wildland fire. Policy 1.E.4 in the Community Development and Design Element would maintain development standards for housing projects that consider fire hazard and the relationship of the development to surrounding land uses. In the Public Safety Element, Policy 9.E.3 would require new development to be consistent with state and County regulations and Policy 9.G.2 would require new residential development to have adequate fire protection. Implementation Program 9.G.c would revise the County's development standards, as necessary to reflect contemporary fire prevention and protection measures. Policy 9.G.4 would require residential development to provide defensible space, and Policy 9.G.1 and Implementation Program 9.G.e would revise County regulations to be consistent with the California Public Resources Code and the Tuolumne County Ordinance Code. Implementation Program 9.E.b would require new development to have access roads for safe evacuation in the event of a wildland fire.

The Natural Hazards Element also includes policies to reduce the potential for exposure to risk associated with wildland fire. Development in high or very high fire hazard areas is addressed in Policy 17.E.1 and Implementation Programs 17.E.a and 17.E.b. Policy 17.E.2 would require maintenance of defensible space where there is a wildfire hazard on adjacent property. Policy 17.E.3 and Implementation Programs 17.E.c through 17.E.e would require new development to mitigate fire hazards and provide safe access.

Further, the General Plan Update includes policies to support federal and state fire service capabilities (Policy 9.4.A and Implementation Program 9.A.d), provide information to the public about fire hazards (Policy 9.A.5 and Implementation Program 9.A.e), and support the Strategic Fire and Resource Protection Planning Program (Policy 9.A.6). Through Policies 9.A.1 and 9.A.2, and Implementation Programs 9.A.b, 9.A.c, 17.E.f, and 17.E.g, fire protection agencies would be involved in land use decisions. The County would assess the

effects of land development applications on fire protection capability and recommend measures to reduce fire hazards through Implementation Program 9.A.a.

The HMP also identifies critical facilities and infrastructure that include emergency operations centers and evacuation shelters. These critical facilities would provide emergency support to residents during potential wildfire events. (For a discussion related to potential conflicts with emergency response/evacuation plans, please see Impact 3.9-4 below.) The implementation of these policies and implementation programs would reduce potential risk of injury or damage from wildland fires by providing specific requirements for new and existing development to reduce fire hazard, ensure emergency access, and provide for safe evacuation. Adherence to existing regulations and to General Plan Update policies and implementation programs would ensure that impacts related to wildland fires would be **less than significant**.

Mitigation Measures

No mitigation is required.

Impact 3.9-3: Result In a Safety Hazard for People Residing or Working Within an Airport Land Use Plan or In the Vicinity of a Private Airstrip

Public and private airports in Tuolumne County could create safety hazards for nearby development. Careful land use planning in accordance with General Plan Update policies and continued coordination with the ALUCP would reduce the potential for airport-related safety hazards. Impacts would be **less than significant**.

Most of the public safety risk created by airports is attributed to aircraft accidents in the vicinity of populated areas. Land use planning considerations can help reduce risks to the public by preventing dense residential development, schools, hospitals, or other densely populated uses that could put residents or workers in harm's way, should an accident occur. Existing airport facilities in Tuolumne County are the Columbia Airport and Pine Mountain Lake Airport. The two airports are included in the ALUCP. The ALUCP describes land use and development restrictions within the designated safety zones, as illustrated on Exhibits 3.9-2 and 3.9-3.

Projected development under the General Plan Update would occur primarily in and around the identified communities. The Columbia Airport is located near Columbia and the Pine Mountain Lake Airport is located to the southeast of Groveland and Pine Mountain Lake. To minimize compatibility issues, the ALUCP limits the height, type, and intensity of land uses surrounding airports to reduce safety concerns associated with aircraft crashes, as well as uses that are sensitive to noise. A local jurisdiction may override an airport land use commission compatibility determination for any proposed incompatible land use by a two-thirds majority vote; however, the jurisdiction must notify the Division of Aeronautics and the commission of this intent. Any potential noise or safety incompatibility concern with locating a specific land use close to an airport is thoroughly reviewed with specific recommendations set forth by the airport land use commission.

General Plan Update Policies 1.B1, 1.B.2, and 4.F.2 would protect existing land uses and public facilities from the effects of incompatible land uses by designating land around existing airports in a manner consistent with the ALUCP and designating areas for new residential development away from airports through Implementation Programs 1.B.c and 1.B.e. Future airport operations would also be planned for through Policy 4.F.1 and Implementation Programs 4.F.a and 4.F.b, which require implementation and update of the airport master plans, and Implementation Program 4.F.d, which would require master planning for any future airports. Further, under Implementation Program 4.F.e, the County would review applications for consistency with the ALUCP.

Therefore, while future development could conflict with the requirements of the ALUCP, the General Plan Update contains policies to ensure land use compatibility on a project-specific basis. The ALUCP also prevents any above-ground bulk storage of hazardous materials in Zone B2, and prohibits any other uses that may cause hazards to flights within any of the safety zones. Compliance with the ALUCP would substantially limit the potential for exposure of people to aircraft-related hazards. Adherence to existing

regulations and to General Plan Update policies and implementation programs would ensure impacts related to airport safety hazards are **less-than-significant**.

Mitigation Measures

No mitigation is required.

Impact 3.9-4: Impair Implementation of, or Physically Interfere with, an Adopted Emergency Response Plan or Emergency Evacuation Plan

Projected development under the General Plan Update would not impair implementation of, or physically interfere with an adopted emergency response plan or emergency evacuation plan because the General Plan Update policies would limit the potential for hazards, particularly associated with wildfire potential and emergency access. Impacts would be **less than significant**.

Tuolumne County maintains an HMP and Emergency Operations Plan. Through the development approvals and coordination processes described above, the County would limit the potential for hazards, particularly associated with wildfire and emergency access, with the General Plan Update policies and implementation programs. This would support the goals of the established plans. In addition, Implementation Program 9.B.h would implement the HMP to protect life, safety, and property by reducing the potential for future damages and economic losses that result from natural and manmade hazards. The Emergency Operations Plan would be maintained and periodically reviewed under Policy 9.B.1 and Implementation Programs 9.B.a and 9.B.b.

Therefore, although individual projects could affect emergency response, the General Plan Update would not substantially impair the implementation of an adopted emergency response plan because General Plan Update policies support the goals of these plans through restrictions on development and policies to maintain and update the plans. Adherence to the existing HMP and to General Plan goals and policies and implementation of the Emergency Operations Plan in response to major emergencies would ensure that impacts related to an emergency response plan or emergency evacuation plan would be **less than significant**.

Mitigation Measures

No mitigation is required.

3.10 HYDROLOGY AND WATER QUALITY

This section assesses potential water quality impacts and impacts from flooding, stormwater runoff, and dam inundation of projected development under the General Plan Update.

Comments received during public review of the Draft EIR relating to hydrology and water quality raised concerns regarding the frequency and intensity of high runoff events and possible exacerbation of those events with increases in impervious surfaces from new development; issues associated with reservoir and water supply during sustained drought periods; issues related to sources of water pollution for Section 303(d)-listed waterbodies; and issues related to dam failure. These concerns are addressed below, as appropriate.

3.10.1 Environmental Setting

WATERSHED AND WATER RESOURCES

Surface Water Resources

Tuolumne County crosses seven watersheds. There are two main watersheds within the County: the Upper Stanislaus River Watershed and the Upper Tuolumne River Watershed. Because of the high elevation of many of these watersheds, much of the precipitation is in the form of snowfall (Tuolumne County 2018).

The Stanislaus River is an approximately 65-mile-long waterway that flows from the Sierra Nevada to the San Joaquin River in the eastern part of the Central Valley and is one of the largest tributaries of the San Joaquin River. The Stanislaus River Watershed covers an area of approximately 904 square miles. The river originates as North, Middle, and South Forks in Stanislaus National Forest in the Sierra Nevada. The confluence of the North and Middle Forks northeast of New Melones Lake forms the Stanislaus River proper. The South Fork joins the river within New Melones Lake. The North Fork forms the northwestern boundary of the County.

The Tuolumne River watershed drains an area of approximately 1,533 square miles. Its headwaters originate in the high Sierra at the eastern edge of Tuolumne Meadows in Yosemite National Park, and continue through the park to Hetch Hetchy Valley, where the main branch is dammed by the 95-year-old O'Shaugnessy Dam, forming the Hetch Hetchy Reservoir. At the O'Shaughnessy Dam, approximately 33 percent of the river's flow is diverted to the San Francisco Bay Area, where it provides drinking water for nearly 2.5 million people.

These watersheds and the network of water features in the County are illustrated on Exhibit 3.10-1.

Groundwater Resources

The California Department of Water Resources publishes Bulletin 118, which provides a detailed description of traditional groundwater basins in California. Such basins are characterized by loose, unconsolidated sediments or porous, permeable bedrock conditions. No such basin is identified in Tuolumne County in Bulletin 118 (Tuolumne Utilities District 2016).

The County stretches from the foothills to the higher elevations of the Sierra Nevada, where the subsurface material consists primarily of impervious granitic and greenstone bedrock, which generally produces a low or unpredictable groundwater yield. The general hydrogeology of Tuolumne County is 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 conditions than in unconsolidated sediments (e.g., porous sands and gravels). In this type of hydrogeologic environment, the

presence of groundwater and potential well capacities are dependent not only on geographic location and geology, but also on the number and size of fractures encountered where a well is drilled, the degree of connectivity between those fractures and other fractures, and the seasonal and annual recharge of the bedrock fracture network.

WATER QUALITY

Surface and ground water quality within the County is affected by both land uses within the watershed and the composition of subsurface geologic materials. Many of the surface water quality issues identified within the County can be linked to current or historical land use practices. Pollution can enter a water body from point sources (such as an industrial site) or from nonpoint sources over a broad area such as runoff from a city or agricultural area. The State Water Resources Control Board (SWRCB) and Regional Water Quality Control Board (RWQCB) regulate water quality in surface and ground water bodies. The County is under the jurisdiction of the Central Valley RWQCB, which is responsible for implementation of state and federal water quality protection guidelines within Tuolumne County.

Current water quality conditions within the foothill region of the County are a result of historic land management activities. These conditions are primarily associated with the landscape alteration that has occurred within the last 150 years as a result of road construction, the development of local water supply infrastructure, mining and agricultural practices, and population growth. The Tuolumne County Water Quality Plan identifies residential and commercial on-site sewage disposal systems, leaking underground storage tanks (LUSTs), and unobstructed grazing practices as key sources of existing contamination. Chronic sources of soil erosion and enhanced sediment delivery to local waterways are also identified as a concern (Tuolumne County 2007).

Surface Water Quality

Land use in Tuolumne County includes developed communities, agricultural, and public recreational uses. Stormwater flowing over developed and agricultural areas carries pollutants through natural drainage systems or man-made storm drain facilities to a body of surface water. Such discharges are referred to as “non-point” sources because the pollutants are generated from diffuse sources, entering stormwater on contact over a large area. These discharges are mostly unregulated and difficult or impossible to treat, resulting in untreated pollutants entering rivers and lakes. Pollution from agricultural areas may include fertilizers, herbicides, and pesticides. Pollutant sources in developed areas include parking lots, landscaped areas, and construction sites. Contaminants may include sediments, hydrocarbons, metals, pesticides, bacteria, and solid items, such as trash.

Surface water quality in the region is generally considered very good. For example, most of the water from the Tuolumne River is usable for human consumption with disinfection alone, although additional treatment is required by law (Tuolumne Utilities District 2013). However, there are several impaired water bodies based on environmental standards within the County. The SWRCB, in compliance with the Clean Water Act (CWA), Section 303(d), has identified nine impaired water bodies in Tuolumne County (see Table 3.10-1).

Lake Don Pedro and Hetch Hetchy Reservoir have been listed as Section 303(d) impaired for mercury based on collected fish tissue samples. Samples collected from non-native brown trout (*Salmo trutta*) in Hetch Hetchy Reservoir and largemouth bass (*Micropterus salmoides*) and common carp (*Cyprinus carpi*) in Lake Don Pedro were shown to exceed the Office of Environmental Health Hazard Assessment Screening Value of 0.3 milligram per kilogram for the protection of human health when consuming fish. However, there are no known environmental conditions (e.g., seasonality, land use practices, fire events, storms) that have been linked to the high levels of mercury detected in these fish species (SWRCB 2012).

Septic systems, livestock grazing, and water-based recreation activities have been associated with increased contamination of pathogens such as *E. coli*. There are three 303(d) listed waterbodies within the County for *E. coli* contamination: portions of Curtis Creek, Sullivan Creek, and Woods Creek (Tuolumne Utilities District 2013).

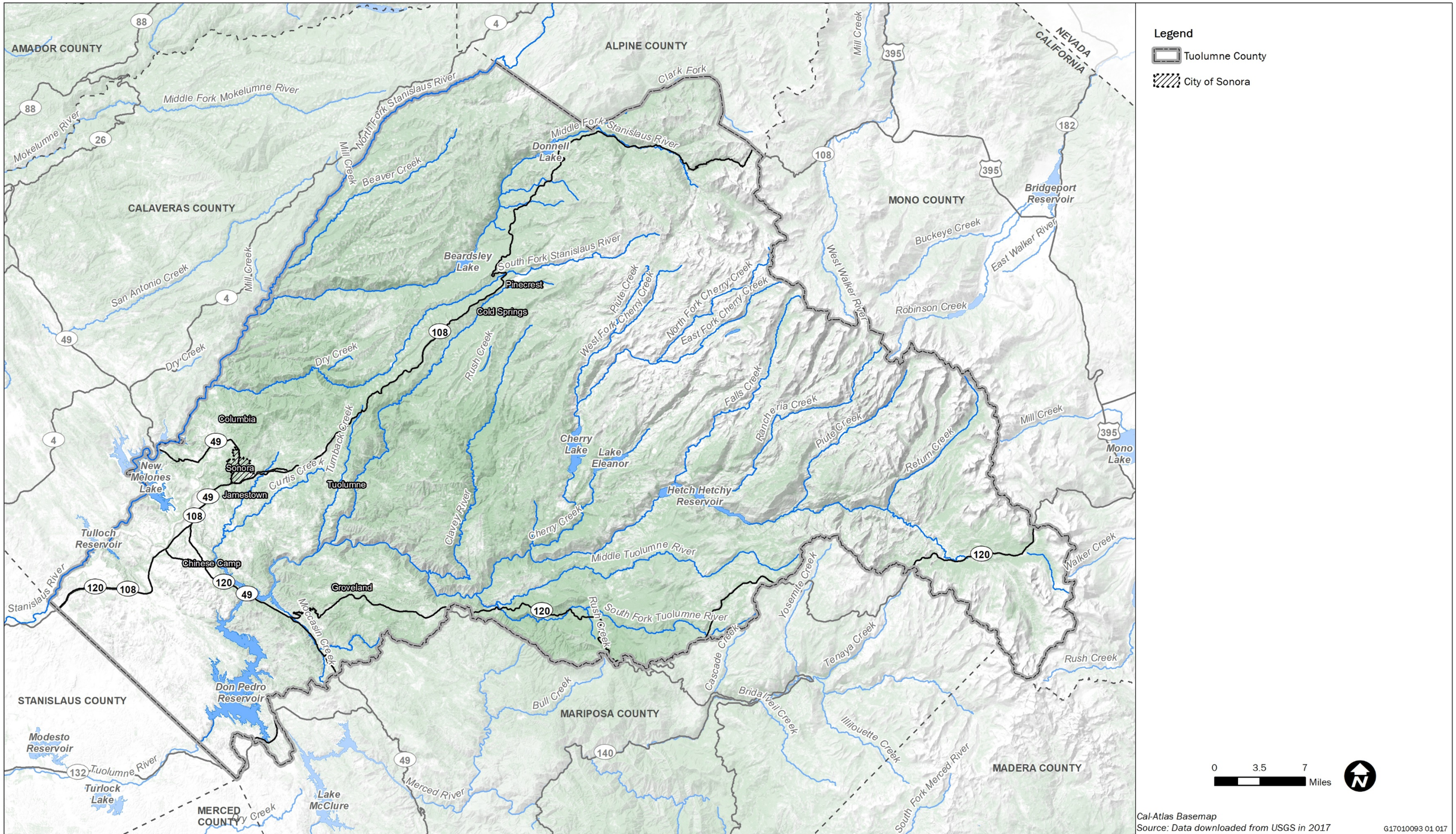


Exhibit 3.10-1

Hydrology

Table 3.10-1 Tuolumne County Water Bodies Listed as Impaired

Water Body	Impairment Constituent
Curtis Creek	*Escherichia coli* (E. coli)
Lake Don Pedro	Mercury
Hetch Hetchy Reservoir	Mercury
Sullivan Creek (from Phoenix Reservoir to Lake Don Pedro, Tuolumne County)	*Escherichia coli* (E. coli)
Tuolumne River, Lower (Don Pedro Reservoir to San Joaquin River)	Diazinon
Woods Creek	*Escherichia coli* (E. coli)
Tulloch Reservoir	Mercury
New Melones Reservoir	Mercury
Stanislaus River, Lower	Temperature, Water

Source: EPA 2015

Groundwater Quality

Groundwater quality throughout the County has generally been found to be good. Groundwater mostly contains naturally-occurring constituents such as iron and manganese (Tuolumne Utilities District 2016). Other sources of groundwater contamination are improperly placed and maintained septic systems, as well as LUSTs. Many septic systems were installed before the requirement of a soil investigation and health study to demonstrate long term feasibility of the septic system before its installation; thus, the areas of most concern are generally associated with older residences where septic systems were installed before the passing of these regulations. Septic system contamination leads to bacteriological contamination within groundwater wells that can become problematic for domestic use of local groundwater. The effects of LUSTs are evaluated in Section 3.9, “Hazards and Hazardous Materials.”

FLOOD HAZARDS

Both the Tuolumne River and Stanislaus River are dammed in the lower elevations along much of the stream courses, and both are mostly contained within government or special district ownership. Thus, excluding a few tributaries, the larger rivers and the immediate environs are not in areas where private development can occur. Further, the rivers and streams reside within relatively steep canyons or valleys, where very little floodplain has been formed. Flooding occurs only occasionally in Tuolumne County, particularly during the winter and spring following heavy periods of rainfall when excessive runoff causes streams and tributaries from the Stanislaus River and Tuolumne River to overrun their banks (Tuolumne County 2018).

The primary indicator of potential flooding is the presence of a floodplain as defined by the Federal Emergency Management Agency (FEMA). A floodplain is defined by FEMA as the area of land adjacent to the watercourse that may be submerged by floodwater during a 100-year (1 percent annual chance occurrence) storm. These “special flood hazard areas” are defined on FEMA Flood Insurance Rate Maps (FIRMs). The County’s most recent digital FIRMs, which came into effect on April 16, 2009, define the special flood hazard areas within the County (Exhibit 3.10-2).

DAM INUNDATION

There are 44 dams in Tuolumne County that range in size from those that retain large reservoirs dedicated to irrigation, water supply, and power generation, to small facilities used in water distribution and treatment systems or for recreation (Tuolumne County 2018). Large dams are mostly located along the Tuolumne and Stanislaus rivers. Exhibit 3.10-3 shows potential dam inundation areas in Tuolumne County.

3.10.2 Regulatory Setting

Development in Tuolumne County is subject to various local, state, and federal regulations and permits regarding water quality and the use of water resources.

FEDERAL

Clean Water Act

The U.S. Environmental Protection Agency (EPA) is the federal agency primarily responsible for water quality management. The CWA establishes the basic structure for regulating discharges of pollutants into "waters of the United States." The Act specifies a variety of regulatory and non-regulatory tools to sharply reduce direct pollutant discharges into waterways, finance municipal wastewater treatment facilities, and manage polluted runoff. Some of these tools include:

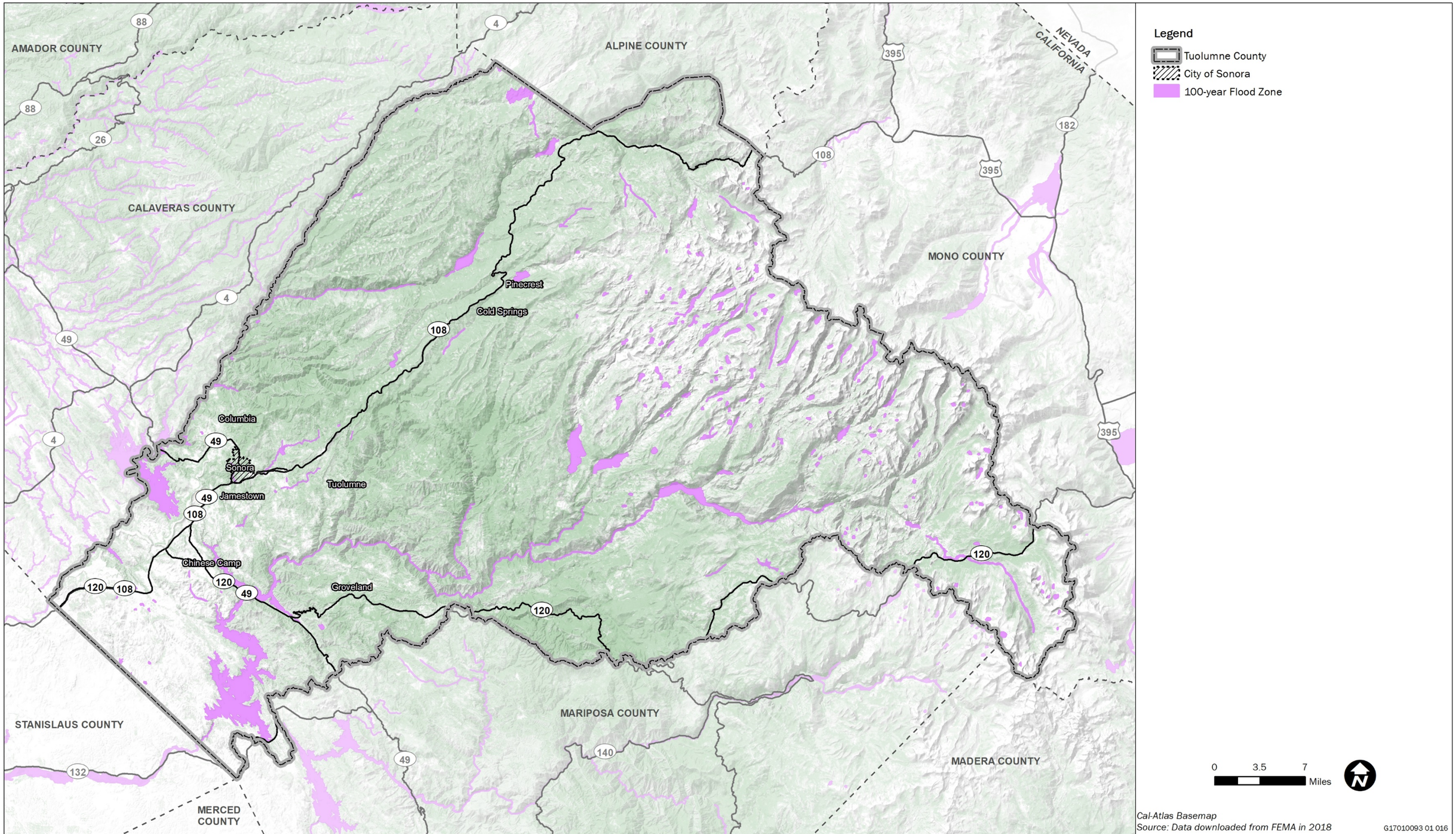
- Section 303(d) – Total Maximum Daily Loads (TMDLs)
- Section 401 – Water Quality Certification
- Section 402 – National Pollutant Discharge Elimination System (NPDES) Program
- Section 404 – Discharge of Dredged or Fill Material

In 2000, EPA established the California Toxics Rule, which sets water quality criteria for priority toxic pollutants and other provisions for water quality standards to be applied to inland surface waters, enclosed bays, and estuaries for all purposes and programs under the CWA.

Section 303(d) of the CWA requires identification and listing of water-quality limited or "impaired" water bodies where water quality standards or receiving water beneficial uses are not met. Once a water body is listed as "impaired," TMDLs must be established for the pollutants or flows causing the impairment. Once established, the TMDL allocates the loads among current and future pollutant sources to the water body. In general, where urban runoff is identified as a significant source of pollutants causing the impairments and is subject to load allocating, the implementation of and compliance with the TMDL requirements is administered through a combination of individual Industrial Stormwater Permits, the General Industrial and General Construction Stormwater Permits, and the County of Tuolumne's municipal stormwater NPDES program. EPA has delegated the responsibility for administration of portions of the CWA to state and regional agencies, including the State of California. Accordingly, the primary regulations resulting from the CWA (i.e., NPDES program) are discussed in the state and local regulation discussions that follow.

Section 401 requires every applicant for a federal permit or license for any activity that may result in a discharge to a water body to obtain a water quality certification that the proposed activity will comply with applicable water quality standards.

Section 402 regulates point-source discharges to surface waters through the NPDES program. In California, SWRCB oversees the NPDES program, which is administered by the RWQCBs. The NPDES program provides for both general permits (those that cover a number of similar or related activities) and individual permits. The NPDES program covers municipalities, industrial activities, and construction activities. The NPDES program includes an industrial stormwater permitting component that covers ten categories of industrial activity that require authorization under an NPDES industrial stormwater permit for stormwater discharges. Construction activities, also administered by the SWRCB, are discussed below. Section 402(p) of the federal CWA, as amended by the Water Quality Act of 1987, requires NPDES permits for stormwater discharges from municipal separate storm sewer systems (MS4s), stormwater discharges associated with industrial activity (including construction activities), and designated stormwater discharges, which are considered significant contributors of pollutants to waters of the United States. On November 16, 1990, EPA published regulations (Code of Federal Regulations Title 40, Part 122) that prescribe permit application requirements for MS4s pursuant to CWA 402(p). On May 17, 1996, EPA published an Interpretive Policy Memorandum on



Cal-Atlas Basemap
Source: Data downloaded from FEMA in 2018

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Exhibit 3.10-2

Flood Zones

ASCENT ENVIRONMENTAL

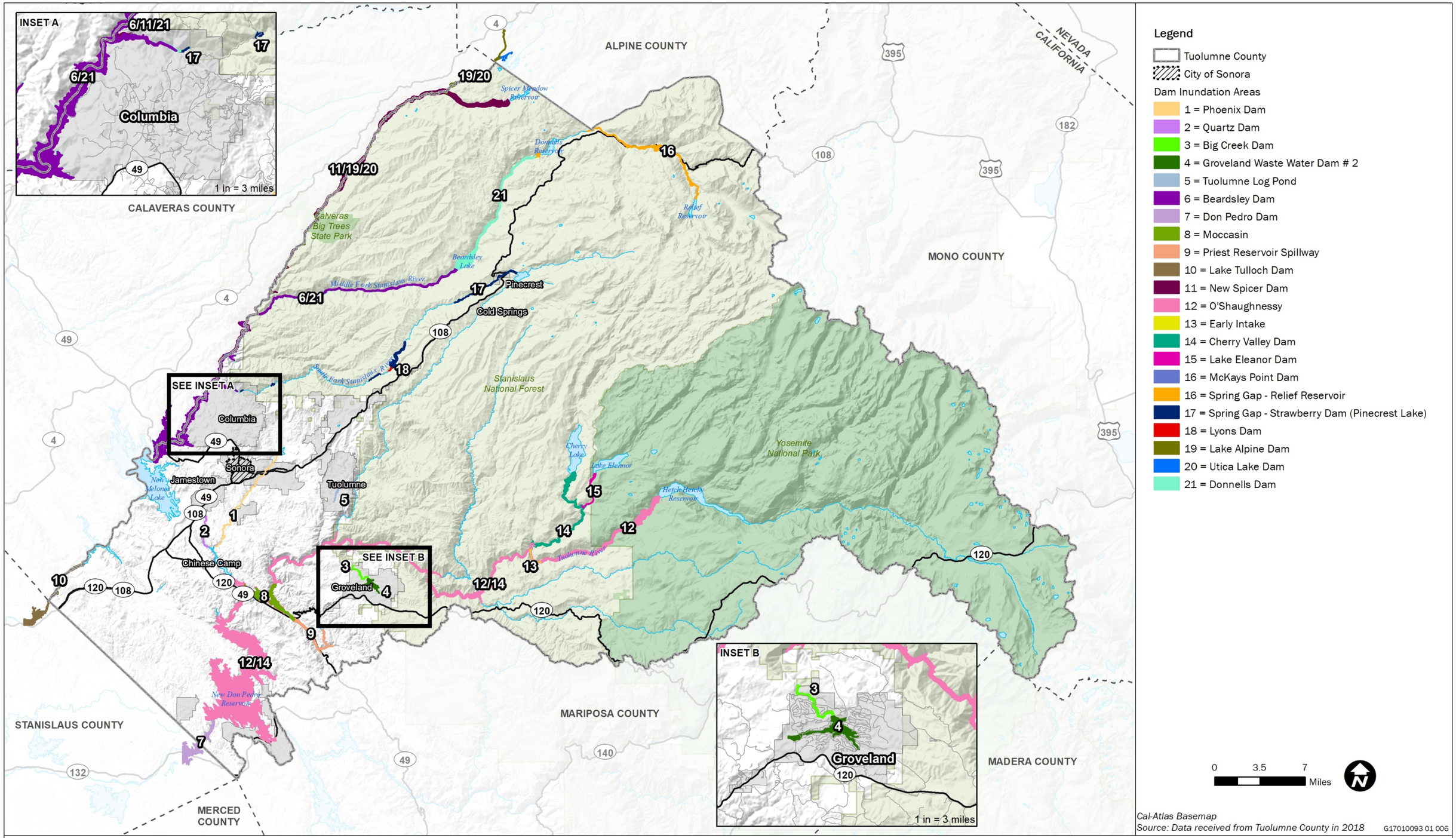

Exhibit 3.10-3

Dam Inundation Areas

Reapplication Requirements for Municipal Separate Storm Sewer Systems, which provided guidance on permit application requirements for regulated MS4s. MS4 permits include requirements for post-construction control of stormwater runoff in what is known as Provision C.3. The goal of Provision C.3 is for the permittees to use their planning authorities to include appropriate source control, site design, and stormwater treatment measures in new development and redevelopment projects to address both soluble and insoluble stormwater runoff pollutant discharges and prevent increases in runoff flows from new development and redevelopment projects. This goal is to be accomplished primarily through the implementation of low impact development techniques.

Section 404 establishes a permit program, administered by the U.S. Army Corps of Engineers, to regulate the discharge of dredged or fill materials into waters of the United States, including wetlands. Activities in waters of the United States that are regulated under this program include fills for development, water resource projects (such as dams and levees), infrastructure development (such as highways and airports), and conversion of wetlands to uplands for farming and forestry. CWA Section 404 permits are issued by the U.S. Army Corps of Engineers. Section 404 is described in Section 3.4, "Biological Resources."

Regulated Floodplain

Floodplain Management Executive Order 11988 (May 24, 1977) directs all federal agencies to evaluate potential effects of any actions they may take in the floodplain and to avoid all adverse impacts associated with modifications to floodplains. It also directs federal agencies to avoid encroachment into the 100-year floodplain, whenever there is a practicable alternative, and to restore and preserve the natural and beneficial values served by the floodplains.

FEMA oversees floodplain management and runs the National Flood Insurance Program (NFIP) adopted under the National Flood Insurance Act of 1968. FEMA prepares FIRMs that delineate the regulatory floodplain to assist local governments with land use and floodplain management decisions to meet the requirements of the NFIP. In general, the NFIP mandates that new development is not to proceed within the 100-year regulatory floodplain, if the development is expected to increase flood elevation by one foot or more. Very limited development is allowed in designated 100-year floodways (i.e., flood flow channels and areas with sufficient directional flow velocity of 100-year floodwaters).

STATE

Porter-Cologne Water Quality Control Act

The State of California is authorized to administer federal law or state-enacted laws regulating water pollution within the state. The Porter-Cologne Water Quality Control Act (Water Code Sections 13000, *et seq*.) includes provisions to address requirements of the CWA. These provisions include NPDES permitting, dredge and fill programs, and civil and administrative penalties. The Porter-Cologne Act is broad in scope and addresses issues relating to the conservation, control, and utilization of the water resources of the state. Additionally, the Porter-Cologne Act states that the quality of all the waters of the state (including groundwater and surface water) must be protected for the use and enjoyment by the people of the state.

State Water Resources Control Board

The SWRCB and its nine RWQCBs are agencies within the umbrella structure of the California Environmental Protection Agency. The SWRCB has the principal responsibility for the development and implementation of California water quality policy and must develop programmatic water quality control procedures to be followed by the RWQCBs. The Central Valley RWCQB is the region that regulates water quality permitting in Tuolumne County.

Water Code Section 13050 defines "pollution," "contamination," and "nuisance." Briefly defined, pollution means an alteration of water quality such that it unreasonably affects the beneficial uses of water (which may be for drinking, agricultural supply, or industrial uses) or facilities which serve these beneficial uses. Contamination means an impairment of water quality to the degree that it creates a hazard to the public

health through poisoning or spread of disease. Nuisance is defined as anything that is injurious to health, is offensive to the senses, or is an obstruction to property use, and which affects a considerable number of people, and that occurs during, or as a result of, the treatment or disposal of wastes.

Under Section 13240 of the Porter-Cologne Act, each Regional Board must formulate and adopt water quality control plans, or Basin Plans, for all areas within the region. The Central Valley RWQCB has two Basin Plans: one for the Tulare Lake Basin and one for the Sacramento and San Joaquin River Basins. The San Joaquin River Basin includes the entire area drained by the San Joaquin River, including the Stanislaus and Tuolumne Rivers in Tuolumne County.

Beneficial Uses

The Basin Plan defines and designates the existing beneficial uses for surface and groundwater in the plan area. Beneficial uses for source waters above the Don Pedro Reservoir and proposed beneficial uses for sources waters above the New Melones Reservoir are identified in Table 3.10-2.

Table 3.10-2 Designated Beneficial Uses for Waterbodies in the Plan Area

Beneficial Use	Definition of Use
Surface Water – Source to Don Pedro Reservoir, source to New Melones Reservoir (proposed uses)	
Municipal and Domestic Supply	Community, military, or individual water supply, including drinking water supply.
Agricultural Supply	Farming, horticulture, or ranching activities, including irrigation, stock watering, and support of vegetation for range grazing.
Hydropower Generation	Uses of water for hydropower generation.
Contact Recreation	Recreational activities involving body contact with water where ingestion of water is reasonably possible. These include, for example, swimming, water-skiing, or fishing.
Noncontact Recreation	Recreational activities involving proximity to water, but not normally involving body contact with water. These uses include picnicking, sunbathing, hiking, beachcombing, camping, boating, and others.
Wildlife Habitat	Uses of waters that support wildlife habitat including preservation and enhancement of vegetation and prey species such as waterfowl.
Cold Freshwater Habitat	Uses of water that support cold water ecosystems including, but not limited to, preservation and enhancement of aquatic habitats, vegetation, fish, and wildlife, including invertebrates.
Warm Freshwater Habitat	Uses of water that support warm water ecosystems including, but not limited to, preservation and enhancement of aquatic habitats, vegetation, fish, and wildlife, including invertebrates.
Groundwater – All Groundwaters of the Central Valley Region	
Municipal and Domestic Supply	Community, military, or individual water supply, including drinking water supply.
Agriculture Supply	Farming, horticulture, or ranching activities, including irrigation, stock watering, and support of vegetation for range grazing.
Industrial Service Supply	Uses of water for industrial activities that do not depend primarily on water quality, including mining, cooling water supply, hydraulic conveyance, gravel washing, fire protection, or oil well repressurization.
Industrial Process Supply	Uses of water for industrial activities that depend primarily on water quality.

Source: Central Valley RWQCB 2016

NPDES Permits

The SWRCB and RWQCBs, through powers granted by the federal CWA, require specific permits for a variety of activities that have potential to discharge pollutants to waters of the state and adversely affect water quality. To receive an NPDES permit, a Notice of Intent (NOI) to discharge must be submitted to the RWQCB and design and operational best management practices (BMPs) must be implemented to reduce the level of contaminated runoff. BMPs can include the development and implementation of regulatory measures (local authority of drainage facility design), various practices, including educational measures (workshops

informing public of what impacts result when household chemicals are dumped into storm drains), regulatory measures (local authority of drainage facility design), public policy measures (label storm drain inlets as to impacts of dumping on receiving waters), and structural measures (filter strips, grass swales, and retention basins). All NPDES permits also have inspection, monitoring, and reporting requirements.

General Permit for Storm Water Discharges Associated with Construction Activity

The SWRCB adopted the statewide NPDES General Permit for Storm Water Discharges Associated with Construction Activity (General Construction Permit) in August 1999. The state requires that projects disturbing more than one acre of land during construction file a NOI 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 storm water pollution prevention plan (SWPPP) must be developed and implemented for each site covered by the permit. The SWPPP must include 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.

General Permit for Storm Water Discharges Associated with Industrial Activities

The General Permit for Storm Water Discharges Associated with Industrial Activities (Industrial General Permit) was adopted by SWQCB in April 2014 and went into effect in July 2015. The Industrial General Permit regulates stormwater discharges for specified categories of industries, which are identified by their Standard Industrial Classification Code. The permit requires that discharges comply with stringent requirements for the protection of receiving waters, including the elimination of unauthorized non-stormwater discharges, implementation of SWPPPs and BMPs, monitoring and reporting, and executing response actions when discharges exceed results. The County would be required to file NOIs for facilities that would be subject to the Industrial General Permit, as applicable.

Sustainable Groundwater Management Act

The Sustainable Groundwater Management Act (SGMA) requires governments and water agencies of high and medium priority basins to halt overdraft and bring groundwater basins into balanced levels of pumping and recharge. Under SGMA, these basins should reach sustainability within 20 years of implementing their sustainability plans. For critically over-drafted basins, that will be 2040. For the remaining high and medium priority basins, 2042 is the deadline. As noted above, Tuolumne County does not have traditional groundwater basins. The 2018 SGMA Basin Prioritization Results do not include any basins in Tuolumne County (DWR 2018).

Dam Safety Regulations

The California Department of Water Resources, Division of Safety of Dams is charged with the inspection of all dams if the height is more than 6 feet and it impounds 50 acre-feet or more of water, or if the dam is 25 feet or higher and impounds more than 15 acre-feet of water. Federally owned dams are exempted.

LOCAL

Tuolumne County Ordinance Code

The Tuolumne County Groundwater Management Ordinance (Tuolumne County Ordinance Code (TCOC) Chapter 13.20) prohibits groundwater extraction within the County for use outside of County boundaries except by permit.

The Tuolumne County Grading Ordinance (TCOC Chapter 12.20) provides regulations for the construction and maintenance of excavations, site reclamation, drainage control, and stockpiling, as well as for protection of exposed soils surfaces, and cut and clearing of vegetation.

Chapters 13.08 and 13.04 of the TCOC are the basis for sewage disposal regulation. They specify requirements for prohibited acts, permitting, variances, violations, enforcement, and rules and regulations.

The Tuolumne County Flood Damage Prevention Ordinance (TCOC Chapter 15.24) aims to minimize public and private losses because of flood conditions within flood prone or flood related erosion areas. The ordinance applies to all areas of special flood hazards within Tuolumne County and includes standards of construction for all new construction, substantial improvements, and other proposed new development in all special flood hazard zones. The ordinance also includes regulations to:

- restrict or prohibit uses which are dangerous to health, safety, and property due to water or erosion hazards, or which result in damaging increases in erosion or flood heights or velocities;
- require that uses vulnerable to floods, including facilities which serve such uses, be protected against flood damage at the time of initial construction;
- control the alteration of natural floodplains, stream channels, and natural protective barriers, which help accommodate or channel floodwaters;
- control filling, grading, dredging, and other development which may increase flood damage; and
- prevent or regulate the construction of flood barriers which will unnaturally divert floodwaters or which may increase flood hazards in other areas.

The Tuolumne County Code also includes requirements for landscaping (TCOC Chapter 15.28) that are intended to conserve water and protect water resources. Provisions for stormwater management, recycling and greywater use, and other site management provisions to control runoff and infiltration are detailed there.

Local Agency Management Plan for On-Site Wastewater Treatment Systems

The Tuolumne County Environmental Health Division has prepared a local agency management plan (LAMP) through which it regulates on-site wastewater treatment systems throughout the County. The LAMP is operated under the authority granted by the Central Valley RWQCB and allows individual dischargers to qualify for the state's conditional waiver. The TCOC was amended to satisfy the requirements of the LAMP.

Tuolumne-Stanislaus Integrated Regional Water Management Plan

The Tuolumne-Stanislaus Integrated Regional Water Management Plan, developed in 2013, intended to provide a framework to improve collective understanding and take high-priority actions to collaboratively address the many major water-related challenges/needs and conflicts encompassing the Upper Tuolumne River, Upper Stanislaus River and Upper Rock Creek-French Camp Slough watersheds traversing all of Tuolumne County, eastern Stanislaus County, and Calaveras County to Highway 4 and southwestern Alpine County. These issues include water quality, local water supply reliability, better integration of water and land use management, resource stewardship and ecosystem protection.

Tuolumne County Water Quality Plan

The 2007 Tuolumne County Water Quality Plan is a comprehensive program to address a wide array of water quality concerns in the County over a 20-year planning horizon. The Plan focuses on surface water quality and the factors affecting it, as well as mechanisms for maintaining and improving it. In particular, the Plan focuses on three principal non-point sources of water pollution: pathogens and nutrients; urban contaminants; and erosion and sedimentation. There are two primary objectives of the Plan:

- responding to existing and new state and federal regulations; and
- addressing existing and future water quality issues that are relevant to Tuolumne County waterways identified in the County Foothill Watershed Assessment.

The Water Quality Plan primarily functions as a roadmap for strategies that will improve water quality in the County by identifying specific programs and opportunities for water quality improvement that the County can implement. Conditions or mitigating measures, best management practices, and monitoring programs were developed as part of the Plan as a first step in addressing water quality.

Tuolumne County General Plan

The 1996 General Plan provides a framework for addressing issues related to water resources in the County. As the proposed project would update the 1996 General Plan, this document will be discussed in the context of the update within the impact analysis. The Water Resources Section of the Conservation and Open Space Element contains goals to conserve the quality and quantity of the County's water resources and conserve public water resource areas with high recreation value. Specific General Plan Update policies related to hydrology and water quality are identified below under Section 3.10.3, "Impact Analysis."

Tuolumne County Multi-Jurisdictional Hazard Mitigation Plan

The Disaster Mitigation Act of 2000, Public Law 106-390, constitutes an effort by the federal government to reduce the rising costs of disasters and stresses the importance of mitigation planning and disaster preparedness before a disaster. To ensure compliance with the act, Tuolumne County has prepared a Multi-Jurisdictional Hazard Mitigation Plan in compliance with FEMA's Multi-Hazard Mitigation Planning Process. The plan outlines practical, meaningful, attainable, and cost-effective mitigation solutions to minimize each jurisdiction's vulnerability to identified hazards and reduce human and financial losses in the event of a disaster.

3.10.3 Impact Analysis

METHODS OF ANALYSIS

The General Plan Update is a policy document that would guide development and conservation of land throughout the County. Adoption of the General Plan Update would not result in any changes to existing conditions; however, the policies could allow for or encourage future activities that may result in exposure of people to flood hazards, modifications to local hydrological regimes, or produce new sources of water pollution. Impacts could result from the placement of new development within Tuolumne County's watersheds. Impacts are evaluated assuming full projected development under the General Plan Update within the 2040 planning horizon.

The evaluation of potential hydrological and water quality impacts is based on a review of documents pertaining to the plan area, including previous studies conducted for the County, previous EIRs, and published and unpublished hydrologic data and literature. The information obtained from these sources was reviewed and summarized to understand existing conditions and to identify potential environmental effects, based on the thresholds of significance. In determining the level of significance, the analysis assumes that projected development under the General Plan Update would comply with applicable federal, state, and local laws, regulations, and ordinances.

Thresholds of Significance

Assessment of impacts is based on review of County information regarding hydrology and water quality issues. In accordance with the State CEQA Guidelines, impacts would be considered significant if projected development under the General Plan Update would:

- violate any water quality standards or waste discharge requirements;
- 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 stormwater 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 dam; or
- substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing local wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted).

Issues Not Discussed Further

Appendix G also includes the following significance threshold: result in inundation by seiche, tsunami, or mudflow. As an inland region separated from the Pacific Ocean by approximately 150 miles, Tuolumne County is at no risk from tsunamis. According to the most recent Alquist-Priolo Earthquake Fault Zoning Map, earthquake-induced seiches also do not pose a risk to Tuolumne County. Impacts from mass wasting events, including mudflow, are evaluated in Section 3.7, "Geology." There are no levees located within the County. Therefore, flooding as a result of a levee failure would not occur. These issues are not discussed further in this section.

General Plan Update Policies

The following policies and implementation programs from the General Plan Update are applicable to the evaluation of effects related to hydrology and water quality:

Water Supply Element

- **Policy 14.A.3:** Work with other agencies in developing joint water policies supporting healthy watershed management.
  - **Implementation Program 14.A.e**: Implement the Tuolumne County Water Action Plan: Developing a Plan for Our Future adopted by the Board of Supervisors on April 7, 2015, as it may be amended from time to time.
  - **Implementation Program 14.A.f**: Collaborate with the other agencies and water purveyors to develop a Comprehensive Water Resources Plan to manage and protect the County's water resources by developing and prioritizing a list of water resources projects and a monitoring program.
- **Policy 14.A.5:** Manage groundwater resources consistent with the requirements of the Sustainable Groundwater Management Act, in response to the probability that the State will extend regulations to the County of Tuolumne.
  - **Implementation Program 14.A.h**: Use of groundwater recharge to help stabilize and supplement groundwater levels and protect water supplies. Discourage incompatible development near

groundwater recharge stations, such as ponds, basins and tanks, that could affect the recharged groundwater levels.

- **Policy 14.A.6:** Encourage water purveyors to provide an adequate water supply to meet long term needs in a manner that is consistent with this General Plan and urban water management plans and that maintains water resources for water users while protecting the natural environment.

- **Policy 14.C.4:** Encourage the conservation of water resources in a systematic manner that is sensitive to the maintenance of water quality, natural capacities, ecological values, and consideration of the many water related needs of the County.

  - **Implementation Program 14.C.e**: Update the Tuolumne County Water Quality Plan, subject to receiving funding, to facilitate a consistent, fair and cost-effective approach to water resource mitigation and encourage and support the restoration of degraded riparian areas through public education programs demonstrating the value of healthy riparian habitats in protecting water quality and provide for permit streamlining while conserving important water resources.

- **Policy 14.C.5:** Develop and evaluate criteria to allow limited development to occur where harmful area-wide impacts to groundwater exist based on known hazard areas when feasible.

  - **Implementation Program 14.C.f**: Consider creating and maintaining soil maps that identify areas of high ground water, impervious soils, limestone or other hazards which, either by themselves or in combination, create potentially serious health conditions because of failing septic systems or which are inappropriate for on-site sewage treatment and disposal on an areawide basis. Continue to develop and evaluate criteria to allow development to occur in areas of high ground water, impervious soils, limestone or other hazards without degrading the water resources.

- **Policy 14.C.6:** Recognize that the decisions made by the County of Tuolumne concerning water resources influence water supply needs for all beneficial uses of water consistent with the California Water Code, including, but not limited to, domestic, municipal, agricultural and industrial supply; power generation; recreation; aesthetic enjoyment; navigation; and preservation and enhancement of fish, wildlife, and other aquatic resources or preserves.

  - **Implementation Program 14.C.g**: Continue to consult with local public water agencies to determine that water supplies and delivery systems can meet the demands of the anticipated new development and population growth of the County. In accordance with Section 65352.5 of the California Government Code, the General Plan Land Use Diagrams were formulated in consultation with the applicable urban water management plans from these agencies and any amendments to those diagrams shall be reviewed in consultation with the respective public water agency serving the parcel or parcels affected by the proposed amendment.

- **Policy 14.C.8:** Encourage water resources to be protected from pollution, conserved, and recycled whenever possible to provide for continued economic, community, and social growth.

  - **Implementation Program 14.C.h**: Continue to regulate the exportation of groundwater to preserve the County's limited groundwater reserves for use by its residents and businesses through the provision of Chapter 13.20 of the Tuolumne County Ordinance Code.

- **Policy 14.C.9:** Promote improved watershed health, improved water quality and water quantity yields of the watersheds in Tuolumne County.

  - **Implementation Program 14.C.i**: Promote the development of plans for watershed rehabilitation projects which provide for such watershed improvements as:

- A reduction in the presence of contaminants in drinking water by addressing the origins and treatment of the contaminants, including, to the maximum extent practicable, the specific activities that affect the drinking water supply of a community or communities.

- An increase in the quantity of water available from the watershed.

- The improvement, restoration, or enhancement of fisheries habitat, including riparian habitat, in and along streams and watercourses in the watershed. These projects may address factors which increase sedimentation in streams and watercourses in the watershed.

- The improvement of overall forest health, including the reduction of factors which may contribute to the severity of wildfires in the watershed.

- **Implementation Program 14.C.j**: Initiate or assist in the formulation of plans for watershed rehabilitation projects with the County serving as the coordinating agency for the various stakeholders in such a plan, such as property owners, water agencies, other public agencies, private industry, recreational facility providers and other interested groups and organizations. Provide technical assistance in the development of plans for watershed rehabilitation projects through such means as data sharing.

- **Implementation Program 14.C.k**: Cooperate and consult with Federal, State and local agencies, such as the Tuolumne County Water Agency, in promoting the stewardship of the watersheds within the County. Consult with these agencies to avoid duplication of effort and to maximize use of public resources in working towards a common goal of improving the watersheds within Tuolumne County which will, in turn, contribute to the State and Federal objective of providing long-term Bay-Delta recovery and protection.

- **Implementation Program 14.C.l**: Support the Tuolumne County Resource Conservation District in its efforts to improve watersheds within Tuolumne County, including stream water quality sampling, which can assist agencies where to direct their efforts.

- **Implementation Program 14.C.m**: Submit applications for grants which become available for funding for County initiated or sponsored watershed rehabilitation projects and support the efforts of other public agencies and water agencies, such as the Tuolumne County Water Agency, Tuolumne-Stanislaus Integrated Regional Water Management Authority and other entities in their efforts to seek funding for watershed improvement projects. This support may manifest itself in such ways as adopting a resolution of support or co-sponsoring an application for funding for a watershed project.

<u>Natural Hazards Element</u>

- **Policy 17.B.1:** Reduce the potential for future damages and economic losses that result from flood hazards by implementing the Tuolumne County Multi-Jurisdictional Hazard Mitigation Plan.

- **Policy 17.B.2:** Reduce the potential for damage to property within the 100-year floodplains as designated on the Federal Emergency Management Agency, Flood Insurance Rate Maps and other areas prone to flooding due to rain or dam failure, through limitations on land use.

  - **Implementation Program 17.B.a**: Implement and enforce the Flood Damage Prevention Ordinance, Chapter 15.28 of the Tuolumne County Ordinance Code, as it pertains to designated “special flood hazard areas,” as identified on the Flood Insurance Rate Maps.

  - **Implementation Program 17.B.b**: Review and notify FEMA of errors or other information to correct or update FIRM maps.

- **Policy 17.B.3:** Solve flood control problems in areas where existing development has encroached into a floodplain.
  - **Implementation Program 17.B.c**: Encourage property owners with existing structures within areas subject to flooding, whether identified on the Flood Insurance Rate Maps or not, to conform to the requirements of the Flood Damage Prevention Ordinance.
  - **Implementation Program 17.B.d**: Based upon the Flood Insurance Rate Maps, provide notification to the owners of property within designated floodplains of the consequences of constructing within the floodplain.
  - **Implementation Program 17.B.e**: Encourage owners of land and improvements within floodplains not identified on the Federal Insurance Rate Maps (FIRM), to develop the property to meet the requirements of the Flood Damage Prevention Ordinance by implementing appropriate measures, such as:
    - Identify owners of land and improvements within floodplains not identified on FIRMs.
    - Develop and implement an outreach program to coordinate with these stakeholders.
    - Prepare and distribute to the owners informational literature describing the requirements of the Flood Damage Prevention Ordinance.
  - **Implementation Program 17.B.f**: Continue to provide flood hazard information to the public. Information available includes flood zones, requirements of the Flood Damage Prevention Ordinance, and how to floodproof existing structures through relocation, or "dry" or "wet" floodproofing.
- **Policy 17.B.4:** Projects proposed within areas identified on the dam failure inundation maps designated by the Office of Emergency Services and evacuation plans on file with the County Office of Emergency Services shall not be approved if a project presents a direct threat to human life or structures. Projects should be modified to ensure public safety.
- **Implementation Program 17.B.g**: Regularly update the Emergency Operations Plan for Tuolumne County, which addresses dam failures in the Flood Annex. In the event of a dam failure, the Emergency Operations Plan refers to the Emergency Action Plan of the owner agency of the dam. The County will notify and assist in evacuation along federally designated flood plains.
- **Policy 17.B.5:** Prohibit the construction of facilities essential for emergencies and large public assembly in the 100-year floodplain, unless the structure and access to the structure are free from flood inundation.
- **Policy 17.B.6:** Consult with local, regional, State and Federal agencies to achieve adequate flood protection. Cooperate with the Tuolumne Utilities District, surrounding jurisdictions, the City of Sonora, and other public, State and Federal agencies in planning and implementing regional flood control improvements.
- **Policy 17.C.1:** Minimize the risk from flood hazards through land use planning and the avoidance of incompatible structural development in floodplains.
  - **Implementation Program 17.C.a**: Utilize regulatory methods of flood control, such as designating identified floodplains and drainage easements as Open Space, where possible, rather than construction-related methods of flood control. Regulatory methods reduce the need for flood control projects, minimize losses in areas where flooding is inevitable, and attempt to notify those who own property in flood hazard areas of the risks and that they should assume responsibility for their actions.

- **Implementation Program 17.C.b**: Maintain stream carrying capacity by continuing to regulate new fill, grading, dredging, and other new development which may increase flood damage by increasing sedimentation in streams and watercourses, or by constricting water courses with structures for roads and driveways. Encourage owners of land and improvements within floodplains to maintain the stream carrying capacity by allowing thinning of dense vegetation, subject to approval of the Community Resources Agency.

- **Policy 17.C.2:** Continue to require evaluation of potential flood hazards prior to approval of development projects and require on-site mitigation to minimize off-site flows.

  - **Implementation Program 17.C.c**: Proponents of new development shall submit accurate topographic and flow characteristics information and depiction of the 100-year floodplain boundaries under fully-developed, unmitigated conditions.

  - **Implementation Program 17.C.d**: Review policies and available data concerning development in floodplains to ensure lives and property are not at risk from future flood conditions.

  - **Implementation Program 17.C.e**: Require new development to mitigate impacts on downstream drainages if new development results in increased peak flows because of project-generated stormwater runoff. Measures necessary to mitigate impacts will be attached to development entitlements issued by the County, which may include retention/detention facilities, permeable surfacing materials, greywater systems, and green roofs.

- **Policy 17.C.3:** Strive to maintain natural conditions within the 100-year floodplain of rivers and streams in order to maintain stream capacity except under the following circumstances:

  a. Where work is required to restore the stream's drainage characteristics and where such work is done in accordance with the Tuolumne County Water Quality Plan, County Flood Damage Prevention Ordinance, California Department of Fish and Wildlife regulations, and Clean Water Act provisions administered by the U.S. Army Corps of Engineers; or

  b. When facilities for the treatment of development generated runoff can be located in the floodplain provided that there is minimal destruction of riparian vegetation, and such work is done in accordance with the County Flood Damage Prevention Ordinance and California Department of Fish and Wildlife regulations.

  - **Implementation Program 17.C.f**: Maintain essential public facilities, such as culverts and drainage facilities along County maintained roads and eliminate logjams and other obstructions from bridges.

PROJECT IMPACTS

This section presents a programmatic-level analysis of potential impacts associated with hydrology and water quality from projected development under the General Plan Update. Evaluation of environmental impacts associated with the General Plan Update considers the development that would be facilitated by the General Plan Update, in accordance with goals, policies, and implementation programs, to accommodate projected growth in the County. It should be noted that the County's population is projected to grow by 0.6 percent annually over the planning horizon (2040). As discussed in detail in Chapter 2, "Project Description," and the introduction to Chapter 3, this is a relatively low amount of growth.

Impact 3.10-1: Impacts Related to Flooding

Some areas within the County adjacent to waterbodies are located within the 100-year flood zone. Existing federal, state, and local regulations address the hazards associated with locating development in these zones. In addition, some of the policies and implementation programs in the General Plan Update restrict development within flood zones and strive to reduce hazards to existing development. Impacts related to flooding would be **less than significant**.

Flooding as a result of storm events can cause widespread damage to affected areas, and endanger human safety. When development encroaches on floodplains, buildings and vehicles can be damaged or destroyed, while smaller objects can be buried in flood-deposited sediments. Floodwaters can break utility lines, interrupting services and potentially affecting health and safety. Floods may also create health and safety hazards and disruption of vital public services. The secondary effects of flooding include standing water, which can result in septic tank failure and water well contamination. Standing water can also damage roads, foundations, and electrical circuits. The extent of damage caused by any flood depends on the topography of the area flooded; depth, duration, and velocity of floodwaters; the extent of development in the floodplain; and the effectiveness of forecasting, warnings, and emergency operations. Encroachment onto floodplains, such as artificial fills and structures, reduces the capacity of the floodplain and increases the height of floodwater upstream of the obstructions.

The physical geography of the County affects and limits the flooding potential. The overall slope of the watersheds is relatively steep and the rivers and streams move run off away quickly and therefore very little flood plain has been formed. The Tuolumne and Stanislaus Rivers are dammed in the lower elevations and well controlled. In addition, these water courses are contained in government or special district ownership and private development is very limited and well regulated. In older communities, such as Jamestown, the overflowing of smaller creeks and waterways does occasionally occur; however, the damage is limited and is not typically life threatening. Therefore, although there is a moderate probability of localized flooding, the severity of effects due to flooding is low because only limited areas of identified communities are exposed (Tuolumne County 2007).

There are no areas designated as 100-year floodplain on the FEMA FIRMs within the Jamestown Community Plan area. As such, development that would occur in this area would not be exposed to 100-year flood events and associated hazards. There is a small waterbody within the Columbia Community Plan area south of Horseshoe Bend Road that is identified as within the 100-year floodplain. In addition, areas adjacent to the Upper Stanislaus River along the northwestern boundary of the Community Plan area are within the 100-year floodplain. Within the East Sonora Community Plan area, the Sonora, Curtis, and Sullivan Creeks run through the plan area. Areas within and around Sullivan and Curtis creeks are within the 100-year flood zone. In the Tuolumne Community Plan boundary, there is one area within the 100-year floodplain south of Tuolumne Road along Turnback Creek. Three perennial streams run through the Mountain Springs Community Plan Area including the Sullivan Creek, Flores Creek, and Curtis Creek. Areas along Sullivan Creek and Curtis Creek are located within the 100-year floodplain although the potential for flooding is limited because of the small size of these streams and the rugged relief of the area.

The County has planning and land use ordinances in place that outline development standards in areas that have the potential to be inundated by a 100-year flood. The County has adopted a Flood Damage Prevention Ordinance and has developed a Storm Drainage Master Plan to assist in long range plan efforts for the improvement of flood control efforts (Tuolumne County 2018). Development in the County located within an area of special flood hazard is subject to the provisions of the County's Flood Damage Prevention Ordinance (TCOC Chapter 15.24). These regulations identify construction standards, including anchoring requirements, flood-resistant materials standards, and floodproofing specifications, which development must meet if constructed within a floodplain, thereby minimizing flood damage and risk to human safety.

New development within the 100-year flood zone would also be subject to the County's policies as set forth in the Natural Hazards Element, which would protect people or property that are subject to flood risk through

implementation and enforcement of the Flood Damage Prevention Ordinance and evaluation of potential flood hazards within a site (Policies 17.B.2, 17.B.5 and 17.C.3 and Implementation Programs 17.B.a, 17.C.c and 17.C.d). For existing development in flood hazard areas that is not currently subject to the Flood Damage Prevention Ordinance, the General Plan Update provides policies that support compliance with the ordinance such as using information included identified in FIRMs and providing information related to floodproofing of structures (Policy 17.B.3 and Implementation Programs 17.B.c through 17.B.f). The General Plan Update would also promote the implementation of flood improvements, prohibit the construction of emergency facilities and large public assembly facilities in the 100-year floodplain, and support implementation of the Multi-Jurisdictional Hazard Mitigation Plan, which contains plans and programs to improve flood-prone areas (Policies 17.B.6 and 17.C.2 and Implementation Programs 17.C.a and 17.C.b).

Flooding can also be caused or exacerbated by alteration of existing drainage patterns caused by new development. Under the General Plan Update, new development would not substantially alter existing drainage patterns of the County, because most development is anticipated to occur in identified communities where the land is more defined by development, such as curbs, gutters, roadways and landscaping. In rural areas, typical development would not be sized such that major changes in topography would occur or major impervious surfaces would be added. Moreover, consistent with Implementation Program 17.C.e, any larger-scale development would be required to minimize potential for downstream flooding by providing appropriate features, which may include retention/detention facilities, permeable surfacing materials, greywater systems, and green roofs. The above-discussed regulations and programs aimed at flood hazard reduction are protective of life and property such that flooding hazards are generally addressed through the planning and development process. The General Plan Update includes policies and implementation measures that would be consistent with existing regulations and support enhanced safety in flood-prone areas. New development would not substantially alter the existing drainage patterns. Therefore, impacts related to flooding caused by storm events would be **less than significant**.

Mitigation Measures

No mitigation is required.

Impact 3.10-2: Risk of Dam Inundation

Portions of the County are located within an identified dam inundation zone; therefore, within the County, there is potential to expose people and structures to associated dam inundation hazards. However, dam safety monitoring and maintenance programs exist for dams of notable size and capacity, and the General Plan Update would not facilitate development in dam inundation areas. Therefore, impacts related to dam inundation would be **less than significant**.

There are 44 dams in Tuolumne County that range in size from those that retain large reservoirs dedicated to irrigation, water supply, and power generation, to small facilities used in water distribution and treatment systems or for recreation. Exhibit 3.10-2 shows potential dam inundation areas in Tuolumne County. Potential causes of dam failure include seismic failure, overtopping of dam capacity (usually because of unexpectedly heavy rainfall in a watershed), spillway blockage, failure of the dam foundation because of poor maintenance, and failure because of piping and seepage from internal cracks in the dam structure. Impacts related to dam inundation are generally confined to larger-sized dams, such as those located along the Tuolumne and Stanislaus Rivers.

The 2018 Tuolumne County Multi-Jurisdictional Hazard Mitigation Plan includes a vulnerability assessment for dam failure (Tuolumne County 2018:54-58). There are a few dams within the County that are situated such that they have the capability of causing damage to downstream structures. These include the O'Shaugnessy Dam, which impounds the Hetch Hetchy Reservoir, and the Moccasin and Priest Dams. Man-made structures downstream of these facilities would be subject to exceptional flood conditions in the event of their failure. Multiple bridges and culverts on County roads and state highways lie within these dam inundation zones and would likely be severely damaged should a dam fail above the road. No known hazardous materials sites have been identified within any of the mapped dam inundation areas.

Dam safety requires a comprehensive and long-term process of site maintenance, continuous inspection and monitoring, and implementation of periodic site improvements. The California Department of Water Resources, Division of Dam Safety is charged with the inspection of all dams greater than 6 feet in height with impoundments of 50 acre-feet of water or more and all dams greater than 25 feet in height that impound more than 15 acres of water. The state dam safety program includes an annual inspection program to ensure dams are safe and performing as intended, and includes an assessment of seismic, hydrologic, and static parameters. If reviews indicate any areas of concern, further studies are completed to fully understand the potential area of weakness and corrective actions are taken. For very large dams, daily visual inspections are also completed.

The General Plan Update would encourage growth within identified communities. Some of the identified communities overlap with a dam inundation area, as shown on Exhibit 3.10-3, and development could occur in these or other areas susceptible to inundation. Portions of the Beardsley, New Spicer, and Donnells Dam inundation areas overlap with and are adjacent to the Columbia Community Plan area. Similarly, the Big Creek and Groveland Wastewater Dam have the potential to impact portions of the community of Groveland. Projected development under the General Plan could occur in some of these populated areas. However, Policy 17.B.4 requires the review of new development within dam inundation areas and requires appropriate action to be taken, including development restriction, if it presents a direct threat to human life or structures. The General Plan Update also contains Implementation Program 17.B.g related to disaster planning for potential dam failure. Implementation Program 17.B.g requires the County to regularly update the Emergency Operations Plan, which address dam failures in the Flood Annex.

Because dam safety programs mean that the likelihood of dam failure is very low, and because the General Plan Update includes policies and implementation programs to review proposals within high-risk areas, the potential for flooding because of dam failure would be minimal, resulting in a **less-than-significant** impact.

Mitigation Measures

No mitigation is required

Impact 3.10-3: Impacts to Water Quality Associated with Stormwater and Point Source Contamination

Projected development under the General Plan Update could generate new sources of surface water and groundwater pollution, including both point and non-point sources. Point sources would include industrial or commercial facilities, while non-point sources would include new impervious or otherwise disturbed surfaces capable of generating an increase in stormwater runoff. Compliance with existing regulations and implementation of General Plan Update policies would result in **less-than-significant** impacts.

The following discussion addresses potential water quality effects related to stormwater runoff and point source contamination. The evaluation corresponds to the above-stated thresholds regarding violation of water quality standards, contribution of polluted runoff, and other degradation of water quality. Effects on the capacity of existing or planned stormwater drainage systems are evaluated in Section 3.17, “Utilities and Service Systems.” Pollution can enter surface and groundwater from point sources (e.g., an industrial site or faulty septic system) or from nonpoint sources over a broad area (e.g., runoff from agriculture or the impervious areas of a community, or due to construction activities). Each of these potential sources is discussed below.

The Water Supply Element includes policies and implementation programs that would reduce potential impacts related to water quality, including adhering to and updating the Tuolumne County Water Quality Plan (Implementation Program 14.C.e) and restoring watershed function and health (Policy 14.C.9 and Implementation Programs 14.C.i through 14.C.l).

Point Sources

As discussed above, residential and commercial on-site sewage disposal systems and LUSTs are key contributors to existing groundwater quality impairment in the County (Tuolumne County 2007). However, projected development under the General Plan Update would be subject to current (and any future) regulations that have been developed to address the conditions that lead to release of contaminants. Underground storage tanks are subject to SWRCB's regulations related to design, permitting, operation, and proper abandonment. Before installation of septic systems, operators must now conduct a soil investigation and health study to demonstrate long term feasibility of the septic system.

The Industrial General Permit covers, as the name suggests, industrial facilities such as landfills, mines, and hazardous waste sites. It requires that these covered facilities comply with stringent requirements for the protection of receiving waters, including the elimination of unauthorized non-stormwater discharges, implementation of SWPPPs and BMPs, monitoring and reporting, and executing response actions when discharges exceed results. Minimum BMPs have been established for all facilities, which include provisions for good housekeeping, preventative maintenance, spill and leak prevention, materials handling, specific erosion and sediment controls (such as erosion stabilization, run-on diversions, and sediment basins), and detailed record keeping. Operators are also expected to maintain an employee training program and comply with training requirements for facility staff.

Discharge of pollutants from any point source is prohibited unless the discharge is in compliance with an NPDES permit issued by the appropriate RWQCB. Therefore, with compliance with existing federal and state regulations, as enforced through NPDES permit requirements, new point sources generated by projected development under the General Plan Update would not result in water quality degradation or affect beneficial uses.

Stormwater Runoff

Water quality impacts from potential future projects are directly related to specific site drainage patterns and stormwater runoff. Projected development under the General Plan Update would increase development intensity in portions of the County, thereby increasing the amount of impervious surface area within the watershed. New impervious surfaces would alter the peak discharge and timing of surface runoff into drainages, which could result in water quality degradation. As rainwater passes over land, contaminants and sediment become suspended within the flow. Stormwater runoff from landscaped areas, roadways and parking lots can entrain various pollutants associated with motor vehicles, including petroleum compounds, heavy metals, asbestos, and rubber, as well as fertilizers and pesticides from landscaped areas. Oil and grease from urban runoff contain hydrocarbons that are toxic to aquatic organisms, some at low concentrations. Heavy metals such as lead, cadmium, and copper are the most common metals found in urban stormwater runoff. These metals can also be toxic to aquatic organisms and have the potential to contaminate drinking water supplies. With no prior treatment of stormwater runoff, any pollutant residues would be entrained in stormwater runoff and directly enter natural watercourses.

The TCOC Chapter 15.28 details landscaping requirements for certain types of commercial, industrial, and multiple-use residential developments. These requirements are aimed chiefly at water conservation, but also provide benefit to stormwater runoff conditions by diverting run-on to sites to protect from erosion and increasing site infiltration. These provisions include retaining existing site vegetation, maintaining soil conditions that promote water retention and reduce water loss from evaporation, and implementing stormwater management practices that minimize runoff and increase water retention and infiltration. By limiting contact water on developed sites and promoting infiltration, opportunities for direct discharge of contaminated stormwater to receiving waterbodies is limited.

As discussed above, SWQCB has identified nine water bodies that are classified as impaired under Section 303(d) of the CWA. Where TMDLs have been established, compliance with the standards (which is required through the NPDES permitting process) would substantially address the potential to contribute to existing pollution. As described in further detail below, adherence to the SWPPP would reduce the potential for soil erosion and sedimentation of stormwater runoff during construction. As such, projects associated with forecasted land use development would not be expected to contribute to violations of water quality standards.

For projects or facilities that require that hydrocarbons be present on-site in substantial quantities, facility operators and/or contractors must have an up-to-date Spill Prevention and Countermeasure Control plan that they follow to ensure containment of fuels and lubricants and the procedures to follow in the event of a release.

Considering the types and density of land uses identified in the Land Use Diagram and the requirements of local and state regulations, additional runoff from new impervious surfaces is unlikely to cause substantial degradation of surface water quality for surface waterbodies located downstream of development.

Construction Runoff

Construction activities could also result in the pollution of natural watercourses or groundwater. The types of pollutant discharges that could occur as a result of construction include accidental spillage of fuel and lubricants, discharge of excess concrete, and an increase in sediment runoff.

While the threat of stormwater contamination from development can pose a serious risk to receiving waterbodies, as described above, there are multiple layers of regulatory protections that developers and operators must abide by. These include compliance with the statewide General Construction Permit, including preparation of a SWPPP, compliance with the General Industrial Permit, preparation of a Spill Prevention and Countermeasure Control plan under the CWA, as appropriate, compliance with the County code, and adherence to the policies and implementation programs of the General Plan Update.

For development within the County that would disturb 1 or more acre of land, the developer or contractor would be required to obtain coverage under the General Construction Permit before construction. To comply with the General Construction Permit, a SWPPP would be prepared detailing measures to control soil erosion and waste discharges from project construction areas. The SWPPP would identify the grading and erosion-control BMPs and specifications necessary to minimize or avoid water-quality impacts to the extent practicable. Standard erosion control measures (including management and structural controls) would be required to be implemented for all construction activities that expose soil. Fill and grading materials brought in from off-site would be clean, chemically inert, and handled with appropriate containment to prevent contamination of stormwater. Grading operations would be required to eliminate direct routes for conveying potentially contaminated runoff to waterways. Erosion control barriers such as silt fences and mulching material would be installed, as appropriate. The SWPPP would also contain specific measures for stabilizing soils at sites before the onset of the winter rainfall season. All contractors conducting construction-related work would be required to implement the SWPPP to control soil erosion and waste discharges. The general contractor(s) and/or subcontractor(s) conducting the work would be responsible for implementing all BMPs detailed in the SWPPP. Adherence to the SWPPP would reduce the potential for soil erosion and sedimentation of stormwater runoff during construction. Measures to prevent/minimize releases of sediment and contaminants into groundwater during excavations and methods of cleaning up releases would be detailed in SWPPP documents and may include: using temporary berms or dikes to isolate construction activities, using vacuum trucks to capture contaminant releases, and maintaining absorbent pads and other containment and clean up materials on-site to allow an immediate response to contaminant releases if they occur.

Sedimentation during grading operations would also be controlled by the provisions of the Tuolumne County Grading Ordinance, TCOC Chapter 12.20, which directs non-exempt developers to obtain a grading permit. Grading permits identify construction and maintenance actions for excavations, site reclamation, drainage control, stockpiling, actions for protection of exposed soils surfaces, and cutting and clearing of vegetation.

Potential erosion and sedimentation can also occur due to alterations to existing drainage patterns. NPDES Provision C.3 requirements include post-construction drainage control requirements that address the volume of offsite flows, which can be effective in reducing sedimentation effects on downstream receiving waters. Project proponents are required to plan, design, and develop sites to: (1) protect areas that provide important water quality benefits necessary to main riparian and aquatic biota, and/or are particularly susceptible to erosion and sediment loss; (2) limit increases of impervious areas; (3) limit land disturbance activities such as clearing and grading, and cut-and-fill to reduce erosion and sediment loss; (4) limit disturbance of natural drainage features and vegetation; and (5) reduce erosion and, to the extent

practicable, retain sediment on-site during and after construction. For some projects, NPDES permits and regulations include hydromodification requirements where project proponents must study the potential impacts of proposed channelization and channel modification and then develop and implement plans to protect against undesirable impacts, including erosion. Implementing agencies would also generally require project sponsors to commit to BMPs that would minimize or eliminate existing sources of polluted runoff during operation, such as those contained in the California Stormwater Quality Association's *California Stormwater Best Management Practice Handbook for New Development and Redevelopment*. The growth that could occur under the General Plan Update, both within and outside of the identified communities, would not result in substantially increased rates of stormwater runoff that could result in substantial erosion or siltation because of compliance with federal, state, and local regulations.

Conclusion

The above-described regulations would control or prevent the discharge of pollutants, including sediment, into local surface water drainages, and would provide protection of groundwater quality. In addition, the policies and implementation programs in the Water Supply Element provide general support of watershed health. As a result, projected development under the General Plan Update would not create or contribute runoff water which would provide substantial additional sources of polluted runoff, and impacts would be **less than significant**.

Mitigation Measures

No mitigation is required

Impact 3.10-4: Substantially Deplete Groundwater Supplies or Interfere Substantially with Groundwater Recharge

The General Plan Update would not substantially deplete groundwater supplies because TUD's pumping rate would not change and construction of new private wells would be limited, dispersed throughout the County, and subject to permits that require appropriate setback distances and other special requirements. Furthermore, existing regulations, General Plan Update policies, and land ownership would limit development of impervious surfaces in areas of potential recharge. Impacts would be **less than significant**.

As discussed above, Tuolumne County does not have traditional groundwater basins. Groundwater occurs in fractures in bedrock, and the presence of groundwater is dependent on the number and size of fractures encountered, the degree of connectivity between those fractures and other fractures, and recharge. Recharge is localized in areas such as ponds that feed into the bedrock fracture network because most of the County is impermeable bedrock.

As addressed further in Section 3.17, "Utilities and Service Systems," projected development under the General Plan Update would increase demand for water. TUD, which provides water either directly or indirectly (through sales to other water agencies) to most of the developed portions of Tuolumne County has projected that water supply will exceed demand through the 2040 planning horizon of the General Plan Update, even using a growth rate higher than the 0.6 percent rate utilized in this assessment. No effect on groundwater supply is anticipated to result from TUD's water delivery because the portion of the overall supply that would be derived from groundwater would be maintained at the 2015 level of 1,465 acre-feet annually (see Tables 3.17-1 and 3.17-2). The General Plan Update would not substantially deplete groundwater supplies because TUD's pumping rate would not change and construction of new private wells would be limited, dispersed throughout the County, and subject to permits that require appropriate setback distances and other special requirements in flood zones or groundwater deficient areas.

Groundwater resources would be managed in a manner consistent with the SGMA (General Plan Update Policy 14.A.5), which provides guidance for sustainable groundwater management, including best management practices. Further, proposed Implementation Program 14.A.h would discourage incompatible development near groundwater recharge stations that could affect the recharged groundwater levels. In

addition, projected development under the General Plan Update would mostly occur within identified communities, and approximately 77 percent of the County's total land area is under government ownership or management, including Yosemite National Park and Stanislaus National Forest; these areas are largely open space. The General Plan Update would not substantially deplete groundwater supplies because existing regulations, General Plan Update policies, and land ownership would limit development of impervious surfaces in areas of potential recharge.

Projected development under the General Plan Update would not substantially deplete groundwater supplies or substantially interfere with groundwater recharge. Impacts would be **less than significant**.

Mitigation Measures

No mitigation is required

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3.11 LAND USE AND PLANNING

This section analyzes the General Plan Update's consistency with applicable local, regional, and state land use policies. Several comments on land use and planning were received on the Draft EIR. These included general comments, comments regarding specific zoning changes at the parcel or community level, and comments about zoning compatibility with utilities and easements. Comments also addressed open space, agritourism, increased residential densities, classification of urban areas, infill, and mixed-use development. The concerns addressed in these letters are addressed below, as appropriate.

3.11.1 Environmental Setting

According to the current 1996 General Plan Land Use Designations, the majority of the unincorporated area of Tuolumne County (77.10 percent of total acreage) is designated Public on the land use diagram, which includes open land, infrastructure, and parks, and recreational facilities run by various state, federal, regional, and local agencies. Agricultural land makes up 11.20 percent of the total acreage, and timber production makes up 5.99 percent. Thus, a small portion of Tuolumne County, 5.71 percent, is available for residential, commercial, and industrial land uses while the vast majority of the unincorporated area remains primarily undeveloped. Tuolumne County is subject to the land use regulatory policies of various state regional agencies. These agencies and the corresponding policy documents that affect land use planning in Tuolumne County are discussed below.

3.11.2 Regulatory Setting

Tuolumne County retains land use authority and jurisdiction over territory within the County that is not located in its sole incorporated city (Sonora) and is not owned by the state and federal government or other government agencies. Multiple agencies have jurisdiction over parks and other recreational facilities within Tuolumne County: the U.S. Forest Service, U.S. Bureau of Reclamation, National Park Service, U.S. Bureau of Land Management, California Department of Parks and Recreation, and California Department of Fish and Wildlife. The City of Sonora and other government agencies are not subject to the County's land use regulations and are, therefore, outside the jurisdiction of the General Plan Update.

FEDERAL

There are no federal regulations that pertain to land use that are applicable to the General Plan Update. The federal government develops and implements its own policies for land under its jurisdiction, such as the national forests and Yosemite National Park. However, because the County has no jurisdiction over these lands, there is no intersection of County and federal land use regulation.

STATE

Planning and Zoning Law

The legal framework in which California cities and counties exercise local planning and land use functions is provided in the California Planning and Zoning Law, Government Code Section 65000 et seq. Under state planning law, each city and county must adopt a comprehensive, long-term general plan. State law gives cities and counties wide latitude in how a jurisdiction may create a general plan, but there are fundamental requirements that must be met. These requirements include the inclusion of seven mandatory elements described in the Government Code. Each of the elements must contain text and descriptions setting forth

objectives, principles, standards, policies, and plan proposals; diagrams and maps that incorporate data and analysis; and mitigation measures.

Office of Planning and Research General Plan Guidelines

To assist local governments in meeting general plan requirements, the Governor's Office of Planning and Research is required to adopt and periodically revise guidelines for the preparation and content of general plans (Government Code Section 65040.2). These are advisory guidelines, not mandated requirements, and serve as a reference tool for cities and counties in the preparation of local general plans. The guidelines include information on the required contents of a general plan, sustainable development and environmental justice, formatting, public participation, and implementation. The General Plan Guidelines were updated in 2017.

LOCAL

Tuolumne Tomorrow Regional Blueprint - Distinctive Communities Alternative Growth Scenario

Tuolumne Tomorrow is a Regional Blueprint planning process for directing future growth and enhancing the quality of life in the County over the next few decades. Through this coordinated effort, the City of Sonora, Tuolumne County, Tuolumne County Transportation Council (TCTC), and community members developed Guiding Principles for growth and development and studied the potential effects of the likely land use development pattern and possible alternative growth scenarios on the transportation system, housing, local economy, quality of life, natural resources, and the environment. As a result of this effort, the Distinctive Communities Growth Scenario was selected and adopted by the Board of Supervisors in August 2012 as the preferred growth scenario for Tuolumne County. The Distinctive Communities Growth Scenario encourages mixed-use and infill development within the vicinity of or near existing communities, transportation networks, and public services.

Regional Transportation Plan

TCTC adopted the 2016 Regional Transportation Plan (RTP) in 2017. The 2016 RTP focuses on developing a coordinated and balanced multimodal transportation system and considers short-range (0–10 years) and long-range (11–25 years) transportation investment for all modes, including highways, public transportation, bicycle facilities, pedestrian facilities, railroads, aviation, and goods movement within a financially constrained environment. The 2016 RTP establishes regional transportation goals, objectives, and rural sustainable strategies. The RTP identifies present and future needs, deficiencies and constraints, analyzes potential solutions, estimates available funding, and proposes investments for short and long-term projections (TCTC 2015). The 2016 RTP is consistent with state and federal transportation planning requirements, including the California Department of Transportation's 2010 Regional Transportation Guidelines and the Regional Transportation Plan Checklist.

The 2016 RTP identifies the following regional transportation goals:

- **Regional Goal 1:** Enhance the quality of life of Tuolumne County residents by providing transportation access to jobs, housing, recreation, and community services.
- **Regional Goal 2:** Preserve the multimodal system by maintaining, managing, and efficiently utilizing the existing transportation system.
- **Regional Goal 3:** Improve the multimodal system by expanding and enhancing transportation choices, and connections to meet the future transportation needs.
- **Regional Goal 4:** Promote strategic and cost-effective transportation investments that create sustainable economic growth and improve transportation services and facilities.

- **Regional Goal 5:** Practice environmental stewardship by protecting our air quality, natural resources, historical and cultural assets.
- **Regional Goal 6:** Integrate land use and transportation decisions by prioritizing infrastructure investments within the Defined Community Boundaries that strikes a balance between development, available infrastructure, conserves natural resources, and provides for a high quality of life.
- **Regional Goal 7:** Consider transportation safety, and security in all transportation funding decisions.
- **Regional Goal 8:** Support a vibrant economy by enhancing the movement of goods and people to spur economic development, growth, and job creation.
- **Regional Goal 9:** Encourage and promote public involvement and social equity in all transportation decisions.
- **Regional Goal 10:** Continue the inter-organizational commitments of cooperative, mutually dependent action that is required to provide efficient multimodal transportation system

The plan includes a Rural Sustainable Community Strategies Element that builds upon previous Tuolumne County Regional Blueprint Plan efforts and provides an alternative sustainability plan for compliance with stat-wide air quality regulations.

Tuolumne County Airport Land Use Compatibility Plan

The Tuolumne County Airport Land Use Commission (ALUC) is responsible for reviewing airport and adjacent land use proposals on and near Columbia Airport and Pine Mountain Lake Airport. The criteria and affected areas in proximity to the airports are defined in the Tuolumne County Airport Land Use Compatibility Plan (ALUCP), which was approved in 2003. The goal of the ALUCP is to promote compatibility between the public-use airports within Tuolumne County and the land uses which surround them. The ALUCP serves as the primary tool for use by the ALUC in its review of land development proposals at County airports and on surrounding land. The ALUCP contains policies regarding noise, safety, airspace protection, and aircraft overflights which apply primarily to property located within the airport influence area boundaries associated with the two County public-use airports.

Tuolumne County General Plan

The 1996 General Plan provides a framework for addressing land use issues in the County. As the proposed project would update the 1996 General Plan, this document will be discussed in the context of the update within the impact analysis. The General Plan Update Community Development and Design Element contains goals to facilitate projected development under the General Plan Update in a manner that would minimize potential land use conflicts. Specific General Plan Update policies related to land use are identified below under Section 3.11.3, “Impact Analysis.”

3.11.3 Impact Analysis

METHODS OF ANALYSIS

Potential impacts resulting from projected development under the General Plan Update are evaluated based on a review of planning documents pertaining to the County. The focus of this land use analysis is on land use impacts that would result from the new General Plan Update policy document and Land Use Diagram. The potential for General Plan Update policies, as well as other County policies and regulations, to result in or manage environmental impacts with regard to other resources is evaluated throughout the other technical sections of this Recirculated Draft EIR, where such policies and regulations are relevant.

THRESHOLDS OF SIGNIFICANCE

The discussion of land use impacts analyzes the General Plan Update's consistency with applicable policies of various regional and local plans for the purposes of assessing the General Plan Update's environmental impacts related to land use. An impact is considered significant if physical changes that could result from projected development under the General Plan Update would result in one or more of the following conditions, which are based upon the environmental checklist in Appendix G of the CEQA Guidelines:

- physically divide an established community;
- conflict with any applicable land use plan, policy, or regulation of an 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.

Because a habitat conservation plan or natural community conservation plan is not in place in Tuolumne County, the General Plan Update would not conflict with any habitat conservation plan or natural community conservation plan. Potential for conflict with other regional plans is addressed below. Consistency with the Tuolumne County ALUCP is evaluated in Section 3.9, "Hazards and Hazardous Materials," and other policies and regulations relevant to other resources are addressed where such resources are addressed in this EIR.

Although the following analysis evaluates consistency with various regulatory policies, it should be noted that each individual agency (TCTC, Local Agency Formation Commission of Tuolumne County, and ALUC) ultimately has the discretion to determine consistency of the General Plan Update with the policies, plans, and/or programs that fall within that agency's purview.

GENERAL PLAN UPDATE POLICIES

General Plan Update policies related to land use and planning and, specifically, the thresholds of significance identified above, include the following:

<u>Community Development and Design Element</u>

- **Policy 1.A.4:** Focus urban growth in identified communities, emphasizing infill development and the intensified use of existing development.
  - **Implementation Program 1.A.c:** Designate land between identified communities for non-urban land uses to protect the individual character of each community and to maintain distinct boundaries between communities.
  - **Implementation Program 1.A.d:** Maintain the County's rural character by utilizing transitional land uses around urban areas as buffers between communities and agricultural areas and timberlands, including rural density development, recreation areas, cluster developments, and natural features such as streams, ridgetops and large stands of trees.
  - **Implementation Program 1.A.e:** Designate adequate land in and around identified communities for urban land uses to allow for the growth accommodated in the General Plan. Limit the future conversion of non-urban designated land to urban designations to parcels immediately adjacent to identified communities.
- **Policy 1.A.5:** Promote infill and clustered patterns of development that facilitate the efficient and timely provision of infrastructure and services.
  - **Implementation Program 1.A.f:** Encourage a compact development pattern in and around identified communities through the General Plan land use diagrams.

- **Implementation Program 1.A.g:** Target public funds toward identified communities to increase community revitalization and the efficiency of public works investments and safeguard rural landscapes.

- **Implementation Program 1.A.h:** Provide incentives to applicants with approved undeveloped projects that are modified to be consistent with High Density or Medium Density land use designations where allowable densities have been increased.

- **Policy 1.A.6:** Establish growth areas to provide community services and enhance the quality of life by providing for economic, housing and cultural opportunities within identified communities. Where possible, these growth areas should be placed near transit stops, commercial centers, and other services.

  - **Implementation Program 1.A.i:** Establish areas for growth in identified communities on the General Plan land use diagrams and zone the land in accordance with these maps.

- **Policy 1.A.7:** Encourage comprehensively planned and well-balanced, separate, and distinct communities.

  - **Implementation Program 1.A.j:** Designate an adequate amount of land for industrial development, business parks, commercial facilities and recreational development to provide jobs for the County's workforce, facilities for the County's residents and visitors and promote a healthy economy.

  - **Implementation Program 1.A.k:** Provide an appropriate mix of land uses and amenities in community cores to attract and retain quality businesses and institutions.

- **Policy 1.A.8:** Designate adequate areas for greenbelts, open areas, parks and recreational facilities in and around identified communities to meet the needs of growing populations and to reflect the County's changing demographics.

- **Policy 1.A.9:** Encourage the clustering of community-oriented services and amenities in and near residential neighborhoods, including schools, branch libraries, open areas and parks and limited neighborhood commercial uses to provide a community center for neighborhoods.

  - **Implementation Program 1.A.l:** Formulate community plans for identified communities that provide adequate lands for community-oriented services and amenities in and near residential neighborhoods, including schools, libraries, open areas and parks, and limited neighborhood commercial uses to provide and community center for neighborhoods. These plans should also promote the linking of these types of facilities through pedestrian/bicycle paths.

- **Policy 1.A.11:** Encourage growth to be dispersed among identified communities rather than concentrated in just one or two areas in the County.

- **Policy 1.A.12:** Identify special features or characteristics, such as unique topography, critical view sheds, or sensitive habitat, in areas throughout the County that affect development potential or opportunities for conservation.

- **Policy 1.A.13:** Encourage the extension and upgrading of services to Disadvantaged Legacy Communities as identified in the General Plan Technical Background Report.

  - **Implementation Program 1.A.m:** Promote the extension of public water, sewer, stormwater drainage and structural fire protection services to identified Disadvantaged Legacy Communities, where feasible, and identify funding mechanisms that could make the extension of services and facilities to these communities financially feasible.

- **Policy 1.A.14:** Encourage a mix of uses in isolated identified communities that minimize the need for nearby residents to travel greater distances to access goods and services.

- **Policy 1.B.1:** Protect existing land uses from the infringement of and impacts associated with incompatible land uses.
  - **Implementation Program 1.B.a:** Designate, where possible, land around existing non-residential land uses, such as agriculture, timberlands, mining preserves and industry, for new development that is compatible with these existing uses.
  - **Implementation Program 1.B.b:** Designate, where possible, land around existing residential neighborhoods for uses that are compatible with residences. Designate areas for new urban residential development away from existing incompatible land uses, such as agriculture, mining, industry, solid waste facilities, airports and sewage treatment facilities.
  - **Implementation Program 1.B.c:** Separate new urban residential development from land uses that potentially conflict with housing, such as agriculture, mining, industry, airports and sewage treatment facilities.
  - **Implementation Program 1.B.d:** Consider buffer areas around existing industrial land uses to protect them from infringement of new residential and other potentially incompatible land uses. These buffer areas may include building setbacks and/or limiting land uses within an established distance of these existing land uses.
- **Policy 1.B.2:** Protect public facilities from the infringement of incompatible land uses.
  - **Implementation Program 1.B.e:** Designate land around the County's airports for uses that are consistent with the Tuolumne County Airport Land Use Compatibility Plan and airport master plans.
  - **Implementation Program 1.B.f:** Identify solid waste facilities in the County on the General Plan Land Use Diagrams and designate land around these facilities for compatible land uses, recognizing that some potentially incompatible land uses may already exist.
- **Policy 1.E.1:** Encourage and promote the development of housing for all income levels.
  - **Implementation Program 1.E.a:** Identify areas of the County suitable for development of housing for all income levels and designate adequate amounts of land for such development on the General Plan land use diagrams.
- **Policy 1.E.2:** Promote affordable housing throughout Tuolumne County.
  - **Implementation Program 1.E.b:** Provide incentives to developers to build new housing units that are affordable for the County's residents. These incentives shall include density bonuses, “fast-track” processing of land development permits, reduced parcel sizes and waivers of fees for affordable housing units, as defined by the County of Tuolumne.
  - **Implementation Program 1.E.c:** Designate an adequate amount of land in various density and parcel size ranges to meet the need of all income levels of the County's population.
  - **Implementation Program 1.E.d:** Maintain the Tuolumne County Ordinance Code in accordance with Accessory Dwelling Unit regulations established by the State of California. Develop local regulations to address life safety concerns.
- **Policy 1.E.3:** Consider amending the Uniform Zoning Ordinance to allow land designated Low Density Residential by the General Plan land use diagrams to be divided into six parcels per acre without requiring an exception to the development standards.

- **Policy 1.E.4:** Maintain development standards for housing projects that reflect and consider natural and cultural features, noise exposure of residents, fire hazard, circulation, access and the relationship of the development to surrounding land uses. These requirements determine residential densities and patterns which may result in a density that is less than the maximum specified by General Plan designations.

- **Policy 1.E.5:** Require subdivisions to be designed to provide well-connected internal and external streets and pedestrian facilities, where appropriate.

  - **Implementation Program 1.E.e:** Establish development standards for new housing projects to provide well-connected internal and external streets. Pedestrian facilities such as sidewalks, ramps, crosswalks, street lighting, shade trees, and curb extensions, should be required, where appropriate. Amend Title 11 of the Tuolumne County Ordinance Code to reflect these development standards.

- **Policy 1.F.2:** Promote new commercial development in rural communities that provides for the immediate needs of the local residents and services to tourists. The scale and character of such commercial development should be compatible with and complement the surrounding area.

  - **Implementation Program 1.F.b:** Provide for commercial facilities in rural areas that have limited public services by maintaining a land use designation for such facilities that has unique development standards.

- **Policy 1.F.3:** Encourage commercial development to be designed to be compatible with the scale and architectural style of historic buildings located in the community.

  - **Implementation Program 1.F.c:** Establish design guidelines for new commercial development in communities desiring design review to be compatible with the scale and architectural style of the existing buildings and integrate where appropriate natural and cultural amenities such as creeks, hillsides, scenic views, historic buildings and structures, and archaeological sites.

  - **Implementation Program 1.F.d:** Encourage street frontages in historic communities to reflect the historic "Main Street" character and ambiance.

<u>Utilities Element</u>

- **Policy 3.A.1:** Encourage the siting of new urban development either within or adjacent identified communities to maximize the use of existing infrastructure and encourage the logical extension of public water services infrastructure. When new urban development is proposed to be located outside but adjacent to identified communities, it should be located in proximity to existing water supply infrastructure.

<u>Transportation Element</u>

- **Policy 4.B.1:** Develop a modern transportation system that incorporates alternative transportation modes into the system design.

- **Policy 4.B.2:** Expand and improve pedestrian sidewalks and facilities focusing on safety, connectivity, and accessibility.

- **Policy 4.B.3:** Expand and improve the bikeways within Tuolumne County, focusing on safety, connectivity, and accessibility.

- **Policy 4.B.4:** Encourage the use of alternative modes of transportation by incorporating public transit, bicycle and pedestrian modes in County transportation planning and by requiring new development to provide adequate pedestrian and bikeway facilities at suitable locations.

- **Policy 4.B.5:** Maintain and expand, where possible and appropriate, the system of non-motorized connections that link neighborhoods to larger roadways, activity centers and nodes, businesses, community services, parks and recreational facilities, and transit stops and stations.

- **Policy 4.B.6:** Actively investigate and seek alternative funding sources for bicycle and pedestrian facilities.

- **Policy 4.C.1:** Support the development of all public and social service transportation systems as outlined in the Tuolumne County Transit Development Plan.

- **Policy 4.C.2:** Encourage the Tuolumne County Transportation Council to enhance transit trips by improving performance, reliability, safety, security and facilities.

- **Policy 4.C.3:** Encourage the Tuolumne County Transit Agency to meet the needs of the transportation disadvantaged, including youths, elderly, persons with disabilities and the economically disadvantaged.

- **Policy 4.C.4:** Encourage effective marketing of all existing transportation services in Tuolumne County to improve awareness of existing services.

- **Policy 4.C.5:** Support the development of medium and high-density housing, commercial and offices along transit routes.

- **Policy 4.C.6:** Support street designs that accommodate transit facilities and operations.

- **Policy 4.C.7:** Support the use of public transit during emergency evacuations by coordinating efforts through the Emergency Operations Plan.

<u>Agriculture Element</u>

- **Policy 8.A.4:** Development proposed adjacent to land designated Agricultural by the General Plan land use diagrams shall provide a buffer from the agricultural land. The buffer shall be 200 feet in width and located on the development site. No residential or non-agricultural buildings may be erected in the buffer area as long as the adjacent land remains designated Agricultural. The buffer may be reduced in width by the Board of Supervisors after considering the recommendation of the Agricultural Advisory Committee if such a reduction is determined appropriate based upon the topography, vegetation, roads or other physical features of the buffer area or other factors considered by the Committee. If the General Plan land use designation of the adjacent land is amended in the future to a designation other than Agricultural, the need for the buffer area will be eliminated and the land use restrictions imposed pursuant to this Policy will cease at that time.

- **Policy 8.B.1:** Limit intrusion of urban development into agricultural areas.

  - **Implementation Program 8.B.a:** Make one of the following findings before approving expansion of identified community boundaries established on the General Plan land use diagrams:

    (a) the proposed development would not result in reduced productivity or increased costs of an agricultural operation;

    (b) the proposed development would not contribute to the deterioration of the rural setting, agricultural landscape, and operation practices of the adjacent agricultural areas; or

    (c) the community's need for the development in the proposed location is so important as to justify an exception to the policies and implementation programs contained within this Element.

- **Policy 8.B.2:** Protect and encourage productive use of valuable agricultural lands and areas that provide buffers between identified communities.

- **Policy 8.C.1:** Allow agriculturalists to manage their operations in an efficient, economic manner while minimizing conflict with non-agricultural uses.

  - **Implementation Program 8.C.a:** Apply the provisions of the "Right to Farm" Ordinance (Tuolumne County Ordinance Code, Chapter 5.20) to minimize conflict and resolve disputes between agricultural operations and nearby non-agricultural land uses.

  - **Implementation Program 8.C.b:** Minimize impacts to existing agricultural operations or use and resolve potential_conflicts between agricultural operations and new development through conditions of approval made a part of such new development.

  - **Implementation Program 8.C.c:** Require that maintenance of preexisting common fence lines be the joint responsibility of the existing agricultural use and adjacent new development through conditions of approval made a part of such new development.

- **Policy 8.C.2:** Establish a buffer between agricultural land uses and residential/non-agricultural land uses. It shall be the obligation of the party seeking the land use change to ensure that a sufficient buffer is established between the parcels. The buffer shall favor protection of the agricultural land.

  - **Implementation Program 8.C.d:** Implement the standards for buffer zones between new non-agricultural development and land designated for agricultural use established in Policy 8.A.4.

<u>Climate Change Element</u>

- **Policy 18.A.1:** Prepare a Climate Action Plan (CAP), or similar GHG emission reduction plan, that establishes a GHG reduction target consistent with the Senate Bill (SB) 32 goal to reduce statewide GHG emissions to 40 percent below 1990 levels by 2030. The CAP shall identify specific measures to reduce countywide emissions consistent with the established target and will also include adaptation strategies for the County to appropriately adjust to the environmental effects of climate change. Many of the measures in the CAP will overlap with and help implement goals, policies, and implementation programs identified in this General Plan.

- **Policy 18.A.3:** Continue to implement the policies and strategies identified in the *2016 Final Regional Transportation Plan*, including the Rural Sustainable Strategies.

- **Policy 18.A.7:** Encourage reduced consumption of fossil fuel energy by promoting alternative transportation methods and encouraging pedestrian oriented development to reduce the use of motor vehicles. See the Transportation Element and the Community Development and Design Element for a detailed listing of policies and implementation programs.

PROJECT IMPACTS

This section presents a programmatic-level analysis of potential impacts associated with land use and planning from projected development under the General Plan Update. Evaluation of environmental impacts associated with the General Plan Update considers the development that would be facilitated by the General Plan Update, in accordance with goals, policies, and implementation programs, to accommodate projected growth in the County. It should be noted that the County's population is projected to grow by 0.6 percent annually over the planning horizon (2040). As discussed in detail in Chapter 2, "Project Description," and the introduction to Chapter 3, this is a relatively low amount of growth.

Impact 3.11-1: Conflict with an Applicable Regional Plan

The Tuolumne Tomorrow Regional Blueprint and the 2016 RTP are the regional plans that, in addition to the General Plan Update, apply to the County. The General Plan Update includes policies that are designed to be consistent with the Regional Blueprint and the RTP. Therefore, the General Plan Update would not conflict with the Tuolumne Tomorrow Regional Blueprint or the 2016 RTP. Impacts would be **less than significant**.

The General Plan Update is a policy document intended to guide land use decisions within Tuolumne County's planning area through the year 2040. The General Plan Update promotes well-defined, cohesive, and compact communities, each built around an appropriately-scaled community core and community gathering places. General Plan Update policies, such as Policy 3.A.1, encourage new development in locations that take advantage of existing public infrastructure and services. With compact neighborhoods, auto dependency and demand for new roads would be reduced and transportation options would increase.

The TCTC adopted a population projection of 63,243 residents in Tuolumne County and the City of Sonora by the year 2040 after consideration of the California Department of Finance forecasts, Census population projections, and past TCTC adopted population projections. Although the General Plan Update is based upon the assumption that Tuolumne County and the City of Sonora will reach this projected population, it does not promote the growth of the County's population to that level. In fact, as described in Chapter 2, "Project Description," this projected growth rate is much higher than the rate of growth that has occurred in the unincorporated areas of the County over the past 20 years and is also much higher than projected by some to occur over the next 25 years. For instance, as described in Chapter 2, the California Department of Finance has projected virtually no growth through 2040. The philosophy of the General Plan Update is that the County will be prepared and able to accommodate growth, while adhering to policies that direct growth to identified communities.

As described above in Section 3.11.2, "Regulatory Setting," the 2016 RTP focuses on developing a coordinated and balanced multi-modal transportation system and considers short- and long-range transportation investments and improvements for all transportation modes. The General Plan Update's Transportation Element is intended to complement the improvements envisioned by the 2016 RTP. The environmental impacts of the General Plan Update Transportation Element are addressed throughout Chapter 3 of this Recirculated Draft EIR. Specifically, impacts relating to air quality, energy use, and noise are addressed in Sections 3.3, "Air Quality"; 3.6, "Energy"; 3.8, "Global Climate Change"; 3.12, "Noise"; and 3.16, "Transportation and Circulation." In addition, although overall traffic levels are likely to increase with projected development under the General Plan Update, the General Plan Update includes goals, policies, and implementation programs that would address increases in traffic. In general, development within identified communities reduces vehicle miles traveled (VMT) and associated air pollutant emissions and traffic-related noise as compared to development on sites in the periphery of metropolitan areas.

Projected development under the General Plan Update would be subject to Community Development and Design Element policies and implementation programs aimed at strengthening and balancing vehicle, bicycle, pedestrian, and transit connections in the County. Policies 1.A.4 through 1.A.6 focus growth within identified communities and promote development near transit. Policy 1.E.5 requires subdivisions to provide well-connected streets and pedestrian facilities. Policies 4.B.1 through 4.B.6 promote alternative transportation modes by requiring transportation systems to include alternative modes into the design; expanding and improving pedestrian facilities and bikeways; requiring new development to provide public transit, bicycle, and pedestrian facilities in appropriate locations; maintaining and expanding non-motorized linkages; and actively seeking alternative funding sources for bicycle and pedestrian facilities. Policies 4.C.1 through 4.C.7 promote transit by supporting development of the transit system, working with and encouraging the Tuolumne County Transportation Council, supporting higher density residential and commercial development near transit stops, and supporting street designs that accommodate transit facilities. Policies 18.A.1, 18.A.3, and 18.A.7 reduce VMT and promote alternative modes of transportation by requiring the County to prepare a CAP, implementing the strategies of the 2016 RTP (including the Rural Sustainable Strategies), and promoting alternative

transportation modes to reduce the use of motor vehicles. (See the full policy text, as well as the supporting implementation programs, above under "General Plan Update Policies.")

These General Plan Update policies and corresponding implementation programs promote mixed-use and infill development, orient growth areas near transit stops and stations, reduce VMT, and promote the development, enhancement, and funding alternate methods of transportation. These policies are aligned with the goals of the 2016 RTP described above. Also consistent with the 2016 RTP, the General Plan Update provides guidance in determining the appropriate or desirable locations for this growth, thereby preventing an unnecessarily scattered pattern of development, which often results in extraordinary demands on public services, above average public service costs and unnecessary and avoidable destruction or degradation of valuable resources. Therefore, implementation of the General Plan Update would not conflict with the Tuolumne Tomorrow Regional Blueprint or the 2016 RTP. This impact is **less than significant**.

Mitigation Measures

No mitigation is required.

Impact 3.11-2: Physically Divide an Established Community

Projected development under the General Plan Update would not physically divide any established communities. Instead, policies and land use changes under the General Plan Update would facilitate and direct growth and expansion of existing identified communities in an efficient and orderly manner. The General Plan Update also includes policies that would minimize potential incompatible land uses in identified communities. Impacts would be **less than significant**.

The General Plan Update intends to facilitate development within identified communities where public infrastructure and services already exist. Under the General Plan Update, no changes would be made to land use designations that would reduce allowable density on any parcel. Rather, land use changes under the General Plan Update would increase the overall acreage and percentage of Low, Medium, High, Estate, and Rural Residential land use designations, while decreasing Large Lot and Homestead Residential land uses. These land use changes would allow for increased density of dwelling units to be developed where the land use changes would occur, which would generally be in identified communities.

New housing and mixed-use development would be encouraged by Community Development and Design Element policies and supporting implementation programs. For example, Policy 1.A.4 would focus growth in identified communities. Implementation programs supporting Policy 1.A.4 would protect the separation of identified communities by designating the land between identified communities of non-urban uses, maintaining the rural character by using transitional land uses around identified communities, and designating adequate land within and around identified communities to allow growth in those areas. Similarly, Policy 3.A.1 would encourage the siting of new urban development within or adjacent to identified communities to maximize the use of existing infrastructure and encourage logical extension of infrastructure. However, in order to prevent concentration of growth in only a couple communities, Policy 1.A.11 would encourage growth to be dispersed among identified communities. Together, these policies would encourage growth to occur in and near identified communities with the intent of protecting the rural character of the areas outside identified communities.

The General Plan Update also includes policies to minimize potential land use incompatibility. Policy 1.B.1 would protect existing land uses from incompatible land uses. Implementation programs supporting Policy 1.B.1 include designating land around existing non-residential land uses with compatible land uses, designating land uses around existing residential neighborhoods with compatible uses, separating new residential development from incompatible land uses, and considering buffer areas around existing industrial land uses to protect them from encroachment of incompatible land uses. By promoting land use compatibility, the General Plan Update minimizes the potential for allowing an incompatible land use within an identified community. Therefore, established communities would not be physically divided, but instead, growth and expansion would be facilitated and organized in an efficient manner. Impacts would be **less than significant**.

Mitigation Measures

No mitigation is required.

3.12 NOISE

This section considers existing noise levels and analyzes the potential noise-related impacts from projected development under the General Plan Update. Impacts relating to noise and vibration generated by construction, traffic, industrial, commercial, agricultural uses, railroads, and airports are addressed. Analysis of existing traffic noise exposure along the major corridors and arterials located in Tuolumne County and potential new noise associated with projected development under the General Plan Update is based on traffic data analysis provided in the Tuolumne County General Plan and Regional Transportation Plan Update Draft EIR Traffic Study (Wood Rodgers 2016).

Several public comments on the Draft EIR related to noise. The concerns expressed in these comments included the noise impacts associated with the encroachment of commercial activity on rural and agricultural land uses, and the effect noise associated with projected development under the General Plan Update would have on existing residents. These concerns are addressed below, as appropriate.

3.12.1 Environmental Setting

OVERVIEW OF NOISE AND VIBRATION

Noise (or volume) is generally measured in decibels (dB) using the A-weighted sound pressure level (dBA). The A-weighting scale is an adjustment to the actual sound power levels to be consistent with that of human hearing response, which is most sensitive to frequencies around 4,000 Hertz (about the highest note on a piano) and less sensitive to low frequencies (below 100 Hertz). In addition to the actual instantaneous measurement of sound levels, the duration of sound is important since sounds that occur over a long period of time are more likely to be an annoyance or cause direct physical damage or environmental stress.

One of the most frequently used noise metrics that considers both duration and sound power level is the equivalent noise level (L_{eq}). The L_{eq} is defined as the single steady A-weighted level that is equivalent to the same amount of energy as that contained in the actual fluctuating levels over a period of time. Typically, L_{eq} is summed over a one-hour period. The maximum instantaneous noise level (L_{max}) can be used to describe short noise events (e.g., construction activities, car pass-by). In addition, the community noise equivalent level (CNEL), is typically used for describing ambient noise levels and sources that generate noise over extended periods of time (e.g., roadway noise). The CNEL is a weighted noise level over a 24-hour period that applies a penalty of 5 dB during the evening hours (7:00 p.m. to 10:00 p.m.) and a 10-dB penalty during the nighttime hours (10:00 p.m. to 7:00 a.m.).

The sound pressure level is measured on a logarithmic scale with the 0-dB level based on the lowest detectable sound pressure level that people can perceive (an audible sound that is not zero sound pressure level). Decibels cannot be added arithmetically, but rather are added on a logarithmic basis. Based on the logarithmic scale, a doubling of sound energy is equivalent to an increase of 3 dB. Because of the nature of the human ear, a sound must be about 10 dB greater than the reference sound to be judged as twice as loud. In general, a 3-dB change in community noise levels is noticeable, while 1–2 dB changes generally are not perceived. Quiet suburban areas typically have exterior noise levels in the range of 40–50 dBA, while those along arterial streets are in the 50–60+ dBA range. Normal conversational levels are in the 60–65 dBA range and ambient noise levels greater than that can interrupt conversations.

Noise levels typically attenuate at a rate of 6 dB per doubling of distance from point sources such as industrial machinery (Harris 1979). For example, a person standing 25 feet from an industrial machine may experience noise levels of 75 dBA, while a person standing 50 feet from the same noise source would experience noise levels of 69 dBA, and a person standing 100 feet from the source would experience noise levels of 63 dBA. Noise from lightly traveled roads typically attenuates at a rate of about 4.5 dB per doubling

of distance. Noise from heavily traveled roads, such as the state routes that pass through the County and major County arterials, typically attenuates at about 3 dB per doubling of distance (Harris 1979).

The actual time period in which noise occurs is also important since noise that occurs at night tends to be more disturbing than that which occurs during the daytime. The day-night average level (L_{dn}) recognizes this characteristic by weighting the hourly L_{eq} over a 24-hour period. The weighting involves the addition of 10 dBA to actual nighttime (10:00 p.m. to 7:00 a.m.) noise levels, accounting for the greater amount of disturbance associated with noise during that time period.

VIBRATION

Vibration is an oscillatory motion through a solid medium in which the motion's amplitude can be described in terms of displacement, velocity, or acceleration. Vibration can be a serious concern, causing buildings to shake and rumbling sounds to be heard. In contrast to noise, vibration is not a common environmental problem. It is unusual for vibration from sources such as buses and trucks to be perceptible, even in locations close to major roads.

There are several different methods that are used to quantify vibration. The peak particle velocity (PPV) is defined as the maximum instantaneous peak of the vibration signal. The PPV is most frequently used to describe vibration impacts to buildings and is usually measured in inches per second. The root mean square (RMS) amplitude is most frequently used to describe the effect of vibration on the human body. The RMS amplitude is defined as the average of the squared amplitude of the signal. Decibel notation (VdB) is commonly used to measure RMS. The decibel notation acts to compress the range of numbers required to describe vibration.

High levels of vibration may cause physical personal injury or damage to buildings. However, groundborne vibration levels rarely affect human health. Instead, most people consider groundborne vibration to be an annoyance that can affect concentration or disturb sleep. In addition, high levels of groundborne vibration can damage fragile buildings or interfere with equipment that is highly sensitive to groundborne vibration (e.g., electron microscopes).

In contrast to noise, groundborne vibration is not a phenomenon that most people experience every day. The background vibration velocity level in residential areas is usually 50 RMS or lower which is well below the threshold of perception for humans (human perception is around 65 RMS). Most perceptible indoor vibration is caused by sources within buildings, such as operation of mechanical equipment, movement of people, or slamming of doors. Typical outdoor sources of perceptible groundborne vibration are construction equipment, steel-wheeled trains, and traffic on rough roads. If the roadway is smooth, the vibration from traffic is rarely perceptible.

SENSITIVE RECEPTORS

Noise level allowances for various types of land uses reflect the varying noise sensitivities associated with those uses. In general, noise-sensitive land uses ("sensitive receptors") are any residence, hospital, school, hotel, library, office, or similar facility where quiet is an important attribute of the environment. Such uses have more stringent noise level allowances than most commercial or agricultural uses that are not subject to impacts such as sleep disturbance. As described in the 1996 Tuolumne County General Plan Noise Element, sensitive receptors include but are not limited to residential development, schools, hospitals, convalescent homes, churches, and libraries. Sensitive receptors most affected by roadway noise are those immediately adjacent to roadways and corridors with high traffic volume, such as State Routes (SRs) 108, 49, and 120, as well as other local high-volume streets such as Mono Way or Tuolumne Road that may experience elevated noise levels.

EXISTING NOISE LEVELS IN TUOLUMNE COUNTY

The ambient noise environment in Tuolumne County is largely affected by traffic on highways and County roadways, commercial and industrial uses, agricultural uses, railroad operations, and aircraft. The most prominent sources of noise in the project vicinity are motor vehicles (e.g., automobiles, buses, trucks, and motorcycles). Motor vehicle noise is a major influence on noise levels to nearby sensitive receptors (primarily to nearby residences). Motor vehicle noise is of concern because it is characterized by a high number of individual events, which often create a sustained noise level, and because of its proximity to noise sensitive uses. In general, corridors throughout Tuolumne County consist of one or two lanes in each direction with varying speed limits ranging from 35 miles per hour (mph) to 55 mph.

The areas surrounding travel corridors in the County are often characterized by hills. As a consequence, both the corridors and surrounding sensitive noise receptors are located at various heights, which may affect how traffic noise travels and how it is experienced at nearby sensitive receptors. Additionally, the speed limits on the corridors may frequently change due to vehicles needing to slow down around wide turns. Because vehicles may be regularly accelerating and decelerating, this can also be a factor that influences the level of traffic noise at sensitive receptors.

To determine existing noise levels and noise contours along evaluated travel corridors in the County, six weekday evening 15-minute noise measurements were taken using a Rion NL-21 sound level meter on April 24, 2015. The locations of noise measurements were selected to correlate and to be consistent with the traffic data collection study times and locations. These noise measurements provide existing noise levels during the 3:00 p.m. to 6:00 p.m. peak hour travel period. Exhibit 3.12-1 shows the on-site noise measurement locations and Table 3.12-1 identifies the measured noise levels. In addition to noise monitoring, existing traffic noise levels on major roadways were modeled using average daily trip volumes available in the Tuolumne County General Plan and Regional Transportation Plan Update Draft EIR Traffic Study (Wood Rodgers 2016). Table 3.12-2 shows the modeled existing traffic noise levels and associated distance to the 60, 65, and 70 dBA CNEL contour.

Table 3.12-1 Existing Noise Measurements

Measurement Number	Measurement Location	Distance (feet) from Nearest Roadway[1]	Sample Time	L_{eq} (dBA)[2]
1	Black Hawk Drive and Twain Harte Drive, Twain Harte	25	5:00 pm-5:15 pm	70.6
2	1075 Mono Way, East Sonora (Carl's Jr)	45	5:34 pm-5:49 pm	69.7
3	22540 Parrotts Ferry Road, Columbia (Columbia Elementary School)	35	6:02 pm-6:17 pm	65.1
4	18233 CA-49, Jamestown (Dollar General)	85	6:46 pm-7:01 pm	65.3
5	Tuolumne County Fire Department Chinese Camp Station 61, Chinese Camp	60	7:14 pm-7:29 pm	63.3
6	Mary Laveroni Community Park, Groveland	25	7:51 pm-8:04 pm	66.4

[1] Distance is approximate from the centerline of measured road.

[2] L_{eq} refers to equivalent continuous sound pressure level (dB). Refer to Exhibit 3.12.1 for noise measurement locations.

Source: Tuolumne County 2015

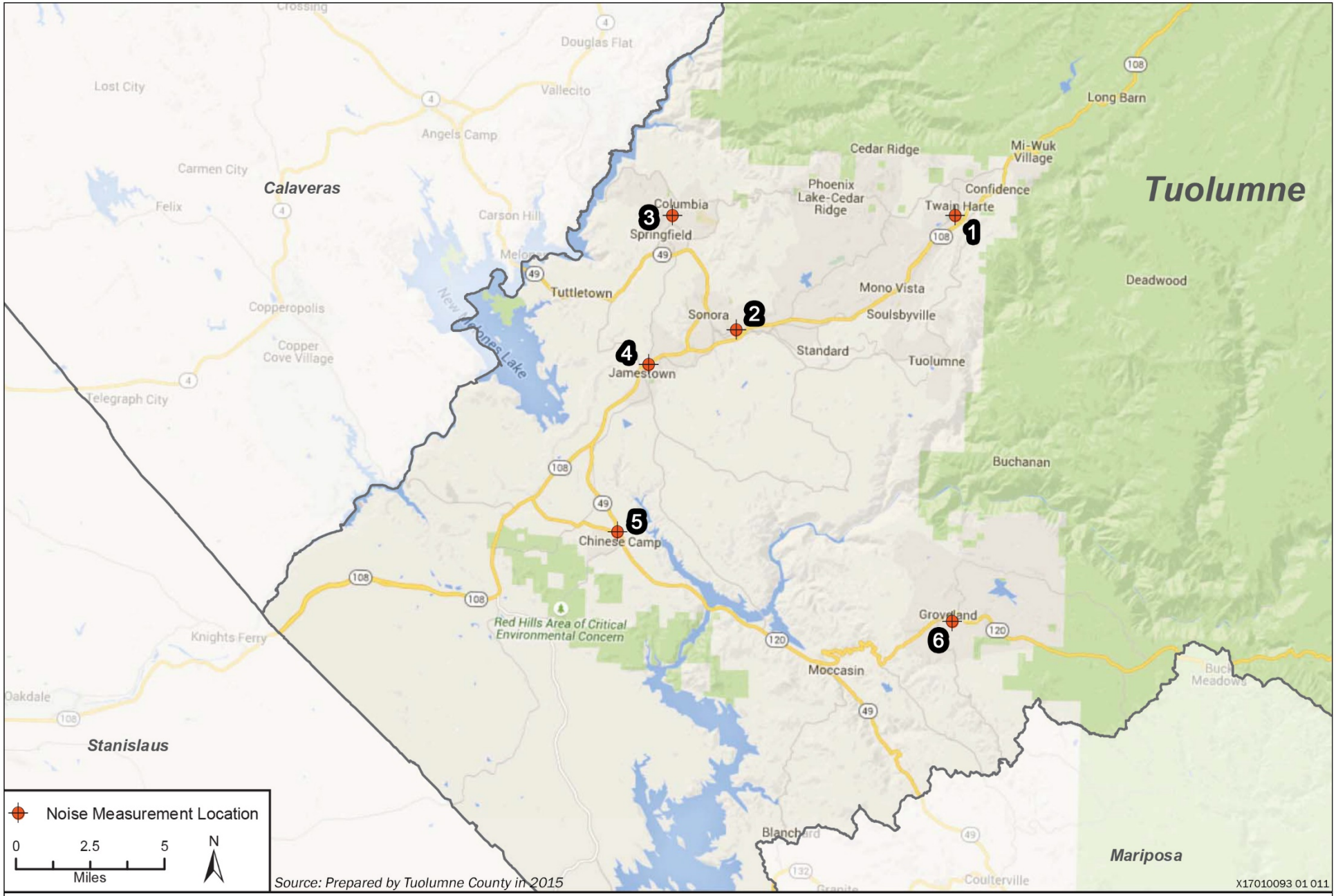


Exhibit 3.12-1

Noise Monitoring Locations

Table 3.12-2 Existing 2015 Noise Contours

Corridor and Segment		Noise @ 50 feet from Road (dBA CNEL)	Noise Contour (dBA CNEL) Distance in Feet		
			60 dBA	65 dBA	70 dBA
State Route 108					
1	Between Stanislaus County Line and Tulloch Road	70.1	427	198	92
2	Between O'Byrnes Ferry Road and La Grange	71.8	291	135	63
3	Between O'Byrnes Ferry Road and SR 120 (Yosemite Junction)	72.5	324	151	70
4	Between SR 120 and West Junction SR 49	72.4	319	148	69
5	Between South Washington Street/Lime Kiln Road and Mono Way	72.9	347	161	75
6	Between South Washington Street/Lime Kiln Road and Mono Way	73.1	354	164	76
7	Between Mono Way and Hess Avenue	73.1	357	166	77
8	Between Hess Avenue and Peaceful Oak Road	71.9	296	137	64
9	Between Peaceful Oak Road and Mono Way	71.5	277	129	60
10	Between Mono Way and Soulsbyville Road	71.6	359	166	77
11	Between Soulsbyville Road and West Connector Twain Harte Drive	69.1	242	112	52
12	Between West and East Connector Twain Harte Drive	69.0	240	111	52
13	Between East Connector Twain Hart Road and Leisure Drive	69.1	242	112	52
14	Between Leisure Drive and Chief Fuller Road	68.3	171	79	37
15	Between Chief Fuller Road and Lyons Lake Road	66.4	128	59	28
16	Between Lyons Lake Road and West Long Barn Connector	66.2	123	57	26
17	Between West Long Barn Connector and East Long Barn Connector	67.1	178	83	38
18	Between Kennedy Meadows Road and Tuolumne/Mono County Line	58.9	40	19	9
State Route 49					
20	Between South Junction SR 120 and Mariposa County Line	59.1	41	19	9
21	North of North SR 120 Junction	61.8	63	29	14
22	Between SR 49 (Montezuma Junction) and Bell Mooney Road	72.6	331	154	71
23	Between Bell Mooney Road and South Junction Main St	72.8	340	158	73
24	Between South Junction Main Street and Rawhide Road	72.8	340	158	73
25	Between Rawhide Road and Fifth Ave	72.9	344	160	74
26	Between Fifth Ave and Stockton Road/SR 108	73.6	387	180	83
27	Between SR 108 and Fairview Lane (Ponderosa)	70.7	246	114	53
28	Between Fairview Lane and Southgate Drive	70.2	229	106	49
29	Between Southgate Drive and Washington Street	70.3	232	108	50
30	Between Stockton Road and Dodge Street	72.6	330	153	71
31	Between Dodge Street and Snell Street	72.8	341	158	73
32	Between Snell Street and Columbia Way	72.0	301	140	65
33	Between Columbia Way and Old Sonora Columbia Road	71.8	292	136	63
34	Between Old Sonora Columbia Road and Parrotts Ferry Road	71.2	265	123	57
35	Between Parrotts Ferry Road and Von Kleiben Road	67.0	139	65	30
36	Between Von Kleiben Road and Rawhide Road	67.3	147	68	32
37	Between Rawhide Road and Tuttletown Road	66.5	130	60	28
38	Between Tuttletown and Tuolumne/Calaveras County Line	67.4	149	69	32
State Route 120 (Stanislaus County Line-Chinese Camp)					
39	Between Tulloch Road and La Grange Road	70.3	437	203	94
40	Between East Junction 108 and North Junction SR 49	64.2	92	42	20

Table 3.12-2 Existing 2015 Noise Contours

Corridor and Segment		Noise @ 50 feet from Road (dBA CNEL)	Noise Contour (dBA CNEL) Distance in Feet		
			60 dBA	65 dBA	70 dBA
41	Between North Junction SR 49 and Jacksonville Road	65.7	114	53	25
42	Between Jacksonville Road and South Junction SR 49	66.9	138	64	30
43	Between South Junction SR 49 and Priest-Coulterville Road	65.8	117	54	25
44	Between Priest-Coulterville Road and Ferretti Road (Groveland Townsite)	66.7	134	62	29
45	Between Ferretti Road (Groveland Townsite) and Old State Highway 120	67.6	152	71	33
46	Between Old State Highway 120 and Hells Hollow Road	66.8	135	63	29
47	Between Hells Hollow Road and Ferretti Road	65.7	115	53	25
48	Between Ferretti Road and Cherry Valley Lake Road	65.5	111	51	24
49	Between Cherry Valley Lake Road and Yosemite Park West Boundary	65.4	109	51	23
Mono Way					
50	West of Sanguinetti Road	63.8	88	41	19
51	Between Sanguinetti Road and Greenley Road	62.6	74	34	16
52	Between Greenley Road and Fir Drive	63.6	87	40	19
53	Between Fir Drive and Tuolumne Road	64.3	96	44	21
54	Between Tuolumne Road and Hess Ave	61.2	60	28	13
55	Between Hess Avenue and Standard Road/Peaceful Oak Drive	61.1	59	27	13
56	Between Standard Road/Peaceful Oak Drive and SR 108	59.0	43	20	9
Parrotts Ferry Road					
60	Between SR 49 and Sawmill Flat Road	64.1	93	43	20
61	Between Sawmill Flat Road and Springfield Drive	62.6	74	35	16
62	Between Springfield Drive and Marble Quarry Drive	62.7	75	35	16
63	Between Marble Quarry Drive and Calaveras County Line	59.8	48	22	10
Tuolumne Road					
75	Between Mono Way and Lambert Lake Road	65.5	115	53	25
76	Between Lambert Lake Road and Hess Avenue	64.8	104	48	22
77	Between Hess Avenue and Wards Ferry Road	64.5	100	46	22
78	Between Wards Ferry Road and Standard Road	64.4	97	45	21
79	Between Standard Road and Woodhams Carne	64.4	98	46	21
80	Between Woodhams Carne and Cherokee Road	64.4	98	45	21
104	Between Tuolumne Road and Mi Wu Street	61.7	65	30	14
105	Between Mi Wu Street and East Avenue	57.4	34	16	7
106	Between East Avenue and SR 108	55.2	24	11	5

Source: Modeled by Ascent Environmental in 2018, based on traffic data provided by Wood Rodgers (2016)

Highway/Roadway Noise

Streets and highways throughout the County are identified as the most extensive source of mobile noise in the County. There are two east-west state highways in the County: SRs 108 and 120. SR 49 is the only north-south highway in the County. The majority of the identified communities exist on or near these transportation corridors. SRs 108, 120, and 49 are the major transportation routes through the County. A segment of SR 132 traverses the southern edge of Tuolumne County near the shore of the Don Pedro Reservoir and produces traffic noise that would potentially affect nearby residences. None of the state routes are interstates.

Industrial and Commercial Operations

Mining and timberland production operations are located throughout Tuolumne County. Noise generation within industrial and commercial facilities such as mining or timberland production facilities or from many types of agricultural equipment are controlled by federal and state employee health and safety regulations (e.g., federal Occupational Safety and Health Administration and California Division of Occupational Safety and Health), but exterior noise from such operations may exceed local standards at nearby noise-sensitive land uses. Typical commercial and industrial noise sources include loading dock operations, parking lot activity, on-site equipment (including heating and air conditioning), and heavy truck idling. Other stationary noise sources of concern typically include generators, pumps, air compressors, outdoor speakers, motors, heavy equipment, back up alarms and similar machinery. There is also potential for blasting or demolition noise associated with mining operations.

Agricultural Operations

Agricultural production is recognized throughout the General Plan Update as vital to Tuolumne County. Some of the more common noise sources associated with farming operations include tractors, harvesting equipment, spray equipment, and stationary power sources, including internal combustion pump engines. Maximum noise levels generated by farm-related tractors typically range from 77 to 85 dB at a distance of 50 feet from the tractor, depending on the horsepower of the tractor and the operating conditions. Due to the seasonal nature of the agricultural industry, there are often extended periods of time when no noise is generated on properties, which are actively being farmed, followed by short-term periods of intensive mechanical equipment usage and corresponding noise generation. These uses generate short-term periods of elevated noise during all hours of the day and night and possess the potential to generate adverse public reaction during intensive farm-related activities.

Railroads

Tuolumne County is served by the Sierra Railroad which operates between Oakdale, in Stanislaus County, and Standard, in Tuolumne County. The Sierra Railroad currently runs through areas of Jamestown and Sonora, with existing structures and development located roughly 100 feet away from the track centerline. Connections are made with both the Southern Pacific and the Santa Fe Railroads in Oakdale. The Sierra Railroad includes 49 miles of track and has been in operation since 1897. The Sierra Railroad is vital to the local economy. The railroad not only provides the local economy and lumber industry with access to distant markets, but also provides historic rail excursions and scenic opportunities for the film industry. Located along the Sierra Railroad in Jamestown is Railtown 1897 State Historic Park, which includes a functional roundhouse, several steam engines and an inventory of vintage passenger and freight cars. According to data from the Federal Railroad Administration dated March 2015, railroad crossings in Tuolumne County that are currently in use are not crossed more than four times per day and the speed of the trains do not exceed 25 mph at railroad crossings.

Airports

Two airports are located in Tuolumne County: Columbia Airport and Pine Mountain Lake Airport. Pine Mountain Lake Airport includes both a public use airport as well as a residential use airport. It is located three miles northeast of the town of Groveland, serving Tuolumne County, California, and is the gateway airport for SR 120, the most northern route to Yosemite National Park. The airport is used mostly for general aviation aircraft. Pine Mountain Lake Airport covers 52 acres and has one runway. The runway is 3,625 feet by 50 feet and has an asphalt surface (Tuolumne County 2012).

Columbia Airport covers an area of 356 acres which contains two runways: the first runway is paved asphalt and measures 4,670 feet by 75 feet and the second runway is turf, measuring 2,600 feet by 100 feet. There are approximately 25,000 aircraft operations per year at this airport. General aviation aircraft make up approximately 96 percent of the flight operations, with the remainder comprising about approximately 4 percent air taxi, and 1 percent military aircraft (Tuolumne County 2012). There are over 200 aircraft based at this airport: 95 percent single engine, 2 percent multi-engine, 2 percent helicopters, and 1 percent ultra-light aircraft (Tuolumne County 2012). Columbia Airport is also the home to a California Department of

Forestry and Fire Protection (CAL FIRE) Air Attack Base. The CAL FIRE Air Attack crews respond to fires throughout the area and provide support for fighting wildfires. The base provides initial attack for CAL FIRE Madera-Mariposa-Merced and Amador-El Dorado Units and the Stanislaus National Forest and Yosemite National Park. This area spans north to the town of Plymouth, south to the town of Mariposa, east over the Sierra and west to the Unit's state responsibility area boundary: an initial attack area of approximately 3.6 million acres. Columbia Air Attack Base responds to an average of 150 calls per year (CAL FIRE 2005).

The Tuolumne County Airport Land Use Compatibility Plan, adopted in January 2003, includes calculated 2015 noise contour maps for both the Columbia Airport and Pine Mountain Lake Airport, shown in Exhibits 3.12-2 and 3.12-3.

3.12.2 Regulatory Setting

FEDERAL

Federal Interagency Committee on Aviation Noise

The Federal Interagency Committee on Aviation Noise (FICAN) was established in 1993 to assist agencies in providing adequate forums for discussion of public and private sector proposals, identifying needed research, and encouraging the conduct of research and development in these areas.

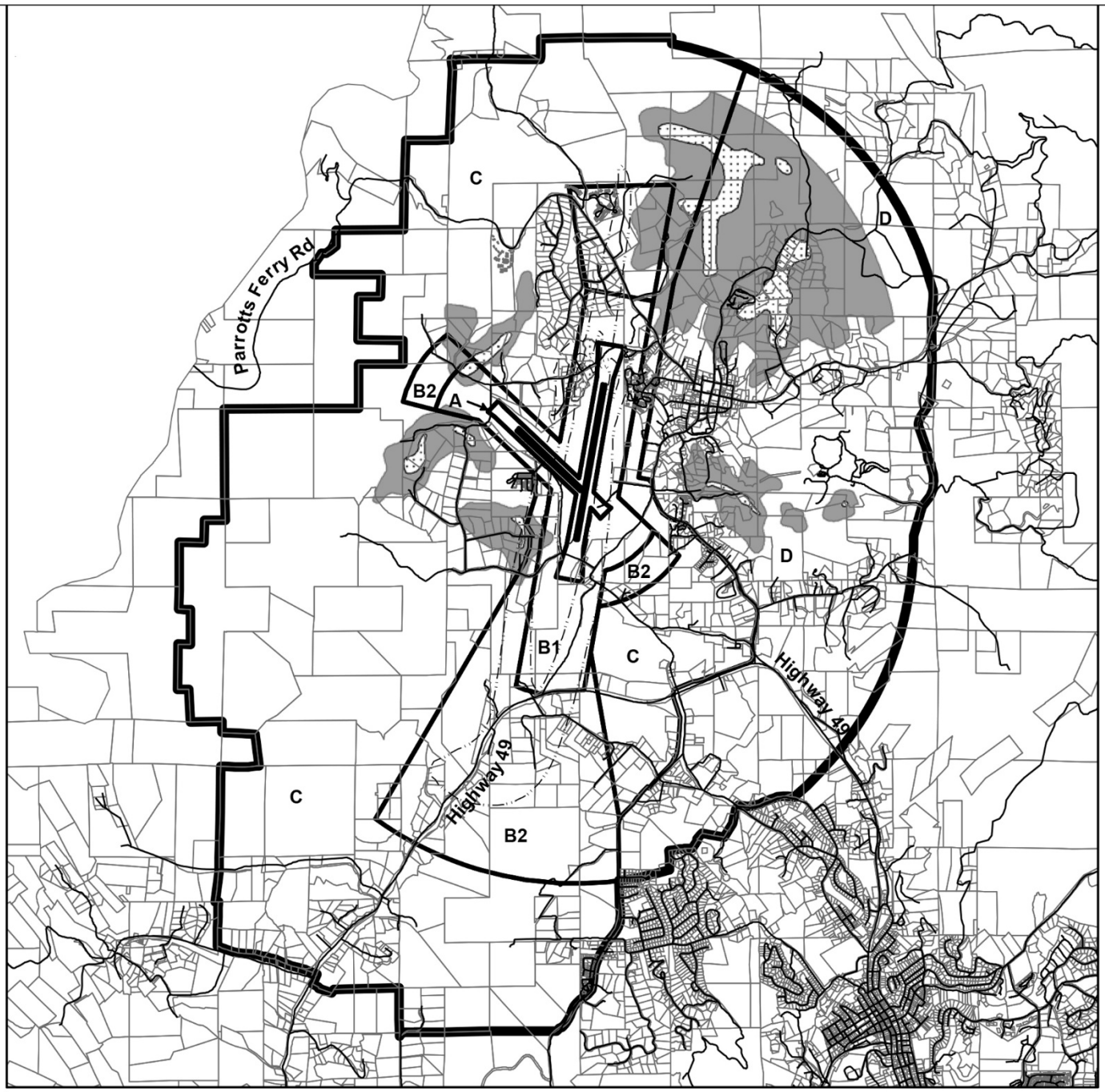
In 1992, the Federal Interagency Committee on Noise published the *Federal Agency Review of Selected Airport Noise Analysis Issues,* which recommended an interim dose-response curve to predict the percent of the exposed population expected to be awakened as a function of the exposure to single-event noise levels expressed in terms of SEL (FICON 1992).

Since the adoption of FICON's interim curve in 1992, substantial field research in the area of sleep disturbance has been completed. In 1997, FICAN published the *Effects of Aviation Noise on Awakenings from Sleep,* which recommends the adoption of a new dose-response curve for predicting awakening (FICAN 1997). The FICAN 1997 curve represents the upper limit of the observed field data, and should be interpreted as predicting the "maximum percent of the exposed population expected to be behaviorally awakened," or the "maximum % awakened" for a given residential population. Based on the 1997 FICAN dose-response curve, 10 percent of the population is estimated to be awakened when the SEL interior noise level is 81 dB. An estimated five to 10 percent of the population is affected when the SEL interior noise level is between 65 and 81 dB, and few sleep awakenings (less than five percent) are predicted if the interior SEL is less than 65 dB (FICAN 1997:5).

U.S. Department of Transportation

To address the human response to groundborne vibration, the Federal Transit Administration (FTA) set forth guidelines for maximum-acceptable vibration criteria for different types of land uses. Among these guidelines are the following maximum-acceptable vibration limits:

- 65 VdB, referenced to 1 microinch per second and based on the RMS velocity amplitude, for land uses where low ambient vibration is essential for interior operations (e.g., hospitals, high-tech manufacturing, laboratory facilities);
- 80 VdB for residential uses and buildings where people normally sleep; and
- 83 VdB for institutional land uses with primarily daytime operations (e.g., schools, churches, clinics, offices) (FTA 2006).



A Runway Protection Zone

B1 Approach - Departure Zone

B2 Extended Approach - Departure Zone

C Common Traffic Pattern Zone

D Other Airport Environs

Critical Height Zone Overlay

Height Caution Zone Overlay

Noise Impact Zones CNEL 55, 60, & 65 dBa

Runway

Roads

Source: Tuolumne County Ordinance Code, Chapter 18.24

X17010093 01 001

Exhibit 3.12-2 **Columbia Airport Noise Impact Area – 2015**

A Runway Protection Zone

B1 Approach - Departure Zone

B2 Extended Approach - Departure Zone

C Common Traffic Pattern Zone

D Other Airport Environs

Critical Height Zone Overlay

Height Caution Zone Overlay

Noise Impact Zones CNEL 55, 60, & 65 dBa

Runway

Roads

Source: Tuolumne County Ordinance Code, Chapter 18.24

X17010093 01 002

Exhibit 3.12-3 **Pine Mountain Lake Airport Noise Impact Area – 2015**

STATE

California Building Code

The State of California's noise insulation standards are codified in the California Code of Regulations, Title 24, Building Standards Administrative Code, Part 2, California Building Code. Title 24 is applied to new construction in California and states that interior noise levels attributable to exterior sources shall not exceed 45 dB L_{dn}/CNEL in any habitable room. An acoustical analysis documenting compliance with the interior sound level standards shall be prepared for structures containing habitable rooms within the CNEL noise contours of 60-dB or greater.

California Department of Transportation

In 2013, Caltrans published the Transportation and Construction Vibration Guidance Manual. The Manual provides general guidance on vibration issues associated with construction and operation of projects in relation to human perception and structural damage. Table 3.12-3 below presents recommendations for levels of vibration that could result in damage to structures exposed to continuous vibration.

Table 3.12-3 Caltrans Recommendations Regarding Vibration Levels

PPV (in/sec)	Effect on Buildings
0.4-0.6	Architectural damage and possible minor structural damage
0.2	Risk of architectural damage to normal dwelling houses
0.1	Virtually no risk of architectural damage to normal buildings
0.08	Recommended upper limit of vibration to which ruins and ancient monuments should be subjected
0.006–0.019	Vibration unlikely to cause damage of any type

Notes: in/sec = inch per second; PPV= peak particle velocity.

Source: Caltrans 2013

California General Plan Guidelines

Though not adopted by law, the *State of California General Plan Guidelines 2017*, published by the California Governor's Office of Planning and Research (OPR 2017), provide guidance for the compatibility of projects 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. Normally acceptable noise levels for single-family homes are levels below 55 dBA CNEL and conditionally acceptable levels range from 55 dBA to 70 dBA CNEL. For multifamily homes levels below 60 dBA CNEL are normally acceptable and levels between 60 dBA CNEL and 70 dBA CNEL are conditionally acceptable.

LOCAL

Tuolumne County General Plan

Tuolumne County's current (1996) Noise Element establishes noise standards for the range of uses present in and around the County. These standards are used to determine whether proposed new development in the County requires mitigation to avoid potential land use conflicts. As the proposed project would update the 1996 General Plan, this document will be discussed in the context of the update within the impact analysis. Specific General Plan Update policies related to noise are identified below under Section 3.12.3, "Impact Analysis."

Tuolumne County Airport Land Use Compatibility Plan

The Airport Land Use Commission is responsible for reviewing airport and adjacent land use proposals on or near Columbia Airport and Pine Mountain Lake Airport. The criteria and affected areas in proximity to the airports are defined in the Tuolumne County Airport Land Use Compatibility Plan, which was approved in 2003. The goal of the plan is to promote compatibility between the public-use airports within Tuolumne County and the land uses which surround them. The Airport Land Use Compatibility Plan serves as the primary tool for use by the Tuolumne County Airport Land Use Commission in its review of land development proposals at County airports and on surrounding land. The Airport Land Use Compatibility Plan contains policies regarding noise, safety, airspace protection, and aircraft overflights which apply primarily to property located within the airport influence area boundaries associated with the two-County public-use airports. Table 3.12-4 below shows the maximum allowable noise exposure from aircraft-related sources.

Table 3.12-4 Maximum Allowable Noise Exposure—Aircraft Noise Sources[1]

Land Use Receptors	Outdoor Activity Areas[2]	Interior Spaces[3]		
	L_{dn}/CNEL, dB	L_{dn}/CNEL, dB	L_{max}, dB[4]	
			Day	Night
Residential – Living Areas	55	45	45	45
Residential – Sleeping Areas	55	40	45	40
Transient Lodging[5]	60	45	–	40
Hospitals, Nursing Homes[6]	60	45	–	40
Churches, Meeting Halls, Office Buildings, Mortuaries	60	45	45	45
Schools Libraries, Museums	60	45	55	55

Notes:
1 This table applies to noise exposure levels that result from aircraft. For existing receiving land uses, consideration shall be given to the noise exposure from new aviation-related sources during the design and approval of the new aviation-related project. In the case of existing aviation-related sources, projects or consideration of land use changes that lie within the jurisdictional area of the Tuolumne County Airport Land Use Commission, which involve noise-sensitive land uses shall address the noise exposure environment and use these standards as thresholds.
2 An outdoor activity area is a location outside of the immediate structure where formal or informal activities are likely to happen. For example, anywhere on an urban residential property could be an outdoor activity area, while the outdoor activity area for a school would be the playground or sporting fields, and for a hospital would be an exterior patio or exercise area. Where the location of outdoor activity areas is unknown, the exterior noise level standard shall be applied to the property line of the receiving land uses.
3 For typical construction methods, the reduction in the noise level from the outside of the structure to the inside is approximately 15 dB. In a high noise environment, special construction techniques may be necessary to reduce the interior noise level to the standard.
4 L_{max} refers to the maximum interior noise level. The design L_{max} value shall be established as the maximum aircraft noise level which is exceeded by 10 percent of the aircraft noise events occurring during a typical 24-hour day of aircraft operations. In other words, the L_{max} value used in the evaluation shall be determined by eliminating the loudest 10 percent of the aircraft events measured during the sample period, which should be a typical 24-hour day.
5 Transient lodging are overnight accommodations usually intended for occupancy by tourists or other short-term paying customers, examples include hotels, motels, or homeless shelters. Transient lodging, as used in this case, does not include bed and breakfast establishments which are located in rural areas, campgrounds or guest ranches.
6 These standards only apply to nursing homes or schools that have more than 6 beds or students, respectively.

3.12.3 Impact Analysis

METHODS OF ANALYSIS

Construction

To assess potential short-term (construction-related) noise and vibration impacts, project-generated construction source noise and vibration levels were determined based on methodologies, reference noise levels, and usage factors from the FTA's *Transit Noise and Vibration Impact Assessment* (FTA 2006) and the Federal Highway Administration *Roadway Construction Noise Model User's Guide* (FHWA 2006). Reference levels are noise and vibration levels for specific equipment or activity types that are well documented in the field of acoustics.

Operations

The assessment of potential long-term (operational) noise impacts from project-generated increases in traffic was conducted using modeling based on the Caltrans traffic noise analysis protocol and the technical noise supplement (Caltrans 2013), as well as project-specific traffic data (Appendix D). To assess this impact, traffic noise levels under existing and existing-plus-project conditions for affected roadway segments were modeled. The modeling conducted does not account for any natural or human-made shielding (e.g., the presence of vegetation, berms, walls, or buildings) and, consequently, represents worst-case noise levels. The traffic analysis evaluated 150 roadway segments. However, the noise analysis only included freeways/highways, major roads, and roads that resulted in noise levels that exceeded applicable thresholds. Roadways that would not experience noise levels above any threshold were not included. See Appendix E for modeling details and assumptions.

Stationary sources, airports, and railroad noise sources were also evaluated. Long-term (operational) impacts were based on reference noise emission levels and measured noise levels for activities and equipment associated with project operation (e.g., heating ventilation and air conditioning units, delivery docks) and standard attenuation rates and modeling techniques. Railroad noise was modeled using modeling and propagation methodologies from FTA.

GENERAL PLAN UPDATE POLICIES

The General Plan Update includes policies and implementation programs that address the various noise sources in Tuolumne County. The applicable policies and programs are included below.

<u>Transportation Element</u>

- **Policy 4.B.1:** Develop a modern transportation system that incorporates alternative transportation modes into the system design.

<u>Noise Element</u>

- **Policy 5.A.1:** Evaluate the need of proponents of new development of noise-sensitive land uses proposed adjacent to existing transportation or other noise sources to incorporate noise reduction techniques so that noise levels at the new development are consistent with the exposure threshold standards shown in [General Plan] Figures 5.2 and 5.3. [See Tables 3.12-5 and 3.12-6 in this EIR.]

  - **Implementation Program 5.A.a:** Review new public and private development proposals to determine conformance with the policies and programs of this Noise Element. Determine that noise levels from new development will not exceed the noise level standards for specified land uses included in [General Plan] Figures 5.2, 5.3, 5.4, or 5.5. [See Tables 3.12-5, 3.12-6, 3.12-7, and 3.12-8 in this EIR.] Determine that new development of noise-sensitive land uses in proximity of existing noise sources or land designated on the General Plan land use diagrams as HI, LI, BP, HC, TPZ or MPZ will not be affected by noise levels exceeding the standards of Figure 5.4 [See Table 3.12-7 in this EIR.] For modifications or expansions of existing stationary noise sources that already exceed the standards of Figure 5.4 on lands designated as noise-sensitive uses, Tuolumne County will determine that the new development will not increase the noise level received at the noise-sensitive land uses, or require noise reduction measures, so that the cumulative noise generated from the entire development site is equal to or less than the pre-modification or pre-expansion ambient noise level.

  - **Implementation Program 5.A.b:** Require an acoustical analysis where activities associated with proposed development are likely to produce noise levels exceeding those specified in [General Plan] Figures 5.2, 5.3, 5.4, or 5.5 of [the General Plan Noise] Element. [See Tables 3.12-5, 3.12-6, 3.12-7, and 3.12-8 in this EIR.] The acoustical analysis shall be conducted early in the review process so that the possible effects of noise and noise mitigation can be considered in the project design. The requirements of an acoustical analysis are listed in [General Plan] Figure 5.1.

- **Policy 5.A.2:** Evaluate if proponents of proposed new transportation noise sources need to submit evidence of noise effects on existing noise-sensitive land uses. Require that new development of transportation noise sources be located and designed so that existing noise-sensitive land uses will not be exposed to noise levels that exceed the standards shown in [General Plan] Figures 5.2, 5.3 or 5.5. [See Tables 3.12-5, 3.12-6, and 3.12-7 in this EIR.] Potential noise effects on any adjacent sensitive wildlife habitat and associated special-status wildlife species should also be considered and minimized, as needed.
  - **Implementation Program 5.A.c:** Institute procedures to enforce noise reduction measures required pursuant to an acoustical analysis during the building permit and construction processes and to monitor compliance with noise reduction measures during operation of the development. Acoustical studies shall meet all requirements detailed in [General Plan] Figure 5.1.
- **Policy 5.A.3:** Require proponents of proposed development of new stationary noise sources or modifications of existing stationary noise sources to evaluate noise effects on existing nearby noise-sensitive land uses. This policy does not apply to noise levels associated with agricultural operations.
- **Policy 5.A.4:** Require new development located within the Noise Impact Area diagrams identified by the Tuolumne County Airport Land Use Compatibility Plan to be located and designed so that it will not be affected by noise levels exceeding the standards within the Airport Land Use Compatibility Plan.
- **Policy 5.A.5:** Require that construction activity and temporary construction impacts do not expose existing noise-sensitive land uses to excessive noise levels. Require all new construction activities to implement all feasible noise-reducing measures as necessary to limit construction noise exposure at receiving occupied land uses to within acceptable County noise levels identified in Figure 5.3. Should nighttime construction activities be required, noise levels shall not exceed night time noise maximum noise levels established for various land uses in [General Plan] Figure 5.3. [See Table 3.12-6 of this EIR.]
  - **Implementation Program 5.A.e:** The County shall ensure that, where residences or other noise sensitive uses are located within 800 feet of construction sites, appropriate measures shall be implemented to limit noise exposure from construction. Specific techniques may include, but are not limited to, restrictions on construction timing, use of sound blankets on construction equipment, and the use of temporary walls and noise barriers to block and deflect noise.
  - **Implementation Program 5.A.f:** Require the use of alternative pile driving techniques, where feasible, if a particular project requires pile driving within 800 feet of sensitive receptors requires pile driving.
  - **Implementation Program 5.A.g:** Require equipment and trucks used for project construction utilize the best available noise control techniques (including mufflers, use of intake silencers, ducts, engine enclosures and acoustically attenuating shields or shrouds).
  - **Implementation Program 5.A.h:** Require impact equipment (e.g., jack hammers, pavement breakers, and rock drills) used for project construction be hydraulically or electrical powered wherever feasible to avoid noise associated with compressed air exhaust from pneumatically powered tools. Where use of pneumatically powered tools is unavoidable, the use of an exhaust muffler on the compressed air exhaust is recommended to lower noise levels from the exhaust by up to about 10 dBA. When feasible, external jackets on the impact equipment should also be incorporated to achieve a further reduction of 5 dBA. Whenever feasible, require the use of quieter procedures, such as drilling rather than impact equipment operation.
  - **Implementation Program 5.A.i:** Locate stationary noise sources as far from sensitive receptors as possible. Stationary noise sources that must be located near existing receptors shall be adequately designed to minimize noise exposure at sensitive receptors such that County noise standards are met.

- **Policy 5.A.6:** The County shall ensure that, where new residences or other noise sensitive uses would be located adjacent to existing or new railroad tracks that would be in use, such as the Sierra Railroad, appropriate measures shall be implemented to ensure such residences would not be exposed to noise levels that exceed standards in [General Plan] Figure 5.2 [see Table 3.12-5 in this EIR] and applicable vibration levels (e.g., Federal Transit Administration Guidelines). New residential development adjacent to existing railroads shall be required to prepare an acoustical study in accordance with requirements in [General Plan] Figure 5.1 to determine appropriate measures, including distance buffers, site design, building material choice, to ensure compliance with noise and vibration standards.

In addition to the above policies and programs, the General Plan Update includes the following noise standards, as referenced above in the policies and programs. The interior and exterior noise standards (Table 3.12-5) establish maximum transportation noise levels that are allowable for new development in the County. Under the existing General Plan, this matrix is used to determine whether a proposed new use would be compatible with the ambient noise environment in which it is proposed as well as whether the proposed new use would create noise compatibility conflicts with established uses. For the most sensitive uses such as most residences and noise-sensitive institutional uses, 60 dBA L_{dn} is the maximum allowable exterior level. The maximum allowable interior noise level for all spaces is 45 dBA L_{dn}.

Table 3.12-5 Maximum Allowable Noise Exposure—Transportation Noise Sources Excluding Aviation-Related Noise[1]

Land Use Receptors	Outdoor Activity Areas[2]	Interior Spaces[3]
	L_{dn}/CNEL, dB	L_{dn}/CNEL, dB
Urban Residential	60	45
Transient Lodging[4]	60	45
Hospitals, Nursing Homes[5]	60	45
Churches, Meeting Halls, Office Buildings, Mortuaries	–	45
Schools[5], Libraries, Museums	–	45

Notes:
1 This table applies to noise exposure levels that result from a transportation noise source other than aircraft. For existing receiving land uses, consideration shall be given to the noise exposure from new transportation noise sources during the design and approval of the new transportation project. In the case of existing transportation noise sources, projects or consideration of land use changes involving noise-sensitive land uses shall address the noise exposure environment and use these standards as thresholds.
2 An outdoor activity area is a location outside of the immediate structure where formal or informal activities are likely to happen. For example, anywhere on an urban residential property could be an outdoor activity area, while the outdoor activity area for a school would be the playground or sporting fields, and for a hospital would be an exterior patio or exercise area. Where the location of outdoor activity areas is unknown, the exterior noise level standard shall be applied to the property line of the receiving land uses.
3 For typical construction methods, the reduction in the noise level from the outside of the structure to the inside is approximately 20-25 dB. In a high noise environment, special construction techniques may be necessary to reduce the interior noise level to the standard.
4 Transient lodging are overnight accommodations usually intended for occupancy by tourists or other short-term paying customers, examples include hotels, motels, or homeless shelters. Transient lodging, as used in this case, do es not include bed and breakfast establishments which are located in rural areas, campgrounds or guest ranches.
5 These standards only apply to nursing homes or schools that have more than 6 beds or students, respectively.

As discussed in Section 3.12.2, "Regulatory Setting," the Airport Land Use Commission is responsible for reviewing airport and adjacent land use proposals on or near Columbia Airport and Pine Mountain Lake Airport. The criteria and affected areas in proximity to the airports are defined in the Tuolumne County ALUCP, which was approved in 2003. The Airport Land Use Compatibility Plan contains policies regarding noise, safety, airspace protection, and aircraft overflights which apply primarily to property located within the airport influence area boundaries associated with the two-county public-use airports. Table 3.12-6 below shows the maximum allowable noise exposure from aircraft-related sources.

Table 3.12-6 Maximum Allowable Noise Exposure—Aircraft Noise Sources[1]

Land Use Receptors	Outdoor Activity Areas[2]	Interior Spaces[3]		
	L_{dn}/CNEL, dB	L_{dn}/CNEL, dB	L_{max}, dB[4]	
			Day	Night
Residential – Living Areas	55	45	45	45
Residential – Sleeping Areas	55	40	45	40
Transient Lodging[5]	60	45	–	40
Hospitals, Nursing Homes[6]	60	45	–	40
Churches, Meeting Halls, Office Buildings, Mortuaries	60	45	45	45
Schools Libraries, Museums	60	45	55	55

Notes:
1 This table applies to noise exposure levels that result from aircraft. For existing receiving land uses, consideration shall be given to the noise exposure from new aviation-related sources during the design and approval of the new aviation-related project. In the case of existing aviation-related sources, projects or consideration of land use changes that lie within the jurisdictional area of the Tuolumne County Airport Land Use Commission, which involve noise-sensitive land uses shall address the noise exposure environment and use these standards as thresholds.
2 An outdoor activity area is a location outside of the immediate structure where formal or informal activities are likely to happen. For example, anywhere on an urban residential property could be an outdoor activity area, while the outdoor activity area for a school would be the playground or sporting fields, and for a hospital would be an exterior patio or exercise area. Where the location of outdoor activity areas is unknown, the exterior noise level standard shall be applied to the property line of the receiving land uses.
3 For typical construction methods, the reduction in the noise level from the outside of the structure to the inside is approximately 15 dB. In a high noise environment, special construction techniques may be necessary to reduce the interior noise level to the standard.
4 L_{max} refers to the maximum interior noise level. The design L_{max} value shall be established as the maximum aircraft noise level which is exceeded by 10 percent of the aircraft noise events occurring during a typical 24-hour day of aircraft operations. In other words, the L_{max} value used in the evaluation shall be determined by eliminating the loudest 10 percent of the aircraft events measured during the sample period, which should be a typical 24-hour day.
5 Transient lodging are overnight accommodations usually intended for occupancy by tourists or other short-term paying customers, examples include hotels, motels, or homeless shelters. Transient lodging, as used in this case, does not include bed and breakfast establishments which are located in rural areas, campgrounds or guest ranches.
6 These standards only apply to nursing homes or schools that have more than 6 beds or students, respectively.

Table 3.12-7 below shows the maximum allowable noise exposure from stationary sources.

Table 3.12-7 Maximum Allowable Noise Exposure—Stationary Noise Sources[1]

	Daytime (7 a.m. to 10 p.m.)	Nighttime (10 p.m. to 7 a.m.)
Hourly L_{eq}, dB[2]	50	45
Maximum level, dB[3]	70	65

Notes:
1 This table applies to noise exposure as a result of stationary noise sources. For a development project or land use change involving a noise-sensitive land use, the noise from nearby noise sources will be considered during design and approval of the project, or in determining whether the land use change is appropriate. For development projects which may produce noise, land use changes and project review will consider the effects of the noise on possible noise-sensitive land uses. When considering modification or expansion at a site that already produces noise levels which exceed these standards at noise-sensitive land uses, the modification or expansion shall be reviewed to consider if the proposed action will further raise the existing noise levels received at the noise-sensitive land use(s).
Noise-sensitive land uses include urban residential land uses, libraries, churches, and hospitals, in addition to nursing homes or schools which have over 6 beds or students, respectively. Transient lodging establishments which are considered noise sensitive land uses include hotels, motels, or homeless shelters, but not bed and breakfast establishments located in rural areas, campgrounds, or guest ranches.
2 The sound equivalent level as measured or modeled for a one-hour sample period. The daytime or nighttime value should not be exceeded as determined at the property line of the noise-sensitive land use. When determining the effectiveness of noise mitigation measures, the standards may be applied on the receptor side of noise barriers or other property line noise mitigation measures.
3 Similar to the hourly L_{eq}, except this level should not be exceeded for any length of time.

Table 3.12-8 below shows the maximum allowable cumulative noise exposure that may result from development of a project. Cumulative noise refers to all noise generated from the entire development site, which could include noise generated from both operational noise sources. The allowable change in cumulative noise exposure depends on the existing ambient noise level without the project.

Table 3.12-8 Significance of Changes in Cumulative Noise Exposure[1]

Ambient Noise Level Without Project (L_{dn} or CNEL) 2	Significant Impact if Cumulative Level Increases By:
<60 dB	+ 5.0 dB or more
60-65 dB	+ 3.0 dB or more
>65 dB	+ 1.5 dB or more

Notes:
1 These standards shall be applied when considering the noise impacts from projects that could cause a significant increase in the cumulative noise exposure of existing noise-sensitive land uses. If it is likely that existing noise-sensitive land uses could experience these increases in cumulative noise exposure, as measured in CNEL or L_{dn}, then an acoustical analysis that meets the requirements of Figure 5.1 shall be accomplished and the results considered in project design.
2 Ambient Noise is defined as the composite of noise from all sources near and far. In this context, the ambient noise level constitutes the normal or existing level of environmental noise at a given location.
Sources: Tuolumne County 1996, FICON1992

THRESHOLDS OF SIGNIFICANCE

The analysis of noise impacts focuses upon the impact of projected development under the General Plan Update to noise-sensitive land uses within the County and the impact of existing noise sources upon County residents. Projected development under the General Plan Update would result in potentially significant impacts if it would result in any of the following conditions:

- exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies;
  - Construction noise: 65 dBA L_{max} (exterior) during noise sensitive times (between 7 p.m. and 7 a.m.), based on FICAN's 65 dBA SEL level for sleep disturbance but conservatively using L_{max}, which is more appropriate for construction activities.
    - Transportation noise: Table 3.12-5
    - Stationary noise: Table 3.12-7
    - Aircraft noise: Table 3.12-6
    - Railroad noise and vibration: FTA screening distance of 750 feet from a rail line
- exposure of persons to or generation of excessive ground borne vibration (i.e., Caltrans-recommended standard of 0.2 PPV inch per second for normal buildings) or ground borne noise levels (i.e., FTA's maximum-acceptable-vibration standard with respect to human response of 65-83 VdB depending on land use);
- a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project, as defined in Table 3.12-8;
- a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project;
- for a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels; or
- for a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels.

PROJECT IMPACTS

This section presents a programmatic-level analysis of potential impacts associated with noise from projected development under the General Plan Update. Evaluation of environmental impacts associated with the General Plan Update considers the development that would be facilitated by the General Plan Update, in accordance with goals, policies, and implementation programs, to accommodate projected growth in the County. It should be noted that the County's population is projected to grow by 0.6 percent annually over the planning horizon (2040). As discussed in detail in Chapter 2, "Project Description," and the introduction to Chapter 3, this is a relatively low amount of growth.

Impact 3.12-1: Expose New Sensitive Land Uses to Traffic Noise

Projected development under the General Plan Update would include the construction of future residences and other noise-sensitive land uses in close proximity to existing transportation noise sources and would be exposed to noise levels exceeding the maximum allowable range. In some cases, roadway noise levels reach 74.7 dBA CNEL and would require new development to achieve an approximate 15 dBA reduction in noise to meet exterior noise standards of 60 dBA CNEL. General Plan Update policies and implementation programs would require new development to conduct site-specific acoustical analysis and include measures to minimize noise exposure and meet County noise standards. However, at the County-wide scale of this analysis, without knowing the specific location, design, orientation, and type of development projects, it cannot be determined with certainty whether adequate noise reduction could be achieved, and this impact would be **significant.**

Projected development under the General Plan Update would include the development of new residential and other noise-sensitive uses that could be exposed to long-term noise exceeding acceptable levels shown in Table 3.12-5. Potential sources of noise exposure include: (1) traffic on SRs 120, 108, and 49, County-wide expressways arterial roadways, and collector and local roadways; and (2) transportation sources related to operations of commercial, industrial, and agricultural sites that are adjacent to or near noise-sensitive uses.

The General Plan Update lays out a pattern of future growth (projected at 0.6 percent annually) emphasizing intensified land use distribution that encourages the relatively low projected growth in identified communities. Infill and mixed-use are encouraged to take advantage of existing public infrastructure and services. Residential and commercial areas are encouraged to become more compact within identified communities promoting mixed-use and higher density residential development to supply housing demand. With more compact neighborhoods, auto dependency and new roads would be reduced and transportation options would increase. As a result, however, development of infill and mixed-use projects within identified communities and along existing transportation roadways would potentially expose new residences to noise from various roadways as well as from commercial activity. For most sites, the primary generator of noise that could affect noise-sensitive uses would be roadway traffic.

Traffic noise modeling was conducted for the General Plan Update plan horizon (2040). Noise modeling included projected noise levels at 50 feet from roadway segments as well as distances to the 60, 65, and 70 dBA CNEL contours. Exhibit 3.12-4 shows the future (2040) distance to the 60 dBA CNEL contour of all modeled roadways. Table 3.12-9 includes the calculated future noise levels at 50 feet from the roadway, as well as distances to the 60, 65, and 70 dBA CNEL contour for all modeled roadways. Segment numbers in Exhibit 3.13-4 correspond to segment numbers in Table 3.12-9. As shown in Table 3.12-10, with only minor exceptions, traffic noise is expected to increase only slightly along major roadways in the County over the life of the General Plan Update.

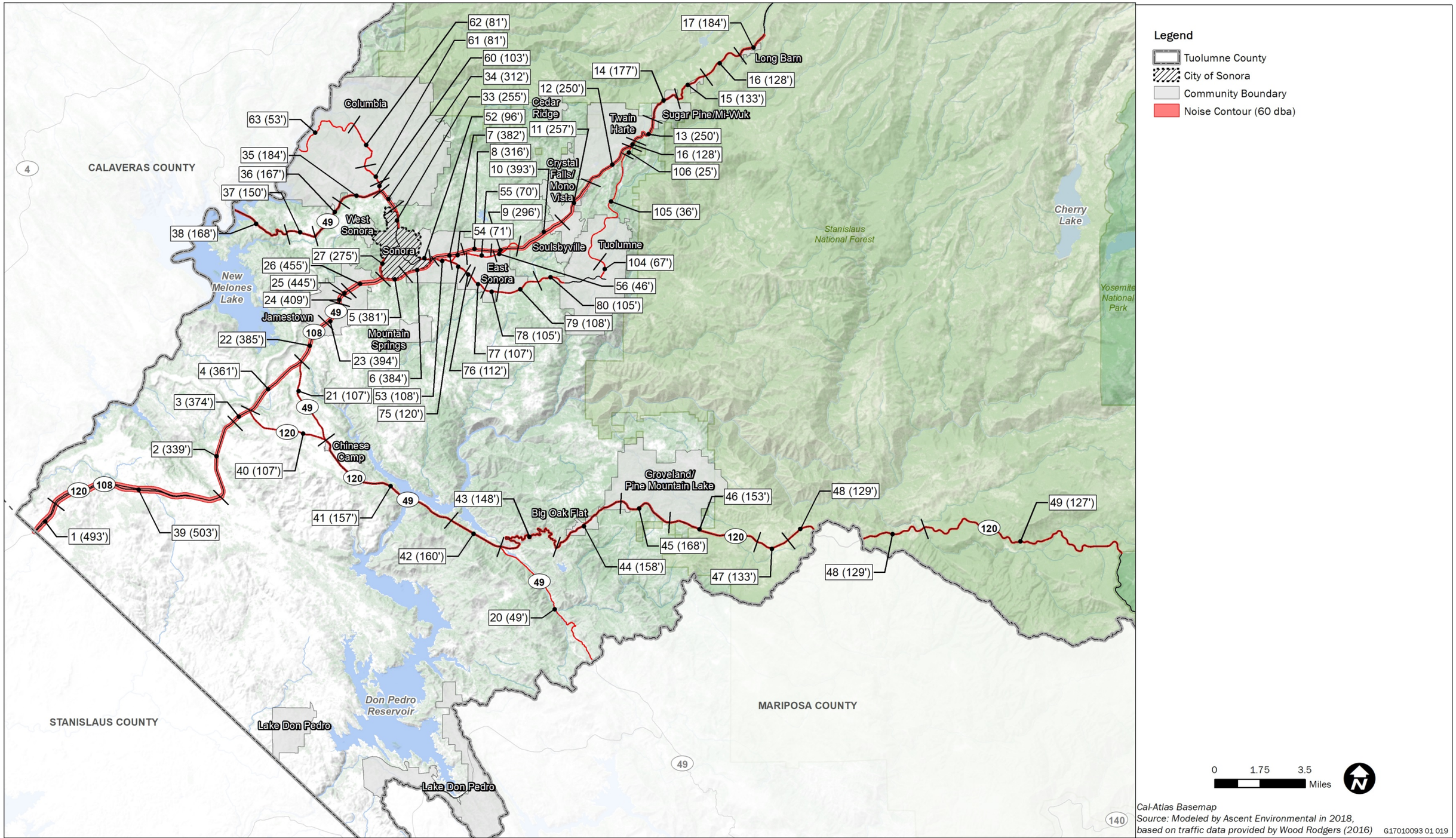


Exhibit 3.12-4

Roadway Noise Contour Map (CNEL)

Table 3.12-9 2040 Noise Levels and Contours

Corridor and Segment		Noise @ 50 feet from Road (dBA CNEL)	Noise Contour (dBA CNEL) Distance in Feet		
			60 dBA	65 dBA	70 dBA
State Route 108					
1	Between Stanislaus County Line and Tulloch Road	71.1	493	229	106
2	Between O'Byrnes Ferry Road and La Grange	72.8	339	157	73
3	Between O'Byrnes Ferry Road and SR 120 (Yosemite Junction)	73.4	374	174	81
4	Between SR 120 and West Junction SR 49	73.2	361	168	78
5	Between South Washington Street/Lime Kiln Road and Mono Way	73.5	381	177	82
6	Between South Washington Street/Lime Kiln Road and Mono Way	73.6	384	178	83
7	Between Mono Way and Hess Avenue	73.5	382	177	82
8	Between Hess Avenue and Peaceful Oak Road	72.3	316	147	68
9	Between Peaceful Oak Road and Mono Way	71.9	296	137	64
10	Between Mono Way and Soulsbyville Road	72.2	393	183	85
11	Between Soulsbyville Road and West Connector Twain Harte Drive	69.5	257	119	55
12	Between West and East Connector Twain Harte Drive	69.3	250	116	54
13	Between East Connector Twain Hart Road and Leisure Drive	69.3	250	116	54
14	Between Leisure Drive and Chief Fuller Road	68.5	177	82	38
15	Between Chief Fuller Road and Lyons Lake Road	66.7	133	62	29
16	Between Lyons Lake Road and West Long Barn Connector	66.4	128	59	28
17	Between West Long Barn Connector and East Long Barn Connector	67.3	184	85	40
18	Between Kennedy Meadows Road and Tuolumne/Mono County Line	60.0	47	22	10
State Route 49					
20	Between South Junction SR 120 and Mariposa County Line	60.2	49	23	11
21	North of North SR 120 Junction	65.3	107	50	23
22	Between SR 49 (Montezuma Junction) and Bell Mooney Road	73.6	385	179	83
23	Between Bell Mooney Road and South Junction Main St	73.6	394	183	85
24	Between South Junction Main Street and Rawhide Road	74.0	409	190	88
25	Between Rawhide Road and Fifth Ave	74.5	445	206	96
26	Between Fifth Ave and Stockton Road/SR 108	74.7	455	211	98
27	Between SR 108 and Fairview Lane (Ponderosa)	71.4	275	128	59
28	Between Fairview Lane and Southgate Drive	70.9	256	119	55
29	Between Southgate Drive and Washington Street	71.6	284	132	61
30	Between Stockton Road and Dodge Street	72.5	323	150	70
31	Between Dodge Street and Snell Street	72.0	299	139	64
32	Between Snell Street and Columbia Way	70.9	256	119	55
33	Between Columbia Way and Old Sonora Columbia Road	70.9	255	118	55
34	Between Old Sonora Columbia Road and Parrotts Ferry Road	72.2	312	145	67
35	Between Parrotts Ferry Road and Von Kleiben Road	68.8	184	86	40
36	Between Von Kleiben Road and Rawhide Road	68.1	167	77	36
37	Between Rawhide Road and Tuttletown Road	67.4	150	69	32
38	Between Tuttletown and Tuolumne/Calaveras County Line	68.2	168	78	36

Table 3.12-9 2040 Noise Levels and Contours

Corridor and Segment		Noise @ 50 feet from Road (dBA CNEL)	Noise Contour (dBA CNEL) Distance in Feet		
			60 dBA	65 dBA	70 dBA
State Route 120 (Stanislaus County Line-Chinese Camp)					
39	Between Tulloch Road and La Grange Road	71.2	503	233	108
40	Between East Junction 108 and North Junction SR 49	65.3	107	50	23
41	Between North Junction SR 49 and Jacksonville Road	67.8	157	73	34
42	Between Jacksonville Road and South Junction SR 49	67.9	160	74	34
43	Between South Junction SR 49 and Priest-Coulterville Road	67.4	148	69	32
44	Between Priest-Coulterville Road and Ferretti Road (Groveland Townsite)	67.8	158	73	34
45	Between Ferretti Road (Groveland Townsite) and Old State Highway 120	68.2	168	78	36
46	Between Old State Highway 120 and Hells Hollow Road	67.6	153	71	33
47	Between Hells Hollow Road and Ferretti Road	66.7	133	62	29
48	Between Ferretti Road and Cherry Valley Lake Road	66.5	129	60	28
49	Between Cherry Valley Lake Road and Yosemite Park West Boundary	66.4	127	59	27
Mono Way					
50	West of Sanguinetti Road	63.7	88	41	19
51	Between Sanguinetti Road and Greenley Road	62.7	76	35	16
52	Between Greenley Road and Fir Drive	64.3	96	44	21
53	Between Fir Drive and Tuolumne Road	65.1	108	50	23
54	Between Tuolumne Road and Hess Ave	62.4	71	33	15
55	Between Hess Avenue and Standard Road/Peaceful Oak Drive	62.2	70	32	15
56	Between Standard Road/Peaceful Oak Drive and SR 108	59.5	46	21	10
Parrotts Ferry Road					
60	Between SR 49 and Sawmill Flat Road	64.7	103	48	22
61	Between Sawmill Flat Road and Springfield Drive	63.1	81	37	17
62	Between Springfield Drive and Marble Quarry Drive	63.2	81	37	17
63	Between Marble Quarry Drive and Calaveras County Line	60.4	53	25	11
Tuolumne Road					
75	Between Mono Way and Lambert Lake Road	65.8	120	56	26
76	Between Lambert Lake Road and Hess Avenue	65.3	112	52	24
77	Between Hess Avenue and Wards Ferry Road	65.0	107	50	23
78	Between Wards Ferry Road and Standard Road	64.9	105	49	23
79	Between Standard Road and Woodhams Carne	65.0	108	50	23
80	Between Woodhams Carne and Cherokee Road	64.9	105	49	23
104	Between Tuolumne Road and Mi Wu Street	62.0	67	31	14
105	Between Mi Wu Street and East Avenue	57.9	36	17	8
106	Between East Avenue and SR 108	55.4	25	11	5

Source: Modeled by Ascent Environmental in 2018, based on traffic data provided by Wood Rodgers (2016)

The General Plan Update includes policies and implementation programs that address the placement of new receptors near transportation noise sources as well as the development of new transportation noise sources. Specifically, Policy 5.A.1 and Implementation Program 5.A.a requires all new development of noise

sensitive land uses in close proximity to existing transportation noise sources to incorporate noise reduction techniques so that noise levels at the new development are consistent with the County's noise standards, as shown in Table 3.12-5. Further, Implementation Programs 5.A.b and 5.A.c would require an acoustical analysis to be prepared prior to the approval of new sensitive land uses or new noise sources (e.g., roadway extension) to ensure that the appropriate design considerations would be included in the development to minimize noise exposure at the new or existing receptors. Regarding new noise sources, policy 5.A.2 would require the proponents of new transportation noise sources to submit evidence of noise effects on existing noise-sensitive land uses for County review prior to project approval. This policy further requires that new development of transportation noise sources be located and designed so that existing noise-sensitive land uses would not be exposed to noise levels that exceed County noise standards (Table 3.12-5).

Implementation of these policies and programs would ensure that projects proposed in noise environments that potentially exceed acceptable standards would be evaluated and that appropriate sound attenuation techniques would be implemented on a case-by-case basis. Depending on what is proposed and the location and source of noise, sound attenuation techniques may include site design to shield noise-sensitive uses from noise, special building standards to reduce interior noise, or the use of barriers to reduce exterior noise. However, although these policies and programs would require all new development to conduct the appropriate acoustical studies and include measures to reduce noise exposure to the extent feasible, given that roadway noise exceeds 70 dBA CNEL in several places, an approximate 15-dB noise reduction may be necessary in some locations (e.g., SR 49). Depending on location of new receptors in proximity to roadways, and the specific constraints of the site and available noise reduction measures, achieving an exterior noise level of 60 dBA CNEL may not be feasible in all cases. For example, when the roadway is elevated above a residence, barriers may be tall enough to attenuate noise. Thus, it is possible that new development located in close proximity to existing major roadways could be exposed to noise levels that exceed County noise standards. This impact would be **significant**.

Mitigation Measures

No mitigation is available.

Significance after Mitigation

Applicable policies and programs have been included that would require individual development to evaluate noise levels at existing and new sensitive receptors. Thus, at the General Plan level, no additional policies or programs are available, and individual projects would be evaluated during subsequent discretionary review. Because no mitigation and no additional policies or programs are available, this impact would be **significant and unavoidable.**

Impact 3.12-2: Expose Existing Sensitive Receptors to Traffic-Noise Increases

Projected development under the General Plan Update would increase traffic and associated noise levels along area highways and roadways in Tuolumne County, thereby exposing existing land uses to increased traffic noise. Within the General Plan Update's 2040 planning horizon, receptors along County roadways could experience noise level increases that exceed thresholds. Transportation-related policies aim to reduce automobile use and increase the use of alternatives modes of transit. Traffic noise would still result in a 3 dB increase on one County road segment. While this is a very limited area, compared to the overall County, that would experience this type of noise increase, this impact would be **significant.**

Projected development under the General Plan Update to accommodate the relatively minor amount of population growth project to occur in the County, in addition to regional growth, would increase noise along area roadways over the life of the General Plan Update. Table 3.12-10 compares calculated noise levels along major roadways in the County under existing conditions to those that could occur with traffic levels associated with projected development under the General Plan within the 2040 planning horizon. To provide a point of comparison for existing and future noise conditions, noise levels were calculated at a distance of 50 feet from the roadway centerline. Noise levels at receptors farther away from roadway noise sources, or in locations with intervening topography, vegetation, or structures, would be lower than shown in the table.

Table 3.12-10 Comparison of Existing and Future Noise Levels Along Road Segments

Corridor and Segment		Noise (dBA CNEL) @ 50 feet from Road		
		Existing (2015)	Future (2040)	Change
State Route 108				
1	Between Stanislaus County Line and Tulloch Road	70.1	71.1	+0.9
2	Between O'Byrnes Ferry Road and La Grange	71.8	72.8	+1.0
3	Between O'Byrnes Ferry Road and SR 120 (Yosemite Junction)	72.5	73.4	+0.9
4	Between SR 120 and West Junction SR 49	72.4	73.2	+0.8
5	Between South Washington Street/Lime Kiln Road and Mono Way	72.9	73.5	+0.6
6	Between South Washington Street/Lime Kiln Road and Mono Way	73.1	73.6	+0.5
7	Between Mono Way and Hess Avenue	73.1	73.5	+0.4
8	Between Hess Avenue and Peaceful Oak Road	71.9	72.3	+0.4
9	Between Peaceful Oak Road and Mono Way	71.5	71.9	+0.4
10	Between Mono Way and Soulsbyville Road	71.6	72.2	+0.6
11	Between Soulsbyville Road and West Connector Twain Harte Drive	69.1	69.5	+0.4
12	Between West and East Connector Twain Harte Drive	69.0	69.3	+0.3
13	Between East Connector Twain Hart Road and Leisure Drive	69.1	69.3	+0.2
14	Between Leisure Drive and Chief Fuller Road	68.3	68.5	+0.2
15	Between Chief Fuller Road and Lyons Lake Road	66.4	66.7	+0.3
16	Between Lyons Lake Road and West Long Barn Connector	66.2	66.4	+0.3
17	Between West Long Barn Connector and East Long Barn Connector	67.1	67.3	+0.2
18	Between Kennedy Meadows Road and Tuolumne/Mono County Line	58.9	60.0	+1.1
State Route 49				
20	Between South Junction SR 120 and Mariposa County Line	59.1	60.2	+1.1
21	North of SR 120 Junction	61.8	65.3	+3.4
22	Between SR 49 (Montezuma Junction) and Bell Mooney Road	72.6	73.6	+1.0
23	Between Bell Mooney Road and South Junction Main St	72.8	73.8	+1.0
24	Between South Junction Main Street and Rawhide Road	72.8	74.0	+1.2
25	Between Rawhide Road and Fifth Ave	72.9	74.5	+1.7
26	Between Fifth Ave and Stockton Road/SR 108	73.6	74.7	+1.0
27	Between SR 108 and Fairview Lane (Ponderosa)	70.7	71.4	+0.7
28	Between Fairview Lane and Southgate Drive	70.2	70.9	+0.7
29	Between Southgate Drive and Washington Street	70.3	71.6	+1.3
30	Between Stockton Road and Dodge Street	72.6	72.5	-0.1
31	Between Dodge Street and Snell Street	72.8	72.0	-0.9
32	Between Snell Street and Columbia Way	72.0	70.9	-1.1
33	Between Columbia Way and Old Sonora Columbia Road	71.8	70.9	-0.9
34	Between Old Sonora Columbia Road and Parrotts Ferry Road	71.2	72.2	+1.1
35	Between Parrotts Ferry Road and Von Kleiben Road	67.0	68.8	+1.8
36	Between Von Kleiben Road and Rawhide Road	67.3	68.1	+0.8
37	Between Rawhide Road and Tuttletown Road	66.5	67.4	+0.9
38	Between Tuttletown and Tuolumne / Calaveras County Line	67.4	68.2	+0.8
State Route 120 (Stanislaus County Line-Chinese Camp)				
39	Between Tulloch Road and La Grange Road	70.3	71.2	+0.9

Table 3.12-10 Comparison of Existing and Future Noise Levels Along Road Segments

Corridor and Segment		Noise (dBA CNEL) @ 50 feet from Road		
		Existing (2015)	Future (2040)	Change
40	Between East Junction 108 and North Junction SR 49	64.2	65.3	+1.0
41	Between North Junction SR 49 and Jacksonville Road	65.7	67.8	+2.1
42	Between Jacksonville Road and South Junction SR 49	66.9	67.9	+1.0
43	Between South Junction SR 49 and Priest-Coulterville Road	65.8	67.4	+1.5
44	Between Priest-Coulterville Road and Ferretti Road (Groveland Townsite)	66.7	67.8	+1.1
45	Between Ferretti Road (Groveland Townsite) and Old State Highway 120	67.6	68.2	+0.6
46	Between Old State Highway 120 and Hells Hollow Road	66.8	67.6	+0.8
47	Between Hells Hollow Road and Ferretti Road	65.7	66.7	+0.9
48	Between Ferretti Road and Cherry Valley Lake Road	65.5	66.5	+1.0
49	Between Cherry Valley Lake Road and Yosemite Park West Boundary	65.4	66.4	+1.0
Mono Way				
50	West of Sanguinetti Road	63.8	63.7	-0.1
51	Between Sanguinetti Road and Greenley Road	62.6	62.7	+0.2
52	Between Greenley Road and Fir Drive	63.6	64.3	+0.6
53	Between Fir Drive and Tuolumne Road	64.3	65.1	+0.8
54	Between Tuolumne Road and Hess Ave	61.2	62.4	+1.2
55	Between Hess Avenue and Standard Road/Peaceful Oak Drive	61.1	62.2	+1.1
56	Between Standard Road/Peaceful Oak Drive and SR 108	59.0	59.5	+0.5
Parrotts Ferry Road				
60	Between SR 49 and Sawmill Flat Road	64.1	64.7	+0.6
61	Between Sawmill Flat Road and Springfield Drive	62.6	63.1	+0.5
62	Between Springfield Drive and Marble Quarry Drive	62.7	63.2	+0.4
63	Between Marble Quarry Drive and Calaveras County Line	59.8	60.4	+0.7
Tuolumne Road				
75	Between Mono Way and Lambert Lake Road	65.5	65.8	+0.3
76	Between Lambert Lake Road and Hess Avenue	64.8	65.3	+0.5
77	Between Hess Avenue and Wards Ferry Road	64.5	65.0	+0.5
78	Between Wards Ferry Road and Standard Road	64.4	64.9	+0.5
79	Between Standard Road and Woodhams Carne	64.4	65.0	+0.6
80	Between Woodhams Carne and Cherokee Road	64.4	64.9	+0.5
104	Between Tuolumne Road and Mi Wu Street	61.7	62.0	+0.2
105	Between Mi Wu Street and East Avenue	57.4	57.9	+0.5
106	Between East Avenue and SR 108	55.2	55.4	+0.2

Source: Modeled by Ascent Environmental in 2018, based on traffic data provided by Wood Rodgers (2016)

As Table 3.12-10 indicates, traffic associated with projected development under the General Plan Update (through 2040) would increase noise along many of the roadways and would result in a slight decrease on some roadways. According to the noise contours depicted in Exhibit 3.12-4 and Table 3.12-9, noise levels along the edges of many County roadways currently exceed the normally acceptable range for certain uses. Of all roadway segments examined (shown above in Table 3.12-10) segment 21, SR 49, north of SR 120

junction would experience a 3.4 dB increase, which would be considered substantial. In all other cases, traffic noise increases are less than 3 dB and would not be noticeable.

The Transportation Element of the General Plan Update includes policies and implementation programs that would encourage alternative modes of transportation that could help to alleviate some traffic and associated noise increases. Policy 4.B.1 would encourage the County to develop a modern transportation system that incorporates alternative transportation modes into the system design. Associated implementation programs set level of service standards, require the County to consider bicyclists, pedestrians, and transit users for roadways improvement projects, and to provide multi-modal access to activity centers.

Although the above-mentioned policies and programs could result in some reductions in traffic and associated traffic noise levels, specific alternative transportation improvements have not been identified at this time. Thus, it cannot be determined as to what level of traffic would be reduced or what facilities would receive the alternative transportation improvements. It should further be noted that the traffic noise modeling represents a noise levels for existing (2015) and future (2040) conditions, representing two snapshots in time. Development within the County would occur gradually over the 20-year plan horizon, consistent with the projected 0.6-percent annual growth rate, as would the increase in traffic noise. Thus, existing receptors would not experience drastic noise increases. Nonetheless, based on the modeling conducted, a substantial increase in traffic noise would occur on one County segment and this impact would be **significant**.

Mitigation Measures

No mitigation is available.

Significance after Mitigation

All applicable policies and programs have been considered and included in the General Plan Update. Because no additional policies or programs and no mitigation are available, this impact would be **significant and unavoidable.**

Impact 3.12-3: Expose Sensitive Receptors to Construction Noise Levels That Exceed Applicable Standards

Construction of individual projects under the General Plan Update could produce noise levels ranging from 90.9 to 96.6 dBA L_{max} at 50 feet from the source. Depending the location, intensity, and timing of future construction activities, existing or new sensitive receptors could be exposed to disruptive nighttime construction activity. General Plan Update policies would require construction activities to implement all available noise reducing measures but would not ensure nighttime noise levels would not exceed thresholds in all cases. This impact would be **significant**.

Projected development under the General Plan Update would generate temporary noise level increases on and adjacent to individual construction sites. Since there are no specific plans or time scales for individual development projects, it is not possible to determine exact noise levels, locations, or time period for construction. However, construction noise would be highest and of the longest duration adjacent to sites where more future development/redevelopment is anticipated to occur. As discussed previously, the General Plan Update would encourage infill and mixed-use development in close proximity to the identified communities. In such areas, considerable demolition and construction activity may occur over the life of the General Plan Update. Construction activities typically occur during daytime hours, when people are less sensitive to noise and, therefore, this analysis is focused on nighttime construction activity that has the potential to disturb people while sleeping.

Construction noise can be characterized based on the type of activity and associated equipment needed and, in this analysis, is evaluated by considering noise levels associated with site preparation/foundation work, utility improvements (e.g., trenching, pipe/transmission line installation), roadway improvements (e.g.,

grading, paving), and vertical construction (e.g., residential, commercial, or other structures), with and without pile driving. Reference noise levels for typical construction equipment required for these activities are shown below in Table 3.12-11. Assuming simultaneously operating equipment and typical reference noise levels for construction equipment, representative noise levels for the various types of construction activity are shown below in Table 3.12-12.

Table 3.12-11 Noise Levels from Construction Equipment

Equipment Type	Typical Noise Level (L_{max} dBA) @ 50 feet
Backhoe	80
Concrete Mixer	85
Compactor	80
Crane/Lift	85
Dozer	85
Dump Truck	84
Excavator	85
Flat Bed Truck	84
Front End Loader	80
Generator	70
Grader	85
Impact Pile Driver	95
Paver	89
Roller	85
Pickup Trucks	55

Note: Assumes all equipment is fitted with a properly maintained and operational noise control device, per manufacturer specifications. Noise levels listed are manufacture-specified noise levels for each piece of heavy construction equipment.
Source: FTA 2006

Table 3.12-12 Noise Levels from Construction Activities

Construction Activity	Noise Level (L_{eq} dBA) @ 50 feet	Noise Level (L_{max} dBA) @ 50 feet
Site Preparation/Foundation Work	87.5	91.5
Building Construction	86.2	90.9
Building Construction with Pile Driving	90.5	96.6
Roadway Construction/Improvements	87.2	91.1
Utility Installation/Improvements	88.1	92.1

Note: Assumes all equipment is fitted with a properly maintained and operational noise control device, per manufacturer specifications. Noise levels listed are manufacture-specified noise levels for each piece of heavy construction equipment.
Source: FTA 2006

Based on reference noise levels for typical construction equipment and activities, building construction noise without pile driving could range from 86.2 dBA L_{eq} to 90.9 dBA L_{max} (at 50 feet from the source) and with pile driving could range from 90.6 dBA L_{eq} to 96.6 dBA L_{max}. Refer to Appendix E for modeling inputs and results.

Noise levels from point sources such as construction sites typically attenuate at a rate of about 6 dBA per doubling of distance from the source. Therefore, considering building construction noise of 96.6 dBA L_{max}, areas within 1,908 feet of construction site with heavy-duty equipment may be exposed to noise levels exceeding 65 dBA L_{max}. In addition, some construction work, such as utility installation and roadway

improvements may occur during nighttime hours, as is typical with this type of construction, to reduce traffic impacts, and could expose existing or proposed future sensitive receptors to noise levels that may disrupt sleep and exceed applicable exterior construction noise threshold of 65 dBA L_{max}.

The General Plan Update includes Policy 5.A.5 and associated implementation programs that specifically require all construction activities to implement noise-reducing measures to limit noise exposure at receiving land uses. Further, implementation programs require construction contractors to use the best available noise control techniques, including specific measures such mufflers, intake silencers, ducts, engine enclosures and acoustically attenuating shields or shrouds, restrictions to construction timing, sound blankets, and the use of temporary sound barriers to minimize construction noise. However, Implementation Program 5.A.e, only requires additional study for activities occurring within 800 feet of a sensitive receptor, whereas noise modeling indicates that areas within approximately 1,900 feet of a construction site could be exposed to noise levels exceeding County standards.

Although these policies and implementation programs would require individual construction contractors to include numerous noise-reducing techniques and minimize noise at receiving land uses, at this time the location, intensity, and timing of future construction activities, as well as relative noise level at nearby receptors is unknown. Also, the distance stated in Implementation Program 5.A.e is not adequate to minimize exceedances of County noise standards. Therefore, it cannot be determined if noise levels would exceed applicable standards at nearby receptors, and this impact would be **significant**.

Mitigation Measures

Mitigation Measure 3.12-3a: Establish Construction Noise Standards

The following revision to General Plan Update Policy 5.A.5 is recommended to reduce noise impacts from construction as follows:

- **Policy 5.A.5:** Require that construction activity and temporary construction impacts do not expose existing noise-sensitive land uses to excessive noise levels. Require all new construction activities to implement all feasible noise-reducing measures as necessary to limit construction noise exposure at receiving occupied land uses to within acceptable County noise levels identified in Figure 5.3. Should nighttime construction activities be required (between the hours of 7 p.m. and 7 a.m.), exterior noise levels shall not exceed 65 dBA L_{max}, based on FICAN's 65 dBA SEL level for sleep disturbance (but conservatively using L_{max}, which is more appropriate for construction activities). ~~night time noise maximum noise levels established for various land uses in [General Plan] Figure 5.3, [See Table 3.12-5 of this EIR.]~~

Mitigation Measure 3.12-3b: Increase Construction Noise Buffer

The following revision to General Plan Implementation Program 5.A.e is recommended to increase the distance construction activities are allowed from sensitive uses before additional measures are required:

- **Implementation Program 5.A.e:** The County shall ensure that, where residences or other noise sensitive uses are located within ~~800~~1,900 feet of construction sites, appropriate measures shall be implemented to limit noise exposure from construction. Specific techniques may include, but are not limited to, restrictions on construction timing, use of sound blankets on construction equipment, and the use of temporary walls and noise barriers to block and deflect noise.

Significance after Mitigation

Implementation of Mitigation Measures 3.12-3a would help minimize potential sleep disturbance associated with nighttime construction noise. Implementation of Mitigation Measure 3.12-3b would increase the distance construction activities are allowed from sensitive uses before additional noise-reducing measures are required. At the General Plan Update level, policies and implementation programs have been included that would ensure individual construction activities incorporate all available and feasible measures to reduce noise exposure. However, at the program-level scale of this analysis individual construction activities and associated noise

exposure at receiving land uses cannot be determined. Future development would be subject to subsequent discretionary review by Tuolumne County and would be required to comply with above mentioned construction noise policies and any other at that time. All applicable policies and programs have been considered and included in the General Plan Update. At the General Plan Update level and feasible mitigation measures applied, no further mitigation is available, and this impact would be **significant and unavoidable**.

Impact 3.12-4: Expose Sensitive Receptors to Construction Vibration Levels That Exceed Applicable Standards

Projected development under the General Plan Update could produce vibration levels that could potentially affecting adjacent sensitive land uses. Such vibration could cause temporary disturbance to nearby receptors. These impacts would be **significant**.

Construction-related vibration has the potential to damage structures, cause cosmetic damage (e.g., crack plaster), or disrupt the operation of vibration-sensitive equipment. Vibration can also be a source of annoyance to individuals who live or work close to vibration-generating activities. Heavy construction operations can cause substantial vibration near the source. As shown in Table 3.12-13, the highest impact caused by equipment such as pile drivers or large bulldozers can generate vibrations of 1.518 to 0.089 inches per second of PPV at a distance of 25 feet. Regarding disruptive vibration levels, pile drivers can result in vibration-noise levels of up to 112 VdB and large dozers in levels of up to 87 VdB. In addition, similar to construction noise, vibration levels would be variable depending on the type of construction project and related equipment use. Reference vibration levels for typical impact equipment are shown in Table 3.12-13.

Table 3.12-13 Construction Equipment Vibration Levels

Equipment		Peak Particle Velocity (PPV) at 25 Feet (Inches per Second)	Root Mean Square at 25 Feet (VdB)
Pile Driver (Impact)	Upper Range	1.518	112
	Typical	0.644	104
Pile Driver (Sonic)	Upper Range	0.734	105
	Typical	0.170	93
Vibratory Roller		0.210	95
Blasting		1.130	109
Clam Shovel Drop (Slurry Wall)		0.202	94
Hydrol Mill (Slurry Wall)	In Soil	0.008	66
	In Rock	0.017	75
Large Bulldozer		0.089	87
Caisson Drilling		0.089	87
Loaded Trucks		0.076	86
Jackhammer		0.035	79
Small Bulldozer		0.003	58

Source: FTA 2006

Typical project construction activities, such as the use of jackhammers, blasting, other high-power or vibratory tools, compactors, and tracked equipment, may also generate substantial vibration (i.e., greater than 0.2 inch per second PPV) in the immediate vicinity, typically within 15 feet of the equipment.

Some specific construction activities result in higher levels of vibration. Pile driving and blasting have the potential to generate the highest vibration levels and are the primary concern for structural damage when it

occurs in close proximity to structures. Vibration levels generated by blasting activities would vary depending on project conditions, such as soil conditions, construction methods and equipment used.

When considering new construction, blasting generates the highest vibration levels and is, therefore, of greatest concern when evaluating construction-related vibration impacts. Based on FTA's recommended procedure for applying a propagation adjustment to reference levels for blasting vibration levels could exceed the threshold of significance of 0.2 inch per second PPV for structural damage within 85 feet of blasting activities (refer to Appendix E for modeling details). Regarding vibration annoyance, 65 VdB is conservatively used in this analysis, as it is unknown where construction activity would take place and what land use types could be affected. Based on FTA's recommended procedure for applying propagation adjustments to reference levels for blasting, vibration levels could exceed threshold of significance within 730 feet of a sensitive land use (refer to Appendix E for modeling details).

The General Plan Update includes two implementation programs that specifically address construction vibration levels. Implementation Program 5.A.f requires the use of alternative pile driving techniques, and Implementation Program 5.A.h requires that impact equipment use electric or hydraulic power, when feasible, to avoid noise associated with compressed air. This Implementation Program also requires the use of external jackets on the impact equipment to achieve a further reduction of 5 dBA. However, no policies or implementation programs are proposed that specifically address blasting. Therefore, it is possible that construction activities that require blasting to remove large outcroppings could result in vibration levels that disrupt nearby receptors.

Although these policies and implementation programs would require individual construction contractors to include numerous vibration-reducing techniques and minimize exposure at receiving land uses, at this time the location, intensity, and timing of future construction activities, as well as relative vibration levels at nearby receptors is unknown. Further no policies are in place that would reduce impacts from potential blasting activities. Therefore, it cannot be determined if vibration levels would exceed applicable standards at nearby receptors, and this impact would be **significant**.

Mitigation Measures

Mitigation Measure 3.12-4: Establish Blasting Restrictions

The following Implementation Program is recommended to reduce vibration and noise exposure from construction-related blasting to nearby sensitive land uses.

- **Implementation Program 5.A.i:** Require, prior to approval of development or construction activities that would include blasting activities, proof of contract with a State licensed contractor if blasting is required for any construction activities. Blasting shall not be allowed during the sensitive night time hours (7 p.m. to 7 a.m.). In addition, prior to approval of construction/grading permits, Tuolumne County will review all proposed blasting activities and require construction contractors to implement available noise reduction measures, including alternatives to blasting.

Significance after Mitigation

At the General Plan Update level, policies and implementation programs have been included that would ensure individual construction activities incorporate all available and feasible measures to reduce vibration from impact equipment and blasting activities. However, at the program-level scale of this analysis, individual construction activities and associated vibration exposure at receiving land uses cannot be determined. Future development would be subject to subsequent discretionary review by Tuolumne County and would be required to comply with above mentioned construction noise policies and any other identified at that time. All applicable policies and programs have been considered and included in the General Plan Update. At the General Plan Update level, no further mitigation is available, and this impact would be **significant and unavoidable**.

Impact 3.12-5: Expose Noise-Sensitive Land Uses to Airport Noise That Exceeds the Standards in the Tuolumne County ALUCP

Projected development under the General Plan Update could result in exposure of existing and future residences and other noise-sensitive land uses to air-traffic-related noise levels exceeding the "acceptable" range and noise standards as listed in the Tuolumne County ALUCP. However, implementation of policies in the General Plan Update to enforce noise standards for new development would reduce impacts to a **less-than-significant** level.

Aircraft operations associated with the County airports can generate noise levels exceeding 65 dBA CNEL, and new development would be potentially subjected to airport-related noise exceeding acceptable levels, depending on its proximity to the airport. Projected development under General Plan Update could fall within the noise impact areas of the Columbia and Pine Mountain Lake Airports as described in the ALUCP and as shown in Exhibits 3.12-2 and 3.12-3. Land uses that would be immediately adjacent to the Columbia Airport or that fall within its noise impact area include Rural Residential (RR), Homestead Residential (HR), Low Density Residential (LDR), Business Park (BP), General Commercial (GC), High Density Residential (HDR), Special Commercial (SC), and Agricultural (AG). Land uses that would be immediately adjacent to the Pine Mountain Lake Airport or that fall within the noise impact area include primarily Low Density Residential (LDR), Rural Residential (RR), General Commercial (GC) and Agricultural.

However, Policy 5.A.6 and associated implementation programs require new development located in close proximity to existing airports to be designed such that aircraft noise standards are not exceeded. Further, these implementation programs would require an acoustical analysis to be conducted to provide recommendations for project design and require that all new development be compatible with the adopted ALUCP and associated noise standards.

Implementation of Policy 5.A.6 and its associated implementation programs would ensure that projects proposed within the noise environment of local airports would be evaluated and that appropriate sound attenuation techniques would be implemented on a case-by-case, project-level basis. Implementation of the above General Plan Update policy and implementation programs and enforcement of the Maximum Allowable Noise Exposure thresholds from aircraft noise sources as shown in Table 3.12-6 above would ensure that impacts related to airport generated noise exceeding County standards would be **less than significant** without mitigation.

Mitigation Measures

No mitigation is required.

Impact 3.12-6: Expose Noise-Sensitive Land Uses to Operational Stationary Noise That Exceeds Applicable Standards

Projected development under the General Plan Update could potentially result in exposure of future residences and other noise-sensitive land uses to noise impacts generated from operational stationary noise sources, especially from mining, timberland production, sawmills, and agricultural operations. Implementation of policies in the General Plan Update to enforce noise standards for new development would ensure that acceptable standards would not be exceeded in most cases. However, noise associated with operational stationary noise sources from agritourism uses could exceed applicable standards at nearby receptors, especially during the more noise-sensitive nighttime hours. These impacts would be **significant**.

Mining, timberland production, sawmills, agricultural operations, and other commercial or industrial operations could be potential stationary noise sources or generate substantial levels of noise. Typical commercial and industrial noise sources include loading dock operations, parking lot activity, on-site equipment (including heating and air conditioning), and heavy truck idling. Other stationary noise sources of concern typically include generators, pumps, air compressors, outdoor speakers, motors, heavy equipment,

back-up alarms and similar machinery. There is potential for blasting or demolition noise associated with the mines, which may occur once every other year. Industrial and commercial operations can be substantial sources of noise, depending on the type and hours of operation. Such operations may result in noise impacts when they are adjacent to noise sensitive land uses.

The General Plan Update includes Policy 8.A.4, which requires a 200-foot buffer between agriculture land and new development. In addition, Policy 5.A.1 and associated implementation programs would require new development to be consistent with stationary noise standards and require an acoustical analysis to be conducted for new development likely to produce noise levels exceeding adopted stationary noise standards. Further Policy 5.A.3 and 5.A.i requires proposed new stationary sources or modifications to existing stationary noise sources to evaluate noise effects on existing nearby noise-sensitive land uses and requires that new sources be located as far from sensitive receptors as possible or be adequately designed to minimize noise exposure at sensitive receptors such that County noise standards are met.

For development that would occur near noise-sensitive areas where noise levels already exceed the standards shown in Table 3.12-7, Implementation Program 5.A.a would ensure existing noise levels would not be further increased. Depending on what is proposed and the location and source of noise, sound attenuation techniques may include site design to shield noise-sensitive uses from noise, special building standards to reduce interior noise, or the use of barriers to reduce exterior noise.

Proposed General Plan policies and the proposed changes to Title 17 of the County's Ordinance Code would increase opportunities for agritourism by expanding the types of agricultural uses allowed on property zoned Agriculture or Residential Estate. Individual properties used for agritourism could generate additional noise associated with parking areas, people talking, music, and increased traffic. Many types of agritourism operations, such as bonsai education or rare rose tours, would generate low noise levels that would not be typically be discernable at nearby sensitive land uses. It should be noted that proposed changes to Title 17 allow for special events that could include as many as 500 people (although events that large would be limited to only twice per year at a given location). According to the 2018 Lisa Wise Consulting's Agritourism Market Study, event venues account for approximately 15 percent of the 26 operations found in the County in 2018. While the exact number of agritourism operations that may be in operation in 2040 is unknown, it is reasonable to assume that that number will be less than 85 operations throughout the County, which is the high-end estimate of total operations in 2040 (the low-end estimate was 46 total operations in 2040). Therefore, the number of event venues associated with agritourism operations in the County is likely to range from 13 on the high end to seven on the low end. Standards for special events are provided in the proposed revisions to Ordinance Code section 17.52.220 that limit hours of event operation to exclude nighttime hours. The standards also include requirements for parking buffers, as well as requirements that noise levels are consistent with County standards. (See Appendix F for details.) However, there is no provision in the proposed Title 17 text and no policy or implementation program that would limit outdoor gatherings associated with regular operation of agritourism uses (non-special-event operations) to the daytime hours; thus, noise generated during the more noise-sensitive nighttime hours by agritourism uses could conflict with surrounding land uses. Therefore, operational stationary noise levels could exceed applicable standards at nearby receptors, and this impact would be **significant**.

Mitigation Measures

Mitigation Measure 3.12-6: Restriction of outdoor gathering hours for agritourism uses and prohibition of exterior amplified sound

The following implementation programs will be added to the General Plan Update under Policy 5.A.1 to reduce noise exposure from operational stationary noise sources of agritourism uses to nearby sensitive land uses.

- **Implementation Program 5.A.x** [specific numbering to be provided in Final General Plan Update]**:** Outdoor gatherings associated with normal, day-to-day agritourism uses shall be limited to daytime hours (7:00 a.m. to 10:00 p.m.). Exceptions may be allowed with review and approval by the County. As part of the County review and approval, such exceptions shall include an operation noise plan prepared by an

acoustical engineer that evaluates potential for outdoor gatherings occurring during nighttime hours to exceed County noise standards. If needed, the noise plan shall include noise minimization measures (such as siting/orientation of the gathering) to minimize sound exposure of any nearby residences such that County noise standards (Table 3.12-7 of this EIR) are not exceeded. The applicant shall demonstrate through the plan how the nighttime gathering would not exceed applicable County noise standards. After the noise plan is approved by the County for the agritourism operation, no additional noise plan would be required, unless the agritourism operation proposes changes to its nighttime outdoor uses that could meaningfully affect exterior noise levels (e.g., changes in location/orientation of gatherings, location of access/parking, and type of gatherings, and/or substantial change in typical number of guests).

- **Implementation Program 5.A.x** [specific numbering to be provided in Final General Plan Update]**:** No exterior amplified sound systems (e.g., public address systems) will be allowed as part of any agritourism use. Exceptions may be allowed with review and approval by the County with the submittal of a plan analyzing the noise from the speakers/amplification. As part of the County review and approval, the applicant shall submit a speaker/amplification noise plan prepared by an acoustical engineer, that evaluates the potential for the proposed amplified sound to exceed County noise standards (Table 3.12-7 of this EIR). If necessary, the noise plan shall include protocols for siting, orientation, and operation of speakers (including potential volume limits) that would be implemented to reduce the effect of noise levels generated by on-site stationary noise sources. The applicant shall demonstrate through the plan how the speaker/amplification system would not exceed applicable County noise standards (Table 3.12-7 of this EIR). After the noise plan is approved by the County for the agritourism operation, no additional speaker/amplification noise plan would be required, unless the agritourism operation proposes changes to the speaker/amplification system that could meaningfully affect noise levels (e.g. changes to the location, orientation, or volume of the amplification system).

Significance after Mitigation

These additional implementation programs require outdoor gatherings associated with agritourism uses to occur during daytime hours (7:00 a.m. to 10:00 p.m.) and prohibit amplified sound systems as a regular part of an agritourism use. The County may provide exceptions to these implementation programs only if a noise plan is provided that demonstrates County noise standards would not be exceeded at any surrounding noise-sensitive receptor. Implementation of these policies and programs would ensure that projects proposed in noise environments that could potentially exceed acceptable standards would be evaluated and that appropriate sound attenuation techniques would be implemented on a case-by-case basis. Therefore, implementation of Mitigation Measure 3.12-6 would reduce this impact to a **less-than-significant** level.

Impact 3.12-7: Expose Noise-Sensitive Land Uses to Railroad Noise and Vibration that Exceeds Applicable Standards

Projected development under the General Plan Update could result in exposure of future residences and other noise-sensitive land uses to railroad-related noise and vibration levels exceeding the “acceptable” range and noise standards. Implementation of policies in the General Plan Update to enforce noise standards for new development would generally reduce impacts. Impacts due to railroad-related noise and vibration levels would be **less than significant**.

Operation of the Sierra Railroad and new development near or adjacent to the railroad as a result of the General Plan Update could be subject to significant noise and vibration impacts. FTA provides reference vibration levels and screening distances for noise assessments of rail roads. Although operation of the Sierra Railroad within the County is limited to 25 mph, this analysis conservatively applies the reference noise and vibration levels of rail vehicles traveling at 50 mph, because standardized data is available for this noise level and significant noise impacts would not be expected. Table 3.12-14 shows the approximate VdB from passenger and freight trains at 30, 50, 100, 120, 200, and 300 feet from the track centerline traveling at 50 mph. These are vibration levels at ground floor elevation. Upper level floors would experience less vibration due to dispersion and attenuation of the vibration energy as it propagates through a building.

Vibration typically attenuates by 1 to 2 VdB for each floor. Regarding railroad noise, FTA recommends a screening distance of 750 feet from railroads.

Table 3.12-14 Vibration Levels for Rail Transit

	Approximate VdB					
	30 Feet	50 Feet	100 Feet	120 Feet	200 Feet	300 Feet
Locomotive Powered Passenger or Freight Train (50 mph)	88	85	78	76	72	67

Source: FTA 2006

Projected development under the General Plan Update could result in new sensitive land uses in close proximity to the existing railroad. However, because specific design, orientation, location, and type of individual development projects are unknown at this time, this analysis conservatively applies the 65 VdB threshold for vibration-sensitive land uses and the 750-foot screening distance for noise-sensitive receptors. Under the General Plan Update new residential development could be placed within 750 of the existing Sierra Railroad, potentially exposing new receptors to noise and vibration levels that could be disturbing.

However, Policy 5.A.6 requires new noise sensitive uses to incorporate measures to ensure noise standards (i.e., 60 dBA CNEL, exterior, and 45 dBA CNEL, interior) are not exceeded. The policy further requires that new development near railroads prepare an acoustical study to determine appropriate measures, including distance buffers, site design considerations, and building material choice to adequately reduce noise and vibration exposure.

Implementation of General Plan Update Policy 5.A.6 would ensure that projects proposed in noise environments that potentially exceed acceptable standards would be evaluated and that appropriate sound attenuation techniques would be implemented on a case-by-case basis. Depending on what is proposed and the location and source of noise, sound attenuation techniques may include site design to shield noise-sensitive uses from noise, special building standards to reduce interior noise, or the use of barriers to reduce exterior noise. This impact would be **less than significant**.

Mitigation Measures

No mitigation is required.

3.13 POPULATION AND HOUSING

This section analyzes the potential environmental impacts of projected development under General Plan Update related to population and housing. Comments on the Draft EIR addressed population estimates, curtailment of sprawl, and methods used to determine population growth. These concerns are addressed below and in Chapter 2, "Project Description," as appropriate.

3.13.1 Environmental Setting

As described in Chapter 2, "Project Description," Tuolumne County, including the City of Sonora, has historically experienced a low annual rate of growth: roughly 1.2 percent annually between 1990 and 2000, and 0.2 percent annually between 2000 and 2010.

Table 3.13-1 shows the existing 2015 population and dwelling unit count for the unincorporated area, City of Sonora, and County total. The average household size is 2.28 persons, while vacancy rate is 30.7 percent (California Department of Finance 2015) in the unincorporated area of the County. The vacancy rate is higher for the unincorporated area of the County because vacation homes and recreational rental units, which are more predominant in the County, are classified as vacant units.

Table 3.13-1 Existing Population and Dwelling Unit Count

County/City	Population	Percentage of County	Dwelling Units	Percentage of County	Vacancy Rate
Unincorporated	49,458	91	21,240	90	30.7%
City of Sonora (Incorporated)	4,879	9	2,460	10	10.7%
County Total	**54,337**	**100**	**23,700**	**100**	**29.1%**

Sources: California Department of Finance 2015, Wood Rodgers 2016

The population of the unincorporated area of the County was 44,300 in year 1990; 50,100 in year 2000; 51,700 in year 2004; 50,400 in year 2010; and 49,458 in year 2015. (DOF 2018a; DOF 2015.) When the population of the City of Sonora is added with the population of the unincorporated area of the County, then the population for these years are as follows: 48,456 in year 1990; 54,522 in year 2000; 56,788 in year 2005; 55,365 in year 2010; and 54,337 in year 2015. The most recent California Department of Finance data indicate that, including the City of Sonora, the County's population stood at 54,740 as of January 1, 2018. With this 0.2-percent increase over 2015 population levels, the County together with the City of Sonora have roughly the same population level they had in 2000.

According to the 2014 Housing Element Update, Tuolumne County has a large senior population. Between 2000 and 2010, the percentage of the population aged 65 or over increased from 18.3 percent of the population to 21 percent. In comparison, seniors make up 11 percent of the population statewide.

3.13.2 Regulatory Setting

FEDERAL

There are no federal regulations related to population and housing that apply to the General Plan Update.

STATE

State Housing Element Law

The Housing Element law (Government Code Section 65580 et seq.) mandates that local governments adequately plan to meet the existing and projected housing needs of all economic segments of the community. The law recognizes that for the private market to adequately address housing needs and demand, local governments must adopt land use plans and regulatory systems that provide opportunities for, and do not unduly constrain, housing development. As a result, state housing policy rests largely upon the effective implementation of local general plans and in particular, housing elements. Additionally, Government Code Section 65588 dictates that the housing elements must be updated at least once every five years. The Tuolumne County 5th Cycle 2014–2019 Housing Element Update was adopted in June 2014 and determined by the state to be in compliance with the Housing Element Law.

Regional Housing Needs Allocation

The Housing Element law requires that each county and city develop local housing programs to meet its "fair share" of future housing growth needs for all income groups, as determined by the California Department of Housing and Community Development. The regional councils of government are then tasked with distributing the state-projected housing growth need for their region among their city and county jurisdictions by income category. This fair share allocation is referred to as the Regional Housing Needs Allocation (RHNA) process. The RHNA represents the minimum number of housing units each community is required to plan for through a combination of (1) zoning "adequate sites" at suitable densities to provide affordability and (2) housing programs to support production of below-market rate units.

LOCAL

Tuolumne Tomorrow, Distinctive Communities Alternative Growth Scenario

Tuolumne Tomorrow is a Regional Blueprint planning process for directing future growth and enhancing the quality of life in the County over the next few decades. Through this coordinated effort, the City of Sonora, Tuolumne County, Tuolumne County Transportation Council, and community members developed Guiding Principles for growth and development, and studied the potential effects of the likely land use development pattern and possible alternative growth scenarios on the transportation system, housing, local economy, quality of life, natural resources, and the environment. As a result of this effort, the Distinctive Communities Growth Scenario was selected and adopted by the Board of Supervisors in August 2012 as the preferred growth scenario for Tuolumne County. The Distinctive Communities Growth Scenario would encourage mixed-use and infill development within the vicinity or near identified communities, transportation networks, and public services. The General Plan Update has been formulated to reflect this preferred growth scenario.

Tuolumne County General Plan

The 1996 General Plan includes policies related to population and housing. As the proposed project would update the 1996 General Plan, this document will be discussed in the context of the update within the impact analysis. The proposed Community Development and Design Element contains goals, policies, and implementation programs address population and housing. Specific General Plan Update policies related to population and housing are identified below under Section 3.13.3, "Impact Analysis."

2014 Housing Element

The Housing Element describes a variety of policies and programs intended to conserve the existing supply of housing in unincorporated Tuolumne County, including affordable housing, as well as to provide capacity for the development of new housing in accordance with the County's RHNA allocation.

According to the 2014 Housing Element Update, between January 1, 2009, and December 31, 2013, Tuolumne County issued building permits for 228 single-family homes, 6 attached units, and 60 mobile homes not in rental parks, for a total of 294 new dwelling units, which is an average of approximately 59 dwelling units per year. This figure does not include building permits issued for replacement mobile homes in mobile home parks. It does include building permits issued for demolition of residential units, which averaged 22 per year for that period. Tuolumne County RHNA allocation for unincorporated County areas is shown in Table 3.13-2.

Table 3.13-2 Regional Housing Needs Allocation for Unincorporated Tuolumne County 2014–2019

Income Group	RHNA Allocation (units)	% of Total
Extremely Low	45	10
Very Low	57	13
Low	74	16
Moderate	81	18
Above Moderate	193	43
Total	**450**	**100**

Source: Tuolumne County 2014

Tuolumne County's RHNA allocation for the 2014–2019 period is 450 new units. This total includes 176 units in the "extremely low," "very low," and "low" income categories. An important goal of the Housing Element is to ensure that Tuolumne County continues to grow and develop as a clean and safe County where residents have access to adequate, dignified, and affordable housing without overcrowding, where population density is in balance with resources.

3.13.3 Impact Analysis

METHODS OF ANALYSIS

Through the 2016 Regional Transportation Plan (RTP), the Tuolumne County Transportation Council adopted a population projection of 63,243 residents in Tuolumne County, including the City of Sonora, by the year 2040 after considering the California Department of Finance forecasts, Census population projections, and past Tuolumne County Transportation Council adopted population projections. As discussed in Chapter 2, "Project Description," other growth projections are significantly lower than what the 2016 RTP adopted. The 2016 RTP was used over other projections in order to ensure that impacts of population growth and related development were not under estimated. As an example, the California Department of Finance forecasts little to no growth over the 25-year horizon (2015-2040) covered by the General Plan Update, with a projected population of 55,400 in year 2040 (DOF 2018b). The 2016 RTP was used over other projections because the County has decided to be conservative in its approach to the analysis and mitigation of environmental impacts. But the County's analysis in this EIR also considers the level of foreseeable growth throughout the County based in part upon consideration of where existing infrastructure is located and where previously-issued building permits and other land use approvals have been sought. Full buildout of every parcel in the County is not foreseeable. Because assumptions about population growth are considered very conservative, the EIR's analyses more than cover the foreseeable impacts of development under the General Plan Update.

THRESHOLDS OF SIGNIFICANCE

Impacts relating to population and housing are considered significant if projected development under the General Plan Update would result in one or more of the following conditions, which are based upon the environmental checklist in Appendix G of the State CEQA Guidelines:

- induce substantial population growth either directly or indirectly;
- displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere; or
- displace substantial numbers of people, necessitating the construction of replacement housing elsewhere.

As shown in Table 2-3 in Chapter 2, "Project Description," Tuolumne County has designated more than sufficient land for potential housing units to meet the housing needs for the planning period. As part of the General Plan Update, additional acres are proposed to be designated for High Density Residential, Medium Density Residential, and Mixed Use zoning. Thus, Tuolumne County provides ample capacity to develop residential units in the "extremely low," "very low," "low," moderate," and "above moderate" income categories based on the number of remaining vacant lots in the County to meet Tuolumne County's RHNA allocation for the 2014–2019. Therefore, there are no land use constraints to providing sufficient housing to meet the needs of the projected population at all income levels.

GENERAL PLAN UPDATE POLICIES

The following policies and implementation programs from the General Plan Update are applicable to the evaluation of effects related to population and housing:

<u>Community Development and Design Element</u>

- **Policy 1.A.4:** Focus urban growth in identified communities, emphasizing infill development and the intensified use of existing development.
- **Policy 1.A.5:** Promote infill and clustered patterns of development that facilitate the efficient and timely provision of infrastructure and services.
  - **Implementation Program 1.A.f:** Encourage a compact development pattern in and around identified communities through the General Plan land use diagrams.
  - **Implementation Program 1.A.h:** Provide incentives to applicants with approved undeveloped projects that are modified to be consistent with High Density or Medium Density land use designations where allowable densities have been increased.
- **Policy 1.A.6:** Establish growth areas to provide community services and enhance the quality of life by providing for economic, housing and cultural opportunities within identified communities. Where possible, these growth areas should be placed near transit stops, commercial centers, and other services.
  - **Implementation Program 1.A.i**: Establish areas for growth in identified communities on the General Plan land use diagrams and zone the land in accordance with these maps.
- **Policy 1.A.7:** Encourage comprehensively planned and well-balanced, separate, and distinct communities.

- **Implementation Program 1.A.j:** Designate an adequate amount of land for industrial development, business parks, commercial facilities and recreational development to provide jobs for the County's workforce, facilities for the County's residents and visitors and promote a healthy economy.

- **Implementation Program 1.A.k:** Provide an appropriate mix of land uses and amenities in community cores to attract and retain quality businesses and institutions.

Housing Element

- **Policy 2.A.4:** Encourage residential infill development through flexible development standards in areas of the County where adequate public facilities and services are already in place taking into consideration the visual character of the neighborhood.

PROJECT IMPACTS

This section presents a programmatic-level analysis of potential impacts associated with population and housing from projected development under the General Plan Update. Evaluation of environmental impacts associated with the General Plan Update considers the development that would be facilitated by the General Plan Update, in accordance with goals, policies, and implementation programs, to accommodate projected growth in the County. It should be noted that the County's population is projected to grow by 0.6 percent annually over the planning horizon (2040). As discussed in detail in Chapter 2, "Project Description," and the introduction to Chapter 3 as well as above, this is a relatively low amount of growth.

Impact 3.13-1: Result in Displacement that Necessitates the Construction of Replacement Housing

The General Plan Update would facilitate the development of new housing in accordance with state and local housing requirements. Although future redevelopment projects could displace residents temporarily during construction activities, this displacement would not be wide-spread. Impacts would be **less than significant**.

As discussed above, the existing 2015 population of Tuolumne County, including the City of Sonora, as of 2015 is 54,337, and there with approximately 23,700 dwelling units total. Based on estimates included in the 2016 RTP, the County population, including the City of Sonora, is forecasted to be 63,243 residents in 2040. In addition, as discussed in Chapter 2, "Project Description," under the growth forecasts, projected development under the General Plan Update would result in a net increase of 5,159 dwelling units through 2040. (See Chapter 2, Project Description, Table 2-6.)

An intention of the General Plan Update is to encourage development in identified communities, which would promote infill and mixed-use development near existing public infrastructure and services. The General Plan Update includes policies that promote growth in identified communities (Policy 1.A.4 and Policy 1.A.5) over rural areas, establish growth areas to provide community services (Policy 1.A.6) and encourage infill development in areas where adequate public facilities and services are already in place (Policy 2.A.4), and encourage comprehensively planned and well-balanced, separate, and distinct communities (Policy 1.A.7). These policies would be implemented through programs that would provide direction for appropriate land use planning (Implementation Programs 1.A.f, 1.A.h, 1.A.i, 1.A.j, and 1.A.k)

Under the General Plan Update, no changes would be made to land use designations that would reduce allowable density on any parcel. Rather, land use changes under the General Plan Update would increase the overall acreage and percentage of Low, Medium, High, Estate, and Rural Residential land use designations, while decreasing Large Lot and Homestead Residential land uses. These land use changes would allow for increased density of dwelling units to be developed where the land use changes would occur, which would generally be in identified communities.

While projected development under the General Plan Update would not result in long-term displacement of residents, future development projects could displace residents temporarily if redevelopment of existing residential structures occurs. However, based on existing land use patterns and projected growth, residential redevelopment projects would not likely occur at a pace that would result in large-scale displacement of existing residents. Also, given the County's vacancy rate of 30.7 percent, it is likely that temporary housing would be available for displaced residents such that replacement housing would not need to be constructed. Furthermore, even if the County's vacancy rate changes in the future, housing would continue to be developed as part of the projected development under the General Plan Update that would accommodate potentially displaced residents. This impact is **less than significant**.

Mitigation Measures

No mitigation is required.

Impact 3.13-2: Induce substantial population growth

Implementation of the General Plan Update would facilitate new residential development in Tuolumne County, which would accommodate an increase in the population to approximately 63,243 by the year 2040. This growth would be expected to occur without adoption of the proposed General Plan Update. Because projected development under the General Plan Update would result in population growth consistent with regional population projections, impacts would be **less than significant**.

As discussed in Chapter 2, "Project Description," the existing population of Tuolumne County (as of 2015) is 54,337. The Tuolumne County Transportation Council adopted a population projection of 63,243 residents in Tuolumne County by the year 2040 after considering the State Department of Finance Forecasts, Census population projections, and past Tuolumne County Transportation Council adopted population projections. Although the General Plan Update is based upon the assumption that Tuolumne County will reach this projected population, based on land use designation changes, it does not directly promote the growth of the County's population to that level. Moreover, the County has lost population over the last 10 years, and the rate of growth between 2015 and 2040, if a total population of 63,243 is to be reached, is a modest 0.5 percent per year.

This growth would be expected to occur without adoption of the proposed General Plan Update. The philosophy of the General Plan Update is that the County will be prepared and able to accommodate projected growth, while adhering to policies that define where and how development will occur. The General Plan Update provides guidance in determining the appropriate or desirable locations for this growth, thereby preventing an unnecessarily scattered dispersed pattern of development, which often results in extraordinary demands on public services, above average public service costs, and unnecessary and avoidable destruction or degradation of valuable natural resources. For additional discussion of population and economic growth, and the potential for the General Plan Update to remove obstacles to growth, refer to Chapter 5, "Other CEQA Discussions," in this Recirculated Draft EIR.

Furthermore, the physical environmental impacts associated with the growth that could occur with adoption of the General Plan Update have been analyzed and disclosed throughout Chapter 3 of this Recirculated Draft EIR. The General Plan Update would not induce substantial population growth, nor would it change how much growth occurs in the County. Therefore, impacts related to population growth would be **less than significant.**

Mitigation Measures

No mitigation would be required.

3.14 PUBLIC SERVICES

This section assesses potential impacts of projected development under the General Plan Update to public services, including fire and emergency services, law enforcement, public schools, and libraries. Hazards and hazardous materials-related impacts are discussed in Section 3.9, "Hazards and Hazardous Materials." Impacts to water and wastewater infrastructure and solid waste collection and disposal are discussed in Section 3.17, "Utilities and Service Systems." Impacts to parks and recreation are discussed in Section 3.15, "Recreation."

Several commenters on the 2015 Draft EIR expressed concerns related to public services, including growth and buildout assumptions and fire hazards. These topics are addressed herein, as appropriate. For additional discussion of growth and build-out assumptions, refer to Chapter 2, "Project Description." For an analysis of wildland fire hazards, refer to Section 3.9, "Hazards and Hazardous Materials."

3.14.1 Environmental Setting

FIRE PROTECTION SERVICE

Fire protection services are provided to unincorporated Tuolumne County by Tuolumne County Fire Department (TCFD), California Department of Forestry and Fire Protection (CAL FIRE), seven fire protection districts, and the United States Department of Agriculture in the Stanislaus National Forest (Tuolumne Fire Safe 2008). The majority of unincorporated Tuolumne County falls outside a fire district boundary and is protected by TCFD (administered by CAL FIRE under a contractual agreement with the County since 1975). TCFD has 13 fire stations, eight of which are in the unincorporated area of Tuolumne County (see Table 3.14-1). With the exception of the Jamestown and Groveland stations, the fire stations in the unincorporated communities are staffed by volunteer firefighters (Tuolumne County 2013).

TCFD operates under a cooperative agreement with CAL FIRE. CAL FIRE's Tuolumne/Calaveras Unit is headquartered in Sonora and includes stations in Groveland, Twain Harte, Blanchard, and Green Springs. Additional services are provided by the Twain Harte Fire Protection District (FPD), Tuolumne City FPD, Columbia FPD, Sonora Fire Department, Groveland Community Services District (CSD), Strawberry FPD, and Tuolumne Rancheria Fire Department (Tuolumne Fire Safe 2008).

Table 3.14-1 Tuolumne County Fire Stations and Staff

County Stations	Location	Staffing
Mono Village Station 51	19500 Hillsdale Dr., Sonora	5 paid full time, 12 volunteer
Ponderosa Hills Station 53	20810 Tomira Meadows Ct., Tuolumne	12 volunteer
Long Barn Station 54	25910 Long Barn Rd., Long Barn	12 volunteer
Pinecrest Station 55	Pinecrest Ave., Pinecrest	12 volunteer
Mono Vista Station 56	16925 Mono Vista Rd. North, Sonora	12 volunteer
Crystal Falls Station 57	21720 Phoenix Lake Rd., Sonora	12 volunteer
Cedar Ridge Station 58	24190 Kewin Mill Rd., Sonora	12 volunteer
Chinese Camp Station 61*	Highway 120, Chinese Camp	12 volunteer
Smith Station 63*	223260 Elmore Rd., Groveland	12 volunteer
Don Pedro Station 64*	2990 Highway 132, La Grange	12 volunteer
Jamestown Station 76	18249 4th Ave., Jamestown	5 paid, 12 volunteer
Groveland Station 78	18930 Highway 120 Groveland	5 full time and 21 part time paid
Columbia College Station 79	11600 Columbia College Dr., Sonora	1 full time paid, 15 student, 12 volunteer

Source: Tuolumne County 2013

The Tuolumne County Fire Department responded to 4,347 total incidents during the 2014 calendar year, and currently serves an area of more than 2,200 square miles. Currently, the Fire Department maintains shifts of nine firefighters on duty 24 hours a day, seven days a week. TCFD does not use the National Fire Protection Association standard for fire protection services that requires 1-2 firefighters per 1,000 residents because this standard does not fit TCFD's personnel resources and service population. Fire services within the County are provided by a mix of professional and volunteer firefighters and mutual aid agreements among the fire service agencies. The populations of the City of Sonora and the communities of Columbia, Twain Harte, Strawberry/Pinecrest, Mi-Wuk/Sugar Pine and Tuolumne are serviced by fire departments separate from TCFD. For urban areas, the TCFD response time is an average of 9 minutes; suburban areas have a response time of 10 minutes; rural areas have a response time of 14 minutes; and remote areas have response times dependent directly on travel distance (Gregory, pers. comm., 2018a; NFPA 2018).

The Fire Prevention Department of the Tuolumne County Fire Department is coordinated by the Fire Marshal and it is the duty of the Fire Prevention Bureau to prevent incidents that require the response of the County's fire suppression personnel. It is the job and responsibility of this bureau to enforce fire codes, to conduct fire and life safety plan reviews, to provide fire safety education, to inspect and abate existing and potential fire hazards through public education and code enforcement. The Fire Marshal and staff also draft and recommend new fire and life safety ordinance codes and standards to the Tuolumne County Board of Supervisors as needed (Tuolumne County n.d.).

AMBULANCE SERVICE

Tuolumne County Ambulance Service provides emergency and non-emergency medical transport services for Tuolumne County. There are over 60 full time and part time Paramedics and Emergency Medical Technicians (EMTs) employed, who handle approximately 8,000 calls per year (Tuolumne County n.d.).

LAW ENFORCEMENT

The Tuolumne County Sheriff's Office (TCSO) is committed to providing law enforcement services to all unincorporated areas of the County and to staff the county jail. There are approximately 135 authorized positions, including 63 Patrol Deputies and 38 Adult Detention deputies who provide law enforcement services to the 54,337 residents of the County. Additionally, the Emergency Dispatch Center is staffed 24/7 by 13 Dispatchers. There is only one Sheriff Station in the County, located at 28 Lower Sunset Drive, in the City of Sonora (Carrillo, pers. comm., 2015). The Sheriff's Station consists of several buildings in close proximity to each other, and includes the patrol unit, the coroner's office, and the County jail.

In addition to staffing the Patrol division, the County Jail, Emergency Dispatch Center, the Coroner's Office, and performing Civil Processes, the Sheriff's Office also provides a wide array of ancillary services such as investigations, narcotics, boat patrol, courts security, records, swat, search & rescue, K-9. Crime prevention and administrative functions are also provided by the Sheriff's Office (Tuolumne County Sheriff's Office 2015).

In 2013, TCSO handled more than 31,688 calls for service. These calls for service range anywhere from homicides to loud music complaints, to assists to Sonora Police, California Highway Patrol, Fire Department, Child Welfare Services, etc. For the 2013 calendar year, calls for service included over 2,500 traffic stops and more than 296 issued citations. Deputies contacted 852 suspicious vehicles or persons. Additionally, Deputies had 2,574 self-initiated incidents, handled 2,949 disturbance calls, which included domestic violence and verbal disputes. In addition, the Sheriff's Office Dispatch handled 9,010 calls for service ranging from medical aids to animal control calls and assisting other agencies (Tuolumne County Sheriff's Office 2013).

TCSO does not have a target officer per 1,000 resident ratio. The Sheriff's Office does not use a level of service ratio because of the large geographic area of the County. TCSO strives to ensure it has enough personnel to cover the large geographic area (Carrillo, pers. comm., 2015). TCSD's average response time is 3 minutes and 18 seconds (Carrillo, pers. comm., 2015).

The California Highway Patrol provides additional traffic enforcement along state highways and County roadways. Tuolumne County is within the California Highway Patrol's (CHP) Central Division which encompasses the heart of the San Joaquin Valley. The County's CHP area office is located at 18437 Fifth Avenue in Jamestown. In addition to issuing traffic citations for traffic violations, CHP provides other services to support the overall safety of residents in the County.

PUBLIC SCHOOLS

There are 11 school districts within Tuolumne County (including the City of Sonora), consisting of two high school districts, eight elementary school districts, and one unified school district, which includes both elementary and high schools. Approximately 5,907 students attended the first day of classes for the 2017-2018 school year within this County.

There are four public charter schools within Tuolumne County: California Virtual Academy at Jamestown, Connections Visual and Performing Arts Academy, Gold Rush Charter, and the Foothill Leadership Academy, which opened in the City of Sonora for the 2014–2015 school year. For the 2017–2018 school year, there were 875 students enrolled in the four charter schools.

Enrollments at private schools operating within Tuolumne County range in size from a single student (at home school sites) up to 155 students. The two largest private schools are the Mother Lode Christian School, located in Tuolumne, and the Sierra Waldorf School, located in the Rawhide Valley, near Jamestown.

Financing school facilities is a problem facing school districts in Tuolumne County. Due to financing problems and decreased enrollment, the Chinese Camp School District has been consolidated into the Jamestown School District. Table 3.14-2 below shows each school by name, grade levels served, 2013–2014 enrollment and the district in which it is located.

There has been a substantial decrease in enrollment throughout the County over the past decade. District and school capacity is not closely monitored unless indicators of overcrowding are present. Therefore, due to the declining enrollment, overcrowding indicators are not present and information related to current student capacity of the districts and schools in Tuolumne County is not readily available; however, there is no known issue with student capacity.

Table 3.14-2 Schools within Tuolumne County and 2013-2014 Enrollment

District Name	School Name	Grades	2017–2018 Enrollment
Belleview School District	Belleview Elementary School	K-8	147
Big Oak Flat Groveland Unified School District	Tenaya Elementary School	K-8	197
Big Oak Flat Groveland Unified School District	Don Pedro High School	9-12	48
Big Oak Flat Groveland Unified School District	Tioga High School	9-12	52
Big Oak Flat Groveland Unified School District	Moccasin Community Day	10-12	5
Columbia Union School District	Columbia Elementary	K-8	521
Columbia Union School District	Springfield Community Day	5-8	10
Curtis Creek School District	Curtis Creek Elementary	K-8	458
Jamestown School District	California Virtual Academy at Jamestown	K-12	114
Jamestown School District	Chinese Camp School	K-6	29
Jamestown School District	Jamestown Elementary School	K-8	298
Sonora School District	Sonora Elementary School	K-8	728
Sonora Union High School District	Sonora High School	9-12	973

Table 3.14-2 Schools within Tuolumne County and 2013-2014 Enrollment

District Name	School Name	Grades	2017–2018 Enrollment
Soulsbyville School District	Soulsbyville Elementary	K-8	494
Summerville School District	Summerville Elementary School	K-8	402
Summerville Union High School District	Cold Springs High	9-11	2
Summerville Union High School District	Connections Visual and Performing Arts Academy	7-12	222
Summerville Union High School District	Gold Rush Charter	K-12	406
Summerville Union High School District	Mountain High	10-11	4
Summerville Union High School District	South Fork High	9-12	4
Summerville Union High School District	Summerville High	9-12	406
Twain Harte School District	Twain Harte Middle School	K-8	254
Tuolumne County	Foothill Leadership Academy	K-8	133
Total			5,907

Source: California Department of Education 2017

OTHER PUBLIC SERVICES

Other public service functions provided by the County government are also considered by the Tuolumne County General Plan Update. Some of the County functions are primarily administrative, like the County Administration Office, while others provide direct service to certain taxpayers who have a need of a particular service, such as the District Attorney's Victim/Witness Division. Other offices that provide public services include: Agricultural Commissioner, Animal Control, District Attorney, Child Support, Victim/Witness, Elections, Farm Advisor, Child Welfare Services, Community Resources Agency, Public Health, Behavioral Health, Welfare, Probation, Public Defender, Recreation, and Weights and Measurements.

Library Services

The Tuolumne County Library system provides a diverse array of library services to the residents of Tuolumne County. Based at the Main Library in Sonora, with branches in Groveland, Tuolumne City, and Twain Harte, the County Library is able to support the information and educational needs of County residents through standard reference and circulating collections, as well as videos, periodicals and newspapers, interlibrary loans, and children's programs.

3.14.2 Regulatory Framework

FEDERAL

There are no federal regulations that pertain to public services that are applicable to the General Plan Update.

STATE

California Occupational Safety and Health Administration

In accordance with California Code of Regulations Title 8 Sections 1270 "Fire Prevention" and 6773 "Fire Protection and Fire Equipment," the California Occupational Safety and Health Administration (Cal/OSHA) has established minimum standards for fire suppression and emergency medical services. The standards

include, but are not limited to, guidelines on the handling of highly combustible materials, fire hose sizing requirements, restrictions on the use of compressed air, access roads, and the testing, maintenance and use of all firefighting and emergency medical equipment.

Emergency Response/Evacuation Plans

In 2008, Governor Schwarzenegger signed AB 38, the California Emergency Services Act, which merged the duties, powers, purposes, and responsibilities of the Governor's Office of Emergency Services and the Governor's Office of Homeland Security into a new cabinet-level agency called the California Emergency Management Agency (Cal EMA). The legislation authorizes Cal EMA to prepare a Standard Emergency Management System (SEMS) program, which sets forth measures by which a jurisdiction should handle emergency disasters. Non-compliance with SEMS could result in the State withholding disaster relief from the non-complying jurisdiction in the event of an emergency disaster. Cal EMA serves as the lead State agency for emergency management and coordinates the State response to major emergencies in support of local government. The primary responsibility for emergency management resides with local government. SEMS provides the mechanism by which local government requests assistance from Cal EMA, and as such, Cal EMA maintains oversight of the State's mutual aid system. Cal EMA may task State agencies to perform work outside their day-to-day and statutory responsibilities and serves as the lead agency for obtaining federal resources. The 2012 Multi-hazard Emergency Response Plan for Tuolumne County establishes the emergency organization, assigns tasks, specifies policies, and general procedures, and provides for coordination of planning efforts of the various emergency staff and service elements utilizing the National Incident Management System (NIMS) and the SEMS.

California State Assembly Bill 2926—School Facilities Act of 1986

In 1986, AB 2926 was enacted by the state of California authorizing entities to levy statutory fees on new residential and commercial/industrial development in order to pay for school facilities. AB 2926, entitled the "School Facilities Act of 1986," was expanded and revised in 1987 through the passage of AB 1600, which enacted Government Code Section 66000 et seq. Under this statute, payment of such statutory fees by developers would serve as total mitigation in accordance with CEQA to satisfy the impact of development on school facilities.

California Department of Education

The California Education Code contains various provisions governing the siting, design, and construction of new public schools (e.g., Education Code Sections 17211, 17212, and 17212.5). In addition, to help focus and manage the site selection process, the California Department of Education's (CDE's) School Facilities and Planning Division has developed screening and ranking procedures based on criteria commonly affecting school selection (Education Code Section 17251[b], 5 CCR Section 14001[c]). The foremost consideration in the selection of school sites is safety. Certain health and safety requirements are governed by state statute and CDE regulations. In selecting a school site, a school district should consider the factors including proximity to airports, proximity to high-voltage power transmission lines, presence of toxic and hazardous substances, hazardous air emissions, and facilities within one-quarter mile, and proximity to railroads.

California Government Code Section 65995—School Facilities Legislation

The School Facilities Legislation was enacted to generate revenue for school districts for capital acquisitions and improvements. As of 2018, this legislation allows a maximum one-time fee of $3.79 per square foot of residential development and $0.61 per square foot of commercial development. This fee is divided between the primary and secondary schools and is termed a "Level One" fee.

The passage of SB 50 in 1998 defined the Needs Analysis process in Government Code Sections 65995.5-65998. Under the provisions of SB 50, school districts may collect Level Two and Level Three fees to offset the costs associated with increasing school capacity in response to student enrollment increases associated with residential developments. Level Two fees require the developer to provide one-half of the costs of accommodating students in new schools, while the state would provide the other half. Level Three fees require the developer to pay the full cost of accommodating the students in new schools and would be

implemented at the time the funds available from Proposition 1A (approved by the voters in 1998) are expended. School districts must demonstrate to the state their long-term facilities needs and costs based on long-term population growth to qualify for this source of funding, however, voter approval of Proposition 55 on March 2, 2004, precludes imposition of the Level Three fee for the foreseeable future. Therefore, once qualified, the districts may impose only Level Two fees, as calculated per SB 50.

LOCAL

Fire Codes and Guidelines

The availability of sufficient water flows and pressure are a basic requirement of the TCFD, Cal Fire and other mutual aid fire departments in the region. Fire Department requirements are determined for specific development projects at the design stage and are based on the state's Uniform Building Code (UBC) and the National Fire Protection Association (NFPA). In addition to meeting minimum fire flow requirements, all development projects in the plan area would be required to meet other various fire protection requirements identified in the plan check and review process.

TCFD Service Level Stabilization Plan

The Tuolumne County Fire Department *Service Level Stabilization Plan* was adopted in 1993 to address fire protection needs of the area served by the TCFD. The Plan focuses on three goals:

1. Clearly define the baseline service level for TCFD;
2. Identify stable funding sources for TCFD through a realistic annual operations budget; and
3. Establish an apparatus replacement fund.

A functionally integrated fire protection system, involving federal, state, and local government resources, is a cost-effective method of delivering high quality fire protection to at risk areas. This allows coordination of fire prevention, protection, and suppression strategies.

Tuolumne County Services Impact Mitigation Fee

New residential development is subject to the County Services Impact Fee. All fees are due prior to issuance of Blue Tag for electrical service or at the time escrow closes if an escrow account has been established for the subject property prior to issuance of a building permit. Prior to issuance of a Building Permit, the applicant must provide proof to the County Building and Safety Division that an escrow account has been established and must sign a contract to pay the fee at the time in conjunction with escrow closing.

Tuolumne County General Plan

The 1996 General Plan provides a framework for addressing public-services issues in the County. As the proposed project would update the 1996 General Plan, this document will be discussed in the context of the update within the impact analysis. The Public Safety Element and Education and Libraries Element contain goals, policies, and implementation programs to address projected development under the General Plan Update in a manner that would address the demand for public services. Specific General Plan Update policies related to public services are identified below under Section 3.14.3, "Impact Analysis."

3.14.3 Impact Analysis

METHODS OF ANALYSIS

The General Plan Update is a policy document that would guide development and conservation of land in the county. Adoption of the plan would not result in any changes to existing conditions; however, the policies could allow for or encourage future activities that may result in increased demand for fire and emergency services, law enforcement, and public schools capacity. Impacts are evaluated assuming full buildout of the plan area.

Evaluation of potential fire service, law enforcement, and public school impacts was based on review of applicable service plans, County code and service standards, and personal communications with service providers. Evaluation of potential public services impacts also considered the General Plan Update policies and implementation programs described below.

THRESHOLDS OF SIGNIFICANCE

In accordance with Appendix G of the State CEQA Guidelines, the projected development under the General Plan Update would result in potentially significant impacts relating to public services if it would:

- Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable services ratios, response times or other performance objectives for any of the public services:
  - Fire and Emergency Services,
  - Law Enforcement, or
  - Schools.

Fire and Emergency Services. Information on current service demands and available staff and equipment was provided by Stephen Gregory from the Tuolumne County Fire Prevention Division of the Tuolumne County Fire Department. The Fire Department does not use the National Fire Protection Association (NFPA) standard and the TCFD Service Level Stabilization Plan as explained above. The TCFD Service Level Stabilization Plan encourages coordination of fire and emergency services with federal and state services. Therefore, an impact would be considered significant if projected development under the General Plan Update would increase demand for fire and emergency services such that it would require the construction of new or expanded facilities, the construction of which could cause significant environmental impacts.

Law Enforcement. Information on service demands and available staff and equipment as of 2015 was provided by Tuolumne County Counsel Sarah Carrillo and the Tuolumne County Sheriff's Office. The Sheriff Office's goal is to ensure it has enough personnel to cover the large geographic area. The service ratio in 2015 is approximately 1 deputy per 403 residents. An impact would be considered significant if projected development under the General Plan Update results in increased demand for law enforcement protection services such that it would require the construction of new or expanded facilities, the construction of which could cause significant environmental impacts.

Public Schools. Information on current school facilities was provided by the various school districts throughout the County and the School Accountability Report Card (SARC) by the California Department of Education (http://www.sarconline.org/). Specifically, information pertaining to current school enrollments was collected from SARC. Student generation rates, provided by the various districts as contained within the most recent developer impact fee report, were used to estimate potential future enrollments as a result of the population increase associated with projected development under the General Plan Update. Current information on district and school capacity was not readily available for all districts and schools. According to Sonora Union High School District, Columbia Union School District, and Big Oak Flat Groveland Unified School District, Tuolumne County has a substantial shortage of student enrollment. As a result, each district and school is operating without any capacity issues.

Impacts would be significant if projected development under the General Plan Update would cause student enrollment to increase such that new or expanded school facilities would be required, the construction of which could cause environmental impacts.

Issues Not Discussed Further

Appendix G also includes the following significance threshold related to physical impacts associated with other public facilities.

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

Projected development under the General Plan Update would increase overall demand for services. The provision and payment of the County Services Impact Mitigation Fee would ensure that all service-providing functions of County government agencies are adequate. Any new or expanded facilities would be developed consistent with the General Plan Update land use diagram and would not result in environmental impacts above and beyond those evaluated in this Recirculated Draft EIR. Impacts to other public facilities are not evaluated further in this EIR.

Impacts to parks are discussed in Section 3.15, "Recreation."

GENERAL PLAN UPDATE POLICIES

The following policies and implementation programs from the General Plan Update are applicable to the evaluation of effects related to public services:

Public Safety Element

Fire and Emergency Services Policies

- **Policy 9.A.4:** Actively support efforts to maintain and improve Federal and State fire service capabilities.
  - **Implementation Program 9.A.d:** Support efforts of CAL FIRE, the U.S. Forest Service, the National Park Service, other government land management agencies, the Southwest Interface Team (SWIFT), the Highway 108 Fire Safe Council, the Yosemite Foothills Fire Safe Council and other regional fire safe entities, to secure adequate funding for their fire protection and fuel reduction programs, and support their efforts to reduce the wildland fire potential on lands under their jurisdiction within Tuolumne County.
- **Policy 9.C.3:** Periodically review emergency medical services to maintain an acceptable level of service as the County population changes.
- **Policy 9.E.2:** Maintain adopted levels of fire protection service.
  - **Implementation Program 9.E.e**: Strive to improve the County's Insurance Service Office (ISO) ratings through improved infrastructure of hydrants and water availability, and by reducing response time with a greater number of strategically placed and fully staffed fire stations. ISO ratings should not exceed 9 for areas without hydrants and should not exceed 6 for areas with hydrants within the jurisdiction of the Tuolumne County Fire Department as outlined in fire protection service reports. Provide assistance to fire protection agencies in their efforts to improve ISO ratings wherever possible.
- **Policy 9.F.1:** Support and implement the Tuolumne County Fire Department Service Level Stabilization Plan.
  - **Implementation Program 9.F.a**: Consult with the Tuolumne County Fire Department to establish funding mechanisms, including impact fees, to offset fire protection costs for new development in areas of high wildfire risk.

- **Policy 9.F.2:** Construct new fire protection facilities as needed within the jurisdiction of the Tuolumne County Fire Department/CAL FIRE in order to maintain the desired Insurance Services Office (ISO) ratings.
  - **Implementation Program 9.F.b:** Identify appropriate areas for construction of new fire protection facilities within the service area of the Tuolumne County Fire Department/CAL FIRE necessary to provide structural fire protection to the residents of Tuolumne County. Consult with all fire agencies in the County on fire protection facilities planning.
  - **Implementation Program 9.F.c:** Construct new fire protection facilities and equip and staff new and existing facilities in areas of the County under the jurisdiction of the Tuolumne County Fire Department where deemed necessary.

Law Enforcement Policies

- **Policy 9.D.2:** Provide law enforcement, such as patrol, investigation, supervision, administration, clerical support, dispatch, coroner, crime laboratory, prosecution, probation, and jail services within the unincorporated area of Tuolumne County and assure that the established level of service is maintained and maintain this level.
  - **Implementation Program 9.D.b:** Establish a definitive measure of what constitutes an adequate level of service for the criminal justice system in Tuolumne County. This comprehensive definition should identify all necessary services provided by the County's criminal justice system law enforcement, such as patrol, investigation, supervision, administration, clerical, support, dispatch, coroner, crime laboratory, prosecution, probation and jail services. In the absence of this determination, the County should continue to maintain the existing level of service and upgrade it to meet the needs of the County's increasing population.
- **Policy 9.D.3:** Assure that the established level of service in the criminal justice system is maintained prior to approving new development.
  - **Implementation Program 9.D.e:** Consider including provisions for reimbursement of criminal justice services in the terms of future annexation agreements between the City of Sonora and the County, to provide reimbursement to the County by the City for the expansion of services which it requires.
  - **Implementation Program 9.D.f:** Consider implementing law enforcement options as new urban areas develop and expand in order to increase patrol time and reduce response time to citizen requests for law enforcement services.
- **Policy 9.D.4:** Require new development to be designed so as to discourage criminal activity.
  - **Implementation Program 9.D.g:** Encourage the use of private patrols and security personnel in large residential and commercial developments to assist the Sheriff's Office in crime prevention.
  - **Implementation Program 9.D.h:** Actively involve the Tuolumne County Sheriff's Office in the review of land development applications and incorporate law enforcement recommendations as conditions of land use entitlements.

Education and Libraries Element

Public School Policies

- **Policy 12.A.1:** Encourage school facilities planning and site acquisition to be coordinated between school districts and Tuolumne County in order to provide public schools that are physically and functionally integrated with their communities.

- **Implementation Program 12.A.a:** Work closely with school districts to identify future school sites that are compatible with land use, transportation, air quality plans, and pedestrian routes.

- **Implementation Program 12.A.b:** Encourage schools to be located in areas with a minimum of incompatible land uses such as traffic hazards, airports, industrial complexes and repositories for hazardous waste.

- **Implementation Program 12.A.c:** Require review, by the Community Resources Agency Director, of potential school sites. The Community Resources Agency Director shall report on the conformity of the site with this General Plan, prior to acquisition by the school district, in accordance with California Government Code Section 65402 and Tuolumne County Resolution 89-11.

- **Implementation Program 12.A.d:** Encourage schools to be located in residential areas to promote the use of school facilities as community centers, with their associated educational, cultural and recreational opportunities, and minimize transportation costs.

- **Implementation Program 12.A.e:** Encourage the use of schools as multi-purpose community facilities for uses such as after school **care** for young students and youth services in order to avoid duplication of facilities.

- **Implementation Program 12.A.f:** Integrate schools into the system of alternative transportation corridors, such as bike lanes, and riding and hiking trails, so that as many students as possible can walk or bike to school.

- **Policy 12.A.3:** Promote a quality K-12 education in an uncrowded environment for all children of Tuolumne County.

  - **Implementation Program Implementation Program 12.A.l:** Assist the County Superintendent of Schools Office and the school districts within Tuolumne County in their efforts to provide school services and facilities consistent with the level established by the respective school boards.

  - **Implementation Program 12.A.m:** Allow the establishment of private or alternative schools in a variety of zoning districts as conditional uses as long as the school can be found to be compatible with the surrounding neighborhood.

  - **Implementation Program 12.A.n:** Support the school districts within Tuolumne County in their quest for adequate funding to provide school facilities for anticipated County growth.

  - **Implementation Program 12.A.o:** Support schools in their efforts to obtain funding for school facilities.

Library Policy

- **Policy 12.C.1:** Maintain a goal through the Capital Improvements Program (CIP) for levels of library services throughout Tuolumne County equivalent to 325 square feet of gross floor area of adequately equipped and staffed library facilities per 1,000 population, exclusive of the Sierra Conservation Center.

  - **Implementation Program 12.C.a** - Establish revenue sources to provide a stable, adequate level of funding for library services.

  - **Implementation Program 12.C.b** - Maintain adequate considerations in the County's Capital Improvement Program (CIP) for the expansion of library facilities and collections. The estimates for the expansion projects will be refined as long-range capital needs of the library system are more clearly defined.

- **Implementation Program 12.C.c** - Review the County Services Impact Mitigation Fee on a regular basis to evaluate the adequacy of the library services component. The fees should fund the cost recovery of necessary building additions or replacements. The librarian shall be consulted as to an adequate level of funding.

- **Implementation Program 12.C.d** - Expand electronic services offered at libraries, such as e-book access, computer and internet access, online research service, and mobile library applications.

PROJECT IMPACTS

This section presents a program-level analysis of potential impacts associated with provision of public services for projected development under the General Plan Update. Evaluation of environmental impacts associated with the General Plan Update considers the development that would be facilitated by the General Plan Update, in accordance with goals, policies, and implementation programs, to accommodate projected growth in the County. It should be noted that the County's population is projected to grow by 0.6 percent annually over the planning horizon (2040). As discussed in detail in Chapter 2, "Project Description," and the introduction to Chapter 3, this is a relatively low amount of growth.

Impact 3.14-1: Increase the Demand for Fire Protection and Emergency Services

Projected development under the General Plan Update would increase demand for fire protection service; however, excess capacity exists within the TCFD and new or expanded facilities would not be needed. Review of subsequent development by the Fire Department pursuant to existing County development review practices, the required provision of emergency access, and payment of impact mitigation fees would ensure that potential impacts are **less than significant**.

Currently, there are 13 fire stations located throughout the County. The proposed General Plan Update encourages future development to be focused primarily in identified communities, which are within the service area of the 13 fire stations of the TCFD or other local special districts. Thus, the areas that would be expected to accommodate the majority of additional growth under the General Plan Update would be serviced by existing fire stations located within their service area. No new developments would be anticipated to occur beyond the existing service area of the TCFD or the seven fire protection districts in the County because all areas of unincorporated County fall within the jurisdiction of one of these agencies. TCFD has the capability to serve the area and complies with the response times specified in the TCFD Service Level Stabilization Plan. Therefore, TCFD response times would not be compromised by the minor level of new development projected to occur within the current service area under the General Plan Update.

However, because there would be an increase in population, additional on-duty full time firefighters could be needed incrementally over the planning horizon of the General Plan Update. Existing facilities can accommodate any additional firefighters needed based on the projected development under the General Plan Update and would not require a new or expanded station or facility to be built (Gregory, pers. comm., 2018b). It should also be noted that federal and state fire protection service is provided for wildland fire response. Also, mutual aid is provided by the City of Sonora and the tribes that can supplement County fire protection services when needed.

Furthermore, the General Plan Update would require that adequate fire protection service is maintained as development occurs. The Public Safety Element includes the several policies that would reduce potential impacts to fire and emergency services. Policy 9.A.4 directs the County to actively support the efforts to maintain and improve federal and state fire service capacity in the County; Policy 9.C.3 addresses maintenance of an adequate level of emergency medical services through periodic review to meet increased demand as population in the County grows; Policy 9.E.2 and Policy 9.F.1 require maintaining adopted levels of fire protection service presented in the TCFD Service Level Stabilization Plan; Policy 9.F.1 addresses support and implementation of the Tuolumne County Fire Department Service Level Stabilization Plan to ensure that fire protection service levels are met; and Policy 9.F.2 requires that adequate fire protection facilities are constructed to maintain

desired Insurance Services Office (ISO) ratings. Implementation of the Public Safety Element policies would ensure impacts related to fire protection and emergency services are **less than significant**.

Mitigation Measures

No mitigation would be required.

Significance after Mitigation

Impacts would be less than significant without mitigation.

Impact 3.14-2: Increase the Demand for Law Enforcement Service

Projected development under the General Plan Update would increase demand for law enforcement services, but would not result in the need to construct new law enforcement facilities. Therefore, impacts would be **less than significant**.

Currently, the Sheriff's Office does not adhere to a specific officer to resident service ratio because of the large geographic area of the County. Nevertheless, the Sheriff's Office strives to ensure it has enough personnel to cover the large geographic area (Carrillo, pers. comm., 2015).

The General Plan Update encourages new development to be focused primarily in identified communities, which are within the service area of the Sheriff's Office. The Sheriff's Office service area includes the entire county excluding the City of Sonora, which is not included in the General Plan; therefore no New development would occur beyond the service area of the Sheriff's Office, and the level of new development occurring within the service area is not expected to be substantial given the low level of population increase (0.6 percent) projected to occur in the County by 2040. As a result, assuming additional sheriff personal would be added incrementally over the planning horizon, the Sheriff's Office average response time of approximately 3 minutes and 18 seconds would not be substantially affected. There is one Sheriff's Office in the County. An expansion of, or intensification of development does not necessarily result in the need for additional facilities if deputies and patrol vehicles are equipped with adequate telecommunications equipment to communicate with Sheriff's Office headquarters. However, it is likely that some additional staffing would be needed to accommodate the minor amount of growth while maintaining average service levels.

There are 135 deputies who provide law enforcement services to the County's existing (as of 2015) 54,337 residents, which would equate to 1 deputy per 403 residents. Based on the Tuolumne County Transportation Council's future projected population, the increase in population in Tuolumne County is estimated to be 8,906 people by the year 2040. Therefore, an additional 23 deputies would be needed by the year 2040 to maintain the 2015 service ratio. As discussed above, the addition of 23 deputies by the year 2040 could potentially be accommodated by existing facilities as long as adequate telecommunications equipment was available. However, if new or expanded facilities are required to accommodate the additional law enforcement personnel, this would be a minor expansion or small new building and would be developed consistent with the General Plan Update land use diagram and would not result in environmental impacts above and beyond those evaluated in this Recirculated Draft EIR.

Furthermore, the General Plan Update would require that adequate law enforcement is maintained as development occurs. The Public Safety Element includes the following policies that would address potential impacts to law enforcement. Policy 9.D.2 ensures that adequate law enforcement levels are maintained; Policy 9.D.3 ensures that adequate criminal justice capacity is maintained prior to approving new development; and Policy 9.D.4 requires that new development is designed such that criminal activity is deterred, including the incorporation of law enforcement recommendations at the time of project processing. These policies help address potential demand for law enforcement officers and provide for expansion of law enforcement staff at a pace that is consistent with growth. Implementation of the Public Safety Element would ensure impacts related to law enforcement services are **less than significant**.

Mitigation Measures

No mitigation would be required.

Significance after Mitigation

Impacts would be less than significant without mitigation.

Impact 3.14-3: Increase the Demand for Public Schools

Projected development under the General Plan Update could increase student enrollment. However, the payment of state-mandated school impact fees is deemed full mitigation by the State of California. Therefore, impacts to schools would be **less than significant**.

According to the US Census Bureau, approximately 17 percent of the County's population is under 18 years old, and approximately 4 percent of the County's population is under 5 years old (US Census Bureau 2017). Therefore, the school-aged population currently comprises approximately 13 percent of the County's total population. Projected development under the General Plan Update would likely increase enrollment of schools within the various districts throughout the County. Within the 2040 planning horizon the County's population is expected to grow by 8,906 people. Assuming the same percentage of school-aged residents persists through 2040, the projected population increase could generate roughly 1,200 new students over the next 20+ years (an average of approximately 60 students per year).

Currently, all public schools within the County serve a total student population of 5,907 and are under enrollment capacity. As discussed above, two separate school districts had to be consolidated due, in part, to under enrollment. Therefore, it is expected that there is existing available capacity to absorb the projected student growth occurring within 2040 planning horizon. Further, as development occurs over the next 20+ years, if additional school facilities are needed, schools would modify their facilities on an as-needed basis, and projected development under the General Plan Update would be required to pay impact mitigation fees. However, the projected increase in students is 60 students per year so additional facilities are not anticipated to be required.

Although projected development under the General Plan Update may increase student enrollment, Section 65995(h) of the California Government Code (Senate Bill 50, chaptered August 27, 1998) states that payment of statutory fees *"…is deemed to be full and complete mitigation of the impacts of any legislative or adjudicative act, or both, involving, but not limited to, the planning, use, or development of real property, or any change in governmental organization or reorganization."* Therefore, pursuant to compliance with Government Code Section 65995(h), impacts relating to schools would be less than significant.

Furthermore, the Education and Libraries Element includes the following policies which address potential impacts to schools. Policy 12.A.1 encourages coordination between the County and school districts for school facilities planning and site acquisition for better integration with communities, and Policy 12.A.3 promotes a quality education for children in grades K-12 in an uncrowded environment.

Payment of required statutory fees and implementation of the policies from the Education and Libraries Element would ensure that impacts to public education facilities are **less than significant**.

Mitigation Measures

No mitigation would be required.

Significance after Mitigation

Impacts would be less than significant without mitigation.

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3.15 RECREATION

This section describes the parks and recreational facilities within Tuolumne County and potential impacts thereof associated with projected development under the General Plan Update. Comments received on the Draft EIR raised issues related to recreation, primarily issues associated with the level of parkland provision and County standards. These concerns are addressed below, as appropriate.

3.15.1 Environmental Setting

EXISTING PARKS AND RECREATIONAL FACILITIES

Parks and recreational facilities enhance Tuolumne County's aesthetic qualities, the health of the County's environment, and residents' quality of life. Community parks serve as both recreational and open space resources, which can provide opportunities for active and passive recreation, and can also include natural preserve areas. The County's Public land use designation includes the County's own property, Stanislaus National Forest, Yosemite National Park, Columbia State Historic Park, Railtown 1897 State Historic Park, and lands under jurisdiction of the U.S. Bureau of Land Management and U.S. Bureau of Reclamation.

Table 3.15-1 describes some of the existing park and recreational facilities located within unincorporated areas of the County.

Table 3.15-1 Park and Recreational Facilities in Unincorporated Tuolumne County

Name	Managing Entity	Location
Yosemite National Park	National Park Service	High Country
Stanislaus National Forest	U.S. Forest Service	High Country
New Melones Lake	U.S. Bureau of Reclamation	Columbia
Columbia State Park	California Department of Parks and Recreation	Columbia
Railtown 1897 State Historic Park	California Department of Parks and Recreation	Jamestown
Big Trees State Park	California Department of Parks and Recreation	Northern Tuolumne County
Lake Don Pedro	Don Pedro Recreation Agency	Lake Don Pedro
Lake Tulloch	South San Joaquin Irrigation District	Jamestown
Pioneer Park	Tuolumne County Recreation Department	Columbia
Rocca Park	Tuolumne County Recreation Department	Jamestown
Patterson Field	Tuolumne County Recreation Department	Jamestown
Jamestown Youth Center	Tuolumne County Recreation Department	Jamestown
Groveland Youth Center	Tuolumne County Recreation Department	Groveland
Twain Harte Pool	Tuolumne County Recreation Department	Twain Harte
Columbia Pool	Tuolumne County Recreation Department	Columbia
Tuolumne Pool	Tuolumne County Recreation Department	Tuolumne
Standard Park Sports Complex	Tuolumne County Recreation Department	East Sonora
Westside Memorial Park	Tuolumne County Recreation Department	Tuolumne
Tuolumne Youth Center	Tuolumne County Recreation Department	Tuolumne
Depot Park and Trails	Tuolumne Park and Recreation District	Tuolumne
Bay Street Tot Lot	Tuolumne Park and Recreation District	Tuolumne
Reid Park	Tuolumne Park and Recreation District	Tuolumne

Table 3.15-1 Park and Recreational Facilities in Unincorporated Tuolumne County

Name	Managing Entity	Location
Twain Harte Park	Twain Harte Community Services District	Twain Harte
Eproson Park	Twain Harte Community Services District	Twain Harte
Twain Harte Tennis Courts	Twain Harte Community Services District	Twain Harte
Mary Laveroni Park	Groveland Community Services District	Groveland
Columbia College Tennis Courts	Columbia College	Columbia
Twain Harte Golf Club	Private	Twain Harte
Mountain Springs Golf Club	Private	Mountain Springs
Phoenix Lake Golf Course	Private	Phoenix Lake
Leland High Sierra Snow Play	Private	Leland Meadows
Dodge Ridge Wintersports Area	Private	Pinecrest

Source: Data compiled by Ascent and Tuolumne County in 2018

Note: In addition to the park and recreation facilities listed above, there are parks and recreation areas owned and operated by homeowners associations. Some of these facilities are open to the public (e.g., Brentwood Homeowners Association Park, Willow Springs Park, Crystal Springs Park and Lake, and Twain Hart Lake).

The 2002 Tuolumne County Recreation Master Plan describes the parks and recreation facilities operated by the County. Table 3.15-2 below shows each of the park facilities and identifies the primary amenities and size of each facility. As shown in Table 3.15-2, Tuolumne County operates and maintains over 341 acres of parks.

Table 3.15-2 County Parks Identified in 2002 Recreation Master Plan

County Parks[1]	Amenities	Acres
Courthouse Park	Benches, picnic areas	0.25
Rocca Park	Bandstand, children's playground, restrooms	0.5
Library, Skateboard Park, and Heaven for Children Playground	Skateboard park, picnic/barbeque facilities, children's playground	5
Standard Park	Softball/soccer fields, children's play area, concession stand, restrooms	11
Patterson Field	Baseball field, picnic/barbeque facilities, concessions stand, restroom	3
Twain Harte Swimming Pool	Swimming pool, restroom	0.5
Pioneer Park	Baseball field, concession stand, bleachers, restroom, children's playground, picnic facilities	20
Westside Memorial Hall Park	Bandstand, picnic tables, swimming pool, sports field, and playground	5
Lake Tulloch Marina (long-term lease on land owned California Department of Fish and Wildlife)	130 campsites, restaurant/store, marina, boat launch, day-use facilities	296
Sullivan Creek	Natural area with swimming hole	9
Greenley Oaks	None-undeveloped	1
Quail Hollow	None-undeveloped	1
Total	–	**352.25**

Note:

1. Jamestown Youth Center and the Golden Pond/Jamestown Mine Site are not included on this list. Jamestown Youth Center would not generally be considered a "park" or public recreation facility. The Golden Pond/Jamestown Mine Site is not currently developed as a park or recreation facility although it does provide potential future opportunity as a major park in the County.

Source: Compiled by Ascent Environmental from Tuolumne County 2002

Based on the 2015 population of unincorporated Tuolumne County (49,458 individuals), and the acreage of parkland provided in the unincorporated area by the County (approximately 341 acres), the County currently provides nearly 7 acres of parks per 1,000 residents.

The 1996 General Plan designates 4,827 acres of land for park and recreation use. In addition to County-owned and managed resources, multiple agencies have jurisdiction over parks and other recreational facilities within Tuolumne County: the U.S. Forest Service, U.S. Bureau of Reclamation, National Park Service, U.S. Bureau of Land Management, California Department of Parks and Recreation, and California Department of Fish and Wildlife. Schools, when not in session, also provide recreational facilities used by County residents.

Stanislaus National Forest, Yosemite National Park, and other surrounding areas in the Sierra Nevada provide incredible natural vistas and settings for hiking, water skiing, horseback riding, rafting, camping, snowmobiling, boating, snow skiing, fishing, and other outdoor activities. In addition, human-made recreational attractions include restored historic hotels, golf courses, numerous gourmet restaurants, wineries, train rides, casinos, five museums, two state historic parks, live theater, and bed-and-breakfasts. These parks and recreational resources make the County a true year-round vacation and recreation destination.

3.15.2 Regulatory Setting

FEDERAL

There are no federal regulations that pertain to recreation that are applicable to the General Plan Update.

STATE

Quimby Act

The Quimby Act (Government Code Section 66477), enacted in 1975, is intended to mitigate the impacts of development on parks and recreational facilities. This Act authorizes cities and counties to adopt ordinances requiring that developers set aside land, donate conservation easements, or pay fees for park improvements. Required in-lieu fees for park and recreational improvements, known as Quimby fees, are attached as a condition of approval of a tract map or parcel map. The Quimby Act authorizes jurisdictions to require that such fees fund 3 acres of parkland per 1,000 persons, unless the amount of existing neighborhood and community park area exceeds that limit, in which case the legislative body may adopt the calculated amount as a higher standard not to exceed 5 acres per 1,000 persons.

LOCAL

Tuolumne County General Plan

The 1996 General Plan provides a framework for addressing issues related to recreation in the County. As the proposed project would update the 1996 General Plan, this document will be discussed in the context of the update within the impact analysis. The Parks and Recreation Element contains goals, policies, and implementation programs related to County parks. Specific General Plan Update policies related to recreation are identified below under Section 3.15.3, “Impact Analysis.”

3.15.3 Impact Analysis

METHODS OF ANALYSIS

Potential impacts in the Tuolumne County resulting from projected development under General Plan Update were evaluated based on a review of planning documents pertaining to the County, including the County's current General Plan and zoning ordinance. The focus of this analysis is on impacts to recreation facilities that would result from the General Plan Update.

THRESHOLDS OF SIGNIFICANCE

Based on the Quimby Act, impacts are significant if implementation of the General Plan Update results in less than 5 acres of County recreational facilities per 1,000 residents.

Additionally, in accordance with Appendix G of the State CEQA Guidelines, an impact is significant if physical changes that could result from projected development under the General Plan Update would result in one or more of the following conditions:

- the project would increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated, or
- the project includes recreational facilities or requires the construction or expansion of recreational facilities which might have an adverse physical effect on the environment.

GENERAL PLAN UPDATE POLICIES

The following policies and implementation programs from the General Plan Update are applicable to the evaluation of effects related to recreation:

<u>Parks and Recreation Element</u>

- **Policy 11.A.1**: Acquire and develop recreation facilities to fulfill the County's projected unmet need based on a goal of 5 acres of recreational facilities per 1,000 residents.
  - **Implementation Program 11.A.a**: Maintain and update the Recreation Master Plan which describes the general location for regional recreation facilities, provides conceptual designs for future parks and recreational facilities, identifies desired recreational trails, estimates costs of construction, identifies potential funding sources, identifies potential management agencies and provides the rationale establishing the need for recreational facilities in Tuolumne County.
  - **Implementation Program 11.A.b**: Acquire land and construct new parks according to the priorities established, the needs identified and within the general locations shown in the Recreation Master Plan.
  - **Implementation Program 11.A.c**: Update the database of existing recreational facilities on the County's Geographic Information System (GIS) whenever new facilities are constructed. The database shall include, at a minimum, the location, acreage, and description for all public and private recreational facilities.
  - **Implementation Program 11.A.d**: Distribute a recreational needs assessment survey inviting comment on the adequacy and level of use of existing facilities and need for new facilities to the local, state and federal agencies, local media, and interested stakeholders on a periodic basis.
  - **Implementation Program 11.A.e**: Maintain the amount of acreage devoted to the County of Tuolumne's regional recreational facilities by establishing a program for replacing any regional

parkland that may be eliminated in the future. Such a program should establish guidelines for selecting sites for relocation of the facilities, setting time frames for replacement and identify possible funding mechanisms for such relocation and replacement.

- **Implementation Program 11.A.f:** Address recreational needs of new identified communities and community plans through a recreation plan to be approved in conjunction with approvals for new communities and community plans which includes the following:
  - Recommendations for the amount of acreage needed to serve the population of the new community or within the community plan's boundaries using a minimum standard of 5 acres/1,000 population.
  - Recommendations for the locations and alternative locations for park sites within the boundaries based on projected acreage needs.
  - Appropriate zoning to facilitate future dedication/development of identified park sites.
  - Recommendations for maintaining proposed recreation facilities, including maintenance districts.
  - Identification of potential routes for trails to link new towns or communities into the County-wide trail system.

- **Policy 11.B.1:** Ensure professional design of new facilities, acquisition of adequate levels of insurance, and adoption of long-term maintenance plans for new facilities.
  - **Implementation Program 11.B.a**: Avoid impinging on private property rights whenever possible by locating new recreational facilities on publicly-owned lands whenever feasible and encourage cooperation from private property owners by providing compensation to and indemnification from liability for willing sellers when the acquisition of private property is necessary.
  - **Implementation Program 11.B.b**: Prepare a sample recreation easement detailing the rights and restrictions of the public to use trails over private property, detailing methods for screening private property from public trail use and addressing indemnification of private property owners.
  - **Implementation Program 11.B.c**: Encourage the private development and maintenance of trails of all kinds, including equestrian facilities, within private subdivisions. Recognize that the provision of equestrian trails should be the choice of the developer of new residential subdivisions and that choice should include responsibility for maintenance of those trails by future property owners; as such, discontinue the County's acceptance of equestrian trail easements within private subdivisions and discontinue requiring such easements as a condition of project approval. The County will continue to consider accepting easements for future equestrian trails outside of new residential subdivisions to serve public needs.
  - **Implementation Program 11.B.d**: Evaluate alternatives to maintaining liability coverage for public parks and indemnification of private property owners.

- **Policy 11.B.2:** Target lands for proposed facilities within the Recreation Master Plan that require minimal grading with topography consistent, where feasible, with the Americans with Disabilities Act (ADA). In addition, emphasize sites which feature mature vegetation and would require minimal additional landscaping. Proposed facility locations should be adjacent to existing or anticipated population centers for convenient access by residents of those areas and to provide for efficient use of existing infrastructure.

- **Policy 11.B.3:** Create convenient and safe opportunities for physical activity for residents of all ages and income levels.

- **Policy 11.B.4:** Give preference to locating new recreational facilities in areas where high levels of community support and interest are expressed.
  - **Implementation Program 11.B.e**: Solicit input from the people to be served by a new recreational facility to gauge interest prior to allocating funding to acquire and/or construct new facilities. Identify local organizations interested in adopting parks for maintenance and identify volunteers to assist permanent staff with construction and maintenance of facilities.
- **Policy 11.B.5:** Investigate the feasibility of forming a regional recreation district to organize and conduct recreation programs; establish systems of recreation and recreation centers; and to acquire, construct, maintain and operate recreation centers within the district. The intent of the formation of such a district would be to provide for public recreational facilities of a regional nature that are located outside of the identified communities. Any proposed regional recreation district would not include the areas lying within the jurisdictional boundaries of existing recreation and park districts or community services districts which provide public recreational facilities unless those districts choose to participate in the regional recreation district.
- **Policy 11.B.6**: Construct trails for bicycle, pedestrian and, where feasible, equestrian use linking the County's major population centers with other local, state and federal recreational facilities, significant open space areas, libraries, schools, neighborhoods, public facilities and other destination points. Acquisition and construction shall be in accordance with the priorities established, the needs identified and within the general locations shown in the Tuolumne County Recreation Master Plan in coordination with the Tuolumne County Regional Transportation Plan Non-motorized Element (RTP) and General Plan Transportation Element.
  - **Implementation Program 11.B.f**: Promote the development of non-motorized trails along streams, rivers and ditches to encourage walking and bicycling.
  - **Implementation Program 11.B.g**: Encourage the dedication and installation of multi-use non-motorized trails in new development proposals. Allow subdivisions to construct portion(s) of adopted bicycle/ pedestrian routes to fulfill the recreation requirements. The construction of any such routes shall count toward the required on-site recreational facilities pursuant to Government Code Section 66477.
- **Policy 11.B.7**: Permit recreational uses in flood zones if it can be demonstrated that the recreational use will not cause additional flooding, increase the potential for flood damage, or increase health and safety risks.
  - **Implementation Program 11.B.h**: To provide recreational use in water resource areas, continue to conditionally permit, in the O (Open Space) and O-1 (Open Space -1) zoning districts, recreational uses where such uses do not adversely impact water resources, such as beaches, picnic areas, non-motorized pedestrian and equestrian trails and other recreational uses.
- **Policy 11.B.8**: Provide reasonable public access to public waterways, lakes and reservoirs in compliance with State statutes while protecting private property rights and maintaining the biological, scenic and historical integrity of these features and lands adjacent to these features.
  - **Implementation Program 11.B.i**: Develop a program to identify public waterways, lakes and reservoirs that do not already provide reasonable public access, but which are required to provide such access pursuant to State statutes. The program should include provisions for identifying which bodies of water require public access, identification of reasonable access points to these water bodies and procedures for providing such access.
- **Policy 11.C.1:** Promote the sharing of recreational facilities between the County and the public schools by coordinating with the schools in master planning new recreational facilities and exploring opportunities to share the costs of acquisition, construction, maintenance and administration of such

facilities. Where feasible, link the recreational facilities provided by schools to those offered by the County and other agencies providing public recreational facilities through a regional trail system.

- Implementation Program 11.C.a: Encourage joint-use agreements of school and park facilities, and access to trails and recreational opportunities, especially in communities that suffer from a disproportionate lack of recreational facilities.

- Implementation Program 11.C.b: Encourage the joint use of school and park facilities to provide more efficient educational and recreational services and minimize the duplication of such facilities and services.

- Policy 11.C.2: Locate new park facilities and trail routes on or adjacent to publicly owned property, where feasible, to minimize the cost of acquiring and maintaining new facilities and to minimize potential conflicts associated with acquiring privately-owned property for public facilities.

  - Implementation Program 11.C.c: Target the acquisition of available public lands for the location of new parks and target public rights-of-way for locating new trails within the regional trail system using the Recreation Master Plan as a guide.

- Policy 11.C.3: Encourage and support, in conjunction with local agencies, the development of facilities that are family oriented community centers designed to encourage family values and participation.

- Policy 11.C.4: Coordinate review of the Recreation Master Plan and Parks and Recreation Element of the General Plan and updates to those documents with the City of Sonora, public schools, park and recreation districts, community services districts and other providers of public recreation facilities to promote and facilitate coordination in the planning of new parks and recreational facilities within the County.

- Policy 11.C.5: Consider establishing a committee of private and public members appointed by the Board of Supervisors to review needs and proposals that may impact recreation in the County, to make recommendations to the Board and its Planning Commissions and committees.

- Policy 11.C.6: Coordinate with and provide incentives to private industry and commercial businesses to help attain maximum use and minimum duplication in the cost of park and recreation facilities.

- Policy 11.D.1: Identify existing public parks and recreational facilities on the land use diagrams of the General Plan to facilitate planning compatible land uses near these facilities, planning trails to link such facilities and identifying locations for new parks and recreational facilities. This information will be utilized in updating the Recreation Master Plan for regional recreational facilities to meet the needs of the County's population as it continues to grow.

- Policy 11.D.2: Amend the Tuolumne County Zoning Ordinance to include bicycle rental facilities and other such facilities as permitted uses within Commercial and Recreational zoning districts to facilitate and encourage use of the County's regional trail system.

- Policy 11.D.3: Encourage parks and recreational opportunities in proximity to neighborhoods to promote physical activity and increase access to facilities.

- Policy 11.D.4: Develop plans for recreational trails which target routes that link the County's major population centers with other local, State and Federal recreational facilities, significant open areas, libraries, schools, neighborhoods, public facilities and other destination points for greatest consistency with trail routes identified in the Regional Transportation Plan (RTP), the Recreation Master Plan, and Transportation Element. Grant applications for facilities under the RTP should be coordinated with grant applications for recreational trails. Updates of both the RTP's non-motorized element and the Recreation Master Plan should be coordinated for consistency.

- **Implementation Program 11.D.a**: Design bicycle and pedestrian transportation routes that can be integrated into the recreational routes designated in the Tuolumne County Recreation Master Plan.

- **Implementation Program 1.D.b**: Encourage and support a multimodal use of the Sierra Railroad right-of-way between Standard and Oakdale for development of a pedestrian, equestrian and bicycle trail. Balance pedestrian, bicycle and road safety needs with railroad infrastructure.

- **Implementation Program 11.D.c**: Maintain, periodically update and implement the Tuolumne County Bikeways and Trails Plan, which addresses a complete bicycle and pedestrian network to serve the needs of the County. This active transportation network should include roadways parallel to regional facilities so that the regional roadway system can function effectively and efficiently. Seek funding for this network from a combination of sources, such as new development and Federal and State funding programs.

- **Policy 11.E.1:** Maintain and update, as necessary, the Tuolumne County Ordinance Code sections pertaining to land dedications and/or payment of in-lieu fees for new development's contribution to providing recreational facilities consistent with Government Code Section 66477.

  - **Implementation Program 11.E.a**: Establish standards in the Tuolumne County Ordinance Code for the provision of open areas and recreational facilities for new residential development consisting of five or more dwelling units. Review and update, as needed, existing requirements for open areas and recreation facilities for multi-family housing development in the County Ordinance Code.

  - **Implementation Program 11.E.b**: Require new residential development of five or more units to participate in the provision of recreational facilities for their residents as follows:

    a. For multi-family housing developments, such as apartments, or mobile home parks, recreational facilities shall be provided on site.

    b. For residential subdivisions, the subdivider shall have the option to provide recreational facilities on site, pay an in-lieu recreation fee or dedicate land for public recreational facilities in accordance with Government Code 66477. Any such fees collected may be used for the acquisition, construction and maintenance of recreational facilities.

- **Policy 11.F.1:** Distribute the cost of providing and maintaining new recreational facilities to visitors and County residents.

  - **Implementation Program 11.F.a**: Update existing ordinances establishing user fees at public recreation facilities. Fees generated shall be used for acquisition, construction and maintenance of recreational facilities.

  - **Implementation Program 11.F.b**: Investigate the feasibility of forming assessment districts for the purpose of financing the installation, construction and maintenance of landscaping, park and recreational improvements and for the purchase of land for improvements related to parks, lighting and landscaping.

  - **Implementation Program 11.F.c**: Consider selling surplus public lands and vacant public lands that are too small to be developed into meaningful recreational facilities or are not in propitious locations, to finance larger, more functional, recreational facilities serving the same population.

  - **Implementation Program 11.F.d**: Continue to explore funding sources, such as grants and bond acts for acquisition, development and/or maintenance of recreational facilities.

  - **Implementation Program 11.F.e:** Encourage community groups to "Adopt-A-Park" for maintenance of parks and recreational facilities.

PROJECT IMPACTS

This section presents a programmatic-level analysis of potential impacts associated with recreation from projected development under the General Plan Update. Evaluation of environmental impacts associated with the General Plan Update considers the development that would be facilitated by the General Plan Update, in accordance with goals, policies, and implementation programs, to accommodate projected growth in the County. It should be noted that the County's population is projected to grow by 0.6 percent annually over the planning horizon (2040). As discussed in detail in Chapter 2, "Project Description," and the introduction to Chapter 3, this is a relatively low amount of growth.

Impact 3.15-1: Require the Construction or Expansion of Recreational Facilities

The General Plan Update includes a proposed policy that would change the County's goal of 30 acres of recreational facilities per 1,000 residents to 5 acres of parkland per 1,000 residents. This policy change is consistent with the requirements of the Quimby Act and is also in line with standards of other Sierra/foothill counties. Furthermore, the availability of recreation opportunities provided by state and federal public lands further minimizes demand for County parks and reduces the potential for physical deterioration of existing parks as a result of overuse. Impacts to parks as a result of the policy change would be **less than significant**.

As explained below, the General Plan Update includes a change to the County's parkland provision goal. But this change will not have significant impacts on existing recreational facilities or the physical environment.

Policy 8.A.1 in the County's 1996 General Plan Recreation Element states an intent to acquire and develop recreation facilities based on a goal of 30 acres of recreational facilities per 1,000 residents. State or federal lands do not count toward meeting this policy provision as the Quimby Act limits inclusion to neighborhood and community parks of the County. As discussed above, the County currently provides almost 7 acres of parkland per 1,000 residents. The County currently falls substantially short of meeting the 1996 policy's goal for parkland provision.

As part of the General Plan Update process, the County has re-considered the feasibility and necessity of the 30-acre-per-1,000-resident policy. The County notes that the Quimby Act (Government Code Section 66477[a][2]) sets the minimum standard for requiring parkland dedication and/or in-lieu compensation from developers at 3 acres per 1,000 residents, but also sets a maximum standard at 5 acres per 1,000 residents. Therefore, the County is not able to require land dedication or fees from developers above the maximum set by the Quimby Act, and the County would have been required to find other funding sources to develop the remaining 25 acres of parkland per 1,000 residents to meet the 1996 parkland provision goal. The County has not been able to find these funding sources, and the current parkland provision policy is considered infeasible.

Moreover, County residents have access to substantial public recreation acreage through the federal and state resources located within the County, such as New Melones Lake, Yosemite National Park, Columbia State Park, and other resources identified in Table 3.15-1. In short, the County has an abundance of County, state, and federal parkland, and the County has concluded that the 30-acre-per-1,000-resident policy is unnecessary to the County's planning objectives.

In developing an updated parkland standard, the County reviewed parkland provision standards identified by similar counties. Table 3.15-3 includes the parkland provision standards of six other Sierra/foothills counties, including Placer, Nevada, El Dorado, Amador, Calaveras, and Madera. The parkland standards generally range from 1.5 acres to 5 acres per 1,000 residents. (One exception is that Placer County includes a standard of 5 acres of active parkland and 5 acres of passive parkland per 1,000 residents for combined active and passive parkland of 10 acres of parkland per 1,000 residents.)

Table 3.15-3 Parkland Provision Standards of Other Sierra/Foothills Counties

County	Parkland Standard (acres per population)	Document Containing Standard
Placer County	◢ 10 acres of parkland per 1,000 ◤ 5 acres active parkland per 1,000 ◤ 5 acres passive parkland per 1,000	Policy 5.8.1, Placer County General Plan (2013)
Nevada County	◢ 3.0 acres parkland for increase of 1,000	Policy 5.5, Nevada County General Plan Recreation Element (1995)
El Dorado County	◢ 1.5 acres regional park per 1,000 ◢ 1.5 acres community park per 1,000 ◢ 2 acres neighborhood park per 1,000	Policy 9.1.1.1, El Dorado County General Plan Parks and Recreation Element (2004)
Amador County	◢ 5 acres of parkland per 1,000 ◢ 3 acres of developed active parkland per 1,000	Amador County Draft Park and Recreation Master Plan (2016)
Calaveras County	◢ 2.5 new local parkland per 1,000	Implementation Program V-8B-2, Calaveras County General Plan Open Space Element (1996)
Madera County	◢ 3 acres of improved parkland per 1,000	Policy 4.A.4, Madera County General Plan Recreational and Cultural Resources Element (1995)

General Plan Update Policy 11.A.1, which would update Policy 8.A.1 from the 1996 General Plan, states that the County will acquire and develop recreation facilities to fulfill the County's projected unmet need based on a goal of 5 acres of recreational facilities per 1,000 residents. This proposed new standard is consistent with the provisions of the Quimby Act and consistent with the standards of other Sierra/foothills counties.

Updating the policy to reflect an achievable parkland provision goal would not result in physical impacts to existing recreational facilities. The County's proposed parkland standard would continue to maximize the parkland dedication and/or in-lieu fees collected from developers. In addition, the expansive amount of federal and state public lands available for recreation will continue to provide residents of Tuolumne County numerous alternatives to County parks, which reduces demand for County parks and also minimizes the potential for physical deterioration of County parks resulting from overuse. Impacts related to provision of parkland and associated physical impacts to existing parks resulting from overuse would be **less than significant.**

Mitigation Measures

No mitigation is required.

Impact 3.15-2: Physical Impacts to Existing Parks Resulting from Inadequate Park Provision

Projected development under the General Plan Update would increase the County's population; however, parks would be provided that would meet the County's proposed standard of 5 acres of recreation facilities per 1,000 residents. (See Impact 3.15-1 above that evaluates potential impacts associated with the proposed change in the County's park provision standard.) Policies and implementation programs in the General Plan Update would contribute to the development of additional parkland. Furthermore, state and federal public lands located within Tuolumne County provide County residents substantial alternatives to County recreation facilities, which reduces demand for County parks as well as the potential for their overuse. Impacts from the overuse and deterioration of existing park and recreational facilities would be **less than significant**.

Based on the unincorporated County's population of 49,458 (in year 2015), and the standard of 5 acres of recreational facilities per 1,000 residents as proposed in Policy 11.A.1 of the Parks and Recreation Element, the County needs to provide a minimum of 247 acres of recreational facilities to meet existing demand from residents. As shown in Table 3.15-2, the County currently provides approximately 352 acres of recreation facilities to meet the existing demand, which exceeds the proposed County standards. As discussed in Section 3.13, "Population and Housing," the Tuolumne County Transportation Council projects that the County's total population will increase to 63,243 by the year 2040. The County would be required to provide a total of 316 acres of parks by 2040 to meet the proposed standard using this population estimate.

However, because a portion of this population growth would occur within the City of Sonora, this projection conservatively calculates parkland demand for the unincorporated area of the County. The County already provides 352 acres of recreation amenities, which exceeds the amount of parkland required if the projected 2040 population is reached.

In addition, the General Plan Update designates a total of 5,287 acres as Parks and Recreation (not included on federal or state land). This could accommodate an increase of 4,935 acres over existing conditions. Therefore, implementation of the General Plan Update would conceivably result in the development of parks and recreation facilities on the 5,287 acres, which would far exceed the proposed parkland provision standard. But, as noted elsewhere in the EIR, full buildout of every parcel in the County is not foreseeable and there is no evidence to suggest that new parks and recreation facilities would be developed on all of the 4,935 acres.

Further, although it is not factored into the County's parkland provision standard, federal and state parkland, including Yosemite National Park, Stanislaus National Forest, Columbia State Park, and other parks and reservoirs (designated Public in the General Plan Update), serve as recreational amenities for residents of the unincorporated County. Exhibit 3.15-1 below shows the General Plan Update land use designations for Parks and Recreation, Open Space, and Public land.

The implementation of goals, policies, and implementation programs in the General Plan Update would further enhance provision of quality parks and recreation facilities in the County. As discussed above, Policy 11.A.1 requires 5 acres of recreational facilities per 1,000 residents. This policy is supported by implementation programs to update the Recreation Master Plan, acquire land and construct new parks, public outreach and recreation needs assessment, replacing any future parkland that is lost, and requiring recreation plans for new communities and community plans. Other policies relate to appropriate siting and general location of safe and convenient parks near population centers and in locations where high levels of community support and interest are expressed (Policies 11.B.1 through 11.B.4). Policy 11.B.5 addresses regional recreation needs by requiring investigation of a regional recreation district. Policies 11.B.6 and 11.D.4 address the need for trails by requiring construction of a trails network for bicycle, pedestrian, and where feasible, equestrian use and siting trails to provide linkage between other recreational destinations, population centers, and public facilities (libraries, schools, etc.). Policy 11.B.8 requires the County to provide reasonable public access to public waterways, lakes, and reservoirs. Policy 11.C.1 would potentially expand the amount of parkland available to the public by promoting the sharing of recreational facilities between the County and public schools. Policies 11.E.1 and 11.F.1 pertain to funding of recreation facilities by requiring the County to maintain and update the County Ordinance Code sections requiring land dedication and in-lieu fees for developments' contribution to provision of recreation facilities and by distributing the cost of providing and maintaining new recreational facilities to both visitors and County residents through establishing user fees, investigating the feasibility of assessment districts, and exploring other funding sources such as grants and bond acts.

Implementation of these policies and the supporting implementation programs would enhance the County's ability to provide and maintain high-quality recreation facilities sufficient to meet the needs of the County and consistent with the County's standards. This impact is **less than significant**.

Mitigation Measures

No mitigation is required.

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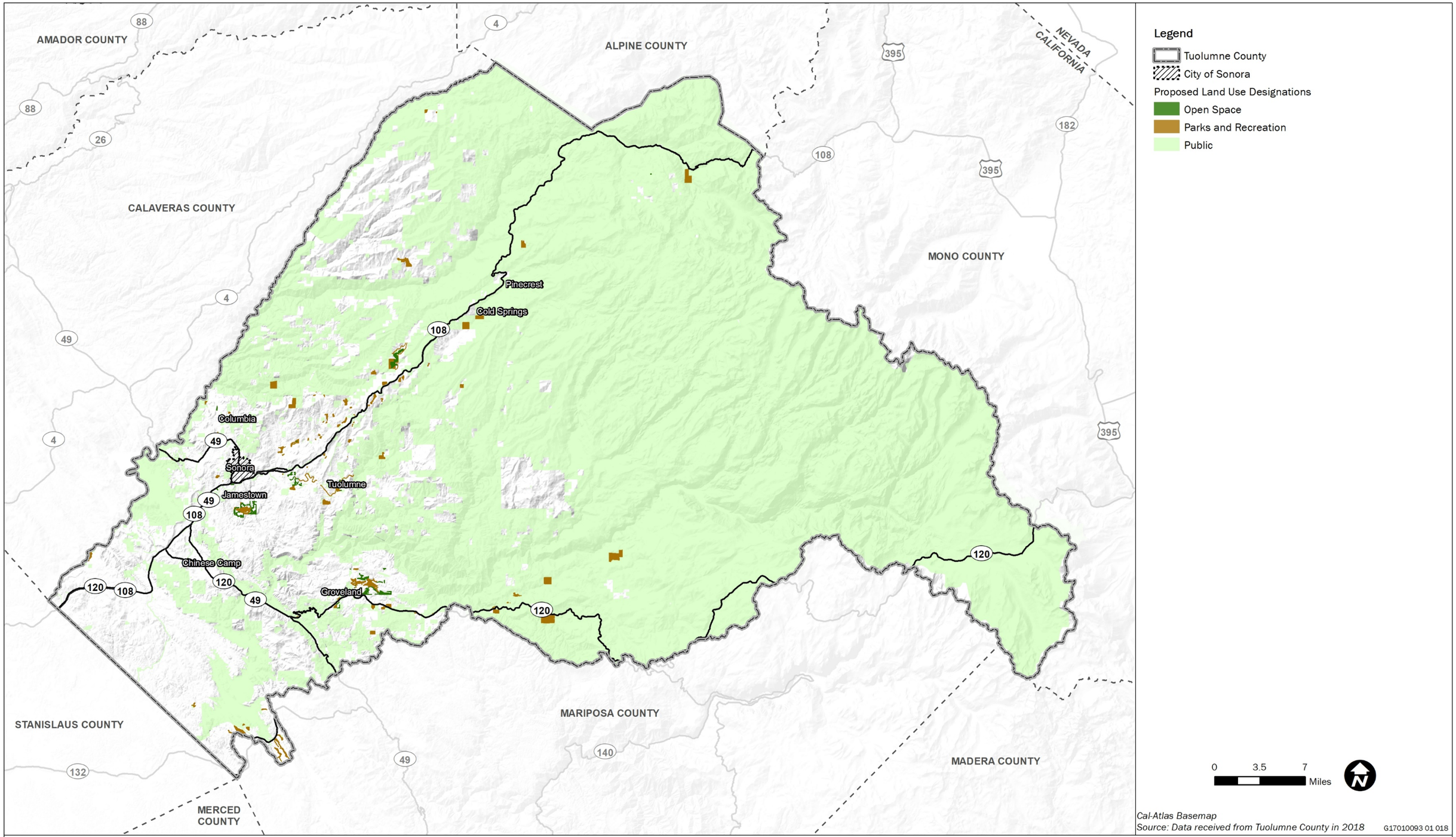

Exhibit 3.15-1 **Proposed Parks and Recreation, Open Space, and Public Land Use Designations**

3.16 TRANSPORTATION AND CIRCULATION

This section includes an analysis of the existing and future traffic operations for key roadways and intersections in Tuolumne County. The analysis herein is based on the General Plan and Regional Transportation Plan (RTP) Update EIR Traffic Study (Traffic Study) prepared for the Tuolumne County Transportation Council (TCTC) by Wood Rodgers in September of 2015, and the subsequent addendum to this report (Traffic Study Addendum) that was completed by Wood Rodgers in August of 2016. This section describes existing conditions and potential impacts to the transportation system for 2030 and 2040 associated with projected development under the General Plan Update. Additionally, this section identifies transportation and circulation improvements that would be necessary to mitigate the transportation impacts resulting from projected development under the General Plan Update through 2040.

Comments on the Draft EIR addressed traffic increases and transportation safety issues related to the potential future development of specific parcels, accounting for transportation funding changes that will affect the programmed improvement projects identified in the 2016 RTP, and the need to address the traffic impacts of agritourism.

3.16.1 Environmental Setting

EXISTING VEHICULAR CIRCULATION SYSTEM

Major Roadways. Circulation in/through Tuolumne County is primarily provided by State Routes (SRs) 49, 108, 120, and 132. In addition, County and city streets and roads as well as federal and private roads also provide local and regional access across the County. Exhibit 2-1 in Section 2.1 of Chapter 2, "Project Description," shows Tuolumne County's state route system. Exhibit 3.16-1 identifies the street and highway routes, and intersections within Tuolumne County. The expected travel characteristics, including vehicle trips, the directionality of those vehicle trips, and primary travel routes associated with the General Plan Update would directly impact the circulation system of the City of Sonora. Therefore, roadways segments and intersections within the City of Sonora were included within the study area and analyzed within this EIR.

State routes play a major role in Tuolumne County's transportation system. Each of the major state routes within Tuolumne County are summarized below.

State Route 49

A north-south state highway that traverses the eastern portion of northern California from Madera County to Plumas County, SR 49 extends through the western and most populated portion of Tuolumne County, linking the communities of Moccasin, Chinese Camp, Tuttletown, and the City of Sonora. SR 49 runs concurrent with SR 120 between the communities of Moccasin and Chinese Camp and runs concurrent with SR 108 through Jamestown. SR 49 runs directly through downtown Sonora and serves as the main street through the northern half of the city. SR 49 is generally a two-lane highway through the County.

State Route 108

A state highway that runs northeast from the City of Modesto in the California Central Valley to U.S. 395 in Mono County, SR 108 runs concurrent with SR 49 and SR 120 near Jamestown and the City of Sonora in Tuolumne County. Throughout the County, SR 108 is generally a two-lane highway, with four-lane divided segments. SR 108 provides the City of Sonora with an important link to the Central Valley as well as to smaller communities in the eastern portion of the County.

State Route 120

An East-West state highway in Northern California that runs from San Joaquin County to U.S. 6 in Mono County, in Tuolumne County SR 120 runs concurrent with SR 49 near Chinese Camp, and with SR 108 from Yosemite Junction to the western County line. SR 120 has a route break in Tuolumne County when it reaches Yosemite National Park; thereafter, the route becomes a park service road under the jurisdiction of the National Park Service. In Tuolumne County, SR 120 alternates between a two-lane expressway and a two-lane conventional highway.

State Route 132

A state highway that runs from the east from Modesto/Waterford in the Central Valley through LaGrange and ends in Mariposa County, a small portion of this highway runs through Tuolumne County near LaGrange and County Highway J59.

AIRPORTS AND RAIL

Tuolumne County has two public airports, Columbia Airport and Pine Mountain Lake Airport. Columbia Airport provides access to Columbia and surrounding areas in northwestern Tuolumne County, including a fly-in campground. Pine Mountain Lake Airport provides access to the area surrounding Pine Mountain Lake near Groveland in southwestern Tuolumne County.

The Sierra Railroad runs between Standard in Tuolumne County and Oakdale in Stanislaus County, where it connects with the Southern Pacific and Santa Fe Railroads. With 49 miles of track, the Sierra Railroad has been in operation since 1897 and connects the local economy and lumber industry to distant markets. The railroad also provides historical excursions and scenic opportunities. However, the condition of the track has been in decline since 1980 when freight usage decreased substantially.

PUBLIC TRANSPORTATION

Tuolumne County public transportation is provided by Tuolumne County Transit. Bus service is provided along six routes Monday-Friday. On-demand, dial-a-ride service is available seven days a week. Additionally, Tuolumne County Transit operates a SkiBUS and partners with Yosemite National Park to provide the Yosemite Area Regional Transportation System. The SkiBUS provides service from Sonora to Dodge Ridge Ski Resort throughout the ski season. The Yosemite Area Regional Transportation System operates from May to September and connects Sonora, Jamestown, Groveland, and Buck Meadows with Yosemite Valley.

BICYCLE AND PEDESTRIAN CIRCULATION

Pedestrian and bicycle facilities are limited within Tuolumne County due to steep terrain and the rural setting of the area. Sidewalks are typically intermittent along business fronts in identified communities. There are two existing Class II bicycle facilities within the County: a 6-mile facility along Soulsbyville Road and a 3-mile facility along Mono Way. The *Tuolumne County Transportation Council Bikeways and Trails Plan* does encourage the construction of Class I and Class II bicycle facilities to allow for bicycle and pedestrian safety.

Class I Bike Path. Provides a completely separate right of way designated for exclusive use of bicycles and pedestrians with cross-flows by motorists minimized.

Class II Bike Lanes. Provides a restricted right-of-way through signs and pavement striping designated for the exclusive or semi-exclusive use of bicycles with through travel by motor vehicles or pedestrians prohibited, but with cross-flows by pedestrians and motorists permitted. In California, the Manual on Uniform Traffic Control Devices sign #R3-17 normally designates class II facilities.

EXISTING TRAFFIC CONDITIONS

Level of Service Definitions

Level of service (LOS) is used to measure the operating conditions of an intersection or a roadway segment by considering factors such as traffic volume and capacity. LOS standards are used by Tuolumne County, California Department of Transportation (Caltrans), and local agencies to assess street and state route system performance. LOS is a qualitative measure of traffic operating conditions. LOS A through F are assigned to an intersection or roadway segment, with LOS A indicating very good operations with little congestion and LOS F indicating poor operations with heavy congestion. LOS A through C indicate a minimal or acceptable delay. LOS D indicates high density, stable flow with noticeable congestion. LOS E indicates that the roadway is at or near capacity with frequently intolerable delays and LOS F indicates that traffic volumes are higher than the capacity of the roadway resulting in queuing and excessive delays.

Pursuant to Implementation Program 4.A.b of the General Plan Update, the minimum LOS standard for Minor Collectors, Major Collectors, Arterials and Urban Streets (County facilities) is LOS D, unless an exception is made by the County. The minimum LOS standard for local roads is LOS C. The minimum peak hour LOS standard for all County intersections is LOS D. Based on direction from Caltrans and County staff, the minimum LOS standard for all Caltrans facilities (roadways and intersections) is LOS D.

The LOS threshold volumes for roadway segments are defined in Table 3.16-1 and the LOS threshold volumes for intersections are defined in Table 3.16-2.

Table 3.16-1 TCTC Generalized Roadway Average Daily Traffic (ADT) LOS Lookup Table

Area Type	Roadway Type	Type #	Maximum Two-Way Average Daily Traffic (ADT)				
			LOS A	LOS B	LOS C	LOS D	LOS E
ROLLING	Rural Arterial (4-lane) Divided	1	6,240	12,480	18,720	26,520	31,200
	Rural Arterial (4-lane) Undivided	2	4,820	9,640	14,460	20,485	24,100
	Rural Minor Arterial (4-lane)	3	6,080	12,160	18,240	25,840	30,400
	Rural Minor Arterial (with left-turn lane)	4	4,600	9,200	13,800	19,550	23,000
	Rural Minor Arterial (2-lane)	5	3,120	6,240	9,360	13,260	15,600
	Major Collector (34–36 ft)	6	3,420	6,840	10,260	14,535	17,100
	Major/Minor Collector (23–32 ft)	7	2,900	5,800	8,700	12,325	14,500
	Major/Minor Collector (20–23 ft)	8	2,590	5,180	7,770	11,008	12,950
	Major/Minor Collector (18–20 ft)	9	2,300	4,600	6,900	9,775	11,500
	Major/Minor Collector (less than 18 ft)	10	1,920	3,840	5,760	8,160	9,600
	Local Road	11	1,920	3,840	5,760	8,160	9,600
	Rural Minor Arterial (with climbing lane)	12	2,900	7,400	13,800	19,700	28,800
MOUNTAINEOUS	Rural Arterial (4-lane) Divided	101	5,810	11,610	17,410	24,670	29,020
	Rural Arterial (4-lane) Undivided	102	4,490	8,970	13,450	19,060	22,420
	Rural Minor Arterial (4-lane)	103	5,660	11,310	16,970	24,040	28,280
	Rural Minor Arterial (with left-turn lane)	104	4,280	8,560	12,840	18,190	21,390
	Rural Minor Arterial (2-lane)	105	2,910	5,810	8,710	12,340	14,510
	Major Collector (34–36 ft)	106	3,190	6,370	9,550	13,520	15,910
	Major/Minor Collector (23–32 ft)	107	2,700	5,400	8,100	11,470	13,490
	Major/Minor Collector (20–23 ft)	108	2,410	4,820	7,230	10,240	12,050
	Major/Minor Collector (18–20 ft)	109	2,140	4,280	6,420	9,100	10,700
	Major/Minor Collector (less than 18 ft)	110	1,790	3,580	5,360	7,590	8,930
	Local Road	111	1,790	3,580	5,360	7,590	8,930
	Rural Minor Arterial (with climbing lane)	112	2,700	6,890	12,840	18,330	26,790

Table 3.16-1 TCTC Generalized Roadway Average Daily Traffic (ADT) LOS Lookup Table

Area Type	Roadway Type	Type #	Maximum Two-Way Average Daily Traffic (ADT)				
			LOS A	LOS B	LOS C	LOS D	LOS E
URBAN	4-Lane Freeway	201	28,000	43,200	61,600	74,400	80,000
	3-Lane Freeway	202	10,100	20,200	30,300	42,925	50,500
	2-Lane Freeway + Auxiliary Lanes	203	8,392	16,784	25,176	35,666	41,960
	2-Lane Freeway	204	6,680	13,360	20,040	28,390	33,400
	4-Lane Expressway	205	24,000	28,000	32,000	36,000	40,000
	2-Lane Expressway	206	5,700	11,300	17,000	24,100	28,400
	6-Lane Divided Arterial (with left-turn lane)	207	32,000	38,000	43,000	49,000	54,000
	4-Lane Divided Arterial (with left-turn lane)	208	22,000	25,000	29,000	32,500	36,000
	4-Lane Undivided Arterial (no left-turn lane)	209	18,000	21,000	24,000	27,000	30,000
	2-Lane Principal/Minor Arterial (with left-turn lane)	210	2,900	7,700	14,300	20,100	31,300
	2-Lane Principal/Minor Arterial (no left-turn lane)	211	2,900	7,200	11,900	16,100	24,200
	2-Lane Major/Minor Collector (with left-turn lane)	212	3,400	6,900	11,600	15,800	29,400
	2-Lane Major/Minor Collector (no left-turn lane)	213	2,700	5,600	9,200	12,800	23,500
	2-Lane Local Street	214	2,300	4,900	8,400	11,400	21,200

Notes:

1. Values shown corresponding to LOS A through E are roadway ADT traffic volumes
2. Collector width is measured from the edge of pavement to the edge of pavement
3. Roadways with continuous grade steeper than 6 percent or above 4,000 ft. elevation should use mountainous LOS thresholds
4. Site Specific LOS may be necessary
5. Peak Hour LOS threshold is assumed to be 10 percent of the daily traffic volume unless site specific analysis shows a different ratio
6. Examples LOS A (0.20 of capacity), LOS B (0.21 to 0.40 of capacity), LOS C (0.41 to 0.60 of capacity), LOS D (0.61 to 0.85 of capacity), LOS E (0.86 to 0.92 of capacity)

All volumes thresholds are approximate and assumes average roadway characteristics. Actual threshold volume for each Level of Service listed above may vary depending on variety of factors (but not limited to) roadway curvature and grade, intersection or interchange spacing, driveway spacing, percentage of trucks, RVs, and other heavy vehicles, travel lane widths, speed limits, signal timing characteristics, on-street parking, volume of cross traffic, and pedestrians, etc.

Source: Wood Rogers 2016

Table 3.16-2 Level of Service Definitions and Criteria for Intersections

LOS	Flow Type	Operational Characteristics	Intersection Control Delay (seconds/vehicle)	
			Signal Control	2-Way-Stop or All-Way Stop Control
A	Stable Flow	Free-flow conditions with negligible to minimal delays. Excellent progression with most vehicles arriving during the green phase and not having to stop at all. Nearly all drivers find freedom of operation.	≤10	0-10
B	Stable Flow	Good progression with slight delays. Short cycle-lengths typical. Relatively more vehicles stop than under LOS A. Vehicle platoons are formed. Drivers begin to feel somewhat restricted within groups of vehicles.	>10-20	>10-15
C	Stable Flow	Relatively higher delays resulting from fair progression and/or longer cycle lengths. Individual cycle failures may begin to appear. The number of vehicles stopping is significant, although many still pass through without stopping. Most drivers feel somewhat restricted.	>20-35	>15-25
D	Approaching Unstable Flow	Somewhat congested conditions. Longer but tolerable delays may result from unfavorable progression, long cycle lengths, and/or high volume-to-capacity ratios. Many vehicles are stopped. Individual cycle failures may be noticeable. Drivers feel restricted during short periods due to temporary back-ups.	>35-55	>25-35

Table 3.16-2 Level of Service Definitions and Criteria for Intersections

LOS	Flow Type	Operational Characteristics	Intersection Control Delay (seconds/vehicle)	
			Signal Control	2-Way-Stop or All-Way Stop Control
E	Unstable Flow	Congested conditions. Significant delays result from poor progression, long cycle lengths, and high volume-to-capacity ratios. Individual cycle failures occur frequently. There are typically long queues of vehicles waiting upstream of the intersection. Driver maneuverability is very restricted.	>55-80	>35-50
F	Forced Flow	Jammed or grid-lock type operating conditions. Generally considered to be unacceptable for most drivers. Zero or very poor progression, with over-saturation or high volume-to-capacity ratios. Several individual cycle failures occur. Queue spillovers from other locations restrict or prevent movements.	>80	>50

Source: Wood Rogers 2015

Existing Traffic Operations

Exhibit2-1 in Section 2.1 of Chapter 2, "Project Description," and Exhibit 3.16-1 show key travel corridors in Tuolumne County and local state routes. (Note that not all roads identified in Exhibit 3.16-1 are discussed in this section. Please refer to the Traffic Study in Appendix D of this EIR for a full list of the roadways shown.) Traffic data and vehicle counts from these roads were used to find ADT for roadways and peak hour delays for intersections and calculate LOS for each of the 150 roadway segments and 41 intersections that were studied. Traffic data and vehicle counts were obtained through new studies at various intersections and roadways and supplemented with data previously collected by Tuolumne County and Caltrans published traffic volumes on the Caltrans website (Wood Rodgers 2015).

As shown in Table 3.16-3, all but seven of the 152 studied roadway segments currently operate at the acceptable LOS D conditions or better, under existing conditions. The conditions for all 152 roadway segments (including the 143 segments that are currently operating at acceptable LOS conditions) is provided in Appendix D of this EIR.

Table 3.16-3 Existing Roadways with Unacceptable LOS

#	Roadway Segment	Type #	LOS Std.	AADT	LOS
24	SR 49 b/w Bell Mooney Rd and South Jct Main St	211	D	19,300	**E**
27	SR 49 b/w Fifth Ave and East Jct SR 108	210	D	23,500	**E**
31	SR 49 b/w Washington St and Dodge St	211	D	18,500	**E**
32	SR 49 n/o Dodge St	211	D	19,400	**E**
33	SR 49 s/o N Washington St / Columbia Way	211	D	16,100	**E**
52	Mono Way w/o Sanguinetti Rd	210	D	22,205	**E**
116	S Washington St b/w Restano Way & Church St	212	D	18,595	**E**

Notes: AADT = Annual Average Daily Traffic, LOS = Level of Service

Source: Wood Rogers 2015. See Appendix D of this EIR for the full Traffic Study.

As shown in Table 3.16-4, eleven of the 41 studied intersections do not meet the acceptable LOS D standard or better, under existing traffic conditions. Each of the unacceptable eleven intersections has an LOS of E or F for the AM peak hour and/or the PM peak hour. The other 30 intersections that currently have acceptable LOS standards are provided in Appendix D of this EIR.

Table 3.16-4 Existing Intersections with Unacceptable Peak Hour LOS

#	Intersection	Control Type	LOS Std.	AM Peak Hour		PM Peak Hour	
				Delay (Sec/Veh)	LOS	Delay (Sec/Veh)	LOS
5	SR 49-SR 108 & Chicken Ranch Rd	SSSC	D	24.5	C	47.2	**E**
8	Main St/Jamestown Rd & SR 49-SR 108	TWSC	D	93.5	**F**	125.1	**F**
9	5th Ave & SR 49-SR 108	TWSC	D	232.2	**F**	429.6	**F**
11	SR 49-SR 108/SR 108 & SR 49 (Stockton Rd)	SSSC	D	36.9	**E**	69.6	**F**
13	Parrotts Ferry Rd & Sawmill Flat Rd	SSSC	D	41.0	**E**	54.3	**F**
19	SR 49 (N Washington St)/SR 49 & N Washington St/Columbia Way	TWSC	D	134.4	**F**	160.5	**F**
20	SR 49 (N Washington St) & School St	SSSC	D	43.5	**E**	44.1	**E**
23	S Washington St/SR 49 (N Washington St) & SR 49 (Stockton Rd)	Signal	D	63.1	**E**	58.1	**E**
24	S Washington St & Church St	TWSC	D	64.1	**F**	101.4	**F**
38	Woodham Carne Rd/Black Oak Rd & Tuolumne Rd	TWSC	D	43.0	**E**	28.9	D
39	Tuolumne Rd & Soulsbyville Rd	SSSC	D	52.9	**F**	23.7	C

Notes:

1. TWSC = Two-Way-Stop Control, AWSC = All-Way-Stop Control, SSSC = Side-Street-Stop Control

2. For TWSC intersection, worst-case movement delays (in seconds/vehicle) is indicated. "Average" control delays (in seconds/vehicle) are indicated for AWSC and signal-controlled intersections. Delays reported in above table are from Synchro 8 software.

3. Bold numbers and letters represent condition where intersection does not meet minimum acceptable standards.

Source: Wood Rogers 2015). See Appendix D of this EIR for the full Traffic Study.

3.16.2 Regulatory Setting

FEDERAL

There are no federal laws or regulations addressing transportation and circulation that are relevant to the General Plan Update.

STATE

California Department of Transportation Concept Reports

Caltrans is responsible for the planning, design, construction, operation, and maintenance of all state-owned roadways, including those in Tuolumne County. SR 49, 108, 120, and 132 are located in Tuolumne County, and are within Caltrans's jurisdiction.

Transportation Concept Reports (TCRs) have been completed by Caltrans for the state highway system serving Tuolumne 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. TCRs identify how a highway will be developed and managed so that it delivers a targeted concept LOS that is feasible to attain over a twenty-year planning horizon.

TCRs for the state highways in Tuolumne County are listed below:

- SR 49 Transportation Concept Report (Caltrans 2013)
- SR 108 Transportation Concept Report (Caltrans 2014a)
- SR 108 Corridor System Management Plan (Caltrans 2008)
- SR 120 Transportation Concept Report (Caltrans 2011)
- SR 132 Transportation Concept Report (Caltrans 2014b)

The TCRs for SR 49, 108, 120, and 132 indicate that the concept LOS for these facilities within Tuolumne County are LOS C in rural areas and LOS D in urban areas. The portion of SR 108 that runs through Tuolumne County is addressed in the SR 108 TCR; however, the SR 108 Corridor System Management Plan from 2008 is the primary guiding document for this segment of SR 108. The concept LOS identified within the management plan is LOS C for the segments of SR 108 within Tuolumne County.

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 is prepared pursuant to Government Code Section 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.

Senate Bill 743

Senate Bill 743, passed in 2013, requires the California Governor's Office of Planning and Research (OPR) to develop new CEQA guidelines that address traffic metrics under CEQA. As stated in the legislation, upon adoption of the new guidelines, "automobile delay, as described solely by LOS or similar measures of vehicular capacity or traffic congestion shall not be considered a significant impact on the environment pursuant to this division, except in locations specifically identified in the guidelines, if any." The California Natural Resources Agency is currently in the process of public review and consideration of the recommended updates to the CEQA Guidelines proposed by OPR; therefore, the proposed changes to the CEQA Guidelines have not been formally adopted at this time. If adopted as currently drafted, lead agencies would have until January 2020 to implement any changes related to transportation impact analyses. Because this EIR is already in preparation, even if adopted, the guidelines would not apply.

Senate Bill 1

Senate Bill 1, passed in 2017, invests $54 billion over the next decade to fix roads, freeways and bridges in communities across California and includes investment in transit and safety improvements. These funds will be split equally between state and local investments.

Senate Bill 1 provides a new funding program for local agencies such as Tuolumne County to complete road maintenance and complete streets improvements. Tuolumne County's share of the funding for the year 2017-2018 is $940,000, which will increase to $5 million by 2027.

LOCAL

Regional Transportation Plan

TCTC serves as the state-designated Regional Transportation Planning Agency. As mandated by Chapter 2.5, Section 65080 et seq. of the California Government Code, each Regional Transportation Planning Agency must prepare a RTP by September 1, every 5 years. The 2016 RTP was completed and adopted by TCTC in 2017.

The 2016 RTP is a vision, policy, action, and financial plan that is focused on the future transportation needs of Tuolumne County for the next 25 years. The RTP focuses on transportation, and the movement of people and goods for purposes such as working, shopping, school, or recreation, by means of autos, trucks, buses, trains, planes, bicycling, or walking. The RTP must balance transportation priorities with anticipated funding because the RTP is a financially constrained document. A Financially Constrained Expenditure Plan Capital Improvement Program (FCEP-CIP) is included in the 2016 RTP. Additionally, the 2016 RTP includes new chapters including the Rural Sustainable Strategies chapter, the Regional and Interregional Transportation chapter, and six new chapters that address individual modes of transportation. The General Plan Update and 2016RTP are intended to be consistent with each other.

Tuolumne County General Plan

The goals, policies and implementation programs contained within the General Plan are intended to guide the development of a transportation system which will maintain and improve the quality of life in Tuolumne County while accommodating new growth. Because the proposed project is an update to the 1996 General Plan, which would, upon approval, supersede the 1996 General Plan, this Recirculated Draft EIR section addresses the General Plan Update. Specific General Plan Update policies related to traffic and circulation are identified below under Section 3.16.3, “Impact Analysis.”

3.16.3 Impact Analysis

METHODS OF ANALYSIS

The following reviews the traffic analysis scenarios and key elements of the traffic methodology and thresholds used in the EIR analysis.

Existing Traffic Volumes

Existing conditions were obtained for the Tuolumne County roadway system from TCTC and Wood Rodgers traffic count data, prior Tuolumne County studies, and Caltrans traffic volumes published on the Caltrans website. The current Annual Average Daily Traffic volumes are shown in Appendix Table 3 (see Appendix D of this EIR).

Roadway ADT volumes represent the level of traffic that travels on a specific roadway segment over an average 24-hour period. The AM peak hour is defined as the highest one hour of traffic flow counted between 7:00 a.m. and 9:00 a.m. on a typical weekday while the PM peak hour is defined as the highest one hour of traffic flow counted between 4:00 p.m. and 6:00 p.m. on a typical weekday. The current ADT volumes for roadway segments in Tuolumne County are shown in Appendix Table 4 and AM and PM peak hour traffic volumes are shown in Appendix Table 3 (see Appendix D). As described in Section 3.16.1 and depicted in Table 3.16-3, all of the roadway segments, except for seven, are currently operating at acceptable LOS D conditions or better under existing conditions. As described in Section 3.16.1 and depicted in Table 3.16-4, all of the intersections, except for 11, are currently operating at acceptable LOS D or better under existing conditions.

Year 2030 Traffic Volumes

Year 2030 traffic impacts were based on the assumption that a number of intersection and roadway improvement projects (associated with the 2016 RTP) are completed by 2030. The Traffic Study Addendum updated the year 2030 roadway network to assume Tier 1a and Tier 1b FCEP-CIP projects are in place. These improvements include intersection signalization, roadway and intersection geometric modifications, roadway widening and realignment, and complete streets improvements (see Appendix D for a full list of improvements). These improvements will aid in the reduction of congestion by 2030. Traffic volumes were estimated based on projected 2030 growth and development in the General Plan Update, referred to as the Distinctive Communities Scenario in the Traffic Study Addendum.

Year 2040 Traffic Volumes

Year 2040 traffic impacts were based off the assumption that additional improvements will be completed by 2040 in addition to those completed by 2030. The Traffic Study Addendum updated the year 2040 roadway network to assume Tier 1a, Tier 1b, and Tier 1c FCEP-CIP projects are in place. These improvements include intersection signalization, roadway and intersection geometric modifications, roadway widening and realignment, complete streets improvements, and bicycle signage enhancements (see Appendix D for a full list of improvements). These improvements will aid in the reduction of congestion by 2040. Traffic volumes were developed assuming implementation of the proposed General Plan Update at 2030 and 2040 growth levels and consistent with the Distinctive Communities Scenario in the Traffic Study Addendum. The projected impacts are the result of increased traffic, population growth and expected developments.

Traffic Performance Standards

LOS

Intersections and roadways in Tuolumne County have targeted LOS standards. Based on General Plan Implementation Program 4.A.b, the target LOS standard for minor collectors, major collectors, rural arterials and urban streets (County facilities) shall be LOS D, unless an exception is made by the County and the minimum LOS standard for local and residential roads shall be LOS C (Wood Rodgers 2015:10). The minimum peak hour LOS standard for all County intersections shall be LOS D (Wood Rodgers 2015:10).

The project study area includes SR 49, SR 108, SR 120 and SR 132. The Caltrans published *Guide for the Preparation of Traffic Impact Studies* (2002) states the following:

> "Caltrans endeavors to m*aintain a target LOS at the transition between LOS C and LOS D on State highway facilities, however, Caltrans acknowledges that this may not be always feasible and recommends that the lead agency consult with Caltrans to determine the appropriate target LOS."*

Based on direction from Caltrans and County staff, the minimum LOS standard for all Caltrans facilities (roadways and intersections) within Tuolumne County shall be LOS D (Wood Rodgers 2015:10).

Therefore, for the purposes of this analysis a minimum acceptable LOS standard of LOS C shall apply to all local roads, and LOS D shall apply to all other remaining County and Caltrans facilities. Additionally, the minimum peak hour LOS standard for all intersections shall be LOS of D.

Vehicle Miles Traveled

The Wood Rodgers Traffic Study and Traffic Study Addendum forecasted vehicle miles traveled (VMT) in 2030 and 2040 under the Recent Trends (Existing) scenario in the Traffic Study and Traffic Study Addendum, and the proposed Distinctive Communities scenario (General Plan Update scenario) in the Traffic Study and Traffic Study Addendum.

Table 3.16-5 shows VMT in the year 2015, 2030, and 2040 under both the proposed General Plan Update and under the Recent Trends (Existing) scenario for roadways within Tuolumne County. As shown in Table 3.16-5, the 2030 and 2040 annual VMT would increase above 2015 conditions for both scenarios. This increase is largely a result of future population growth anticipated throughout the region. However, the

increase in VMT is not necessarily attributed to the General Plan Update when compared to existing conditions. To evaluate the incremental impact of the proposed General Plan Update, future conditions in the year 2030 and 2040 were evaluated with and without the General Plan Update. As shown in Table 3.16-5, the General Plan Update would result in lower VMT when compared to the No Project scenario conditions for both 2030 and 2040. Therefore, the General Plan Update would result in circulation improvements and lower VMT when compared to conditions without the General Plan Update.

Table 3.16-5 Total Annual VMT

Scenario	VMT (Daily)
Baseline - 2015 Existing Conditions	1,829,654
Year 2030 - No Project Scenario	2,046,484
Year 2030 - Proposed General Plan Update	2,033,692
Year 2040 - No Project Scenario	2,168,520
Year 2040 - Proposed General Plan Update	2,152,846

Note: See Appendix D for the full Traffic Study.

Source: Wood Rogers 2016. See Appendix D of this EIR for the full Traffic Study.

As shown in Table 3.16-5, in 2040, the County is projected to generate approximately 2.15 million VMT. Projected development under the General Plan Update would result in an increase of over 300,000 VMT above baseline (2015) conditions.

The General Plan Update includes policies (see proposed General Plan policies below) that specifically address reducing VMT within Tuolumne County. Policy 4.A.7 states that it is the policy of the County to, when appropriate and feasible, support sustainable communities strategies to reduce VMT. Implementation Program 4.B.q states that the County should consider developing an impact fee program whereby all development would contribute towards the construction of pedestrian facilities to reduce VMT consistent with Senate Bill 743; and Implementation Program 4.B.u requires support of private efforts to construct bicycle and pedestrian facilities between high use areas as a means to reduce VMT. Additionally, Implementation Program 4.A.c includes a provision stating that projects needed to reduce VMT by improving the use of other modes of transportation, including, but not limited to, public transportation facilities (transit facilities and stops), park and ride facilities, bikeways, non-motorized trails and pedestrian facilities.

As described above, the proposed changes to the CEQA Guidelines to address VMT have not been formally adopted at this time. Therefore, this EIR does not include an impact analysis with a VMT-based threshold.

THRESHOLDS OF SIGNIFICANCE

Impacts relating to transportation and circulation would be considered potentially significant if projected development under the General Plan Update would:

- conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system;
  - Impacts to roadway segments would be significant if traffic generated by projected development under the General Plan Update causes a local roadway segment within Tuolumne County that currently operates (or is projected to operate) at LOS C or better to degrade to LOS D or worse;
  - Impacts to roadway segments would be significant if traffic generated by projected development under the General Plan Update causes a minor collector, major collector, rural arterial, urban street,

or Caltrans roadway segment within Tuolumne County that currently operates (or is projected to operate) at LOS D or better to degrade to LOS E or worse;

- Impacts to roadway segments would be significant if traffic generated by projected development under the General Plan Update would add traffic and increase delay to any local roadway segment within Tuolumne County that currently operates at deficient LOS (LOS D or worse);
- Impacts to roadway segments would be significant if traffic generated by projected development under the General Plan Update would add traffic and increase delay to any minor collector, major collector, rural arterial, urban street, or Caltrans roadway segment within Tuolumne County that currently operates at deficient LOS (LOS E or worse);
- Impacts to intersections would be significant if traffic generated by projected development under the General Plan Update causes an intersection within Tuolumne County that currently operates (or is projected to operate) at LOS D or better to degrade to LOS E or worse;
- Impacts to intersections would be significant if traffic generated by projected development under the General Plan Update would add traffic and increase delay to any intersection within Tuolumne County that currently that is currently operating at deficient LOS (LOS E or worse);

- conflict with an applicable congestion management program;
- result in a change of air traffic patterns;
- substantially increase traffic-related hazards due to a design feature or incompatible uses;
- result in inadequate emergency access; or
- conflict with adopted policies relating to alternative transportation modes, including transit, walking, and bicycling.

It should be noted that these thresholds are very conservative in that any traffic added to a roadway segment or intersection that is already operating at or below the target LOS would be considered a significant impact.

It should be noted that the Traffic Study Addendum (see Appendix D) included analysis of a set of local roadway segments, and the analysis found that none of the analyzed local roadway segments would operate at deficient levels (worse than LOS C); therefore, local roadway segments are not addressed in detail below. See Appendix D for the detailed analysis. Air traffic-related hazards are analyzed in Section 3.9, “Hazards and Hazardous Materials,” and those impacts would be less than significant.

GENERAL PLAN UPDATE POLICIES

The following policies and implementation programs from the General Plan Update are applicable to the evaluation of effects related to transportation and circulation:

Transportation Element

- **Policy 4.A.1:** Support and work with the TCTC to regularly conduct assessments of the current status of the highway system to determine the current level of needs in the system, and report those needs to the Board of Supervisors.
  - **Implementation Program 4.A.a:** Plan, design and regulate roadways in accordance with the following functional classification system and designations which are reflected in the County's Regional

Transportation Plan, and are shown on the Master Plan of Streets and Highways in [General Plan] Figures 2.1 and 2.2, and in [General Plan] Appendix 2.A:

- Other Freeways and Expressways (Functional Class Code 2)
- Other Principal Arterial (Functional Class Code 3)
- Minor Arterial (Functional Class Code 4)
- Major Collector (Functional Class Code 5)
- Minor Collector (Functional Class Code 6)
- Local Road (Functional Class Code 7)
- Scenic Routes
- Urban Streets

- **Implementation Program 4.A.b:** Develop and manage the County's roadway system to maintain the following minimum levels of service (LOS) using methodology adopted by the Tuolumne County Transportation Council:

Arterials, Minor Collectors, Major Collectors, Urban Streets	LOS D, unless an exception is made
Local Roads	LOS C
Minimum Peak Hour for all Intersections	LOS D

The County may allow exceptions to these level of service standards where it finds that the improvements or other measures required to achieve the LOS standards are unacceptable. In allowing any exception to the standards, the County shall consider the following factors, including congestion/delays, rights of way, environmental impacts, safety, aesthetics, alternative transportation modes, and other geographical, environmental, social or economic factors on which the County may base findings to allow an exceedance of the standards. Exceptions to the standards will only be allowed after all reasonably feasible measures and options are explored.

- **Implementation Program 4.A.c**: Establish priorities based on available funding for road improvement projects while balancing the need to support employment generating uses, affordable housing, and educational facilities. Emphasize, consistent with legal and funding constraints, the following road improvement projects in the County Road Improvement Program:

  1. Projects needed to maximize the safety of the road system on high accident road segments and intersections, including, but not limited to, additional road widths and turn lanes, realignments, shoulder improvements, bridge improvements, hazard elimination and hazard control devices.
  2. Projects needed to improve rideability and preserve past infrastructure investments, including, but not limited to, pavement life extension and rehabilitation. To provide the most effective expenditure of funds, maintenance shall emphasize the arterial and major collector segments of the road system utilizing the County Pavement Management System.
  3. Projects needed to improve capacity and travel speed, particularly on roads carrying through traffic, and including, but not limited to, interchange improvements, bypasses, additional road lanes and/or widths, turn lanes, signalization and bridge improvements that help fire, police and other emergency services achieve acceptable response times.
  4. Projects needed to reduce vehicle miles traveled by improving the use of other modes of transportation, including, but not limited to, public transportation facilities (transit facilities and stops), park and ride facilities, bikeways, non-motorized trails and pedestrian facilities.

- **Implementation Program 4.A.d**: Prioritize safety related road improvement projects needed on streets and highways which experience an unusual number of motor vehicle traffic accidents, design necessary improvements and implement necessary improvements in a timely manner to the greatest extent possible.

- **Implementation Program 4.A.d.1** – Support alternative energy vehicles and development of electric charging stations for passenger vehicles.

- **Implementation Program 4.A.d.2** – Prioritize a Safe Routes for School Program by partnering with the school districts and the TCTC to improve safety and increase walking and bicycling to school.

- **Implementation Program 4.A.d.3** – Support a regional effort for a Local Road Safety Plan for planning and prioritizing safety improvement projects.

- **Policy 4.A.2:** Dedicate, widen and construct roads according to design and access standards generally defined in Appendix 2.A and, more specifically, the County Ordinance Code and the Countywide Traffic Circulation Improvement Program. Exceptions to these standards may be necessary and shall be approved by the Community Resources Agency Director, who shall ensure that safe and adequate public access and circulation are preserved by such exceptions.

  - **Implementation Program 4.A.e**: Require that roadway rights-of-way be wide enough to accommodate the lanes needed to carry long-range forecasted traffic volumes, as well as planned bikeways, pedestrian and transit facilities and required drainage, utilities, landscaping, cuts and fills, and suitable separations. Minimum right-of-way criteria for each class of roadway are specified in Appendix 2.A of this Element and the County Ordinance Code. However, additional right-of-way, beyond the minimum criteria may be required to provide for location specific needs.

  - **Implementation Program 4.A.f**: Require Complete Streets design, where feasible and appropriate, in road planning documents, detailing pedestrian and bicycle lane infrastructure and alternative transportation connectivity, such as bus stops and dedicated bus pullout areas.

  - **Implementation Program 4.A.g**: Require local roads serving new development to be aligned with existing local roads on abutting properties and extend existing roads to link with other roads wherever possible to provide continuity and provide safety in the local road system.

  - **Implementation Program 4.A.h**: Accommodate through traffic in a manner that discourages the use of neighborhood Local Roads. This through traffic, particularly truck traffic, shall be directed to appropriate routes in order to maintain public safety and local quality of life by using design measures, such as appropriate signage and traffic calming devices.

  - **Implementation Program 4.A.i**: Maximize intersection spacing on arterial and collector roadways and thoroughfares and minimize driveway encroachments. Except where specific site conditions warrant, no new intersection of a local road or new driveway with an arterial or collector road shall be closer to an existing local road or driveway than 500 feet in rural areas or 200 feet within urban areas.

  - **Implementation Program 4.A.j**: Promote the installation of traffic calming devices to improve street safety and access for pedestrians and bicyclists.

- **Policy 4.A.3:** Evaluate the need for the provision of County roads to serve as alternative routes to the State Highway network within the County's boundaries and, if warranted, pursue funding for and construction of and/or improvements to the identified alternative routes.

  - **Implementation Program 4.A.k**: Support the State's goal of maintaining Level of Service C on State Highways and at intersections with County roads. If meeting the State's goal is not feasible after considering the following factors, congestion/delays, rights of way, environmental impacts, safety, aesthetics, and other geographical, environmental, social or economic factors on which the County may base findings to allow an exceedance of the standards, the minimum LOS standard for the State Highway System shall be no lower than LOS D. The methodology for evaluating LOS on State Highways shall be pursuant to the current version of the Highway Capacity Manual.

- **Implementation Program 4.A.l**: Maintain, periodically update and implement the Tuolumne County Master Plan of Streets and Highways. This road network should include roadways parallel to regional facilities so that the regional roadway system can function effectively and efficiently. Funding for this network should be provided from a combination of sources, such as new development, sales tax, gas tax, State partnerships and federal transportation programs.

- **Implementation Program 4.A.m**: Collaborate with neighboring jurisdictions to provide acceptable and compatible levels of service and joint funding on the roadways that cross the County's boundaries.

- **Policy 4.A.4:** Set forth recommendations for the future of the County's streets and highways system in each update of the Regional Transportation Plan.

  - **Implementation Program 4.A.n**: Cooperate with the Tuolumne County Transportation Council in the implementation of the Regional Transportation Plan.

  - **Implementation Program 4.A.o**: Encourage the Tuolumne County Fire Department and the Tuolumne County Sheriff's Department to identify transportation issues prior to each revision of the Regional Transportation Plan by the TCTC. Fire Department and Sheriff's Department comments regarding emergency response corridors, evacuation routes and needed improvements, such as helispots, should be considered when revising the list of Circulation Improvement Projects.

- **Policy 4.A.5:** Consider the traffic impacts of development in relation to General Plan growth policies and require new development to provide mitigation for its fair share of impacts to the County's transportation system. Assess the needs of street and road users regularly through the land development application review process.

  - **Implementation Program 4.A.p**: Evaluate and analyze the traffic impacts of proposed land uses in relation to stated goals and objectives of the General Plan since growth policies regarding land use decisions directly affect the existing and future transportation system.

  - **Implementation Program 4.A.q**: Evaluate the impacts of new development on the County's transportation system and require such development to provide mitigation for its fair share of the impact. New development that is determined by the County to create or exacerbate an identified deficiency in the transportation system may not be approved if a plan and funding program to provide needed roadway improvements have not been approved or if the mitigation provided by the development will not correct the deficiency or if it will create an additional burden on County transportation funds. This implementation program shall not apply to new development for which the County makes a finding of overriding considerations for traffic impacts related to the new development in accordance with the California Environmental Quality Act.

  - **Implementation Program 4.A.r**: Consider implementing an alternative to LOS for evaluating transportation impacts, such as vehicles miles traveled, as described in the CEQA guidelines.

- **Policy 4.A.6:** Strive to maintain all components of the transportation system at adopted level of service standards.

  - **Implementation Program 4.A.s**: Coordinate with State and Federal agencies, the Tuolumne County Transportation Council and developers to secure financing in a timely manner for all components of the transportation system to achieve and maintain adopted level of service standards.

  - **Implementation Program 4.A.t**: Require new development to mitigate that development's impacts on the local and regional transportation system through the fair share contribution of improvements to the master planned system and/or the payment of Traffic Impact Mitigation Fees. Exceptions to the payment of traffic impact mitigation fees may apply to land uses listed in the Traffic Impact

Mitigation Fee Schedule or when alternative sources of funding can be identified to offset foregone revenues.

- **Implementation Program 4.A.u:** Consider developing a two-tier Traffic Impact Mitigation Fee Schedule, whereby all new development pays a regional component, and sub-regional components are developed based upon the amount of improvements required in a specific area and the amount of development anticipated in that area.

- **Policy 4.A.7:** Recognize the major funding limitations that exist within the State and County system and find that, as a matter of legislative policy, additional growth and development may be allowed within the County, notwithstanding the adverse impacts which may result in the short term by this growth and development. Therefore, it shall be the policy of the County to:

  1. Encourage the existing partnership between the Tuolumne County Transportation Council, the State and developers in working together to solve State highway and County road problems created by growth and funding limitations.

  2. Cooperate with governmental agencies in identifying and funding improvements necessary to mitigate the deficiencies in the transportation system in Tuolumne County.

  3. Acknowledge that short-term adverse impacts to the Tuolumne County transportation system resulting from growth and development within and outside of the County will occur until adequate funding is made available and improvements are made through projects identified in the adopted State Transportation Improvements Program.

  4. Monitor responsible agencies' activities in responding to the needs of the transportation system within the County.

  5. Review and provide input on the Regional Transportation Improvement Program (RTIP).

  6. Should critical State highway improvements not be identified in the adopted State Transportation Improvements Program, the County should review its policies to determine if additional growth and development should be curtailed in the impacted areas to maintain established minimum LOS standards.

  7. When appropriate and feasible, support sustainable communities strategies to reduce vehicle miles traveled.

- **Policy 4.A.8:** Require that all new development participate in the provision of off-street parking, either on-site or in consolidated lots or structures, by providing parking facilities or through the payment of in-lieu fees or facilities for transit oriented developments. Allow for the payment of in-lieu parking fees for new development within Historic Design Preservation Districts and within identified communities as an alternative to providing on-site parking in order to retain the character of those districts and in recognition of the size limitations of existing parcels in historic communities to accommodate on-site parking.

- **Policy 4.B.1:** Develop a modern transportation system that incorporates alternative transportation modes into the system design.

  - **Implementation Program 4.B.a**: Strive to meet the level of service standards through a balanced transportation system that provides alternatives to the automobile.

  - **Implementation Program 4.B.b**: Plan for a balanced multimodal transportation network that meets the needs of all users of roads, including bicyclists, pedestrians, and transit users. Incorporate bicycle, pedestrian and transit improvements when designing roadway improvements where

appropriate. Support the efforts of the TCTC to develop an Active Transportation Plan for Tuolumne County, The State Route 49 Complete Streets and State Route 49 Congested Corridor Plan.

- **Implementation Program 4.B.c**: Provide multi-modal access to activity centers such as public facilities, commercial centers and corridors, employment centers, transit stops, schools, parks, recreation areas, and tourist attractions.

- **Implementation Program 4.B.d**: Promote walking and bicycling through education and outreach programs and activities such as commute campaigns, classes that teach cycling skills, and providing route maps.

- **Policy 4.B.2:** Expand and improve pedestrian sidewalks and facilities focusing on safety, connectivity, and accessibility.

  - **Implementation Program 4.B.e**: Develop a Sidewalk Priority Plan identifying all existing sidewalks as well as future sidewalks throughout the County. Prioritize retrofitting existing and constructing new sidewalks that connect residents to schools, bus lines and other transit stops, and parks and community centers.

  - **Implementation Program 4.B.f**: Require safe and adequate crossing facilities that minimize pedestrian exposure to vehicular traffic, such as curb extensions or refuge islands, wherever feasible.

  - **Implementation Program 4.B.g**: Develop new or revised street and street crossing design standards to improve pedestrian safety, convenience, and comfort, both as a part of routine public works projects and as a part of ongoing development.

  - **Implementation Program 4.B.h**: Update the local street design standards for urban areas, where practicable, to include Universal Design criteria for street infrastructure such as sidewalks, pedestrian curb ramps, crosswalks, street lighting, shade trees, and curb extensions to accommodate all users, including people with disabilities and other special needs.

  - **Implementation Program 4.B.h.1:** Include planned sidewalks, roadway shoulders, bike lanes, and transit stops in the design of major roadway rehabilitation or other improvement projects to accelerate the build out of the complete streets system.

- **Policy 4.B.3:** Expand and improve the bikeways within Tuolumne County, focusing on safety, connectivity, and accessibility.

  - **Implementation Program 4.B.i**: Pursue state and federal funds earmarked for new bicycle paths and transit improvements.

  - **Implementation Program 4.B.j**: Encourage provisions for bicycle facilities at transit nodes, recreational facilities and public spaces.

  - **Implementation Program 4.B.j.1**: Use local road funds to construct sidewalks, bike lanes, and roadway shoulder when performing major pavement maintenance projects.

- **Policy 4.B.4:** Encourage the use of alternative modes of transportation by incorporating public transit, bicycle and pedestrian modes in County transportation planning and by requiring new development to provide adequate pedestrian and bikeway facilities at suitable locations.

  - **Implementation Program 4.B.k**: Consider the needs of pedestrians, bicyclists and individuals with disabilities in the project design review process.

- **Implementation Program 4.B.l**: Require, when appropriate and warranted, new development to contribute to, or construct, bicycle and pedestrian facilities. New development zoned R-1, R-2, R-3, C-O, C-1, C-2, C-K and M-U occurring within a two mile radius of a school, shopping center, life enrichment facility or work concentration area and located along a major or minor collector or arterial shall be targeted for providing bicycle and pedestrian facilities within the new development. If existing conditions prohibit development from constructing warranted facilities, such developments should set aside sufficient room along the project frontage and pay in-lieu fees to construct bicycle and pedestrian facilities.

- **Implementation Program 4.B.m:** Where appropriate, require new development outside of identified communities to provide and stripe minimum four-foot wide shoulders within the development to accommodate pedestrians unless average lot sizes are greater than two acres.

- **Implementation Program 4.B.n**: Encourage a continuous and interconnected pedestrian friendly system of paths that lead to transit stops, by encouraging all new residential and commercial development to include a pedestrian circulation system that is connected to existing (and where possible, planned) transit stops.

- **Implementation Program 4.B.o**: Require, when appropriate, new commercial, high density residential and recreational development to provide and maintain bicycle storage facilities.

- **Implementation Program 4.B.p**: Provide and plan for pedestrian access routes to designated transit corridors in new development.

- **Implementation Program 4.B.q**: Consider developing an impact fee program whereby all development would contribute towards the construction of pedestrian facilities to reduce vehicle miles traveled consistent with the California Environmental Quality Act.

- **Implementation Program 4.B.r**: Require local roads serving new development to include, where feasible, bicycle and pedestrian infrastructure that links to existing bicycle and pedestrian facilities.

- **Implementation Program 4.B.s**: Require, where appropriate and warranted, dedication of right-of-way for and/or construction of bicycle and pedestrian facilities along routes identified in the priority and non-priority lists contained in the Non-Motorized Element of the County of Tuolumne Regional Transportation Plan.

- **Policy 4.B.5:** Maintain and expand, where possible and appropriate, the system of non-motorized connections that link neighborhoods to larger roadways, activity centers and nodes, businesses, community services, parks and recreational facilities, and transit stops and stations.

  - **Implementation Program 4.B.t:** Require all new community plans to include a bicycle and pedestrian routes plan. These bicycle and pedestrian route plans should illustrate an integrated connection to the existing bicycle, roadway and pedestrian network outside of the community, either through connections to urban centers and workplace locations or through connections to recreation infrastructure identified in the Recreation Master Plan.

  - **Implementation Program 4.B.u:** Support private efforts to construct bicycle and pedestrian facilities between high use areas as a means to reduce vehicle miles traveled. Consider crediting the cost of such facilities towards traffic impact mitigation fees.

  - **Implementation Program 4.B.v:** New bicycle and pedestrian facilities should be designed to accommodate preferred safe routes to the school from nearby population centers.

  - **Implementation Program 4.B.w:** Encourage the construction of pedestrian facilities and Class I and Class II bicycle facilities, such as widened and striped shoulders or completely separate facilities. In

high traffic/high speed motorized transportation areas which receive high use by school children, require the construction, where feasible, of barriers between motorized and non-motorized traffic as well as provision of other safety features, such as special signal types, traffic calming features, and increased signage warning drivers of the presence of children walking and using bicycles. Such barriers can include, but are not limited to, construction of an asphalt or concrete curb or berm between motorized and non-motorized traffic ways.

- **Implementation Program 4.B.x:** Identify routes for new bicycle and/or pedestrian facilities to link existing residential development to nearby commercial areas and community centers and facilities, such as schools, and to link existing and new identified communities to one another where feasible.

- **Implementation Program 4.B.y:** Integrate pedestrian routes, sidewalks and bicycle lanes into continuous networks within identified communities.

- **Policy 4.B.6:** Actively investigate and seek alternative funding sources for bicycle and pedestrian facilities.

  - **Implementation Program 4.B.z:** Encourage the Tuolumne County Transportation Council to set aside two percent (2%) of all new apportionments of Local Transportation Fund (LTF) dollars to fund bicycle and pedestrian facility projects listed in the Regional Transportation Plan or Recreation Master Plan.

  - **Implementation Program 4.B.aa:** Construct bicycle and pedestrian facilities as funds become available.

  - **Implementation Program 4.B.bb:** Continue to explore new funding sources for construction and maintenance of bicycle and pedestrian facilities.

- **Policy 4.C.1:** Support the development of all public and social service transportation systems as outlined in the Tuolumne County Transit Development Plan.

  - **Implementation Program 4.C.a:** Encourage the Tuolumne County Transit Agency to implement the Tuolumne County Transit Development Plan.

  - **Implementation Program 4.C.b:** Encourage the Tuolumne County Transit Agency to pursue public input into the operation of social service transportation systems as received via rider surveys, the Social Service Transportation Advisory Council and comments made during the annual unmet transit needs hearing.

  - **Implementation Program 4.C.c:** Promote coordination among all public and social service transportation operations to provide the highest level of efficiency and cost-effectiveness possible.

  - **Implementation Program 4.C.d:** Encourage the Tuolumne County Transit Agency to cooperate with public transportation providers, State and Federal Governments and private business to fund transportation services.

  - **Implementation Program 4.C.e:** Require new development projects to analyze their contribution to increased use of public transit and to contribute towards improvements if significant impacts are identified.

- **Policy 4.C.2:** Encourage the Tuolumne County Transportation Council to enhance transit trips by improving performance, reliability, safety, security and facilities.

  - **Implementation Program 4.C.f:** Encourage integration of different alternate transportation modes to facilitate multi-modal trips. Examples of methods to integrate transportation modes include, but are

not limited to, provision of bicycle parking at transit and park and ride facilities and buses that provide bicycle storage.

- **Implementation Program 4.C.g:** Encourage the Tuolumne County Transit Agency to monitor the efficiency of the transit program and maintain compliance with established standards on a continual basis.

- **Implementation Program 4.C.h:** Encourage the Tuolumne County Transit Agency to strive to establish 60 to 90 minute service frequency in high priority areas such as Sonora, Columbia and Jamestown, 120 to 180 minute service frequency on inter-city routes that service Sierra Village and Tuolumne and life line services to remote communities, such as Groveland.

- **Implementation Program 4.C.i:** Support the Tuolumne County Transportation Councils efforts to expand and improve transit service by methods such as increased frequency of more popular routes, longer operating hours, and more stops in key locations and its consistency as identified in the Transit Development Plan Update for Tuolumne County Transit.

- **Implementation Program 4.C.j:** Support an inter-county bus transfer stop in Columbia near State Route 49.

- **Implementation Program 4.C.k:** Support direct transit services at major commercial destinations and activity centers.

- **Implementation Program 4.C.l:** Support reasonable efforts to expand recreational opportunities with transit services.

- **Policy 4.C.3:** Encourage the Tuolumne County Transit Agency to meet the needs of the transportation disadvantaged, including youths, elderly, persons with disabilities and the economically disadvantaged.

  - **Implementation Program 4.C.m:** Encourage eligible claimants to maximize the use of Federal and State funds for public transportation purposes.

  - **Implementation Program 4.C.n:** Encourage the Tuolumne County Transit Agency to provide flexible and reliable demand-responsive services to paratransit patrons by striving to eliminate dial-a-ride trip turn downs and limiting subscription dial-a-ride to 50% of hourly capacity.

- **Policy 4.C.4:** Encourage effective marketing of all existing transportation services in Tuolumne County to improve awareness of existing services.

  - **Implementation Program 4.C.o:** Encourage the Tuolumne County Transit Agency to adopt a marketing plan that provides user friendly route schedules and service brochures, cultivates media contacts and makes special efforts to promote service to target markets.

  - **Implementation Program 4.C.p:** Encourage the Tuolumne County Transit Agency to market the transit trolley service to tourists to reduce daily internal County trips.

  - **Implementation Program 4.C.q:** Support efforts of the Tuolumne County Transportation Council efforts to increase transit ridership through marketing and outreach campaigns.

- **Policy 4.C.5:** Support the development of medium and high-density housing, commercial and offices along transit routes.

  - **Implementation Program 4.C.s:** Encourage the following land use designations in areas served by transit: low density residential land use designations within 3/4 mile of an transit corridor medium density residential designations within 2 ¼ mile of transit corridors.

- **Implementation Program 4.C.t:** Coordinate transit system development with community planning and development efforts by implementing the following land use policies:

  1. Encourage new facilities which may have public transit impacts to locate within ½ mile of high frequency service areas, with pedestrian access to current bus stops.

  2. Require, when appropriate, new large developments, such as urban density subdivisions, multi-family housing complexes, commercial centers or business parks, to provide amenities, such as shelters and benches, for transit users.

  3. Encourage low income/senior/disabled housing projects within ½ mile from existing high frequency service corridors.

- **Policy 4.C.6:** Support street designs that accommodate transit facilities and operations.

  - **Implementation Program 4.C.u:** Support transit shelters that are comfortable, attractive, and accommodate transit riders. Ensure that shelters provide shade, route information, and benches.

- **Policy 4.C.7:** Support the use of public transit during emergency evacuations by coordinating efforts through the Emergency Operations Plan.

- **Policy 4.D.1:** Work with the owners of the Sierra Railroad to apply to the State and Federal Government for funding to rehabilitate Sierra Railroad.

- **Policy 4.D.2:** Support the revival of passenger, excursion and film train operations on the Sierra Railroad to the extent that such operations themselves can be proven cost-effective and do not conflict with freight operations on the Railroad.

- **Policy 4.D.3:** Encourage industrial and recreation land uses along the Sierra Railroad that may increase rail operations and which will not detract from use of the Railroad by the filming industry.

- **Policy 4.D.4:** Designate land within along the Sierra Railroad with rail access for commercial, industrial or business park development on the General Plan land use diagrams and zone the property accordingly to increase the inventory of land zoned for business related development with the option of utilizing rail transportation.

- **Policy 4.D.5:** Support the intermodal linkage of truck on rail as a technique of reducing truck AADT (Annual Average Daily Traffic) on highway corridors.

  - **Implementation Program 4.D.a:** Support State and Federal efforts to levy higher user charges for mitigating truck traffic impacts.

- **Policy 4.D.6:** Encourage the use of rail as the preferred method to move high load tonnage commodities.

- **Policy 4.D.7:** Develop through cooperation with all agencies involved, a railroad system that provides for the convenient and reliable movement of freight and passengers.

- **Policy 4.E.1:** Support the development of the Columbia and Pine Mountain Lake (PML) Airports in accordance with the Tuolumne County Airport Land Use Compatibility Plan and Airport Master Plans.

  - **Implementation Program 4.E.a:** Continue to pursue funds for maintenance and capital improvement projects for both airports.

- **Policy 4.E.2:** Support the continued existence of an Airport Enterprise Fund for each airport, and the dedication of all revenues generated from airport properties for use in funding airport operational and capital improvement costs.
  - **Implementation Program 4.E.b:** Continue to strive to improve the service available at both airports, while becoming financially more self-supporting.
- **Policy 4.E.3:** Assist the Tuolumne County Office of Emergency Services in developing a workable plan which will create a county-wide system of emergency heliports. This will include the specific task of obtaining night lighting for the Bald Mountain, Buck Meadows and Moccasin heliports.
- **Policy 4.E.4:** Support operations at the Columbia and Pine Mountain Lake Airports, and seek funding sources to perpetuate the County Airports Department as a viable resource for aviation in Tuolumne County
  - **Implementation Program 4.E.c:** Support sources of capital improvement funds for the Columbia and PML Airports.
- **Policy 4.E.5:** Encourage enhanced levels of service and aviation opportunities available at the County airports.
  - **Implementation Program 4.E.d:** Maintain an array of air-related service businesses, such as air charter, helicopter, pilot's training, maintenance, search and rescue, air ambulance and other aviation related businesses presently using the airports.
  - **Implementation Program 4.E.e:** Develop presently vacant property at the Columbia Airport with industries or businesses that are aviation-related, aviation-dependent, or otherwise compatible with the future use of the Columbia Airport.
  - **Implementation Program 4.E.f:** Promote the retention of the California Department of Forestry and Fire Protection (CAL FIRE) Air Attack Base at the Columbia Airport by accommodating CAL FIRE operational needs at the airport and working with the local community to influence the State to keep the Air Attack Base at its current location.
  - **Implementation Program 4.E.g:** Support proposals for a public air carrier service whose purpose would be to provide frequent flights to bring Tuolumne County closer, in terms of travel time, to other areas.
- **Policy 4.F.1:** Plan for future airport operations, considering possible expansion of airport operations, services and the proximity of adjacent land uses.
  - **Implementation Program 4.F.a:** Implement and periodically update the Columbia Airport Master Plan in order to update operational and safety procedures, reflect State and Federal mandates, better utilize Airport property and recommend land use compatibility standards for land surrounding the Airport.
  - **Implementation Program 4.F.b:** Implement and periodically update the Pine Mountain Lake Airport Master Plan to guide the development of the Pine Mountain Lake Airport. The master plan should reflect desired operational and safety procedures, State and Federal mandates, and the internal needs of the Airport.
  - **Implementation Program 4.F.c:** Seek funding to allow the Airport Land Use Commission to update the Airport Land Use Compatibility Plan periodically to ensure that land use decisions affecting property in the vicinity of the County airports are consistent with the continued safe operation of the airports.

- **Policy 4.F.2:** Encourage development in the vicinity of County airports that would not cause land use conflicts, hazards to aviation or hazards to the public.
  - **Implementation Program 4.F.d:** Require future County-owned, public-use airport facilities and surrounding land use zones to be master planned prior to operation in order to establish safe operation of the airport.
  - **Implementation Program 4.F.e:** Review General Plan Amendments, Zone Changes, and development applications within the referral area of a County airport for consistency with the Airport Land Use Compatibility Plan in order to continue safe operation of the airports.

PROJECT IMPACTS

This section presents a programmatic-level analysis of potential impacts associated with transportation and circulation from projected development under the General Plan Update. Evaluation of environmental impacts associated with the General Plan Update considers the development that would be facilitated by the General Plan Update, in accordance with goals, policies, and implementation programs, to accommodate projected growth in the County. It should be noted that the County's population is projected to grow by 0.6 percent annually over the planning horizon (2040). As discussed in detail in Chapter 2, "Project Description," and the introduction to Chapter 3, this is a relatively low amount of growth.

Impact 3.16-1: Impacts to Roadway Segment Operations

Projected development under the General Plan Update would generate vehicle trips that would result in LOS deficiencies to roadway segments within the local circulation system based on a threshold of LOS D. The fiscally constrained roadway improvements planned in the 2016 RTP (Tier 1a, 1b, and 1c) are intended to address projected deficiencies for roadway segments within the County. However, after the identified improvements are implemented, fifteen roadways segments could still operate at deficient LOS. Impacts are **potentially significant.**

Projected development under the General Plan Update would increase traffic on the Tuolumne County roadway system. Impacts to roadway capacities resulting from projected development under the General Plan Update are discussed below. Table 3.16-6 presents the Year 2030 and Year 2040 roadway average ADT and LOS for the key roadway segments in Tuolumne County that would have LOS conditions of either E or F, which would not meet the "Acceptable" standard of LOS D or better. Tier 1a, Tier 1b, and Tier 1c projects in the 2016 RTP and FCEP-CIP include improvements that would be implemented in three stages. The first stage would include all Tier 1a FCEP-CIP projects that are planned to begin construction in the next six years. Tier 1b FCEP-CIP projects would be constructed in the next six to fifteen years by 2030 and Tier 1c FCEP-CIP projects are planned for construction in the next sixteen to 25 years by the year 2040. Improvements, including widening road segments and/or planned intersection modifications would aid in the reduction of congestion on the majority of roadways in Tuolumne County. Programmed improvements include the widening of SR 108 and the construction of the planned Greenley Road Extension, and a list of all roadway segment improvements for year 2030 and year 2040 are included in Appendix D of this EIR.

There are seven roadway segments currently operating at unacceptable LOS, below LOS D, as shown in Table 3.16-3: SR 49 between Bell Mooney Road and South Junction Main Street, SR 49 between Fifth Avenue and East Junction SR 108 (East of Golf Links Road), SR 49 between Washington Street and Dodge Street, SR 49 north of Dodge Street to Columbia Way, SR 49 south of North Washington Street/Columbia Way, Mono Way west of the western terminus of Sanguinetti Road, and South Washington Street between Restano Way and Church Street. Accounting for the programmed improvements, projected development under the General Plan Update would cause an additional eight roadway segments to operate at an unacceptable LOS standard below LOS D. The following roadway segments would not meet the minimum LOS D with the projected development under the General Plan Update and the associated roadway improvements:

- Roadway 3 - SR 108 between O'Byrnes Ferry Road and SR 120 (Yosemite Junction)
- Roadway 4 - SR 108 between SR 120 (Yosemite Junction) and SR 49 (Montezuma Junction)
- Roadway 5 - SR 108 between SR 49 (Stockton Road) and S. Washington Street/Lime Kiln Road
- Roadway 23 - SR 49 between SR 49 (Montezuma Junction) and Bell Mooney Road
- Roadway 24 - SR 49 between Bell Mooney Road and South Junction Main Street
- Roadway 27 - SR 49 between Fifth Avenue and Stockton Road/SR 108
- Roadway 31 - SR 49 between Stockton Road and Dodge Street
- Roadway 32 - SR 49 north of Dodge Street
- Roadway 33 - SR 49 south of N. Washington Street/Columbia Way
- Roadway 34 - SR 49 north of N. Washington Street/Columbia Way
- Roadway 35 - SR 49 east of Parrotts Ferry Road
- Roadway 52 - Mono Way west of Sanguinetti Road
- Roadway 69 - Greenley Road between Cabezut Road/Morning Star Road and Delnero Drive
- Roadway 77 - Tuolumne Road between Mono Way and Lambert Lake Road
- Roadway 116 - S. Washington Street between Restano Way and Church Street

Table 3.16-6 Roadway Segments with an Unacceptable LOS with Projected Development Under the General Plan Update

No.	Roadway/Highway Segment	LOS Type# (2030/2040)	ADT 2030	LOS* 2030	ADT 2040	LOS* 2040	Acceptable
3	SR 108 b/w O'Byrnes Ferry Rd and SR 120 (Yosemite Junction)	4/12	20,764	E	22,306	E	NO
4	SR 108 b/w SR 120 (Yosemite Junction) and SR 49 (Montezuma Junction)	4/12	19,863	E	21,166	E	NO
5	SR 108 b/w SR 49 (Stockton Rd) and S Washington St/Lime Kiln Rd	4/12	21,736	E	22,966	E	NO
23	SR 49 b/w SR 49 (Montezuma Jct) and Bell Mooney Rd	4/12	21,104	E	23,275	E	NO
24	SR 49 b/w Bell Mooney Rd and South Jct Main St	210	21,800	E	24,086	E	NO
27	SR 49 b/w Fifth Ave and Stockton Rd/SR108	210	25,196	E	29,879	E	NO
31	SR 49 b/w Stockton Rd and Dodge St	211	17,414	E	17,924	E	NO
32	SR 49 n/o Dodge St	211	20,283	E	15,929	D	No in 2030
33	SR 49 s/o N Washington St / Columbia Way	211	17,110	E	12,611	D	No in 2030
34	SR 49 n/o N Washington St / Columbia Way	211	16,133	E	12,551	D	No in 2030
35	SR 49 e/o Parrotts Ferry Rd (Columbia WYE)	211	14,027	D	17,021	E	No in 2040
52	Mono Way w/o Sanguinetti Rd	210	22,167	E	22,058	E	NO
69	Greenley Rd b/w Cabezut Rd/ Morning Star Rd and Delnero Dr	212	11,922	D	15,939	E	No in 2040
77	Tuolumne Rd b/w Mono Way and Lambert Lake Rd	212	15,689	D	16,235	E	No in 2040
116	S Washington St b/w Restano Way & Church St	212	17,700	E	17,706	E	NO

Source: Wood Rogers 2016. See Appendix D of this EIR for the full Traffic Study.

Scheduled improvements would not improve LOS to acceptable levels for any of the fifteen roadway segments, listed in Table 3.16-6, that are not projected to meet LOS standards with implementation of the proposed General Plan Update in 2030 and 2040.

Implementation Program 4.A.c establishes priorities based on available funding for road improvement projects and sets criteria for incorporating road improvement projects into the County Road Improvement Program.

The inclusion of Policy 4.A.5 in the General Plan Update would require the consideration of the traffic impacts resulting from development in relation to General Plan growth policies and require new development to provide mitigation for its fair share of impacts to the County's transportation system. Additionally, it would require the assessment of the needs of street and road users regularly through the land development application review process. Implementation Program 4.A.q would require the evaluation of the impacts of new development on the County's transportation system and require such development to provide mitigation for its fair share of the impact. New development that is determined by the County to create or exacerbate an identified deficiency in the transportation system will not be approved if a plan and funding program to provide needed roadway improvements have not been approved or if the mitigation provided by the development will not correct the deficiency or if it will create an additional burden on County transportation funds. Implementation Program 4.A.q also provides that it shall not apply to new development for which the County makes a finding of overriding considerations for traffic impacts related to the new development in accordance with the California Environmental Quality Act.

Thus, it is the intent of the County to mitigate the fair-share of impacts to roadway segment operating conditions caused by planned development in the General Plan Update. However, if the necessary improvements are needed along facilities for which the County does not have full jurisdictional control (i.e., Caltrans and City of Sonora roadway facilities), it cannot be assured that improvement will be approved and constructed.

Additionally, due to funding constraints and uncertainty of the timing of implementation of improvements, it cannot be assured that the roadway improvements for which development under the General Plan Update would pay its fair share, would be constructed within the necessary time frame (or at all) to improve operating condition along roadway segments to acceptable levels.

Therefore, because fifteen roadway segments would not meet the LOS D threshold for roadway operations, and because the fair share payments of development under the General Plan Update would not ensure the improvements necessary to improve operating conditions along roadway segment to acceptable levels would be implemented, impacts would be **potentially significant**.

Mitigation Measures

Mitigation Measure 3.16-1: Roadway Improvements

As part of its update of the Tuolumne County Countywide Traffic Circulation Improvement Program, the County shall evaluate the following improvements for inclusion in the Program, thus allowing for funding through the Tuolumne County Traffic Impact Mitigation Fee program. The improvements shall be incorporated into the Program if they are considered feasible and consistent with General Plan policies. If further analysis demonstrates that an alternative improvement would be adequate to achieve the target LOS, that alternative improvement shall be incorporated into the Program if feasible and consistent with General Plan policies.

Roadway 3, Roadway 4, Roadway 5, and Roadway 23 – Widen the Segments to Four Lanes

Widen the following segments to four lane expressways, consistent with FCEP-CIP Tier 3 projects, to improve conditions to LOS A in 2030 and 2040:

- Roadway 3 - SR 108 between O'Byrnes Ferry Road and SR 120 (Yosemite Junction)
- Roadway 4 - SR 108 between SR 120 (Yosemite Junction) and SR 49 (Montezuma Junction)
- Roadway 5 - SR 108 between SR 49 (Stockton Road) and S. Washington Street/Lime Kiln Road
- Roadway 23 - SR 49 between SR 49 (Montezuma Junction) and Bell Mooney Road

Roadway 24 and Roadway 27 – Widen the Segment to Five Lanes

Widen the following segments to five lanes, consistent with FCEP-CIP Tier 2 projects, to improve conditions to LOS C in 2030 and 2040:

- Roadway 24 - SR 49 between Bell Mooney Road and South Junction Main Street
- Roadway 27 - SR 49 between Fifth Avenue and Stockton Road/SR 108

Roadway 32, Roadway 33, and Roadway 34 - Construct the North-South Connector Phase 1

Construct the North-South Connector Phase 1 Greenley Road Extension to SR 49, consistent with FCEP-CIP Tier 2, by year 2030 to improve operating conditions along the following roadway segments:

- Roadway 32 - SR 49 north of Dodge Street,
- Roadway 33 - SR 49 south of N. Washington Street/Columbia Way
- Roadway 34 - SR 49 north of N. Washington Street/Columbia Way

If the aforementioned roadway improvement is deemed infeasible, or if further analysis demonstrates it will not result in acceptable operating conditions along the applicable roadway segment, the following improvements shall be incorporated:

- Construct the Western Bypass that would extend from SR 108/49 (south of Jamestown) to Rawhide Road. The Western Bypass is projected to further divert and reduce traffic on this segment of SR 49.

- Improve alternative modes of transportation along Roadways 32, 33, and 34, such as transit service or bicycle and pedestrian infrastructure.

Roadway 35 – Construct Left Turn Lane

Construct a continuous two-way-left-turn median lane to improve conditions to an acceptable LOS D in the year 2040 to improve operating conditions along Roadway 35 - SR 49 east of Parrots Ferry Road (Pedro Wye)

If the aforementioned roadway improvement is deemed infeasible, or if further analysis demonstrates it will not result in acceptable operating conditions along the applicable roadway segment, the following improvements shall be incorporated:

- Widen the segment to five lanes to improve conditions to LOS A in the year 2040.

- Improve alternative modes of transportation along this roadway segment, such as transit or bicycle and pedestrian infrastructure.

Roadway 52 and Roadway 116 - Construct the North-South Connector Phase 2

Construct the North-South Connector Phase 2, consistent with FCEP-CIP's Tier 2 and Tier 3, that would extend Fir Drive from Mono Way to the Greenley Road Extension, which may reduce traffic on the following segments:

- Roadway 52 - Mono Way west of Sanguinetti Road
- Roadway 116 - S. Washington Street between Restano Way and Church Street

If the aforementioned roadway improvement is deemed infeasible, or if further analysis demonstrates it will not result in acceptable operating conditions along the applicable roadway segment, the following improvement shall be incorporated:

- Improve alternative modes of transportation along Roadways 52 and 116, such as transit service, bicycle and pedestrian infrastructure.

Roadway 77 - Widen the Segment to Five Lanes

Widen to five lanes Roadway 77 - Tuolumne Road from Mono Way to Lambert Lake Road to improve conditions to an acceptable LOS D in the year 2040.

If the aforementioned roadway improvement is deemed infeasible, or if further analysis demonstrates it will not result in acceptable operating conditions along the applicable roadway segment, the following improvement shall be incorporated:

- Improve alternative modes of transportation along this roadway segment, such as transit service or bicycle and pedestrian infrastructure.

Roadway 31 - Construct the North-South Connector Phase 2

Consistent with the FCEP-CIP's Tier 2 and Tier 3, construct the North-South Connector Phase 2 from Fir Drive Extension to SR 108, by the year 2040.

If the aforementioned roadway improvement is deemed infeasible, or if further analysis demonstrates that it will not result in acceptable operating conditions along the applicable roadway segment, the following improvements shall be incorporated:

- Construct the Western Bypass that would extend from SR 108/49 (south of Jamestown) to Rawhide Road. The Western Bypass is projected to further divert and reduce traffic on this segment of SR 49, or

- Improve alternative modes of transportation along Roadway 31, such as transit service or bicycle and pedestrian infrastructure.

Roadway 69 – Construct the North-South Connector Phase 2

Consistent with the FCEP-CIP's Tier 2 and Tier 3, construct the North-South Connector Phase 2 from Fir Drive Extension to SR 108, to improve conditions to an acceptable LOS by the year 2040 on Roadway 69 - Greenley Road between Cabezut Road/Morning Star Road and Delnero Drive.

If the aforementioned roadway improvement is deemed infeasible, or if further analysis demonstrates it will not result in acceptable operating conditions along the applicable roadway segment, the following improvement shall be incorporated:

- Construct the Cabezut Road Extension from the Fir Drive Road Extension to Phoenix Lake Road, to further divert and reduce traffic on this segment of Greenley Road.

Significance after Mitigation

The following roadways segments would operate at acceptable LOS in years 2030 and 2040 with the implementation of the associated mitigation measure:

- Roadway 3 - SR 108 between O'Byrnes Ferry Road and SR 120 (Yosemite Junction)
- Roadway 4 - SR 108 between SR 120 (Yosemite Junction) and SR 49 (Montezuma Junction)
- Roadway 5 - SR 108 between SR 49 (Stockton Road) and S. Washington Street/Lime Kiln Road
- Roadway 23 - SR 49 between SR 49 (Montezuma Junction) and Bell Mooney Road
- Roadway 24 - SR 49 between Bell Mooney Road and South Junction Main Street
- Roadway 27 - SR 49 between Fifth Avenue and Stockton Road/SR 108
- Roadway 32 - SR 49 north of Dodge Street
- Roadway 33 - SR 49 south of N. Washington Street/Columbia Way
- Roadway 34 - SR 49 north of N. Washington Street/Columbia Way
- Roadway 35 - SR 49 east of Parrotts Ferry Road
- Roadway 69 - Greenley Road between Cabezut Road/Morning Star Road and Delnero Drive
- Roadway 77 - Tuolumne Road between Mono Way and Lambert Lake Road

However, these improvements may not be feasible due to physical constraints, financial reasons, or jurisdictional control (as these roadways segments and improvements may be outside of the County's direct control and subject to City of Sonora or Caltrans approval and implementation). Furthermore, as part of its analysis prior to including these improvements in the Tuolumne County Countywide Traffic Circulation Improvement Program, the County may determine that the improvements are not desirable in terms of County policies, including those in the General Plan Update. In addition, these mitigation measures may have secondary environmental impacts (growth-inducing impacts, construction impacts related to air quality, noise, temporary closure of roads or pedestrian routes, biological and cultural resources). The environmental impacts associated with these measures is included in the overall program-level analysis of this Recirculated Draft EIR. However, project-specific environmental review would be required pursuant to CEQA for each of these improvements.

Additionally, the following roadway segments would continue to operate at deficient LOS in years 2030 and 2040 after implementation of the associated mitigation measures:

- Roadway 31 - SR 49 between Stockton Road and Dodge Street
- Roadway 52 - Mono Way west of Sanguinetti Road
- Roadway 116 - S. Washington Street between Restano Way and Church Street

Therefore, operational impacts of projected development under the General Plan Update to these roadway segments would be **significant and unavoidable**.

Impact 3.16-2: Impacts to Intersection Operations

Projected development under the General Plan Update would increase traffic volumes at intersections throughout Tuolumne County. Intersection improvements planned in the 2016 RTP are intended to address projected deficiencies intersections within the County. The fiscally constrained roadway improvements planned in the 2016 RTP (Tier 1a, 1b, and 1c) are intended to address projected deficiencies at intersections within the County. However, after the identified improvements are implemented, three intersections could still operate at deficient LOS. Impacts are **potentially significant.**

Projected development under the General Plan Update would contribute to congestion at intersections throughout Tuolumne County. Tier 1a, Tier 1b, and Tier 1c projects in the 2016 RTP and FCEP-CIP include improvements that would be implemented in three stages. The first stage would include all Tier 1a FCEP-CIP projects that are planned to begin construction in the next 6 years. Tier 1b FCEP-CIP projects would be constructed in the next 6 to 15 years by 2030 and Tier 1c FCEP-CIP projects are planned for construction in the next 16 to 25 years by the year 2040.

Improvements, including planned intersection modifications would improve operations at intersections in Tuolumne County. Planned intersection improvements are anticipated to occur through 2040. These improvements would improve the LOS of all but three intersections to acceptable levels by 2030, and improve LOS at all but two intersections to acceptable levels by 2040. See Table 3.16-7 for Peak Hour Delay(s) and LOS for those intersections that would not operate at acceptable LOS in 2030 or 2040. See Appendix D of this EIR for the full Traffic Study.

Table 3.16-7 Intersections with Unacceptable Levels of Service (2030/2040) with Projected Development Under the General Plan Update

No.	Intersection Name	2030 AM Peak Hour		2030 PM Peak Hour		2040 AM Peak Hour		2040 PM Peak Hour		Acceptable?
		Delay(s)	LOS	Delay(s)	LOS	Delay(s)	LOS	Delay(s)	LOS	
11	SR 49-SR 108/SR 108 and SR 49 (Stockton Rd)	43.3	**E**	93.5	**F**	14.7	B	18.5	C	**No in 2030**
23	S Washington St/SR 49 (S Washington St) and SR 49 (Stockton Road)	68.6	**E**	62.5	**E**	55.6	**E**	58.1	**E**	**No in 2030 and 2040**
24	S Washington St and Church St	34.8	D	54.7	**F**	26.3	D	36.1	**E**	**No in 2030 and 2040**

Source: Wood Rogers 2016. See Appendix D of this EIR for the full Traffic Study.

As shown in Table 3.16-7, the intersections of SR 49-SR 108/SR 108 and SR 49 (Stockton Road); and S. Washington Street/SR 49 (S. Washington Street) and SR 49 (Stockton Road) are projected to operate at unacceptable LOS in 2030 during both the a.m. peak hour and p.m. peak hour. The intersection of S. Washington Street and Church Street is projected to operate below LOS D in 2030 during the PM peak hour. Geometric improvements at SR 108 and SR 49 Stockton Road intersection are included on the 2016 RTP's list of long-range capital improvement projects as a Tier 1c project. However, these improvements are not expected to be completed until the year 2040.

In 2040, the intersection of S. Washington Street/SR 49 (S. Washington Street) and SR 49 (Stockton Road) are projected to operate at unacceptable LOS during both the a.m. peak hour and p.m. peak hour; and the intersection of S. Washington Street and Church Street is projected to operate below LOS D in 2040 during the PM peak hour.

Implementation Program 4.A.c establishes priorities based on available funding for road improvement projects and sets the criteria for incorporating road improvement projects into the County Road Improvement Program.

The inclusion of Policy 4.A.5 in the General Plan Update would require the consideration of the traffic impacts resulting from development in relation to General Plan growth policies. This policy would require new development to provide mitigation for its fair share of impacts to the County's transportation system, and the assessment of the needs of street and road users regularly through the land development application review process. Implementation Program 4.A.q would require the evaluation of the impacts of new development on the County's transportation system and require such development to provide mitigation for its fair share of the impact. New development that is determined by the County to create or exacerbate an identified deficiency in the transportation system will not be approved if a plan and funding program to provide needed roadway improvements have not been approved or if the mitigation provided by the development will not correct the deficiency or if it will create an additional burden on County transportation funds.

Thus, it is the intent of the County to require development to pay its fair-share for impacts to intersection operating conditions caused by planned development in the General Plan Update. However, if the necessary improvements are needed for facilities that the County does not have full jurisdictional control (i.e., Caltrans and City of Sonora intersections), it cannot be assured that improvements will be approved and constructed.

Additionally, due to funding constraints and uncertainty of the timing of implementation of improvements, it cannot be assured that the intersection improvements for which development under the General Plan Update would pay their fair share of, would be constructed within the necessary time frame to improve operating conditions at intersections to acceptable levels.

Therefore, because the three intersections identified in Table 3.16-7 would not meet the LOS D threshold for intersection operations, and because the fair share payments of development under the General Plan Update would not ensure the improvements necessary to improve operating conditions at these intersections to acceptable levels would be implemented, impacts would be **potentially significant**.

Mitigation Measures

Mitigation Measure 3.16-2: Intersection Improvements

As part of its update of the Tuolumne County Countywide Traffic Circulation Improvement Program, the County shall evaluate the following improvements for inclusion in the Program, thus allowing for funding through the Tuolumne County Traffic Impact Mitigation Fee program. The improvements shall be incorporated into the Program if they are considered feasible and consistent with General Plan policies. If further analysis demonstrates that an alternative improvement would be adequate to achieve the target LOS, that alternative improvement shall be incorporated into the Program if feasible and consistent with General Plan policies.

Intersection 11 - Installation of a Traffic Signal or Conversion to a High-T Type Intersection

Improve the intersection of SR 49-SR 108/SR 108 and SR 49 (Stockton Road) by year 2030 to a High-T type intersection or install a traffic signal at the intersection.

Intersection 23 – Construct a Southbound Right-Turn Pocket

A southbound right-turn pocket shall be constructed at the intersection of S. Washington Street/SR 49 (S. Washington Street) and SR 49 (Stockton Road) to improve conditions to an acceptable LOS in the year 2040, with some movements operating at a LOS F. If this is not feasible due to the existing right-of-way, alternative modes of transportation shall be improved along this roadway segment, such as transit service, bicycle and pedestrian infrastructure.

If the aforementioned roadway improvement is deemed infeasible, or if further analysis demonstrates it will not result in acceptable operating conditions at the applicable intersection, the following improvements shall be incorporated:

- Construct the North-South Connector Phase 2 (Fir Drive Extension), which would extend Fir Drive from Mono Way to the Greenley Road Extension, intersecting with Cabezut Road and Lyons Bald Mountain Road in between, may reduce traffic on this segment of SR 49 by up to 5%.
- Construct the Western Bypass that would extend from SR 108/49 (south of Jamestown) to Rawhide Road. The Western Bypass is projected to divert traffic away from downtown Sonora and may reduce traffic at this intersection.
- Improve alternative modes of transportation along this roadway segment, such as transit service, bicycle and pedestrian infrastructure.

Intersection 24 – Installation of a Traffic Signal and Restricting Right-Turn Movements

A traffic signal shall be installed at the intersection of South Washington Street and Church Street. If this is not feasible due to the proximity of another signalized intersection, then the westbound Church Street approach shall be converted to right-turn-only during peak hours. The eastbound approach is currently restricted to right-turn-only during peak hours.

Significance after Mitigation

With implementation of Mitigation Measure 3.16-2, SR 49-SR 108/SR 108 and SR 49 (Stockton Road) (Intersection 11) would be improved to LOS C in the years 2030 and 2040. South Washington Street and Church Street (Intersection 24) would be improved to LOS A or LOS C in the years 2030 and 2040, depending on which feasible improvement is implemented. In addition, with implementation of Mitigation Measure 3.16-2, the intersection South Washington Street/SR 49 (South Washington Street) and SR 49

(Stockton Road) (Intersection 23) would continue to operate at an unacceptable LOS in the years of 2030 and 2040.

However, this mitigation measure may not be possible due to physical constraints, financial reasons, or jurisdictional control (as these intersections and improvements may be outside of the County's direct control and subject to either City of Sonora or Caltrans approval and implementation). In addition, this mitigation measure may have secondary environmental impacts (construction impacts related to air quality, noise, temporary closure of roads or pedestrian routes). The environmental impacts associated with this measure are included in the overall program-level analysis of this Recirculated Draft EIR. However, project-specific environmental review would be required pursuant to CEQA for each of these improvements.

Therefore, impacts of projected development under the General Plan Update to intersection operations would be **significant and unavoidable**.

Impact 3.16-3: Hazards Due to a Design Feature or Incompatible Uses, including Agritourism Uses

The implementation of General Plan Update policies relating to traffic calming and enhancing bicycle and pedestrian facilities would help improve safety of the overall circulation network within Tuolumne County. Additionally, any future circulation improvements associated with projected development under the General Plan Update would be subject to all applicable County and Caltrans design and safety standards. Additionally, the General Plan Update contains policies related to the compatibility of future development with existing airport land use compatibility and master plans; thus, ensuring incompatible uses in the vicinity of the existing airports would not occur. However, agritourism-related special events that would be allowed under the proposed text changes to the County Ordinance Code could result in temporary traffic hazards. This would be considered a **potentially significant** impact.

The General Plan Update is intended to encourage growth in and near the identified communities, such as the communities of Jamestown, Columbia, East Sonora, and Tuolumne, ultimately increasing density and improving circulation and multimodal connections. These communities are generally located along a select number of arterials, major collectors, and transit corridors including SR 49 and SR 108. The General Plan Update is encourages the decrease in auto dependency and increase in pedestrian, bicycle, and transit activity. This increases the potential hazards for pedestrians and bicyclists in the County. However, the General Plan Update includes a range of policies and implementation programs that are specifically intended to increase pedestrian and bicyclist safety and walkability throughout the County. These policies include Policy 4.B.1 which strives to incorporate alternative transportation modes into system design; and Policy 4.B.2 and Policy 4.B.3 which focus on expanding and improving safety, connectivity and accessibility of pedestrian and bicycle facilities, respectively. Additionally, Policy 4.B.4 incorporates public transit, bicycle and pedestrian modes in County transportation planning and requires new development to provide adequate pedestrian and bikeway facilities at suitable locations.

In addition to the impact of the General Plan Update on design, connectivity, and safety of bicycle, pedestrian, and transit discussed above, all future roadway improvements associated with projected development under the General Plan Update would be constructed in accordance with applicable County and Caltrans design and safety standards. Additionally, the General Plan Update includes a range of policies and implementation programs that are specifically intended to increase safety on streets and highways throughout the County. These policies include Policy 4.A.1 which would direct the Community Resources Agency, in conjunction with Caltrans, to regularly conduct assessments of the current status of the highway system to determine the current level of needs in the system, and report those needs to the Board of Supervisors. Under this policy, Implementation Program 4.A.d would prioritize safety related road improvement projects needed on streets and highways which experience an unusual number of motor vehicle traffic accidents, design necessary improvements and implement necessary improvements in a timely manner to the greatest extent possible. Policy 4.A.2 of the General Plan Update emphasizes that dedication, improvement, and construction of roadways be done so according to design and access

standards, specifically, those in the General Plan Update, County Ordinance Code, and the Countywide Traffic Circulation Improvement Program.

Policy 4.E.1 supports the development of the Columbia and Pine Mountain Lake (PML) Airports in accordance with the Tuolumne County Airport Land Use Compatibility Plan and Airport Master Plans; thus, protecting airports from incompatible features. Policy 4.F.1 plans for future airport operations, considering possible expansion of airport operations, services and the proximity of adjacent land uses. Implementation Program 4.F.a ensures that the Columbia Airport Master Plan will be implemented and periodically updated in order to update operational and safety procedures, reflect State and Federal mandates, better utilize Airport property and recommend land use compatibility standards for land surrounding the Airport.

It is possible that the proposed policy and code changes to facilitate increased agritourism could result in increased visitation in the vicinity of a specific agritourism use. This could result in increased levels of traffic. Traffic generated by agritourism-related events would be expected to primarily occur outside weekday peak traffic hours and therefore it is not anticipated that it will substantially affect the local transportation facilities' peak hour levels of service. Therefore, typical increases in traffic associated with these agritourism venues would be minor and would generally be consistent with the overall projected traffic operations of the County. Additionally, agencies with the responsibility for roadway design and operation, including Tuolumne County; the City of Sonora; and Caltrans, all have adopted roadway design standards that must be adhered to. These standards address a variety of roadway elements, including safety and hazards. Therefore, existing transportation infrastructure used to access potential agritourism venues would have been constructed in compliance with all applicable design standards detailed above. However, proposed Ordinance Code changes allow for a limited number of special events per year on agricultural property. The maximum number of attendees at such events would be 500 (limited to twice per year). Although these events would also typically occur outside of weekday peak hours, larger events could result in heavier traffic volume on local (often rural) roadways where access may be limited, and the roads may not be designed to accommodate such bursts of heavy traffic. This could result in a traffic hazard and is considered a **potentially significant** impact.

Mitigation Measures

Mitigation Measure 3.16-3: Revise proposed Title 17 text to require traffic mitigation plans.

The proposed text changes to Title 17 of the Ordinance Code shall be revised as follows:

17.52.220 Commercial events on agricultural land

Commercial events are the use of land and/or facilities for meetings, gatherings and events, including, but not limited to, weddings, parties and similar uses, for which a fee is charged.

A. An annual ministerial permit may be acquired from the County to allow ~~U~~up to 40 commercial events ~~may~~ to be held per calendar year for up to 300 guests on a parcel zoned AE-37, AE-80 or AE-160 subject to the standards in paragraph C.

B. An annual ministerial permit may be acquired from the County to allow ~~U~~up to two commercial events ~~may~~ to be held per calendar year for up to 500 guests on a parcel zoned AE-37, AE-80 or AE-160 subject to the standards in paragraph C.

C. Standards for commercial events:

   1. The event venue shall be located on a parcel that complies with the cul-de-sac road standards specified in Section 11.12.040 of this code.

   2. The event venue, excluding parking areas, shall be located at least 200 feet from the boundary of the nearest parcel zoned R or RE.

3. The event parking areas shall be located at least 20 feet from the boundary of any parcel zoned R or RE.

4. Prior to issuance of the annual special event permit, a traffic management plan (TMP) shall be submitted and approved by the Community Resources Agency for events exceeding 100 guests. The TMP shall be prepared by a qualified transportation engineer/consultant and shall include appropriate techniques to provide safe ingress and egress from event facilities without resulting in substantial congestion of roadways, or otherwise cause traffic-related hazards. Such techniques may include (but may not be limited to):

   - Temporary caution and directional signage;
   - Clearly defined points of ingress/egress;
   - Cones or other clear markers placed to help direct vehicle flow define parking areas and driveways; and
   - Flag persons to help direct vehicle flow and minimize congestion.

   [subsequent items to be renumbered]

Significance after Mitigation

With implementation of Mitigation Measure 3.16-3, potential traffic hazards associated with agritourism-related commercial events would be minimized by requiring a traffic management plan to be submitted and approved by the County for large special events on agricultural property. The plan would be prepared by a transportation professional and would include techniques to reduce potential traffic hazards. This would reduce the impact to a **less-than-significant** level.

Impact 3.16-4: Impacts to Alternative Transportation

Implementation of the General Plan Update and the associated circulation improvements and policies is expected to improve the availability of, and access to bicycle and pedestrian facilities. Additionally, while the County's population would increase as projected development under the General Plan Update occurs, the policies and planned improvements under the General Plan Update would improve transit options within Tuolumne County, including efficiency and capacity of the transit system. Therefore, impacts related to alternative transportation would be **less than significant**.

Projected development under the General Plan Update through 2040 would result in a net increase of 5,159 dwelling units, 938,000 square feet of commercial development, and 196,000 square feet of industrial development above existing conditions (year 2015). It is estimated that the population within Tuolumne County will increase by 8,906 to a population of 63,243 residents in the year 2040. The General Plan Update does not drive growth to that level; rather it prepares the County to accommodate the level of growth that is already projected. The General Plan Update is intended to encourage growth in and near the identified communities, such as the communities of Jamestown, Columbia, East Sonora, and Tuolumne, ultimately increasing density and improving circulation and multimodal connections. The Transportation Element of the General Plan Update emphasizes the creation of a coordinated transportation and pedestrian system supported by the policies and implementation programs contained within the General Plan Update. Additionally, the *Tuolumne County Bikeways and Trails Plan* has prioritized bicycle and trail projects based on the perceived needs of the County. The General Plan Update provides policies and implementation programs that include, but are not limited to, developing routes to schools (Implementation Program 4.B.v), linking bicycle and pedestrian facilities (Implementation Program 4.B.r and Policy 4.B.5), improving pedestrian safety (Implementation Program 4.B.g and Policy 4.B.3), and balancing multimodal transportation in roadway improvements(Implementation Program 4.A.f). Additionally, the General Plan Update includes a range of policies that aim to enhance alternative transportation in Tuolumne County. These policies include,

but are not limited to, Policy 4.B.1 which would incorporate alternative transportation modes into system design; Policy 4.B.2 and Policy 4.B.3 which would expand and improve connectivity and accessibility of pedestrian and bicycle facilities, respectively; and Policy 4.B.4 which would incorporate public transit, bicycle and pedestrian modes in County transportation planning and require new development to provide adequate pedestrian and bikeway facilities at suitable locations.

The General Plan Update land use diagram, its policies and implementation programs, and the five community plans would promote development in the identified communities to take advantage of existing public infrastructure and services. Compact neighborhoods would reduce auto dependency and the need for new roads, and transportation options would be increased. The General Plan Update plans for each identified community in Tuolumne County to contain a well-defined, cohesive, and compact community. Infill and mixed-use aspects of the General Plan Update support alternative transportation due to residences, employment centers, and services being closer together.

Implementation of the circulation improvements and policies included in the General Plan Update is expected to address the availability of sidewalks, bike paths, and transit over time. By making these transportation alternatives more attractive, General Plan Update is expected to foster a gradual increase of alternative transportation use. While the County's population would increase throughout the 2040 planning horizon, the General Plan Update would improve alternative transit options within Tuolumne County, including efficiency and capacity of the transit system.

Because overall population growth is projected to be minor (0.6 percent) through 2040, substantial additional demand would not be placed on existing alternative transportation facilities or operations. In addition, the policies and implementation programs included in the General Plan Update are intended to improve alternative transportation facilities and operations; therefore, impacts related to alternative transportation would be **less than significant**.

Mitigation Measures

No mitigation is required.

Impact 3.16-5: Impacts to Emergency Access

Projected development under the General Plan Update would be subject to review by the County and responsible emergency service agencies; thus, ensuring any future development under the General Plan Update would be designed to meet all County emergency access and design standards. Therefore, adequate emergency access would be provided and impacts to emergency access would be **less than significant**.

Projected development under the General Plan Update would be subject to applicable County standards and fire department standards, which require emergency access provisions. Additionally, any development would be subject to the Tuolumne County Ordinance Code Chapter 15.20, *Fire Safety Standards*, and Chapter 11.12, *Basic Road Design and Construction Standards*. Compliance with existing requirements would ensure that adequate emergency access would be provided for by all projected development under the General Plan Update. Additionally, policies in the General Plan Update would further improve emergency access. These policies include, but are not limited to, Policy 4.C.7 which would support the use of public transit during emergency evacuations by coordinating efforts through the Emergency Operations Plan; Policy 4.E.3 which would emphasize support of the Tuolumne County Office of Emergency Services in developing a workable plan which will create a County-wide system of emergency heliports; and the specific Implementation Program 4.A.o which encourages cooperation between the TCTC, the Tuolumne County Fire Department and the Tuolumne County Sheriff's Office regarding transportation issues, and requiring Fire Department and Sheriff's Office comments regarding emergency response corridors, evacuation routes and needed improvements, such as helispots, to be considered when revising the list of Circulation Improvement Projects. Additionally, Implementation Program 4.A.c states that roadway improvement projects in the County Road Improvement Program would need to demonstrate that capacity and travel speed would be improved with the project, particularly on roads carrying through traffic, and including, but not limited to,

interchange improvements, additional road lanes and/or widths, turn lanes, signalization and bridge improvements that help fire, police and other emergency services achieve acceptable response times.

Because development under the General Plan Update would be subject to applicable County standards for emergency access, and because the General Plan Update includes policies and implementation programs to facilitate appropriate emergency access and response, impacts related to emergency access as a result of projected development under the General Plan Update would be **less than significant**.

Mitigation Measures

No mitigation is required.

3.17 UTILITIES AND SERVICE SYSTEMS

This section evaluates potential impacts of projected development under the General Plan Update to water supply, wastewater service, and solid waste service. Section 3.10, "Hydrology and Water Quality," addresses potential impacts of projected development under the General Plan Update related to storm water runoff, flooding, and surface water quality.

Comments received on the Draft EIR include concerns related to the availability and supply of water, the capacity for sewer service to development, zoning compatibility with utilities, and the general effects of development on existing infrastructure. In addition, the Tuolumne Utilities District and the San Francisco Public Utilities Commission (SFPUC) provided suggested edits to the information presented in the Draft EIR. Responses to comments and additional information have been incorporated into the following discussion, as applicable.

3.17.1 Environmental Setting

WATER SUPPLY

Development in Tuolumne County receives water primarily from public utilities such as Tuolumne Utilities District (TUD) and Groveland Community Services District (GCSD), and also from local groundwater. The water supply varies from year to year based on the amount of rain and snowfall in the Sierra Nevada Mountains. The County, along with much of the state, recently experienced a multi-year drought. Inadequate rainfall and snowpack reduced the runoff to the reservoirs supplying most of the water in the County. The reserved pools of water in those systems were not of adequate size to withstand a sustained drought of multiple years without either adding to the supply or rationing the water. On February 4, 2014 the Tuolumne County Board of Supervisors declared a local state of emergency because of drought conditions. This was common throughout California and not unique to Tuolumne County. The Board of Supervisors terminated the local state of emergency on August 1, 2017.

In total, approximately 59,000 residents would be served with water provided by water supply districts in 2040, with the remaining approximately 4,000 residents served by private wells. The data concerning water supply and supply reliability differs from district to district and consistent data is not available. However, in aggregate, the information is generally sufficient to draw important conclusions regarding supply and demand for water during the General Plan Update horizon. This is described below.

Tuolumne Utilities District

The public water system providing service to most residents in Tuolumne County is operated by TUD. Actually, as an assemblage of numerous large and smaller systems under TUD ownership and operation, TUD provides water either directly or indirectly to most of the developed portions of Tuolumne County. TUD currently serves (year 2015) about 30,800 residents. In 2040, TUD anticipates serving about 51,700 residents, which represents about 82 percent of the County's total projected population of 63,243 residents, including the City of Sonora (TUD 2016a. TUD's service area occupies approximately the northerly two-thirds of Tuolumne County bounded on the west by the North Fork and Main Stem of the Stanislaus River along the Tuolumne County and Calaveras County boundary, on the north by Alpine County, on the east by Mono County and Yosemite National Park, on the south by the Tuolumne River, and on the southwest by Stanislaus County. This service area does not include the communities of Groveland and Big Oak Flat, which (as described below) receive water from GCSD, or Lake Don Pedro, which receives water from the Lake Don Pedro Community Services District.

TUD maintains a Treated Water System, also referred to as a "water distribution system," which includes TUD's 14 surface water treatment plants, 25 active water wells, and the treated water customer service

meters. The Treated Water System is primarily characterized by residential land use, with some commercial and industrial land uses. The TUD water distribution systems do not follow census tract boundaries, political boundaries, watersheds, or community boundaries. Rather the boundaries of the water distribution systems are irregular and represent those specific geographic areas which are served by one or more TUD municipal water supply treated water sources. TUD operates and maintains 17 separate distribution systems that together form the Treated Water System (TUD 2016a).

Most of TUD's water supply consists of surface water that originates as rainfall and runoff from snowpack in the Sierra Nevada Mountains (TUD 2016a). Snowmelt runs through the South Fork Stanislaus River, filling PG&E's Pinecrest and Lyons reservoirs; while TUD has no independent water rights, it obtains water from these reservoirs (TUD 2016a). The remaining 3 percent of water supply is met with groundwater from 25 wells either as a primary source or a backup source. However, the groundwater supply is limited because of the hard, impermeable bedrock that covers most of Tuolumne County (TUD 2016a). The California Department of Water Resources' Bulletin 118, which provides a detailed description of groundwater basins in California, does not identify any groundwater basins in the County. Table 3.17-1 shows current (2015) and planned water supplies in TUD's service area. Approximately one-third to two-thirds of the treated potable water is produced by TUD's largest treatment plant, in Sonora.

Table 3.17-1 Water Supply in TUD Service Area

Category	2015 Water Supply (AFY)	2040 Water Supply (AFY)
Water from PG&E	24,500	24,500
Groundwater	1,465	1,465
Recycled Water	1,627	2,316
Total	**27,593**	**28,282**

Notes: AFY = acre-feet per year

Sources: TUD 2016a

Table 3.17-2 shows current (2015 for most uses; 2010 for agriculture irrigation) water demand and projected water demand for the year 2040 in TUD's service area. TUD's 2015 Urban Water Management Plan includes a projection for their service area population in 2040 that is different and separate from the projected population used by this EIR. Total demand for treated water in TUD's service area is approximately 3,903 acre-feet per year in 2015 and is projected to reach 8,857 acre-feet per year in 2040, including unaccounted-for system losses and wholesale deliveries (TUD 2016). Overall water demand (including raw water) in TUD's service area is currently 13,212 acre-feet per year and projected to be 21,182 acre-feet per year in 2040. Average treated water use factors for the period from 2000 through 2013 were used in forecasting future demand (water use in recent years [2014–2015] was considered atypical due to mandatory conservation imposed by the Governor's drought emergency declarations).

Table 3.17-2 Water Demand in TUD Service Area

Category	2015 Water Demand (AFY)	2040 Water Demand (AFY)
Treated Water		
Single-family residences	2,116	5,535
Multi-family residences	245	582
Commercial	495	661
Institutional/Governmental	193	607
Landscape	44	106
Industrial	1	4
Subtotal	**3,094**	**7,495**

Table 3.17-2 Water Demand in TUD Service Area

Category	2015 Water Demand (AFY)	2040 Water Demand (AFY)
Additional treated water uses and losses	556	1,048
Wholesale deliveries	253	314
Raw and Recycled Water		
Agriculture irrigation as raw water	2,366[1]	3,484
Agriculture irrigation as recycled water	1,850[1]	2,316
Wholesale deliveries	373	665
Additional raw water uses and losses	4,720	5,861
Total	**13,212**	**21,182**

Notes: AFY = acre-feet per year

1. 2010 demand. 2015 demand not reported by TUD for this use.

Sources: TUD 2016a

TUD's 2015 Urban Water Management Plan (UWMP) summarizes the results of modeling to forecast TUD's surface water availability under a normal hydrologic year, the single driest hydrologic year, and a period of three consecutive dry years. Based on minimum targeted storage levels of 1,200 acre-feet at Lyons Reservoir and 3,500 acre-feet at Pinecrest Lake, TUD estimates the available surface water supply during multiple-dry water years to be 27,549 acre-feet per year (AFY). Even with water demand projected to increase to 21,182 AFY in the year 2040, TUD estimates that the total surface water supply would exceed demand by 6,367 AFY during multiple dry years. Demand is projected to be roughly ¾ of multiple dry-year supply.

Chapter 8 of the 2015 UWMP describes TUD's water shortage contingency plan. As shown in Table 3.17-3, TUD has grouped the actions to be taken during a water shortage into three phases that are based on the water supply conditions. This three-phase rationing plan includes both voluntary and mandatory rationing, depending on the causes, severity, and anticipated durations of the water supply shortage.

Table 3.17-3 Water Supply Shortage Stages and Conditions

Phase No.	Water Shortage Supply Conditions	Shortage Percent
I	Greater than 50% of normal forecasted flow of the Bulletin 120 for the Stanislaus River	0
II	Less than 50% of normal forecasted flow of the Bulletin 120 for the Stanislaus River	15
III	Less than 30% of normal forecasted flow of the Bulletin 120 for the Stanislaus River[1]	30
IV	Emergency – Catastrophic water restriction	50

1. Per Regulation 12, TUD may implement Phase III "whenever it determines that the amount of available water supply may be less than the projected water system demand."

Source: TUD 2016a

Groveland Community Services District

For the southern portion of Tuolumne County, GCSD provides potable water to approximately 3,147 full-time residents in the communities of Groveland, Big Oak Flat, and Pine Mountain Lake, as well as seasonal visitors (GCSD 2016). The water is withdrawn from the Hetch Hetchy Mountain Tunnel, under a long-term contract with SFPUC. GCSD's water supply and distribution system includes three water treatment plants, five storage reservoirs, and approximately 70 miles of distribution piping. GCSD also owns and operates a regional wastewater collection, treatment, and regional recycled water system, which provides sewer service

to 899 connections within GCSD's service area (GCSD 2016). The raw water is treated and distributed to approximately 3,500 customers.

GCSD has a contract service area agreement with SFPUC until 2050. GCSD and SFPUC estimate that sufficient quantities of water will be available from the Hetch Hetchy system to meet projected demands over the next 20 years, assuming a projected growth rate of 0.25 percent per year. The GCSD UWMP assumes a 2040 service population of 3,351. Table 3.17-4 shows that GCSD has adequate supply to meet projected demand in a multiple dry-year scenario through the year 2040. GCSD assumes, conservatively, that surface water supplies from the SFPUC would be reduced by 25 percent during the second and third dry years. To offset reduced surface water supplies and to meet water demands during this period, the SFPUC plans to identify 10 mgd of groundwater, recycled water, and conservation programs to reduce the need for rationing when demand levels increase in the future. This would decrease the amount of conservation required in a drought (GCSD 2016).

Table 3.17-4 Supply and Demand Comparison in GCSD Service Area – Multiple Dry-Year Scenario

		2020	2025	2030	2035	2040
First Year Supply	Supply	118 MGD	119 MGD	120 MGD	121 MGD	122 MGD
	Demand	118 MGD	119 MGD	120 MGD	121 MGD	122 MGD
	Difference	0	0	0	0	0
Second Year Supply	Supply	105 MGD	106 MGD	106 MGD	107 MGD	108 MGD
	Demand	105 MGD	106 MGD	106 MGD	107 MGD	108 MGD
	Difference	0	0	0	0	0
Third Year Supply	Supply	92 MGD	92 MGD	93 MGD	94 MGD	95 MGD
	Demand	92 MGD	92 MGD	93 MGD	94 MGD	95 MGD
	Difference	0	0	0	0	0

Note: This analysis does not reflect water conservation over a multiple dry-year scenario and does not assume any reduction in demand due to conservations (or that supply is reduced due to conservation or rationing). As such, water demand for multiple dry years may be overstated.

Source: GCSD 2015 UWMP (Table 7-4), 2016a; *Assuming a population of 3,351 residents in 2040*

Other Water Suppliers

Two other primary water suppliers in Tuolumne County are the Twain Harte Community Services District (CSD) and the Lake Don Pedro CSD. The Twain Harte CSD, a water supplier for an approximately 3-square-mile area that encompasses the community of Twain Harte, receives water from TUD and groundwater. Twain Harte CSD provides services an approximate population of 2,500 residents in Twain Harte's downtown residential and commercial zones (Twain Harte CSD 2018). Reliability data was not readily available, but given that a portion of the supply originates with the TUD, which does have reliable supply, it can be inferred that the District is well-suited to accommodate its population base in the future.

The Lake Don Pedro CSD encompasses portions of La Grange and Coulterville, and spans the Mariposa and Tuolumne County line. Water is pumped from Lake McClure and blended with ground water before treating it and pumping it into the distribution system, which has over 1,400 service connections (Lake Don Pedro CSD 2018). Note that the CSD reports its service in terms of connections rather than population and it can conservatively be assumed that one connection serves at least one (and likely more) person. The Lake Don Pedro CSD installed three additional wells for Lake McClure to provide emergency water supply during the drought of 2013-2016 when water levels dropped below 560 ASL and these wells were able to supply 100 percent of the needs of the community is serves. The nonemergency water wells consist of two submersible pumps to provide a portion of the needed Lake Don Pedro CSD water supply (Lake Don Pedro CSD 2017).

Small Water Systems and Wells

Groundwater is the only water supply source for many of the small water systems in Tuolumne County, particularly for rural residential development in outlying areas (TUD 2013). The majority of small water systems that are regulated by the State Water Quality Control Board rely exclusively on individual small capacity wells. Rather than large groundwater basins, most of the areas served by private wells are underlain by fractured rock. Fractured rock provides inconsistent groundwater conditions; some parcels are underlain by small pools of groundwater that are reliable, and others tap into less reliable subsurface rills and streamlets. Because of weather fluctuations and the nature of fractured rock, wells can prove unreliable during drought periods and difficult to establish in some parts of the County. The Tuolumne-Stanislaus Integrated Regional Water Management Plan determined that existing data are insufficient to quantify the total available sustainable groundwater supply (TUD 2013). This is not atypical in fractured rock environments such as those that occur throughout the Sierra foothills.

STORM WATER

Surface runoff of water during rainfall and snow events is defined as storm water. If surface runoff overwhelms the capacity of storm water conveyance systems, flooding can result. Because of the elevation gradient and existence of multiple upper watershed reservoirs severe flooding has not historically been a major concern in Tuolumne County (TUD 2013). However, management and containment of localized flooding of creeks and tributaries, particularly in developed areas, and along some local roadways has been a challenge and many storm water conveyance systems in Tuolumne County are in need of improvements to reduce the potential for catastrophic flooding. The Tuolumne County Community Resources Agency has identified areas of Sullivan, Sonora, Mormon, Woods, and Curtis Creeks to be problematic. In addition, some more rural areas with County or ranch roads have low water fords which flood and prevent access at times.

WASTEWATER

Five wastewater collection and treatment systems operate in Tuolumne County: TUD, GCSD, Twain Harte CSD, Jamestown Sanitary District, and the Tuolumne Sanitary District. Residents outside of these districts rely on individual septic tank systems to treat household wastewater.

Tuolumne Utilities District

TUD provides sewer service to 6,024 residential and commercial accounts. In addition, TUD provides regional sewer services to subscriber agencies, such as the Jamestown Sanitary District (reclamation) and the Twain Harte CSD (treatment and reclamation). An estimated 24,000 people benefit from TUD's wastewater collection, treatment, or reclamation service. In addition, TUD processes septage originating from septic tanks in areas of the County are not connected to the sewer system (TUD 2016b).

The largest wastewater system in Tuolumne County is TUD's Sonora Regional Wastewater Treatment Plant (RWWTP) in the City of Sonora, which receives flow from both the TUD and Twain Harte CSD wastewater collection systems (TUD 2013). The Sonora RWWTP is a conventional secondary wastewater treatment plant and has a design capacity of 2.6 million gallons per day (mgd). Treated effluent is piped to the 1,616 acre-foot Quartz Reservoir and is distributed to agricultural customers that use the treated wastewater for growing feed crops. TUD does not discharge treated wastewater to any state receiving waters (TUD 2016c).

Groveland Community Services District

GCSD operates a wastewater treatment plant that serves approximately 1,500 customers with a capacity of 250,000 gallons per day (gpd). The plant provides primary and secondary treatment. Treated wastewater is disposed of through evaporation ponds, as irrigation water at the Pine Mountain Lake Golf Course, or through 14 acres of spray fields (TUD 2013).

Jamestown Sanitary District

The Jamestown Sanitary District operates a wastewater treatment plant that serves approximately 1,250 customers with a capacity of 280,000 gpd. The plant provides primary and secondary treatment of wastewater. Treated wastewater is stored at Quartz Reservoir and used as agricultural irrigation (TUD 2013).

Twain Harte Community Service District

The Twain Harte CSD serves approximately 1,500 customers and sends wastewater to TUD's RWWTP for secondary treatment (TUD 2013).

Tuolumne Sanitary District

The Tuolumne Sanitary District operates spray evaporation ponds with a capacity of 360,000 gpd to dispose of wastewater from approximately 850 customers (TUD 2013).

Individual, on-site septic systems are also very common in Tuolumne County. Many residents with community water service connections do not have wastewater connections (TUD 2013).

SOLID WASTE

The Tuolumne County Solid Waste Division oversees the collection, transport, and disposal of solid waste within Tuolumne County, and is responsible for ensuring that solid waste disposal services meet state and federal mandates for integrated waste management. Curbside collection is provided by three franchise haulers: Cal Sierra Disposal, Inc./Waste Management, Moore Bros Scavenger Co., Inc., and Burns Refuse Service, Inc. Cal Sierra Disposal, Inc. operates the Cal Sierra Transfer Station (in East Sonora) and Pinecrest Transfer Station under a franchise agreement with the County. Cal Sierra also operates a recycling center and Earth Resources Facility in Sonora. Moore Bros Scavenger Co., Inc., operates the transfer station in Groveland-Big Oak Flat.

The County has four franchise areas for solid waste haulers. Cal Sierra serves franchise areas 1 and 2 in unincorporated Tuolumne County along the State Route 108 corridor from the western County line to Pinecrest, including the communities of East Sonora, Jamestown, Columbia, and Twain Harte. Cal Sierra also services the City of Sonora under a separate franchise agreement with the City. Burns Refuse Service, Inc. provides solid waste collection service for franchise area 3, which includes the community of Tuolumne, Standard, Curtis Creek, Soulsbyville Road up to Soulsbyville Elementary School, Wards Ferry Road, and Old Wards Ferry Road. Moore Bros Scavenger Co., Inc. provides solid waste collection service for franchise area 4 in southern Tuolumne County, including Groveland, Big Oak Flats, Moccasin, and areas upcountry along the Highway 120 corridor.

Collected solid waste is processed at the transfer stations and disposed of at the Highway 59 Disposal Site landfill, which is operated by the Merced County Regional Waste Management Authority. The maximum permitted capacity of the landfill is 30,012,352 cubic yards, and the maximum permitted throughput is 1,500 tons per day. The remaining capacity (as of September 2005) is 28,025,334 cubic yards (CalRecycle 2018a). In 2016, the annual per capita disposal rate in unincorporated Tuolumne County was 3.8 pound per day (PPD) per resident and 16.9 PPD per employee (CalRecycle 2018b).

3.17.2 Regulatory Setting

FEDERAL

There are no federal policies or regulations applicable to the evaluation of utilities.

STATE

California Water Conservation Act

SBx7-7 was enacted in November 2009 and requires each urban water supplier to select one of four water conservation targets contained in California Water Code Section 10608.20 with the statewide goal of achieving a 20 percent reduction in urban per capita water use by 2020. Under SBx7-7, urban retail water suppliers (in this case, TUD), are required to develop water use targets and submit a water management plan to the California Department of Water Resources (DWR) by July 2011. The plan must include the baseline daily per capita water use, water use target, interim water use target, and compliance daily per capita water use (TUD has incorporated this information into its 2015 UWMP). In addition, the state will make incremental progress towards this goal by reducing per capita water use by at least 10 percent by December 31, 2015. Tuolumne County exceeded this goal in 2015.

Urban Water Management Act

The California Urban Water Management Planning Act of 1983 requires that each urban water supplier, providing water for municipal purposes either directly or indirectly to more than 3,000 customers or supplying more than 3,000 acre-feet of water annually, shall prepare, update and adopt its urban water management plan at least once every 5 years on or before December 31, in years ending in 5 and 0. The plan describes and evaluates sources of water supply, including groundwater; projected water needs; conservation; implementation strategy and schedule. It is a tool that generally guides the actions of water management agencies and provides managers and the public with a broad perspective on a number of water supply issues. TUD, the major water supplier for the County, last prepared an UWMP in 2015.

California Integrated Waste Management Act

The California Integrated Waste Management Act of 1989, Public Resources Code Section 40000 et seq., requires every city and county in the state to prepare a Source Reduction and Recycling Element to its Integrated Waste Management Plan that identifies how each jurisdiction will meet the mandatory state waste diversion goals of 25 percent by 1995 and 50 percent by 2000. The purpose of AB 939 is to “reduce, recycle, and re-use solid waste generated in the state to the maximum extent feasible.” The term “integrated waste management” refers to the use of a variety of waste management practices to safely and effectively handle the municipal solid waste stream with the least adverse impact on human health and the environment. The Act has established a waste management hierarchy, as follows:

- Source Reduction;
- Recycling;
- Composting;
- Transformation; and
- Disposal.

LOCAL

Tuolumne County General Plan

The 1996 Tuolumne County General Plan provides the main regulatory framework for ensuring that adequate water supply, wastewater service, and solid waste services are maintained. The General Plan Update would supersede the 1996 General Plan; therefore, the discussion of the General Plan in the context of this section focuses on the General Plan Update. Goals and policies contained within the Water Supply Element and the Utilities Element guide the provision of services within the County. Specific General Plan Update policies related to water, wastewater, storm water, and solid waste are identified below under Section 3.17.3, “Impact Analysis.”

Integrated Regional Water Management Plan

The Integrated Regional Water Management Plan defines a vision for water resources management in the Tuolumne-Stanislaus Region and highlights important actions needed to help accomplish that vision through the year 2035. The plan provides a framework within which to collaboratively address the many major water-related challenges and conflicts within the region. These issues include water quality, local water supply

reliability, integration of water and land use management, resource stewardship, and ecosystem protection. The array of goals, objectives, selected resource management strategies, and prioritized projects of this plan represent a collective view of how to improve integrated water management throughout the region.

Tuolumne County Water Quality Plan

The 2007 Tuolumne County Water Quality Plan is a comprehensive program to address a wide array of water quality concerns in the County. The plan focuses on surface water quality and the factors affecting it, as well as mechanisms for maintaining and improving it. The Water Quality Plan primarily functions as a roadmap for strategies that will improve water quality in the County by identifying specific programs and opportunities for water quality improvement that the County can implement.

Tuolumne County Integrated Waste Management Plan

The Tuolumne County Integrated Waste Management Plan was adopted to provide for an integrated solid waste management system that preserves the public health, safety, welfare, convenience and necessity. This was adopted to replace the existing permit system for solid waste collection.

Tuolumne Utilities District's Wastewater Discharge Ordinance

TUD's Wastewater Discharge Ordinance sets uniform requirements for discharges into the wastewater collection and treatment system. It enables TUD to comply with administrative provisions of the Clean Water Grant Regulations, the water quality requirements set by the Regional Water Quality Control Board and applicable effluent limitations, national standards of performance, toxic and pretreatment effluent standards, and any other discharge criteria which are required or authorized by State or Federal law. The ordinance regulates the quality and quantity of wastewater discharged into the systems. This ordinance also provides for the setting of user charges and fees for the equitable distribution of cost of all users, and the issuance of permits to certain users.

3.17.3 Impact Analysis

METHODS OF ANALYSIS

The General Plan Update is a policy document that would guide development and conservation of land throughout the County. Adoption of the General Plan Update would not result in any changes to existing conditions; however, the policies could allow for or encourage future activities that may result in increased demand for utilities infrastructure, including water, wastewater, storm water, and solid waste facilities. Significant impacts could result from the expansion of existing facilities or development of new facilities to meet increased demand where the construction of these facilities would have effects on the environment. Impacts are evaluated assuming projected development under the General Plan Update.

This analysis assumes a level of growth consistent with the Tuolumne County Transportation Council County-wide population projection of 63,243 residents in 2040. As described in Chapter 2, "Project Description," based on current growth trends and the proposed land use diagram and zoning, it is assumed that the portion of this growth that would occur in the unincorporated County area would be focused in the identified communities. Evaluation of potential water, wastewater, storm water, and solid waste impacts were based upon a review of the General Plan Update policies described below.

THRESHOLDS OF SIGNIFICANCE

According to Appendix G of the State CEQA Guidelines, projected development under the General Plan Update would have a significant impact with respect to water provision, wastewater treatment, storm water, and solid waste disposal if it would:

- exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board;

- require or result in the construction of new water or wastewater facilities or expansion of existing facilities, the construction of which could cause significant environmental effects;
- require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects;
- fail to have sufficient water supplies available to serve the project from existing entitlements and resources, or need new or expanded entitlements;
- result in a determination by the wastewater treatment provider that it does not have adequate capacity to serve projected demand in addition to existing commitments;
- result in not being served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs; or
- fail to comply with federal, state, and local statutes and regulations related to solid waste.

GENERAL PLAN UPDATE POLICIES

The following policies and implementation programs from the General Plan Update are applicable to the evaluation of effects related to utilities:

Community Development and Design Element

- **Policy 1.A.13:** Encourage the extension and upgrading of services to Disadvantaged Legacy Communities as identified in the General Plan Technical Background Report.
  - **Implementation Program 1.A.m** - Promote the extension of public water, sewer, stormwater drainage and structural fire protection services to identified Disadvantaged Legacy Communities, where feasible, and identify funding mechanisms that could make the extension of services and facilities to these communities financially feasible.
- **Policy 1.F.6:** Continue to require development on land designated Neighborhood Commercial, General Commercial or Heavy Commercial to be served with public water and sewer.

Water Supply Element

- **Policy 14.A.1:** Support the pursuit and acquisition of County Area of Origin Water Rights and other water rights to ensure adequate and stable water supplies.
  - **Implementation Program 14.A.a:** Evaluate and consider pursuing senior water rights. Tuolumne County supports Area of Origin Water Rights, the existing water right priority system and the authority to make water management decisions locally to meet the County's current and future needs, thereby protecting Tuolumne County's communities, economy and environment.
- **Policy 14.A.2:** Support the efforts of local water purveyors to increase water storage capacity, maintain and enhance infrastructure, and cross-connect water systems.
  - **Implementation Program 14.A.b:** Support the efforts of the Tuolumne Utilities District to secure modified lake level guidelines at Pinecrest Lake to provide a reliable water supply to its customers.
  - **Implementation Program 14.A.c:** Support the efforts of local water purveyors to increase water storage and pursue additional water storage initiatives within the County or acquire access to increase water storage.

- **Implementation Program 14.A.d:** Work with other agencies and water purveyors, such as the Tuolumne County Water Agency, to develop, adopt and fund long term strategic infrastructure maintenance, modernization and sustainability plans by identifying areas that would benefit from improvement projects, obtaining funding for such projects, and implementing projects identified in the strategic plan.

- **Policy 14.A.6**: Encourage water purveyors to provide an adequate water supply to meet long term needs in a manner that is consistent with this General Plan and urban water management plans and that maintains water resources for water users while protecting the natural environment.

- **Policy 14.B.1:** Support water districts in establishing conservation standards to reduce demand for water.

  - **Implementation Program 14.B:** Support the efforts, such as funding applications and inter-agency coordination, of water agencies and districts to prevent the depletion of water resources and promote the conservation and reuse of water.

- **Policy 14.B.2:** Increase water conservation efforts to maximize water use efficiency within Tuolumne County through conservation, recycling and education.

  - **Implementation Program 14.B.b:** Encourage water reuse programs in new development to conserve raw or potable water supplies consistent with State Water Resources Control Board guidelines through the application review process.

  - **Implementation Program 15.4.c:** Support the efforts of water purveyors to rehabilitate water delivery systems to reduce lost water and increase the efficient use and availability of water.

  - **Implementation Program 14.B.d:** Encourage water reuse/recycling through the treatment and distribution of treated wastewater by working with new development to identify ways to incorporate reuse/recycling into projects.

  - **Implementation Program 14.B.e:** Ensure the conservation of water through the implementation of the Tuolumne County Landscaping Requirements, Chapter 15.28 of the Tuolumne County Ordinance Code, which provide for the use of xeriscape landscaping plants and materials to conserve water, the use of water conserving irrigation systems for landscaping, and the use of reclaimed or reused water for irrigation.

  - **Implementation Program 14.B.f:** Prohibit any processing activities with high water use practices near areas where groundwater overdraft problems exist, unless the facility uses water recycling and conservation techniques that minimize effects of water use on the groundwater table.

  - **Implementation Program 14.B.g**: Develop an outreach program, working with the water service providers in the region, to encourage development to be constructed with, or upgraded to, water-efficient plumbing fixtures, landscaping, and irrigation systems, and use graywater and/or recycled water for irrigation.

  - **Implementation Program 14.B.h:** Encourage the use of domestic graywater for landscape irrigation and other purposes and consider establishing incentives for new development to install graywater systems in areas where such systems are allowed by the applicable water or sewer purveyor. Recognize that water or sewer purveyors may adopt regulations to prohibit or otherwise regulate graywater systems that could adversely affect the efficient operation of their systems.

  - **Implementation Program 14.B.i:** Explore the feasibility of reducing wastewater through the use of dry/composting toilets in new construction consistent with Goal 3E.

- **Implementation Program 14.B.j:** Support the development of educational programs by water districts and public agencies to increase public awareness of efficiently conserving, using, reusing, and managing water resources.

- **Implementation Program 14.B.k:** Provide information on water conservation measures to the general public and consult with conservation efforts of the water districts.

- **Implementation Program 14.B.l:** Promote and facilitate the use of reclaimed wastewater for agricultural irrigation, in accordance with the guidelines published by the State Water Resources Control Board.

- **Implementation Program 14.B.m:** Cooperate with the Agricultural Commissioner, Cooperative Extension Service, Farm Bureau and water districts to promote the protection of water resources in agricultural areas by encouraging programs that assist producers in using water efficiently in agricultural operations and by promoting technology for efficient water use in agriculture.

- **Implementation Program 14.B.n:** Utilize water-efficient plumbing fixtures and irrigation systems on publicly owned property.

- **Implementation Program 14.B.o:** Support development of new technology to improve efficient use of water.

- **Implementation Program 14.B.p:** Encourage plumbing retrofits to be installed in existing buildings to reduce water use by working with water purveyors to inform their customers about the permit process to facilitate such retrofits.

- **Implementation Program 14.B.q:** Develop an outreach program, working with the water service providers in the region, to encourage existing development to upgrade to water-efficient plumbing fixtures, landscaping, and irrigation systems, and use grey and/or recycled water for irrigation.

- **Implementation Program 14.B.r:** Develop incentives, such as fee reductions, for the installation of rainwater harvesting and storage facilities to conserve water and minimize water loss in areas where such systems are allowed by the applicable water or sewer purveyor. Recognize that water or sewer purveyors may adopt regulations to prohibit or otherwise regulate graywater systems that could adversely affect the efficient operation of their systems.

- **Policy 14.C.1.** Protect the quality of the County's water resources by supporting the efforts of local districts to maintain infrastructure and cross-connect sewer systems and ensuring Tuolumne County's development standards are adequate to protect surface and groundwater resources from contamination.

  - **Implementation Program 14.C.a:** Maintain local source water protection and wellhead protection programs in the Tuolumne County General Plan, such as setbacks, to protect the sources of drinking water supplies.

  - **Implementation Program 14.C.b:** Implement grading and surface runoff standards, such as retention and detention, permeable surfaces and recharge, necessary to protect water resources in compliance with State and Federal water quality regulations and with the County's water quality plan referenced in Implementation Program 14.C.e.

- **Policy 14.C.2:** Encourage new urban development to locate in areas where public water and sewer services are available or can be developed.

- **Implementation Program 14.C.c**: Continue to require new urban residential development with a density of one dwelling unit per two acres, or greater, and commercial development, except on land designated as Special Commercial by the General Plan land use diagrams, to be served with public water.

- **Implementation Program 14.C.d**: Continue to require new urban residential development with a density of three dwelling units per acre, or greater, and commercial development, except that on land designated Special Commercial by the General Plan land use diagrams, to connect to public sewer.

- **Policy 14.C.3:** Support the efforts of the local water agencies in identifying and procuring new water resources to meet projected future demands from growth in the County, including the use of reclaimed water.

- **Policy 14.C.9:** Promote improved watershed health, improved water quality and water quantity yields of the watersheds in Tuolumne County.

  - **Implementation Program 14.C.i:** Promote the development of plans for watershed rehabilitation projects which provide for such watershed improvements as:

    - A reduction in the presence of contaminants in drinking water by addressing the origins and treatment of the contaminants, including, to the maximum extent practicable, the specific activities that affect the drinking water supply of a community or communities.

    - An increase in the quantity of water available from the watershed.

    - The improvement, restoration, or enhancement of fisheries habitat, including riparian habitat, in and along streams and watercourses in the watershed. These projects may address factors which increase sedimentation in streams and watercourses in the watershed.

    - The improvement of overall forest health, including the reduction of factors which may contribute to the severity of wildfires in the watershed.

  - **Implementation Program 14.C.j:** Initiate or assist in the formulation of plans for watershed rehabilitation projects with the County serving as the coordinating agency for the various stakeholders in such a plan, such as property owners, water agencies, other public agencies, private industry, recreational facility providers and other interested groups and organizations. Provide technical assistance in the development of plans for watershed rehabilitation projects through such means as data sharing.

<u>Utilities Element</u>

- **Policy 3.A.1:** Encourage the siting of new urban development either within or adjacent to identified communities to maximize the use of existing infrastructure and encourage the logical extension of public water services infrastructure. When new urban development is proposed to be located outside but adjacent to identified communities, it should be located in proximity to existing water supply infrastructure.

- **Policy 3.A.2:** Require new commercial development to be served by public water systems, except for development in areas designated as Special Commercial on the General Plan land use diagrams.

  - **Implementation Program 3.A.a:** Utilize the Special Commercial (SC) General Plan land use designation on property suitable for commercial development of a neighborhood, rural or tourist-oriented nature but lacking service from a public water system. Development of a commercial nature on land designated SC is allowed with applicant permits without having service from a public water or sewer system, but only where service is not reasonably available.

- **Policy 3.A.3:** Continue to require new urban residential development with a density of one dwelling unit per two acres, or greater, and commercial development, except on land designated as Special Commercial (SC) by the General Plan land use diagrams, to be served with public water.

- **Policy 3.A.6:** Require new commercial development in areas designated as Neighborhood Commercial, General Commercial or Heavy Commercial on the General Plan land use diagrams and urban residential development (densities greater than one dwelling unit per two acres) to be served by a public water distribution system. Prior to approval of any discretionary entitlement for such development, a public water distribution system must have indicated that service is available and it has a reliable source of water to serve their existing and future customer's foreseeable needs. Prior to occupancy of the development, the service must be in place.

- **Policy 3.B.1:** Require that development is consistent with the applicable water purveyor master plan, including as applicable, the proper design and sizing of water distribution lines, storage tanks, and other aspects of the water infrastructure system both on and off the site of development.

- **Policy 3.B.2:** Consider whether the water system proposed to serve a new development has a reliable source of water, sized to serve their existing and future customer's' foreseeable demands. Projects shall only be approved where the water supply system has reliable sources of water capable of meeting present and future demands.

  - **Implementation Program 3.B.a:** Continue to require new urban development needing discretionary entitlements to secure a letter from the jurisdictional public water agency stating that the proposed project can be served by that agency and that there is an available water supply.

  - **Implementation Program 3.B.b:** Encourage new industrial development to locate in areas which have the capability of being served by a public water system, or a private system when it can be reasonably demonstrated that the development will not cause an adverse public health problem by maintain zoning code standards for the provision of public water for industrial zoning districts and requiring review by the Environmental Health Division when exceptions are requested.

  - **Implementation Program 3.B.c:** New development shall not be approved that is proposed to be served by a public water purveyance system that does not include the project area within the defined geographic limits of service unless the public water purveyance system is in the process of or agrees to pursue action to include the project area within the purveyor's limits of service.

- **Policy 3.B.3:** Encourage the logical extension of public water services infrastructure during review of new land development projects to provide a reliable and adequate distribution system to meet the future needs of the water purveyor.

- **Policy 3.D.1:** Encourage the installation of public sewage systems in existing communities that are experiencing repeated septic system failures.

- **Policy 3.D.2:** Encourage new urban development to be served by public sewer systems.

  - **Implementation Program 3.D.a:** Require the logical extension of sewer lines and infrastructure to areas of existing development where there are known limitations or problems associated with on-site underground sewage disposal.

- **Policy 3.D.3:** Assist and cooperate in master planning sewer facilities and encourage the extension of additional public services through the installation of larger utility distribution lines and off-site improvements on new developments.

- **Implementation Program 3.D.b:** Provide land use data from the General Plan, proposals being considered for updating the land use diagrams of the General Plan, and other relevant maps and data to districts who provide sewage disposal to be used in preparing their master plans. Data and maps showing areas noted as being hazardous for underground disposal or areas of known leach field failures, as well as relevant land use data, shall be shared.

- **Implementation Program 3.D.c:** Review and consider land use implications of sewer master plans prepared by any of the sewer districts in the County.

- **Implementation Program 3.D.d:** Provide descriptions of proposed land development projects that may require sewer service or in some way affect the ability of the sewer purveyor to provide service, to all affected utility districts or public sewer systems and consider comments in the evaluation process.

- **Policy 3.E.1:** Maintain standards for residential development that sets a minimum lot size that can be created without service by a public sewer system.

  - **Implementation Program 3.E.a:** Continue to require new urban residential development with a density of three dwelling units per acre, or greater, and commercial development, except that on land designated Special Commercial (SC) by the General Plan land use diagrams, to connect to public sewer.

- **Policy 3.E.2:** Require that proposed development in areas of known or suspected geological limitations to underground sewage disposal either be served by a public sewer system, or successfully demonstrate that on-site underground sewage disposal can be accomplished with no lessening of quality to ground or surface waters.

- **Policy 3.E.3:** Encourage new industrial and commercial development in areas where a public sewer system is available, or require evidence that there is a capability of functioning on a private system without any adverse public health impact.

- **Policy 3.E.4:** Require development to connect to a public sewer system if it is reasonably available.

  - **Implementation Program 3.E.b:** Encourage the siting of urban development either within or adjacent identified communities (see if this conflicts with LU) to maximize the use of existing infrastructure and reduce the need for expansion of the public sewer system. Where urban development is proposed to be located outside but adjacent to identified communities, it should be preferentially located in proximity to existing public sewer infrastructure.

  - **Implementation Program 3.E.c:** Consider whether areas proposed for designation as Neighborhood Commercial, General Commercial, Heavy Commercial, Business Park, Mixed Use, Light Industrial or Heavy Industrial on the General Plan land use diagrams can be served by a public sewer system. If public sewer service is available, the public sewer system shall be used for commercial or industrial development. Public sewer service is considered "available" according to the definition in Chapter 13.08 of the Tuolumne County Ordinance Code. Prior to approval of any discretionary entitlement for such development, a public sewer purveyor must have indicated that service is available, or an acceptable plan for sewage disposal through a private system must be approved by the Environmental Health Division or the State Water Resources Control Board. Prior to occupancy of the development, the service must be in place.

  - **Implementation Program 3.E.d:** Continue to allow industrial development to be served by private water and sewage disposal systems provided that they are first approved by the agency having jurisdiction by law.

  - **Implementation Program 3.E.e:** Require development that is proposed on a parcel within 300 feet uphill or 100 feet downhill of a public sewer system's primary pipeline to connect to that system for

service in accordance with Chapter 13.08 of the Tuolumne County Ordinance Code. This includes all urban residential development, and commercial and industrial development. This does not apply when the public sewer system's treatment plant is at its capacity level or the sewer purveyor indicates the connection is not feasible, or the project lies outside the defined service area established for a district.

- **Policy 3.F.1:** Require proposed solid waste facilities and all other new development to comply with the Tuolumne County Integrated Waste Management Plan and all adopted elements thereof.
  - **Implementation Program 3.F.a:** Encourage alternative methods of disposal of vegetative matter, including, but not limited to, composting, mulching or transporting the material to biomass facilities that accept it.
  - **Implementation Program 3.F.b:** Continue to offer a program for processing brush and yard debris in the County which avoids adverse impacts to energy consumption and generates a usable product, such as the Cal Sierra Earth Resource Facility.
- **Policy 3.F.2:** Encourage the recycling of products and materials and support the efforts of agencies, businesses and the general public to reduce the waste stream.
  - **Implementation Program 3.F.c:** Support existing and encourage the development of new recycling facilities.
  - **Implementation Program 3.F.d:** Continue to require franchise waste haulers to offer the Commingled Recycled System or a similar recycling program.
  - **Implementation Program 3.F.e:** Create and implement a countywide green waste and recycling program for residential and non-residential land uses. Implement a program to educate residents and business owners about recycling requirements and opportunities.
  - **Implementation Program 3.F.f:** Encourage the development of new and expansion of existing businesses which reuse products and materials, recycle waste materials or convert waste products to energy.

PROJECT IMPACTS

This section presents a programmatic-level analysis of potential impacts associated with provision of utility service. Evaluation of environmental impacts associated with projected development under the General Plan Update considers the development in accordance with goals, policies, and implementation programs, to accommodate projected growth in the County. It should be noted that the County's population is projected to grow by 0.6 percent annually over the planning horizon (2040). As discussed in detail in Chapter 2, "Project Description," and the introduction to Chapter 3, this is a relatively low amount of growth.

Impact 3.17-1: Exceed Water Supply Infrastructure Capacity or Entitlements such that New or Expanded Infrastructure or Entitlements would be Required

Projected development under the General Plan Update would result in an increase in water demand. Although areas served by TUD would have adequate supplies of water without new or expanded infrastructure or entitlements, it is inconclusive with available data to determine if areas served by other water purveyors would have adequate capacity to serve new connections. Further, new development or expanded service encouraged through the General Plan Update may require new or expanded water supply infrastructure. However, with implementation of policies that require the provision of water prior to development, and because subsequent infrastructure expansion projects would be subject to separate environmental review, impacts related to water supply would be **less than significant**.

Projected development under the General Plan Update would increase demand for water. As detailed in Table 2-6, it is projected that the General Plan Update would accommodate 4,332 new single-family residences, 827 multi-family residential units, 938,000 square feet of commercial uses, and 196,000 square feet of industrial uses in the County by the year 2040. Depending on location, new connections would receive water from TUD, GCSD, the Lake Don Pedro CSD, other water providers, or private groundwater wells. However, as described above, TUD provides water either directly or indirectly (through sales to other water agencies) to most of the developed portions of Tuolumne County. Because of TUD's geographic coverage, which includes many of the identified communities, and due to the limited growth projected, it is anticipated that water demand in areas served by other water districts would be limited.

The location where new development may occur is expected to roughly coincide with where TUD provides services, but other growth may occur outside TUD's service area; simply, it would be speculative to determine the exact locations of growth. As shown in Tables 3.17-1 and 3.17-2, above, TUD forecasts that water supply will exceed demand through the 2040 planning horizon of the General Plan Update by an estimated 7,100 AFY under normal conditions. This is a large margin, equal to roughly 25 percent of its supply, and includes water supplied by TUD to the Twain Harte CSD. This is based on projected annual growth rates of 2.34 percent between 2015 and 2035, and 0.87 percent between 2035 and 2040, which exceed the annual growth rate projected in the General Plan Update. In contrast, GCSD's UWMP utilizes a projected growth rate of 0.25 percent annually, which is less than the 0.6 percent growth rate used in the General Plan Update. This may or may not match actual growth because, as explained above, it would be speculative at the general plan level to forecast exact locations of growth. However, areas served by TUD (the majority of where growth is expected) would be expected to have adequate supplies of water without new or expanded infrastructure or entitlements. Areas served by other water purveyors, however, may or may not have adequate capacity to serve new connections due to new development or expanded service, depending on the actual rate of growth (if any) in their district boundaries.

During periods of water shortage, TUD has the authority to manage water demand by implementing a three-phase rationing plan summarized in Tables 3.17-2 and 3.17-3. Pursuant to Resolution 31-15, TUD's current water connection fee also includes money for TUD to implement demand offset projects that would yield enough water to serve new connections. Therefore, water rationing (if needed) and demand offset projects would ensure that the TUD has an adequate water supplies and infrastructure capacity to serve projected development under the General Plan Update.

In addition, General Plan Update policies and implementation programs would seek to increase the water supply and reduce water demand in Tuolumne County. The updated Utilities Element and Water Supply Element have the following relevant policies and implementation programs that would address potential impacts to water supply in the County. Policies 14.A.1, 14.1.2, and 14.C.9 support the pursuit and acquisition of new supplies and efforts to increase water storage capacity by local purveyors while promoting improved watershed health and yield. Other policies (Policy 14.A.6 and Policy 14.C.3) encourage water purveyors to plan for long-term needs and support the efforts of local water agencies to identify, procure, and plan for long-term projected future water demand. Policy 14.C.2 encourages new development to locate where adequate water services are available. Policies 3.A.1 through 3.A.3 and Policy 3.A.6 encourage the siting of new development such that it is served by existing water infrastructure or is in proximity to existing infrastructure, require new urban residential and commercial development to be served by public water systems, and require that water service is in place prior to development of these projects. Policy 3.B.1 requires that development is consistent with the applicable purveyor masterplan.

Policy 3.B.2 ensures that projects are only approved where water supplies are reliable. More specifically, Implementation Program 3.B.a, which implements Policy 3.B.2, requires new urban development needing discretionary entitlements to secure a letter from the jurisdictional public water agency stating that the proposed project can be served by that agency and that there is an available water supply. Therefore, new development projects would not be constructed if potable water supply is not available to serve the project. This policy provides a stop-gap assurance that adequate water to serve development would be provided. Policy 3.B.3 encourages the logical extension of water infrastructure. These policies and their supporting

implementation program would enhance the reliability and availability of the water supply system and would require appropriate development types to be served by public water after demonstrating that appropriate supply is available.

Individual wells are addressed in the Hydrology section of this EIR, under Impact 3.10-4. In short, construction of new private wells would be limited, dispersed throughout the County, and subject to permits that require appropriate setback distances and other special requirements in flood zones or groundwater deficient areas. It is possible that an individual well could fail or be insufficient to serve an individual parcel due to localized groundwater conditions. While this would be adverse to the individual property owner, and could result in the need to construct another well, this would not be a substantial effect because it would be limited to individual parcels if it happened at all.

Further, specific infrastructure improvements that may be completed during the planning horizon to accommodate new growth or serve existing growth, as encouraged by the General Plan Update, would be completed at the discretion of the water service provider. These projects would generally occur in previously-disturbed areas, such as road rights of way, but there may be exceptions, and construction these new facilities could result in environmental effects (i.e., air quality, noise, hydrology and water quality, biological resources, cultural resources, etc.). These improvements would be consistent with the typical construction effects of development associated with the General Plan Update, which are evaluated throughout this Recirculated Draft EIR. In addition, individual improvements would be subject to separate environmental review under CEQA. Impacts of projected development under the General Plan Update related to water supply would be **less than significant**.

Mitigation Measures

No mitigation would be required.

Impact 3.17-2: Prevent Achievement of Water Quality Treatment Standards or Result in Significant Environmental Effects due to the Construction of New or Expanded Wastewater Capacity

Projected development under the General Plan Update would increase wastewater generation above existing conditions. However, existing wastewater treatment facilities have adequate capacity to accommodate new development, and General Plan Update policies would further reduce potential impacts. Therefore, impacts would be **less than significant**.

Projected development under the General Plan Update would increase generation of wastewater. Depending on its location, new development could generate wastewater in the service areas of TUD, GCSD, Twain Harte CSD, Tuolumne Sanitary District, or Jamestown Sanitary District, or may be served by a septic system.

As with the estimates of water demand in Impact 3.17-1, this analysis assumes that most growth would occur within TUD's service area because TUD currently serves most of the County, and the service area includes most of the identified communities. Growth that occurs outside of TUD's service area is not anticipated to have a substantial effect on wastewater capacity or treatment standards due to the small geographic area and relatively low rate of growth anticipated, and because most development outside of the service area would utilize individual, on-site septic systems which are subject to permits and regulations that protect offsite parcels from water pollution.

TUD relies on the new development anticipated by Tuolumne County and the City of Sonora under their General Plans in assessing the infrastructure needs within its service areas due to non-acquisition growth (TUD 2015). TUD's 2015 UWMP is intended to be consistent with the growth projections used in the General Plan Update and reflects a 0.6 percent growth rate between 2015 and 2040. The UWMP projects that 2,316 acre-feet of wastewater will be collected and treated in the services areas of the Sonora RWWTP and JSD WWTP in 2040 (TUD 2016a).

As indicated above, the Sonora RWWTP has a design capacity of 2.6 million gallons per day, or about 2,900 acre feet annually, and the JSD WWTP (which serves the community of Jamestown) is a secondary level WWTP with a design capacity of 0.42 MGD, or about 470 AFY (TUD 2016a). The estimated volume of wastewater generated by the population growth in TUD's service area projected in the General Plan Update would, therefore, be within the capacity of the existing wastewater treatment plants and the construction of new wastewater treatment facilities would not be required.

The General Plan Update Utilities Element includes policies and implementation programs related to wastewater service provision. For example, Policies 3.D.1, 3.E.1, and 3.E.2 encourage the development of public sewer systems where septic is failing and cooperation to extend new sewer services as needed, as well as maintaining standards that would minimize development not served by public sewers. Policies 3.D.2 and 3.E.3 encourage new urban development served by public sewer systems, and Policy 3.E.4 requires connection to public sewers where available.

Anticipated growth would result in an incremental increase in wastewater flows. In addition, General Plan Update policies to connect new development to public sewer systems, rather than to individual septic systems, would increase the volume of wastewater handled by public facilities and may result in the extension of service to new areas. However, these policies would reduce water quality problems from the proliferation of septic tank systems.

The utility districts continually evaluate the potential for new or expanded service based on existing and projected conditions. TUD and other service providers would use the General Plan Update to inform facility planning. Where new connections or increased wastewater flow result in the need for new or expanded wastewater infrastructure, these projects would be subject to subsequent review. As described above for water, wastewater infrastructure projects would generally occur in previously-disturbed areas, such as road rights of way, but exceptions could occur, and construction these new facilities could result in environmental effects (i.e., air quality, noise, hydrology and water quality, biological resources, cultural resources, etc.). These improvements would be consistent with the typical construction effects of development associated with the General Plan Update, which are evaluated throughout this Recirculated Draft EIR. In addition, individual improvements would be subject to separate environmental review under CEQA. Therefore, impacts related to wastewater facilities would be **less than significant**.

Mitigation Measures

No mitigation would be required.

Impact 3.17-3: Result in Significant Environmental Effects due to the Construction of New or Expanded Storm Water Infrastructure

Projected development under the General Plan Update would incrementally increase the amount of impervious surfaces within the County, which could result in increased storm water runoff and the need for additional storm water infrastructure. However, the County's existing Water Quality Plan and policies and implementation programs in the General Plan Update would require adequate facilities and minimize the potential for adverse effects. Therefore, impacts would be **less than significant**.

The General Plan Update would facilitate additional development, which would incrementally increase the amount of impervious surface area in the unincorporated portion of Tuolumne County. The potential increase in storm water runoff from new development could place greater demand on the existing storm water conveyance infrastructure. The Tuolumne County Community Resources Agency has identified existing storm water infrastructure as in need of improvement in the areas of Sullivan, Sonora, Mormon, Woods, and Curtis Creeks. New development under the General Plan Update would increase the need for improvements to new or expanded infrastructure. In addition, Policy 1.A.13 and Implementation Program 1.A.m in the General Plan Update promote extension of storm water infrastructure to existing Disadvantaged Legacy Communities.

The General Plan Update could result in the need for new and expanded storm water infrastructure due to the demand generated by new development, the County's policy to encourage the extension of facilities to existing Disadvantaged Legacy Communities, and existing deficiencies in the storm water system. Continued implementation of the Tuolumne County Water Quality Plan would minimize impacts on storm water infrastructure. Chapter 3 of the Water Quality Plan includes programs to develop a comprehensive map of the County's storm sewer system, to control non-permitted discharges into this system, and to stencil messages at storm drain inlets to educate the public about storm water runoff pollution. In addition, the Water Quality Plan includes requirements for best management practices to reduce the discharge of storm water runoff from new development during and after construction. It is anticipated that as projected development under the General Plan Update occurs, storm water infrastructure would be upgraded on a project-specific basis in accordance with the Water Quality Plan's requirements. These projects would be subject to subsequent environmental review and would be required to comply with the General Plan Update policies as they relate to storm water infrastructure, as well as state requirements for storm water management.

With implementation of the County's Water Quality Plan and regulations that require the evaluation of storm water improvements at the project-level, impacts due to the expansion of storm drainage facilities would be **less than significant**.

Mitigation Measures

No mitigation would be required.

Impact 3.17-4: Result in Need for Additional Landfill Capacity

Projected development under the General Plan Update would result in an overall increase in the amount of solid waste generated in the County. However, existing landfills would adequately serve development throughout the planning horizon of the General Plan Update, and policies in the Utilities Element would further reduce solid waste. Therefore, impacts would be **less than significant**.

As described in Section 3.8, "Global Climate Change," the service population of the County is anticipated to increase by 8,906 residents and 1,735 employees through the 2040 planning horizon. As shown in Table 3.17-5, this projected population would generate an estimated additional 24.4 tons of solid waste for disposal at landfills daily.

Table 3.17-5 Net Increase in Solid Waste Generation by 2040

Land Use	Net Population Increase by 2040	Generation Factor	Solid Waste Generation[1]
Residents	8,906	3.8 lbs/day	16.9 tons/day
Employees	1,735	8.6 lbs/day	7.5 tons/day
Total			24.4 tons/day

Notes: lbs = pounds

[1] Includes 7 percent reduction based on current recycling rates for Cal Sierra Disposal, Inc., which serves the majority of Tuolumne County.

Source: Calculations performed by Ascent in 2018 based on CalRecycle 2018b

All solid waste that is collected by Tuolumne County's three solid waste providers – Cal Sierra Disposal, Burns Refuse Service, and Moore Bros Scavenger Co. – and not diverted for recycling is disposed of at the Highway 59 landfill in Merced. Tuolumne County's current contract for disposing of solid waste at the Highway 59 landfill runs through June 30, 2022. Currently, the Highway 59 landfill has a maximum permitted throughput of 1,500 tons per day and receives 677.6 tons per day during the 6 days per week on which it operates. This landfill has a remaining capacity of 822.4 tons per day. Assuming that projected

development under the General Plan Update contributes an addition 24.4 tons per day to the Highway 59 landfill, it would still have a remaining capacity of 798 tons per day. Furthermore, the Merced County Regional Waste Management Authority estimates that the Highway 59 landfill will have remaining capacity at least until the year 2080, which is four decades beyond the planning horizon of the General Plan Update. Therefore, this landfill can accommodate solid waste from projected development under the General Plan Update. In addition, Policy 3.F.1 of the General Plan update requires that new solid waste facilities and new development comply with the Tuolumne County Integrated Waste Management Plan, and Policy 3.F.2 encourages recycling to reduce waste. Because applicable landfills have capacity to accommodate solid waste generated under the life of the General Plan Update, impacts related to solid waste would be **less than significant**.

Mitigation Measures

No mitigation would be required.

4 CUMULATIVE IMPACT ANALYSIS

CEQA defines cumulative impacts as "two or more individual effects which, when considered together, are considerable, or which can compound or increase other environmental impacts." Section 15130 of the CEQA Guidelines requires that an EIR evaluate potential environmental impacts that are individually limited but cumulatively considerable. These impacts can result from the proposed project alone, or together with other projects. The CEQA Guidelines state: "The cumulative impact from several projects is the change in the environment which results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable probable future projects" (CEQA Guidelines, Section 15355). A cumulative impact of concern under CEQA occurs when the net result of combined individual impacts compounds or increases other overall environmental impacts (CEQA Guidelines, Section 15355). In other words, cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time. CEQA does not require an analysis of incremental effects that are not cumulatively considerable nor is there a requirement to discuss impacts which do not result in part from the project evaluated in the EIR.

CEQA Guidelines Section 15130 describes the requirements for the discussion of cumulative impacts in an EIR. It states that an EIR must discuss cumulative impacts of a project "when the project's incremental effect is cumulatively considerable, as defined in section 15065(a)(3)." (CEQA Guidelines, Section 15130, subd. (a).) In other words, CEQA requires a lead agency to undertake a two-step analysis. First, the agency must consider whether the combined effects from the proposed project and other projects would be cumulatively significant. And second, if the answer is yes, the agency must then consider whether the proposed project's incremental effects are cumulatively considerable. The EIR need not provide as much detail as is provided for the impacts attributable to the project alone. Instead, the discussion will reflect the severity of the impacts and their likelihood of occurrence. In addition, the CEQA Guidelines allow for a project's contribution to be rendered less than cumulatively considerable with implementation of appropriate mitigation.

4.1 METHODS OF ANALYSIS

The General Plan Update is cumulative by design. As such, the environmental analysis of the General Plan Update presented throughout this Recirculated Draft EIR is a cumulative analysis of impacts of projected development under the General Plan Update, and this Recirculated Draft EIR contains detailed analysis of regional (cumulative) impacts at the County level. Additionally, the following discussion examines impacts associated with projected development under the General Plan Update, plus projected development for jurisdictions that neighbor Tuolumne County, in order to assess the potential for cumulative impacts from growth in the greater region. As shown in the analysis below, Tuolumne County is generally surrounded by other counties that expect limited growth or are buffered from the County by sufficient public land/open space and other factors (e.g., natural features that limit development potential), such that cumulative impacts would be limited.

When evaluating cumulative impacts, CEQA allows the use of either a list of past, present, and probable future projects (including projects outside the control of the lead agency), or a summary of projections in an adopted planning document, or a thoughtful combination of the two approaches. The cumulative analysis presented below uses a projections-based approach. As described in Chapter 2, "Project Description," land use and growth projections for Tuolumne County, which are the subject of analysis throughout this Recirculated Draft EIR, are combined with the growth projections for the City of Sonora and adjoining counties, consistent with the population projection approach used by the Tuolumne County Transportation Commission (TCTC) in their 2016 Regional Transportation Plan (RTP). The six counties adjacent to Tuolumne County are shown in Exhibit 4-1 and described briefly below.

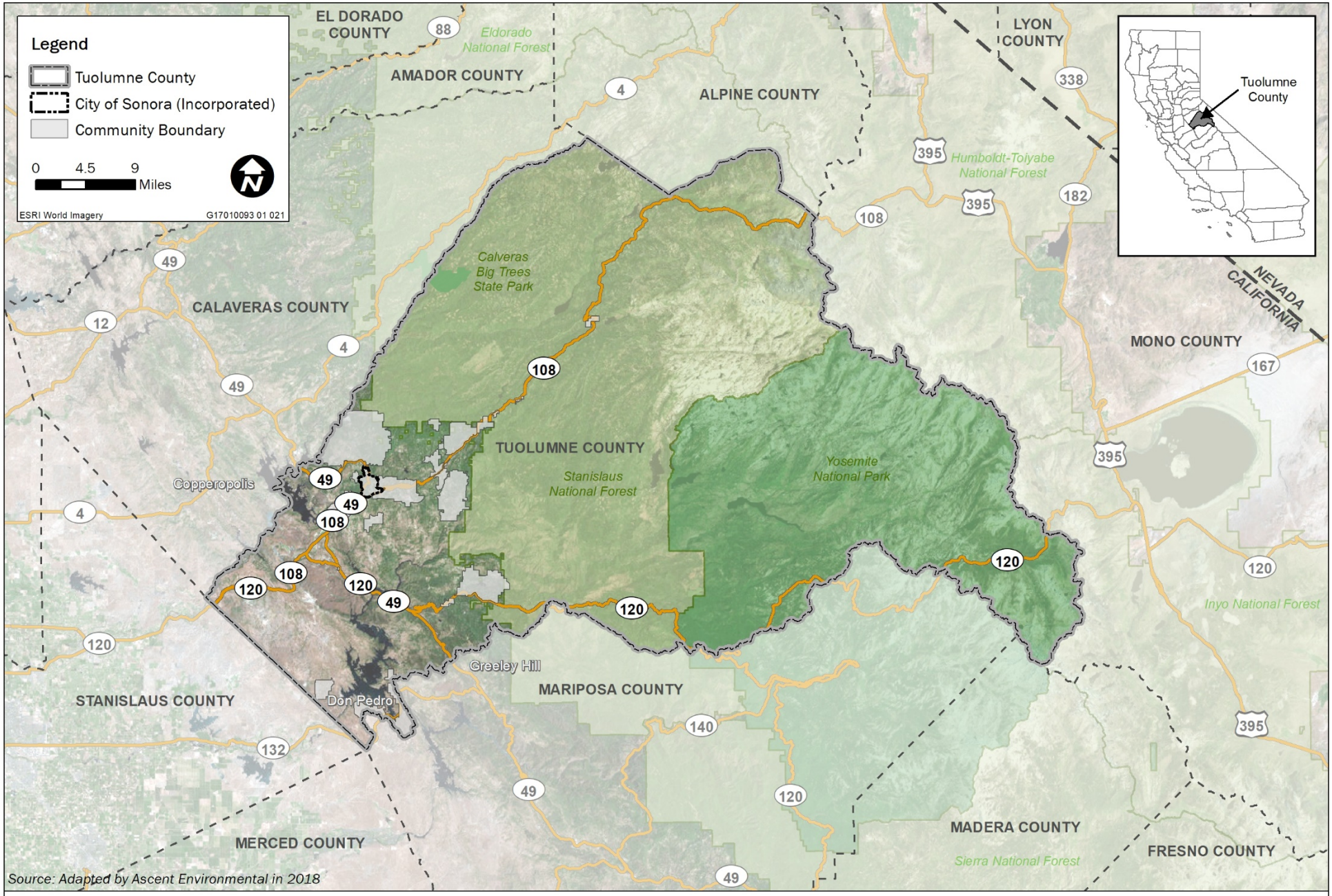

Exhibit 4-1 **Tuolumne County and Surrounding Counties**

The area that includes Tuolumne County, the City of Sonora, and the adjoining counties is referred to in this analysis as the "cumulative impact analysis area." As shown in Table 4-1, the population for the six counties surrounding Tuolumne County is projected to grow from roughly 885,000 people in 2015 to 1,143,000 people by 2040.

Table 4-1 Population, Households, and Employment Projections of Cumulative Impact Analysis Area 2015 - 2040

County	Size (square miles)	Population	
		2015	2040
Alpine	738	1,150	1,143
Calaveras	1,020	44,899	40,033
Mariposa	1,449	18,088	18,761
Merced	1,935	269,870	369,542
Mono	3,049	13,841	14,991
Stanislaus	1,495	537,608	699,022

Source: Data provided by California Department of Finance, California State Association of Counties in 2018

City of Sonora: The City of Sonora is located in Tuolumne County. As mentioned above, the population projection assumed in the General Plan Update, consistent with the TCTC's 2016 RTP, conservatively includes the City of Sonora population. However, the General Plan Update policies apply only to the unincorporated parts of the County and not to the City of Sonora; therefore, this Recirculated Draft EIR does not directly analyze and mitigate for impacts of future development in the City. Nonetheless, future development in the City is included in the Recirculated Draft EIR's consideration of cumulative impacts.

Calaveras County: Calaveras County is located along the northeast boundary of Tuolumne County in the western Sierra Nevada. Like Tuolumne County, a substantial portion of Calaveras County is in public or quasi-public ownership and, as such, is controlled by agencies other than the county. State Route (SR) 4 traverses the county from the northeast to the southwest, roughly parallel to the boundary between Calaveras and Tuolumne counties.

Although the California Department of Finance projects a decrease in Calaveras County's population during the Tuolumne County General Plan Update horizon (between 2015 and 2040, Table 4-1), Calaveras County is currently preparing a General Plan Update that assumes the population of the county will increase modestly, from the current population of 45,578 to 55,541 persons in 2035 (an increase of nearly 10,000 residents). While there are current population centers associated with communities along SR 4, the Draft General Plan Land Use Map maintains a buffer of Resource Management and Resource Production land use designations between the developed areas and the county boundary. The exception is the future specific plan area associated with the community of Copperopolis near the southwestern end of the county and adjacent to Tuolumne County (Calaveras County 2018).

Alpine County: Alpine County is located directly north of Tuolumne County along the crest of the Sierra Nevada. Alpine County is the smallest county in California and is comprised of roughly 95 percent government-owned-and-administered land (Alpine County 1999). No meaningful growth is projected for the County over the horizon of the Tuolumne County General Plan Update.

Mono County: Mono County is located east of Tuolumne County. Like Alpine County, roughly 94 percent of the county is in public ownership (including lands owned by the City of Los Angeles). This land use pattern, combined with the remote location of the county and the limited access, has limited development (Mono County 2015). The General Plan Map does not establish land use designations for the area of the county

that borders Tuolumne County, which is in public lands (national forest and national park) located in a high alpine area. Mono County population is expected to grow by around 1,000 people over the 25-year horizon of the Tuolumne County General Plan Update (Table 4-1).

Mariposa County: Mariposa County borders Tuolumne County to the south. Land uses adjacent to the county boundary primarily include Yosemite National Park, Agriculture/Working Landscape, and Planning Study Areas associated with Don Pedro and Greeley Hill. The Lake Don Pedro-Coulterville area is one of the few areas of the County with public water and sewer disposal systems. The Mariposa General Plan indicates that this area has the potential to accommodate substantial increases in population and there is a potential for construction of single-family residences (Mariposa County 2006). Mariposa County is projected to grow by approximately 1,700 people over the 25-year horizon of the Tuolumne County General Plan Update.

Merced County: Merced County is located southeast of Tuolumne County, in the heart of California's San Joaquin Valley. The county, which spans from the coastal range to the foothills of the Sierra Nevada, is a very productive agricultural region. Substantial growth is projected in the county over the General Plan Update horizon, with the population growing by around 100,000 people. The majority of county residents and growth is located in cities (Merced, Atwater, Livingston, Los Banos, Gustine, Dos Palos) and communities located along the San Joaquin Valley floor. No population centers are located near Tuolumne County.

Stanislaus County: Stanislaus County is located west of Tuolumne County. Similar to Merced County, Stanislaus County is located in the San Joaquin Valley and is primarily in agricultural production. The area adjacent to Tuolumne County is designated as General AG 40 Acre. With the city of Modesto at its core, Stanislaus County is the largest of the surrounding counties with a population over 537,000, and with projections to grow by more than 160,000 by 2040. Similar to Merced County, the major population centers in the county are located in cities (Modesto, Turlock, Ceres, Riverbank, Newman, Patterson, Oakdale) located along the valley floor and the base of the foothills. No major population centers are located near Tuolumne County.

4.2 CUMULATIVE IMPACTS

The following analysis examines the cumulative effects of projected development under the General Plan Update within the cumulative impact analysis area, unless otherwise noted. Because the General Plan Update anticipates development across a large geographical area (unincorporated parts of Tuolumne County) over a long period of time (through 2040), the analysis presented throughout this Recirculated Draft EIR is inherently cumulative. The potential for cumulative effects associated with projected development under the General Plan Update in combination with development of the City of Sonora and surrounding counties are summarized qualitatively below for each of the topics analyzed in Chapters 3, "Environmental Impacts and Mitigation Measures," of this Recirculated Draft EIR.

CEQA Guidelines section 15130(b)(3) directs lead agencies to define the geographic scope of the area affected by the cumulative effect and to provide a reasonable explanation for the geographic limitation used. The geographic scope defines the area within which a proposed project and related projects may contribute to a specific cumulative impact. The geographic scope of the cumulative impact analysis varies depending upon the specific environmental issue being analyzed. The geographic scope for each environmental issue analyzed in this EIR is identified in Table 4-2 below. For many of the resource areas, including geology, noise, public services, and hazards and hazardous materials, impacts would be location specific, and would not be expected to combine with development outside of the County to result in any additional impacts not already addressed in this EIR.

Table 4-2 Geographic Scope of Cumulative Impacts

Environmental Issue Area	Geographic Scope of Cumulative Analysis
Aesthetics	County[1] and land in surrounding counties that have views of county land
Agriculture and Forest Resources	County[1] and surrounding counties
Air Quality	Mountain Counties Air Basin
Biological Resources	County[1] and surrounding counties (and statewide as appropriate)
Cultural Resources	Local (limited to plan area and off-site improvement areas), with regional implications
Energy	County[1] and surrounding counties
Geology	County[1] (impacts are primarily localized)
Global Climate Change	Global
Hazards and Hazardous Materials	County[1] (impacts are primarily localized)
Hydrology and Water Quality	County[1] and shared watersheds and waterways of surrounding counties
Land Use and Planning	County[1] (impacts are primarily localized)
Noise	County[1] (impacts are primarily localized)
Population and Housing	County[1] and surrounding counties
Public Services	Local service areas
Recreation	County[1] and surrounding counties
Transportation and Circulation	County[1] and surrounding counties
Utilities and Service Systems	Local service areas

Notes:

[1] County = Tuolumne County, including City of Sonora

Source: Ascent 2018

4.2.1 Aesthetics

Visual resources impacts associated with projected development under the General Plan Update are analyzed in Section 3.1, "Aesthetics," of this Recirculated Draft EIR. Effects on scenic resources generally occur at the interface between development and the scenic resources, and tend to be localized. Impacts associated with changes to scenic resources, visual character and quality, and light and glare would be less than significant at the County scale. Consequently, the General Plan Update would not be expected to combine with development in adjacent counties to produce a considerable contribution to cumulative impacts. The potential for cumulative impacts related to visual resources is not cumulatively significant, and the impact would be less than cumulatively considerable.

4.2.2 Agricultural and Forest Resources

Projected development under the General Plan Update has the potential to result in conversion of land uses, including agricultural lands and forest land, to urban uses. Implementation of Mitigation Measure 3.2-1 would compensate for the conversion of any High-Value Agricultural Land resulting from the redesignation of Agriculture land to a non-agricultural use. However, although compensation would prevent other existing High-Value Agricultural Land from future conversion, it would not replace the lost High-Value Agricultural Farmland. Further, implementation of cumulative development outside the County, particularly in Merced and Stanislaus counties where the majority of growth would occur, would be expected to result in conversion of farmland, of much higher quality (due to its location on the San Joaquin Valley floor) could also result in

additional conversion of agriculture land and forest land to other uses. The potential for cumulative impacts related to agricultural resources is cumulatively significant, and the impact would be cumulatively considerable. Proposed mitigation of agricultural conversion in Tuolumne County, using a ratio of 1 acre conservation easements for every acre of High-Value Agricultural Land converted, is considered a maximum reasonable mitigation. This is affirmed by case law. While this mitigation would reduce the impact, it would remain cumulatively considerable.

4.2.3 Air Quality

Air quality impacts are assessed at the air-basin level. As a result, the impacts identified in Section 3.3, "Air Quality," are inherently cumulative. Tuolumne County is located within the Mountain Counties Air Basin (MCAB), along with Amador, Calaveras, El Dorado (western), Mariposa, Nevada, Placer (central), Sierra, and Plumas County. However, the Tuolumne County portion of the MCAB is a non-attainment area for the state standards for ozone (CARB 2017) and the high levels of ozone are caused by transport of emissions from the San Francisco Bay Area, Sacramento Valley, and San Joaquin Valley. Thus, for this cumulative analysis the MCAB and the regions that affect air quality within Tuolumne County define the geographic context.

As the San Francisco Bay Area, Sacramento Valley, and San Joaquin Valley continue to grow, it is likely that ozone transfer will continue to occur, affecting levels with Tuolumne County. However, these regions are required by the Clean Air Act to prepare attainment plans that include measures to reduce these pollutants. In addition, although Tuolumne County Air Pollution Control District (TCAPCD) is not required to prepare an attainment plan, all available measures are required to be implemented by TCAPCD. As discussed in Section 3.3, "Air Quality," numerous policies and programs are included in the General Plan Update that would reduce construction and operational-related emissions of ozone precursors. Nonetheless, due to the geography and location of Tuolumne County, it is likely that transport of ozone will continue to occur, and this existing cumulative condition would remain unchanged or worsened in the future.

In addition to emissions transport from other regions, projected development under the General Plan Update would result in associated long-term increases in emissions. As discussed in Section 3.3, "Air Quality," the General Plan update would not result in significant impacts related to construction- or operations-related emission of criteria pollutants. TCAPCD establishes thresholds designed to help the basin achieve state ambient air quality standards; therefore, because the General Plan Update would not exceed those thresholds, the cumulative impact related to air quality is not significant. The contribution of projected development under the General Plan Update to cumulative air quality impacts would not be cumulatively considerable.

4.2.4 Biological Resources

The effect of projected development under the General Plan Update on regional biological resources is analyzed in Section 3.4, "Biological Resources," of this Recirculated Draft EIR. As noted in Section 3.4, implementation of the proposed land use development pattern could result in regional impacts on riparian, oak woodland, or other sensitive natural communities. Similarly, development pursuant to other local and regional planning efforts within the greater cumulative impact area could also have impacts on special-status species and habitat. Regional development in surrounding counties may result in similar impacts, although the majority of cumulative development is expected in different habitat types (e.g., habitat associated with the San Joaquin Valley floor).

Implementation of Mitigation Measure 3.4-2, in combination with existing state and federal regulations, the General Plan Update policies and implementation programs, Community Plan policies, existing Oak Woodlands Conservation Fund established by the County, and Chapter 9.24 (Premature Removal Of Native Oak Trees) of the County of Tuolumne Ordinance Code would reduce impacts associated with projected development under the General Plan Update to riparian habitats, oak woodlands, and other sensitive communities. Specifically,

implementation of Mitigation Measure 3.4-2 would reduce impacts to oak woodlands resulting from projected development under the General Plan Update because it would require impact avoidance or minimization through feasible project design modification or mitigation at a ratio sufficient to offset the loss of oak woodland habitat function and values. Section 3.4, "Biological Resources," concludes that with compliance with existing state and federal regulations, existing and proposed County policies and implementation programs, as well as mitigation measures, the proposed General Plan Update would result in less-than significant impacts related to disturbance or loss of special-status plant and animal species; loss or degradation of riparian, oak woodland, or other sensitive natural communities; loss or degradation of federally protected wetlands; disturbance or loss of animal movement corridors; potential conflict with local policies or ordinances protecting biological resources; and potential conflict with an adopted conservation plan. Because overall development anticipated under the General Plan is relatively low, would be constructed over 20 years, and would likely be dispersed throughout the many identified communities in the County, and because impacts associated with implementation of the General Plan Update on biological resources would not be individually significant, it is unlikely that impacts would meaningfully combine with impacts to species and habitat outside the County.

For these reasons, the proposed General Plan Update would not substantially reduce habitat of a fish or wildlife species or cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal. The potential for cumulative impacts related to biological resources is not cumulatively significant. The contribution of projected development under the General Plan Update to cumulative biological resources impacts would not be cumulatively considerable.

4.2.5 Cultural Resources

The effect of projected development under the General Plan Update on cultural resources is analyzed in Section 3.5, "Cultural Resources," of this Recirculated Draft EIR. While some cultural resources may have regional significance, the resources themselves are site-specific, and impacts to them are project-specific. For example, impacts to a subsurface archeological find at one project site are generally not made worse by impacts from another project to a cultural resource at another site. Rather, the resources and the effects upon them are generally independent. Therefore, the impacts of projected development under General Plan Update would not be expected to combine with impacts to cultural resources in the surrounding counties to create more considerable impacts. The potential for cumulative impacts related to cultural resources is not cumulatively significant, and the impact would be not be cumulatively considerable.

4.2.6 Energy

Potential impacts related to increased energy consumption from projected development under the General Plan Update are evaluated in Section 3.6, "Energy," of this Recirculated Draft EIR. Construction that could occur with projected development under the General Plan Update would result in a temporary increase in fuel consumption. However, it is anticipated that fuel would not typically be consumed in a wasteful manner during construction of individual projects under the General Plan Update, as it is in the interest of construction contractors to meet project schedules and minimize costs. This translates to various efficiencies, including in the use of energy resources. Through the policies and actions of the General Plan Update, transportation-related energy would be reduced through improved facilities for alternative modes of transportation and transit-oriented development. Fuel consumption associated with vehicle trips would not be considered inefficient, wasteful, or unnecessary in comparison to that associated with other, similar rural counties. Building energy would be reduced through improvements in energy efficiency and installation of solar photovoltaics, as expressed in Policies 2.F.3, 6.3.5, and 18.A.6. Further, Policy 18.A.1 requires the County to prepare a climate action plan (CAP) that would aim to reduce GHG emissions and conserve energy. In addition, the General Plan Update emphasizes a clustered pattern of land development.

Development in surrounding counties will also consume energy; it is likely the same or similar factors governing development in these areas would result in efficient energy use: construction contractors would be encouraged to be energy efficient as a matter to business practices, as well as adherence to air quality standards that require minimization of emissions, and strict energy standards. The potential for cumulative impacts related to energy is not cumulatively significant. As such, despite other growth and development in the cumulative impact analysis area that could result in increases in the demand for energy, projected development under the General Plan Update would not result in a wasteful or inefficient use of energy and its contribution to cumulative energy impacts would not be cumulatively considerable.

4.2.7 Geology

Impacts to geology that may result from projected development under the General Plan Update are analyzed in Section 3.7, "Geology," of this Recirculated Draft EIR. Geology and soils impacts may be related to: increased exposure to seismic hazards; increased risks associated with soil liquefaction and subsidence; and risks associated with mass wasting, expansive soils, and erosion. These effects occur independently of one another and are related to site-specific and project-specific characteristics and conditions. In addition, existing regulations specify mandatory actions that must occur during project development, which would adequately address the potential for effects from construction or operation of projects related to geology, soils, and seismicity, as noted throughout the impacts discussed in Section 3.7 of this Recirculated Draft EIR. The potential for cumulative impacts is not cumulatively significant, and the impact would not be cumulatively considerable.

4.2.8 Global Climate Change

Climate change is an inherently cumulative issue and relates to development in the region, California, and the world. Therefore, the impacts are discussed in Section 3.8, "Global Climate Change," are also the cumulative effects of implementation of projected development under the General Plan Update. The General Plan Update includes a number of policies that would help to reduce GHG emissions, including policies that would reduce GHG emissions from the two largest emissions sources, energy and mobile source emissions. Additionally, Policy 18.A.1 of the General Plan Update requires the preparation of a CAP, or similar GHG reduction plan. However, a CAP has not yet been adopted or implemented and estimated GHG emissions associated with General Plan Update would result in a substantial increase in GHG emissions and, therefore, could potentially conflict with state's 2017 Scoping Plan. Thus, the General Plan Update may contribute to cumulatively significant climate change effects, and impacts would be cumulatively considerable.

4.2.9 Hazards and Hazardous Materials

Impacts associated with hazards and hazardous materials related to projected development under the General Plan Update are analyzed in Section 3.9, "Hazards and Hazardous Materials," of this Recirculated Draft EIR. Hazards and hazardous materials impacts may be related to: the transport, use, or disposal of hazardous materials; exposure to wildland fires; proximity to airports; and the potential to impair emergency response or evacuation plans. Existing regulations specify mandatory actions that must occur during project development, including related to the transport, use, and disposal of hazardous materials, which would adequately address issues pertaining to hazards and hazardous materials, as noted throughout the impact discussed in Section 3.9. Wildland fires, in contrast, can cross county lines and create a regional hazard. As described in Section 3.9, the policies and implementation programs in the General Plan Update would reduce potential risk of injury or damage from wildland fires by providing specific requirements for new and existing development to reduce fire hazard, ensuring emergency access, and providing for safe evacuation. This would result in a less-than-significant impact. The potential for cumulative impacts related to hazards and hazardous materials is not cumulatively significant, and the impact would not be cumulatively considerable.

4.2.10 Hydrology and Water Quality

Tuolumne County is upstream from counties that would experience substantial development and, therefore, cumulative impacts would occur if projected development under the General Plan Update would considerably affect hydrology and water quality. Impacts associated with water resources related to projected development under the General Plan Update are analyzed in Section 3.10, "Hydrology and Water Quality," of this Recirculated Draft EIR. Water resources impacts may be related to: exposure of people to a significant risk of loss, injury, or death involving flooding; dam failure; and effects to waterways associated with stormwater runoff and point source contamination. Existing regulations specify mandatory actions that must occur during project development, which would adequately address the potential for construction or operation of projects to affect water resources, as noted throughout the impacts discussed in Section 3.10. It is also important to consider that overall development anticipated under the General Plan is relatively low, would be constructed over 20 years, and would likely be dispersed throughout the many identified communities in the County. Thus, the potential for cumulative impacts related to water resources is not cumulatively significant, and the impact would not be cumulatively considerable.

4.2.11 Land Use and Planning

Land use and physical development impacts associated with projected development under the General Plan Update are analyzed in Section 3.11, "Land Use and Planning," of this Recirculated Draft EIR. The General Plan Update would be consistent with the goals of the 2016 RTP and would not contribute to a cumulative effect due to conflict with regional plans. Other impacts evaluated (i.e., conflict with local plans and potential to result in division of a community) are site-specific and do not result in regional impacts beyond the County boundary. As described in Section 3.11, no significant impacts would result from projected development under the General Plan Update. Further, as also noted in Section 3.11, the additional population, housing, and job growth forecasted for the planning period is not a result of the General Plan Update; rather the General Plan Update provides a strategy to allocate growth to optimize the way that anticipated growth is accommodated in the County. Thus, projected development under the General Plan Update would not result in displacement at the regional scale, or localized displacement that would be expected to exert development pressure on surrounding areas. Because projected development under the General Plan Update would not exert development pressure on adjacent counties through displacement of land uses, indirect effects that would otherwise be expected (effects tied to development) would not occur. Thus, the potential for cumulative impacts is not cumulatively significant, and the impact would not be cumulatively considerable.

4.2.12 Noise

Noise impacts associated with projected development under the General Plan Update are analyzed in Section 3.12, "Noise," of this Recirculated Draft EIR. Noise impacts are based on factors related to site-specific and project-specific characteristics and conditions, including distance to noise sources, barriers between land uses and noise sources, and other factors. Projected development under the General Plan Update is not expected to substantially increase inter-regional travel, because the General Plan Update addresses how to accommodate projected growth. While traffic would be generated within the County as growth and development occurs over time, a much lesser portion of the project-generated traffic increases would occur in surrounding counties. Thus, given that most roadways within the County would experience a 1-db or less increase in traffic-noise, increases in traffic within surrounding counties would be expected to result in traffic noise increases of less than 1-db. In addition, regional traffic modeling from the RTP suggests that traffic from surrounding regions is similarly not expected to substantively affect roadway noise within Tuolumne County. Therefore, contributions of projected development under the General Plan Update to traffic noise outside the region are expected to be minimal, and the General Plan Update's contribution to cumulative traffic noise would be less than cumulatively considerable. Further, due to the distribution characteristics of sound, construction noise and vibration impacts are generally site-specific and do not

combine with distant projects to create cumulative effects. Therefore, the contribution of projected development under the General Plan Update to cumulative noise impacts would not be cumulatively considerable, and the impact would not be cumulatively considerable.

4.2.13 Population and Housing

As discussed in Section 3.13, "Population and Housing," projected development under the General Plan Update would not result in substantial displacement of existing residents or induce substantial population growth inside or outside of the County. The potential for cumulative impacts related to population and housing is not cumulatively significant. As such, the impacts of projected development under the General Plan Update would not be cumulatively considerable.

4.2.14 Public Services

Impacts to public services related to projected development under the General Plan Update are analyzed in Section 3.14, "Public Services," of this Recirculated Draft EIR. This assessment includes an analysis of the need for new facilities or modification to facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for schools, emergency services, police protection, fire protection, and other public facilities. Public schools are provided by school districts to areas within their jurisdictions. While districts may have cross-jurisdictional boundaries, school services are still provided at the local, rather than regional, level. Law enforcement, fire protection, and emergency services are provided by local governments or fire protection districts for areas within their jurisdiction, although mutual aid agreements between agencies do help spread resources. The US Forest Service and State Department of Forestry and Fire Protection provide fire protection services within many rural areas.

The effects of projected development under the General Plan Update related to most public services are not cumulatively significant due to the localized (and inherently non-cumulative) nature of these services. In addition, project-level effects to fire protection and emergency services, law enforcement, public schools, and other public services would be less than significant. As such, the impacts of projected development under the General Plan Update would not be cumulatively considerable.

4.2.15 Recreation

Neighborhood and county parks and recreational services are provided by local governments for areas within their jurisdiction. As discussed in Section 3.15, "Recreation," projected development under the General Plan Update is not expected to result in effects to parks due to proposed policy changes or impacts to existing parks resulting from inadequate park provision within the County or in adjacent jurisdictions. As such, the impacts of projected development under the General Plan Update would not be cumulatively considerable, and impacts would not be cumulatively considerable.

4.2.16 Transportation and Circulation

Impacts to transportation and circulation related to projected development under the General Plan Update are analyzed in Section 3.16, "Transportation and Circulation," of this Recirculated Draft EIR. The travel demand model used to analyze the transportation operations impacts of projected development under the General Plan Update reflects the changes to future growth patterns assumed as part of the General Plan Update under years 2030 and 2040. The impact analysis relies on existing and future growth accommodated through the General Plan Update and accounts for the projected growth of the surrounding

counties. Therefore, the transportation and circulation impacts identified in Section 3.16, "Transportation and Circulation," are inherently cumulative. Because the impacts to roadway segment and intersection operations (Impacts 3.16-1 and 3.16-2) would remain significant and unavoidable after mitigation, the potential for cumulative impacts related to transportation and circulation is cumulatively significant, and the impact would be cumulatively considerable.

4.2.17 Utilities and Service Systems

Impacts to utilities and services related to projected development under the General Plan Update are analyzed in Section 3.17, "Utilities and Service Systems," of this Recirculated Draft EIR. This analysis includes an examination of potential impacts related to the availability and capacity of water supply, stormwater, wastewater, and solid waste disposal. The utilities identified below are generally provided or delivered on a local level, but may originate from sources outside of the local jurisdiction and/or as part of a regional distribution system. The contribution of projected development under the General Plan Update to cumulative impacts associated with the provision of utilities is discussed below.

WATER SUPPLY AND INFRASTRUCTURE

Water supply and associated infrastructure have both local and regional aspects. The rivers that provide surface water supplies travel through the region and beyond, providing water supply to jurisdictions inside and outside of the County along the way. An increase in demand and water consumption in one region has the potential to affect supplies throughout California, because the surface water supply systems are interconnected. Future growth anticipated with projected development under the General Plan Update would result in an increase in water supply needs and demand. Future growth elsewhere in the cumulative impact analysis area could also lead to potential future water shortages and depletion of existing water supplies.

As shown in Table 3.17-5, it is projected that projected development would generate additional demand for 1,725 AFY of water in TUD's service area using the baseline generation factor. It is anticipated that there would be adequate water supplies and infrastructure capacity to serve development associated with projected development under the General Plan Update. This is a minor increase in regional water use. In addition, policies and implementation programs in the General Plan Update would seek to increase the water supply and reduce water demand in Tuolumne County. The policies and implementation programs in the Utilities and Water Supply Elements would enhance the reliability and availability of the water supply system and would require appropriate development types to be served by public water after demonstrating that appropriate supply is available. These policies also help restrict the pattern of development to more urbanized areas that are already served by public water. Therefore, the impacts of projected development under the General Plan Update would not be cumulatively significant with respect to wastewater and wastewater infrastructure, and impacts would not be cumulatively considerable.

WASTEWATER AND INFRASTRUCTURE

Wastewater service (septic tank treatment and sewer treatment) is a localized concern, as the wastewater treatment facilities and services are usually provided and regulated by local governments or special districts for areas within their jurisdiction. As such, wastewater systems and associated infrastructure within Tuolumne County would not be substantially affected by development in adjacent counties. Projected development under the General Plan Update would have less-than-significant impacts related to wastewater capacity. Therefore, the impacts of projected development under the General Plan Update would not be cumulatively significant with respect to wastewater and wastewater infrastructure, and impacts would not be cumulatively considerable.

STORMWATER AND INFRASTRUCTURE

Stormwater drainage systems are generally provided by local governments for areas within their jurisdictions or for county/city areas combined, and are not typically provided on a regional or extra-regional basis. Stormwater drainage solutions typically depend on site-specific and project-specific characteristics and implementation. As such, stormwater drainage systems within Tuolumne County would not be significantly affected by development in adjoining counties. Projected development under the General Plan Update is anticipated to result in less-than-significant impacts related to new or expanded stormwater infrastructure. Therefore, the impacts of projected development under the General Plan Update would not be cumulatively significant with respect to stormwater and stormwater infrastructure, and impacts would not be cumulatively considerable.

SOLID WASTE

Solid waste disposal is generally provided by the Merced County Regional Waste Management Authority. Because applicable landfills have capacity to accommodate solid waste generated under the life of the General Plan Update, and implementation of the policies in the Utilities Element would further reduce the amount of solid waste disposed of at landfills, impacts of projected development under the General Plan Update related to solid waste would not be cumulatively significant, and impacts would not be cumulatively considerable.

5 OTHER CEQA DISCUSSIONS

This chapter discusses other issues for which CEQA requires analysis in addition to the specific issue areas discussed in Chapter 3, "Environmental Impact Analysis." These additional issues include the potential to induce growth and significant and irreversible impacts on the environment.

5.1 GROWTH-INDUCING IMPACTS

In accordance with Section 15126.2(d) of the State CEQA Guidelines, "an EIR must 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." In addition, when discussing growth-inducing impacts of a proposed project, "it must not be assumed that growth in any area is necessarily beneficial, detrimental, or of little significance to the environment" (CEQA Guidelines, Section 15126.2(d)).

The following discusses ways in which the General Plan Update could foster economic or population growth or the construction of additional housing, either directly or indirectly, in the surrounding environment. Growth can be induced in a number of ways, such as through the elimination of obstacles to growth, through the stimulation of economic activity within the region, or through the establishment of policies or other precedents that directly or indirectly encourage additional growth. Although growth inducement itself is not considered an environmental effect, it could potentially lead to environmental effects. In general, a project may foster spatial, economic, or population growth in a geographic area if the project removes an impediment to growth (e.g., the establishment of an essential public service, the provision of new access to an area, a change in zoning or general plan amendment approval) or economic expansion or growth occurs in an area in response to the project (e.g., changes in revenue base and employment expansion).

5.1.1 Population and Economic Growth

As discussed in Chapter 2, "Project Description," the proposed project is a comprehensive update to the Tuolumne County General Plan that establishes the community's vision for the development of Tuolumne County through the year 2040 and will serve as the fundamental land use policy document for the County. Incremental build-out by 2040 under the General Plan Update is projected (as further described in the paragraph below) to result in a net increase of 5,159 dwelling units, 938,000 square feet of commercial development, and 196,000 square feet of industrial development above existing conditions (year 2015). This represents a 24 percent increase in dwelling units, 20 percent increase in commercial development, and 11 percent increase in industrial development above existing conditions. Full build-out of every parcel in the County is not foreseeable.

It is important to acknowledge that the General Plan Update does not facilitate growth in the County; rather, it is intended to shape the location and type of development that would otherwise occur on land zoned and planned for certain uses. Land use changes proposed in the General Plan Update are almost exclusively built around conforming the land use map to underlying zoning and increasing the potential development density in identified communities, rather than in rural areas. General Plan and Community Plan policies would encourage the future growth in the County to occur in the 18 identified communities. The basis of growth projections is the Tuolumne County Transportation Council, which adopted a population projection of 63,243 residents in Tuolumne County (including the City of Sonora) by the year 2040 after considering the California Department of Finance forecasts, Census population projections, and past Tuolumne County Transportation Council adopted population projections. Projected development under the General Plan Update would add an estimated 8,906 residents to the existing population of Tuolumne County and the City of Sonora. As noted in Chapter 2, this is a conservatively high and optimistic estimate of growth. The

California Department of Finance projects little to no growth in the County in the period between 2015 and 2040 (see Chapter 2).

Further, within the General Plan Update, each identified community contains a well-defined, cohesive, and compact community built around an appropriately scaled "urban" core and community gathering places. The size of each community is based on a community boundary. Infill and mixed-use development are encouraged to take advantage of existing public infrastructure and services, rather than an extension of these services. Residential and commercial areas are encouraged by the General Plan Update to become more compact, promoting mixed-use and higher density residential development to supply housing demand.

As stated above, the General Plan Update is projected to accommodate up to 938,000 square feet of new commercial development and 196,000 square feet of new industrial development by 2040 in the unincorporated County. This would result in new employment opportunities (including short-term construction jobs) and foster economic sustainability within the County. It would also result in greater employment-generating uses that may generate a secondary demand for goods and services to support new and expanding businesses. Thus, projected development under the General Plan Update would increase the amount of economic activity resulting from the direction and strategies within the County, which would result in economic growth; however, the growth would be consistent with the regional growth forecasts that have been adopted for the County.

5.1.2 Removal of Obstacles to Growth

Growth in an area may result from the removal of physical impediments or restrictions to growth, as well as the removal of planning impediments resulting from land use plans and policies. In this context, physical growth impediments may include nonexistent or inadequate access to an area or the lack of essential public services (e.g., water service), while planning impediments may include restrictive zoning and/or general plan designations.

The General Plan Update encourages growth within the identified communities, which could intensify the uses over what currently exists in some areas. Limits in existing infrastructure capacity could be an obstacle to this growth. The extension of public service infrastructure, including roadways, water mains, and sewer lines, into areas that are not currently provided with these services is expected to support new development.

Growth within the identified communities depends on expansion of service systems. The General Plan Update's policies provide for the expansion of infrastructure to accommodate new growth within the identified communities. This includes improvements to streets to serve the projected population and provision of water, sanitary sewer, and electricity. Development consistent with the General Plan Update could necessitate the construction of additional distribution and collection systems in areas that are not currently served by public utilities. In addition, it is anticipated that upgrading/upsizing of existing utilities could occur in areas where there is significant reinvestment in vacant or underutilized areas. It is expected that utilities would be appropriately sized to accommodate proposed development, rather than oversizing for unforeseen development, which would be more costly and not supported by projected growth estimates.

5.1.3 Conclusion

Planning documents, such as general plans and regional transportation plans, serve as blueprints for future growth that is projected to occur. The General Plan Update is designed to accommodate a projected population increase. County-wide (including the City of Sonora), this increase is anticipated to be 8,906 residents (or approximately 360 people per year averaged over the 25-year period between 2015 and the 2040 planning horizon). The General Plan Update includes a comprehensive policy framework designed, in large part, to control and focus the growth and minimize potential environmental impacts associated with that growth. The General Plan Update does not include land use designations or policies that would promote growth beyond

population projections. Therefore, because growth in the County will occur with or without approval of the General Plan Update, and because the General Plan Update would not in and if itself induce growth, but would rather control and focus growth, impacts related to growth inducement would be **less than significant**.

5.2 IRREVERSIBLE ENVIRONMENTAL EFFECTS

Section 15126.2(c) of the CEQA Guidelines requires a discussion of any significant irreversible environmental changes. Generally, a project would result in significant irreversible environmental changes if:

- the primary and secondary impacts (such as highway improvement which provides access to a previously inaccessible area) would commit future generations to similar uses;
- the project would involve uses in which irreversible damage could result from any potential environmental accidents associated with the project;
- the project would involve a large commitment of nonrenewable resources; or
- the proposed consumption of resources is not justified (e.g., the project involves the wasteful use of energy).

Implementation of the General Plan Update would result in the long-term commitment of resources to development within identified communities. This would preclude non-urban uses for the lifespan of the General Plan Update. Restoration of the plan area to a less developed condition would not be feasible given the degree of disturbance, the urbanization of the area, and the level of capital investment. The most notable significant irreversible impacts are urbanization of vacant or rural areas and the change in visual character, increased generation of pollutants, including greenhouse gas emissions and the short-term commitment of non-renewable and/or slowly renewable natural and energy resources, such as water resources during construction activities. Resources that would be permanently and continually consumed by projected development under the General Plan Update include water, electricity, and fossil fuels; however, the amount and rate of consumption of these resources would not result the inefficient or wasteful use of resources. See Section 3.6, “Energy,” for a more detailed discussion. These unavoidable consequences of urban growth are described in the appropriate sections in Chapter 3, “Environmental Impact Analysis,” of this EIR.

The CEQA Guidelines also require a discussion of the potential for irreversible environmental damage caused by an accident associated with the project. While projected development under the General Plan Update could result in the use, transport, storage, and disposal of hazardous wastes, as described in Section 3.9, “Hazards and Hazardous Materials,” all activities would be required to comply with applicable state and federal laws related to hazardous materials transport, use, and storage, which significantly reduces the likelihood and severity of accidents that could result in irreversible environmental damage.

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6 ALTERNATIVES

6.1 INTRODUCTION TO ALTERNATIVES

The California Code of Regulations (CCR) Section 15126.6(a) (State CEQA Guidelines) requires environmental impact reports (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 proposed 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 proposed project with the impacts of not approving the proposed 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 an 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 Tuolumne County Board of Supervisors (see PRC Sections 21081.5, 21081[a][3].)

6.2 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 project objectives for the General Plan Update. As summarized in Section 2.4, the general objectives of the General Plan Update are as follows.

- Adopt a County-wide General Plan that reflects the current values and vision of the communities in the County and reflects the latest legal, statutory, scientific, and technical changes and advancements.
- Update the County General Plan to achieve and enable maximum flexibility for development within the bounds of state and federal law as well as an ever-evolving legal, cultural and environmental landscape.
- Promote the delivery of efficient and cost-effective public services.
- Enhance the unique nature of identified communities while providing services and amenities for residents, businesses, and visitors on a County-wide basis.
- Minimize or eliminate restrictions and requirements that can increase delays and/or the cost to development.
- Promote development within the County that is designed to fit the needs of the County's residents, businesses, and visitors.
- Promote the stewardship of the County's natural resources, which includes providing for the productive use of natural resources, and management to reduce risks of wildland fires.
- Conserve the County's historic resources and recognize their unique value to the County's social and economic fabric.
- Allow residents and property owners to use their land to the maximum extent of the law, while respecting the values of the community.

6.3 SUMMARY OF PROJECT IMPACTS

Sections 3.1 through 3.17 of this Recirculated Draft EIR address the environmental impacts of projected development under the General Plan Update. Potentially feasible alternatives were developed with consideration of avoiding or lessening the significant adverse impacts of projected development under the General Plan Update. In summary, the following impacts have been identified as significant and unavoidable. In some instances, mitigation measures in the form of policies are proposed to substantially reduce these impacts, but they are concluded to be significant and unavoidable because the efficacy of the mitigation may be uncertain or there may be questions as to whether the measures will be adopted.

Agricultural Resources

- Loss of High-Value Agricultural Land
- Conflict with Williamson Act contracts, Agricultural preserves or Agricultural Preserve overlay districts (cancellation of contracts/removal of districts that protect agriculture)

Cultural Resources

- Change in the significance of a historical or unique archaeological resource (adverse effects on these resources)

Global Climate Change

- Generation of greenhouse gas (GHG) Emissions, either directly or indirectly (considerable contribution to global climate change)

- Conflict with any applicable plan, policy, or regulation for reducing the emission of GHGs

Noise

- Expose new sensitive land uses to traffic noise
- Expose existing sensitive receptors to traffic-noise increases
- Expose sensitive receptors to construction noise levels that exceed applicable standards
- Expose sensitive receptors to construction vibration levels that exceed applicable standards

Transportation and Circulation

- Impacts to several roadway segment operations
- Impacts to several intersection operations

Cumulative Impacts

- Contribution to cumulative loss of farmland
- Contribution to cumulative air quality impacts
- Contribution to cumulative climate change effects
- Contribution to cumulative impacts related to transportation and circulation

6.4 UPDATE TO THE ALTERNATIVES ANALYSIS

As required by Section 15126.6(a) of the State CEQA Guidelines, this chapter of the Recirculated Draft EIR examined a range of reasonable alternatives to the General Plan Update. Alternatives were selected for evaluation that could feasibly accomplish most of the basic objectives of the General Plan Update and could avoid or substantially lessen one or more of the significant effects of the General Plan Update. This Recirculated Draft EIR re-examines the alternatives considered in the Draft EIR, with revised analysis where needed to reflect the revised analysis in Chapter 3 of this document, and also considers additional alternatives.

The previous analysis included three alternatives: the CEQA-required “no project” alternative (growth in accordance with the 1996 General Plan); a Public Services alternative; and the Recent Trends, Proposed alternative. These alternatives, which were all included as scenarios in the County’s 2016 Regional Transportation Plan, are summarized below:

- **Alternative 1: No Project (Recent Trends, Existing).** Under this alternative, the current 1996 General Plan’s land use diagram would be retained and the existing policies in the current 1996 General Plan would remain in effect. The historic and current trend of primarily low-density suburban and rural development would continue.

- **Alternative 2: Public Services:** Under this alternative, new development would be allocated at higher densities in locations closer to multiple public services than under existing conditions. Although development would continue to grow within identified communities, it also would radiate outward along a select number of arterials, major collectors, and transit corridors where public water and sewer exist. The proposed policies and implementation programs in the General Plan Update would still apply to the Public Services alternative, with the exception of those that are narrowly tailored to focus development within identified communities.

- **Alternative 3: Recent Trends, Proposed.** Under this alternative, the current 1996 General Plan land use diagram would remain unchanged; however, the alternative would include the proposed policies and implementation programs in the General Plan Update (with the exception of those that are narrowly tailored to focus development within identified communities). As with the General Plan Update, this alternative would promote locating development near identified communities; however, it would generally continue the historic and current trend of primarily low-density residential development.

6.4.1 Alternatives Considered but Dismissed from Further Evaluation

The County considered a Reduced Development Alternative that would result in less overall development in the County. However, the County dismissed this alternative from further considerations for the following reasons. The amount of development anticipated to occur within the 2040 planning horizon is not considered substantial, and, according to some growth forecasts, is conservatively high. The current general plan land use element and the associated map does not constrain the capacity of growth to 2040; growth could be substantially higher, but projections (and demand) do not support this growth. Thus, the only realistic means to reduce the already low growth projections would be to either: (1) significantly downzone the majority of properties in Tuolumne County such that even the modest level of expected growth would not occur, or (2) adopt growth control policies or other policies that restrict the physical or economic ability to develop lands, which would be contrary to several fundamental objectives of the General Plan Update (examples: enable maximum flexibility for development within the bounds of state and federal law, minimize or eliminate restrictions and requirements that can increase delays and/or the cost to development). Even moderate reduction in growth would require land use restrictions and prohibitions that would conflict with the project objectives; a major reduction in growth would require extreme measures.

Several comments received on the Draft EIR addressed alternatives. Some comments related to the overall approach to the development and analysis of alternatives. Other comments identified additional alternatives to the General Plan Update for inclusion in the analysis. Additional alternatives identified include a Modified Public Services Alternative, an Existing Capacity Alternative, and a Conservation Alternative. The County has considered these alternatives and has dismissed two of them from further evaluation in the Recirculated Draft EIR. The County's consideration and reasons for dismissal are described for each of the two alternatives below.

- **Existing Capacity Alternative.** This alternative would limit development to existing buildable vacant and underused properties and would focus on renovation and reuse of these properties. This alternative would severely limit the size and type of development that could occur within the County because all potential development would be confined to a limited number of parcels. Many of the vacant parcels are located near Pine Mountain Lake in Groveland and are designed to accommodate vacation rentals. It is also probable that a large portion of the other vacant parcels have severe development constraints, such as steep slopes and lack of access to roads, water, and other utilities. This alternative is not consistent with project objectives related to development flexibility. For these reasons the County has dismissed this alternative from further analysis.

- **Conservation Alternative.** This alternative would prioritize protection of natural, agricultural, and cultural resources, as well as recreation access. Since the draft General Plan Update was released to the public in 2015, many of the policies have been revised to further prioritize resource protection including policies related to oak woodland protection. The Recirculated Draft EIR concludes that, with implementation of mitigation measures, impacts to biological resources are less than significant. The Recirculated Draft EIR also concludes that impacts related to recreation are less than significant, due to the revised parkland provision policy that is consistent with the Quimby Act and more consistent with the parkland provision policies of other nearby counties. For these reasons, this alternative is dismissed from further consideration. However, there are opportunities for an alternative to reduce impacts associated with agricultural and cultural resources, which are both identified as significant and unavoidable impacts. Therefore, additional alternatives (discussed below) are included to address these resource areas.

6.4.2 Additional Alternatives Considered in the Alternatives Analysis

In response to public comments received on the Draft EIR, this chapter of the Recirculated Draft EIR has been revised to include three additional alternatives, which are summarized below.

- **Alternative 4: Historic Structure Preservation.** This alternative is consistent with the General Plan Update with respect to the land use diagram and is primarily consistent with the proposed policy framework, but with one key difference. The Historic Structure Preservation Alternative would include policies prohibiting demolition or substantial alteration of significant historic structures (with some exceptions based on the structural condition and cost of preservation). This alternative is designed to substantially reduce significant impacts associated with historic resources.

- **Alternative 5: Williamson Act Property Preservation.** The primary difference between this alternative and the General Plan Update is that, under this alternative, the 134 acres of land designated agriculture that are currently under Williamson Act contracts, would not be redesignated to residential use. To achieve the same amount of housing identified in the General Plan Update, this alternative would require increased residential density in other areas designated for residential development. This alternative is designed to substantially reduce significant impacts associated with consistency with the Williamson Act.

- **Alternative 6: Modified Public Services.** The Modified Public Services Alternative, which was recommended as part of public comment on the originally circulated Draft EIR, would be designed to directly reduce new development outside identified communities by providing similar incentives in the General Plan Update for encouraging growth within identified communities, but also going further than the General Plan Update to create disincentives for development in rural areas. Under this alternative, no land located outside identified communities would be redesignated from Agriculture to a non-agricultural use.

Table 6-1 provides a summary comparison of the development characteristics of the General Plan Update and the alternatives. A more detailed description of the alternatives is included in the impact analysis for each alternative.

Table 6-1 Comparison of 2040 Buildout Characteristics of Project Alternatives

Land Use Designation	Alternatives						
	General Plan Update	Alternative 1: No Project (Recent Trends, Existing)[1]	Alternative 2: Public Services[1]	Alternative 3: Recent Trends, Proposed[1]	Alternative 4: Historic Structure Preservation	Alternative 5: Williamson Act Property Preservation	Alternative 6: Modified Public Services
Residential							
Single Family Residential	4,332 du	5,018 du	4,912 du	5,024 du	4,332 du[2]	4,332 du	4,332 du
Multi-Family Residential	827 du	157 du	669 du	151 du	827 du[2]	827 du	827 du
Residential Subtotal	**5,159 du**	**5,175 du**	**5,581 du**	**5,175 du**	**5,159 du[2]**	**5,159 du**	**5,159 du**
Commercial	**938,000 sf**	**938,000 sf**	**1,001,000 sf**	**938,000 sf**	**938,000 sf[2]**	**938,000 sf**	**938,000 sf**
Industrial	**196,000 sf**	**197,000 sf**	**207,000 sf**	**196,000 sf**	**196,000 sf[2]**	**196,000 sf**	**196,000 sf**

Notes: du = dwelling units, sf = square feet

1. Alternative information is from Tuolumne County GP and RTP Update EIR Traffic Study, Table 6: Alternative Growth Scenarios Land Use Differences, September 2015

2. Totals do not account for constraints to infill/redevelopment associated with the restrictions on historic properties under Alternative 4

Source: data compiled by Ascent Environmental 2018

6.5 DESCRIPTION OF ALTERNATIVES AND COMPARISON OF IMPACTS

6.5.1 Alternative 1: No Project (Recent Trends, Existing)

DESCRIPTION

The "No Project" alternative is a "business-as-usual" scenario based on current land use designations within the existing County General Plan (1996). It assumes no change in market demand for housing types and would continue the existing pattern of suburban and rural development in which low-density residential is the primary housing choice. This alternative would require full dependency on automobiles for most residences of Tuolumne County because walkable communities, defined as a 5-minute walk (0.25 mile) between home and the core of a community (shopping, jobs, recreation, community facilities and transit), would exist only within community cores. Policies would not promote a focus on developing within the communities, and it could be expected that sprawling development would persist.

IMPACT COMPARISON

Aesthetics

Whereas the General Plan Update would minimize impacts to scenic vistas from locally-designated scenic routes by promoting development primarily within identified communities, the No Project alternative would not discourage continued suburban and rural low-density residential and other development outside of identified communities. Substantial new residential development in rural areas could adversely affect existing scenic vistas of agricultural and natural landscapes from portions of SR 49 and 108 that are locally-designated scenic corridors. Existing policies in the 1996 General Plan to protect scenic vistas would continue to apply to the No Project alternative, as would the Hillside and Hilltop Guidelines and Guidelines for Development Along Scenic Routes for discretionary permits. However, the continuation of existing suburban development patterns would increase impacts associated with this alternative relative to the General Plan Update.

This alternative also would increase the geographic extent of changes to the County's predominantly rural character, by accommodating more suburban low-density residential and other development outside the boundaries of identified communities. Although existing policies to minimize changes to visual character (discouraging strip development along the County's arterials, encouraging cluster development that protects open space areas, and protecting the historic built environment) would continue to apply to the No Project alternative, impacts from changes to visual character would increase relative to the General Plan Update.

As with the General Plan Update, this alternative would facilitate development that would introduce new sources of light and glare, which would increase overall ambient night-time light and daytime glare from building materials. Development outside of identified communities would incrementally increase the intrusion of new sources of light and glare into rural areas. Continued implementation of Policy 17.D.7 in the existing Tuolumne Community Plan would encourage lighting design and scale that incorporates dark sky standards, minimizing and avoiding light pollution throughout the Tuolumne Planning Area, and Implementation Measure 14.A.g in the existing Jamestown Community Plan requires lighting that adheres to dark sky standards. However, impacts associated with the No Project alternative would be greater than for the General Plan Update, which includes creation and implementation of countywide policies to limit the illumination of areas surrounding new development.

Agricultural Resources

The No Project alternative would not be subject to proposed Policy 8.A.2, which would facilitate conversion of agricultural land near developed areas. The General Plan Update includes policies and implementation programs to protect agricultural land from conversion, including policies to promote agritourism to increase the viability (and reduce conversion pressure) of agricultural land, and mitigation measures are included in this Recirculated Draft EIR to reduce impacts to High-Value Agricultural Land. The No Project alternative

would not be subject to these policies or mitigation measures. However, because the General Plan Update would result in the redesignation of 4,509 acres of agricultural land to non-agricultural use including redesignation of 134 acres of land currently under Williamson Act contract, impacts associated with the No Project alternative would be less than under the General Plan Update.

Future development under current land use designations also may result in incompatibilities where residential and agricultural uses would directly abut each other. Land use conflicts would be reduced through the separation of potentially conflicting land uses, continued application of the County's Right to Farm Ordinance, and implementation of existing General Plan policies. Impacts related to land use compatibility with agricultural land would be similar.

As with the General Plan Update, existing timberland would remain in timber production under this alternative. Impacts to timberland would be similar.

Air Quality

Construction activities associated with future development under the No Project alternative would have the potential to result in temporary adverse impacts on air quality in Tuolumne County. Without the addition of policies to control emissions during construction of individual projects, impacts would be greater than under the General Plan Update.

Under the No Project alternative, emissions levels are generally forecast to decline compared to existing conditions between 2015 and 2040 despite projected future growth in the County. This is due to the state-wide continuing downward trend in emissions levels caused by the CARB rules designed to reduce emissions from cars and trucks. The No Project alternative does not incorporate increased density and other vehicle miles traveled (VMT) reducing land use strategies included under the General Plan Update. Therefore, the overall impact associated with the No Project alternative would be somewhat greater than under the General Plan Update.

The No Project alternative also would allow for siting of new sensitive receptors within close proximity to local roadways and other potential sources of toxic air pollutants. While the less compact land use pattern under this alternative would be less likely to result in proximity between sensitive uses and sources of toxic air pollutants, existing policies in the Air Quality Element do not specifically establish buffer zones to separate these uses. Thus, the No Project alternative may result in greater impacts than the General Plan Update, which includes policies to avoid impacts from toxic air pollution.

Biological Resources

Implementation of this alternative would result in greater impacts to biological resources, as more ground disturbance would occur from low density residential and other development in rural areas. This would result in greater impacts to special-status plants, animals, riparian areas and other sensitive habitat, wetlands, and/or migratory wildlife corridors outside identified communities than anticipated under implementation of the General Plan Update. As discussed in Section 3.4, "Biological Resources," there are 177 special-status animal and plant species known to occur or with potential to occur within Tuolumne County. Thirty one of these species (21 animal species and 10 plant species) are given high levels of protection by the federal government through listing under the federal Environmental Endangered Species Act (ESA) and/or by the State government through listing under the California Endangered Species Act (CESA) or Fully Protected. Without proposed policies in the Natural Resources Element and community plans of the General Plan Update to control invasive species, encourage the use of native species, establish thresholds of significance for oak woodland conversion, and recognize the reduced impacts from development on biological resources, impacts of the No Project alternative would be greater than for the General Plan Update.

Cultural Resources

The No Project alternative would have greater potential impacts on archaeological resources because it would allow ground-disturbing development in a greater area of Tuolumne County relative to the General Plan Update. On the other hand, the less compact pattern of development and less of a focus (compared to

the General Plan Update) on development in identified communities, where historic properties are more common, may result in less disturbance of the historic built environment. Adherence to State regulations would preserve human remains unearthed during future construction, and policies in the existing General Plan would protect historic and archaeological resources on a case-by-case basis. However, mitigation would be required to protect potential paleontological resources from future development. Impacts on cultural resources would be greater in some instances and less in others than under the General Plan Update; therefore, overall, the impact would be similar.

Energy

As described for the General Plan Update, development under the No Project alternative would increase electricity and propane consumption. Buildings would still be required to comply with Title 24, Part 6 of the California Building Efficiency Standards, and energy use would be reduced through increased use of solar photovoltaics and energy efficiency. However, development would not be subject to the General Plan Update policies and implementation programs that would promote transit-oriented development, improved accessibility for alternative modes of transportation, and increased transit availability. In addition, the No Project alternative would not include development and implementation of a climate action plan to reduce both transportation- and building energy-related energy consumption. Thus, while energy consumption associated with the No Project alternative would not result in wasteful, inefficient, or unnecessary consumption of energy, impacts would be greater than with implementation of the General Plan Update.

Geology

The No Project alternative would result in development consistent with current land use designations that, similar to development under the General Plan Update, may be subject to fault rupture, ground shaking, liquefaction, landslides, and soil erosion from grading on unstable slopes. Adherence to required building codes during construction would reduce these geologic and soil-related impacts. Existing policies, which would be implemented under both the No Project alternative and the General Plan Update, limit development in seismically hazardous areas; require engineering studies prior to development in landslide or unstable slope areas; establish a program for geologic, seismic, and geotechnical engineering reports for proposed developments; and maintain erosion control measures. Therefore, impacts of the No Project alternative would be similar to the General Plan Update.

Global Climate Change

Although the County would continue to apply project-level GHG thresholds for discretionary entitlements, the continuation of existing land use trends under the No Project alternative would be inconsistent with the goals of applicable GHG reduction plans and policies, including the adopted Tuolumne County Regional Blueprint Greenhouse Gas Study and Statewide goals under AB 32 and SB 32. Whereas the General Plan Update's land use scenario is designed to promote more centralized development to reduce VMT and transportation-related GHG emissions, this alternative would require auto dependency for many parts of Tuolumne County. Walkable communities, defined as a 5-minute walk (0.25 mile) between home and the core of a community, shopping, jobs, recreation, community facilities and transit, would exist only within community cores. Further, under the No Project Alternative, the County would not prepare a comprehensive plan for GHG reduction that identifies specific measures to reduce countywide and adaptation strategies for the County to appropriately adjust to the environmental effects of climate change (as required under Policy 18.A.1 of the General Plan Update). Therefore, impacts would be greater for the alternative than for the General Plan Update.

Hazards and Hazardous Materials

As with the General Plan Update, this alternative could facilitate development near known hazardous material users, construction in areas with existing hazardous materials, or accidental releases of hazardous materials during transportation. The less compact pattern of development may result in less exposure to hazardous materials in community settings. Residential development also might occur in areas designated as Moderate, High or Very High Wildland Fire Hazard areas. Compliance with federal, state, and local regulations, including implementation of existing General Plan policies, would minimize exposure to hazards

and hazardous materials. (The policies included in the General Plan Update would likely result in slightly better minimization of risk exposure.)

Continued coordination with the Tuolumne County Airport Land Use Compatibility Plan also would reduce airport-related hazards, and existing goals and policies from the Land Use and Safety elements would apply to reduce potential risks from hazardous materials, wildland fires, and proximity to airports, or to ensure emergency preparedness. Overall, impacts would be similar to the General Plan Update.

Hydrology and Water Quality

Under the No Project alternative, development facilitated by current land use designations could occur within 100-year flood zones. This alternative also would allow for development in dam inundation areas, whereas the General Plan Update would not, and would result in a greater amount of impervious surfaces from development in rural areas. The addition of impervious surfaces would increase watershed runoff, which could degrade water quality. Under the No Project alternative, there would also be fewer protections for groundwater resources. Therefore, impacts related to hydrology and water quality would be slightly greater than for the General Plan Update.

Land Use and Planning

Whereas the General Plan Update plans for development within well-defined, cohesive, and compact communities, the No Project alternative would allow a more dispersed pattern of development. This land use pattern would result in greater demands on public services, above average public service costs and greater degradation of valuable resources, and would be inconsistent with the Tuolumne Tomorrow Regional Blueprint's policies that are intended to protect environmental resources by reducing dispersed development. Therefore, the No Project alternative would have greater impacts related to inconsistency with the Tuolumne Tomorrow Regional Blueprint.

Noise

Similar to the General Plan Update, the No Project alternative would facilitate development that exposes existing sensitive receptors to noise and vibration from new construction. New and existing noise-sensitive land uses also would be exposed to traffic noise, aircraft-related noise, and noise generated from operational stationary noise sources; in comparison with the General Plan Update, the less compact land use pattern in this alternative would place fewer new sensitive receptors in more developed environments with higher traffic noise levels. The existing General Plan includes policies to reduce noise exposure by enforcing the County's noise standards, considering noise impacts from new projects on sensitive land uses, identifying potential noise conflicts early in the review process for proposed developments, and ensuring land use compatibility. This alternative would be subject to existing standards in Figure 5.C of the County's Noise Element that require new development within Noise Impact Areas identified in the Tuolumne County Airport Land Use Compatibility Plan to be located and designed to minimize aircraft-related noise exposure. The No Project alternative would have greater impacts related to aircraft noise, construction noise and vibration, and railroad noise because it would not include policies to address construction noise and vibration impacts and to buffer new sensitive uses from railroad tracks.

Population and Housing

Due to its less compact development pattern within existing developed areas, potential impacts related to potential displacement of residents would be slightly less for the No Project alternative than the General Plan Update, although the impact (as described in Section 3.13, "Population and Housing") would be less than significant. Overall growth would remain consistent with the population growth projection adopted by the Tuolumne County Transportation Council for the year 2040, although the alternative would allow a greater level of development than the General Plan Update. Overall, impacts would be similar.

Public Services

Similar to the General Plan Update, development facilitated under current land use designations would increase demand for fire protection and law enforcement services. However, review of subsequent

development by the Fire Department pursuant to existing County development review practices, the required provision of emergency access, and payment of impact mitigation fees would reduce impacts related to fire protection to less than significant, and new development may not result in the need to construct new law enforcement facilities. Although the No Project alternative would not likely result in demand for fire protection services above demand of the General Plan Update, because the No Project alternative is not designed to focus development in identified communities, implementation of the No Project alternative may result in a wider dispersion of development, which may influence response times to a greater extent. Regarding school services, the payment of State-mandated school impact fees would fully mitigate impacts related to school facilities. Impacts to libraries would also be similar, due to the similar level of growth. Overall, impacts would be similar to the impacts anticipated under the General Plan Update.

Recreation

The No Project alternative would facilitate a similar amount of development to the General Plan Update. However, under the No Project alternative, the supply of recreational facilities would not meet the County's current goal of 30 acres per 1,000 residents. The General Plan Update includes a proposed policy that would change the County's goal of 30 acres of recreational facilities per 1,000 residents to 5 acres of parkland per 1,000 residents, which is consistent with the Quimby Act (established to provide sufficient recreation for people throughout the State), and is also consistent with parkland requirements of other similar counties. Keeping the existing policy in place under the No Project alternative may result in more parkland provision than the General Plan Update, although this is uncertain because the County is not currently meeting the parkland requirements of the existing policy. Therefore, because the No Project alternative may potentially result in a greater amount of parkland provided (due to the higher level of parkland required), the impact is considered slightly less than the General Plan Update, even though the impact under the General Plan Update is less than significant.

Transportation and Circulation

Because the No Project alternative would allow a similar amount of residential, commercial, and industrial development to the General Plan Update, this development would generate a similar amount of vehicular trips. Trip generation and trip length would be greater because of a scattered land use pattern that promotes dependency on automobiles. Similar to the General Plan Update, the increase in vehicle trips would cause deficiencies in traffic flow at roadway segments and intersections.

The No Project alternative's auto-dependent land use pattern would not reduce existing design hazards for pedestrian and bicyclists in the County. As proposed, new goals and policies to increase pedestrian and bicyclist safety and walkability would not apply to the No Project alternative; impacts from design hazards would be greater.

As with the General Plan Update, development facilitated by current land use designations would be subject to applicable County standards and fire code standards, which require emergency access provisions. Compliance with existing requirements would ensure that adequate emergency access would be provided for by all new development.

Overall, VMT within the Tuolumne County region would increase as a result of regional population growth. However, as discussed in Section 3.16, "Transportation and Circulation," overall VMT would be greater under the No Project alternative (approximately 2,168,520 VMT) compared to the General Plan Update (approximately 2,152,846 VMT) in the year 2040. The higher VMT under this alternative is primarily because land use changes that are included as part of the General Plan Update which are intended to reduce VMT would not occur under this alternative.

Utilities and Service Systems

The No Project alternative would allow for a similar amount of development to the General Plan Update resulting in similar water demand and wastewater and solid waste generation. Therefore, impacts related to utilities and service systems would remain the same. Water, wastewater, and solid waste providers are projected to have enough capacity to serve new development. In addition, the County's existing Water

Quality Plan and policies and implementation programs in the existing General Plan would reduce potential impacts related to storm drainage facilities. Therefore, impacts under the No Project alternative would be similar to those anticipated with implementation of the General Plan Update.

ACHIEVEMENT OF PROJECT OBJECTIVES

The No Project alternative appears to meet some of the project objectives, including delivery of efficient and cost-effective public services and minimizing restrictions and requirements that can delay development. However, the No Project alternative does not appear to meet most of the project objectives. Implementation of the 1996 General Plan under the No Project alternative may not reflect the current values and vision of the communities or the latest legal, statutory, scientific, and technical changes and advancements. It also may not (compared to the General Plan Update) enhance the nature of identified communities, promote stewardship of natural resources, or conserve historic resources.

6.5.2 Alternative 2: Public Services

DESCRIPTION

The Public Services alternative would allocate new development at higher densities in locations closer to multiple public services, such as major transportation corridors, transit lines, public water and sewer, and parks. This alternative would focus growth based on the general availability of public infrastructure and services. Development would continue to grow within identified communities; however, in contrast to the General Plan Update, development also would radiate outward along a select number of arterials, major collectors, and transit corridors where public water and sewer exist. This radial development would create linear communities containing a mix of multi-family housing, townhouses, neighborhood commercial, and traditional neighborhoods. This alternative would result in more dependency than the General Plan Update on automobiles for residents residing beyond transit corridors and community cores. The amount of mixed-use land uses would increase by placing these uses in close proximity to transit stations and community cores, thereby increasing walkability in these areas. The policies and implementation programs in the General Plan Update would still apply to this alternative (including expansion of agritourism and associated changes to Title 17 of the County's Ordinance Code), with the exception of those that are narrowly tailored to focus development within identified communities.

IMPACT COMPARISON

Aesthetics

Whereas the General Plan Update would minimize impacts to scenic vistas from locally-designated scenic routes by channeling development to existing identified communities, new development would be associated with roadways under the Public Services alternative and would therefore branch out further from the identified communities. This new development along corridors could adversely affect existing scenic vistas of rural landscapes from portions of SR 49 and 108 that are locally designated scenic corridors. Implementation of policies in the General Plan Update would incrementally reduce effects on scenic vistas. However, the development near scenic corridors with a mix of multi-family housing, townhouses, neighborhood commercial, and traditional neighborhoods along SR 49 and 108 would have an unavoidably adverse effect on scenic vistas. Therefore, impacts associated with this alternative would increase relative to the General Plan Update.

This alternative also would increase the geographic extent of changes to the County's predominantly rural character, by allowing development to occur along transportation corridors outside the boundaries of identified communities. Proposed policies to discourage strip development along the County's arterials and to encourage cluster development that protects open space areas (which would minimize changes to rural visual character) would not apply to this alternative. While existing policies would protect the visual character

of communities with historic buildings, they would not reduce the adverse effects of development on the visual character of rural areas. Therefore, impacts would increase relative to the General Plan Update.

As with the General Plan Update, this alternative would facilitate development that would introduce new sources of light and glare, which would increase overall ambient night-time light and daytime glare from building materials. Development along transportation corridors would incrementally increase the intrusion of new sources of light and glare into rural areas. However, with implementation of the policies proposed to preserve the existing nighttime environment by limiting the illumination of areas surrounding new development, impacts would be similar (though slightly greater) to those described for the General Plan Update.

Agricultural Resources

Impacts to High-Value Agricultural Land and Williamson Act land would be incrementally greater than those of the General Plan Update because the area of potential disturbance would expand to include agricultural land along transportation corridors, potentially including additional land currently under Williamson Act contracts.

As with the General Plan Update, existing timberland would remain in timber production under this alternative. Potential land use conflicts would be reduced through the separation of potentially conflicting land uses, proposed policies, and application of the County's Right to Farm Ordinance. Impacts would be similar to those identified for the General Plan Update.

Air Quality

This alternative would allow less centralized development, which would result in more dependency on automobiles for residents residing beyond transit corridors and community cores and a greater amount of VMT in the County. This alternative would also allow for siting of new sensitive receptors within close proximity to local roadways and other potential sources of toxic air pollutants, although it is unlikely traffic volumes on adjacent roads would be sufficient to result in substantial health impacts. Impacts would be slightly greater to the General Plan Update.

Biological Resources

Implementation of this alternative would result in greater impacts to biological resources as more ground disturbance would occur for development in rural areas along transportation corridors. This would result in incrementally greater impacts to special status plants, animals, riparian areas and other sensitive habitat, wetlands, and/or migratory wildlife corridors outside developed areas than anticipated under the General Plan Update. As discussed in Section 3.4, "Biological Resources," there are 177 special-status species known to occur or with potential to occur within Tuolumne County. Thirty one of these species (21 animal species and 10 plant species) are given high levels of protection by the federal government through listing under ESA and/or by the State government through listing under CESA or Fully Protected. Similar to the General Plan Update, proposed policies would minimize impacts on special-status species and wetlands. However, overall, impacts would be greater than the General Plan Update.

Cultural Resources

This alternative would have incrementally greater impacts on cultural resources because it would facilitate ground-disturbing development in a greater area of Tuolumne County. As with the General Plan Update, proposed policies would protect historic and archaeological resources on a case-by-case basis, and adherence to State regulations would preserve human remains unearthed during construction. Nevertheless, development could adversely affect historical and unique archaeological resources and avoidance of historical and unique archaeological resources may not be possible. However, overall, impacts to cultural resources would be greater than those described for the General Plan Update.

Energy

As described for the General Plan Update, development under the Public Services alternative would increase electricity and propane consumption. Buildings would still be required to comply with Title 24, Part 6 of the California Building Efficiency Standards, and energy use would be reduced through increased use of solar photovoltaics and energy efficiency. In addition, policies and implementation programs under the General Plan Update would include transit-oriented development, improved accessibility for alternative modes of transportation, and increased transit availability that would reduce VMT, as well as development and implementation of a climate action plan to reduce both transportation- and building energy-related energy consumption. Thus, energy consumption associated with the Public Services alternative would not result in wasteful, inefficient, or unnecessary consumption of energy. Impacts would be similar to those identified for the General Plan Update.

Geology

Similar to the General Plan Update, the Public Services alternative would allow development that may be subject to fault rupture, ground-shaking, liquefaction, landslides, and soil erosion from grading on unstable slopes. Adherence to required building codes during construction would reduce these geologic and soil-related impacts. Proposed policies to limit development in seismically hazardous areas; to require engineering studies prior to development in landslide or unstable slope areas; to establish a program for geologic, seismic, and geotechnical engineering reports required for proposed developments; and to maintain erosion control measures for all grading would further minimize impacts related to geology and soils. Impacts would be similar to those identified for the General Plan Update.

Global Climate Change

Although the County would continue to apply project-level GHG thresholds for discretionary entitlements, the land use scenario under the Public Services alternative would be inconsistent with the goals of applicable GHG reduction plans and policies, including the adopted Tuolumne County Regional Blueprint Greenhouse Gas Study and AB 32/SB 32. Whereas the General Plan Update's land use scenario is designed to centralize development in communities, this alternative would allow development in transportation corridors outside of communities. Impacts related to consistency with applicable GHG reduction plans and policies would be greater.

Hazards and Hazardous Materials

As with the General Plan Update, this alternative could facilitate development near known hazardous material users, construction in areas with existing hazardous materials, or accidental releases of hazardous materials during transportation. Residential development also might occur in areas designated as Moderate, High or Very High Wildland Fire Hazard areas. However, impacts would be addressed through compliance with federal, state, and local regulations, and with General Plan policies. Similar to the General Plan Update, careful land use planning in accordance with General Plan Update policies and continued coordination with the Tuolumne County Airport Land Use Compatibility Plan would reduce airport-related hazards, and development would have no impact on adopted emergency response or evacuation plans. Impacts would be similar to those identified for the General Plan Update.

Hydrology and Water Quality

Development facilitated by the Public Services alternative within communities and along transportation corridors might occur within 100-year flood zones. Similar to the General Plan Update, policies for protection of riparian corridors would prevent development in these flood-prone areas. Furthermore, any development within a 100-year flood zone would be subject to the County's policies as set forth in the General Plan Update Public Safety Element and the community plans, which would ensure that people or property are not subject to flood risks.

Whereas the General Plan Update would not facilitate development in dam inundation areas, this alternative would allow for development in a potential dam inundation area shown in Exhibit 3.10-3 along the SR 49 corridor, near Lake Don Pedro and the Moccasin Reservoir. However, the vulnerability assessment for dam

failure in the 2018 Tuolumne County Multi-Jurisdictional Hazard Mitigation Plan (HMP) concluded that the extent of damage from any dam failure would not be great due to the small areas possibly inundated and the assumption that such an event is unlikely to happen. With implementation of General Plan policies and implementation programs to protect structures from dam failure, impacts would be similar to those identified for the General Plan Update.

Because the Public Services alternative would result in incrementally more development than would the General Plan Update and more dispersed development outside of identified communities, it would lead to a greater amount of impervious surfaces within the County. The addition of impervious surfaces would increase watershed runoff, which could degrade water quality. However, similar to the General Plan Update, impacts would be addressed through compliance with existing regulations and implementation of proposed policies. Impacts would be similar to those identified for the General Plan Update.

Land Use and Planning

Whereas the General Plan Update plans for development within well-defined, cohesive, and compact communities, this alternative would allow for linear development along major transportation corridors. By converting open space buffers between communities to developed areas, the Public Services alternative would reduce the distinctiveness of communities. Therefore, the Public Services alternative would have greater impacts related to inconsistency with the Tuolumne Tomorrow Regional Blueprint.

Noise

The Public Services alternative would have similar impacts to the General Plan Update from construction and operational noise. Existing sensitive receptors would be subject to noise and vibration from new construction, and new and existing noise-sensitive land uses would be exposed to transportation noise. However, proposed policies would reduce noise exposure.

Similar to the General Plan Update, this alternative would facilitate development that could be exposed to noise generated from operational stationary noise sources and aircraft. However, proposed policies to enforce noise standards for new development would reduce noise exposure. These impacts would be similar to the General Plan Update. Because the Public Services would likely result in development occurring in the vicinity of railroad tracks, impacts from exposure to railroad noise and vibration would also be similar.

Population and Housing

Both the General Plan Update and the Public Services alternative would facilitate new residential development in Tuolumne County, which would accommodate an increase in the population to approximately 63,243 by the year 2040. Although future redevelopment projects could displace residents temporarily during construction activities, this displacement would not be wide-spread and, given the county's vacancy rate (30.7 percent), would not likely require construction of replacement housing elsewhere. Impacts would be similar to those identified for the General Plan Update.

Public Services

Similar to the General Plan Update, development facilitated by the Public Services alternative would increase demand for fire protection and law enforcement services. However, review of subsequent development by the Fire Department pursuant to existing County development review practices, the required provision of emergency access and payment of impact mitigation fees would reduce impacts related to fire protection, and new development may not result in the need to construct new law enforcement facilities. In addition, the payment of State-mandated school impact fees would fully mitigate impacts related to school facilities. Impacts would be similar to those identified for the General Plan Update.

Recreation

The Public Services alternative would facilitate a similar amount of development as the General Plan Update. although it would allocate new development at higher densities near parks. As under the General Plan Update, this alternative would include a proposed policy that would change the County's goal of 30 acres of

recreational facilities per 1,000 residents to 5 acres of parkland per 1,000 residents. Impacts associated with the development of new parks and use of existing facilities would be similar.

Transportation and Circulation

Because the Public Services alternative would facilitate a similar amount of residential, commercial, and industrial development to the General Plan Update, this alternative would generate a similar amount of vehicular trips. Similar to the General Plan Update, the increase in vehicle trips would cause deficiencies in traffic flow at roadway segments and intersections. Although implementation of Mitigation Measures 3.16-1 and 3.16-2 would reduce traffic impacts on roadway segments and at intersections, impacts would remain significant because implementation of these measures may not be feasible.

Similar to the General Plan Update, implementation of proposed policies relating to traffic calming and improving walkability and bikeability would reduce potential impacts from design hazards. Buildout of this alternative also would not substantially increase the use of available public transit resources and would not have a significant impact on existing or planned pedestrian and bicycle infrastructure. As with the General Plan Update, development facilitated by this alternative would be subject to applicable County standards and fire department standards, which require emergency access provisions. Compliance with existing requirements would ensure that adequate emergency access would be provided for by all new development.

Overall, VMT within the Tuolumne County region would increase as a result of regional population growth. However, overall VMT would be greater under the Public Services alternative (approximately 2,167,632 VMT[1]) compared to the General Plan Update (approximately 2,152,846 VMT) in the year 2040.

Utilities and Service Systems

The Public Services alternative would allocate new development at higher densities in locations closer to public water infrastructure in communities and along major transportation corridors. This alternative would allow for a similar amount of development to the General Plan Update, resulting in similar water demand and wastewater and solid waste generation. The need to extend infrastructure would be slightly reduced under this alternative. Water, wastewater, and solid waste providers are projected to have enough capacity to serve new development. Therefore, these impacts would be similar or less than those identified for the General Plan Update.

ACHIEVEMENT OF PROJECT OBJECTIVES

This alternative appears to meet the overall objectives of the General Plan Update because it would implement the same policies and would only slightly change the development pattern, resulting in less centralized development. This development pattern may be inconsistent with the General Plan Update objective related to enhancing the unique nature of identified communities.

6.5.3 Alternative 3: Recent Trends, Proposed

DESCRIPTION

This alternative represents an intermediate land-use scenario with a density in-between the conditions in the year 2010 (prior to the adoption of the Tuolumne Tomorrow Regional Blueprint and the adoption of the Distinctive Communities Growth Scenario) and the General Plan Update. This alternative would generally continue the existing pattern of development, in which low density residential is the primary type of residential development. This alternative would require more auto dependency for many parts of Tuolumne County because walkable communities, defined as a 5-minute walk (0.25 mile) between home and the core of a community, shopping, jobs, recreation, community facilities and transit, would exist only within community cores. This alternative would promote more development near identified communities, somewhat

[1] Tuolumne County GP and RTP Update Traffic Study, Wood Rogers (September 2015). See Appendix C for full Traffic Study.

similar to the General Plan Update, but not to the same level or density as the General Plan Update. Thus, while this alternative would have some similar goals and policies for land use as the General Plan Update, it would also maintain some of the existing development trends similar to conditions prior to the year 2010 (when the Tuolumne Tomorrow Regional Blueprint was adopted). The policies and implementation programs in the General Plan Update would still apply to this alternative (including expansion of agritourism and associated changes to Title 17 of the County's Ordinance Code), with the exception of ones that are narrowly tailored to focus development within identified communities.

IMPACT COMPARISON

Aesthetics

The Recent Trends, Proposed alternative would not include all of the General Plan Update policies that minimize impacts to scenic vistas from locally designated scenic routes by encouraging residential development near identified communities. New residential development in rural areas could adversely affect existing scenic vistas of agricultural and natural landscapes from portions of SR 49 and SR 108 that are locally designated scenic corridors. Implementation of policies in the General Plan Update would incrementally reduce effects on scenic vistas. However, potential development along SR 49 and 108 would have an unavoidably adverse effect on scenic vistas. Therefore, impacts associated with this alternative would be greater.

This alternative also would increase the geographic extent of changes to the County's predominantly rural character, by promoting a greater degree of dispersed residential development to occur outside the boundaries of identified communities. Proposed policies to discourage strip development along the County's arterials and to encourage cluster development that protects open space areas would minimize changes to rural visual character. In addition, policies would protect the visual character of communities with historic buildings. These policies, however, would not fully reduce the adverse effects of development on the visual character of rural areas. Therefore, impacts would be greater.

As with the General Plan Update, this alternative would facilitate development that would introduce new sources of light and glare, which would increase overall ambient night-time light and daytime glare from building materials. Development outside of identified communities would incrementally increase the intrusion of new sources of light and glare into rural areas. However, impacts would remain similar to the General Plan Update through the incorporation of policies designed to regulate lighting.

Agricultural Resources

Because this alternative would retain existing land use designations and would generally continue the existing pattern of more dispersed development, the area of potential disturbance would expand to include agricultural land outside of identified communities. Impacts to High-Value Agricultural Land and Williamson Act land would be incrementally greater than those of the General Plan Update and would remain significant and unavoidable.

As with the General Plan Update, existing timberland would remain in timber production under this alternative. Impacts to timberland would be similar to the General Plan Update. This alternative also would alter the present land use pattern in portions of the County, but land use conflicts between residential and agricultural uses would be reduced through the separation of potentially conflicting land uses, proposed policies, and application of the County's Right to Farm Ordinance. Impacts would be similar to the General Plan Update.

Air Quality

Construction activities associated with future development under the Recent Trends, Proposed alternative would have the potential to result in temporary adverse impacts on air quality in Tuolumne County. However, with implementation of policies and implementation measures to control emissions during construction of individual projects, impacts would be similar to the General Plan Update.

In comparison to the General Plan Update, long-term operational emissions would be similar under this alternative. However, relative to future "no project" conditions, this alternative would increase density within community cores, reducing VMT and associated emissions from vehicular travel. Impacts would likely remain similar to the General Plan Update.

Similar to the General Plan Update, this alternative would allow for siting of new sensitive receptors within close proximity to local roadways and other potential sources of toxic air pollutants. However, the less compact land use pattern under this alternative would be less likely to result in proximity between sensitive uses and sources of toxic air pollutants. The exposure of new sensitive receptors to toxic air pollutants, impacts would be slightly less than the General Plan Update.

Biological Resources

Implementation of this alternative would result in greater impacts to biological resources as more ground disturbance would occur for scattered development in rural areas. This would result in incrementally greater impacts to special status plants, animals, riparian areas and other sensitive habitat, wetlands, and/or migratory wildlife corridors outside developed areas than anticipated under the General Plan Update. As discussed in Section 3.4, "Biological Resources," there are 177 special-status species known to occur or with potential to occur within Tuolumne County. Thirty one of these species (21 animal species and 10 plant species) are given high levels of protection by the federal government through listing under FESA and/or by the State government through listing under CESA or Fully Protected. Similar to the General Plan Update, proposed policies would minimize impacts on special-status species and wetlands. However, with implementation of mitigation measures, impacts on sensitive habitats and wildlife movement would be slightly greater than the General Plan Update.

Cultural Resources

This alternative would have incrementally greater impacts on cultural resources, in part because it would allow ground-disturbing development in a greater area of Tuolumne County. On the other hand, the less compact pattern of development may result in less disturbance of the historic built environment. As with the General Plan Update, proposed policies would protect historic and archaeological resources on a case-by-case basis, and adherence to State regulations would preserve human remains unearthed during construction. Overall impacts on cultural resources, similar to the General Plan Update, would be significant and unavoidable; however, the impact would be slightly greater under the alternative, due to the larger overall disturbance area.

Energy

As described for the General Plan Update, development under the Recent Trends, Proposed alternative would increase electricity and propane consumption. Buildings would still be required to comply with Title 24, Part 6 of the California Building Efficiency Standards, and energy use would be reduced through increased use of solar photovoltaics and energy efficiency. In addition, policies and implementation programs under the General Plan Update would include transit-oriented development, improved accessibility for alternative modes of transportation, and increased transit availability that would reduce VMT, as well as development and implementation of a climate action plan to reduce both transportation- and building energy-related energy consumption. Thus, energy consumption associated with the Recent Trends, Proposed alternative would not result in wasteful, inefficient, or unnecessary consumption of energy. Impacts would be similar to those identified for the General Plan Update.

Geology

Similar to the General Plan Update, the Recent Trends, Proposed alternative would allow development that may be subject to fault rupture, ground-shaking, liquefaction, landslides, and soil erosion from grading on unstable slopes. Adherence to required building codes during construction would reduce these geologic and soil-related impacts. Proposed policies to limit development in seismically hazardous areas; to require engineering studies prior to development in landslide or unstable slope areas; to establish a program for geologic, seismic, and geotechnical engineering reports required for proposed developments; and to

maintain erosion control measures for all grading would further minimize impacts related to geology and soils. Impacts would be similar to the General Plan Update.

Global Climate Change

Relative to the General Plan Update, this alternative would result in a similar amount of construction-related GHG emissions. Furthermore, this alternative would allow less centralized development, which would result in some dependency on automobiles for residents residing beyond transit corridors and community cores and would increase VMT and mobile emissions in the County.

Although the County would continue to apply project-level GHG thresholds for discretionary entitlements, the general continuation of existing land use trends under the Recent Trends, Proposed alternative would be largely inconsistent with the goals of applicable GHG reduction plans and policies, including the adopted Tuolumne County Regional Blueprint Greenhouse Gas Study and AB 32/SB 32. Whereas the General Plan Update's land use scenario is designed to centralize development to reduce VMT and transportation-related GHG emissions, this alternative would likely result in a greater amount of residential development outside of identified communities. This alternative would require auto dependency for many parts of Tuolumne County, because walkable communities, defined as a 5-minute walk (0.25) mile between home and the core of a community, shopping, jobs, recreation, community facilities and transit, would exist only within identified community cores. Because this land use scenario would be largely inconsistent with applicable plans and policies to reduce GHG emissions, impacts would be greater than for the General Plan Update.

Hazards and Hazardous Materials

Overall impacts relating to hazards would be similar to those of the General Plan Update. As with the General Plan Update, this alternative could facilitate development near known hazardous material users, construction in areas with existing hazardous materials, or accidental releases of hazardous materials during transportation. The less compact pattern of development may result in less exposure to hazardous materials in community settings. Residential development also might occur in areas designated as Moderate, High or Very High Wildland Fire Hazard areas. However, impacts would remain less than significant given compliance with federal, state, and local regulations, and with General Plan policies. Similar to the General Plan Update, careful land use planning in accordance with General Plan Update policies and continued coordination with the Tuolumne County Airport Land Use Compatibility Plan would minimize airport-related hazards, and development would have not substantially affect adopted emergency response or evacuation plans.

Hydrology and Water Quality

Development facilitated by the Recent Trends, Proposed alternative could occur within 100-year flood zones. Similar to the General Plan Update, policies for protection of riparian corridors would prevent development in these flood-prone areas. Furthermore, any development within a 100-year flood zone would be subject to the County's policies as set forth in the General Plan Update Natural Hazards Element and the community plans, which would ensure that people or property are not subject to flood risks. Impacts would be similar to the General Plan Update.

Whereas the General Plan Update would not facilitate development in dam inundation areas, this alternative would allow for future development in a potential dam inundation areas associated with several reservoirs. However, the vulnerability assessment for dam failure in the 2018 Tuolumne County Multi-Jurisdictional HMP concluded that the extent of damage from any dam failure would not be great due to the small areas possibly inundated, and the assumption that such an event is unlikely to happen. With implementation of General Plan policies and implementation programs to protect structures from dam failure, impacts would be similar to the General Plan Update.

Buildout of the Recent Trends, Proposed alternative would result in a similar amount of development and associated impervious surfaces within the County. The addition of impervious surfaces would increase watershed runoff, which could degrade water quality. However, similar to the General Plan Update, impacts

would be similar to the General Plan Update given compliance with existing regulations and implementation of proposed policies.

Land Use and Planning

Similar to the General Plan Update, existing identified community boundaries may be expanded to allow growth to occur near identified community nodes under the Recent Trends, Proposed alternative. Whereas the General Plan Update plans for development within well-defined, cohesive, and compact communities, this alternative would encourage more scattered development outside of communities. By converting open space buffers between communities to developed areas, the Recent Trends, Proposed alternative would reduce the distinctiveness of communities. Therefore, the Recent Trends, Proposed alternative would have greater impacts related to inconsistency with the Tuolumne Tomorrow Regional Blueprint.

The less compact pattern of development under this alternative would not physically divide established communities. Potential impacts would be similar to the General Plan Update.

Noise

The Recent Trends, Proposed alternative would have similar impacts to the General Plan Update from construction and operational noise. Existing sensitive receptors would be subject to noise and vibration from new construction, and new and existing noise-sensitive land uses would be exposed to transportation noise. In comparison with the General Plan Update, the less compact land use pattern in this alternative would place fewer new sensitive receptors in developed environments with higher traffic noise levels. Proposed policies also would reduce noise exposure. These impacts would be similar to the General Plan Update.

Similar to the General Plan Update, this alternative would facilitate development that could be exposed to noise generated from operational stationary noise sources and aircraft. However, proposed policies to enforce noise standards for new development would reduce noise exposure. These impacts would be similar to the General Plan Update. Impacts from exposure to railroad noise and vibration would also be similar to the General Plan Update.

Population and Housing

Both the General Plan Update and the Recent Trends, Proposed alternative could temporarily displace residents if redevelopment of existing residential structures occurs. Impacts from displacement would remain less than significant. Overall growth would remain consistent with the population growth projection adopted by the Tuolumne County Transportation Council for the year 2040. Impacts would be similar to the General Plan Update.

Public Services

Similar to the General Plan Update, development facilitated by the Recent Trends, Proposed alternative would increase demand for fire protection and law enforcement services. However, review of subsequent development by the Fire Department pursuant to existing County development review practices, the required provision of emergency access, and payment of impact mitigation fees would reduce impacts related to fire protection to less than significant, and new development would not result in the need to construct new law enforcement facilities. In addition, the payment of State-mandated school impact fees would fully mitigate impacts related to school facilities. These impacts would be similar to the General Plan Update.

Recreation

The Recent Trends, Proposed alternative would facilitate a similar amount of development as the General Plan Update, although it would more dispersed and less dense than under the General Plan Update. As under the General Plan Update, this alternative would include a proposed policy that would change the County's goal of 30 acres of recreational facilities per 1,000 residents to 5 acres of parkland per 1,000 residents. Impacts associated with the development of new parks and use of existing facilities would be similar.

Transportation and Circulation

Because the Recent Trends, Proposed alternative would facilitate a similar amount of residential, commercial, and industrial development to the General Plan Update, this development would generate a similar amount of vehicular trips. However, the more scattered land use pattern under this alternative would likely result in greater auto-dependency, a slight increase in trip generation, and longer trip lengths. The increases in trip generation and trip length would cause greater deficiencies in traffic flow at roadway segments and intersections. Although, similar to the General Plan Update, implementation of mitigation measures would reduce traffic impacts on roadway segments and at intersections, impacts would likely be slightly greater than the General Plan Update.

Similar to the General Plan Update, implementation of proposed policies relating to traffic calming and improving walkability and bikeability would reduce potential impacts from design hazards to a less-than-significant level. Buildout of this alternative also would not incrementally increase the use of available public transit resources and would not have a significant impact on existing or planned pedestrian and bicycle infrastructure. As with General Plan Update, development facilitated by this alternative would be subject to applicable County standards and fire department standards, which require emergency access provisions. Compliance with existing requirements would ensure that adequate emergency access would be provided for by all new development. Impacts would be similar to the General Plan Update.

Overall, vehicles miles traveled (VMT) within the Tuolumne County region would increase as a result of regional population growth. However, overall VMT would be greater under the Recent Trends, Proposed alternative (approximately 2,167,134 VMT) compared to the General Plan Update (approximately 2,152,846 VMT) in the year 2040. The higher VMT under this alternative is primarily because land use changes that are included as part of the General Plan Update which are intended to reduce VMT would not occur under this alternative.

Utilities and Service Systems

The Recent Trends, Proposed alternative would allow for a similar amount of development to the General Plan Update resulting in similar water demand and wastewater and solid waste generation. Therefore, impacts related to utilities and service systems would remain the same. Water, wastewater, and solid waste providers are projected to have enough capacity to serve new development. In addition, the County's existing Water Quality Plan and policies and implementation programs in the General Plan Update would reduce potential impacts related to storm drainage facilities. Therefore, these impacts would be similar to the General Plan Update.

ACHIEVEMENT OF PROJECT OBJECTIVES

This alternative appears to meet most of the overall objectives of the General Plan Update because it would implement the same policies but would change the development pattern and type, resulting in more dispersed, lower density development. This development pattern may be inconsistent with the General Plan Update objectives related to enhancing the unique nature of identified communities, providing efficient public services, and promoting stewardship of natural resources.

6.5.4 Alternative 4: Historic Structure Preservation

DESCRIPTION

The Historic Structure Preservation alternative is designed to reduce significant impacts to historic resources that could potentially result from projected development under the General Plan Update. This alternative would result in a similar level of development as the General Plan Update and would result in an overall pattern of development consistent with the General Plan Update. However, under this alternative, policy provisions would be included that would prohibit, with some exceptions, demolition or substantial alteration of a significant historic structure. The policy would focus on preserving historic structures that are in habitable/occupiable

condition and that are eligible for listing on the California Register of Historical Resources (CRHR) or the National Register of Historic Places. Exceptions to the policy would include proposed demolition or substantial alteration of structures that are not eligible for listing or structures that are eligible but are not in a habitable/occupiable condition (or otherwise demonstrated to be in a condition that would result in an extraordinary financial burden to preserve and maintain). Other than the policies related to historic resources, the policy framework of this alternative would be similar to the General Plan Update (including expansion of agritourism and associated changes to Title 17 of the County's Ordinance Code).

IMPACT COMPARISON

Because the Historic Structure Preservation alternative differs from the General Plan Update only in terms of policies related to historic structures, this impact analysis focuses only on impacts that involve historic resources: Aesthetics and Cultural Resources. All other environmental impacts associated with the alternative would be substantially similar to the General Plan Update. It should be noted that although the restrictions identified in this alternative could result in some constraints to redevelopment in identified communities where historic structures are more concentrated, given the limited number of known historic resources in these communities (there are currently 19 NRHP listings and 20 California Historical Landmarks in the County), it is not likely that the restrictions for altering known or currently unknown historic structures would pose a major impediment to overall infill/redevelopment within identified communities. Therefore, it is not assumed that this alternative would result in more development locating outside identified communities.

Aesthetics

Historic structures are an important component of the aesthetic quality of the communities experienced by motorists, bicyclists, and pedestrians on roadways in the County. These structures also play an integral part in defining the character of the communities. The Historic Structure Preservation alternative would reduce visual changes that could affect the quality of a scenic vista or resource that can be seen from a visually sensitive location (particularly roadways) and would reduce the likelihood that there would be substantial change to the visual character of the County. The General Plan Update would not result in substantial adverse effects related to visual resources; however, this alternative would result in even less impact. Overall, the impact would be slightly less than the General Plan Update.

Cultural Resources

This alternative would limit redevelopment in communities where there are known historical resources (e.g., the communities of Columbia, Groveland, Jamestown, and Tuolumne). With implementation of the Historic Structure Preservation alternative, direct effects on known historical resources, including 19 NRHP listings and 20 California Historical Landmarks, would generally be avoided. By prohibiting the demolition or substantial alteration of a significant historic structure, this alternative would limit the potential for a change in the historical significance of these existing resources. In addition, General Plan Update policies and existing regulations pertaining to the protection of cultural resources would reduce impacts to such resources, as identified for the proposed plan.

This alternative would generally avoid impacts to significant historical resources, but provides exceptions where demolition or substantial alteration of structures could still occur. Effects on historical structures would be substantially reduced. However, because a change in the significance of a historical resource could still occur, and recordation of a significant historic resource does not constitute adequate mitigation for a substantial adverse change to that resource, impacts would remain significant and unavoidable. Nevertheless, this alternative would result in less impact to historic resources than the General Plan Update.

ACHIEVEMENT OF PROJECT OBJECTIVES

This alternative would meet some of the overall objectives; however, the alternative may present challenges for accommodating projected growth while defining where and how development would occur. The alternative would, similar to the General Plan Update, focus development within identified communities, and

historic structures are more common and more concentrated in existing developed communities. As mentioned above, avoiding significant historic structures, as required by the alternative, could pose a constraint to individual rehabilitation/redevelopment projects within identified communities that contain these resources; however, given the limited number of historic resources in these communities, it is not likely that the constraints would pose a major impediment to overall infill/redevelopment within identified communities. This alternative may be inconsistent with project objectives to achieve and enable maximum flexibility for development, minimize or eliminate restrictions and requirements that can increase costs and delays of development, and allowing residents and property owners to use their land to the maximum extent of the law while respecting the values of the community.

6.5.5 Alternative 5: Williamson Act Property Preservation

DESCRIPTION

The Williamson Act Property Preservation alternative is designed to reduce significant impacts related to proposed redesignation of approximately 134 acres of agricultural land currently under Williamson Act contract to residential use. Under the alternative, the 134 acres of land would remain designated Agricultural rather than redesignated Large Lot Residential (16 acres), Low Density Residential (26 acres) and Rural Residential (92 acres) under the General Plan Update. To achieve the same amount of housing identified in the General Plan Update, this alternative would require increased residential density in other areas designated for residential development. This alternative would be consistent with the intent of the Williamson Act. Apart from the 134 acres that would remain designated Agricultural, this alternative would result in an overall pattern of development consistent with the General Plan Update. Also, the policy framework of this alternative would be similar to the General Plan Update (including expansion of agritourism and associated changes to Title 17 of the County's Ordinance Code).

IMPACT COMPARISON

The Williamson Act Property Preservation alternative is identical to the General Plan Update, except for the 134 acres of land under Williamson Act contract that would not be redesignated from Agricultural to residential use. Generally, preserving 134 additional acres of undeveloped agricultural land would result in reduction of environmental impacts related to construction and operation of development that would be anticipated under the General Plan Update. This is because there would be less grading and other ground disturbance and there would likely be lower VMT (and associated air pollutant and GHG emission) because housing would not be provided on these relatively rural agricultural properties. On a countywide basis, 134 acres constitutes a fraction of 1 percent of the total number of acres designated for development under the General Plan Update; therefore, preserving this land constitutes only a minor impact reduction for most environmental issue areas. The exception is Agricultural Resources, which is discussed in more detail below.

Agricultural Resources

As shown in Figure 3.2-1, a substantial portion of western Tuolumne County (122,905 acres) is under Williamson Act contracts for the preservation of agricultural land. The General Plan Update would redesignate 134 acres of individual agricultural parcels that are currently under Williamson Act contracts to residential uses. The Williamson Act Property Preservation alternative would not redesignate any land currently under Williamson Act contract.

The Williamson Act Property Preservation alternative would reduce impacts associated with the loss of High-Value Agricultural Land because land under Williamson Act contract would not be re-designated. However, 4,379 acres of agricultural land would continue to be redesignated. With implementation of Mitigation Measure 3.2-1, this impact would remain significant and unavoidable. The potential for conflicts with forest and timber land, as well as conflicts between agricultural land use and the identified communities would remain less than significant.

The Williamson Act Property Preservation alternative would not result in conflict with the overarching intent of the Williamson Act. In addition, this alternative would be subject to the same policies as the General Plan Update, including those designed to reduce indirect pressure to convert agriculture to non-agricultural uses through limiting the expansion of public services and requiring land use buffers. Conflicts with Williamson Act contracts would be reduced, but the proposed redesignation of 1,7397 acres of land in Tuolumne County that are currently within an agricultural preserve would continue to be a significant impact.

ACHIEVEMENT OF PROJECT OBJECTIVES

The Williamson Act Preservation alternative would achieve many of the General Plan Update objectives, including those that promote stewardship of the County's natural resources. However, because land use designations would be based on the presence of Williamson Act contracts, some of which are currently in non-renewal and the remainder of which could go through the non-renewal process during the life of the General Plan Update, this alternative could unnecessarily restrict the development potential of 134 acres. This alternative may be less effective at meeting the objectives of minimizing or eliminating restrictions and requirements that can increase delays and/or the cost to development, and allowing residents and property owners to use their land to the maximum extent of the law, while respecting the values of the community.

6.5.6 Alternative 6: Modified Public Services

Public comments received on the originally circulated Draft EIR recommended the EIR evaluate a Modified Public Services Alternative. This alternative would be aimed at reducing impacts to the environment associated with development occurring in more rural areas. Development in rural areas can result in greater VMT and associated impacts to roadway congestion and air quality. The land use map within the identified communities would be the same as the proposed General Plan Update. Given the projected growth rate, it is assumed that all growth could be accommodated within the identified communities without increasing the allowable development densities on these parcels. Therefore, as identified in Table 6-1, the level of development is assumed to be similar than the development projected to occur under the proposed General Plan Update.

The Modified Public Services Alternative would be designed to reduce the potential for new development to occur outside identified communities by providing similar incentives as the General Plan Update for encouraging growth within identified communities, but going further than the General Plan Update by creating disincentives for development in rural areas. Similar to Alternative 2: Public Services, the Modified Public Services Alternative would be anticipated to result in development more concentrated in locations closer to multiple public services, such as major transportation corridors, transit lines, public water and sewer, and parks. This alternative would focus growth based on the general availability of public infrastructure and services. However, unlike Alternative 2, development would primarily be confined within identified communities and would not, to the same degree, radiate outward along a select number of arterials, major collectors, and transit corridors where public water and sewer exist. Growth in rural areas would be further constrained by placing more rigorous limitations on the expansion of infrastructure beyond identified community boundaries. Also, under this alternative none of the land located outside identified communities would be redesignated from Agriculture to a non-agricultural use (i.e., a use not intended for commercial agriculture as the primary use and that allows residential or commercial development), which would prevent over 3,200 acres of land currently designated Agriculture from being redesignated to a non-agricultural use, including nearly 200 acres of land under Williamson Act contract. (Note that these acreage numbers differ from other discussions because they do not include land within identified communities.) Moreover, nearly all development would be expected to occur in identified communities. Overall, the policy framework under this alternative would be similar to the General Plan Update (including expansion of agritourism and associated changes to Title 17 of the County's Ordinance Code), but, as discussed above, would include some additional disincentives for development in areas outside identified communities.

IMPACT COMPARISON

Aesthetics

The Modified Public Services Alternative would focus more new development along existing transportation/transit corridors. This could adversely affect existing scenic vistas from portions of SR 49 and SR 108 that are locally designated scenic corridors, but the effects would be limited to the areas of the County that are already developed. Implementation of policies similar to those included in the General Plan Update would incrementally reduce effects on scenic vistas. Although the development near scenic corridors along SR 49 and SR 108, which would include a mix of higher-density multi-family housing, townhouses, neighborhood commercial, and traditional neighborhoods, would likely be visually more intrusive within identified communities, there would be less development along these corridors outside identified communities. Therefore, the overall level of impact would be similar to the General Plan Update.

Because this alternative would focus more development within identified communities, and would further disincentivize development in rural areas, this alternative would decrease the geographic extent of changes to the County's predominantly rural character. The impact related to visual character would be less under the alternative.

As with the General Plan Update, this alternative would facilitate development that would introduce new sources of light and glare, which would increase overall ambient night-time light and daytime glare from building materials. With implementation of the policies proposed to preserve the existing nighttime environment by limiting the illumination of areas surrounding new development, impacts would be minimized, similar to the General Plan Update. However, because less development would occur in rural areas that currently have fewer existing light and glare sources, impacts would be slightly less.

Agricultural Resources

This alternative would prevent the redesignation of over 3,200 acres of Agriculture (including nearly 200 acres of Williamson Act land) to a non-agricultural use. While not all of the 3,200 acres would convert to developed uses under the General Plan Update, and although the developed uses such as rural estates may incorporate agricultural uses, the amount of land converted from a primary agricultural use to a non-primary agricultural use would be reduced under the alternative. Although some redesignation of Agriculture would still occur within identified communities, this land is less likely to be considered High-Value Agricultural Land due to its proximity to existing development and infrastructure (which are considerations for evaluating High-Value Agricultural Land). Maintaining the Agriculture designation of over 200 acres of land currently under Williamson Act contract would also substantially reduce potential conflicts with the Williamson Act. Overall, the impact to agriculture would be substantially less under this alternative than the General Plan Update.

As with the General Plan Update, existing timberland would remain in timber production under this alternative. Impacts to timberland would be similar to the General Plan Update. This alternative also would alter the present land use pattern in portions of the County, but land use conflicts between residential and timber production uses may be slightly reduced through the separation of potentially conflicting land uses, proposed policies, and application of the County's Right to Farm Ordinance. Overall, impacts related to timber production would be similar to the General Plan Update.

Air Quality

Construction activities associated with future development under the Modified Public Services Alternative would have the potential to result in temporary adverse impacts on air quality in Tuolumne County. Although development would be focused more within identified communities than under the General Plan Update, given the same population growth assumptions, the overall amount of development is not assumed to be different. Therefore, with implementation of policies and implementation measures to control emissions during construction of individual projects, construction-related air quality impacts would be similar to the General Plan Update.

In comparison to the General Plan Update, long-term operational emissions would be less under this alternative. This alternative would increase concentration of development within community cores, reducing VMT and associated emissions from vehicular travel. Impacts would likely be slightly less than the General Plan Update.

Similar to the General Plan Update, this alternative would allow for siting of new sensitive receptors within close proximity to local roadways and other potential sources of toxic air pollutants. The compact land use pattern under this alternative would be more likely to result in proximity between sensitive uses and sources of toxic air pollutants. However, it is not likely that new sensitive receptors under the alternative would be exposed to substantially higher levels of toxic air pollutants; therefore, impacts would similar.

Biological Resources

Implementation of this alternative would result in fewer impacts to biological resources as less ground disturbance would occur for scattered development in rural areas. This would result in incrementally fewer impacts to special status plants, animals, riparian areas and other sensitive habitat, wetlands, and/or migratory wildlife corridors outside developed areas than anticipated under the General Plan Update. As discussed in Section 3.4, "Biological Resources," there are 177 special-status species known to occur or with potential to occur within Tuolumne County. Thirty one of these species (21 animal species and 10 plant species) are given high levels of protection by the federal government through listing under FESA and/or by the State government through listing under CESA or Fully Protected. Similar to the General Plan Update, proposed policies would minimize impacts on special-status species and wetlands. Impacts on sensitive habitats and wildlife movement would be slightly less than the General Plan Update.

Cultural Resources

This alternative would have incrementally fewer impacts on archaeological resources, in part because it would allow less ground-disturbing development in currently undeveloped areas of Tuolumne County. On the other hand, the compact pattern of development may result in more alteration to the historic built environment. As with the General Plan Update, proposed policies would protect historic and archaeological resources on a case-by-case basis, and adherence to State regulations would preserve human remains unearthed during construction. Overall impacts on historic resources, similar to the General Plan Update, would be significant and unavoidable; however, the impact would be slightly greater under the alternative, due to the greater potential for alteration of historical structures within the identified communities.

Energy

As described for the General Plan Update, development under the Modified Public Services Alternative would increase electricity and propane consumption. Buildings would still be required to comply with Title 24, Part 6 of the California Building Efficiency Standards, and energy use would be reduced through increased use of solar photovoltaics and energy efficiency. In addition, policies and implementation programs under the General Plan Update would include transit-oriented development, improved accessibility for alternative modes of transportation, and increased transit availability that would reduce VMT, as well as development and implementation of a climate action plan to reduce both transportation- and building energy-related energy consumption. Thus, energy consumption associated with the Modified Public Services Alternative would not result in wasteful, inefficient, or unnecessary consumption of energy. Impacts would be similar to those identified for the General Plan Update.

Geology

Similar to the General Plan Update, the Modified Public Services Alternative would allow development that may be subject to fault rupture, ground-shaking, liquefaction, landslides, and soil erosion from grading on unstable slopes. Adherence to required building codes during construction would reduce these geologic and soil-related impacts. Proposed policies to limit development in seismically hazardous areas; to require engineering studies prior to development in landslide or unstable slope areas; to establish a program for geologic, seismic, and geotechnical engineering reports required for proposed developments; and to

maintain erosion control measures for all grading would further minimize impacts related to geology and soils. Impacts would be similar to those identified for the General Plan Update.

Global Climate Change

Relative to the General Plan Update, this alternative would result in a similar amount of construction-related GHG emissions. However, this alternative would promote centralized development, which could result in less dependency on automobiles for residents residing within transit corridors and community cores and could decrease VMT and mobile GHG emissions in the County. The pattern of development under this alternative would be consistent with the goals of applicable GHG reduction plans and policies, including the adopted Tuolumne County Regional Blueprint Greenhouse Gas Study and AB 32/SB 32, and is anticipated to result in slightly less impact relative to the General Plan Update.

Hazards and Hazardous Materials

As with the General Plan Update, this alternative could facilitate development near known hazardous material users, construction in areas with existing hazardous materials, or accidental releases of hazardous materials during transportation. The more compact pattern of development may result in more exposure to hazardous materials in community settings. However, impacts would remain less than significant given compliance with federal, state, and local regulations, and with General Plan policies. Similar to the General Plan Update, careful land use planning in accordance with General Plan Update policies and continued coordination with the Tuolumne County Airport Land Use Compatibility Plan would minimize airport-related hazards, and development would have not substantially affect adopted emergency response or evacuation plans. By disincentivizing development outside identified communities, the alternative would likely result in slightly less impact with respect to wildland fire hazard. Therefore, overall, impacts associated with the alternative would be slightly less than the General Plan Update.

Hydrology and Water Quality

Similar to the General Plan Update, policies for protection of riparian corridors would prevent development in these flood-prone areas. Furthermore, any development within a 100-year flood zone would be subject to the County's policies as set forth in the General Plan Update Natural Hazards Element and the community plans, which would ensure that people or property are not subject to flood risks. Impacts would be similar to the General Plan Update. Further, based on the vulnerability assessment for dam failure in the 2018 Tuolumne County Multi-Jurisdictional HMP, which concluded that the extent of damage from any dam failure would not be great due to the small areas possibly inundated, the implementation of General Plan policies and implementation programs to protect structures, and the assumption that such an event is unlikely to happen, impacts associated with dam failure would be similar to the General Plan Update.

Buildout of the Modified Public Services Alternative would result in a similar amount of development and associated impervious surfaces within the County. The addition of impervious surfaces would increase watershed runoff, which could degrade water quality. However, impacts would be similar to the General Plan Update given compliance with existing regulations and implementation of proposed policies.

Land Use and Planning

Similar to the General Plan Update, existing identified community boundaries may be expanded to allow growth to occur near identified community nodes under the Modified Public Services Alternative. This alternative would increase the level of development within the identified communities and would maintain the distinction between the identified communities and the rural areas. This alternative would not physically divide established communities. The Modified Public Services Alternative would be consistent with the intent of the Tuolumne Tomorrow Regional Blueprint. Potential impacts would be similar to the General Plan Update.

Noise

The Modified Public Services Alternative would have similar impacts to the General Plan Update from construction and operational noise. Existing sensitive receptors would be subject to noise and vibration from new construction, and new and existing noise-sensitive land uses would be exposed to transportation noise.

In comparison with the General Plan Update, the more compact land use pattern in this alternative would place more new sensitive receptors in developed environments with higher traffic noise levels. However, proposed policies to enforce noise standards for new development would reduce noise exposure. These impacts would be similar to the General Plan Update.

Population and Housing

Both the General Plan Update and the Modified Public Services Alternative could temporarily displace residents if redevelopment of existing residential structures occurs. Impacts from displacement would remain less than significant. Overall growth would remain consistent with the population growth projection adopted by the Tuolumne County Transportation Council for the year 2040. Impacts would be similar to the General Plan Update.

Public Services

Similar to the General Plan Update, development facilitated by the Modified Public Services Alternative would increase demand for fire protection and law enforcement services. However, review of subsequent development by the Fire Department pursuant to existing County development review practices, the required provision of emergency access, and payment of impact mitigation fees would reduce impacts related to fire protection to less than significant, and new development would not result in the need to construct new law enforcement facilities. The payment of State-mandated school impact fees would fully mitigate impacts related to school facilities. In addition, the new demand would be more concentrated within the identified communities, where there are existing services in place, and disincentivizing growth outside identified communities would not affect police and fire response times because development would not be as remote and would be centralized. Overall, the impacts would be slightly less than the General Plan Update.

Recreation

The Modified Public Services Alternative would facilitate a similar amount of development as the General Plan Update, although there would be less rural development than under the General Plan Update. As under the General Plan Update, this alternative would include a proposed policy that would change the County's goal of 30 acres of recreational facilities per 1,000 residents to 5 acres of parkland per 1,000 residents. Impacts associated with the development of new parks and use of existing facilities would be similar.

Transportation and Circulation

Overall, VMT within the Tuolumne County region would increase as a result of regional population growth. Because the Modified Public Services Alternative would facilitate a similar amount of residential, commercial, and industrial development to the General Plan Update, this development would generate a similar (though fewer) number of vehicular trips. However, the less scattered land use pattern under this alternative would likely result in less auto-dependency, a slight decrease in trip generation, and shorter trip lengths. The decrease in trip generation and trip length would cause reduced deficiencies in traffic flow at roadway segments and intersections. VMT may be reduced in the year 2040 with the implementation of this alternative because there would be policies that disincentivize development outside of the identified communities. Impacts would likely be slightly less than the General Plan Update.

Similar to the General Plan Update, implementation of proposed policies relating to traffic calming and improving walkability and bikeability would reduce potential impacts from design hazards to a less-than-significant level. Buildout of this alternative also would incrementally increase the use of available public transit resources and would not have a significant impact on existing or planned pedestrian and bicycle infrastructure. As with General Plan Update, development facilitated by this alternative would be subject to applicable County standards and fire department standards, which require emergency access provisions. Compliance with existing requirements would ensure that adequate emergency access would be provided for by all new development. Impacts would be similar to the General Plan Update.

Utilities and Service Systems

The Modified Public Services Alternative would allow for a similar amount of development to the General Plan Update, resulting in similar water demand and wastewater and solid waste generation. Therefore, impacts related to utilities and service systems would remain the same. Water, wastewater, and solid waste providers are projected to have enough capacity to serve new development. In addition, the County's existing Water Quality Plan and policies and implementation programs in the General Plan Update would reduce potential impacts related to storm drainage facilities. Therefore, these impacts would be similar to the General Plan Update.

ACHIEVEMENT OF PROJECT OBJECTIVES

The Modified Public Services Alternative appears to achieve some of the General Plan Update objectives, including those that promote the delivery of efficient and cost-effective public services and stewardship of the County's natural resources. This alternative may be less effective at meeting the objectives of minimizing or eliminating restrictions and requirements that can increase delays and/or the cost to development, and allowing residents and property owners to use their land to the maximum extent of the law, while respecting the values of the community. In addition, by concentrating growth in the communities, development under this alternative it may conflict with goals related to conservation of historic resources and enhancing the unique nature of the identified communities.

6.6 ENVIRONMENTALLY SUPERIOR ALTERNATIVE

CEQA requires the identification of the environmentally superior alternative among the options studied. When the "No Project" alternative is determined to be environmentally superior, CEQA also requires identification of the environmentally superior alternative among the development options. In this case, the No Project alternative is inferior to the General Plan Update and all other alternatives.

Table 6-2 indicates whether each alternative's environmental impact is greater, less, or similar to the General Plan Update. Alternatives 2 and 3 would be inferior to the General Plan Update in several categories of environmental issues, especially with regard to impacts on the visual character of rural areas, global climate change, and consistency with the preferred growth scenario of the Tuolumne Tomorrow Regional Blueprint plan. Alternative 4 would reduce impacts to historical structures, but not to a less-than-significant level, and it may present some constraints to infill development and redevelopment. Alternative 5 would reduce significant impacts associated with conflicts to the Williamson Act and may reduce the overall effects on farmland, but may not fully achieve project objectives.

Through modifications to the land use diagram that would avoid redesignation of agricultural lands and implementation of policies that restrict growth outside of the identified communities, Alternative 6 would reduce effects associated with land disturbance and scattered development. This would include a reduction in impacts identified as significant and unavoidable for the General Plan Update. Impacts to transportation and circulation would be reduced due to the potential for shorter vehicle trips and greater use of alternative modes of transportation where residences and goods and services are developed nearer to each other. Impacts to air quality would be slightly reduced due to the lower projected VMT; this would also slightly reduce significant impacts related to GHG emissions. In addition, there would be a substantial reduction to significant impacts to agricultural resources because there would be no redesignation of agricultural land to other land uses outside of the identified communities (although the impact may not be able to be reduced to a less-than-significant level due to the fact that Alternative 6 would allow redesignation of Agriculture land within identified communities).

As indicated above, this alternative may not achieve all of the project objectives. In areas outside of the identified communities, the Modified Public Services Alternative would add restrictions and requirements that can increase delays and/or the cost to development and would attempt to limit property owners to use their land. Although this alternative may not meet all of the identified objectives and the reduction in impacts

would may not completely avoid a significant and unavoidable impact associated with the General Plan Update, it would result in a substantial reduction to the significant and unavoidable agricultural resources impact and would also result in overall reduction in environmental impacts. Therefore, Alternative 6, the Modified Public Services Alternative, is considered the environmentally superior alternative.

Table 6-2 Comparison of Environmental Impacts of Alternatives

Issue	General Plan Update[1]	Alternative 1: No Project (Recent Trends, Existing)	Alternative 2: Public Services	Alternative 3: Recent Trends, Proposed	Alternative 4: Historic Structure Preservation	Alternative 5: Williamson Act Property Preservation	Alternative 6: Modified Public Services Alternative
Aesthetics	LTS	Greater	Greater	Greater	Slightly less	Similar	Slightly less
Agricultural and Forest Resources	SU	Less	Greater	Greater	Similar	Less	Less
Air Quality	LTS	Greater	Similar	Slightly less	Similar	Similar	Slightly less
Biological Resources	LTSM	Greater	Greater	Slightly greater	Similar	Similar	Slightly less
Cultural Resources	SU	Similar	Greater	Slightly greater	Less	Similar	Slightly greater
Energy	LTS	Greater	Similar	Similar	Similar	Similar	Similar
Geology	LTS	Similar	Similar	Similar	Similar	Similar	Similar
Global Climate Change	SU	Greater	Greater	Greater	Similar	Similar	Slightly less
Hazards and Hazardous Materials	LTS	Similar	Similar	Similar	Similar	Similar	Similar
Hydrology and Water Quality	LTS	Slightly greater	Similar	Similar	Similar	Similar	Similar
Land Use and Planning	LTS	Greater	Greater	Greater	Similar	Similar	Similar
Noise	SU	Greater	Similar	Similar	Similar	Similar	Similar
Population and Housing	LTS	Similar	Similar	Similar	Similar	Similar	Similar
Public Services	LTS	Similar	Similar	Similar	Similar	Similar	Slightly less
Recreation	LTS	Slightly less	Similar	Similar	Similar	Similar	Similar
Transportation and Circulation	SU	Greater	Similar	Greater	Similar	Similar	Slightly less
Utilities and Service Systems	LTS	Similar	Similar	Similar	Similar	Similar	Similar
Overall	n/a	Greater	Greater	Greater	Less	Less	Less

Notes: LTS = less-than-significant impact; LTSM = less-than-significant impact with mitigation; SU = significant and unavoidable impact.

1. This column lists the most severe impact determination for each environmental issue.

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Chapter 5, "Other CEQA Discussions"

No sources were used in this chapter.

Chapter 6, "Alternatives"

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