

**NOTICE OF AVAILABILITY
of a Draft Environmental Impact Report
for the County of Tuolumne Broadband Infrastructure
Environmental Impact Report Project**

TO: State Clearinghouse, State Responsible Agencies, State Trustee Agencies, Other Public Agencies, and Interested Organizations and Parties.

PROPOSED PROJECT: County of Tuolumne Broadband Infrastructure Environmental Impact Report

PROJECT LOCATION: The proposed program would be located within Tuolumne County (County) limits. The County has jurisdiction over a total of approximately 610 miles of County-maintained roads. It is envisioned that the vast majority of future broadband infrastructure would be installed within existing County-maintained roads and right-of-way, public utility easements, and/or existing overhead public utility easements of record throughout the County. The exact alignment of future broadband infrastructure is currently unknown at this time and would be planned based on such considerations as construction feasibility, local preference, and locations of sensitive environmental resources.

PROJECT DESCRIPTION: The County is proposing to expand access to broadband technology throughout the County, including the unincorporated areas of the County. The Countywide program would install fiber optic conduit either underground in buried conduits, overhead on existing or newly constructed utility pole lines, or in combination of both. The future location of broadband infrastructure would focus on areas of the County that are currently unserved or underserved.

AVAILABILITY OF THE DOCUMENT: The Draft Environmental Impact Report can be downloaded for review from the County website at: <https://www.tuolumnecounty.ca.gov/821/Environmental-Review-Documents>

REVIEW PERIOD: Tuolumne County is providing a 45-day public review period for the Draft Environmental Impact Report. The review period begins on April 2, 2024 and ends at 5:00 p.m. on May 17, 2024.

COMMENTS ON THE ENVIRONMENTAL IMPACT REPORT: Tuolumne County welcomes and encourages agency and public review and comment on the proposed Draft Environmental Impact Report. Anyone wishing to make formal comments on the environmental document must do so in writing by mailing comments to the address listed below or submitting them by email. The full name and physical mailing address of the agency, individual, or organization must be included in the comment. Please use the phrase "County of Tuolumne Broadband Infrastructure Draft Environmental Impact Report Comment" in the subject line.

Send comments by email to: QYaley@co.tuolumne.ca.us

Send comments by regular mail to:

Tuolumne County Community Development Department
2 S. Green Street
Sonora, CA 95370

All written comments must be received by Tuolumne County no later than 3:00 p.m. on May 17, 2024.

Additional information may be obtained by contacting Tuolumne County Community Development Department at (209) 533-5961, Monday through Thursday, between the hours of 8:00 a.m. and 3:00 p.m.

Publish date local paper: April 6, 2024

County of Tuolumne Broadband Infrastructure Environmental Impact Report

DRAFT
Environmental Impact Report

SCH No. 2023050017

April 2024

Prepared for:

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ACRONYMS AND ABBREVIATIONS

AAQS	Ambient Air Quality Standards
AB	Assembly Bill
ALUCP	Airport Land Use Compatibility Plan
Amsl	above mean sea level
AR4	Fourth Assessment Report
AR5	Fifth Assessment Report
BMP	Best Management Practices
BPL	broadband over powerlines
BRA	Biological Resources Assessment
BSL	Broadband Service Locations
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
CAFE	Corporate Average Fuel Economy
Cal ARP	California Accidental Release Prevention
Cal/OSHA	California Division of Occupational Safety and Health
CalEEMod	California Emissions Estimator Model
CalEPA	California Environmental Policy Act
CALFIRE	California Department of Forestry and Fire Protection
CALGreen	California Green Building Standards Code
CalRecycle	California Department of Resources Recycling and Recovery
Caltrans	California Department of Transportation
CALVEG	Classification and Assessment with LANDSAT of Visible Ecology Groupings
CAP	Climate Action Plan
CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resources Board
CBC	California Building Code
CBSC	California Building Standards Code
CDC	California Department of Conservation
CDFW	California Department of Fish and Wildlife
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CESA	California Endangered Species Act
CETF	California Emerging Technology Fund
CFC	California Fire Code
CFR	Code of Federal Regulations
CFR	Code of Federal Regulations
CGS	California Geological Survey
CH4	methane
CHP	California Highway Patrol
CNEL	Community Noise Equivalent Level

ACRONYMS AND ABBREVIATIONS (cont.)

CNPS	California Native Plant Society
CO	Carbon Monoxide
CO ₂ e	carbon dioxide equivalents
County	Tuolumne County
CRHR	California Register for Historic Resources
CRPR	California Rare Plant Rank
CSD	Community Services District
CTC	California Transportation Commission
CTP	California Transportation Plan
CUPA	Certified Unified Program Agency
CVRWQCB	Central Valley Regional Water Quality Control Board
CWA	Clean Water Act
CWHP	California Wildfire Mitigation Program
CWHR	California Wildlife Habitat Relationships System
CWPP	Community Wildfire Protection Plan
dB	decibels
dBA	A-weighting decibels
DMV	Department of Motor Vehicles
DOT	Department of Transportation
DPM	diesel particulate matter
DSL	digital subscriber line
DTSC	Department of Toxic Substances Control
DWR	Department of Water Resources
ECA	Essential Connectivity Areas
EFH	Essential Fish Habitat
EIR	Environmental Impact Report
EO	Executive Order
EOP	Emergency Operations Plan
ESA	Endangered Species Act
ESA	Environmental Site Assessment
Eveg	Existing Vegetation
FCC	Federal Communications Commission
FEMA	Federal Emergency Management Act
FESA	Federal Endangered Species Act
FHSZ	Fire Hazard Severity Zone
FHWA	Federal Highway Administration
FMMP	Farmland Mapping and Monitoring Program
FRA	Federal Responsibility Areas
GCSD	Groveland Communities Services District
GHG	Greenhouse Gas

ACRONYMS AND ABBREVIATIONS (cont.)

GSP	Groundwater Sustainability Plans
GWP	Global Warming Period
H ₂ S	hydrogen sulfide
HCP/NCCP	Habitat Conservation Plan / Natural Community Conservation Plan
HFC	hydrofluorocarbons
HMBP	Hazardous Materials Business Plan
IBC	International Building Code
IPaC	Information for Planning and Consultation
IPCC	Intergovernmental Panel on Climate Change
ISP	Internet Service Provider
LATA	Local Agency Technical Assistance
LBP	Lead-based paint
lbs/day	pounds per day
LCFS	Low Carbon Fuel Standard
LOS	level of service
LRA	Local Responsibility Areas
LUST	Leaking Underground Storage Tanks
Mbps	megabits per second
MBTA	Migratory Bird Treaty Act
MCAB	Mountain Counties Air Basin
MJHMP	Multi-Jurisdictional Hazard Mitigation Plan
MM	Mitigation Measure
MMRP	Mitigation Monitoring and Reporting Program
MMT	million metric tons
MND	Mitigated Negative Declaration
mPa	micro-Pascals
MPO	metropolitan planning organizations
MPZ	Mineral Preserve
MSA	Magnuson-Stevens Fishery Conservation and Management Act
N ₂ O	nitrous oxide
NAAQS	National Ambient Air Quality Standards
NAGPRA	Native American Graves Protection and Repatriation Act
NAHC	Native American Heritage Commission
NEPA	National Environmental Policy Act
NFPA	National Fire Protection Association
NHTSA	National Highway Traffic Safety Administration
NIMS	National Incident Management System
NMFS	National Marine Fisheries Service
NO ₂	Nitrogen Dioxide

ACRONYMS AND ABBREVIATIONS (cont.)

NOA	Notice of Availability
NOAA	National Oceanic and Atmospheric Administration
NOC	Notice of Completion
NOD	Notice of Determination
NOP	Notice of Preparation
NO _x	nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
NPS	National Park Service
NRCS	National Resource Conservation Service
NSLU	Noise sensitive land uses
O ₃	Ozone
OEHHA	Office of Environmental Health Hazard Assessment
OES	Office of Emergency Services
OHP	Office of Historic Preservation
OPR	Office of Planning and Research
OSHA	Occupational Safety and Health
Pb	Lead
PFC	perfluorocarbons
PM	post miles
PM	Particulate Matter
PM ₁₀	Coarse PM, 10 micrometers or less in diameter
PM _{2.5}	Fine PM, 2.5 micrometers or less in diameter
PPD	pounds per day
Ppm	parts per million
PPV	peak particle velocity
PRC	Public Resources Code
RCNM	Roadway Construction Noise Model
RCRA	Resource Conservation and Recovery Act
RMP	Risk Management Plans
ROG	reactive organic compounds
ROW	Right of way
RTP	regional transportation plan
RTPA	regional transportation planning agency
RWQCB	Regional Water Quality Control Board
SAR	Second Assessment Report
SARA	Superfund Amendments and Reauthorization Act
SB	Senate Bill
SCC	Species of Special Concern
SCS	Sustainable Communities Strategy
SEMS	Standardized Emergency Management System

ACRONYMS AND ABBREVIATIONS (cont.)

SF ₆	sulfur hexafluoride
SGMA	Sustainable Groundwater Management Act
SHPO	State Historic Preservation Officer
SIP	State Implementation Plans
SLP	short-lived climate pollutants
SMARA	Surface Mining and Reclamation Act of 1975
SO ₂	Sulfur Dioxide
SPL	sound pressure level
SR	State Route
SRA	State Responsibility Areas
SWPPP	Stormwater Pollution Prevention Program
SWRCB	State Water Resources Control Board
TAC	toxic air contaminants
TCALUC	Tuolumne County Airport Land Use Commission
TCAPCD	Tuolumne County Air Pollution Control District
TCFD	Tuolumne County Fire Department
TCR	Tribal Cultural Resource
TCTC	Tuolumne County Transportation Council
TCU	Tuolumne-Calaveras Unit
TIMF	Traffic Impact Mitigation Fee
TMDL	Total Maximum Daily Load
TUD	Tuolumne Utilities District
UNFCCC	United Nations Framework Convention on Climate Change
USACE	U.S. Army Corps of Engineers
USC	United States Code
USDA	U.S. Department of Agriculture
USEPA	United States Environmental Protection Agency
USFS	U.S. Forest Service
USFWS	U.S. Fish and Wildlife Service
UST	Underground Storage Tank
VHFHSZ	Very High Fire Hazard Severity Zone
VMT	vehicles miles traveled
VOC	volatile organic compounds
WEAP	Worker Environmental Awareness Program
WQC	Water Quality Certification
WQP	Water Quality Plan
WUI	Wildland-Urban Interface

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EXECUTIVE SUMMARY

ES.1 INTRODUCTION

This summary presents an overview of the proposed County of Tuolumne Broadband Infrastructure Countywide program, herein referred to as “program” or “Countywide program”. This section also summarizes the alternatives to the proposed program, identifies issues to be resolved, areas of controversy, and conclusions of the analysis contained in Sections 4.1 through 4.13 of this Environmental Impact Report (EIR). For a complete description of the proposed program, please see Section 3.0, Project Description, of this EIR. For a discussion of Project Alternatives, please see Section 5.0, Project Alternatives.

This EIR addresses the environmental effects associated with the program. The California Environmental Quality Act (CEQA) requires that local government agencies, prior to taking action on projects over which they have discretionary approval authority, consider environmental impacts of such projects. An EIR is a public document designed to provide the public, local, and State governmental agency decision-makers with an analysis of a project’s potential environmental impacts to support informed decision-making.

This EIR has been prepared pursuant to the requirements of CEQA and the CEQA Guidelines to determine if project approval could have a significant impact on the environment. Tuolumne County, as the Lead Agency, has reviewed and revised as necessary submitted drafts, technical studies, and reports to reflect its own independent judgment, including reliance on applicable County technical personnel and review of all technical reports. Information for this EIR was obtained from on-site field observations; discussions with affected agencies; analysis of adopted plans and policies; review of available studies, reports, data, and similar literature in the public domain; and specialized environmental assessments (e.g., air quality, biological resources, greenhouse gas emissions).

ES.2 ENVIRONMENTAL PROCEDURES

This EIR has been prepared to assess the environmental effects associated with implementation of the proposed program, as well as anticipated future discretionary actions and approvals. The main objectives of this document as established by CEQA Section 15002(a) are to:

- Inform governmental decision-makers and the public about the potential, significant environmental effects of proposed activities.
- Identify the ways that environmental damage can be avoided or significantly reduced.
- Prevent significant, avoidable damage to the environment by requiring changes in projects through the use of alternatives or mitigation measures when the governmental agency finds the changes to be feasible.
- Disclose to the public the reasons why a governmental agency approved the project in the manner the agency chose if significant environmental effects are involved.

An EIR is the most comprehensive form of environmental documentation identified in the CEQA statute and in the CEQA Guidelines. It provides the information needed to assess the environmental consequences of a proposed project, to the extent feasible. EIRs are intended to provide an objective, factually supported, full-disclosure analysis of the environmental consequences associated with a proposed project that has the potential to result in significant, adverse environmental impacts. An EIR is also one of various decision-making tools used by a lead agency to consider the merits and disadvantages of a project that is subject to its discretionary authority. Prior to approving a proposed project, the lead agency must consider the information contained in the EIR, determine whether the EIR was properly prepared in accordance with the CEQA Guidelines, determine that it reflects the independent judgment of the lead agency, adopt findings concerning the project's significant environmental impacts, if any, and alternatives, and adopt a Statement of Overriding Considerations if the proposed project would result in significant impacts that cannot be avoided.

ES.3 EIR FORMAT

This EIR is organized into the following chapters:

- **Executive Summary:** Consistent with Section 15123 of the CEQA Guidelines, this chapter provides a brief summary of the proposed program and identifies environmental impacts and mitigation measures in a summary matrix.
- **Chapter 1.0 – Introduction:** This chapter presents an overview of the program background and describes the intended use of the EIR (CEQA Guidelines Section 15124(d)), as well as the environmental review process.
- **Chapter 2.0 – Project Setting and Location:** This chapter includes a description of the physical environmental conditions in the vicinity of the program site as they existed at the time the Notice of Preparation (NOP) was published, and which have been updated based on current conditions during preparation of this EIR, consistent with Section 15125 of the CEQA Guidelines.
- **Chapter 3.0 – Project Description:** This chapter provides a detailed description of the proposed program characteristics and objectives as well as the required discretionary approvals consistent with Section 15124 of the CEQA Guidelines.
- **Chapter 4.0 – Environmental Impact Analysis:** This chapter contains a comprehensive analysis of the potential impacts to each environmental factor evaluated in this EIR, feasible measures that could minimize or mitigate those impacts consistent with Section 15126.4 of the CEQA Guidelines, and cumulative impacts resulting from the combination of the proposed program together with other County plans causing related impacts consistent with Section 15130 of the CEQA Guidelines.
- **Chapter 5.0 – Project Alternatives:** Consistent with Section 15126.6 of the CEQA Guidelines, this chapter evaluates a range of reasonable alternatives to the program, or to the location of the Countywide program, which would feasibly attain most of the basic objectives of the program but would avoid or substantially lessen any of the significant effects of the program. Alternatives other than the proposed program evaluated in this document include: (1) No Project Alternative; (2) Aerial

Installation Only Alternative; (3) Underground Installation Only Alternative; and, (4) Use of Existing Infrastructure Alternative.

- **Chapter 6.0 – Environmental Impacts Found Not to be Significant:** This Chapter lists the environmental factors that were determined by the County to clearly have no potential to be significantly impacted by the program.
- **Chapter 7.0 – Significant Irreversible Environmental Changes:** Consistent with Section 15126.2(d) of the CEQA Guidelines, this chapter outlines the significant irreversible changes anticipated to occur as a result of the proposed program.
- **Chapter 8.0 – Growth Inducement:** Consistent with Section 15126.2(e) of the CEQA Guidelines, this chapter describes potential growth-inducing impacts associated with the proposed program.
- **Chapter 9.0 – Significant and Unavoidable Impacts:** Consistent with Section 15126.2(c) of the CEQA Guidelines, this chapter describes any significant impacts identified, including those which can be mitigated but not reduced to a level of insignificance.
- **Chapter 10.0 – List of Preparers:** This chapter lists all authors and agencies that assisted in the preparation of the report by name, title, and company or agency affiliation.

ES.4 TYPE AND PURPOSE OF THIS EIR

This EIR has been prepared in accordance with the CEQA Guidelines and Tuolumne County as the Lead Agency. This EIR assesses potential environmental consequences of implementing the proposed program and identifies mitigation measures and alternatives to the proposed program that would avoid or reduce significant impacts where necessary. This EIR is intended to inform County decision makers, other responsible agencies, and the general public as to the nature of the proposed program's potential environmental impacts.

ES.5 PROJECT LOCATION

The proposed program would be located within Tuolumne County limits. The area in which future broadband infrastructure could be implemented includes all unincorporated areas of the County; it excludes federal lands, private roads, and State highway rights-of-way (ROW). The County has jurisdiction over a total of approximately 610 miles of County-maintained roads. It is envisioned that the vast majority of future broadband infrastructure would be installed within existing County-maintained roads and ROW, public utility easements, and/or existing overhead public utility easements of record throughout the County. The exact alignment of future broadband infrastructure is currently and would be planned based on such considerations as construction feasibility, local preference, and locations of sensitive environmental resources.

This EIR conservatively assumes that new ground disturbance would be required for the entire program; however, there would be potential for utilizing existing conduit where only installation of fiber optic line would be required. The new infrastructure constructed under the program would connect to existing broadband infrastructure (e.g., aboveground and/or belowground) in the program area supported by existing internet service providers (ISP).

ES.6 PROJECT SUMMARY

The County is proposing to expand access to broadband technology throughout the County, including the unincorporated areas of the County. The Countywide program would result in the installation of fiber optic conduit (either underground in buried conduits, overhead on pole lines, or in a combination of both) by private ISPs. Broadband infrastructure would be installed to provide aboveground or underground lateral connections to private residences and businesses. Individual connections typically would be located in previously disturbed and/or developed areas (e.g., in ROW or public utility easements). The broadband infrastructure may be co-located with other utility installations; therefore, it is likely that the ground along these alignments has been previously disturbed by prior utility infrastructure. Additionally, many of these connections would generally follow the route of the County roadway, particularly if the applicable areas have other issues that could affect access, such as vegetation, geologic conditions, landscape, and/or water features that should not be disturbed. This EIR conservatively assumes that new ground disturbance would be required for the entire program; however, there would be potential for utilizing existing conduit where only installation of fiber optic line would be required. If deemed feasible, the new broadband infrastructure constructed under an individual project or phase would connect to existing infrastructure in the project area supported by existing ISPs.

The area in which future broadband infrastructure could be implemented includes all unincorporated areas of the County; it excludes federal lands, private roads, and State highway ROW. The County includes a total of approximately 610 miles of County-maintained roads. The installation of underground or overhead cables would be located within existing County maintained road ROW, public utility easements, and/or overhead public utility easements of record throughout the County. The future location of broadband infrastructure would focus on areas of the County that are currently unserved or underserved. The exact alignment of future broadband infrastructure is unknown at this time and would be based on such considerations as construction feasibility, local preference, and locations of sensitive environmental resources.

Per Section 15124 of the CEQA Guidelines, the County identified the following objectives for the proposed program:

- promote upgradable and expandable high-speed broadband capacity in the service areas with minimum speeds of 100 megabits per second (Mbps) for downloads and 20 Mbps for uploads, which is labeled as “served” areas within California;
- promote the construction of a broadband network in unserved and underserved areas of unincorporated Tuolumne County;
- enable an increase in telecommuting, with a commensurate decrease in vehicle miles traveled (VMT);
- improve public health and safety through enabling faster emergency response, enhanced communication between emergency services, and access to critical information during disasters or emergencies;
- streamline the environmental review process for individual broadband projects that are implemented in the County;

- promote a reliable foundation of data and acceptable methodology to assess impacts for any specific broadband deployment project;
- identify known environmental and cultural assets to be protected and/or restored with an approved set of preservation measures and/or mitigations; and,
- save time and money for both the County and broadband ISP project applicants, resulting in greater government and economic efficiencies, reducing the amount of County staff time required to review broadband projects and avoiding duplication of applicant costs.

ES.7 SUMMARY OF ALTERNATIVES TO THE PROJECT

ES.7.1 No Project Alternative

This alternative is required under Section 15126.6(e) of the CEQA Guidelines and represents a possible scenario that could occur if the proposed project is not approved. According to Section 15126.6 (e)(3)(B) of the CEQA Guidelines, if the project is other than a land use or regulatory plan, for example a development project on identifiable property, the “no project” alternative is the circumstance under which the project does not proceed. Under the No Project Alternative, no actions would be taken to expand broadband availability and the service area would remain unchanged from current conditions. The No Project Alternative would not meet the project objectives. However, as required by CEQA, the No Project Alternative is evaluated in this Draft EIR.

Although it is acknowledged that with the No Project Alternative, there would be no discretionary action by Tuolumne County, and thus no impact, for purposes of comparison with the other action alternatives, conclusions for each technical area are characterized as “impacts” that are greater, similar, or less, to describe conditions that are worse than, similar to, or better than those of the proposed Countywide program.

ES.7.2 Aerial Installation Only Alternative

This alternative would only include individual fiber projects that install aboveground fiber optic line that would utilize existing or newly installed utility poles. No underground fiber optic line or new conduit would be installed under this alternative. This alternative was considered because it would avoid all impacts associated with underground installation, including construction impacts associated with horizontal directional drilling, plowing, trenching, microtrenching, line installation, and/or pavement repair. This alternative could also avoid the impacts associated with the spillage of drilling fluid.

Aboveground fiber optic lines are susceptible to damage from high winds, snowstorms, wildfires, and other natural disasters. Such damage would reduce the reliability of communications system, which could disrupt emergency communications during extreme storms, wildfires, or other emergency conditions when reliable communication is essential. The addition of utility poles may not be feasible in some locations in the County due to the rocky subsurface conditions that would make it nearly impossible to reach the boring depth required for secure pole installation. Furthermore, this alternative would result in additional aesthetics impacts associated with the additional utility poles. It should also be noted that existing poles are owned by certain utilities or exist as joint poles with shared use between utilities. Additional joint pole users may not be feasible, and the ability to add joint pole users may be difficult to augment. Consequently, this alternative would not meet several of the project objectives associated with providing a reliable system of broadband communications.

ES.7.3 Underground Installation Only Alternative

This alternative would only include individual fiber projects that would install underground fiber optic lines and would utilize existing or newly installed underground conduit. No aboveground fiber optic line would be installed under this alternative. This alternative was considered because it could avoid possible impacts associated with aboveground installation, including aesthetic impacts and construction impacts associated with the installation of new utility poles and fiber optic line.

This alternative could be susceptible to biological, cultural, and geologic impacts due to underground installation, including construction impacts associated with horizontal directional drilling, plowing, trenching, microtrenching, and line installation. Additionally, this alternative could be susceptible to hazards and hazardous material impacts due to possible trenching or digging in proximity to existing, unmarked infrastructure. Depending on the prevailing geologic conditions, including bedrock near the surface, it may be impossible to install underground infrastructure in some parts of the County. Consequently, this alternative would not meet several of the project objectives associated with providing a reliable system of broadband communications.

ES.7.4 Use of Existing Infrastructure Alternative

This alternative would include individual fiber projects that install fiber optic line in existing fiber-specific conduit or along existing utility poles. This alternative was considered because it would avoid impacts associated with installation of new utility pole and new underground fiber-specific conduit infrastructure. This alternative would avoid or substantially reduce all potential impacts associated with the proposed Countywide program as outlined in this EIR. However, it would not meet most of the project objectives because it would not promote the expansion of broadband infrastructure into portions of the service area that do not already include sufficient conduit, utility poles, and/or supporting infrastructure.

ES.8 ISSUES TO BE RESOLVED

Section 15123(b)(3) of the CEQA Guidelines requires that an EIR identify issues to be resolved, including the choice among alternatives and whether or how to mitigate significant impacts. With regard to the proposed program, the major issues to be resolved include decisions by Tuolumne County, as Lead Agency, related to:

- Whether this Draft EIR adequately describes the environmental impacts of the proposed program.
- Whether the program is compatible with the character of the existing area.
- Whether the identified mitigation measures should be adopted or modified.
- Whether there are other mitigation measures that should be applied to the proposed program besides those identified in the Draft EIR.
- Whether there are any alternatives to the proposed program that would substantially lessen any of the significant impacts of the proposed program and achieve most of the basic objectives.

ES.9 AREAS OF CONTROVERSY

Tuolumne County issued a NOP for the Draft EIR on May 1, 2023 and held an in-person public scoping meeting on Wednesday, May 10, 2023 to receive agency and public comments. The scoping period for this EIR started on May 1, 2023 and ended on May 30, 2023, during which time responsible agencies and interested members of the public were invited to submit comments as to the scope and content of the Draft EIR. The comments received focused primarily on tribal cultural resources, transportation, biological resources, hydrology and water quality. Comments received during the public scoping period are included in Appendix B of this EIR.

To the extent that these issues have environmental impacts and to the extent that analysis is required under CEQA, they are addressed in Sections 4.0 through 9.0 of this EIR.

ES.10 SIGNIFICANT IMPACTS AND MITIGATION MEASURES

Under CEQA, a significant impact on the environment is defined as a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the proposed project, including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic and aesthetic significance.

The proposed Countywide program does not have the potential to generate significant environmental impacts. **Table ES-1** summarizes the conclusions of the environmental analysis contained in this EIR and presents a summary of impacts and mitigation measures identified. It is organized to correspond with the environmental issues discussed in Sections 4.1 through 4.13. The table is arranged in four columns: 1) environmental impacts, 2) significance prior to mitigation, 3) mitigation measures, and 4) significance after mitigation. For a complete description of potential impacts, please refer to the specific discussions in Sections 4.1 through 4.13.

Significant Impact	Significance Without Mitigation	Mitigation Measures	Significance with Mitigation
Aesthetics			
AES-1: The proposed project would have a substantial adverse effect on a scenic vista.	Less than significant	N/A	N/A
AES-2: The proposed project would not substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State Scenic Highway.	Less than significant	N/A	N/A
AES-3: The proposed project would degrade the existing visual character or quality of public views (public views are those that are experienced from publicly accessible vantage point) of the site and its surroundings in a non-urbanized area.	Less than significant	N/A	N/A
AES-4: The proposed project would not expose people on- or off-site to substantial light or glare which would adversely affect day or nighttime views in the area.	Less than significant	N/A	N/A
AES-5: The proposed project would not result in a significant cumulative impact with respect to aesthetics.	Less than significant	N/A	N/A
Air Quality			
AQ-1: The proposed project would not conflict with or obstruct implementation of the applicable air quality plan.	Less than significant	N/A	N/A
AQ-2: The proposed project would not result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or State ambient air quality standard.	Less than significant	N/A	N/A

Significant Impact	Significance Without Mitigation	Mitigation Measures	Significance with Mitigation
AQ-3: The proposed project would not expose sensitive receptors to substantial pollutant concentrations.	Less than significant	N/A	N/A
AQ-4: The proposed project would not result in substantial emissions of odors adversely affecting a substantial number of people.	Less than significant	N/A	N/A
AQ-5: The proposed project would not contribute to a cumulatively considerable impact on regional air quality.	Less than significant	N/A	N/A
Biological Resources			
<p>BIO-1: The proposed project may result in a substantial adverse effect, either directly or through habitat modifications, on species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service.</p>	Potentially significant	<p>Mitigation Measure BIO-1: Prepare a Site-Specific Biological Resources Assessment</p> <p>Prior to project approval, the project applicant shall retain a qualified biologist to prepare a site-specific biological resources assessment (BRA). The BRA shall consist of a desktop review of relevant biological databases and online resources, a general biological reconnaissance survey, vegetation mapping, aquatic resources assessment, analysis of potential impacts to biological resources, and proposed measures to reduce and/or avoid potential impacts.</p> <p>If it is determined during the biological resources assessment that special-status species have the potential to occur within a project area, then project-specific mitigation measures should be recommended to reduce and/or avoid potential impacts. Potential measures for special-status species may include, but are not limited to, protocol-level surveys, nesting bird surveys, and other focused pre-construction surveys.</p> <p>If it is determined that special-status species are present within or adjacent to the project area, or if the project has potential to impact USFWS designated critical habitat and/or NMFS essential</p>	Less than significant

Significant Impact	Significance Without Mitigation	Mitigation Measures	Significance with Mitigation
		fish habitat, then the project proponent shall coordinate with CDFW and/or USFWS, as necessary, to determine mitigation and/or avoidance measures to reduce potential impacts to a level that would be less than significant. Depending on site-specific conditions, agency involvement may be triggered through the regulatory permitting process or direct agency consultation.	
BIO-2: The proposed project may result in a substantial adverse effect on a sensitive natural community.	Potentially Significant	<p>Mitigation Measure BIO-2: Jurisdictional Delineation and Regulatory Permitting</p> <p>If it is determined that impacts to jurisdictional waters or other sensitive natural communities cannot be avoided, then the project proponent shall apply for any necessary permits from the USACE, CDFW, and the RWQCB (e.g., Section 401/404 permits, CDFW Lake or Streambed Alteration Agreement, etc.). If necessary, a formal delineation of wetlands and “other waters” of the United States shall be prepared in accordance with the U.S. Army Corps of Engineers’ (USACE) Corps of Engineers Wetlands Delineation Manual and appropriate regional supplements to determine the extent of aquatic resources and quantify impacts. Impacts to jurisdictional waters and/or sensitive natural habitat shall be mitigated in accordance with agency requirements.</p> <p>Mitigation Measure BIO-3: Oak Resources Inventory</p> <p>If is determined during the biological resources assessment that a project will result in impacts to oak resources, then the County may require mitigation for impacts to oak resources or regulated individual oak trees. Prior to project approval, the Community Development Department may require an inventory of prematurely removed trees or canopy cover to determine the extent of the loss. The inventory shall be prepared by a resource professional with expertise in oak woodlands ecology who is on the list of qualified consultants maintained by the Community</p>	Less than significant

Significant Impact	Significance Without Mitigation	Mitigation Measures	Significance with Mitigation
		Development Department. Resource professionals may include botanists, ecologists, wildlife biologists, and foresters.	
BIO-3: The proposed project may result in a substantial adverse effect on State or federally protected wetlands (including, but not limited to marsh, vernal pool, coastal, etc.) or other waters of the U.S. and State through direct removal, filling, hydrological interruption, or other means.	Potentially significant	See MM BIO-2	Less than significant
BIO-4: The proposed project would not interfere substantially with the movement of native resident wildlife species or with established native resident or migratory wildlife corridors.	Potentially significant	See MM BIO-1	Less than significant
BIO-5: The proposed project may conflict with local policies or ordinances protecting biological resources.	Potentially significant	See MM BIO-1 and MM BIO-3	Less than significant
BIO-6: The proposed project 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.	No impact	N/A	N/A
BIO-7: The proposed project would not result in a significant cumulative impact with respect to biological resources.	Potentially significant	See MM BIO-1, MM BIO-2, and MM BIO-3	Less than significant
Cultural Resource			
CUL-1: The proposed project may cause a substantial change in the significance of a historical resource pursuant to Section 15064.5.	Less than significant	N/A	N/A

Significant Impact	Significance Without Mitigation	Mitigation Measures	Significance with Mitigation
<p>CUL-2: The proposed project may cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5</p>	<p>Potentially significant</p>	<p>Mitigation Measure CUL-1: Archaeological Cultural Resources Investigations</p> <p><i>Preconstruction Screening Identification</i></p> <p>Prior to each phase of fiber optic installation, including appurtenant structures, unpaved staging areas, and fiber optic line, Tuolumne County shall request a records search from the Central California Information Center (CCIC) for project footprints for which ground disturbance is required in areas that have not been previously subject to such disturbance. For those areas of native, unpaved soil that have not been previously surveyed for archaeological cultural resources, the County shall require a pedestrian field survey by a qualified professional archaeologist. If archaeological cultural resources are identified as a result of that survey, the County shall implement the recommendations of the consulting archaeologist to avoid or substantially reduce the severity of impacts to such resources. For those areas that have been surveyed previously, the County shall abide by the recommendations of the professional archaeologist who conducted the original survey.</p> <p><i>Known Resource Conflicts</i></p> <p>In the event that the records search described above identify archaeological cultural resources that would be subject to project-related impact, the County shall evaluate the status of the resource under CEQA. The archaeological cultural resource shall be assessed for significance through the implementation of a Phase II investigation by a qualified archaeologist. This may require some or all of the following:</p>	<p>Less than significant</p>

Significant Impact	Significance Without Mitigation	Mitigation Measures	Significance with Mitigation
		<ul style="list-style-type: none"> • Development of a research design that guides assessments of site significance and scientific potential. • Mapping and systematic collection of a representative sample of surface artifacts • Subsurface investigation through shovel test pits, surface scrapes, or 1 by 1 meter excavation units; a combination of such methods; or equivalent methods • Analysis of recovered material to determine significance pursuant to the CEQA Guidelines • Preparation of a report, including an evaluation of site significance, and recommendations for mitigation, if appropriate • Appropriate curation of collected artifacts <p>If the resource is precontact in nature, the Phase II investigation shall be coordinated with descendant tribal communities.</p> <p>If the Phase II evaluation concludes that the archaeological cultural resource does not qualify as a historical resource (PRC Section 21084.1) or unique archaeological resource (PRC Section 21083.2), then no further study or protection of the resource is necessary. If the resource does qualify as a historical or unique archaeological resource, then the County shall require the implementation of the Phase III approach described below.</p>	

Significant Impact	Significance Without Mitigation	Mitigation Measures	Significance with Mitigation
		<p>A Phase III data recovery effort, in accordance with CEQA Guidelines, shall be implemented by the consulting archaeologist for those sites that are shown by the Phase II efforts to qualify as significant under CEQA. The County shall ensure that data recovery conducted to the level that reduces impacts to below the level of significance has been completed prior to project implementation. The Phase III data recovery program shall include all or a combination of the following methods:</p> <ul style="list-style-type: none"> • Development of a research design to identify important research questions that may be answered through a systematic study of the resource. • Mapping and systematic collection of surface artifacts, possibly complete data recovered depending on site size • Subsurface investigation through methods such as controlled hand-excavation units, machine excavations, deep testing, or a combination of methods. When applicable, other techniques, such as geophysical testing, may be warranted. • Analysis of recovered material through visual inspection and chemical analysis when applicable • Preparation of a report • Appropriate curation of collected artifacts <p>If the resource is precontact in nature, the Phase III investigation shall be coordinated with descendant tribal communities.</p>	

Significant Impact	Significance Without Mitigation	Mitigation Measures	Significance with Mitigation
<p>CUL-3: The proposed project may cause a substantial adverse change in the significance of archaeological cultural resources that are accidentally discovered during project construction</p>	<p>Potentially significant</p>	<p>Mitigation Measure CUL-2 Inadvertent Discovery of Archaeological Cultural Resources</p> <p>In the event that cultural resources are exposed during ground-disturbing activities, construction activities shall be halted within 100 feet of the discovery. Cultural resources could consist of but are not limited to stone, bone, wood, or shell artifacts, or features, including hearths, structural remains, or historic dumpsites. If the resources cannot be avoided during the remainder of construction, a consulting archaeologist, who meets the Secretary of the Interior’s <i>Professional Qualifications Standards</i> for archaeology, shall assess the resource and provide appropriate management recommendations. The County shall implement those recommendations to avoid or substantially reduce the severity of impact to significant resources.</p>	<p>Less than significant</p>
<p>CUL-4: The proposed project may disturb human remains, including those interred outside of formal cemeteries</p>	<p>Potentially significant</p>	<p>Mitigation Measure CUL-3: Human Remains</p> <p>In the event of an accidental discovery or recognition of any human remains, PRC Section 5097.98 must be followed. Once project-related earthmoving begins and if there is a discovery or recognition of human remains, the following steps shall be taken:</p> <ol style="list-style-type: none"> 1. There shall be no further excavation or disturbance of the specific location or any nearby area reasonably suspected to overlie adjacent human remains until the County Coroner is contacted to determine if the remains are Native American and if an investigation of the cause of death is required. If the coroner determines the remains are Native American, the coroner shall contact the NAHC within 24 hours, and the NAHC shall identify the 	<p>Less than significant</p>

Significant Impact	Significance Without Mitigation	Mitigation Measures	Significance with Mitigation
		<p>person or persons it believes to be the “most likely descendant” of the deceased Native American. The most likely descendant may make recommendations to the landowner or the person responsible for the excavation work, for means of treating or disposing of, with appropriate dignity, the human remains, and any associated grave goods as provided in PRC Section 5097.98, or</p> <p>2. Where the following conditions occur, the landowner or their authorized representative shall rebury the Native American human remains and associated grave goods with appropriate dignity either in accordance with the recommendations of the most likely descendent or on the project area in a location not subject to further subsurface disturbance:</p> <ul style="list-style-type: none"> • The NAHC is unable to identify a most likely descendent or the most likely descendent failed to make a recommendation within 48 hours after being notified by the commission; • The descendent identified fails to make a recommendation; or <p>The landowner or his authorized representative rejects the recommendation of the descendent, and the mediation by the NAHC fails to provide measures acceptable to the landowner.</p>	
CUL-5: The proposed project may result in cumulative impacts to cultural resources.	Potentially significant	See MM CUL-1, MM CUL-2 and MM CUL-3	Less than significant

Significant Impact	Significance Without Mitigation	Mitigation Measures	Significance with Mitigation
Geology and Soils			
GEO-1: The proposed project may directly or indirectly cause potential substantial adverse effects involving rupture of known earthquake fault, strong seismic ground shaking, or seismic-related ground failure, including liquefaction or landslides.	Less than significant	N/A	N/A
GEO-2: The proposed project would not result in substantial soil erosion or loss of topsoil.	Less than significant	N/A	N/A
GEO-3: The project may 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 the on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse.	Less than significant	N/A	N/A
GEO-4: The proposed project may be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1194) and would not create substantial direct or indirect risks to life or property.	Less than significant	N/A	N/A
GEO-5: The proposed project would not require the use of septic tanks or an alternative wastewater disposal system.	No Impact	N/A	N/A
GEO-6: The proposed may directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.	Potentially significant	<p>GEO-1: Perform a Site-Specific Paleontological Resources Inventory Assessment</p> <p>Before submitting a grading permit application, the applicant for an individual fiber project shall retain the services of a qualified professional paleontologist who shall prepare a paleontological resources inventory and assessment for any affected rock units.</p>	Less than significant

Significant Impact	Significance Without Mitigation	Mitigation Measures	Significance with Mitigation
		<p>This report shall include the following components:</p> <ul style="list-style-type: none"> • A report of any fossils observed during a reconnaissance-level field survey. • The results of a records search of appropriate paleontological databases (at a minimum, the database at the University of California, Berkeley Museum of Paleontology) to determine whether any previously recorded fossil localities are located within or immediately adjacent to the fiber optic facilities where rock boring or excavation that would reach paleontological soil is proposed. • A determination as to whether the geologic formations are of high or low paleontological sensitivity, and a discussion supporting the reasons why the sensitivity determinations were made. <p>Prior to issuance of grading permits, the approving local jurisdiction shall review the reports and its findings to confirm no paleontological resources would be affected.</p>	
<p>GEO-7: The proposed project would not result in a significant cumulative impact with respect to geology and soils.</p>	<p>Less than significant</p>	<p>N/A</p>	<p>N/A</p>
<p>Greenhouse Gas Emissions</p>			
<p>GHG-1: Implementation of the project would not generate GHG emissions that may have a significant impact on the environment.</p>	<p>Less than significant</p>	<p>N/A</p>	<p>N/A</p>
<p>GHG-2: Implementation of the project would not conflict with or obstruct implementation of applicable GHG reduction plans, policies, or regulations.</p>	<p>Less than significant</p>	<p>N/A</p>	<p>N/A</p>

Significant Impact	Significance Without Mitigation	Mitigation Measures	Significance with Mitigation
GHG-3: The proposed project would not contribute to a significant cumulative impact to regional and State GHG emissions.	Less than significant	N/A	N/A
Hazards and Hazardous Materials			
HAZ-1: The proposed project would not create a significant hazard to the public or the environment through the routine transport, use or disposal of hazardous materials.	Less than significant	N/A	N/A
HAZ-2: The proposed project would not 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.	Less than significant	N/A	N/A
HAZ-3: The proposed project would not emit hazardous emissions or require handling of hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.	Less than significant	N/A	N/A
HAZ-4: The proposed project is not located on a site that is included on a list of hazardous materials sites compiled pursuant to Section 65962.5 of the California Government Code and, as a result, would not create a significant hazard to the public or the environment.	Less than significant	N/A	N/A
HAZ-5: The proposed project, which is not within an airport land use plan or within two miles of a public airport or public use airport, would not result in a safety hazard or excessive noise for people residing or working in the project area.	Less than significant	N/A	N/A

Significant Impact	Significance Without Mitigation	Mitigation Measures	Significance with Mitigation
HAZ-6: The proposed project would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.	Less than significant	N/A	N/A
HAZ-7: The proposed project would not expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires.	Less than significant	N/A	N/A
HAZ-8: The proposed project would not contribute to a significant cumulative impact with respect to hazards and hazardous substances.	Less than significant	N/A	N/A
Hydrology and Water Quality			
HYD-1: The proposed project would not violate water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality.	Less than significant	N/A	N/A
HYD-2: The proposed project would not substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin.	Less than significant	N/A	N/A
HYD-3: The project may alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would: (i) result in substantial erosion or siltation on- or off-site; (ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite; (iii) create or contribute runoff	Less than significant	N/A	N/A

Significant Impact	Significance Without Mitigation	Mitigation Measures	Significance with Mitigation
water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or (iv) impede or redirect flood flows.			
HYD-4: The project would not risk release of pollutants due to project inundation due to flood hazards, tsunamis, or seiches.	No impact	N/A	N/A
HYD-5: The proposed project would not conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.	Less than significant	N/A	N/A
HYD-6: The proposed project would not contribute to a significant cumulative impact with respect to hydrology and water quality resources.	Less than significant	N/A	N/A
Noise			
NOI-1: The proposed project may result in a temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the County Noise Ordinance.	Potentially significant	<p>Mitigation Measure NOI-1: Construction Hours and Best Management Practices</p> <p>Prior to issuing individual project construction approvals or permits, the County shall insure that construction documentation includes the following restrictions. Project construction activities within 1,900 feet of noise sensitive land uses (NSLUs; e.g., residences, schools, hospitals, convalescent homes, churches, libraries) shall implement the following best manage practices:</p> <ul style="list-style-type: none"> All noise-generating activities shall be prohibited between the hours of: 7:00 p.m. to 7:00 a.m. Monday through Saturday and at any time on Sundays and County recognized public holidays. 	Less than significant

Significant Impact	Significance Without Mitigation	Mitigation Measures	Significance with Mitigation
		<ul style="list-style-type: none"> • Equipment and trucks used for project construction shall utilize the best available noise control techniques (including mufflers, use of intake silencers, ducts, engine enclosures and acoustically attenuating shields or shrouds); and • Impact equipment (e.g., jack hammers, pavement breakers, and rock drills) used for project construction shall be hydraulically or electrically powered wherever feasible to avoid noise associated with compressed air exhaust from pneumatically powered tools. Whenever feasible, require the use of quieter procedures, such as drilling rather than impact equipment operation. <p>Mitigation Measure NOI-2: Backup Generator Noise Control</p> <p>Prior to approving individual projects that require an emergency back generator, the County shall verify project plans include the following: Where feasible, emergency backup generators shall be installed no closer than 105 feet from any noise sensitive land use (NSLU; e.g., residences, schools, hospitals, convalescent homes, churches, libraries). If it is not feasible to locate emergency generators 105 feet or more from all NSLUs, the project proponent shall incorporate noise attenuating features (e.g., generator sound enclosures, noise barriers) into the equipment installation sufficient to reduce generator noise levels to 50 dBA LEQ or less measured at outdoor use areas or building edges of the closest NSLU. Noise levels at NSLUs shall be verified by a qualified acoustical professional.</p>	

Significant Impact	Significance Without Mitigation	Mitigation Measures	Significance with Mitigation
<p>NOI-2: The proposed project would not result in the generation of excessive groundborne vibration levels.</p>	<p>Potentially Significant</p>	<p>Mitigation Measure NOI-3: Vibratory Roller Use</p> <p>Prior to issuing individual project construction approvals or permits, the County shall insure that construction documentation includes the following restrictions. Vibratory rollers shall be used in static mode only (no vibrations) within the following distances:</p> <ul style="list-style-type: none"> • Within 15 feet of any occupied building; and • Within 18 feet of any older residential building; and • Within 60 feet of a fragile historical building, ruin, or ancient monument. 	<p>Less than significant</p>
<p>NOI-3: The proposed project would not expose people residing or working in the project area to excessive noise levels from public use airports or private airstrips.</p>	<p>Less than significant</p>	<p>N/A</p>	<p>N/A</p>
<p>NOI-4: The proposed project would not contribute to a cumulatively considerable impact on ambient noise levels in the County.</p>	<p>Potentially significant</p>	<p>See MM NOI-01 and MM NOI-03</p>	<p>Less than significant</p>
<p>Transportation</p>			
<p>TRA-1: The proposed project would not conflict with a program, plan, ordinance, or policy addressing the circulation system including transit, roadway, bicycle, and pedestrian facilities.</p>	<p>Less than significant</p>	<p>N/A</p>	<p>N/A</p>
<p>TRA-2: The proposed project would be inconsistent with CEQA Guidelines section 15064.3, subdivision (b).</p>	<p>Less than significant</p>	<p>N/A</p>	<p>N/A</p>

Significant Impact	Significance Without Mitigation	Mitigation Measures	Significance with Mitigation
TRA-3: The proposed project would not substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).	Less than significant	N/A	N/A
TRA-4: The proposed project would not result in inadequate emergency access.	Less than significant	N/A	N/A
TRA-5: The proposed project would not contribute to a significant cumulative impacts with respect to transportation.	Less than significant	N/A	N/A
Tribal Cultural Resources			
TCR-1: The proposed project may cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geologically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is: Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k).	Potentially significant	<p>Mitigation Measure TCR-1: Tribal Consultation</p> <p>Tuolumne County shall conduct the appropriate tribal consultation outreach to relevant California Native American tribes, pursuant to PRC § 21080.3.1, for all future individual fiber projects included within the scope of the Tuolumne County Broadband EIR. Both local tribes, the Tuolumne Band of Me-Wuks and the Chicken Ranch Rancheria, are to be formally notified once site-specific information has been submitted to the County. Pursuant to PRC § 21080.3.1 (b), the tribes will have 30 days for AB 52 from the receipt of the request for consultation to either request or decline consultation for the individual fiber project, in writing, with the County for each proposed individual fiber project included in the scope of the Tuolumne County Broadband EIR. In the event that a general plan or specific plan adoption or amendment is required for the implementation of an individual fiber project, the County shall comply with the requirements of Senate Bill 18 (SB 18), in coordination with AB 52, as described in California Government Code § 65352.3.</p>	Less than significant

Significant Impact	Significance Without Mitigation	Mitigation Measures	Significance with Mitigation
<p>TCR-2: The proposed project may cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geologically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is: A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.</p>	<p>Potentially significant</p>	<p>See MM TCR-1</p>	<p>Less than significant</p>
<p>TCR-3: The proposed project may cause a substantial adverse change in the significance of a tribal cultural resource inadvertently discovered during construction.</p>	<p>Potentially significant</p>	<p>Mitigation Measure TCR-2: Archaeological Treatment and Tribal Consultation</p> <p>In the event that TCRs are exposed during ground-disturbing activities, construction activities (e.g., grading, grubbing, or vegetation clearing) shall be halted in the immediate vicinity of the discovery. An archaeologist who meets the Secretary of the Interior’s <i>Professional Qualifications Standards</i> shall then be retained to evaluate the resource’s significance under CEQA in close coordination with tribal members who would provide traditionally based cultural knowledge for the analysis. If the discovery proves to be significant, additional work and mitigation measures, such as those listed in CUL-1, CUL-2, and CUL-3 as deemed appropriate by the tribal organization consulting on the find. Such mitigation may include avoidance, data recovery excavation, or traditional ethnographic research into the cultural</p>	<p>Less than significant</p>

Significant Impact	Significance Without Mitigation	Mitigation Measures	Significance with Mitigation
		importance of the find to contemporary descendant communities.	
TCR-4: The proposed project may result in a cumulative impact with respect to tribal cultural resources.	Potentially significant	See MM TCR-1 and MM TCR-2	Less than significant
Utilities and Service Systems			
UTIL-1: The proposed project may require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects.	Less than significant	N/A	N/A
UTIL-2: The proposed project would not have a significant impact on water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years.	Less than significant	N/A	N/A
UTIL-3: The proposed project would result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments.	Less than significant	N/A	N/A
UTIL-4: The proposed project would not generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals.	Less than significant	N/A	N/A
UTIL-5: The proposed project would comply with federal, state, and local management and reduction statutes and regulations	Less than significant	N/A	N/A

Significant Impact	Significance Without Mitigation	Mitigation Measures	Significance with Mitigation
related to solid waste.			
UTIL-6: The proposed project would result in a significant cumulative impact with respect to utilities.	Less than significant	N/A	N/A
Wildfire			
FIRE-1: The proposed project would not substantially impair an adopted emergency response plan or emergency evacuation plan.	Less than significant	N/A	N/A
FIRE-2: Due to slope, prevailing winds, and other factors, the project would not exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire.	Less than significant	N/A	N/A
FIRE-3: The proposed project would not require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment.	Less than significant	N/A	N/A
FIRE-4: The proposed project would not expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes.	Less than significant	N/A	N/A
FIRE-5: The proposed project would be located in a State Responsibility Area but would not contribute to a significant cumulative impact with respect to wildfire.	Less than significant	N/A	N/A

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1.0 INTRODUCTION

According to CEQA, preparation of an EIR is required whenever it can be fairly argued, based on substantial evidence, that a proposed program may result in a significant environmental impact. An EIR is an informational document used to inform public-agency decision makers and the general public of the significant environmental impacts of a project, identify possible ways to minimize the significant impacts, and describe reasonable alternatives to the project that could feasibly attain most of the basic objectives of the project while substantially lessening or avoiding any of the significant environmental impacts. Public agencies are required to consider the information presented in the EIR when determining whether to approve a project.

This Draft EIR has been prepared to meet the requirements of a program EIR as defined in CEQA Guidelines Section 15168(c) for streamlining later activities. In accordance with Section 15168 of the CEQA Guidelines, a program EIR may be prepared on a series of actions that can be characterized as one large project and are related to, among other things, the issuance of general criteria to govern the conduct of a continuing program or individual activities carried out under the same authorizing statutory or regulatory authority and having generally similar environmental effects that can be mitigated in similar ways. The proposed program meets these criteria for use of a program EIR.

In accordance with CEQA Guidelines Section 15168(c), subsequent activities consistent with the program would be examined in light of the information in this program EIR to determine whether additional environmental documentation must be prepared. If the lead agency finds that, pursuant to CEQA Guidelines Section 15162, no new significant effects would occur and no new mitigation measures would be required, the activity can be approved as being within the scope of the proposed program covered by the program EIR, and no new environmental documentation would be required. In this situation, the lead agency must incorporate all feasible mitigation measures from the program EIR into the subsequent project, as needed, to address significant or potentially significant effects on the environment covered by the program EIR.

A program EIR provides a regional consideration of cumulative effects and includes broad policy alternatives and program mitigation measures that are equally broad in scope. This program EIR provides a regional scale analysis and a framework of mitigation measures for subsequent, site-specific environmental review documents prepared by lead agencies in the County as individual broadband projects are identified and designed and moved through the planning, review, and decision-making processes.

A program EIR may serve as a first-tier document for later CEQA review of individual projects determined not to be wholly within the scope of the program EIR. These project-specific CEQA reviews, if needed, will focus on project-specific impacts and mitigation measures and need not repeat the broad analyses contained in the program EIR. This document addresses environmental impacts to the level that can be assessed without undue speculation (CEQA Guidelines Section 15145).

If a subsequent project or later activity consistent with the program would have effects that were not examined in this program EIR, an initial study may be prepared to determine the appropriate level of environmental review. If another environmental document is needed, whether it is a notice of exemption, negative declaration, mitigated negative declaration, or EIR, the program EIR can be used to simplify the task of preparing the subsequent environmental document, as indicated in CEQA Guidelines

Section 15168(d). For instance, regional influences, secondary effects, cumulative impacts, and broad alternatives that apply to the overall program can be incorporated by reference, allowing the later environmental document to focus solely on the new effects, such as site-specific environmental impacts related to project design that had not been previously considered in the program EIR. Any project-specific impacts that are too speculative to define at the program level would be resolved during CEQA review of individual projects.

1.1 PROJECT BACKGROUND

This program EIR provides an assessment of the potential environmental impacts that may result from implementation of the County of Tuolumne Programmatic Environmental Impact Report and Broadband Strategic Plan, herein referred to as “Countywide program” or “program.” Tuolumne County (County) is the CEQA Lead Agency for the proposed program. This EIR will provide a guiding document and process on the development of broadband in the County by reducing the process required for the deployment of Internet Service Provider (ISP) infrastructure. The EIR will study the impact to the environment caused by the installation of broadband, whether underground in buried conduits or overhead on utility pole lines, within existing road or public utility easements throughout the County and consider them within the framework of both CEQA and National Environmental Policy Act (NEPA). It is anticipated that the presence of a quality program EIR covering potential broadband infrastructure installation projects will put Tuolumne County in the position to have shovel-ready broadband projects and be in a more favorable position to compete for State and federal broadband grants. Broadband infrastructure will enhance public safety, economic prosperity, and the environmental protection efforts of the County.

The proposed program EIR will achieve compliance with the California Environmental Quality Act (CEQA) such that entities can take advantage of current and future funding for broadband infrastructure provision, expected to be available through the California Emerging Technology Fund (CETF) and other Federal and State funding sources. In the immediate near term, the County will be including this project into a Local Agency Technical Assistance (LATA) application as a means to assist in paying for this project. The County applied for a Technical Assistance grant in July 2022 and received the award in August 2022.

The National Telecommunications and Communications Service (NTIA) under the Department of Commerce is the NEPA Lead Agency. An Environmental Assessment was prepared in compliance Federal NEPA requirements and is included as Appendix F to this EIR.

1.2 SCOPE AND ORGANIZATION OF THE EIR

Sections 15120 through 15132 of the CEQA Guidelines present the required content for Draft and Final EIRs. An EIR must include a brief summary of the proposed action and its consequences, a description of the proposed project, a description of the environmental setting, an environmental impact analysis, mitigation measures proposed to minimize potentially significant effects, alternatives to the proposed project, significant irreversible environmental changes, growth inducement, effects found not to be significant, effects found to be significant and unavoidable, organizations and persons consulted, and cumulative impacts.

In accordance with CEQA, this EIR: (1) identifies the potential significant effects of the proposed project on the environment and indicates the manner in which those significant effects can be avoided or mitigated; (2) identifies unavoidable adverse impacts that cannot be mitigated; and (3) analyzes

reasonable alternatives to the proposed project. Although the EIR does not control the final decision on the proposed project, the Lead Agency shall consider the information in the EIR and respond to each significant effect identified in the EIR.

As the CEQA Lead Agency, the County identified the following issues areas to be analyzed in detail in this EIR:

- Aesthetics
- Air Quality
- Biological Resources
- Cultural Resources
- Geology and Soils
- Greenhouse Gas Emissions
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Noise
- Transportation
- Tribal Cultural Resources
- Utilities and Service Systems
- Wildfire

This EIR is organized in the following chapters:

- **Executive Summary:** Consistent with Section 15123 of the CEQA Guidelines, this chapter provides a brief summary of the proposed program and identifies environmental impacts and mitigation measures in a summary matrix.
- **Chapter 1.0 – Introduction:** This chapter presents an overview of the project background and describes the intended use of the EIR (CEQA Guidelines Section 15124(d)), as well as the environmental review process.
- **Chapter 2.0 – Project Setting and Location:** This chapter includes a description of the physical environmental conditions in the vicinity of the Countywide program site as they existed at the time the Notice of Preparation (NOP) was published, and which have been updated based on current conditions during preparation of this EIR, consistent with Section 15125 of the CEQA Guidelines.
- **Chapter 3.0 – Project Description:** This chapter provides a detailed description of the proposed program characteristics and objectives as well as the required discretionary approvals consistent with Section 15124 of the CEQA Guidelines.
- **Chapter 4.0 – Environmental Impact Analysis:** This chapter contains a comprehensive analysis of the potential impacts to each environmental factor evaluated in this EIR, feasible measures that could minimize or mitigate those impacts consistent with Section 15126.4 of the CEQA Guidelines, and cumulative impacts resulting from the combination of the proposed program together with other County plans causing related impacts consistent with Section 15130 of the CEQA Guidelines.
- **Chapter 5.0 – Project Alternatives:** Consistent with Section 15126.6 of the CEQA Guidelines, this chapter evaluates a range of reasonable alternatives to the program, or to the location of the Countywide program, which would feasibly attain most of the basic objectives of the program, but would avoid or substantially lessen any of the significant effects of the program, Alternatives other than the proposed program evaluated in this document include: (1) No Project Alternative; (2) Aerial

Installation Only Alternative; (3) Underground Installation Only Alternative; and (4) Use of Existing Infrastructure Alternative.

- **Chapter 6.0 – Environmental Impacts Found Not to be Significant:** This Chapter lists the environmental factors that were determined by the County to clearly have no potential to be significantly impacted by the program.
- **Chapter 7.0 – Significant Irreversible Environmental Changes:** Consistent with Section 15126.2(d) of the CEQA Guidelines, this chapter outlines the significant irreversible changes anticipated to occur as a result of the proposed program.
- **Chapter 8.0 – Growth Inducement:** Consistent with Section 15126.2(e) of the CEQA Guidelines, this chapter describes potential growth-inducing impacts associated with the proposed program.
- **Chapter 9.0 – Significant and Unavoidable Impacts:** Consistent with Section 15126.2(c) of the CEQA Guidelines, this chapter describes any significant impacts identified, including those which can be mitigated but not reduced to a level of insignificance.
- **Chapter 10.0 – List of Preparers:** This chapter lists all authors and agencies that assisted in the preparation of the report by name, title, and company or agency affiliation.
- **List of Appendices:**
 - Appendix A – Figures**
 - Appendix B – NOP Comment Letters**
 - Appendix C – CalEEMod Output**
 - Appendix D – Table of Special-Status Plant and Animal Species Occurring in the Program Region**
 - Appendix E – MMRP**
 - Appendix F – NEPA Environmental Assessment**

1.3 ENVIRONMENTAL REVIEW PROCESS

The preparation, review, and certification process for the EIR involves the following steps:

1.3.1 Notice of Preparation

After deciding that an EIR is required, the Lead Agency must file an NOP soliciting input on the scope of the EIR with the State Clearinghouse, other concerned agencies, and parties previously requesting notice in writing (CEQA Guidelines Section 15082; Public Resources Code [PRC] Section 21092.2). The NOP must be posted in the County Clerk’s office for 30 days.

The NOP for this EIR was circulated for a 30-day agency and public review period that started on May 1, 2023, and ended on May 30, 2023. An in-person public hearing to receive comments on the scope of the EIR was held on Wednesday, May 10, at 6:00 p.m. The NOP and scoping process solicited comments from identified responsible and trustee agencies, as well as interested parties regarding the scope of the EIR. Appendix B of this EIR includes the NOP comments received in response to the circulation of the NOP, and the scoping report.

1.3.2 Draft EIR

The Draft EIR must contain information required by CEQA Guidelines Sections 15122 through 15131, including: 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.

1.3.3 Public Notice/Public Review of Draft EIR

The principal objectives of CEQA require that: (1) the environmental review process provides for public participation, and (2) the EIR serves as an informational document to inform members of the general public, responsible and trustee agencies, and the decision-makers of the physical impacts associated with a proposed project.

Upon completion of the Draft EIR, the Lead Agency must file a Notice of Completion (NOC) with the State Clearinghouse and prepare a public Notice of Availability (NOA) of a Draft EIR. The NOA must be posted in the County Clerk's office for 30 days (PRC Section 21092), and the Lead Agency must send a copy of the NOA to anyone who has requested it (CEQA Guidelines Section 15087). Additionally, a public NOA of a Draft EIR must be provided through at least one of the following procedures: a) publication in a newspaper of local circulation; b) posting on and off the project site; or c) direct mailing to owners and occupants of contiguous properties. The Lead Agency must solicit input from other agencies and the public and respond in writing to all comments received (PRC Sections 21104 and 21253).

This Draft EIR will be available for review by the public and interested parties, agencies, and organizations for a 45-day comment period beginning on April 2, 2024 to May 17, 2024. During the comment period, the public is invited to submit written or email comments on the Draft EIR to the Tuolumne County Community Development Department.

Written comments on this Draft EIR should be submitted to:

Quincy Yaley, Director
County of Tuolumne, Community Development Department
2 South Green Street
Sonora, CA 95370
Email: qyaley@co.tuolumne.ca.us

1.3.4 Final EIR

Following the conclusion of the 45-day public review period for the Draft EIR, the County will review all comments received and prepare written responses to comments on environmental issues. A Final EIR will then be prepared, which contains all of the comments received, responses to comments raising environmental issues, and any changes to the Draft EIR (if necessary). The Final EIR will then be presented to the Planning Commission for consideration and Board of Supervisors for certification. All agencies, organizations, and individuals who commented on the Draft EIR will be notified of the availability of the Final EIR and the date of the public hearings before the Planning Commission and Board of Supervisors.

Responses to comments submitted on the Draft EIR by public agencies will be provided to those agencies at least 10 days prior to certification of the EIR. Public input is encouraged at all public hearings before the County. The Board of Supervisors will also make findings regarding each significant environmental impact of the proposed project as identified in the Final EIR. For each significant impact of the project identified in the EIR, the Lead 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 impacts, it must prepare a written Statement of Overriding Considerations that sets forth the specific social, economic, or other reasons supporting the agency's decision.

The Final EIR will need to be certified by the County as having been prepared in compliance with CEQA prior to deciding to approve or deny the proposed project. After the Board of Supervisors certifies the Final EIR, it may then consider whether to approve the County of Tuolumne Programmatic Environmental Impact Report Project. The Board of Supervisors will adopt and make conditions of project approval all feasible mitigation measures identified in the EIR.

1.3.5 Notice of Determination

The Lead Agency must file a Notice of Determination (NOD) after deciding to approve a project for which an EIR is prepared (CEQA Guidelines Section 15094). A local agency must file the NOD with the County Clerk within five working days after approval of the project by the Lead Agency. If the project requires discretionary approval from any State agency, then the local Lead Agency shall also file a copy of the NOD with the State Clearinghouse within 5 working days after project approval. The NOD must be posted for 30 days and sent to anyone previously requesting notice. Posting of the NOD starts a 30-day statute of limitations on CEQA legal challenges (PRC Section 21167[c]).

1.3.6 Mitigation Monitoring and Reporting Program

PRC Section 21081.6 requires that the Lead Agency adopt a mitigation monitoring and reporting program (MMRP) for any project for which it has adopted mitigation measures. The MMRP, included in Appendix E, is intended to ensure compliance with the adopted mitigation measures during program implementation.

2.0 PROJECT SETTING AND LOCATION

2.1 PROJECT SETTING

Tuolumne County is located in the center of the California Mother Lode region, along the western slope of the Sierra Nevada mountains. Tuolumne County is bordered to the north by Alpine and Calaveras Counties, to the west by Calaveras and Stanislaus Counties, to the south by Merced and Mariposa Counties, and to the east by Mono County. Sonora is the only incorporated city within the County; however, there are other several unincorporated communities located throughout the County, such as Jamestown, Columbia, Tuolumne City, Groveland, and Twain Harte. Tuolumne County encompasses 2,274 total square miles, or 1,455,360 acres (County 2018).

2.2 PROJECT LOCATION

The proposed program would be located within Tuolumne County limits. See **Figure 2-1**, Project Location Map. The area in which future broadband infrastructure could be implemented includes all unincorporated areas of the County; it excludes federal lands, private roads, and State highway ROW. The County has jurisdiction over a total of approximately 610 miles of County-maintained roads. It is envisioned that the vast majority of future broadband infrastructure would be installed within existing County-maintained roads and ROW, public utility easements, and/or existing overhead public utility easements of record throughout the County. The exact alignment of future broadband infrastructure is currently unknown at this time and would be planned based on such considerations as construction feasibility, local preference, and locations of sensitive environmental resources.

This EIR conservatively assumes that new ground disturbance would be required for the entire program; however, there would be potential for utilizing existing conduit where only installation of fiber optic line would be required. The new infrastructure constructed under the program would connect to existing broadband infrastructure (e.g., aboveground, and belowground) in the program area supported by existing service providers.

2.3 REFERENCES

Tuolumne County (County). 2018. Tuolumne County General Plan Update Project Draft Recirculated Environmental Impact Report. Available at:
<https://www.tuolumnecounty.ca.gov/DocumentCenter/View/11308/Tuolumne-County-GPU-Recirculated-DEIR-full-report>

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3.0 PROJECT DESCRIPTION

As the CEQA Lead Agency, Tuolumne County is proposing the County of Tuolumne Broadband Infrastructure Environmental Impact Report Project (proposed program), a Countywide program to expand access to broadband technology throughout the unincorporated areas of the County. The location and installation of fiber optic cable by a variety of potential methods (e.g., underground via directional bore and trenching, and aerial installation) would be evaluated at a programmatic level in the EIR for the County as a whole. The objective of this program EIR is to achieve compliance with CEQA for the proposed program in advance such that individual fiber projects can take advantage of State and federal grant funding programs.

The NTIA under the Department of Commerce is the NEPA Lead Agency. An Environmental Assessment was prepared in compliance with Federal NEPA requirements and is included as Appendix F to this EIR.

3.1 PROJECT BACKGROUND AND NEED

Broadband, or high-speed internet access, allows users to access the internet and internet-related services at significantly higher speeds than those available through "dial-up" services (FCC 2023). Broadband provides high-speed internet access via multiple types of technologies, including fiber optics, wireless, cable modem, digital subscriber line (DSL), broadband over powerlines (BPL), and satellite. The proposed Countywide program would utilize fiber optic technology that converts light electrical signals and sends the light through transparent glass fibers about the diameter of a human hair (FCC 2023). Fiber optic technology transmits data at speeds far exceeding current DSL or cable modem speeds.

While some areas of the County have sufficient internet speeds for daily work and home life, there are still large portions of the County with no coverage or coverage so slow that it has become prohibitive to perform daily, essential tasks. Providing broadband internet in the County has been challenging for a several reasons. Primarily, the topography and geography of the County present physical barriers to broadband connectivity. Subsurface rock throughout the County is difficult and expensive to trench while dense forests, hills, and canyons may obstruct the sight lines needed for wireless technology. Finally, the County is rural in nature and its population densities are too low to attract market-rate broadband infrastructure investors.

Currently, Tuolumne County has 13,826 Broadband Service Locations (BSL) (or 54 percent of all BSL within the County) that lack access to wireline broadband of speeds of 25/3 megabits per second (Mbps). Per the State of California's definition, areas with less than existing 25/3 Mbps are considered "unserved" and areas with less than existing 100/20 Mbps are considered "underserved". Additionally, 7,954 parcels are unserved within the County. Parcel information was provided by the County's GIS department and reflects the total number of residential, industrial, and commercial parcels that currently include a building. These pockets of unserved, or even underserved, populations in California are missing out on what is now seen as a utility critical to quality of life. This Countywide program would help attract broadband infrastructure investors to bring broadband service to a County in need of reliable connectivity for increasing health and safety factors, as well as for economic and quality of life reasons. Expansion of broadband service and its associated infrastructure is vital to the various communities in the County for many reasons, which include but are not limited to:

- building social and community connections,

- enhancing civic engagement and participation,
- bolstering economic development and sustainability,
- increasing education and continuous learning,
- fostering health care and tele-health services, and
- promoting recreation and tourism.

3.2 PROJECT OBJECTIVES

Per Section 15124 of the CEQA Guidelines, the County identified the following objectives for the proposed program:

- promote upgradable and expandable high-speed broadband capacity in the service areas with minimum speeds of 100 Mbps for downloads and 20 Mbps for uploads, which is labeled as “served” areas within California;
- promote the construction of a broadband network in unserved and underserved areas of unincorporated Tuolumne County;
- enable an increase in telecommuting, with a commensurate decrease in vehicle miles traveled;
- improve public health and safety through enabling faster emergency response, enhanced communication between emergency services, and access to critical information during disasters or emergencies;
- streamline the environmental review process for individual broadband projects that are implemented in the County;
- promote a reliable foundation of data and acceptable methodology to assess impacts for any specific broadband deployment project;
- identify known environmental and cultural assets to be protected and/or restored with an approved set of preservation measures and/or mitigations; and,
- save time and money for both the County of Tuolumne and broadband project applicants, resulting in greater government and economic efficiencies, reducing the amount of County staff time required to review broadband projects and avoiding duplication of applicant costs.

3.3 EXISTING FACILITIES

The County currently has 32 miles of existing broadband infrastructure. The broadband infrastructure emanates from the incorporated City of Sonora and stretches north and southwest. Future broadband infrastructure improvements would likely stem from this existing network. See **Figure 3-1** for a map of existing broadband trunkline within the County.

3.4 PROPOSED FACILITIES

The County is proposing to expand access to broadband technology throughout the County, including the unincorporated areas of the County. The Countywide program would install fiber optic conduit either underground in buried conduits, overhead on existing or newly constructed utility pole lines, or in

a combination of both. Broadband infrastructure would be installed to provide above ground or underground lateral connections to private residences and businesses. Individual connections typically would be located in previously disturbed and/or developed areas (e.g., in ROW or public utility easements). The broadband infrastructure could follow other utility installations; therefore, it is likely that the ground along these alignments has been previously disturbed by prior utility work. Additionally, many of these connections would generally follow the route of the roadway, particularly if the applicable areas have other issues that could affect access, such as vegetation, geologic, landscape, and/or water features that should not be disturbed. This EIR conservatively assumes that new ground disturbance would be required for the entire program; however, there would be potential for utilizing existing conduit where only installation of fiber optic line would be required. If deemed feasible, the new broadband infrastructure constructed under an individual fiber project or phase would connect to existing infrastructure in the program area supported by existing service providers.

The area in which future broadband infrastructure could be implemented includes ROW within unincorporated areas of the County; it excludes federal lands, private roads, and State highway ROW. The County includes a total of approximately 610 miles of County-maintained roads. The installation of underground or overhead cables would be located within existing County maintained road ROW, public utility easements, and/or overhead public utility easements of record throughout the County. The future location of broadband infrastructure would focus on areas of the County that are currently unserved or underserved. The exact alignment of future broadband infrastructure is unknown at this time and would be based on such considerations as construction feasibility, local preference, and locations of sensitive environmental resources.

3.5 PROJECT CONSTRUCTION

3.5.1 Construction Schedule and Methods

The broadband infrastructure program would begin construction of individual fiber projects in Spring 2025. Implementation of future individual fiber projects under the program would likely occur over many years. It is possible that multiple, individual fiber projects could have overlapping construction timeframes (or phases). Additionally, any individual segment could involve multiple construction crews working simultaneously, with plowing, trenching, and directional drilling occurring at the same time in different locations of the segment. Construction activities would occur between 7:00 a.m. and 7:00 p.m. on weekdays and would not occur at night.

The construction methods for future individual fiber projects in Tuolumne County would be determined based on various factors such as location, micro-site conditions, and constraints present at each future individual fiber project site. These methods include horizontal directional drilling, plowing, trenching, and microtrenching. Horizontal directional drilling involves drilling a pilot bore string towards existing access points, then attaching the conduit and pulling it back to install it. Temporary work areas would be established at the entry and exit pits for the bore rig and installation of access vaults. A plowing technique could be used in unpaved areas, where a vibratory cable plow incises the soil and lays the conduits simultaneously. Tracked vehicles are typically used for plowing, and the disturbance caused by the plow is usually restored within two days. In wet or soft conditions, a specialized "spider plow" may be used to minimize disturbance. Trenching would be employed in areas where plowing is unsuitable, typically due to rocky soil or existing underground infrastructure. A backhoe or similar equipment would create a trench of varying width and depth, and the conduit would be placed at the bottom before backfilling and compacting the trench. In narrow or sensitive areas, pavement cutting, and narrow

trenching may be necessary, with slurry backfilling and repaving. Microtrenching is an option for paved areas or sidewalks, involving a narrow excavation trench that is backfilled with slurry or cement and sealed with grout, epoxy, or other sealer.

Once the conduit system is in place, the fiber optic line or microducts would be installed by pulling or blowing them into the conduits. Compressed air or hydraulic pullers would be used for the installation, ensuring smooth pulling within specified tension limits. A pull line would be attached to a plug pushed through the conduit, and then the pull line would be pulled back, threading the fiber optic line through the conduit. Tension limiters and monitors would be used to record the pulling tensions encountered. To facilitate fiber installation, temporary assist points may be excavated if there is damage to the conduit. Access vaults, also known as handholes or pull boxes, could be placed along the alignment to allow for fiber optic line-splicing locations and future access to the buried conduits. Each vault would typically house a length of line slack and would be equipped with a traffic-bearing cover. These vaults would be installed as the final step in the horizontal directional drill process, usually in the same excavations used for drill entry and exit points.

In areas where trenching is challenging or topography is extreme, aerial stringing could be used, utilizing existing utility poles, or installing new poles. Guy wires may be used for additional stability, and self-supporting poles may be used where guy wires are not feasible or burying the pole base is not possible.

3.5.2 Preconstruction Activities

A Worker Environmental Awareness Program (WEAP) would be implemented before construction to educate workers about the program area's sensitive biological and cultural resources, as well as potential contamination risks. All field staff, including employees, contractors, and subcontractors involved in the construction, would be required to participate in the program. A WEAP would provide information on the locations and types of sensitive resources and hazardous materials related to the proposed broadband infrastructure. It would also communicate policies, mitigation measures, and protective measures that must be followed, such as avoiding ground-disturbing activities near sensitive biological resources. In case of hazardous material concerns, workers would be informed that the Tuolumne County Environmental Health Department and the Tuolumne County Fire Department should be notified. Additionally, staff would be educated about proper handling and disposal procedures for hazardous wastes according to federal, State, and local regulations.

3.5.3 Surface Restoration

Site cleanup and surface restoration under the program would be performed promptly following conduit and line installation. Cleanup would include removing debris and restoring original surfacing and contours. Any disturbed areas would be returned to their original or better condition by replacing all asphalt, landscaping, or any earthen areas.

3.5.4 Construction Staging Areas and Equipment

Staging areas are planned to be established along public roadways or existing disturbed areas along the construction routes in the program area. If road constraints prevent locating staging areas along roadways, alternative areas such as paved or graveled yards would be used, and then staging areas will be assessed during individual fiber project application review. The exact locations of staging areas and equipment lay-down areas would be determined during the final construction plans for each individual

fiber project. Construction companies awarded contracts for specific segments would select the staging area locations. Staging areas would be used to mobilize crews, and refueling would not take place in the field. Any construction within the County ROW would require an encroachment permit from the relevant jurisdiction. Standard traffic control measures, specified in a Transportation Management Plan, would be employed for all construction activities along roadways, subject to review and approval by the Tuolumne County Public Works Department for work within their respective limits.

The construction activities would involve different types of vehicles and equipment depending on the specific installation taking place. The five main construction activity types are trenching, directional drilling, fiber blowing, aerial fiber installation, and fiber splicing. The equipment used may include pickup/utility trucks, plows, trenchers, jackhammers, cutting blades, excavators with rock saws or rock breakers, dump trucks, backhoes, boring rigs, and bucket trucks for aerial installation. It is assumed that all fiber installation locations would be accessible by trucks and other construction equipment, and helicopter use is not expected to be necessary. The specific equipment required for each individual fiber project would vary based on construction methods and site conditions.

3.6 PROJECT OPERATIONS

Operational activities for any individual fiber projects implemented under the program would be limited to routine maintenance and emergencies. Infrastructure such as circuit cabinets with cooling fans and/or stand-by generators associated with individual fiber projects may be routinely checked, as needed. This infrastructure would be located on aboveground utility poles or within existing County maintained road ROW, public utility easements, and/or overhead public utility easements of record throughout the County.

3.7 POTENTIAL PERMITS AND APPROVALS REQUIRED

The following actions would be required by Tuolumne County as the CEQA lead agency:

- certification of the appropriate CEQA document;
- adoption of a Mitigation Monitoring and Reporting Program; and,
- adoption of CEQA findings.

Depending on the individual fiber project character, location, and construction techniques of future broadband, potential permits and approvals that could be required are identified in **Table 3-1**.

Table 3-1
POTENTIAL PERMITS AND APPROVALS

Agency	Permits or Approvals
U.S. Army Corps of Engineers	<ul style="list-style-type: none"> • Nationwide Permit or Individual Permit under Section 404 of the Clean Water Act
U.S. Forest Service	<ul style="list-style-type: none"> • Construction easements
Central Valley Regional Water Quality Control Board	<ul style="list-style-type: none"> • National Pollutant Discharge Elimination Construction General Permit • Section 401 water quality certification or a waiver of discharge requirements
California Department of Fish and Wildlife	<ul style="list-style-type: none"> • Lake and streambed alteration agreement Section 1602 of the Fish and Game Code

Agency	Permits or Approvals
County of Tuolumne	<ul style="list-style-type: none"> Use permits, grading permit, encroachment permits

3.8 INDIVIDUAL FIBER PROJECT REVIEW PROCESS

Individual fiber projects developed and implemented under the proposed Countywide program would be evaluated using a checklist developed by the County to determine whether or not the individual fiber project site and activities qualify as a later activity within the scope of the analysis in this EIR (State CEQA Guidelines Section 15168[c]). If the activities are determined to be within the scope of the EIR, the applicable lead agency (determined by location of the individual fiber project) may approve the activities using this EIR without an additional environmental document (in accordance with Section 15168 of the State CEQA Guidelines for program EIRs). If a later activity would have effects that were not examined in this EIR, a new initial study would be prepared to determine whether the new impact would require preparation of an EIR, negative declaration, or a mitigated negative declaration. That later analysis may tier from the program EIR as provided in CEQA Guidelines Section 15152. Individual fiber projects could also require permits or approvals from other state, regional, or local agencies as listed in Section 3.7, “Potential Permits and Approvals Required.”

3.9 REFERENCES

Federal Communications Commission (FCC). 2023. Getting Broadband Q&A. Accessed April 25, 2023 and available at: <https://www.fcc.gov/consumers/guides/getting-broadband-qa>.

NEO Connect. 2022. Central Sierra Broadband Roadmap. Accessed April 25, 2023 at: https://legistarweb-production.s3.amazonaws.com/uploads/attachment/pdf/1672727/Central_Sierra_Broadband_Roadmap_11-2022.pdf.

Tuolumne County (County). 2018. Tuolumne County General Plan Update EIR. Section 3.0 Environmental Setting. Accessed January 26, 2023. Available at: <https://www.tuolumnecounty.ca.gov/DocumentCenter/View/5785/30-Environmental-Setting?bidId=>.

4.0 ENVIRONMENTAL IMPACT ANALYSIS

CHAPTER ORGANIZATION

This chapter of the EIR is made up of 13 sections which evaluate the direct, indirect, and cumulative environmental impacts anticipated from approval of the proposed Countywide program. The following sections describe the format of the environmental analysis, significance thresholds, and the methodology of the cumulative impact analysis.

FORMAT OF ENVIRONMENTAL ANALYSIS

This EIR examines all of the environmental issue areas identified in Appendix G of the CEQA Guidelines and through comments received on the NOP and public scoping meetings. The potential environmental impacts of the proposed Countywide program are analyzed for potential significant impacts in the following 13 environmental issue areas, which are organized with the listed abbreviations:

- Aesthetics (AES)
- Air Quality (AQ)
- Biological Resources (BIO)
- Cultural Resources (CUL)
- Geology and Soils (GEO)
- Greenhouse Gas Emissions (GHG)
- Hazards and Hazardous Materials (HAZ)
- Hydrology and Water Quality (HYD)
- Noise (NOI)
- Transportation (TRA)
- Tribal Cultural Resources (TCR)
- Utilities and Service Systems (UTL)
- Wildfire (FIRE)

Each environmental impact is addressed in the following format:

- **Regulatory Framework:** A discussion of the federal, State, and local regulations relevant to the proposed program.
- **Existing Conditions:** A discussion of the existing conditions and physical environment of the County, providing a baseline against which the potential impacts of the proposed program can be compared.
- **Significance Thresholds:** A discussion of the thresholds of significance according to the CEQA Guidelines (Appendix G). It explains the quantitative or qualitative standards, performance levels, or criteria used to evaluate the existing setting with and without the proposed program to determine whether the impact is significant.
- **Impact Analysis:** A discussion of the potential impacts from the proposed program and explains why impacts are found to be significant or less than significant prior to mitigation. This subsection also includes a discussion of cumulative impacts related to the proposed Countywide program. Impacts and mitigation measures are numbered consecutively within each topical analysis and begin with an acronym or abbreviated reference to the impact section.

The following environmental issue areas are not analyzed in detail in this EIR:

- **Agriculture and Forestry Resources:** 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 (CDC 2023a). However, mapping for the entire County has not been prepared. The County determined that approximately 120,000 acres of agricultural lands within County limits are protected in Williamson Act contracts (County 2018a). Based on the areas that have been mapped by the California Department of Conservation (CDC), the program area could potentially include small strips or plots of land that are designated Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, zoned for agricultural or forest land use, or be located under Williamson Act contract. However, because the Countywide program would be located within existing County maintained road ROW, public utility easements, and/or overhead public utility easements of record throughout the County, construction, staging, and equipment lay-down areas of broadband infrastructure would not be sited on lands that are currently in agricultural production by the respective landowners. The program would consist of underground fiber optic lines and/or aboveground aerial stringing using existing or new utility poles in areas where trenching would be difficult. The fiber optic lines would not cross any U.S. Forest Service (USFS) managed lands. The installation of broadband infrastructure would not interfere with the continuation of existing aboveground uses after construction is completed. Therefore, impacts on agricultural resources would be less than significant. This environmental topic area does not require further evaluation in the program EIR.
- **Energy:** The program would not generate additional energy demand beyond existing conditions within the program area, but rather seeks to improve the connectivity of rural communities in Tuolumne County through improved broadband access. The program would comprise multiple segments of new fiber optic lines throughout Tuolumne County, which would require the use of heavy-duty construction equipment. Energy would be consumed in the form of gasoline and diesel fuel to power this equipment and would be consumed in worker commute vehicles. However, this energy use would be inherently short-term and not substantial and would be a necessary energy expenditure to facilitate the expansion of Tuolumne County's broadband network, which could ultimately result in a decrease in gasoline consumption as rural workers are provided better telecommuting opportunities. Because the program would not induce new energy demand, would not conflict with a local or Statewide plan for renewable energy or energy efficiency, and would support better internet for telecommuting, resulting in a reduction in vehicles miles traveled (VMT) countywide, energy impacts from program implementation would be less than significant. This environmental topic area does not require further evaluation in the program EIR.
- **Land Use and Planning:** The proposed program area would be located within Tuolumne County limits. The area in which future broadband infrastructure could be implemented includes all unincorporated areas of the County; it excludes federal lands, private roads, and State highway ROW. The County includes a total of approximately 610 miles of County-maintained roads. The future broadband would be installed within existing County maintained road ROW, public utility easements, and/or overhead public utility easements of record throughout the County. Future broadband would be placed within areas of the County that are currently unserved or underserved. The exact alignment of future broadband infrastructure is currently unknown at this time and would be based on such considerations as construction feasibility, local

preference, and locations of sensitive environmental resources. There are various general plan land use designations and zoning designations within County limits. Public roads are currently designated in County general plans, zoning codes, and ordinances to accommodate utility infrastructure. Although some temporary construction-related traffic disturbances could occur, the proposed program would not permanently divide an established community. Potential traffic will be evaluated in Section 4.10, Transportation. The proposed broadband would be used to connect communities that are currently unserved or underserved. Prior to issuance of use permits, grading, and/or encroachment permits by Tuolumne County, the proposed program would be required to demonstrate compliance with all applicable laws, regulations, policies, and ordinances. See the following policies outlined in the General Plan regarding communication facilities (County 2018b):

- **Policy 6.B.4:** Support efforts to install state of the art communication facilities throughout Tuolumne County.
 - **Implementation Program 6.B.d** – Support the efforts of communications companies to identify the key facilities and technology required to facilitate increasing business needs for communications services and to keep Tuolumne County competitive in attracting new businesses which depend on such services.
 - **Implementation Program 6.B.e** – Actively work to improve the telecommunications infrastructure in the County in order to increase opportunities for telecommuting and facilitate economic development.
- **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.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

Impacts related to land use and planning would be less than significant. This environmental topic area does not require further evaluation in the program EIR.

- **Mineral Resources:** The County includes a total of six mines and three Surface Mining and Reclamation Act of 1975 (SMARA) mineral land classification studies according to the CDC Division of Mine Reclamation (CDC 2023b). However, because the program would be located within existing County maintained road ROW, public utility easements, or overhead public utility easements of record throughout the County, construction, staging, and equipment lay-down areas of broadband infrastructure would not interfere with the existing mines or mineral land classification studies. Additionally, geology and mineral resources would be assessed in Section 4.5 Geology and Soils. Therefore, impacts on minerals resources would be less than significant. This environmental topic area does not require further evaluation in the program EIR.

- **Population and Housing:** The proposed program does not involve constructing housing and, thus, would not contribute to unplanned growth. Instead, the program would include installation of fiber optic cables, either underground or aboveground, along existing public roads and in previously disturbed and/or developed areas. The program would not displace people or housing, it would improve broadband within areas of the County that are currently unserved or underserved. The potential for the program to have indirect growth inducing effects will be addressed in other sections of the program EIR. Therefore, the proposed program would have a less than significant impact on population and housing and a detailed discussion of the program’s potential impacts on this environmental issue is not warranted.
- **Public Services:** Tuolumne County currently receives structural fire protection from the Tuolumne Fire Department and wildfire protection from the State of California Forestry and Fire Protection Department. The proposed program would comply with the Tuolumne Fire District ordinances regarding access and wildland fire protection. The potential for a minor increase in demand for fire services may occur during construction or maintenance of the future broadband infrastructure. These minor public service demands would not overburden the Tuolumne County Fire Department and no mitigation measures are proposed or warranted; the impact is less than significant.

Additionally, the proposed program would comply with the Tuolumne Fire District and Tuolumne County Ambulance Service regarding emergency responses. With implementation of the proposed program, individuals may have the option to telehealth which could reduce the need for medical emergency response vehicles. The use of telehealth could reduce the demand for emergency response service. Therefore, the impact is less than significant.

Police protection services within the County would continue to be provided by the Tuolumne County Sheriff’s Department. The potential for a minor increase in demand for services may occur for police protection provided by the Sheriff Department if a crime or accident occurs during construction or maintenance of the future broadband infrastructure. These minor public service demands would not overburden the Sheriff Department; the impact is less than significant.

The proposed program would not generate any additional residential population that would create demand for additional schools or increase attendance or enrollment at existing schools. Additionally, the proposed program is not expected to increase use of or demand for parks within the County. The proposed program would have a less than significant impact. This environmental topic area does not require further evaluation in the program EIR.

- **Recreation:** The County is proposing to expand access to broadband technology throughout the County. The proposed program would not contribute to unplanned growth and would not include new housing. The potential for the program to have indirect growth inducing effects will be addressed in other sections of the program EIR. Therefore, the program would not increase the use of existing recreational facilities or demand for new recreational facilities that would adversely affect the environment. The program would have a less than significant impact on recreation. This environmental topic area does not require further evaluation in the program EIR.

SIGNIFICANCE THRESHOLDS

Significance criteria are identified before the impact analysis subsection, under the subsection, “Significance Thresholds.” For each impact identified, a level of significance is determined using the following classifications:

- *Potentially Significant* impacts include a description of the circumstances where an established or defined threshold would be exceeded.
- *Less than significant* impacts include effects that are noticeable, but do not exceed established or defined thresholds, or can be mitigated below such thresholds.
- *No impact* describes circumstances where there is no adverse impact on the environment.

For each impact identified as being significant, the EIR identifies mitigation measures to reduce, eliminate, or avoid the adverse impact. If one or more mitigation measure(s) would reduce the impact to a less than significant level successfully, this is stated in the EIR. *Significant and unavoidable* impacts are described where mitigation measures would not diminish these impacts to less than significant levels.

CUMULATIVE IMPACT ANALYSIS

CEQA Guidelines Section 15130 requires an EIR to discuss the cumulative impacts of a project when the project’s incremental impact is “cumulatively considerable.” Used in this context, cumulatively considerable means that the incremental impacts of an individual project are considerable when viewed in connection with the impacts of past projects, the impacts of other current projects, and the impact of probable future projects.

Where the incremental impact of a project is not “cumulatively considerable,” a Lead Agency need not consider that impact significant but must briefly describe its basis for concluding that the incremental impact is not cumulatively considerable. Where the cumulative impact caused by the project’s incremental impact and the impacts of other reasonably foreseeable projects is not significant, the EIR must briefly indicate why the cumulative impact is not significant.

The cumulative impact discussions in Sections 4.1 through 4.13 explain the geographic scope of the area affected by each cumulative impact (e.g., immediate project areas, Countywide, air or groundwater basin). The geographic area considered for each cumulative impact depends upon the impact that is being analyzed. For example, in assessing aesthetic impacts, the pertinent geographic study area is the area from which a new development can be publicly viewed and may contribute to a significant cumulative visual impact. In assessing macro-scale air quality impacts, on the other hand, all development within the air basin contributes to regional emissions of criteria pollutants, and basin-wide projections of emissions is the best tool for determining the cumulative impact.

CEQA Guidelines Section 15130 permits two different methodologies for completion of the cumulative impact analysis:

- The ‘list’ approach permits the use of a list of past, present, and probable future projects producing related or cumulative impacts, including projects both within and outside the County; or
- The ‘projections’ approach allows the use of a summary of projections contained in an adopted plan or related planning document, such as a regional transportation plan, or in an EIR prepared for such a plan. The projections may be supplemented with additional information such as regional modeling.

This analysis is based on a combination of the list and plan/projections approaches. As shown in **Table 4-1**, the County has identified 12 approved or pending residential and commercial projects in the County at the time that the NOP for this EIR was issued for consideration in the cumulative analysis.

Table 4-1
TUOLUMNE COUNTY CUMULATIVE PROJECTS LIST

No.	Project Name	Number of Dwelling Units	Project Type
1	Valley Vista Subdivision	221	Residential
2	Valley Dale	55	Residential
3	Long Gulch Subdivision	13	Residential
4	Twain Harte Village Shopping Center Redevelopment	37	Residential
5	Hidden Meadows Terrace	72	Residential
6	Curtis Creek Oxbow Subdivision	29	Residential
7	Firefall Resort (Phase 1)	65 guest rooms	Commercial
8	Firefall Resort (Part 2)	56 guest rooms	Commercial
9	Terra Vi Resort	65 guest rooms	Commercial
10	Under Canvas Resort	71 guest units	Commercial
11	Thousand Trails Yosemite Lakes Resort Expansion	75 guest units	Commercial
12	Yonder Yosemite Resort	175 guest rooms	Commercial

Source: Tuolumne County

The following provides a summary of the basis for the cumulative impact analysis for each impact area:

- **Aesthetics:** The cumulative setting for the visual analysis includes areas from which the proposed program could be publicly viewed and the impacts of the proposed program together with other cumulative projects in the County. 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. The potential for cumulative impacts related to visual resources is not cumulatively significant, and the impact would be less than cumulatively considerable.

- **Air Quality:** The cumulative air quality setting is the Mountain Counties Air Basin (MCAB) and its anticipated growth. The Tuolumne County portion of the MCAB is a non-attainment area for the state standards for ozone 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. The Countywide program would not result in significant impacts related to construction- or operations-related emission of criteria pollutants. Tuolumne County Air Pollution Control District (TCAPCD) establishes thresholds designed to help the basin achieve state ambient air quality standards; therefore, because the Countywide program would not exceed those thresholds, the cumulative impact related to air quality is not significant. The potential for cumulative impacts related to air quality is not cumulatively significant, and the impact would be less than cumulatively considerable.
- **Biological Resources:** The cumulative analysis for biological resources considers the impacts of the proposed program when combined with other cumulative projects in the County. Cumulative impacts would occur when the proposed project, in combination with other projects in Tuolumne County, would directly or indirectly result in an adverse impact(s) to a special-status species, on a sensitive natural community, to jurisdictional aquatic resources, wildlife movement corridors and nursery sites, or conflict with local policies/ordinances protecting biological resources or a Habitat Conservation Plan / Natural Community Conservation Plan (HCP/NCCP). Although impacts to biological resources are site specific, project specific impacts contribute to a continued loss of biological resources throughout the range of the species or other biological resource being impacted. The cumulative context for biological resources is based on projects located within Tuolumne County that would impact vegetation communities and species similar to those impacted by the proposed program.

The proposed broadband infrastructure program is anticipated to be within previously disturbed and/or developed areas (e.g., in ROW or public utility easements). However, given that the exact alignment of the future broadband infrastructure is currently unknown, there is the potential that some of the locations for future program components may support sensitive biological resources. In general, a project's potential impacts related to sensitive biological resources depend on the specific project site and whether it supports sensitive natural communities, special-status species, and/or aquatic resources. As discussed above, the proposed program would have potential impacts to special-status species, sensitive natural communities, or State or federally protected aquatic resources and/or conflict with local policies which would be reduced to less than significant levels by the implementation of Mitigation Measures BIO-1 through BIO-3. Several cumulative projects are proposed and/or pending within Tuolumne County. Most of the cumulative projects included in this analysis are residential and commercial development projects, including resorts and residential developments of varying densities.

The projects listed as part of this cumulative analysis would also be subject to CEQA review and would be required to comply with any mitigation measures identified as necessary to reduce potential impacts to biological resources. Therefore, the program is not expected to make a cumulatively considerable contribution to losses of sensitive biological resources in Tuolumne County.

- **Cultural Resources:** Cumulative cultural resource impacts may occur when a series of actions leads to the loss of historically or archaeologically significant type of site, building, deposit, or

tribal cultural resource. For example, while the loss of a single historic building may not be significant to the character of a neighborhood or streetscape, continued loss of such historical resources on a project-by-project basis could amount to a significant cumulative effect. As discussed above, with the implementation of Mitigation Measures CUL-1, CUL-2, and CUL-3, the proposed Countywide program would have a less than significant impact on unknown cultural resources. However, the analysis of cumulative impacts to cultural resources is based on impacts of the proposed Countywide program plus the other cumulative projects in the County. As such, each cumulative project that would be subject to CEQA would be required to assess its potential impacts to cultural resources. Mitigation measures conducted for each cumulative individual fiber project would ensure that impacts to cultural resources are minimized to the maximum extent feasible. Therefore, with implementation of Mitigation Measures CUL-1, CUL-2, and CUL-3 and the requirement for the other cumulative projects subject to CEQA to adopt similar measures, no cumulatively considerable impact to cultural resources would occur with approval of the proposed project.

- **Geology and Soils:** The cumulative analysis for geology, soils, mineral resources, and paleontological resources impacts is generally site-specific and depends on past, present, and future uses and existing soil and conditions. 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 individual fiber projects, which would adequately address the potential for effects from construction or operation of individual fiber projects related to geology, soils, and seismicity. The potential for cumulative impacts is not cumulatively significant, and the impact would not be cumulatively considerable.
- **Greenhouse Gas Emissions:** Greenhouse gas (GHG) emissions are inherently a cumulative concern, in that the significance of GHG emissions is determined based on whether such emissions would have a cumulatively considerable impact on global climate change. Although the geographic scope of cumulative impacts related to GHG emissions is global, this analysis focuses on the State, the region, and the proposed program's direct and/or indirect generation or offset of GHG emissions. TCAPCD establishes GHG efficiency emissions thresholds designed to determine significance for GHG analyses in CEQA documents based on the individual fiber project's anticipated operational year. Based on the service population and the GHG efficiency emissions threshold, it would take approximately 3,408 days of construction activity to come close to exceeding the threshold. Additionally, construction related emissions would be temporary and short term and would be significantly reduced to negligible levels once construction has ceased. The potential for cumulative impacts related to greenhouse gases is not cumulatively significant, and the impact would be less than cumulatively considerable.
- **Hazards and Hazardous Materials:** The cumulative setting for hazards and hazardous materials impacts is generally site-specific and depends on past, present, and future uses and existing soil, sediment, and conditions. 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 individual fiber projects, including related to the transport, use, and disposal of hazardous materials, which would adequately

address issues pertaining to hazards and hazardous materials. The potential for cumulative impacts related to hazards and hazardous materials is not cumulatively significant, and the impact would not be cumulatively considerable.

- **Hydrology and Water Quality:** The cumulative analysis for hydrology and water quality considers the impacts of the proposed program when combined with other cumulative projects in the County. 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 individual fiber projects, which would adequately address the potential for construction or operation of individual fiber projects to affect water resource. The potential for cumulative impacts related to water resources is not cumulatively significant, and the impact would not be cumulatively considerable.
- **Noise:** Cumulatively considerable impact would occur if project construction noise or construction vibration combined with construction noise and vibration from other cumulative projects in the County to affect the same noise sensitive land uses (NSLU). The exact alignment and timing of the future broadband infrastructure is currently unknown. However, there is the potential that some of the locations for future program components could coincide in location and time with other construction projects resulting in potentially cumulatively considerable impacts. Other cumulative projects in the county would also be subject to CEQA review and would be required to comply with any mitigation measures identified as necessary to reduce potential noise and vibration impacts. Implementation of Mitigation Measures NOI-1 through NOI-3 would ensure that the project's contribution to combined construction noise and vibration would be less than cumulatively considerable.
- **Transportation:** The cumulative analysis for transportation, VMT, and circulation addresses the impact of individual fiber project under the Countywide program when considered along with other cumulative projects in the County. The cumulative analysis also addresses the program's potential transportation impacts in comparison with the projections provided in the County's 2016 Regional Transportation Plan. The potential for cumulative impacts related to transportation is not cumulatively significant, and the impact would be less than cumulatively considerable.
- **Tribal Cultural Resources:** Cumulative tribal cultural resource (TCR) impacts may occur when a series of actions leads to the loss of historically or archaeologically significant type of site, building, deposit, or tribal cultural resource. For example, while the loss of a single historic building may not be significant to the character of a neighborhood or streetscape, continued loss of such historic resources on a project-by-project basis could amount to a significant cumulative effect. As discussed above, with the implementation of Mitigation Measures TCR-1 for the inadvertent discovery of TCRs during construction and TCR-2 for tribal consultation, the proposed Countywide program would have less than significant impacts on unknown TCRs. However, the analysis of cumulative impacts to tribal cultural resources is based on impacts of the proposed individual fiber projects plus other cumulative projects in the County.
- **Utilities and Service Systems:** Cumulative impacts are considered in the context of the growth from the proposed Countywide program combined with the estimated growth in the service areas of each utility's service area. Individual fiber projects under the Countywide program

would not require potable water and no wastewater would be generated from construction or operation of individual fiber projects. Once individual fiber projects are installed ground surface would be restored to its existing conditions and the amount of pervious and impervious surface would not be significantly altered. Therefore, no expanded stormwater facilities are required. Installation of the fiber optic lines would not require the use of electricity or natural gas for construction or operation. The Countywide program would construct new telecommunications; however, this EIR analyzes all potential environmental impacts. Construction under the Countywide program would generate minimal waste; however, such waste would comply with the State's waste diversion requirements and would not exceed infrastructure capacity. The potential for cumulative impacts related to utilities and service systems is not cumulatively significant, and the impact would be less than cumulatively considerable.

- **Wildfire:** The areas considered for cumulative impacts related to wildfire are the State Responsibility Areas (SRAs) or Local Responsibility Areas (LRAs) in which individual fiber projects under the Countywide program and other cumulative projects are located. Implementation of the Countywide program would improve public health and safety through enabling faster emergency response, enhanced communication between emergency services, and access to critical information during disasters or emergencies. The potential for cumulative impacts related to wildfire is not cumulatively significant, and the impact would be less than cumulatively considerable.

REFERENCES

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4.1 AESTHETICS

This section describes the regulatory framework and existing conditions related to aesthetic resources, evaluates the potential impacts that could occur as a result of implementation of the proposed Countywide program, and details mitigation measures needed to reduce significant impacts, as necessary. No issues were raised during scoping that pertain to aesthetics.

4.1.1 Environmental Setting

4.1.1.1 Overview of Visual Resources Concepts

Aesthetic/visual resources are defined as the natural and man-made elements and features of the landscape that contribute to the visual character and quality of a setting. Because a viewer observes the visual environment as a whole and not one object at a time, the viewer's perception of that environment is based on the visual character of objects and the relationships between them. Visual characters are descriptive; it is the order and combination of patterns that are created by visual elements in a scene. The fundamental pattern elements used to describe visual character are form (in terms of bulk, mass, size, and shape), line, color, and texture, and the appearance of a landscape is described according to the dominance of these elements.

Visual quality is evaluated according to the vividness, intactness, and unity present in the viewshed. These criteria for evaluating visual quality can be defined as follows:

- **Vividness** is the visual power or memorability of landscape components as they combine in distinctive visual patterns.
- **Intactness** is the visual integrity of the natural and man-made landscape and its freedom from encroaching elements.
- **Unity** is the visual coherence and compositional harmony of the landscape considered as a whole.

An individual's perception and enjoyment of a view can vary with each individual fiber project. The visual experience of the viewer is a combination of the visual resources in the landscape and the viewer's response to what is seen. Viewer response, or awareness, is composed of two elements: viewer sensitivity and viewer exposure. Viewer sensitivity is defined both as the viewers' concern for scenic quality and the viewers' response to change in the visual resources that make up the view. Viewer exposure is the degree to which viewers are exposed to a view or visual resource. Viewer exposure varies based on the physical location of the viewer and the distance and position of the viewer in relation to the resource, the number of viewers of the resource, and the duration and frequency of the view. A viewer's response is also affected by the degree to which he/she is receptive to the visual details, character, and quality of the surrounding landscape.

Visual Character and Quality

Visual character, visual quality, form, line, texture, and other terms are used throughout this discussion to assess the visual impacts of the proposed Countywide program. These terms, as defined by the U.S. Department of Transportation, are briefly discussed below.

Visual Character: The description of the visible attributes of a scene or object typically using artistic terms such as form, line, color, and texture.

Visual Quality: What viewers like and dislike about visual resources that compose the visual character of a particular scene. Different viewers may evaluate specific visual resources differently based on their interests in natural harmony, cultural order, and project coherence. Neighbors and travelers may, in particular, have different opinions on what they like and dislike about a scene. The rating for visual quality is described below:

- High – Views are perceived to be harmonious, orderly, or coherent and desirable visual resources are a dominant component of the view.
- Moderately High – Views may be perceived as largely harmonious, orderly, or coherent. Undesirable visual resources may be present but are few in number. Desirable visual resources are generally present and may be a dominant component of the view.
- Moderate – Views may be perceived as fairly harmonious, orderly, or coherent. Undesirable visual resources may be present but do not dominate the view. Desirable visual resources may also be present.
- Low – Views may be perceived as inharmonious, disorderly, or incoherent and undesirable visual resources are generally present.

Natural Harmony: What viewer likes and dislikes about the natural environment. The viewer labels the visual resources of the natural environment as being either harmonious or inharmonious. Harmony is considered desirable; disharmony is undesirable.

Cultural Order: What a viewer likes and dislikes about the cultural environment. The viewer labels the visual resources of the cultural environment as being either orderly or disorderly. Orderly is considered desirable; disorderly is undesirable.

Viewer Sensitivity: The degree to which viewers are sensitive to changes in the visual character of visual resources. It is the consequence of two factors, viewer exposure and viewer awareness.

Viewer Exposure: Viewer exposure is a measure of proximity (the distance between viewer and the visual resource being viewed), the extent (the number of viewers viewing), and duration (how long a time visual resources are viewed). The greater the exposure, the more viewers will be concerned about visual impacts.

Viewer Awareness: Viewer awareness is a measure of attention (level of observation based on routine and familiarity), focus (level of concentration), and protection (legal and social constraints on the use of visual resource). The greater the attention, the more viewers will be concerned about visual impacts.

Form: The unified mass or shape of an object that often has an edge or outline and can be defined by surrounding space. For example, a high-rise building would have a highly regular, rectangular form, whereas a hill would have an organic, mounded form.

Line: Perceived when there is a change in form, color, or texture, and where the eye generally follows this pathway because of the visual contrast. For example, a city's high-rises can be seen silhouetted

against the blue sky and be seen as a skyline, a river can have a curvilinear line as it passes through a landscape, or a hedgerow can create a line where it is seen rising up against a flat agricultural field.

Texture: The perceived coarseness of a surface that is created by the light and shadow relationship over the surface of an object. For example, a rough surface texture (e.g., a rocky mountainside) would have many facets resulting in a number of areas in light and shadow, and gradual gradations between light and shadow.

Project Coherence: What a viewer likes and dislikes about the project environment. The viewer labels the visual resources of the project environment as being either coherent or incoherent. Coherent is considered desirable; incoherent is undesirable.

Light and Glare

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 many of the communities in Tuolumne County. Excessive light and glare can also be visually disruptive to humans and nocturnal animal species. Electric lighting also increases night sky brightness and is the human-made source of sky glow. 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.

4.1.1.2 Regulatory Framework

The proposed Countywide program is subject to a number of regulations applicable to the protection of visual resources, as well as plans and policies that ensure adequate consideration is given to preserving and/or enhancing the visual qualities of an area.

Federal Regulations

National Scenic Byways Program

The National Scenic Byways program is part of the U.S. Department of Transportation, Federal Highway Administration. The program was established under the Intermodal Surface Transportation Efficiency Act of 1991 and was reauthorized in 1998 under the Transportation Equity Act for the 21st Century. Under the program, the U.S. Secretary of Transportation recognizes certain roads as National Scenic Byways or All-American Roads based on their archaeological, cultural, historic, natural, recreational, and scenic qualities.

State Regulations

California Scenic Highway Program

In 1963, the State Legislature established the California Scenic Highway Program through Senate Bill 1467. It is managed by the California Department of Transportation (Caltrans) Landscape Architecture Division. The intent of the program is to establish the State's responsibility for the protection and enhancement of California's natural scenic beauty by identifying those portions of the State highway system which, together with adjacent scenic corridors, require special conservation treatment. Scenic corridors consist of land that is visible from, adjacent to, and outside of the highway right-of-way, and is

comprised primarily of scenic and natural features. The designation provides benefits to scenic resources along the highway, some of which include protection from incompatible uses, mitigation of activities within the designated corridor that detract from the highway's scenic quality, and preservation of hillsides. Topography, vegetation, viewing distance, and/or jurisdictional lines determine the corridor boundaries. Under the significance criteria established by CEQA, projects are evaluated for visibility from state scenic highways.

California Building Code

Title 24 in the California Code of Regulations is the California Building Standards Code. Part 6 of Title 24 is the California Energy Code, which includes standards for lighting to improve energy efficiency and reduce light pollution and glare by regulating light power, brightness, and sensor controls.

Part 11 of Title 24 is the California Green Building Standards Code, known as CALGreen. CALGreen establishes building standards aimed at enhancing the design and construction of buildings through the use of building concepts that have a reduced negative impact or positive environmental impact. CALGreen encourages sustainable construction practices and includes standards for planning and design, energy efficiency, water efficiency and conservation, material conservation and resource efficiency, and environmental quality. Section 5.106.8, Light Pollution Reduction, specifically establishes Backlight, Uplight, and Glare ratings to minimize the effects of light pollution for non-residential development. The standards for lighting are updated on a three-year basis, and have varying requirements according to lighting zones, established by the location of a project. The standards contain lighting power (i.e., maximum zonal lumens) allowances for newly installed equipment and specific alterations that are dependent on the designated lighting zone. Rural areas are designated lighting zone 2 which requires more stringent regulation of outdoor lighting systems lighting power. The allowed lighting power is based on the brightness of existing lighting in the surrounding area. Providing greater power than is needed potentially leads to debilitating glare on adjacent properties.

Local Regulations

Tuolumne County General Plan

Visual resources are addressed within the *Community Development and Design, Natural Resources, and Community Identity Element* of the General Plan (County 2018a).

The *Community Development and Design Element* contains the following goals, policies, and implementation programs that are aimed at preserving the scenic quality of the County:

- **Goal 1A:** Protect and enhance the quality of life for all residents of Tuolumne County while facilitating growth and development to meet the present and future needs of the County's residents, visitors, and businesses.
 - **Policy 1.A.1:** Promote the efficient use of land to conserve natural resources.
 - **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.

- **Goal 1B:** Minimize conflicts between incompatible land uses.
 - **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.

The *Natural Resources Element* contains the following goals, policies, and implementation programs that are aimed at preserving the scenic quality of the County:

- **Goal 16A:** Balance property rights with the conservation of the environment and rural character of the County, which contributes to the quality of life of residents, encourages tourism and supports economic development.
 - **Policy 16.A.2:** Conserve the natural scenic quality and rural character along designated scenic routes in the County.
 - **Implementation Programs-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 Routes
 - 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 on the State Scenic Highways "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 maps. 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.
 - **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.
- **Policy 16.A.5:** Conserve scenic resources, landmarks and the natural landscape.
- **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 Programs-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.

The *Community Identity Element* contains the following goals, policies, and implementation programs that are aimed at preserving the scenic quality of the County:

- **Policy CI-A.2:** Encourage retention of features important to the context or setting of cultural resources such as mature trees, retaining walls, viewsheds, hills, bridges, and old rock fences.

4.1.1.3 Methodology

Because scenic corridors are a key part of this analysis and because roadways are a publicly accessible location for the local viewshed, the aesthetic analysis generally utilized terminology and steps outlined in the publication, *Guidelines for the Visual Impact Assessment of Highway Projects* (U.S. Department of Transportation 2015).

The steps outlined below were followed to assess visual impacts:

1. Establish the study area.
2. Examine visual quality.
3. Analyze impacts on visual quality.
4. Determine mitigation and enhancement measures.

To analyze the aesthetic impact of the proposed Countywide program, a qualitative approach was taken to determine the current visual quality and character of the program site and surrounding areas and to identify any impacts that may result from implementation of the proposed Countywide program.

4.1.1.4 Existing Conditions

Regional Visual Character

Tuolumne County is located in the central part of California, within the Sierra Nevada region. It is situated in the heart of the Mother Lode Country, an area historically renowned for its gold mining activities during the California Gold Rush in the mid-19th century. The County is bordered by Calaveras County to the northwest, Alpine County to the northeast, Mono County to the east, Mariposa County to the south, and Stanislaus County to the west.

The largest city in Tuolumne County is Sonora, which serves as the central hub for administrative, commercial, and cultural activities. The County encompasses a total area of approximately 2,274 square miles, consisting of diverse landscapes that range from high mountain peaks to rolling foothills.

The visual environment of Tuolumne County is characterized by its natural landscapes, scenic vistas, and diverse terrain. The County is nestled within the Sierra Nevada Mountains, offering views of peaks, rolling hills, and expansive forests. The rugged mountain ranges, such as the Sierra Crest and the Stanislaus National Forest, create a backdrop that adds to the visual appeal of the region. Overall, the visual environment of Tuolumne County is characterized by its natural splendor, ranging from the grandeur of the mountains to the tranquility of the lakes and rivers. The combination of rugged landscapes, scenic waterways, and historic elements creates a captivating visual experience that attracts visitors and residents alike. The County's visual appeal is a testament to its rich natural resources, cultural heritage, and commitment to preserving its aesthetic qualities.

Scenic Highways

Although the County does not currently have any officially designated State Scenic Highways, portions of State Route (SR) 49, 108, and 120 are eligible for designation as State Scenic Highways (Caltrans 2023).

SR 49 traverses the western foothills and Mother Lode and connects many historical sites and towns. Typical views from SR 49 consist of agricultural rangeland on rolling hills. SR 49 is a locally designated 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 section of SR 49 is also eligible for designation as a State Scenic Highway.

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. 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 flat top buttes, to the foothills that eventually reach the mountain roads with views into the Stanislaus National Forest.

From SR 49 near Chinese Camp easterly to SR 49 near Moccasin Creek, SR 120 is a locally designated scenic route and is eligible for designation as a State Scenic Highway. 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. The byway also traverses through 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.

Existing Viewer Sensitivity, Viewer Groups, Viewer Exposure, and Viewer Awareness

The viewer groups in the Countywide program vicinity are residents, cyclists, motorists, and recreationists. For residents, viewer sensitivity is high due to their long-term, constant presence in the area and the moderate to high visual quality of the surrounding scenery. It is also presumed that these viewer groups were drawn to the Countywide program area, in part, because of the viewshed, although motorists/cyclists may travel the area's roadways solely to reach a destination and generally experience the scenery in the short term.

4.1.2 Significance Thresholds

In accordance with Appendix G of the CEQA Guidelines, the proposed Countywide program would have significant aesthetic impacts if the Countywide program would:

1. Have a substantial adverse effect on a scenic vista;
2. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State scenic highway;
3. In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings; and,
4. Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.

4.1.3 Impact Analysis

AES-1 The proposed project would not have a substantial adverse effect on a scenic vista.

A scenic vista is generally considered to be a location from which the public can experience unique and high-quality views, including panoramic views of great breadth and depth, often from elevated vantage points (County 2018b). Future development under the Countywide program, including individual fiber projects, would have the potential to affect scenic vistas if new or intensified development blocked views of areas that provide or contribute to such vistas. Potential impacts could include blocking views of a scenic vista from such publicly accessible vantage points or the alteration of the overall scenic vista itself.

Portions of SR 49, 108, and 120 are eligible for designation as State Scenic Highways; however, the County does not have any officially designated State Scenic Highways (Caltrans 2023). The County has identified three vista points that have been officially designated by Caltrans. These vista points are located on SR 120 at post miles (PM) 19, 21, and 44. PM 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 (County 2018b). The National Park Service (NPS) has designated a portion of the Tuolumne River as a Wild and Scenic River Corridor.

Individual fiber projects under the Countywide program would install fiber optic conduit either underground in buried conduits, overhead on new or previously constructed pole lines, or in a combination of both. The County includes a total of approximately 610 miles of County-maintained

roads. The installation of underground or overhead cables would be located within existing County maintained road ROW, public utility easements, and/or overhead public utility easements of record throughout the County. The exact alignment of future broadband infrastructure is unknown at this time and would be based on such considerations as construction feasibility, local preference, and locations of sensitive environmental resources.

Since the Countywide program would not include installation of fiber optic lines on federal lands, private roads, and State highway ROW, no above ground structures would be installed within the viewsheds of established scenic vistas along SR 120. Some roadway segments and previously disturbed and/or developed areas within the Countywide program area may have scenic views of natural features (e.g., streams, hills, forests) and buildings of architectural value. However, many of the roadways within the program area are lined with tall vertical features (e.g., mature trees, utility poles, streetlights, and roadway signs) and horizontal features (e.g., building and pavement edges, fences, and utility lines). The aboveground fiber optic lines on newly or previously constructed utility poles could be introduced in existing viewsheds; however, these structures would be generally consistent with existing vertical and horizontal features within the Countywide program area. New aboveground fiber optic lines and utility poles would not be so large that they would dominate existing viewsheds or detract from existing views. Therefore, operation of individual fiber projects would not obstruct or substantially alter views from scenic vistas.

Construction activities would result in temporary visual changes for sensitive viewer groups (e.g., residents, recreation users). Implementation of future individual fiber projects under the Countywide program would likely occur over many years. It is possible that multiple, individual fiber projects could have overlapping construction timeframes (or phases). Additionally, any individual segment could involve multiple construction crews working simultaneously, with plowing, trenching, or directional drilling occurring at the same time in different locations of the segment. Construction activities would be limited to the less noise-sensitive hours of 7:00 a.m. and 7:00 p.m., Monday through Saturday.

The construction methods for future individual fiber projects in Tuolumne County would be determined based on various factors such as location, micro-site conditions, and constraints present at each future individual fiber project site. These methods include horizontal directional drilling, plowing, trenching, microtrenching, line installation, and aerial stringing. After construction is complete, the construction staging areas would be returned to conditions similar to those that existed prior to construction of individual fiber projects under the Countywide program. As construction activities would be short-term and temporary, the Countywide program would not permanently or substantially obstruct views from scenic vistas.

Therefore, construction and operation of the proposed Countywide program would not have a substantial adverse effect on a scenic vista. Impacts would be less than significant.

Significance without Mitigation: Less than significant.

AES-2 The proposed project would not substantially damage scenic resources such as trees, rock outcroppings, and historic buildings within a State scenic highway.

Although the County does not currently have any officially designated State Scenic Highways, the County identifies portions of SR 49, 108, and 120 are eligible for designation as State Scenic Highways (Caltrans 2023). As discussed under Section 4.1.1, *Environmental Setting*, 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.

As noted under Impact AES-1, the installation of underground or overhead cables would be located within existing County maintained road ROW, public utility easements, and/or overhead public utility easements of record throughout the County. The Countywide program would not include installation of fiber optic lines on federal lands, private roads, and State highway ROW. Scenic resources would not be impacted by the Countywide program as individual fiber projects would typically be constructed and operated in previously disturbed and/or developed areas (e.g., in ROW or public utility easements). The broadband infrastructure could follow other utility installations; therefore, it is likely that the ground along these alignments has been previously disturbed by prior utility work. Many of these connections would generally follow the route of the roadway, particularly if the applicable areas have other issues that could affect access, such as vegetation, geologic setting, landscape, and/or water features that would not be disturbed.

This EIR conservatively assumes that new ground disturbance would be required for the entire Countywide program; however, there would be potential for utilizing existing conduit where only installation of fiber optic line would be required. If deemed feasible, the new broadband infrastructure constructed under an individual fiber project would connect to existing infrastructure in the Countywide program area supported by existing service providers. New aboveground or underground fiber optic lines, utility poles, and temporary staging areas to support their construction would occur primarily within previously disturbed areas. However, potential disturbed or undisturbed areas would be returned to pre-program conditions after construction is complete.

Therefore, the Countywide program would not damage scenic resources, including trees, rock outcroppings, and historic buildings within a State scenic highway. Impacts would be less than significant.

Significance without Mitigation: Less than significant.

AES-3 The proposed project would not substantially degrade the existing visual character or quality of public views of the site and its surroundings in a non-urbanized area.

Construction

The construction methods for future individual fiber projects in Tuolumne County would be determined based on various factors such as location, micro-site conditions, and constraints present at each future individual fiber project site. These methods include horizontal directional drilling, plowing, trenching, microtrenching, line installation, and aerial stringing. Staging areas are planned to be established along public roadways or existing disturbed areas along proposed construction routes in the Countywide program area. If road constraints prevent locating staging areas along roadways, alternative areas such as paved or graveled yards would be used. The exact locations of staging areas and equipment lay-down areas would be determined during the final construction plans for each individual fiber project. The staging areas would be returned to conditions similar to those that existed prior to construction.

Construction activities and equipment would likely be visible to some motorists, residents, employees, tourists, and/or recreationists. Construction activities would add more unnatural elements to views that

could contrast with and encroach on natural elements; however, these activities would occur in pockets throughout the County and would be temporary in nature. This would limit the number of viewers of any particular active construction area. The temporary and small-scale nature of construction that could result from implementation of the Countywide program would ensure that impacts during construction would be less than significant.

Operation

As discussed under Impact AES-1, the Countywide program would install fiber optic conduit either underground in buried conduits, overhead on pole lines, or in a combination of both. Individual broadband connections typically would be located in previously disturbed and/or developed areas (e.g., in ROW or public utility easements). The broadband infrastructure could follow other utility installations; therefore, it is likely that the ground along these alignments has been previously disturbed by prior utility work. Additionally, many of these connections would generally follow the route of the roadway, particularly if the applicable areas have other issues that could affect access, such as vegetation, geologic setting, landscape, and/or water features that would not be disturbed. This EIR conservatively assumes that new ground disturbance would be required for the entire Countywide program; however, there would be potential for utilizing existing conduit where installation of fiber optic lines would be required. If deemed feasible, the new broadband infrastructure constructed under an individual fiber project would connect to existing infrastructure in the Countywide program area supported by existing service providers.

The proposed underground fiber optic lines would not be visible and would therefore not substantially degrade the existing visual character or quality of public views of the site. However, the program proposes aboveground fiber optic lines that would utilize existing or newly construction utility poles. Portions of the program area are lined with tall vertical features, including mature trees, utility poles, streetlights, and roadway signs as well as horizontal features, including buildings, pavement edges, fences, and utility lines. Although aboveground fiber optic lines and newly constructed utility poles would be introduced into existing viewsheds, these structures would be generally consistent with existing vertical and horizontal features within the program area. New aboveground fiber optic lines and utility poles would not be large enough to dominate existing viewsheds or detract from existing views in the program area. Some portions of the program area have higher viewer sensitivity, such as those areas with more residences or recreational resources (e.g., trails); however, the visual changes from the program would be compatible with the existing environment and the overall change in visual quality would be less than significant as aboveground fiber conduit features would not result in any notable changes to existing visual elements, or to the vividness, intactness, or unity of existing views. Therefore, construction and operation of the Countywide program would not substantially degrade existing visual character or quality of public views in non-urbanized areas. The impact would be less than significant.

Significance without Mitigation: Less than significant.

AES-4 The proposed project would not create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.

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 (County 2018b).

“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. 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 (County 2018b).

Construction

Short-term light and glare impacts associated with construction activities facilitated by implementation of individual fiber projects would likely be limited to lighting in the evening/nighttime hours. In the event that construction lighting becomes a nuisance to surrounding uses, the County would ensure construction-related lighting would be oriented away from adjacent residential areas, if necessary, and consist of the minimal wattage necessary to provide safety at the construction site. Therefore, short-term light and glare impacts associated with construction activities would be less than significant.

Operation

Individual fiber projects would not introduce new light sources. Security lighting may be used; however, all lighting would be minimal and downward facing to prevent light spillover and glare. No reflective surfaces that could cause glare would be used for aboveground infrastructure. Therefore, impacts related to long-term light and glare from operation of the Countywide program would be less than significant.

Significance without Mitigation: Less than significant.

4.1.4 Cumulative Impacts

AES-5 The proposed project would not result in a significant cumulative impact with respect to aesthetics.

Cumulative impacts would occur when the proposed Countywide program, in combination with other projects or plans/projections in Tuolumne County, would directly or indirectly have a substantial adverse effect on a scenic vista, substantially damage scenic resources, degrade existing character or public views, or create a new source of substantial light or glare. The analysis of cumulative impacts is based on impacts of the proposed Countywide program and the other cumulative plan/projections in the County and other cumulative projects in the County as listed in **Table 4-1**. The analysis is based on a combination of the list and plan/projections approaches.

Several residential and commercial cumulative projects are proposed and/or pending within the County. Residential and commercial project types generally require temporary construction activities that are not anticipated to be cumulatively considerable as construction would be short-term and temporary. However, residential, and commercial project types may result in permanent changes to the existing visual setting and viewsheds within the County. Development projects would be required to comply with local design and zoning requirements to ensure that the existing visual character and quality is

maintained within the County. Individual fiber projects under the Countywide program are not expected to combine with future residential and commercial development to produce a considerable contribution to cumulative impacts.

Effects on scenic resources generally occur at the interface between development and the scenic resources and tend to be localized. Individual fiber projects would not result in any notable changes to existing visual elements, or to the vividness, intactness, or unity of existing views. As discussed above, the proposed Countywide program would not have a significant impact on scenic vistas, scenic resources, existing character, or public views, or create a new source of light or glare. Therefore, the Countywide program would have a less than cumulatively considerable impact related to aesthetics.

Significance without Mitigation: Less than significant impact.

4.1.5 References

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4.2 AIR QUALITY

This section describes the regulatory framework and existing conditions related to air quality in the vicinity of the proposed Countywide program, evaluates the potential air quality impacts that could occur as a result of implementation of the proposed Countywide program, and details mitigation measures needed to reduce significant impacts, as necessary. No issues were raised during scoping that pertain to air quality.

4.2.1 Environmental Setting

The Countywide program is located in Tuolumne County, which is part of the Mountain Counties Air Basin (MCAB). The MCAB also includes Amador, Calaveras, El Dorado (western), Mariposa, Nevada, Placer (central), Sierra, and Plumas counties. Air quality in the MCAB is regulated by the U.S. Environmental Protection Agency (USEPA) at the federal level, by the California Air Resources Board (CARB) at the State level, and by the Tuolumne County Air Pollution Control District (TCACPD) at the regional level.

4.2.1.1 Air Pollutant Descriptors and Terminology

Criteria pollutants are defined by State and federal law as a risk to the health and welfare of the general public. In general, criteria air pollutants include the following compounds:

- Ozone (O₃)
- Carbon monoxide (CO)
- Nitrogen dioxide (NO₂)
- Particulate matter (PM), which is further subdivided:
 - Coarse PM, 10 micrometers or less in diameter (PM₁₀)
 - Fine PM, 2.5 micrometers or less in diameter (PM_{2.5})
- Sulfur dioxide (SO₂)
- Lead (Pb)

Criteria pollutants can be emitted directly from sources (primary pollutants; e.g., CO, SO₂, PM₁₀, PM_{2.5}, and lead), or they may be formed through chemical and photochemical reactions of precursor pollutants in the atmosphere (secondary pollutants; e.g., ozone, NO₂, PM₁₀, and PM_{2.5}). PM₁₀ and PM_{2.5} can be both primary and secondary pollutants. The principal precursor pollutants of concern are reactive organic gases ([ROGs] also known as volatile organic compounds [VOCs])¹ and nitrogen oxides (NO_x).

¹ CARB defines and uses the term ROGs while the USEPA defines and uses the term VOCs. The compounds included in the lists of ROGs and VOCs and the methods of calculation are slightly different. However, for the purposes of estimating criteria pollutant precursor emissions, the two terms are often used interchangeably.

**Table 4.2-1
SUMMARY OF COMMON SOURCES AND HUMAN HEALTH EFFECTS OF CRITERIA AIR POLLUTANTS**

Pollutant	Major Man-Made Sources	Human Health Effects
Carbon Monoxide (CO)	An odorless, colorless gas formed when carbon in fuel is not burned completely; a component of motor vehicle exhaust.	Reduces the ability of blood to deliver oxygen to vital tissues, affecting the cardiovascular and nervous system. Impairs vision, causes dizziness, and can lead to unconsciousness or death.
Nitrogen Dioxide (NO ₂)	A reddish-brown gas formed during fuel combustion for motor vehicles and industrial sources. Sources include motor vehicles, electric utilities, and other sources that burn fuel.	Respiratory irritant; aggravates lung and heart problems. Precursor to ozone and acid rain. Contributes to climate change and nutrient overloading, which deteriorates water quality. Causes brown discoloration of the atmosphere.
Ozone (O ₃)	Formed by a chemical reaction between reactive organic gases (ROGs) and nitrogen oxides (NO _x) in the presence of sunlight. Common sources of these precursor pollutants include motor vehicle exhaust, industrial emissions, gasoline storage and transport, solvents, paints, and landfills.	Irritates and causes inflammation of the mucous membranes and lung airways; causes wheezing, coughing, and pain when inhaling deeply; decreases lung capacity; aggravates lung and heart problems. Damages plants; reduces crop yield. Damages rubber, some textiles and dyes.
Particulate Matter (PM ₁₀ and PM _{2.5})	Produced by power plants, steel mills, chemical plants, unpaved roads and parking lots, wood-burning stoves and fireplaces, automobiles, and other sources.	Increased respiratory symptoms, such as irritation of the airways, coughing, or difficulty breathing; aggravated asthma; development of chronic bronchitis; irregular heartbeat; nonfatal heart attacks; and premature death in people with heart or lung disease. Impairs visibility (haze).
Sulfur Dioxide (SO ₂)	A colorless, nonflammable gas formed when fuel containing sulfur is burned, when gasoline is extracted from oil, or when metal is extracted from ore. Examples are petroleum refineries, cement manufacturing, metal processing facilities, locomotives, and ships.	Respiratory irritant. Aggravates lung and heart problems. In the presence of moisture and oxygen, sulfur dioxide converts to sulfuric acid, which can damage marble, iron and steel. Damages crops and natural vegetation. Impairs visibility. Precursor to acid rain.
Lead	Metallic element emitted from metal refineries, smelters, battery manufacturers, iron and steel producers, use of leaded fuels by racing and aircraft industries.	Anemia, high blood pressure, brain and kidney damage, neurological disorders, cancer, lowered IQ. Affects animals, plants, and aquatic ecosystems.

Source: CARB 2023a; USEPA 2023

The descriptions of sources and general health effects for each of the criteria air pollutants are shown in **Table 4.2-1**. Specific adverse health effects on individuals or population groups induced by criteria pollutant emissions are highly dependent on a multitude of interconnected variables such as cumulative concentrations, local meteorology and atmospheric conditions, and the number and characteristics of exposed individuals (e.g., age, gender). Criteria pollutant precursors (ROG and NO_x) affect air quality on a regional scale, typically after significant delay and distance from the pollutant source emissions. Health effects related to ozone and NO₂ are, therefore, the product of emissions generated by numerous sources throughout a region. Emissions of criteria pollutants from vehicles traveling to or from the project site (mobile emissions) are distributed nonuniformly in location and time throughout the region, wherever the vehicles may travel. As such, specific health effects from these criteria pollutant emissions cannot be meaningfully correlated to the incremental contribution from the project.

4.2.1.2 Toxic Air Contaminants

Toxic air contaminants (TACs) are a diverse group of air pollutants that may cause or contribute to an increase in deaths or in serious illness, or that may pose a present or potential hazard to human health. TACs can cause long-term health effects such as cancer, birth defects, neurological damage, asthma, bronchitis, or genetic damage, or short-term acute effects such as eye watering, respiratory irritation (a cough), runny nose, throat pain, and headaches. TACs may be carcinogenic or noncarcinogenic based on the nature of the health effects associated with exposure to the pollutant. For carcinogenic TACs, there is no level of exposure that is considered safe, and impacts are evaluated in terms of overall relative risk expressed as excess cancer cases per one million exposed individuals. Noncarcinogenic TACs differ in that there is generally assumed to be a safe level of exposure below which no negative health impact is believed to occur. These levels are determined on a pollutant-by-pollutant basis.

Diesel engines emit a complex mixture of air pollutants, including both gaseous and solid material. The solid material in diesel exhaust is referred to as diesel particulate matter (DPM). Almost all DPM is 10 microns or less in diameter, and 90 percent of DPM is less than 2.5 microns in diameter (CARB 2023b). Because of their extremely small size, these particles can be inhaled and eventually trapped in the bronchial and alveolar regions of the lung. In 1998, CARB identified DPM as a TAC based on published evidence of a relationship between diesel exhaust exposure and lung cancer and other adverse health effects. DPM has a notable effect on California's population—it is estimated that about 70 percent of total known cancer risk related to air toxics in California is attributable to DPM (CARB 2023b).

4.2.1.3 Regulatory Framework

Federal Regulations

Clean Air Act

Air quality is defined by ambient air concentrations of specific pollutants identified by the USEPA to be of concern with respect to health and welfare of the general public. The USEPA is responsible for enforcing the Clean Air Act (CAA) of 1970 and its 1977 and 1990 Amendments. The CAA required the USEPA to establish National Ambient Air Quality Standards (NAAQS), which identify concentrations of pollutants in the ambient air below which no adverse effects on the public health and welfare are anticipated. In response, the USEPA established both primary and secondary standards for several criteria pollutants. Table 4.2-2 shows the federal and State ambient air quality standards (AAQS) for these pollutants.

The CAA allows states to adopt ambient air quality standards and other regulations provided they are at least as stringent as federal standards. Areas that do not meet the NAAQS for a particular pollutant are considered to be “nonattainment areas” for that pollutant. The area air quality attainment status for the MCAB is shown in **Table 4.2-3**. The MCAB is currently in nonattainment for federal and State PM_{2.5} standards and in nonattainment for State PM₁₀ standards. The MCAB is in State nonattainment for ozone (1-hour) standards and State and Federal nonattainment for ozone (8-hour) standards. Concentrations of all other pollutants meet State and federal standards.

**Table 4.2-2
AMBIENT AIR QUALITY STANDARDS**

Pollutant	Averaging Time	California Standards	Federal Standards	
			Primary ¹	Secondary ²
O ₃	1 Hour	0.09 ppm (180 µg/m ³)	–	–
	8 Hour	0.070 ppm (137 µg/m ³)	0.070 ppm (137 µg/m ³)	Same as Primary
PM ₁₀	24 Hour	50 µg/m ³	150 µg/m ³	Same as Primary
	AAM	20 µg/m ³	–	Same as Primary
PM _{2.5}	24 Hour	–	35 µg/m ³	Same as Primary
	AAM	12 µg/m ³	12.0 µg/m ³	15.0 µg/m ³
CO	1 Hour	20 ppm (23 mg/m ³)	35 ppm (40 mg/m ³)	–
	8 Hour	9.0 ppm (10 mg/m ³)	9 ppm (10 mg/m ³)	–
	8 Hour (Lake Tahoe)	6 ppm (7 mg/m ³)	–	–
NO ₂	1 Hour	0.18 ppm (339 µg/m ³)	100 ppb (188 µg/m ³)	–
	AAM	0.030 ppm (57 µg/m ³)	0.053 ppm (100 µg/m ³)	Same as Primary
SO ₂	1 Hour	0.25 ppm (655 µg/m ³)	75 ppb (196 µg/m ³)	–
	3 Hour	–	–	0.5 ppm (1,300 µg/m ³)
	24 Hour	0.04 ppm (105 µg/m ³)	–	–
Lead	30-day Avg.	1.5 µg/m ³	–	–
	Calendar Quarter	–	1.5 µg/m ³	Same as Primary
	Rolling 3-month Avg.	–	0.15 µg/m ³	
Visibility Reducing Particles	8 Hour	Extinction coefficient of 0.23 per km – visibility ≥ 10 miles (0.07 per km – ≥30 miles for Lake Tahoe)	No Federal Standards	
Sulfates	24 Hour	25 µg/m ³		
Hydrogen Sulfide	1 Hour	0.03 ppm (42 µg/m ³)		
Vinyl Chloride	24 Hour	0.01 ppm (26 µg/m ³)		

Source: CARB 2016

¹ National Primary Standards: The levels of air quality necessary, within an adequate margin of safety, to protect the public health.

² National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

³ O₃: ozone; ppm: parts per million; µg/m³: micrograms per cubic meter; PM₁₀: large particulate matter; AAM: Annual Arithmetic Mean; PM_{2.5}: fine particulate matter; CO: carbon monoxide; mg/m³: milligrams per cubic meter; NO₂ nitrogen dioxide; SO₂: sulfur dioxide; km: kilometer; –: No Standard.

**Table 4.2-3
ATTAINMENT STATUS FOR THE TUOLUMNE COUNTY PORTION OF THE MOUNTAIN COUNTIES AIR BASIN**

Pollutant	State of California Attainment Status	Federal Attainment Status
Ozone (1-hour)	Nonattainment/Unclassified	No Federal Standard
Ozone (8-hour)	Nonattainment/Unclassified	Nonattainment
Suspended Particulate Matter (PM ₁₀)	Nonattainment/Unclassified	Unclassified
Fine Particulate Matter (PM _{2.5})	Nonattainment/Unclassified	Nonattainment/Attainment/Unclassified
Carbon Monoxide (CO)	Attainment/Unclassified	Attainment/Unclassified
Nitrogen Dioxide (NO ₂)	Attainment	Attainment/Unclassified
Lead	Attainment	Attainment/Unclassified
Sulfur Dioxide (SO ₂)	Attainment	Attainment/Unclassified
Sulfates	Attainment	No Federal Standard
Hydrogen Sulfide	Unclassified	No Federal Standard
Visibility Reducing Particles	Unclassified	No Federal Standard

Sources: CARB 2023c

State Regulations

California Clean Air Act

CARB has established the more stringent California Ambient Air Quality Standards (CAAQS) for the seven criteria air pollutants listed above through the California CAA of 1988, and has also established CAAQS for additional pollutants, including sulfates, hydrogen sulfide (H₂S), vinyl chloride and visibility-reducing particles. Areas that do not meet the CAAQS for a particular pollutant are considered to be “nonattainment areas” for that pollutant. The MCAB is currently classified as a nonattainment area under the CAAQS for ozone (1-hour and 8-hour) and PM₁₀.

CARB is the State regulatory agency with the authority to enforce regulations to both achieve and maintain the NAAQS and CAAQS. The MCAB is responsible for developing and implementing the rules and regulations designed to attain the NAAQS and CAAQS, as well as the permitting of new or modified sources, developing of air quality management plans, and adopting and enforcing air pollution regulations within the MCAB.

State Implementation Plan

The CAA requires areas with unhealthy levels of ozone, inhalable particulate matter, carbon monoxide, nitrogen dioxide, and sulfur dioxide to develop plans, known as State Implementation Plans (SIPs). SIPs are comprehensive plans that describe how an area will attain the NAAQS. The 1990 amendments to the CAA set deadlines for attainment based on the severity of an area's air pollution problem.

SIPs are not single documents—they are a compilation of new and previously submitted plans, programs (e.g., monitoring, modeling, permitting), district rules, State regulations and federal controls. Many of California's SIPs rely on a core set of control strategies, including emission standards for cars and heavy trucks, fuel regulations and limits on emissions from consumer products. State law makes CARB the lead agency for all purposes related to the SIP. Local air districts and other agencies prepare SIP elements and submit them to CARB for review and approval. CARB forwards the SIP revisions to the USEPA for approval and publication in the Federal Register. The CFR Title 40, Chapter I, Part 52, Subpart F, Section

52.220 lists all of the items that are included in the California SIP (CFR 2024). At any one time, several California submittals are pending USEPA approval.

Regional and Local Regulations

Tuolumne County Air Pollution Control District

Local control in air quality management from the CARB is provided through county or regional level air pollution control districts. The Countywide program would be located, as previously mentioned, within the Tuolumne TCAPCD. The TCAPCD is responsible for enforcing the standards discussed above under the Federal and State Regulations, and regulating stationary sources, while the CARB is responsible for control of mobile emission sources.

The TCAPCD's 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 have a natural tendency to cause injury or damage to business or property" (County 2020).

Tuolumne County General Plan

Air Quality is addressed within the *Community Development and Design Element* and *Air Quality Element* of the General Plan (County 2018a).

The *Community Development and Design Element* contains the following goals, policies, and implementation programs that address air quality within the County:

- **Policy 1.G.2:** Require industrial development to meet performance standards based on factors of noise, odor, traffic, air and water pollution, and underground resources in order to minimize its impacts on surrounding land uses.

The *Air Quality Element* contains the following goals, policies, and implementation programs that address air quality within the County:

- **Goal 15A:** Develop and sustain an air quality program that protects the public health and ambient air quality while encouraging the economic vitality of local businesses and industries.
 - **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 or 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.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 pollutants 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.

4.2.1.4 Existing Conditions

Local Climate

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 (County 2018b).

Current Ambient Air Quality

The Tuolumne County portion of the MCAB is a nonattainment area for the state and federal standards for ozone and is unclassified or in attainment for the federal and state standards for CO, nitrogen dioxide, SO₂, PM₁₀, PM_{2.5}, and lead (CARB 2023c). 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 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.

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 (County 2018b).

4.2.2 Methodology

Criteria pollutant and precursor emissions for the Countywide program construction activities were calculated using the California Emissions Estimator Model (CalEEMod), Version 2022.1.1.14. CalEEMod is a Statewide land use emissions computer model designed to provide a uniform platform for government agencies, land use planners, and environmental professionals to quantify potential criteria pollutant emissions associated with both construction and operations from a variety of land use projects. The model was developed for the California Air Pollution Control Officers Association (CAPCOA) in collaboration with the California air districts. CalEEMod allows for the use of default data (e.g., emission factors, trip lengths, meteorology, source inventory) provided by the various California air districts to account for local requirements and conditions, and/or user-defined inputs. The model calculates emissions of criteria pollutants, Ozone precursors, and greenhouse gases, including PM₁₀, PM_{2.5}, ROGs, NO_x, and carbon dioxide equivalents (CO₂e). The calculation methodology and input data used in CalEEMod can be found in the CalEEMod User's Guide Appendices C, D, and G (CAPCOA 2023). The input data and subsequent construction and operation emission estimates for the proposed Countywide program are discussed below. The CalEEMod output files are included in Appendix C to this EIR.

4.2.2.1 Construction Emissions

Construction emissions were calculated using CalEEMod based on various construction methods that would be used to construct individual fiber projects. Construction methods include Horizontal Directional Drilling, Plowing, Trenching, Microtrenching, Line Installation, Aerial Stringing, and Pavement Repair. Daily construction emissions were estimated for each construction method based on the construction equipment shown in **Table 4.2-4**.

**Table 4.2-4
CONSTRUCTION EQUIPMENT ASSUMPTIONS**

Equipment	Horsepower	Number	Hours per Day
Horizontal Directional Drilling			
Bore/Drill Rigs	83	1	8
Cranes	367	1	8
Generator Sets	14	1	8
Excavators	36	1	8
Tractors/Loaders/Backhoes	84	1	8
Plowing			
Crawler Tractors	87	1	8
Line Installation			
Air Compressors	37	1	8
Generator Sets	14	1	8
Aerial Stringing			
Bore/Drill Rigs	83	1	8
Cranes	367	1	8
Rough Terrain Forklifts	96	1	8
Tractors/Loaders/Backhoes	84	1	8
Microtrenching			
Trenchers	40	1	8
Tractors/Loaders/Backhoes	84	1	8
Trenching			
Concrete/Individual Saws	33	1	8
Excavators	36	2	8
Tractors/Loaders/Backhoes	84	2	8
Pavement Repair			
Tractors/Loaders/Backhoes	84	1	8
Rollers	36	1	8
Cement and Mortar Mixes	10	1	8

Source: CalEEMod (output data is provided in Appendix C).

Construction traffic would primarily include the delivery of construction equipment, vehicles, and materials including fiber optic cable, utility poles, and daily construction worker trips. Equipment, materials, and labor would likely come from the Tuolumne County area; however, it is possible that some equipment, materials, and labor would need to come from outside areas due to the rural nature of the County. Construction activities would be temporary and short-term in nature and would vary day to day depending on the construction method.

4.2.2.2 Operation Emissions

Operation of the individual fiber projects under the Countywide program would not result in a population increase and would not generate new vehicle trips beyond occasional maintenance activities. Individual fiber projects would produce negligible operational emissions due to the limited number of maintenance trips and therefore, operational emissions were not calculated.

4.2.3 Significance Thresholds

The impact analysis provided below is based on the application of the following State CEQA Guidelines Appendix G thresholds of significance, which indicate that the Countywide program would have a significant air quality impact if it would:

1. Conflict with or obstruct implementation of the applicable air quality plan;
2. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or State ambient air quality standard;
3. Expose sensitive receptors to substantial pollutant concentrations; and,
4. Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

The proposed Countywide program would have a significant impact on air quality if, pursuant to TCAPCD regulations, it would:

- Result in project-generated emissions in excess of the following used by the Tuolumne County Air Pollution Control District:
 - Reactive Organic Gases (ROG) – 1,000 lbs./day or 100 tons per year.
 - Oxides of Nitrogen (NO_x) – 1,000 lbs./day or 100 tons per year
 - Particulate Matter (PM₁₀) – 1,000 lbs./day or 100 tons per year
 - Carbon Monoxide (CO) – 1,000 lbs./day or 100 tons per year

The TCAPCD advises that in addition to the above, they utilize existing federal and State thresholds to evaluate the significance of air quality impacts resulting from stationary sources, such as cogeneration plants and manufacturing facilities. These thresholds are found in various bodies of law which regulate specific industries.

4.2.4 Impact Analysis

AQ-1 The proposed project would not conflict with or obstruct implementation of the applicable air quality plan.

Consistency with the air quality plan is determined by whether the project would hinder implementation of control measures identified in the air quality plan or would result in growth of population or employment that is not accounted for in local and regional planning.

Tuolumne County does not currently have an air quality plan; however, air quality is addressed within the *Community Development and Design Element* and *Air Quality Element* of the General Plan (County 2018a)).

As discussed under Impact AQ-2, CalEEMod was used to determine air quality impacts from construction of individual fiber projects under the proposed Countywide program. The estimated emissions for each construction method used to construct individual fiber projects would be less than the emissions

threshold set by the County. Further, individual fiber projects would be consistent with the County General Plan and would be required to comply with all permitting requirements of TCAPCD. Impacts would be less than significant, and no mitigation is required.

Significance without Mitigation: Less than significant impact.

AQ-2 The proposed project would not result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or State ambient air quality standard.

Construction Emissions

The Countywide program temporary construction emissions were estimated using CalEEMod as described in Section 4.2.2, *Methodology*. The results of the modeling of each construction method emissions of criteria pollutants and ozone precursors are shown in **Table 4.2-5**. The complete CalEEMod output is provided in Appendix C to this EIR.

**Table 4.2-5
UNMITIGATED CONSTRUCTION EMISSIONS BY CONSTRUCTION METHOD**

Construction Methods	Pollutant Emissions (pounds per day)					
	ROG	NO _x	CO	SO _x	PM ₁₀	PM _{2.5}
Horizontal Directional Drilling	0.8	8.3	9.0	<0.1	0.3	0.3
Plowing	0.3	2.8	2.5	<0.1	0.2	0.2
Trenching	0.3	2.6	3.4	<0.1	0.1	0.1
Microtrenching	0.7	5.7	7.7	<0.1	0.2	0.2
Line Installation	0.3	2.0	2.1	<0.1	0.1	0.1
Aerial Stringing	0.7	7.9	9.7	<0.1	0.3	0.3
Pavement Repair	0.3	2.5	3.3	<0.1	0.1	0.1

Source: CalEEMod (Output data is provided in Appendix C)

As shown in **Table 4.2-5**, the Countywide program daily construction emissions for each individual construction method would be significantly less than TCAPCD thresholds of 1,000 pounds per day (lbs./day). It is likely that construction could simultaneously occur at various individual fiber project sites, however, the daily combined construction emissions would not exceed TCAPCD threshold. It is assumed that no more than 20 individual fiber project construction sites would be active at one time. Therefore, the Countywide program construction emissions would not violate any air quality standard or result in a considerable net increase of any criteria pollutant. Impacts related to construction emissions would be less than significant.

Operation Emissions

Operation of the individual fiber projects under the Countywide program would not result in a population increase and would not generate new vehicle trips beyond occasional maintenance activities. An emergency backup generator may be used in the event of a power outage or for routine testing. Monthly routine testing is assumed to last 15 minutes at one time. As use of the emergency backup generator would be limited, individual fiber projects would produce minimal operational emissions. The Countywide program's operational emissions would not violate any air quality standard or result in a

considerable net increase of any criteria pollutant. Impacts related to operational emissions would be less than significant.

Significance without Mitigation: Less than significant impact.

AQ-3 The proposed project would not expose sensitive receptors to substantial pollutant concentrations.

Impacts to sensitive receptors are typically analyzed for CO hot spots and exposure to TACs. An analysis of the Countywide program potential to expose sensitive receptors to these pollutants is provided below.

Carbon Monoxide Hotspots

Vehicle exhaust is the primary source of CO. In an urban setting, the highest CO concentrations are generally found near congested intersections. Under typical meteorological conditions, CO concentrations tend to decrease as distance from the emissions source (i.e., congested intersection) increases. Because CO is a byproduct of incomplete combustion, exhaust emissions are worse when fossil-fueled vehicles are operated inefficiently, such as in stop-and-go traffic or through heavily congested intersections. Because CO disperses rapidly, hot spots are most likely to occur in areas with limited vertical mixing such as tunnels, long underpasses, or below-grade roadways.

The Countywide program would not result in an increase in traffic on the local roadways within the County such that it would impact the efficiency of roadways and/or intersections. As the program would not create congestion or delay, there would be no circumstances in which CO hotspots would occur. Therefore, the impact would be less than significant.

Other Localized Pollutants

The dose (of TAC) to which receptors are exposed is the primary factor used to determine health risk. Dose is a function of the concentration of a substance in the environment and the extent of exposure a person has with the substance; a longer exposure period to a fixed quantity of emissions would result in higher health risks. Current models and methodologies for conducting cancer health risk assessments are associated with longer-term exposure periods (typically 30 years for individual residents based on guidance from Office of Environmental Health Hazard Assessment [OEHHA]) and are best suited for evaluation of long duration TAC emissions with predictable schedules and locations. These assessment models and methodologies do not correlate well with the temporary and highly variable nature of construction activities. Cancer potency factors are based on animal lifetime studies or worker studies where there is long-term exposure to the carcinogenic agent. There is considerable uncertainty in trying to evaluate the cancer risk from projects that will only last a small fraction of a lifetime (OEHHA 2015). In addition, concentrations of mobile source DPM emissions disperse rapidly and are typically reduced by 70 percent at approximately 500-feet (CARB 2005). Considering this information, the highly dispersive nature of DPM, and the fact that construction activities at any single location would be short-term and temporary, it is not anticipated that construction of the Countywide program would expose sensitive receptors to substantial DPM concentrations. Therefore, individual fiber projects would not result in the exposure to elevated pollutant levels from vehicular exhaust. The impact would be less than significant.

Significance without Mitigation: Less than significant impact.

AQ-4 The proposed project would not result in substantial emissions of odors adversely affecting a substantial number of people.**Construction**

Construction of individual fiber projects may require the use of diesel-powered equipment. Diesel exhaust can be a temporary source of odors. Due to the temporary and intermittent nature of construction methods, construction of individual fiber projects would not result in emissions leading to odors that would adversely affect substantial numbers of people. Impacts would be less than significant related to construction.

Operation

Broadband infrastructure is not considered to be a typical significant source of objectionable odors. Therefore, individual fiber projects would not result in emissions leading to odors that would adversely affect substantial numbers of people. No impacts would occur related to operation.

Significance without Mitigation: Less than significant impact.

4.2.5 Cumulative Impacts**AQ-5 The proposed project would not contribute to a cumulatively considerable impact on regional air quality.**

By its very nature, air pollution is largely a cumulative impact. No single project is sufficient in size to, by itself, result in nonattainment of ambient air quality standards in the TCAPCD. Instead, a project's individual emissions of criteria pollutants and precursors contribute to existing cumulatively significant adverse air quality impacts in the TCAPCD. In developing thresholds of significance for criteria pollutants and precursors, if a project exceeds the identified significance threshold of 1,000 lbs/day, its emissions would be cumulatively considerable, resulting in significant adverse air quality impacts on the region's existing air quality conditions. As discussed under Impact AQ-1 through AQ-4 above, construction and operational impacts related to emissions of air pollutants would be less than significant. Therefore, the Countywide program would have a less than cumulatively considerable impact related to air quality.

Significance without Mitigation: Less than significant impact.

4.2.6 References

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4.3 BIOLOGICAL RESOURCES

This section begins with descriptions of the federal and state regulatory framework by which Countywide program effects may be deemed significant, and then describes methods used to evaluate impacts to biological resources and existing biological resources on the Countywide program. The section identifies the potential impacts to biological resources that could occur as a result of the implementation of the proposed program, and details mitigation measures needed to avoid or reduce the significant impacts.

On May 30, 2023, the California Department of Fish and Wildlife (CDFW) sent a letter to Tuolumne County Community Development Department to provide comments on the Countywide Program EIR. CDFW noted that the EIR should consider the cumulative impacts of the reasonably foreseeable projects on the species CDFW has identified in the letter. CDFW recommended that habitat assessments be conducted in and surrounding all locations for planned broadband work and identify all species that could be present. CDFW also recommended that survey-level protocols be conducted as part of the biological technical studies prepared to support each future CEQA document. CDFW recommended consulting with the USFWS on potential impacts to federally listed species. The NOP public comments letters are included in Appendix B.

4.3.1 Regulatory Framework

Federal Regulations

Federal Endangered Species Act

The U.S. Fish and Wildlife Service (USFWS) enforces the provisions stipulated within the Federal Endangered Species Act of 1973 (FESA; 16 United States Code [USC] 1531 et seq.). Species identified as federally threatened or endangered (50 CFR 17.11, and 17.12) are protected from take, defined as direct or indirect harm, unless a Section 10 permit is granted to an entity other than a federal agency or a Biological Opinion with incidental take provisions is rendered to a federal lead agency via a Section 7 consultation. Pursuant to the requirements of FESA, an agency reviewing a proposed project within its jurisdiction must determine whether any federally listed species may be present in the study area and determine whether the proposed project will jeopardize the continued existence of or result in the destruction or adverse modification of critical habitat of such species (16 USC 1536 (a)[3], [4]). Other federal agencies designate species of concern (species that have the potential to become listed), which are evaluated during environmental review under NEPA or CEQA although they are not otherwise protected under FESA.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) of 1918 established federal responsibilities for the protection of nearly all species of birds, their eggs, and nests. The Migratory Bird Treaty Reform Act of 2004 further defined species protected under the act and excluded all non-native species. Section 16 U.S.C. 703–712 of the Act states “unless and except as permitted by regulations, it shall be unlawful at any time, by any means or in any manner, to pursue, hunt, take, capture, kill, attempt to take, capture, or kill” a migratory bird. A migratory bird is any species or family of birds that live, reproduce, or migrate within or across international borders at some point during their annual life cycle. Currently, there are 836 migratory birds protected nationwide by the MBTA, of which 58 are legal to hunt. The U.S. Court of

Appeals for the 9th Circuit (with jurisdiction over California) has ruled that the MBTA does not prohibit incidental take (952 F 2d 297 – Court of Appeals, 9th Circuit 1991).

The Bald and Golden Eagle Protection Act

The bald eagle and golden eagle are federally protected under the Bald and Golden Eagle Protection Act (16 USC 668–668c). It is illegal to take, possess, sell, purchase, barter, offer to sell or purchase or barter, transport, export, or import at any time or in any manner a bald or golden eagle, alive or dead; or any part, nest, or egg of these eagles unless authorized by the Secretary of the Interior. Violations are subject to fines and/or imprisonment for up to one year. Active nest sites are also protected from disturbance during the breeding season.

Clean Water Act (33 USC 1252-1376)

On May 25, 2023, the United States Supreme Court issued a decision in the case of *Sackett v. Environmental Protection Agency* (Supreme Court of the United States 2023) which will ultimately influence how federal waters are defined. The May 25, 2023, Supreme Court decision in *Sackett v. Environmental Protection Agency* determined that “the CWA extends to only those ‘wetlands with a continuous surface connection to bodies that are “waters of the United States” in their own right,’ so that they are ‘indistinguishable’ from those waters.” The United States Environmental Protection Agency and the United States Army Corps of Engineers after review issued a final rule to replace the 2023 rule that amends the “Revised Definition of “Waters of the United States” to conform key aspects of the regulatory text to the U.S. Supreme Court’s May 25, 2023 decision in the case of *Sackett v. Environmental Protection Agency*.

Unless considered an exempt activity under Section 404(f) of the Federal Clean Water Act, any person, firm, or agency planning to alter or work in “waters of the U.S.,” including the discharge of dredged or fill material, must first obtain authorization from the USACE under Section 404 of the Clean Water Act (CWA; 33 USC 1344). Permits, licenses, variances, or similar authorization may also be required by other federal, state, and local statutes. Section 10 of the Rivers and Harbors Act prohibits the obstruction or alteration of navigable waters of the U.S. without a permit from USACE (33 USC 403). Activities exempted under Section 404(f) are not exempted within navigable waters under Section 10.

Federal and state regulations pertaining to waters of the U.S., including wetlands, are discussed below.

Clean Water Act (33 USC 1251-1376). The CWA provides guidance for the restoration and maintenance of the chemical, physical, and biological integrity of the nation’s waters.

Section 401 requires that an applicant for a federal license or permit that allows activities resulting in a discharge to waters of the U.S. must obtain a state certification that the discharge complies with other provisions of CWA. The RWQCB administers the certification program in California and may require State Water Quality Certification before other permits are issued.

Section 402 establishes a permitting system for the discharge of any pollutant (except dredged or fill material) into waters of the U.S. This system is the National Pollutant Discharge Elimination System (NPDES) program, administered by the EPA, that has granted oversight authority in California to the State Water Board through its Regional Water Quality Control Boards.

Section 404 establishes a permit program administered by USACE that regulates the discharge of dredged or fill material into waters of the U.S. (including wetlands). Implementing regulations by USACE are found at 33 CFR Parts 320-332. The Section 404 (b)(1) Guidelines were developed by the USEPA in conjunction with USACE (40 CFR Part 230), allowing the discharge of dredged or fill material for non-water dependent uses into special aquatic sites only if there is no practicable alternative that would have less adverse impacts.

State Regulations

California Endangered Species Act

The California Endangered Species Act (CESA), established under California Fish and Game Code §2050 et. seq., identifies measures to ensure that endangered species and their habitats are conserved, protected, restored, and enhanced. The CESA restricts the “take” of plant and wildlife species listed by the state as endangered or threatened, as well as candidates for listing. Section 86 of the Fish and Game Code defines “take” as “hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill.” Under §2081(b) of the Fish and Game Code, CDFW has the authority to issue permits for incidental take for otherwise lawful activities. Under this section, CDFW may authorize incidental take, but the take must be minimal, and permittees must fully mitigate project impacts. CDFW cannot issue permits for projects that would jeopardize the continued existence of state listed species. For species listed under both FESA and CESA requiring a Biological Opinion under Section 7 of the FESA, CDFW may also authorize impacts to CESA species by issuing a Consistency Determination under Section 2080.1 of the Fish and Game Code.

CDFW maintains lists of Candidate-Endangered Species and Candidate-Threatened Species. Candidate species and listed species are given equal protection under the law. CDFW also lists Species of Special Concern (SSC) based on limited distribution, declining populations, diminishing habitat, or unusual scientific, recreational, or educational value. Designation of SSC is intended by the CDFW to be used as a management tool for consideration in future land use decisions; these species do not receive protection under the CESA or any section of the California Fish and Game Code, and do not necessarily meet CEQA Guidelines §15380 criteria as rare, threatened, endangered, or of other public concern. The determination of significance for SSC must be made on a case-by-case basis. CDFW typically requests that CEQA lead agencies consider minimization of impacts to SSC species when approving projects.

California Code of Regulations Title 14 and California Fish and Game Code

The official listing of endangered and threatened animals and plants is contained in the California Code of Regulations Title 14 §670.5. A state candidate species is one that the California Fish and Game Code has formally noticed as being under review by CDFW to include in the state list pursuant to Sections 2074.2 and 2075.5 of the California Fish and Game Code.

Legal protection is also provided for wildlife species in California that are identified as “fully protected animals.” These species are protected under Sections 3511 (birds), 4700 (mammals), 5050 (reptiles and amphibians), and 5515 (fish) of the California Fish and Game Code. These statutes prohibit take or possession of fully protected species at any time. CDFW is unable to authorize incidental take of fully protected species when activities are proposed in areas inhabited by these species. CDFW has informed non-federal agencies and private parties that they must avoid take of any fully protected species in carrying out projects. However, Senate Bill 618 (2011) allows the CDFW to issue permits authorizing the incidental take of fully protected species under the CESA, so long as any such take authorization is issued

in conjunction with the approval of a Natural Community Conservation Plan that covers the fully protected species (California Fish and Game Code Section 2835).

California Environmental Quality Act

Under CEQA (1970, as amended PRC Section 21000 et seq.), lead agencies analyze whether projects would have a substantial adverse effect on a candidate, sensitive, or special-status species (PRC Section 21001(c)). These “special status” species generally include those listed under FESA and CESA, and species that are not currently protected by statute or regulation, but would be considered rare, threatened, or endangered under the criteria included CEQA Guidelines Section 15380. Therefore, species that are considered rare are addressed in this study regardless of whether they are afforded protection through any other statute or regulation. The California Native Plant Society (CNPS) inventories the native flora of California and ranks species according to rarity; plants with a California Rare Plant Rank (CRPR) of 1A, 1B, 2A, 2B, and 3 are generally considered special-status species under CEQA.¹

Although threatened and endangered species are protected by specific federal and state statutes, CEQA Guidelines Section 15380(d) provides that a species not listed on the federal or state list of protected species may be considered rare if it can be shown to meet certain specified criteria. These criteria have been modeled after the definition in FESA and the section of the California Fish and Game Code dealing with rare or endangered plants and animals. Section 15380(d) of the CEQA Guidelines allows a public agency to undertake a review to determine if a significant effect on species that have not yet been listed by either the USFWS or CDFW (i.e., candidate species) would occur. Thus, CEQA provides an agency with the ability to protect a species from the potential impacts of a project until the respective government agency has an opportunity to designate the species as protected, if warranted.

Nesting Birds (California Fish and Game Code Sections 3503, 3511, and 3800)

California Fish and Game Code Subsections 3503 and 3800 prohibit the possession, take, or needless destruction of birds, their nests, and eggs, and the salvage of dead nongame birds. California Fish and Game Code Subsection 3503.5 protects all birds in the orders of Falconiformes and Strigiformes (birds of prey). Fish and Game Code Subsection 3511 states that fully protected birds or parts thereof may not be taken or possessed at any time. Fish and Game Code Subsection 3513 states that it is unlawful to take or possess any migratory nongame bird as designated in the MBTA or any part of such migratory nongame bird except as provided by rules and regulations adopted by the Secretary of the Interior under provisions of the MBTA. The Attorney General of California has released an opinion that the Fish and Game Code prohibits incidental take.

California Native Plant Protection Act (California Fish and Game Code Sections 1900-1913)

The California Native Plant Protection Act of 1977 (California Fish and Game Code Sections 1900-1913) requires all state agencies to use their authority to carry out programs to conserve endangered and otherwise rare species of native plants. Provisions of the act prohibit the taking of listed plants from the wild and require notification of CDFW at least 10 days in advance of any change in land use other than changing from one agricultural use to another, which allows CDFW to salvage listed plants that would otherwise be destroyed.

¹ The CNPS rare plant ranking system can be found online at <<http://www.cnps.org/cnps/rareplants/ranking.php>>

CNPS is a non-governmental conservation organization that has developed a list of plants of special concern in California. The following explains the designations for each plant species (CNPS 2020).

- Rare Plant Rank 1A – Plants Presumed Extirpated in California and Either Rare or Extinct Elsewhere
- Rare Plant Rank 1B – Plants Rare, Threatened, or Endangered in California and Elsewhere
- Rare Plant Rank 2A – Plants Presumed Extirpated in California, but Common Elsewhere
- Rare Plant Rank 2B – Plants Rare, Threatened, or Endangered in California, but More Common Elsewhere
- Rare Plant Rank 3 – Plants About Which More Information is Needed- A Review List
- Rare Plant Rank 4 – Plants of Limited Distribution – A Watch List

Although the CNPS is not a regulatory agency and plants on these lists have no formal regulatory protection, plants with a CRPR of 1A, 1B, 2A, and 2B are be considered to meet the definition of endangered, rare, or threatened species under Section 15380(d) of CEQA (see above) and impacts to these species may be considered “significant.”

Waters of the State

Any action requiring a CWA Section 404 permit, or a Rivers and Harbors Act Section 10 permit, must also obtain a CWA Section 401 Water Quality Certification. The State of California Water Quality Certification (WQC) Program was formally initiated by the State Water Resources Control Board (SWRCB) in 1990 under the requirements stipulated by section 401 of the Federal CWA. Although the Clean Water Act is a Federal law, Section 401 of the CWA recognizes that states have the primary authority and responsibility for setting water quality standards. In California, under Section 401, the State and Regional Water Boards are the authorities that certify that issuance of a federal license or permit does not violate California’s water quality standards (i.e., that they do not violate Porter-Cologne and the Water Code). The WQC Program currently issues the WQC for discharges requiring USACE permits for fill and dredge discharges within waters of the U.S., and now also implements the State's wetland protection and hydromodification regulation program under the Porter Cologne Water Quality Control Act.

On April 2, 2019, the SWRCB adopted a State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State (Procedures), for inclusion in the forthcoming Water Quality Control Plan for Inland Surface Waters and Enclosed Bays and Estuaries and Ocean Waters of California. The Procedures consist of four major elements: 1) a wetland definition; 2) a framework for determining if a feature that meets the wetland definition is a water of the state; 3) wetland delineation procedures; and, 4) procedures for the submittal, review and approval of applications for Water Quality Certifications and Waste Discharge Requirements for dredge or fill activities. The Office of administrative Law approved the Procedures on August 28, 2019, and the Procedures become effective May 28, 2020. The SWRCB circulated final implementation Guidance on the Procedures in April 2020.

Under the Procedures and the State Water Code (Water Code §13050(e)), “Waters of the State” are defined as “any surface water or groundwater, including saline waters, within the boundaries of the state.” Unless excluded by the Procedures, any activity that could result in discharge of dredged or fill

material to Waters of the State, which includes Waters of the U.S. and non-federal Waters of the State, requires filing of an application under the Procedures.

The Porter-Cologne Water Quality Control Act (Porter-Cologne Act, Water Code Section 13000 et seq.) is California’s statutory authority for the protection of water quality in conjunction with the federal CWA. The Porter-Cologne Act requires the SWRCB and RWQCBs under the CWA to adopt and periodically update water quality control plans, or basin plans. Basin plans are plans in which beneficial uses, water quality objectives, and implementation programs are established for each of the nine regions in California. The Porter-Cologne Act also requires dischargers of pollutants or dredged or fill material to notify the RWQCBs of such activities by filing Reports of Waste Discharge and authorizes the SWRCB and RWQCBs to issue and enforce waste discharge requirements, NPDES permits, Section 401 water quality certifications, or other approvals.

California Fish and Game Code Section 1600

Under the California Fish and Game Code, the CDFW provides protection from “take” for a variety of species. The CDFW also protects streams, water bodies, and riparian corridors through the Streambed Alteration Agreement process under Section 1601 to 1606 of the California Fish and Game Code. The California Fish and Game Code stipulates that it is “unlawful to substantially divert or obstruct the natural flow or substantially change the bed, channel or bank of any river, stream or lake” without notifying the CDFW, incorporating necessary mitigation, and obtaining a Streambed Alteration Agreement. CDFW’s jurisdiction extends to the top of banks and often includes the outer edge of riparian vegetation canopy cover. Impacts to riparian vegetation are regulated through the Lake and Streambed Alteration program. Preliminary notification and project review generally occur during the environmental process. When an existing fish or wildlife resource may be substantially adversely affected, CDFW is required to propose reasonable project changes to protect the resource.

Magnuson-Stevens Fishery Conservation and Management Act

The Magnuson-Stevens Fishery Conservation and Management Act (MSA) establishes a management system for national marine and estuarine fishery resources. The Act applies to Pacific salmon, groundfish, and several pelagic species found in the Pacific Ocean and San Francisco Bay and Delta and pertains to Federal Agencies that carry out projects with the potential to affect Essential Fish Habitat (EFH). Essential fish habitat is defined as those waters and substrate necessary for fish spawning, breeding, feeding, or growth to maturity. For the purposes of interpreting the definition of EFH, “waters” include aquatic areas and their associated physical, chemical, and biological properties that are used by fish, and may include areas historically used by fish where appropriate; “substrate” includes sediment, hard bottom, structures underlying the waters, and associated biological communities; “necessary” means habitat required to support a sustainable fishery and a healthy ecosystem; and “spawning, breeding, feeding, or growth to maturity” covers a species’ full life cycle.

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act (Porter-Cologne Act, Water Code Section 13000 et seq.) is California’s statutory authority for the protection of water quality in conjunction with the federal CWA. The Porter-Cologne Act requires the SWRCB and RWQCBs under the CWA to adopt and periodically update water quality control plans, or basin plans. Basin plans are plans in which beneficial uses, water quality objectives, and implementation programs are established for each of the nine regions in California. The Porter-Cologne Act also requires dischargers of pollutants or dredged or fill material to

notify the RWQCBs of such activities by filing Reports of Waste Discharge and authorizes the SWRCB and RWQCBs to issue and enforce waste discharge requirements, NPDES permits, Section 401 water quality certifications, or other approvals. Projects that do not require a federal permit may still require review and approval by the RWQCB. The RWQCB focuses on ensuring that projects do not adversely affect the “beneficial uses” associated with waters of the State. In most cases, the RWQCB requires the integration of water quality control measures into projects that will require discharge into waters of the State. For most construction projects, the RWQCB requires the use of construction and post-construction best management practices.

Regional and Local Regulations

Tuolumne County Ordinance Code Chapter 9.24 (Removal of Native Oak Trees)

Chapter 9.24 of the Tuolumne County Ordinance Code (Ord. 2903 §1), titled *Premature Removal of Native Oak Trees*, was established in 2008 to discourage the premature removal of oak resources within Tuolumne County.

Oak woodland is defined within the ordinance as a stand of native vegetation containing predominately California native oak species where the oak woodland canopy cover is 10 percent or greater in accordance with the California Board of Forestry and Fire Protection’s definition that encompasses a minimum area of two acres. To achieve a 10 percent oak woodland canopy cover, the native vegetation stand must consist of two or more California native oak trees 5-inches or larger dbh and spaced less than 170-feet apart. The 10 percent oak woodland canopy cover applies to the individual stand of vegetation and not to the project site; consequently, the project site may have one or more oak woodlands on it.

The removal of native oak trees meeting on or more of the criteria listed below from a project site within the five 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 of oak trees:

- Removal of native oak trees resulting in a 10 percent or more average decrease in native oak canopy cover within an oak woodland;
- Removal of any old growth oak trees (any native oak that is 24-inches or greater dbh);
- Removal of any valley oak measuring 5-inches or greater dbh.

The following activities are exempt from the provisions of the ordinance:

- Removal of native oak trees as part of a construction project for which a ministerial permit, such as a building permit, or a discretionary entitlement, such as a tentative parcel map, has been issued or approved by the County of Tuolumne;
- Removal of native oak trees as part of a construction project for which a permit has been issued by a state agency, such as Caltrans or the Department of Fish and Game;
- Removal of native oak trees in conjunction with a timber harvest plan or other plan approved by the California Department of Forestry and Fire Protection;

- Removal of native oak trees for health and safety reasons, including, but not limited to, preventing interference with utility lines or eliminating the risk of a diseased or dying tree falling, subject to approval of the Community Development Department;
- Removal of native oak trees in conjunction with a fire hazard reduction plan that has been approved by the fire prevention bureau and the Community Development Department or that is consistent with the State of California’s standards for fuel reduction around structures;
- Removal of native oak trees on land within an agricultural zoning district for the purpose of producing or processing plant or animal products for commercial purposes;
- Silvicultural treatment to enhance the vitality of the oak woodland in accordance with a plan prepared by a qualified consultant or as otherwise approved by the California Department of Fish and Game.

The ordinance states that the loss of native oak trees or oak canopy due to premature removal shall be mitigated. The Community Development Department may require an inventory of prematurely removed stems or canopy cover to determine the extent of the loss. The inventory shall be prepared by a resource professional with expertise in oak woodlands ecology who is on the list of qualified consultants maintained by the Community Development Department. Resource professionals may include botanists, ecologists, wildlife biologists and foresters. The mitigation shall be in accordance with the measures provided in the Tuolumne County Wildlife Handbook or those recommended by a qualified professional. The property owner shall be responsible for any maintenance, monitoring, or reporting related to the required mitigation. The property owner shall be prohibited from obtaining any permit or entitlement under any provision of this code for the project site until the required mitigation for the premature removal of native oak trees has been implemented or a security agreement has been executed and a financial assurance submitted in accordance with Section 9.24.060 to guarantee the mitigation will be implemented.

Tuolumne County General Plan

Biological Resources are addressed within the *Noise Element, Conservation and Open Space Element, Natural Resources Element, and Natural Hazards Element* of the General Plan (Tuolumne County 2018).

The *Noise Element* contains the following goals, policies, and implementation programs that address biological resources within the County:

- **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 Tables 5.A, 5.B or 5.D. Potential noise effects on any adjacent sensitive wildlife habitat and associated special-status wildlife species should also be considered and minimized, as needed.

The *Natural Resources Element* contains the following goals, policies, and implementation programs that address biological resources within the County:

- **Goal 16A:** Balance property rights with the conservation of the environment and rural character of the County, which contributes to the quality of life of residents, encourages tourism and supports economic development.
 - **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.
- **Goal 16B:** Support the diversity and quality of biological resources while balancing the needs of public use and private property rights.
 - **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.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.

- **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 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; 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).
 - Sensitive natural communities, including wetlands under Federal 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 Program 16.B.j.
- **Implementation Program 16.B.j:** Establish thresholds of significance under 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 the California Environmental Quality Act and Public Resources Code Section 21083.4.
 - An oak woodland is defined in the General Plan as a woodland stand with 10 percent or greater native oak canopy cover. Tree removal from parcels with less than 10 percent native oak canopy cover is not considered a significant conversion or loss of oak woodland.
 - For parcels with 10 percent 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 percent (i.e., conversion to non-oak woodland), or a loss of 10 percent 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.

- **Policy 16.B.7:** Encourage development in identified communities to minimize impacts to biological resources.
 - **Implementation Program 16.B.i:** 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 to minimize impacts to biological resources.
 - **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.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.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 CEQA.
 - **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.
- **Goal 16C:** Support efforts to conserve biological resources.
 - **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.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.

The *Natural Hazards Element* contains the following goals, policies, and implementation programs that address biological resources within the County:

- **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.
- **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.

4.3.2 Methodology

Biological studies conducted in support of this EIR consisted of a special-status species evaluation, which included a desktop review and database searches to identify known biological resources in Tuolumne County and vicinity with potential to occur within the program footprint of the proposed broadband infrastructure.

For the purposes of this EIR, special-status species are defined as those that fall into one or more of the following categories, including those:

- listed as endangered or threatened under Federal Endangered Species Act (FESA; including candidates and species proposed for listing);
- listed as endangered or threatened under CESA (including candidates and species proposed for listing);
- designated as rare, protected, or fully protected pursuant to California Fish and Game Code;
- designated a SSC by CDFW;
- considered by CDFW to be a Watch List species with potential to become a SSC;
- defined as rare or endangered under Section 15380 of CEQA; or,
- Having a CNPS designated CRPR of 1A, 1B, 2A, or 2B.

In order to evaluate special-status species and/or their habitats with the potential to occur in Tuolumne County and/or be impacted by the proposed program, HELIX obtained lists of regionally occurring special-status species from the following information sources:

- California Department of Fish and Wildlife. 2023. *California Natural Diversity Database*; For: *Tuolumne County*. Accessed October 9, 2023;

- California Native Plant Society. 2023. *Inventory of Rare and Endangered Plants* (online edition, v8-03 0.39) For: *Tuolumne County*. Accessed October 9, 2023; and,
- U.S. Fish and Wildlife Service (USFWS). 2023a. *Information for Planning and Consultation (IPaC) List of threatened and endangered species that may occur in Tuolumne County*. Accessed October 9, 2023.
- National Marine Fisheries Service (NMFS). 2023. *Essential Fish Habitat Mapper*. Accessed October 9, 2023

Appendix D includes these lists of special-status plant and animal species occurring in the program region, along with the potential for these regionally occurring special status species to occur in the County.

HELIX also reviewed the following sources for published information pertinent to biological resources within the County:

- Mayer, K.E. and W.F. Laudenslayer. 1988. *A Guide to Wildlife Habitats of California*. State of California, Resources Agency, Department of Fish and Game, Sacramento, CA 166pp.
- USFWS. 2023b. *National Wetland Inventory online wetland mapper*. Accessed October 9, 2023;
- U.S. Department of Agriculture (USDA), Forest Service (USFS). 2014. *Existing Vegetation (Eveg) – Classification and Assessment with LANDSAT of Visible Ecological Groupings (CALVEG) Region 5, Zones 4 (South Sierra) and 5 (Central Valley)*.
- USDA, Natural Resources Conservation Service (NRCS). 2023. *Web Soil Survey*. Available online at: <http://websoilsurvey.sc.egov.usda.gov>. Accessed October 9, 2023;

4.3.3 Environmental Setting

As previously described in Section 3.4, the proposed broadband infrastructure would typically be in previously disturbed and/or developed areas (e.g., in ROW or public utility easements). However, given that the exact alignment of the future broadband infrastructure is currently unknown, the entirety of Tuolumne County was conservatively treated as the program study area as it relates to biological resources. The County includes a wide variety of terrestrial and aquatic habitats that support many common and special-status plant and wildlife species. From its lower elevation, at approximately 300 feet above mean sea level (amsl), the County extends from the Sierra Nevada foothills to the high Sierra Nevada, with its highest peak within the County, Mount Lyell, at approximately 13,100 feet amsl. Land uses vary throughout the County and include uses such as agriculture, timber harvest, mining, residential, commercial, industrial, open space, and public lands.

Biological Communities

Biological community mapping provided in **Figure 4.3-1** for the County is sourced from the Existing Vegetation (Eveg) data associated with the Classification and Assessment with LANDSAT of Visible Ecology Groupings (CALVEG) Zones 4 (South Sierra) and 5 (Central Valley) (USFS 2014). The CALVEG habitat classification system correlates to other classification systems, such as the California Wildlife Habitat Relationships System (CWHR), which is described in detail in the CWHR publication *A Guide to*

Wildlife Habitats of California (Mayer and Laudenslayer 1988). Biological communities within the County broadly include aquatic, herbaceous, shrub, and forest and woodland habitats, as well as developed and non-vegetated lands. These broadly classified communities are further expanded into 35 CWHR habitat types within the County, which are displayed in **Figure 4.3-1** and **Table 4.3-1**. **Table 4.3-1** also provides acreages of each habitat type mapped within the County.

4.3.3.1 Sensitive Biological Resources

Special-Status Species

According to the database queries, a total of 93 regionally occurring special-status plant species and 53 special-status wildlife species are either known to occur or have the potential to occur in Tuolumne County and vicinity. Based on published information and literature review, 139 of the 141 species have potential to occur within Tuolumne County. Further details on these species are included in Appendix D.

Within Tuolumne County, USFWS has mapped eight designated critical habitats, which includes proposed critical habitat for fisher (*Pekania pennanti*) and final critical habitat for Colusa grass (*Neostapfia colusana*), fleshy owl's-clover (*Castilleja campestris* ssp. *succulenta*), Greene's tuctoria (*Tuctora greenei*), Hoover's spurge (*Euphorbia [=Chamaesyce] hooveri*), Sierra Nevada bighorn sheep (*Ovis canadensis sierrae*), Sierra Nevada yellow-legged frog (*Rana sierrae*), and Yosemite toad (*Anaxyrus canorus*).

Additionally, NMFS Essential Fish Habitat (EFH) Mapper has EFH for chinook salmon (*Onchorhynchus tshawytscha*) mapped within Tuolumne County in the Upper Stanislaus watershed (HUC8-18040010) below Goodwin Dam. The NMFS EFH Mapper also indicated the Upper Tuolumne watershed (HUC8-18040009) as EFH for chinook salmon, however it indicates that the EFH is below La Grange Dam, which is outside and downstream of Tuolumne County.

Sensitive Natural Communities

Sensitive natural communities include those that are of special concern to resource agencies or those that are protected under CEQA, Section 1600 of the California Fish and Game Code (i.e., riparian areas), the Porter-Cologne Act, and/or Sections 401 and 404 of the Clean Water Act, which includes wetlands and other waters of the U.S. and State.

Sensitive natural communities, such as wetlands and other waters of the U.S. and State, are present within the Tuolumne County and have potential of being within the footprint of the proposed broadband infrastructure given the numerous stream crossings present along County ROWs. Other sensitive natural communities within the County may include riparian areas and other terrestrial habitats deemed sensitive by CDFW.

Table 4.3-1
BIOLOGICAL COMMUNITIES IN THE TUOLUMNE COUNTY

Habitat Type ¹	Acres in Tuolumne County ²
Developed and Non-Vegetated Habitats	
Barren	146,816
Cropland	645
Deciduous Orchard	15
Urban	2,779

Habitat Type ¹	Acres in Tuolumne County ²
Aquatic Habitats	
Fresh Emergent Wetland	19
Lacustrine	31,110
Riverine	791
Wet Meadow	14,293
Herbaceous Habitats	
Annual Grassland	112,661
Perennial Grassland	32,420
Shrub Habitats	
Alpine Dwarf-Shrub	4,471
Low Sage	7
Mixed Chaparral	83,943
Montane Chaparral	101,456
Sagebrush	3,107
Chamise-Redshank Chaparral	17,058
Forest and Woodland Habitats	
Aspen	1,920
Blue Oak Woodland	68,202
Blue Oak-Foothill Pine	14,185
Closed-Cone Pine-Cypress	24
Douglas Fir	506
Eastside Pine	3
Jeffrey Pine	40,756
Juniper	17,784
Lodgepole Pine	45,437
Montane Hardwood	123,299
Montane Hardwood-Conifer	33,753
Montane Riparian	12,190
Pinyon-Juniper	76
Ponderosa Pine	66,605
Red Fir	88,859
Sierran Mixed Conifer	276,634
Subalpine Conifer	101,681
Valley Oak Woodland	372
White Fir	11,615

¹ Habitat type classification is based on the CDFW CWHR (Mayer and Laudenslayer 1988).

² Acreage values are rounded to the nearest whole number.

Wildlife Movement Corridors

Wildlife corridors link areas of suitable wildlife habitat that are otherwise separated by rugged terrain, changes in vegetation, or human disturbance. This fragmentation of habitat can also occur when a portion of one or more habitats is converted into another habitat; for instance, when woodland or scrub habitat is altered or converted into grasslands after a disturbance such as fire, mudslide, or construction activities. Wildlife corridors mitigate the effects of this fragmentation by: (1) allowing animals to move between remaining habitats thereby permitting depleted populations to be replenished and promoting genetic exchange; (2) providing escape routes from fire, predators, and human disturbances, thus reducing the risk of catastrophic events (such as fire or disease) on population or local species

extinction; and, (3) serving as travel routes for individual animals as they move within their home ranges in search of food, water, mates, and other needs.

Some areas along the northern and southwestern boundary of the County are mapped as Essential Connectivity Areas (ECA) by the California Essential Habitat Connectivity Project. Other wildlife movement corridors are likely present throughout the program area, such as riparian areas, drainages, or contiguous vegetated areas; however, these potential corridors will need to be evaluated on a site-specific level to determine the presence or absence within the project footprint.

4.3.4 Significance Thresholds

The thresholds for determining significance under CEQA are based on Appendix G of the CEQA Guidelines. In this analysis, the proposed program would have significant impacts on biological resources if it would:

1. 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 CDFW or USFWS.
2. Have a substantial adverse effect of any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by CDFW or USFWS.
3. Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.
4. 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.
5. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.
6. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State habitat conservation plan.

4.3.5 Impact Analysis

BIO-1 The proposed project may result in a substantial adverse effect, either directly or through habitat modifications, on species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service.

With the programmatic nature of this EIR, a precise, project-level analysis of the specific effects of individual fiber projects on special-status species is not possible at this time; the analysis is maintained at the County level. As individual fiber projects would be located within previously disturbed and/or developed areas (e.g., in ROW or public utility easement), it is unlikely that the proposed Countywide program would result in a substantial adverse effect on special-status species or their associated habitats, including USFWS designated critical habitats and/or NMFS essential fish habitat. However, individual fiber projects would be required to prepare a biological resources assessment (BRA) that

would assess impacts to special-status species on the individual project site, as outlined in Mitigation Measure BIO-1. With implementation of the recommended mitigation and/or avoidance measures included in the project-specific BRA to be prepared as required by Mitigation Measure BIO-1 below, impacts to special-status species would be less than significant.

Significance without Mitigation: Potentially significant impact.

Mitigation Measure BIO-1: Prepare a Site-Specific Biological Resources Assessment

Prior to project approval, the project applicant shall retain a qualified biologist to prepare a site-specific biological resources assessment (BRA). The BRA shall consist of a desktop review of relevant biological databases and online resources, a general biological reconnaissance survey, vegetation mapping, aquatic resources assessment, analysis of potential impacts to biological resources, and proposed measures to reduce and/or avoid potential impacts.

If it is determined during the biological resources assessment that special-status species have the potential to occur within a project area, then project-specific mitigation measures should be recommended to reduce and/or avoid potential impacts. Potential measures for special-status species may include, but are not limited to, protocol-level surveys, nesting bird surveys, and other focused pre-construction surveys.

If it is determined that special-status species are present within or adjacent to the project area, or if the project has potential to impact USFWS designated critical habitat and/or NMFS essential fish habitat, then the project proponent shall coordinate with CDFW and/or USFWS, as necessary, to determine mitigation and/or avoidance measures to reduce potential impacts to a level that would be less than significant. Depending on site-specific conditions, agency involvement may be triggered through the regulatory permitting process or direct agency consultation.

Significance with Mitigation: Less than significant impact.

BIO-2 The proposed project may result in a substantial adverse effect on a sensitive natural community.

Sensitive natural communities may include, but are not limited to, aquatic resources under Federal and/or State jurisdiction, riparian habitats, and oak woodlands. It is anticipated that individual fiber projects would be primarily located within previously disturbed and/or developed areas (e.g., in ROW or public utility easement), and it is unlikely that the proposed Countywide program would result in a substantial adverse effect on sensitive natural communities. However, if sensitive natural communities would be impacted by project implementation, then the impact would be potentially significant. With the implementation of Mitigation Measure BIO-2, potential impacts to jurisdictional waters, wetlands, and/or sensitive natural communities that may occur within the program area would be reduced to less than significant. With the implementation of Mitigation Measure BIO-3, potential impacts to oak resources that may occur within the program area would be reduced to less than significant.

Significance without Mitigation: Potentially significant impact.

Mitigation Measure BIO-2: Jurisdictional Delineation and Regulatory Permitting

If it is determined that impacts to jurisdictional waters or other sensitive natural communities cannot be avoided, then the project proponent shall apply for any necessary permits from the USACE, CDFW, and the RWQCB (e.g., Section 401/404 permits, CDFW Lake or Streambed Alteration Agreement, etc.). If necessary, a formal delineation of wetlands and “other waters” of the U.S. shall be prepared in accordance with the U.S. Army Corps of Engineers’ (USACE) *Corps of Engineers Wetlands Delineation Manual* and appropriate regional supplements to determine the extent of aquatic resources and quantify impacts. Impacts to jurisdictional waters and/or sensitive natural habitat shall be mitigated in accordance with agency requirements.

Mitigation Measure BIO-3: Oak Resources Inventory

If it is determined during the biological resources assessment that a project will result in impacts to oak resources, then the County may require mitigation for impacts to oak resources or regulated individual oak trees. Prior to project approval, the Community Development Department may require an inventory of prematurely removed trees or canopy cover to determine the extent of the loss. The inventory shall be prepared by a resource professional with expertise in oak woodlands ecology who is on the list of qualified consultants maintained by the Community Development Department. Resource professionals may include botanists, ecologists, wildlife biologists, and foresters.

Significance with Mitigation: Less than significant impact.

BIO-3 The proposed project may result in a substantial adverse effect on State or federally protected wetlands (including, but not limited to marsh, vernal pool, coastal, etc.) or other waters of the U.S. or State through direct removal, filling, hydrological interruption, or other means.

Potential impacts to State or federally protected wetlands or other waters of the U.S. or State are currently unknown given the programmatic nature of this EIR. As individual fiber projects would be located within previously disturbed and/or developed areas (e.g., in ROW or public utility easement), it is unlikely that the proposed Countywide program would result in a substantial adverse effect on state or federally protected aquatic resources. However, potential impacts to state or federally protected aquatic resources would be addressed by avoidance and/or mitigation measures stipulated by regulatory permits as required by Mitigation Measure BIO-2.

Significance without Mitigation: Potentially significant impact.

See Impact BIO-2 for Mitigation Measure BIO-2.

Significance with Mitigation: Less than significant impact.

BIO-4 The proposed project would not interfere substantially with the movement of native resident wildlife species or with established native resident or migratory wildlife corridors.

Some areas along the northern and southwestern boundary of the County are mapped as ECAs by the California Essential Habitat Connectivity Project. However, Tuolumne County is a rural county that currently provides extensive open, dispersal habitat for wildlife movement in the program area. Additionally, the Countywide broadband infrastructure program would install fiber optic conduit underground, aboveground on overhead pole lines, or a combination of both. Implementation of the

Countywide broadband infrastructure program is unlikely to substantially interfere with the movement of wildlife corridors, however, potential impacts to the movement of native resident wildlife species or wildlife corridors would be addressed in the project-specific BRA to be prepared as required by Mitigation Measure BIO-1.

Significance without Mitigation: Potentially significant impact.

See Impact BIO-1 for Mitigation Measure BIO-1.

Significance without Mitigation: Less than significant impact.

BIO-5 The proposed project would not conflict with local policies or ordinances protecting biological resources.

As discussed in Impact BIO-2, if it is determined during the biological resources assessment that a project will result in impacts to oak resources, then the County may require mitigation for impacts to oak resources or regulated individual oak trees. While some individual oak trees could be damaged by projected development under the Countywide program, the scope of premature removals cannot be anticipated based on the programmatic level of analysis of this EIR. As noted in Mitigation Measure BIO-3 above, individual fiber projects that would result in impacts to oak resources may be required to conduct an oak tree inventory to determine if mitigation is needed. With the implementation of Mitigation Measure BIO-1 and Mitigation Measure BIO-3, the impact would be less than significant.

The proposed project would not conflict with any other local policies or ordinances protecting biological resources.

Significance without Mitigation: Potentially significant impact.

See Impact BIO-1 for Mitigation Measure BIO-1 and see Impact BIO-2 for Mitigation Measure BIO-3.

Significance without Mitigation: Less than significant impact.

BIO-6 The proposed project 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.

No Habitat Conservation Plan (HCP), Natural Community Conservation Plan, or other local, regional, or State habitat conservation plan has been adopted or approved in Tuolumne County. Therefore, the Countywide program would not conflict with any provisions of an adopted HCP. No impact would occur.

Significance without Mitigation: No impact.

4.3.6 Cumulative Impacts

BIO-7 The proposed project would not result in a significant cumulative impact with respect to biological resources.

Cumulative impacts would occur when the proposed project, in combination with other projects in Tuolumne County, would directly or indirectly result in an adverse impact(s) to a special-status species,

on a sensitive natural community, to jurisdictional aquatic resources, wildlife movement corridors and nursery sites, or conflict with local policies/ordinances protecting biological resources or an HCP/NCCP. Although impacts to biological resources are site specific, project specific impacts contribute to a continued loss of biological resources throughout the range of the species or other biological resource being impacted. The cumulative context for biological resources is based on projects located within Tuolumne County that would impact vegetation communities and species similar to those impacted by the proposed program.

The proposed broadband infrastructure program is anticipated to be within previously disturbed and/or developed areas (e.g., in ROW or public utility easements). However, given that the exact alignment of the future broadband infrastructure is currently unknown, there is the potential that some of the locations for future program components may support sensitive biological resources. In general, a project's potential impacts related to sensitive biological resources depend on the specific project site and whether it supports sensitive natural communities, special-status species, and/or aquatic resources. As discussed above, the proposed program would have potential impacts to special-status species, sensitive natural communities, or State or federally protected aquatic resources and/or conflict with local policies which would be reduced to less than significant levels by the implementation of Mitigation Measures BIO-1 through BIO-3. Several cumulative projects are proposed and/or pending within Tuolumne County. Most of the cumulative projects included in this analysis are residential and commercial development projects, including resorts and residential developments of varying densities.

The projects listed as part of this cumulative analysis would also be subject to CEQA review and would be required to comply with any mitigation measures identified as necessary to reduce potential impacts to biological resources. Therefore, the program is not expected to make a cumulatively considerable contribution to losses of sensitive biological resources in Tuolumne County.

Significance without Mitigation: Potentially significant impact.

See Impact BIO-1 for Mitigation Measure BIO-1 and see Impact BIO-2 for Mitigation Measure BIO-2 and Mitigation Measure BIO-3. These mitigation measures address potentially significant impacts identified in Impacts BIO-1 through BIO-5.

Significance with Mitigation: Less than significant impact.

4.3.7 References

California Department of Fish and Wildlife (CDFW). 2023. California Natural Diversity Database (CNDDB) RareFind 5. Accessed October 9, 2023.

California Native Plant Society (CNPS). 2023. Inventory of Rare and Endangered Plants (online edition, v8-03 0.39). Website <http://www.rareplants.cnps.org>. Accessed October 9, 2023.

Mayer, K.E. and W.F. Laudenslayer. 1988. A Guide to Wildlife Habitats of California. State of California, Resources Agency, Department of Fish and Game, Sacramento, CA 166pp.

National Marine Fisheries Service (NMFS). 2023. Essential Fish Habitat Mapper. Accessed October 9, 2023.

U.S. Department of Agriculture (USDA), Forest Service (USFS). 2014. Existing Vegetation (Eveg) – Classification and Assessment with LANDSAT of Visible Ecological Groupings (CALVEG) Region 5, Zones 4 (South Sierra) and 5 (Central California).

USDA, Natural Resources Conservation Service (NRCS). 2023. *Web Soil Survey*. Available online at: <http://websoilsurvey.sc.egov.usda.gov>. Accessed October 9, 2023;

U.S. Fish and Wildlife Service (USFWS). 2023. Information for Planning and Consultation (IPaC) Trust Resource Report. Generated October 9, 2023 at <https://ecos.fws.gov/ipac/>.

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4.4 Cultural Resources

This section describes the regulatory framework and existing conditions related to cultural resources, evaluates the potential impacts that could occur as a result of implementation of the proposed Countywide program, and details mitigation measures needed to reduce significant impacts, as necessary.

4.4.1 Environmental Setting

4.4.1.1 Regulatory Framework

State Regulations

Assembly Bill 52

Assembly Bill (AB) 52 adds consultation with Native American tribes to the approval process for all projects requiring discretionary permits and subject to CEQA (see below). Tribes inform local agencies that they wish to be informed of proposed actions, and agencies are required to consult with those tribes before taking actions that may affect tribal cultural resources.

California Environmental Quality Act of 1970

CEQA Guidelines establishes a process for the issuing of discretionary permits by all California public agencies. The process includes full public disclosure and analysis of a project's potential effects on the human environment, open public comment period(s), and written responses by agencies to public comments. CEQA also requires agencies to consider project alternatives that reduce environmental impacts, and to ensure that environmental impacts are fully mitigated if mitigation is practicable. The human environment considered under CEQA includes agriculture, air quality, biological resources, geology and soils, greenhouse gases, hazards, historical and archaeological resources, land use and planning policies, mineral resources, noise, paleontological resources, population growth and housing, public services, recreation, traffic, tribal cultural resources, water quality, utilities, and visual resources.

Historical and archaeological resources are afforded consideration and protection by CEQA (14 CCR Section 21083.2, 14 CCR Section 15064). The CEQA Guidelines define significant cultural resources under two regulatory designations: historical resources and unique archaeological resources. An historical resource is defined as a "resource listed in, or determined to be eligible by the State Historical Resources Commission, for listing in the California Register for Historic Resources (CRHR)"; or "a resource listed in a local register of historical resources or identified as significant in a historical resource survey meeting the requirements of Section 5024.1(g) of the [PRC]"; or "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, provided the agency's determination is supported by substantial evidence in light of the whole record" (14 CCR Section 15064.5[a][3]). Historical resources that are automatically listed in the California Register of Historic Resources (CRHR) include California historical resources listed in or formally determined eligible for the National Register of Historic Places (NRHP) and California Registered Historical Landmarks from No. 770 onward (PRC 5024.1[d]). Locally listed resources are entitled to a presumption of significance unless a preponderance of evidence in the record indicates otherwise.

Under CEQA, a resource is generally considered historically significant if it meets the criteria for listing in the CRHR. A resource must meet at least one of the following four criteria (PRC 5024.1; 14 CCR Section 15064.5[a][3]):

- Is associated with events that have made a significant contribution to the broad patterns of California’s history and cultural heritage. Title 14, CCR Section 4852(b)(1) adds “is associated with events that have made a significant contribution to the broad patterns of local or regional history, or the cultural heritage of California or the United States.”
- Is associated with the lives of persons important in our past. Title 14, CCR Section 4852(b)(2) adds, “is associated with the lives of persons important to local, California, or national history.”
- Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values. Title 14, CCR 4852(b)(3) allows a resource to be CRHR eligible if it represents the work of a master.
- Has yielded, or may be likely to yield, information important in prehistory or history. Title 14, CCR 4852(b)(4) specifies that importance in prehistory or history can be defined at the scale of “the local area, California, or the nation.”

Historical resources must also possess integrity of location, design, setting, materials, workmanship, feeling, and association (14 CCR 4852[c]).

An archaeological artifact, object, or site can meet CEQA’s definition of a unique archaeological resource, even if it does not qualify as a historical resource (14 CCR 15064.5[c][3]). An archaeological artifact, object, or site is considered a unique archaeological resource if “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 (PRC 21083.2[g]):

- Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information.
- Has a special and particular quality such as being the oldest of its type or the best available example of its type.
- Is directly associated with a scientifically recognized important prehistoric or historic event or person.”

Within California state law, cultural resources are defined as buildings, sites, structures, or objects, each of which may have historical, architectural, archaeological, cultural, and/or scientific importance. All resources nominated for listing in the CRHR must have integrity; the authenticity of a historical resource’s physical identity evidenced by the survival of characteristics that existed during the resource’s period of significance. Therefore, resources must retain enough of their historical character or appearance to convey the reasons for their significance. Integrity is evaluated with regard to the retention of location, design, setting, materials, workmanship, feeling, and/or association. It must also be judged with reference to the particular criteria under which a resource is proposed for nomination (Calif. PRC § 5024.1).

CEQA Guidelines, California Code of Regulations Title 14, Section 15064.5

When an initial study identifies the existence of, or the probable likelihood of, Native American human remains within the project, a lead agency shall work with the appropriate Native Americans as identified by the Native American Heritage Commission (NAHC). A project proponent may develop an agreement for treating or disposing of, with appropriate dignity, the human remains and any items associated with Native American burials with the appropriate Native Americans identified as the most likely descendant by the NAHC.

Discoveries of Human Remains under California Environmental Quality Act Public Law

California law sets forth special rules that apply where human remains are encountered during project construction. These rules are set forth in one place in CEQA Guidelines, Section 15064.5[e] as follows:

In the event of the accidental discovery or recognition of any human remains in any location other than a dedicated cemetery, the following steps should be taken:

- a) There shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent human remains until:
 - i) The coroner of the county in which the remains are discovered must be contacted to determine that no investigation of the cause of death is required (as required under California Health and Safety Code Section 7050.5).
 - ii) If the coroner determines the remains to be Native American:
 - (1) The coroner shall contact the NAHC within 24 hours.
 - (2) The NAHC shall identify the person or persons it believes to be the most likely descended from the deceased Native American.
 - (3) The most likely descendent may make recommendations to the landowner or the person responsible for the excavation work, for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods (as provided in [PRC] Section 5097.98), or
- b) Where the following conditions occur, the landowner or his authorized representative shall rebury the Native American human remains and associated grave goods with appropriate dignity on the property in a location not subject to further subsurface disturbance.
 - i) The [NAHC] is unable to identify a most likely descendent or the most likely descendent failed to make a recommendation within 24 hours after being notified by the commission.
 - ii) The descendant identified fails to make a recommendation; or
 - iii) The landowner or his authorized representative rejects the recommendation of the descendant, and the mediation by the NAHC fails to provide measures acceptable to the landowner.

Public Resources Code §5024 et seq.

PRC Section 5024 requires that each state agency develop policies for the preservation and maintenance of all state-owned historical resources under its jurisdiction listed in, or potentially eligible for, inclusion in the NRHP; or registered or eligible for registration as a state historical landmark. Each state agency is required to submit updates to their inventory of all state-owned structures over 50 years of age under its jurisdiction listed in or which may be eligible for inclusion in the NRHP or registered or which may be eligible for registration as a state historical landmark. These inventories are used to create a master list maintained by the California Office of Historic Preservation (OHP). The State Historic Preservation Officer (SHPO) is supposed to be consulted by state agencies if any action would alter or affect any resources on this master list (PRC Section 5024.1). Additionally, Section 5024.1 establishes the CRHR as an authoritative guide for identifying which cultural resources are to be protected, to the extent prudent and feasible, from substantial adverse change. The CRHR eligibility criteria provide one of the bases for determining a cultural resource to be significant under CEQA.

Public Resources Code §5097.9 et seq.

PRC Section 5097.9 establishes that both public agencies and private entities using, occupying, or operating on state property under public permit, shall not interfere with the free expression or exercise of Native American religion and shall not cause severe or irreparable damage to Native American sacred sites, except under special, determined circumstances of public interest and necessity. This section also creates the Governor-appointed nine-member NAHC, charged with identifying and cataloging places of special religious or social significance to Native Americans, identifying and cataloging known graves and cemeteries on private lands, and performing other duties regarding the preservation and accessibility of sacred sites and burials and the disposition of Native American human remains and burial items.

Under PRC Section 5097.5, all state and local agencies must cooperate with the NAHC by providing copies of appropriate sections of all CEQA environmental impact reports relating to property of special significance to Native Americans. The NAHC is required to investigate the effect of proposed actions by a public agency if these actions may either cause severe or irreparable damage to a Native American sacred site located on state property or inhibit access to that site.

The NAHC is authorized to recommend mitigation measures if it finds, after a public hearing, that a proposed action would result in that damage or interference and to request action from the Attorney General if these mitigation measures are not addressed. This section also includes requirements for landowners to limit further development activity on property where Native American human remains are found until that landowner confers with NAHC-identified most likely descendants to consider treatment options. It further enables those descendants, within 48 hours of notification by the NAHC, to inspect the discovery site and recommend to the landowner or the person responsible for the excavation the means to treat or dispose of the human remains and any associate grave goods with dignity. In the absence of a most likely descendant, or of a treatment acceptable to all parties, the landowner is required to reinter the remains elsewhere on the property in a location that will not be disturbed. Finally, this section makes it a felony to remove Native American artifacts or human remains from a Native American grave or cairn, as well as to acquire, possess, sell, or dissect Native American remains, funerary objects, or artifacts from a Native American grave or cairn and establishes the repatriation of these remains, funerary objects, and associated grave artifacts as state policy (PRC Section 5097.9, *et seq.*).

California Health and Safety Code Section 8010-8011: California Native American Graves Protection and Repatriation Act (2001)

This section establishes a state policy that is partially consistent with the federal Native American Graves Protection and Repatriation Act (NAGPRA). It attempts to ensure that all Native American human remains and cultural items are treated with dignity and respect. It encourages the voluntary disclosure and return of remains and cultural items by publicly funded agencies and museums in California and requires that the state provide to tribes the mechanisms necessary to file and follow up with repatriation claims (California Health and Safety Code Section 8010 8011, *et seq.*).

California Senate Bill 18 (California Government Code, Section 65352.3)

Pursuant to Senate Bill 18, local governments are required to consult with California Native American tribes identified by the NAHC for the purpose of protecting and/or mitigating impacts to cultural places. Senate Bill 18 requires formal consultation with Native American tribes as part of a project that enacts or amends a general plan or a specific plan.

California Government Code Sections 65560 and 65562.5: Consultation with Native Americans on Open Space (2005)

This section identifies the protection of Native American cultural places as acceptable designations of open space. It further requires local governments to conduct meaningful consultation with California Native American tribes on the contact lists maintained by the NAHC for purposes of protecting cultural places located on open space (California Government Code Section 65560, 65562.5, *et seq.*).

Local Regulations**Tuolumne County General Plan**

Cultural resources are addressed within the *Cultural Resources Element* of the General Plan (County 2018).

The *Cultural Resources Element* contains the following goals, policies, and implementation programs that address cultural resources within the County:

- **Goal 13.A:** Identify incentives to strengthen the local economic base by providing and promoting a positive atmosphere for visitor, resident, business and industry activity compatible with an historic environment.
 - 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.
- **Goal 13B:** Encourage historic preservation by adopting a consistent and predictable environmental review process for evaluating impacts to 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 Program 13.B.e. 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: *Process for Cultural Resources Evaluation - Ministerial*, Figure 13.B: *Process for Cultural Resources Investigations for Discretionary Entitlements*, and Table 13.1: *Criteria for Conducting Cultural Resource Investigations*; 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.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.
- **Goal 13C:** Maintain Tuolumne County's cultural heritage, through the identification, management, preservation, use, enhancement, restoration and study of its cultural resources.
 - **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.c:** Upon completion of each cultural resource inventory, create a list of properties within Tuolumne County eligible for nomination to the NRHP 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.

4.4.1.2 Cultural Setting

Prehistoric and Historical Background

This section is adapted from the Tuolumne County General Plan Update EIR.

The County's Indigenous peoples, the Central Sierra Me-Wuks, arrived in the area between 2000 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 3500-4000 feet amsl). Summer brought movement into higher elevations, where seasonal camps were established convenient to summer gathering and hunting. Tuolumne County's lower elevations were used intensively for hunting and gathering, which is reflected by many thousands of temporary camps throughout the County. It is estimated that before 1849, there were 35 permanent or semi-permanent villages in the County, indicating that the County was a significant residential and resource procurement area for the Central Sierra Me-Wuk

Few pre-1849 accounts of historic excursions into Tuolumne County have survived. Gabreil Moraga and his fellow explorers are the earliest known non-native to venture into what would become 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 Tuolumne County's physical and cultural landscape.

Non-native 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 Native American refugees into their areas. Former traditions were completely disrupted, and settlement patterns were altered due to high mortality and the encroachment of white settlers on the land. Villages were abandoned or moved because of the decreased number of residents or because of forced removal by non-natives. 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 are artifacts dating from 1848 (Tuolumne County 2013). In the early 1850's, 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-1860's 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 populations decreased by nearly 50 percent.

From the late 1880's 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 for Tuolumne. 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 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.

4.4.2 Significance Thresholds

In accordance with Appendix G of the CEQA Guidelines, the proposed project would have a significant impact associated with cultural resources if the project would:

1. Cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5;
2. Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5; or,
3. Disturb any human remains, including those interred outside of formal cemeteries.

4.4.3 Impact Analysis

For the purposes of this analysis, three potential impact scenarios are presented. The first addresses built-environment cultural resources that meet the CEQA definition as historical resources; the second involves archaeological cultural resources that qualify as historical or unique archaeological resources under CEQA; the third comprises the accidental discovery of archaeological cultural resources during construction; and the fourth involves discovery of human remains during construction. Each impact scenario is addressed below.

CUL-1 The proposed project may cause a substantial adverse change in the significance of a built-environment cultural resource that qualifies as a historical resource pursuant to Section 15064.5.

The Countywide program may require the aerial installation of fiber optic line on utility poles in instances where constraints prevent the installation of subsurface conduit. The aerial installation of such fiber optic lines would entail the use of existing or newly constructed utility poles within existing County maintained road ROW, public utility easements, and/or overhead public utility easements of record throughout the County. Such an installation would introduce a new visual element to areas with concentrations of historical built environment cultural resources such as buildings and structures that comprise historic districts. Historic districts derive much of their significance from their ability to visually convey a sense of time and place from their architecture, street furniture, and streetscape corridor appearance.

The use of existing or newly constructed utility poles for the collocation of fiber optic cable would change the visual signature of the poles and their vicinity. However, these collocations and new installations would be relatively minor additions to existing utility corridors in the County already populated with other utility infrastructure, including in and near historic districts and historical resources. The installation of these fiber optic lines, as proposed, would not diminish a built-

environment resource's ability to convey its significance or justify the reasons for its qualification as a historical resource, two of the criteria of material impairment in the definition of a substantial adverse change in the significance of a historical resource. The impact would be less than significant.

Significance without Mitigation: Less than significant impact.

CUL-2 The proposed project may cause a substantial adverse change in the significance of an archaeological cultural resource that qualifies as a historical resource or unique archaeological resource pursuant to Section 15064.5.

CEQA applies to archaeological sites, and during impact assessment, archaeological sites are first considered as potential historical resources (CEQA Guidelines Section 15064.5 (c)(1)). Tuolumne County has a rich archaeological record with expressions of material culture in almost every environmental setting. Examples of these archaeological cultural resources can range from precontact settlement and resource procurement areas to mining-related features such as adits and tailings, to archaeological features sealed beneath the hardscape of the County's urbanized areas. Their significance can lie in their ability to contain information important in prehistory or history, but also in their value to descendant communities as expressions of their cultural heritage and patrimony.

Because archaeological cultural resources are non-renewable, their disturbance by individual fiber project implementation can impede or destroy their ability to convey their significance, which can embody scientific and/or traditional cultural value. Should that occur, a significant effect on the environment could result.

Implementation of Mitigation Measure CUL-1 contains measures that would identify potential archaeological cultural resources impact scenarios; seek to avoid impacts to such resources if feasible; and mitigate those impacts that cannot be avoided through individual fiber project redesign. Avoidance would prevent the loss of scientific and/or heritage values of the resource, and archaeological mitigation would offset the loss of scientifically consequential data through a program of excavation, analysis, and documentation of information would otherwise be lost.

Significance without Mitigation: Potentially significant impact.

Mitigation Measure CUL-1: Archaeological Cultural Resources Investigations

Preconstruction Screening Identification

Prior to each phase of fiber optic installation, including appurtenant structures, unpaved staging areas, and fiber optic line, Tuolumne County shall request a records search from the Central California Information Center (CCIC) for project footprints for which ground disturbance is required in areas that have not been previously subject to such disturbance. For those areas of native, unpaved soil that have not been previously surveyed for archaeological cultural resources, the County shall require a pedestrian field survey by a qualified professional archaeologist. If archaeological cultural resources are identified as a result of that survey, the County shall implement the recommendations of the consulting archaeologist to avoid or substantially reduce the severity of impacts to such resources. For those areas that have been surveyed previously, the County shall abide by the recommendations of the professional archaeologist who conducted the original survey.

Known Resource Conflicts

In the event that the records search described above identify archaeological cultural resources that would be subject to project-related impact, the County shall evaluate the status of the resource under CEQA. The archaeological cultural resource shall be assessed for significance through the implementation of a Phase II investigation by a qualified archaeologist. This may require some or all of the following:

- Development of a research design that guides assessments of site significance and scientific potential.
- Mapping and systematic collection of a representative sample of surface artifacts
- Subsurface investigation through shovel test pits, surface scrapes, or 1-by-1 meter excavation units; a combination of such methods; or equivalent methods
- Analysis of recovered material to determine significance pursuant to the CEQA Guidelines
- Preparation of a report, including an evaluation of site significance, and recommendations for mitigation, if appropriate
- Appropriate curation of collected artifacts

If the resource is precontact in nature, the Phase II investigation shall be coordinated with descendant tribal communities.

If the Phase II evaluation concludes that the archaeological cultural resource does not qualify as a historical resource (PRC Section 21084.1) or unique archaeological resource (PRC Section 21083.2), then no further study or protection of the resource is necessary. If the resource does qualify as a historical or unique archaeological resource, then the County shall require the implementation of the Phase III approach described below.

A Phase III data recovery effort, in accordance with CEQA Guidelines, shall be implemented by the consulting archaeologist for those sites that are shown by the Phase II efforts to qualify as significant under CEQA. The County shall ensure that data recovery conducted to the level that reduces impacts to below the level of significance has been completed prior to project implementation. The Phase III data recovery program shall include all or a combination of the following methods:

- Development of a research design to identify important research questions that may be answered through a systematic study of the resource.
- Mapping and systematic collection of surface artifacts, possibly complete data recovered depending on site size
- Subsurface investigation through methods such as controlled hand-excavation units, machine excavations, deep testing, or a combination of methods. When applicable, other techniques, such as geophysical testing, may be warranted.

- Analysis of recovered material through visual inspection and chemical analysis when applicable
- Preparation of a report
- Appropriate curation of collected artifacts

If the resource is precontact in nature, the Phase III investigation shall be coordinated with descendant tribal communities.

Significance with Mitigation: Less than significant impact.

CUL-3 The proposed project may cause a substantial adverse change in the significance of archaeological cultural resources that are accidentally discovered during project construction.

Archaeological cultural resources encountered during individual fiber project construction may qualify as significant under CEQA for their ability to contain information important in prehistory or history, or for their value to descendant communities as expressions of their cultural heritage and patrimony. Because archaeological cultural resources are non-renewable, their disturbance by individual fiber project implementation can impede or destroy their ability to convey their significance, which can be embodied as scientific and/or traditional cultural value. Should that occur, a significant effect on the environment could result.

Implementation of Mitigation Measure CUL-2 contains measures that would identify potential archaeological cultural resources impact scenarios; seek to avoid impacts to such resources if feasible; and mitigate those impacts that cannot be avoided through individual fiber project redesign. Avoidance would prevent the loss of scientific and/or heritage values of the resource, and archaeological mitigation would offset the loss of scientifically consequential data through a program of excavation, analysis, and documentation of information would otherwise be lost.

Mitigation Measure CUL-2: Inadvertent Discovery of Archaeological Cultural Resources

In the event that cultural resources are exposed during ground-disturbing activities, construction activities shall be halted within 100 feet of the discovery. Cultural resources could consist of but are not limited to stone, bone, wood, or shell artifacts, or features, including hearths, structural remains, or historic dumpsites. If the resources cannot be avoided during the remainder of construction, a consulting archaeologist, who meets the Secretary of the Interior's *Professional Qualifications Standards* for archaeology, shall assess the resource and provide appropriate management recommendations. The County shall implement those recommendations to avoid or substantially reduce the severity of impact to significant resources.

Significance with Mitigation: Less than significant impact.

CUL-4 The proposed project may disturb human remains, including those interred outside of formal cemeteries.

There is the potential to encounter human remains in almost any environmental context that occurs in Tuolumne County. Therefore, implementation of the Countywide program has the potential to expose

human remains during ground-disturbing activities. Substantial adverse changes to human remains resulting from implementation of the proposed Countywide program would be reduced to below the level of significance through the implementation of Mitigation Measure CUL-3, which is in accordance with CEQA Guidelines Section 15064.5(e). The reduction in severity would be accomplished through the respectful treatment of the remains in consultation with descendant communities who place religious and cultural significance in such remains.

Significance without Mitigation: Potentially significant impact.

Mitigation Measure CUL-3: Human Remains

In the event of an accidental discovery or recognition of any human remains, PRC Section 5097.98 must be followed. Once project-related earthmoving begins and if there is a discovery or recognition of human remains, the following steps shall be taken:

1. There shall be no further excavation or disturbance of the specific location or any nearby area reasonably suspected to overlie adjacent human remains until the County Coroner is contacted to determine if the remains are Native American and if an investigation of the cause of death is required. If the coroner determines the remains are Native American, the coroner shall contact the NAHC within 24 hours, and the NAHC shall identify the person or persons it believes to be the “most likely descendant” of the deceased Native American. The most likely descendant may make recommendations to the landowner or the person responsible for the excavation work, for means of treating or disposing of, with appropriate dignity, the human remains, and any associated grave goods as provided in PRC Section 5097.98, or
2. Where the following conditions occur, the landowner or their authorized representative shall rebury the Native American human remains and associated grave goods with appropriate dignity either in accordance with the recommendations of the most likely descendent or on the project area in a location not subject to further subsurface disturbance:
 - The NAHC is unable to identify a most likely descendent or the most likely descendent failed to make a recommendation within 48 hours after being notified by the commission;
 - The descendent identified fails to make a recommendation; or
 - The landowner or his authorized representative rejects the recommendation of the descendent, and the mediation by the NAHC fails to provide measures acceptable to the landowner.

Significance with Mitigation: Less than significant impact.

4.4.4 Cumulative Impacts

CUL-5 The proposed project may result in cumulative impacts to cultural resources.

Cumulative cultural resource impacts may occur when a series of actions leads to the loss of historically or archaeologically significant type of site, building, deposit, or tribal cultural resource. For example, while the loss of a single historic building may not be significant to the character of a neighborhood or streetscape, continued loss of such historical resources on a project-by-project basis could amount to a significant cumulative effect. As discussed above, with the implementation of Mitigation Measures CUL-1, CUL-2, and CUL-3, the proposed Countywide program would have less than significant impacts on unknown cultural resources. However, the analysis of cumulative impacts to cultural resources is based on impacts of the proposed Countywide program plus the other cumulative projects in the County. As such, each cumulative project that would be subject to CEQA would be required to assess its potential impacts to cultural resources. Mitigation measures conducted for each cumulative individual fiber project would ensure that impacts to cultural resources are minimized to the maximum extent feasible. Therefore, with implementation of Mitigation Measures CUL-1, CUL-2, and CUL-3 and the requirement for the other cumulative projects subject to CEQA to adopt similar measures, no cumulatively considerable impact to cultural resources would occur with approval of the proposed project.

Significance without Mitigation: Potentially significant impact.

See Impact CUL-2 for Mitigation Measure CUL-1, see Impact CUL-3 for Mitigation Measure CUL-2, and see Impact CUL-4 for Mitigation Measure CUL-3.

Significance with Mitigation: Less than significant impact.

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4.5 Geology and Soils

This section describes the regulatory framework and existing conditions related to geology and soils, evaluates the potential impacts that could occur as a result of implementation of the proposed Countywide program, and details mitigation measures needed to reduce significant impacts, as necessary. No issues were raised during scoping that pertain to geology, soils, or mineral resources.

4.5.1 Environmental Setting

Implementation of the proposed Countywide program would be subject to a number of regulatory requirements and industry standards related to potential geologic hazards. These requirements and standards typically involve measures to evaluate risk and mitigate potential hazards through design and construction techniques. Specific guidelines encompassing geologic criteria that may be applicable to the design and construction of the proposed Countywide program include: (1) International Building Code (IBC; International Building Code Council, Inc. 2006); and the related California Building Code (CBC; CCR Title 24, Part 2); (2) The California Seismic Hazards Mapping Act (Public Resources Code [PRC] Division 2, Chapter 7.8, Section 2690 et seq.); (3) The Alquist-Priolo Earthquake Fault Zoning Act (PRC Division 2, Chapter 7.5, Section 2621 et seq.); and (4) applicable standards of the County, including the General Plan Public Safety Element (2001, as amended). Summary descriptions of the listed geologic standards are provided below and are incorporated into the discussion of impacts in Section 4.7.3 as applicable. Discussion of erosion-related issues and associated requirements under federal, State, and County standards is discussed below.

4.5.1.1 Regulatory Framework

State Regulations

Alquist-Priolo Earthquake Fault Zoning Act

California's Alquist-Priolo Act (PRC Section 2621 et seq.) is intended to reduce risks to life and property from surface fault rupture during earthquakes. The Alquist-Priolo Act prohibits the location of most types of structures intended for human occupancy across the traces of active faults and strictly regulates construction in the corridors along active faults capable of surface rupture or fault creep (earthquake fault zones). Generally, the required setback is 50 feet from an active fault trace. The act also defines criteria for identifying active faults and establishes a process for reviewing building proposals in and adjacent to earthquake fault zones.

The Alquist-Priolo Act establishes "earthquake fault zones" and strictly regulates construction along or across zones that are sufficiently active and well defined. A fault is considered sufficiently active if one or more of its segments or strands shows evidence of surface displacement during Holocene time (defined for the purposes of the act as referring to approximately the last 11,700 years). A fault is considered well-defined if its trace can be identified clearly by a trained geologist at the ground surface, or in the shallow subsurface using standard professional techniques, criteria, and judgment (CGS 2018).

Seismic Hazards Mapping Act

Like the Alquist-Priolo Act, the Seismic Hazards Mapping Act of 1990 (PRC Sections 2690-2699.6) is intended 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

strong ground shaking, liquefaction, and seismically induced landslides. Its 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.

Under the Seismic Hazards Mapping Act, permit review is the primary mechanism for local regulation of development. Specifically, cities and counties are prohibited from issuing development permits for sites within seismic hazard zones until appropriate site-specific geologic and/or geotechnical investigations have been carried out and measures to reduce potential damage have been incorporated into the development plans. Geotechnical investigations conducted within seismic hazard zones must incorporate standards specified by California Geological Survey Special Publication 117a, Guidelines for Evaluating and Mitigating Seismic Hazards in California (CGS 2008).

California Building Standards Code

The California Building Standards Code (CBSC) (24 California Code of Regulations) provides the minimum standards for structural design and construction. The CBSC is based on the previously discussed International Building Code (IBC), which is used widely throughout the United States (generally adopted on a state-by-state or district-by-district basis) and has been modified for California conditions with numerous, more detailed, or more stringent regulations. The CBSC requires that “classification of the soil at each building site will be determined when required by the building official” and that “the classification will be based on observation and any necessary test of the materials disclosed by borings or excavations”. In addition, the CBSC states that “the soil classification and design-bearing capacity will be shown on the (building) plans, unless the foundation conforms to specified requirements.” The CBSC provides standards for various aspects of construction including, but not limited to, excavation, grading, and earthwork construction; fills and embankments; expansive soils; foundation investigations; and liquefaction potential and soil strength loss. In accordance with California law, certain aspects of the project would be required to comply with all provisions of the CBSC.

The CBSC requires extensive geotechnical analysis and engineering for grading, foundations, retaining walls, and other structures, including criteria for seismic design.

California Public Resources Code

Several PRC sections protect paleontological resources. Section 5097.5 prohibits “knowing and willful” excavation, removal, destruction, injury, and defacement of any paleontological feature on public lands (lands under state, county, city, district, or public authority jurisdiction, or the jurisdiction of a public corporation), except where the agency with jurisdiction has granted express permission. Section 30244 requires reasonable mitigation for impacts on paleontological resources that result from development on public lands.

Local Regulations

Tuolumne County General Plan

Geology and Soils are addressed within the *Managed Resources Element*, *Natural Hazards Element* and *Cultural Resources Element* of the County General Plan (County 2018a).

The *Managed Resources Element* contains the following goals, policies, and implementation programs that address mineral resources within the County:

- **Goal 7C:** Conserve the County's mineral resources for future use by encouraging well-planned, compatible uses in and adjacent to significant mineral lands and by reclaiming lands that have been disturbed by mining activities.
 - **Policy 7.C.1:** Protect lands classified as significant Mineral Resource Zone-2 (MRZ-2) by the State Department of Conservation Division of Mines and Geology, and meeting the criteria established in the General Plan for Mineral Preserve (-MPZ) overlay, from conflicts, such as incompatible development on surrounding land, which might prevent future mining activities.
 - **Implementation Program 7.C.d:** Enhance mineral resource lands after development by reclaiming the land for future uses compatible with mineral extraction and mining operations and/or by landscaping with plants native to the local area and restoring natural habitats. The natural, undisturbed condition of each habitat type should be mimicked when creating or restoring plant or wildlife habitats and to aesthetically blend the reclaimed site into the surrounding area.

The *Natural Hazards Element* contains the following goals, policies, and implementation programs that address geology and soils within the County:

- **Goal 17A:** Avoid the exposure of people and structures to potential substantial adverse effects, including the risk of loss, injury or death involving natural hazards.
 - **Policy 17.A.6:** Ensure that all new construction is completed in a way most resistant to loss or damage from natural hazards.
- **Goal 17D:** Protect new and existing structures and land uses from geologic hazards in order to minimize loss of life, injury, damage to property, and economic and social dislocations.
 - **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.5:** Monitor development to see that construction in landslide or unstable slope areas is accomplished safely.
 - **Implementation Program 17.C.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 land sliding, 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.

The *Cultural Resources Element* contains the following goals, policies, and implementation programs that address paleontological resources within the County:

- **Goal 13B:** Encourage historic preservation by adopting a consistent and predictable environmental review process for evaluating impacts to 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.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.

4.5.1.2 Existing Conditions

Geologic Setting

Tuolumne County is located in the central Sierra Nevada region of California. The County lies within the western foothills of the Sierra Nevada mountain range and is influenced by both ancient and ongoing geologic processes. The dominant rock types in Tuolumne County are granitic and metamorphic rocks, which form the core of the Sierra Nevada batholith. This batholith represents a vast intrusive body of granitic rock that was emplaced deep within the Earth's crust during the Mesozoic Era. These rocks have been exposed through uplift and erosion over millions of years, giving rise to the iconic granite cliffs, domes, and peaks that define the landscape of the County.

The geologic history of Tuolumne County is also marked by the presence of volcanic activity. In the eastern part of the County, the remnants of ancient volcanic flows and volcanoclastic deposits can be found, representing past episodes of volcanic eruptions. This volcanic activity, combined with tectonic forces, has shaped the topography of the county, resulting in deep canyons, steep slopes, and rugged terrain.

Furthermore, Tuolumne County is intersected by the Sierra Nevada frontal fault system, which represents a zone of ongoing tectonic activity. This fault system contributes to the seismicity of the region and has played a role in the formation of the Sierra Nevada Mountains.

Stratigraphy

The stratigraphy of Tuolumne County encompasses a wide range of rock units that provide insights into the geologic history of the region. The County is located within the western foothills of the Sierra Nevada Mountain range, which is known for its complex geology. The primary rock types found in the County include granitic rocks, metavolcanic rocks, sedimentary rocks, and various types of metamorphic rocks. The dominant feature is the Sierra Nevada batholith, a large intrusive body of granitic rock that was emplaced during the Mesozoic Era. The batholith consists of different types of granitic rocks, including coarse-grained biotite granite, granodiorite, and tonalite. These rocks form the core of the Sierra Nevada range and are responsible for its iconic landscapes, such as granite cliffs, domes, and peaks.

Metavolcanic rocks are also present in the County, representing ancient volcanic activity. These rocks include metavolcanic breccias, andesitic flows, tuffs, and volcanoclastic deposits. They provide evidence of past volcanic eruptions and are found primarily in the eastern part of the County. Sedimentary rocks,

although less common, can be found in localized areas within Tuolumne County. These include sandstones, shales, and conglomerates, which were deposited in ancient marine and fluvial environments.

In addition to the primary rock types, Tuolumne County exhibits a significant number of metamorphic rocks. These rocks have undergone changes in mineralogy and texture due to intense heat and pressure. Metamorphic rocks include schists, gneisses, and amphibolite's, which were formed through the metamorphism of previously existing rocks.

Groundwater

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 (County 2018a).

The Tuolumne County GSA is responsible for the small section of the Modesto Subbasin that falls within Tuolumne County. The Tuolumne GSA covers approximately 1,000 acres that extends eastward into Tuolumne County (STRGBA 2022).

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.

Structure and Seismicity

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 2018b).

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 2018b). 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 (County 2018b). Tuolumne County's earthquake history is shown in **Table 4.5-1**.

**Table 4.5-1
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, 1965	Eastern Mono County, near Tuolumne/Mono County line	6.1	Strong	N/A	38.08	-119.33

Source: County 2018b

Soils

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.

Paleontological Resources

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. Paleontological potential refers to the likelihood that a rock unit will yield a unique or significant paleontological resources. All sedimentary rocks, some volcanic rocks, and some low-grade metamorphic rocks have potential to yield significant paleontological resources. Depending on the 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, 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.

Tuolumne County is located primarily within the Sierra Nevada geomorphic province, with a 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 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 Pilo-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 locations at which fossil remains have been found in Tuolumne County. These occur primarily in the Mehrten geologic formations (UCMP 2018)

4.5.2 Significance Thresholds

In accordance with Appendix G of the CEQA Guidelines, the proposed program would have a significant impact associated with geology, soils, mineral resources, or paleontological resources if the program would:

1. Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving: (i) rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault; (ii) strong seismic ground shaking; (iii) seismic-related ground failure, including liquefaction; or (iv) landslides;
2. Result in substantial soil erosion or the loss of topsoil;
3. 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 the on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse;
4. Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property;
5. 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;
6. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.

4.5.3 Impact Analysis

GEO-1 The proposed project may directly or indirectly cause potential substantial adverse effects involving rupture of a known earthquake fault, strong seismic ground shaking, or seismic-related ground failure, including liquefaction or landslides.

Tuolumne County is located approximately 12 miles east of the Foothills fault system (County 2018b). 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. 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. Since liquefaction would most likely occur during or following an earthquake and severe earthquake risk is deemed to be low, the risk and danger of liquefaction occurring within the County are also low.

Within the County, there are a considerable number of areas 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. Refer to **Figure 4.5-1** for a map of serpentine soils within the County. These areas do not typically slide unless disturbed (i.e., roadways in the area of Don Pedro Reservoir). In addition, as they naturally erode, the steep slopes of the Table Mountain area occasionally shed large boulders and rocks. However, major landslides are not common and there is very little development in the area (County 2018b). Due to these conditions, the Tuolumne County Multi-Hazard Mitigation Plan determined that there is a low probability of landslide in the County. Refer to **Figure 4.5-2** for a map of high slope areas within the County.

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 (County 2018b). Proper engineering, including compliance with the CBC, would minimize the risk to life and property. The proposed broadband infrastructure would be installed within existing County-maintained roads and ROW, public utility easements, and/or existing overhead public utility easements of record throughout the County. As fiber optic lines and/or utility poles would be located primarily in road shoulders, the risk of localized ground failure is assumed to have already been minimized through previous grading, compaction, and use of engineered fills.

Design and construction of individual fiber projects would be conducted in accordance with the CBC and other applicable engineering specifications and grading regulations that would further reduce the potential for adverse effects due to seismic events or landslides. Therefore, this impact would be less than significant.

Significance without Mitigation: Less than significant impact.

GEO-2 The proposed project would not result in substantial soil erosion or loss of topsoil.

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.

Construction of the individual fiber projects would require ground disturbance, including vegetation clearing, trenching, directional drilling, fill placement, pole placement excavation, and staging. The disturbed soil could be exposed to wind and water erosion and loss of topsoil. Any projects that disturb over one acre of soil would be required to comply with the California Construction General Permit Order 2009-0009-DWQ (as amended by 2010-0014-DWQ and 2012- 0006-DWQ), which requires implementation of a Stormwater Pollution Prevention Program (SWPPP) and specific best management practices (BMP) to prevent erosion. Typical erosion-prevention measures such as silt fences, stakes straw bales/wattles, silt/sediment basins and traps, check dams, geofabric, sandbag dikes, and temporary revegetation or other ground cover would be used to minimize erosion impacts. As individual fiber projects implemented under the Countywide program would be required to adhere to relevant County code provisions as well as the Construction General Permit, the program's impact on erosion and loss of topsoil would be less than significant.

If an individual fiber project would disturb more than one acre of soil, a SWPPP with project specific BMP would be required. Additionally, adherence to relevant policies and implementation programs, as well as other State and County regulatory programs would adequately address the potential effects on unstable slopes and erosion. Therefore, the impact would be less than significant.

Significance without Mitigation: Less than significant impact.

GEO-3 The proposed project may 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 the on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse.

As noted under Impact GEO-1, there is a low probability of landslide in the County. New development within the County would be required by law to conform to the CBC. Since liquefaction would be most likely to occur during or following an earthquake and as severe earthquake risk is deemed to be low, the risk and danger of liquefaction occurring within the County are also low. Subsidence potential is also known to be minimal throughout the County and most likely to occur in areas where substantial underground mining activity has occurred.

Hazards associated with unstable soils or geologic units are dependent on site-specific conditions, as well as the specific nature of the individual fiber project. With adherence to CBC requirements, including seismic design criteria as required by the CBC and local building code requirements, broadband infrastructure would be designed to minimize potential risks related to unstable soils and geologic units. Additionally, prior to construction of individual fiber projects, a preliminary soils report would be prepared. If the preliminary soils report indicates soil problems that would lead to structural defects, a soils investigation of each individual fiber project area would be required (County 2018b). Adherence to the Tuolumne County Ordinance Code, policies and implementation programs, and other State regulations as well as preparation of a soil report would adequately address the potential risks of unstable soils. Therefore, the impact would be less than significant.

Significance without Mitigation: Less than significant impact.

GEO-4 The proposed project would not be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994) and would not create substantial direct or indirect risks to life or property.

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 of the Countywide program 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.

Individual fiber projects would be subject to the CBC Section 1808.6, which requires design features for foundations of buildings and structures in areas subject to expansive soils. Prior to construction of individual fiber projects, a preliminary soils report would be prepared and the potential for expansive soil to occur on the project site would be analyzed. 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 individual fiber project area would be required (County 2018b).

Preparation of a preliminary soils report prior to construction of individual fiber projects and adherence to CBC requirements would adequately address the potential effects on expansive soils. Therefore, the impact would be less than significant.

Significance without Mitigation: Less than significant.

GEO-5 The proposed project would not require the use of septic tanks or an alternative wastewater disposal system.

The Countywide program would install fiber optic conduit either underground in buried conduits, overhead on pole lines, or in a combination of both. Therefore, development resulting from the proposed Countywide program would not use a septic or alternative water disposal system. No impact would occur.

Significance without Mitigation: No impact.

GEO-6 The proposed project may directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.

Tuolumne County is located primarily within the Sierra Nevada geomorphic province, with a 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. 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 (County 2018b). Based on geologic mapping, the majority of the County is not considered sensitive for paleontological resources.

Individual fiber projects would primarily be constructed in disturbed public roadways that have been previously graded, compacted, and filled to construct the roads. These previously disturbed portions of the Countywide program area would not contain paleontological resources. Where individual fiber projects would require drilling through rock or excavation into paleontological soil, it is possible that

intact, unique paleontological resources could be present within paleontologically sensitive rock formations and could be affected by the Countywide program. Specifically, those resources could be damaged or destroyed during installation of fiber optic line. Because the Countywide program would primarily be implemented in disturbed or previously developed areas and the County is not considered sensitive for paleontological resources, impacts to paleontological resources would be minimal. However, unique paleontological resources could be present within rock formations and could be affected by construction of individual fiber projects. Implementation of Mitigation Measure GEO-1 would be implemented to reduce potential impacts to a less than significant level.

Significance without Mitigation: Potentially significant impact.

Mitigation Measure GEO-1: Perform a Site-Specific Paleontological Resources Inventory Assessment

Before submitting a grading permit application, the applicant for an individual fiber project shall retain the services of a qualified professional paleontologist who shall prepare a paleontological resources inventory and assessment for any affected rock units. This report shall include the following components:

- A report of any fossils observed during a reconnaissance-level field survey.
- The results of a records search of appropriate paleontological databases (at a minimum, the database at the University of California, Berkeley Museum of Paleontology) to determine whether any previously recorded fossil localities are located within or immediately adjacent to the fiber optic facilities where rock boring or excavation that would reach paleontological soil is proposed.
- A determination as to whether the geologic formations are of high or low paleontological sensitivity, and a discussion supporting the reasons why the sensitivity determinations were made.

Prior to issuance of grading permits, the approving local jurisdiction shall review the reports and its findings to confirm no paleontological resources would be affected.

Significance with Mitigation: Less than significant impact.

4.5.4 Cumulative Impacts

GEO-7 The proposed project would not result in a significant cumulative impact with respect to geology and soils.

Cumulative impacts would occur when the proposed Countywide program, in combination with other projects or plans/projections in Tuolumne County, would directly or indirectly cause adverse effects involving fault rupture, strong seismic ground shaking, seismic-related ground failure, or landslides; result in soil erosion or the loss of topsoil; be located on unstable soil that could result in landslide, lateral spreading, subsidence, liquefaction, or collapse; be located on expansive soil; have soils incapable of adequately supporting septic tanks; or directly or indirectly destroy a unique paleontological resource or site or unique geologic feature. The context for analyzing cumulative impacts to geological and soils resources is limited to the immediate area of geologic constraint, with the exception of some geologic impacts that are regional such as earthquake risk. As discussed above, implementation of the proposed

Countywide program would result in less than significant impacts with mitigation incorporated to paleontological resources.

Individual fiber projects under the Countywide program could be constructed concurrently with, and in proximity to, other residential or commercial development projects in Tuolumne County as shown in **Table 4-1**. While geotechnical impacts may be associated with other developments in proximity to the proposed Countywide program, several potential impacts (e.g., unstable soils, expansive soils, liquefaction, soil erosion, and paleontological resources) are site specific, and would be addressed on a project-specific basis. Seismically induced geologic hazards and unstable soil hazards are site-specific and depend on local conditions as well as the characteristics of the overlying improvements. Individual fiber projects under the Countywide program and other cumulative projects would be required to comply with the applicable state and local requirements including, but not limited to, the CBC and local building codes. Additionally, individual fiber projects would prepare a soils report and the potential for expansive soil to occur on the project site would be analyzed. Therefore, implementation of the Countywide program would not contribute to a cumulatively considerable impact on geotechnical issues.

Seismic impacts are a regional issue and are addressed through compliance with applicable codes and design standards. Thus, individual residential or commercial projects (of the type included on the cumulative project list) do not increase the potential for seismic a seismic event, as the effects would be based on site-specific underlying conditions and proximity to the source of the seismic event. Therefore, implementation of the Countywide program would not contribute to a greater cumulative impact to seismic ground shaking or fault rupture.

Implementation of site-specific SWPPPs would reduce the potential for erosion hazards for residential development constructed as a result of the Countywide program. Impacts form erosion or loss of topsoil for other cumulative projects may require site-specific analysis to determine the soils' permeability, slope, angle and length, extent of groundcover, and human influence on the sites, however all projects in the cumulative setting would be required to adhere to similar erosion control requirements. All construction phases of the Countywide program, and other cumulative projects in the area, would be required to adhere to all federal, State, and local programs, requirements, and policies pertaining to building safety and construction permitting. Accordingly, the Countywide program would have a less than cumulatively considerable impact related to geology and soils.

Significance without Mitigation: Less than significant impact.

4.5.5 References

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4.6 Greenhouse Gas Emissions

This section describes the regulatory framework and existing conditions related to greenhouse gas (GHG), evaluates the potential GHG emissions impacts that could occur as a result of implementation of the proposed Countywide program, and details mitigation measures needed to reduce significant impacts, as necessary. No issues were raised during scoping that pertain to greenhouse gases.

4.6.1 Environmental Setting

4.6.1.1 Climate Change Overview

Global climate change refers to changes in average climatic conditions on Earth including temperature, wind patterns, precipitation, and storms. Global temperatures are moderated by atmospheric gases. These gases are commonly referred to as GHGs because they function like a greenhouse by letting sunlight in but preventing heat from escaping, thus warming the Earth's atmosphere.

GHGs are emitted by natural processes and human (anthropogenic) activities. Anthropogenic GHG emissions are primarily associated with: (1) the burning of fossil fuels during motorized transport, electricity generation, natural gas consumption, industrial activity, manufacturing, and other activities; (2) deforestation; (3) agricultural activity; and (4) solid waste decomposition.

GHG emissions from human activities are the most significant driver of observed climate change since the mid-20th century (United Nations Intergovernmental Panel on Climate Change [IPCC] 2013). The IPCC constructed several emission trajectories of GHGs needed to stabilize global temperatures and climate change impacts. The statistical models show a "high confidence" that temperature increase caused by anthropogenic GHG emissions could be kept to less than two degrees Celsius relative to pre-industrial levels if atmospheric concentrations are stabilized at about 450 parts per million (ppm) carbon dioxide equivalent (CO₂e) by the year 2100 (IPCC 2014).

4.6.1.2 Greenhouse Gases

The GHGs defined under California's Assembly Bill (AB) 32 include carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFC), perfluorocarbons (PFC), and sulfur hexafluoride (SF₆).

Carbon Dioxide. CO₂ is the most important and common anthropogenic GHG. CO₂ is an odorless, colorless GHG. Natural sources include the decomposition of dead organic matter; respiration of bacteria, plants, animals, and fungi; evaporation from oceans; and volcanic outgassing. Anthropogenic sources of CO₂ include burning fuels, such as coal, oil, natural gas, and wood. Data from ice cores indicate that CO₂ concentrations remained steady prior to the current period for approximately 10,000 years. The atmospheric CO₂ concentration in 2010 was 390 ppm, 39 percent above the concentration at the start of the Industrial Revolution (about 280 ppm in 1750). As of June 2023, the CO₂ concentration exceeded 419 ppm (National Oceanic and Atmospheric Administration [NOAA] 2023).

Methane. CH₄ is the main component of natural gas used in homes. A natural source of methane is from the decay of organic matter. Geological deposits known as natural gas fields contain methane, which is extracted for fuel. Other sources are from decay of organic material in landfills, fermentation of manure, and cattle digestion.

Nitrous Oxide. N₂O is produced by both natural and human-related sources. N₂O is emitted during agricultural and industrial activities, as well as during the combustion of fossil fuels and solid waste. Primary human-related sources of N₂O are agricultural soil management, animal manure management, sewage treatment, mobile and stationary combustion of fossil fuel, adipic (fatty) acid production, and nitric acid production.

Hydrofluorocarbons. Fluorocarbons are gases formed synthetically by replacing all hydrogen atoms in methane or ethane with chlorine and/or fluorine atoms. Chlorofluorocarbons are nontoxic, nonflammable, insoluble, and chemically nonreactive in the troposphere (the level of air at Earth's surface). Chlorofluorocarbons were first synthesized in 1928 for use as refrigerants, aerosol propellants, and cleaning solvents. They destroy stratospheric ozone; therefore, their production was stopped as required by the 1989 Montreal Protocol.

Sulfur Hexafluoride. SF₆ is an inorganic, odorless, colorless, nontoxic, nonflammable gas. SF₆ is used for insulation in electric power transmission and distribution equipment, in the magnesium industry, in semi-conductor manufacturing, and as a tracer gas for leak detection.

GHGs have long atmospheric lifetimes that range from one year to several thousand years. Long atmospheric lifetimes allow for GHG emissions to disperse around the globe. Because GHG emissions vary widely in the power of their climatic effects, climate scientists have established a unit called global warming potential (GWP). The GWP of a gas is a measure of both potency and lifespan in the atmosphere as compared to CO₂. For example, because methane and N₂O are approximately 25 and 298 times more powerful than CO₂, respectively, in their ability to trap heat in the atmosphere, they have GWPs of 25 and 298, respectively (CO₂ has a GWP of 1). CO₂e is a quantity that enables all GHG emissions to be considered as a group despite their varying GWP. The GWP of each GHG is multiplied by the prevalence of that gas to produce CO₂e.

Historically, GHG emission inventories have been calculated using the GWPs from the IPCC's Second Assessment Report (SAR). In 2007, IPCC updated the GWP values based on the latest science at the time in its Fourth Assessment Report (AR4). The updated GWPs in the IPCC AR4 have begun to be used in recent GHG emissions inventories. In 2013, IPCC again updated the GWP values based on the latest science in its Fifth Assessment Report (AR5) (IPCC 2013). However, the United Nations Framework Convention on Climate Change (UNFCCC) reporting guidelines for national inventories require the use of GWP values from the AR4. To comply with international reporting standards under the UNFCCC, official emission estimates for California and the U.S. are reported using AR4 GWP values. Therefore, Statewide and national GHG inventories have not yet updated their GWP values to the AR5 values. By applying the GWP ratios, project related CO₂e emissions can be tabulated in metric tons per year. Typically, the GWP ratio corresponding to the warming potential of CO₂ over a 100-year period is used as a baseline. The atmospheric lifetime and GWP of selected GHGs are summarized in **Table 4.6-1**.

**Table 4.6-1
GLOBAL WARMING POTENTIALS AND ATMOSPHERIC LIFETIMES**

Greenhouse Gas	Atmospheric Lifetime (years)	Global Warming Potential (100-year time horizon)
Carbon Dioxide (CO ₂)	50-200	1
Methane (CH ₄)	12	25
Nitrous Oxide (N ₂ O)	114	298
HFC-324a	14	1,430
PFC: Tetrafluoromethane (CF ₄)	50,000	7,390
PFC: Hexafluoroethane (C ₂ F ₆)	10,000	12,200
Sulfur Hexafluoride (SF ₆)	3,200	22,800

Source: IPCC 2007.

HFC: hydrofluorocarbon; PFC: perfluorocarbon

4.6.1.3 Regulatory Framework

Federal Regulations

Federal Clean Air Act

The U.S. Supreme Court ruled on April 2, 2007, in *Massachusetts v. U.S. Environmental Protection Agency* that CO₂ is an air pollutant, as defined under the CAA, and that the USEPA has the authority to regulate emissions of GHGs. The USEPA announced that GHGs (including CO₂, CH₄, N₂O, HFC, PFC, and SF₆) threaten the public health and welfare of the American people (USEPA 2021). This action was a prerequisite to finalizing the USEPA's GHG emissions standards for light-duty vehicles, which were jointly proposed by the USEPA and the United States Department of Transportation's National Highway Traffic Safety Administration (NHTSA).

Light-Duty Vehicle Greenhouse Gas Emissions Standards and Corporate Average Fuel Economy Standards

The USEPA and the NHTSA worked together on developing a national program of regulations to reduce GHG emissions and improve fuel economy of light-duty vehicles. The USEPA established the first-ever national GHG emissions standards under the CAA, and the NHTSA established Corporate Average Fuel Economy (CAFE) standards under the Energy Policy and Conservation Act. On April 1, 2010, the USEPA and NHTSA announced a joint Final Rulemaking that established standards for 2012 through 2016 model year vehicles. This was followed up on October 15, 2012, when the agencies issued a Final Rulemaking with standards for model years 2017 through 2025.

State Regulations and Plans

There are numerous State plans, policies, regulations, and laws related to GHG emissions and global climate change. Following is a discussion of some of these plans, policies, and regulations that (1) establish overall State policies and GHG emission reduction targets; (2) require State or local actions that result in direct or indirect GHG emission reductions for the proposed project; and, (3) require CEQA analysis of GHG emissions.

California Energy Code

California Code of Regulations Title 24 Part 6: California’s Energy Efficiency Standards for Residential and Nonresidential Buildings were first established in 1978 in response to a legislative mandate to reduce California’s energy consumption. Energy-efficient buildings require less electricity, natural gas, and other fuels. Electricity production from fossil fuels and on-site fuel combustion (typically for space or water heating) results in GHG emissions.

The Title 24 standards are updated approximately every three years to allow consideration and possible incorporation of new energy efficiency technologies and methods. The 2022 Title 24 standards became effective on January 1, 2023. The 2022 update to the Building Energy Efficiency Standards focuses on several key areas to improve the energy efficiency of newly constructed buildings and additions and alterations to existing buildings. New for the 2022 Title 24 standards are non-residential on-site photovoltaic (solar panels) electricity generation requirements (California Energy Commission [CEC] 2022).

The standards are divided into three basic sets. First, there is a basic set of mandatory requirements that apply to all buildings. Second, there is a set of performance standards—the energy budgets—that vary by climate zone (of which there are 16 in California) and building type; thus, the standards are tailored to local conditions. Finally, the third set constitutes an alternative to the performance standards, which is a set of prescriptive packages that are basically a recipe or a checklist compliance approach.

California Green Building Standards Code

The California Green Building Standards Code (CALGreen; CCR Title 24, Part 11) is a code with mandatory requirements for all nonresidential buildings (including industrial buildings) and residential buildings for which no other state agency has the authority to adopt green building standards. CALGreen also contains voluntary measures (i.e., Tier 1, Tier 2) which exceed minimum regulatory requirements. The 2022 Standards for new construction of, and additions and alterations to, residential and nonresidential buildings became effective on January 1, 2023 (California Building Standards Commission [CBSC] 2022).

The development of CALGreen is intended to (1) cause a reduction in GHG emissions from buildings; (2) promote environmentally responsible, cost-effective, healthier places to live and work; (3) reduce energy and water consumption; and (4) respond to the directives by the Governor. In short, the code is established to reduce construction waste; make buildings more efficient in the use of materials and energy; and reduce environmental impact during and after construction.

CALGreen contains requirements for storm water control during construction; construction waste reduction; indoor water use reduction; material selection; natural resource conservation; site irrigation conservation; and more. The code provides for design options allowing the designer to determine how best to achieve compliance for a given site or building condition. The code also requires building commissioning, which is a process for the verification that all building systems, like heating and cooling equipment and lighting systems, are functioning at their maximum efficiency.

Executive Order S-3-05

On June 1, 2005, Executive Order (EO) S-3-05 proclaimed that California is vulnerable to climate change impacts. It declared that increased temperatures could reduce snowpack in the Sierra Nevada, further exacerbate California’s air quality problems, and potentially cause a rise in sea levels. To avoid or reduce

climate change impacts, EO S-3-05 calls for a reduction in GHG emissions to the year 2000 level by 2010, to year 1990 levels by 2020, and to 80 percent below 1990 levels by 2050. Executive Orders are not laws and can only provide the governor's direction to State agencies to act within their authority to reinforce existing laws.

Assembly Bill 32 – Global Warming Solution Act of 2006

The California Global Warming Solutions Act of 2006, widely known as AB 32, requires that CARB develop and enforce regulations for the reporting and verification of Statewide GHG emissions. CARB is directed by AB 32 to set a GHG emission limit, based on 1990 levels, to be achieved by 2020. The bill requires CARB to adopt rules and regulations in an open public process to achieve the maximum technologically feasible and cost-effective GHG emission reductions.

Executive Order B-30-15

On April 29, 2015, EO B-30-15 established a California GHG emission reduction target of 40 percent below 1990 levels by 2030. The EO aligns California's GHG emission reduction targets with those of leading international governments, including the 28 nation European Union. California is on track to meet or exceed the target of reducing GHGs emissions to 1990 levels by 2020, as established in AB 32. California's new emission reduction target of 40 percent below 1990 levels by 2030 will make it possible to reach the goal established by EO S-3-05 of reducing emissions 80 percent under 1990 levels by 2050.

Senate Bill 32

Signed into law by Governor Brown on September 8, 2016, Senate Bill (SB) 32 (Amendments to the California Global Warming Solutions Action of 2006) extends 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 EO B-30-15 of 80 percent below 1990 emissions levels by 2050.

Assembly Bill 197

A condition of approval for SB 32 was the passage of AB 197. AB 197 requires that CARB consider the social costs of GHG emissions and prioritize direct reductions in GHG emissions at mobile sources and large stationary sources. AB 197 also gives the California legislature more oversight over CARB through the addition of two legislatively appointed members to the CARB Board and the establishment a legislative committee to make recommendations about CARB programs to the legislature.

Assembly Bill 1493- Vehicular Emissions of Greenhouse Gases

AB 1493 (Pavley) requires that CARB develop and adopt regulations that achieve "the maximum feasible reduction of GHGs emitted by passenger vehicles and light-duty truck and other vehicles determined by CARB to be vehicles whose primary use is noncommercial personal transportation in the State." On September 24, 2009, CARB adopted amendments to the Pavley regulations that intend to reduce GHG emissions in new passenger vehicles from 2009 through 2016. The amendments bind California's enforcement of AB 1493 (starting in 2009), while providing vehicle manufacturers with new compliance flexibility. In January 2012, CARB approved a new emissions-control program for model years 2017

through 2025. The program combines the control of smog, soot, and global warming gases and requirements for greater numbers of zero-emission vehicles into a single packet of standards called Advanced Clean Cars (CARB 2023).

Assembly Bill 341

The State legislature enacted AB 341 (California Public Resource Code Section 42649.2), increasing the diversion target to 75 percent Statewide. AB 341 requires all businesses and public entities that generate 4 cubic yards or more of waste per week to have a recycling program in place. The final regulation was approved by the Office of Administrative Law on May 7, 2012, and went into effect on July 1, 2012.

Executive Order S-01-07

This EO, signed by Governor Schwarzenegger on January 18, 2007, directs that a Statewide goal be established to reduce the carbon intensity of California's transportation fuels by at least 10 percent by the year 2020. It orders that a Low Carbon Fuel Standard (LCFS) for transportation fuels be established for California and directs CARB to determine whether a LCFS can be adopted as a discrete early action measure pursuant to AB 32. CARB approved the LCFS as a discrete early action item with a regulation adopted and implemented in April 2010. Although challenged in 2011, the Ninth Circuit reversed the District Court's opinion and rejected arguments that implementing LCFS violates the interstate commerce clause in September 2013. CARB is therefore continuing to implement the LCFS Statewide.

Senate Bill 350

Approved by Governor Brown on October 7, 2015, SB 350 increases California's renewable electricity procurement goal from 33 percent by 2020 to 50 percent by 2030. This will increase the use of Renewables Portfolio Standard eligible resources, including solar, wind, biomass, and geothermal. In addition, large utilities are required to develop and submit Integrated Resource Plans to detail how each entity will meet their customers resource needs, reduce GHG emissions, and increase the use of clean energy.

Senate Bill 375

SB 375, the Sustainable Communities and Climate Protection Act of 2008, supports the State's climate action goals to reduce GHG emissions through coordinated transportation and land use planning with the goal of more sustainable communities.

Under the Sustainable Communities Act, CARB sets regional targets for GHG emissions reductions from passenger vehicle use. In 2010, CARB established these targets for 2020 and 2035 for each region covered by one of the State's metropolitan planning organizations (MPOs). CARB periodically reviews and updates the targets, as needed.

Each of California's MPOs must prepare a Sustainable Communities Strategy (SCS) as an integral part of its regional transportation plan (RTP). The SCS contains land use, housing, and transportation strategies that, if implemented, would allow the region to meet its GHG emission reduction targets. Once adopted by the MPO, the RTP/SCS guides the transportation policies and investments for the region. CARB must review the adopted SCS to confirm and accept the MPO's determination that the SCS, if implemented, would meet the regional GHG targets. If the combination of measures in the SCS would not meet the

regional targets, the MPO must prepare a separate alternative planning strategy (APS) to meet the targets. The APS is not a part of the RTP. Qualified projects consistent with an approved SCS or Alternative Planning Strategy categorized as “transit priority projects” would receive incentives to streamline CEQA processing.

Senate Bill 100

Approved by Governor Brown on September 10, 2018, SB 100 requires that all retail sales of electricity to California end-use customers be procured from 100 percent eligible renewable energy resources and zero-carbon resources by the end of 2045.

Executive Order N-79-20

EO N-79-20, signed by Governor Newsom on September 23, 2020, establishes three goals for the implementation of zero emissions vehicles in California: first, 100 percent of in-State sales of new passenger cars and trucks will be zero-emissions by 2035; second, 100 percent of medium- and heavy-duty vehicles in the State will be zero-emissions vehicles by 2045 for all operations where feasible, and by 2035 for drayage trucks; and third, 100 percent of off-road vehicles and equipment will be zero emissions by 2035 where feasible.

Assembly Bill 1279

Approved by Governor Newsom on September 16, 2022, AB 1279, the California Climate Crisis Act, declares the policy of the State to achieve net zero GHG emissions as soon as possible, but no later than 2045, and achieve and maintain net negative GHG emissions thereafter, and to ensure that by 2045, Statewide anthropogenic GHG emissions are reduced to at least 85 percent below the 1990 levels. AB 1279 anticipates achieving these policies through direct GHG emissions reductions, removal of CO₂ from the atmosphere (carbon capture), and an almost complete transition away from fossil fuels.

Senate Bill 905

Approved by Governor Newsom on September 16, 2022, SB 905, Carbon Sequestration: Carbon Capture, Removal, Utilization, and Storage Program, requires CARB to establish a Carbon Capture, Removal, Utilization, and Storage Program to evaluate the efficacy, safety, and viability of carbon capture, utilization, or storage technologies and CO₂ removal technologies and facilitate the capture and sequestration of CO₂ from those technologies, where appropriate. SB 905 is an integral part of achieving the State policies mandated in AB 1279.

California Air Resources Board Scoping Plan

The Scoping Plan is a strategy CARB develops and updates at least once every five years, as required by AB 32. It lays out the transformations needed across our society and economy to reduce emissions and reach our climate targets. The current 2022 Scoping Plan is the third update to the original plan that was adopted in 2008. The initial 2008 Scoping Plan laid out a path to achieve the AB 32 mandate of returning to 1990 levels of GHG emissions by 2020, a reduction of approximately 15 percent below business as usual. The 2008 Scoping Plan included a mix of incentives, regulations, and carbon pricing, laying out the portfolio approach to addressing climate change and clearly making the case for using multiple tools to meet California’s GHG targets. The 2013 Scoping Plan assessed progress toward achieving the 2020 mandate and made the case for addressing short-lived climate pollutants (SLCPs). The 2017 Scoping Plan

also assessed the progress toward achieving the 2020 limit and provided a technologically feasible and cost-effective path to achieving the SB 32 mandate of reducing GHGs by at least 40 percent below 1990 levels by 2030. On December 15, 2022, CARB approved the 2022 Scoping Plan for Achieving Carbon Neutrality (2022 Scoping Plan). The 2022 Scoping Plan lays out a path to achieve targets for carbon neutrality and reduce anthropogenic GHG emissions by 85 percent below 1990 levels no later than 2045, as directed by AB 1279. The actions and outcomes in the plan will achieve significant reductions in fossil fuel combustion by deploying clean technologies and fuels; further reductions in SLCPs; support for sustainable development; increased action on natural and working lands to reduce emissions and sequester carbon; and the capture and storage of carbon (CARB 2022a).

Local Regulations and Plans

Tuolumne County General Plan

Greenhouse gases (GHG) are addressed within the *Climate Change Element* of the General Plan (County 2018).

The *Climate Change Element* contains the following goals, policies, and implementation programs that address GHG within the County:

- **Goal 18A:** 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.
 - **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:
 - **Implementation Program 18.A.b:** Include specific adaptation strategies in the CAP. Examples include, but are not limited to the following:
 - **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.

Tuolumne County Climate Action Plan

The County Board of Supervisors approved the CAP on November 8, 2022. The CAP identifies existing and projected GHG emissions, sets GHG reduction targets, establishes policies and actions to meet reduction targets, integrates climate adaptation and resilience strategies, engages the community, and provides an implementation program (County 2022).

4.6.1.4 Existing Conditions

State GHG Inventories

CARB performs statewide GHG inventories. The inventory is divided into six broad sectors: agriculture and forestry, commercial, electricity generation, industrial, residential, and transportation. Emissions are quantified in MMT CO₂e. **Table 4.6-2** shows the estimated statewide GHG emissions for the years 1990, 2000, 2010, and 2020.

Table 4.6-2
CALIFORNIA GHG EMISSIONS BY SECTOR

Sector	Emissions (MMT CO ₂ e)			
	1990	2000	2010	2020
Agriculture and Forestry	18.9 (4%)	30.8 (7%)	33.6 (8%)	31.6 (9%)
Commercial	14.4 (3%)	14.6 (3%)	20.1 (4%)	22.0 (7%)
Electricity Generation (In State and Imports)	110.5 (26%)	105.2 (22%)	90.6 (20%)	59.8 (14%)
Industrial	105.3 (24%)	101.2 (22%)	97.9 (23%)	85.3 (23%)
Residential	29.7 (7%)	31.5 (7%)	32.1 (7%)	30.7 (8%)
Transportation	150.6 (35%)	178.5 (39%)	168.0 (38%)	139.9 (39%)
Unspecified Remaining	1.3 (<1%)	-	-	-
TOTAL	430.7	461.9	442.3	369.2

Source: CARB 2007 and CARB 2022b.

MMT = million metric tons; CO₂e = carbon dioxide equivalent; - = not reported

As shown in **Table 4.6-2**, statewide GHG emissions totaled approximately 431 MMT CO₂e in 1990, 462 MMT CO₂e in 2000, 442 MMT CO₂e in 2010, and 369 MMT CO₂e in 2020. Transportation-related emissions consistently contribute the most GHG emissions, followed by electricity generation and industrial emissions.

4.6.1.5 Methodology

GHG emissions that would result from construction of the Countywide program were calculated using CalEEMod, Version 2022.1.1.14, as described in Section 4.2, *Air Quality*. CalEEMod output files for the project are included in Appendix C to this EIR.

4.6.1.6 Construction Emissions

The CalEEMod input and assumptions for modeling construction emissions are described in Section 4.2, *Air Quality*.

4.6.1.7 Operation Emissions

Operation of the individual fiber projects under the Countywide program would not result in a population increase and would not generate new vehicle trips beyond occasional maintenance activities. Individual fiber projects would produce negligible operational emissions due to the limited number of maintenance trips and therefore, operational GHG emissions were not calculated.

4.6.2 Significance Thresholds

According to Appendix G of the CEQA Guidelines, the following criteria may be considered in establishing the significance of GHG emissions:

1. Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment; and
2. Conflict with any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of GHGs.

As discussed in Section 15064.4 of the CEQA Guidelines, the determination of the significance of GHG emissions calls for a careful judgment by the Lead Agency, consistent with the provisions in Section 15064. Section 15064.4 further provides that a lead agency should make a good faith effort, based to the extent possible on scientific and factual data, to describe, calculate, or estimate the amount of GHG emissions resulting from a project.

The Tuolumne County Board of Supervisors approved the Climate Action Plan on November 8, 2022 (County 2022). Rather than developing the CAP to meet the criteria of Section 15183.5 of the State CEQA Guidelines, thresholds of significance have been developed for use by new projects when undergoing environmental review. **Table 4.6-3** shows efficiency thresholds that were developed using the County's GHG inventory, forecasts, and targets that are aligned with State reduction goals. Projects could use these efficiency thresholds to determine significance for GHG analyses in CEQA documents based on the project's anticipated operational year.

Table 4.6-3
GHG EMISSIONS EFFICIENCY THRESHOLDS

	2030	2040	2050
Target emissions from new development (MTCO ₂ e)	19,617	23,676	17,316
Efficiency threshold for new development (MTCO ₂ e/SP)	3.84	2.43	1.20
Efficiency threshold for new development (MTCO ₂ e/capita)	4.72	2.98	1.48
Efficiency threshold for new development (MTCO ₂ e/employee)	20.70	13.09	6.48

Source: County 2022

GHG=greenhouse gas; MTCO₂e= metric tons of carbon dioxide equivalent; SP=service population

4.6.3 Impact Analysis

GHG-1 Implementation of the project would not generate GHG emissions that may have a significant impact on the environment.

Construction Emissions

The Countywide program temporary construction method emissions were estimated using CalEEMod as described in Section 4.6.1.5 *Methodology*. The results of the modeling of the Countywide program construction method GHG emissions are shown in **Table 4.6-4**. The complete CalEEMod output is provided in Appendix C to this EIR.

**Table 4.6-4
UNMITIGATED CONSTRUCTION GHG EMISSIONS BY CONSTRUCTION METHOD**

Construction Method	2024 Emissions (MT CO ₂ e)
Horizontal Directional Drilling	0.9
Plowing	0.2
Trenching	0.5
Microtrenching	0.2
Line Installation	0.1
Aerial Stringing	0.9
Total¹	2.8

Source: CalEEMod (Output data is provided in Appendix C)

¹Totals may not sum due to rounding.

Table **4.6-4** presents the emissions for a single day of activity for each construction method, totaling 2.8 MT CO₂e in the year 2024. In order to determine how many days of construction activities it would take to exceed the GHG emissions efficiency threshold, outlined in **Table 4.6-5**, a total service population of 7,954 was utilized. Service population was used as a metric as the broadband infrastructure would provide service to the underserved population in the County.

The efficiency threshold for new development emissions per service population in the year 2050, 1.20, multiplied by the service population, 7,954, yields a total of 9,544 MT CO₂e/year. This represents the total annual emissions threshold. Dividing the total annual emissions, 9,544 MT CO₂e/year by the total daily construction activity emissions, 2.8 MT CO₂e/year, calculates the number of days it would take to exceed the annual emissions threshold. Based on these calculations, it would take approximately 3,408 days of activity to come close to exceeding the threshold. This assumes all activities would occur on the same day. These calculations are outlined below in **Table 4.6-5**.

**Table 4.6-5
CALCULATIONS OF NUMBER OF DAYS TO EXCEED THRESHOLD**

Service Population	Year	Efficiency Threshold	Brightline	Number of Days
9,954	2030	3.84	30,543	10,908
	2040	2.43	19,328	6,902
	2050	1.20	9,544	3,408

Additionally, construction emissions would be short term and temporary and would not result in long-term emissions. Once construction is completed and the individual fiber projects are installed, GHG emissions would be significantly reduced to negligible levels. There would be no net change in permanent GHG emissions compared to existing conditions. Therefore, impacts related to construction would be less than significant.

Operation Emissions

Operation of the individual fiber projects under the Countywide program would not result in a population increase and would not generate new vehicle trips beyond occasional maintenance activities. Therefore, the individual fiber projects would produce negligible operational emissions. Implementation of the Countywide program would not generate operational GHG emissions, either directly or indirectly, that may have a significant impact on the environment. Impacts related to operational emission would be less than significant.

Significance without Mitigation: Less than significant impact.

GHG-2 Implementation of the project would not conflict with or obstruct implementation of applicable GHG reduction plans, policies, or regulations.

GHG emissions are addressed within the *Climate Change Element* of the General Plan (Tuolumne County 2018). In addition to the General Plan, the Tuolumne County Transportation Council put together the Tuolumne County Regional Blueprint Greenhouse Gas Study, adopted by the County Board of Supervisors in January 2012, which includes a countywide GHG emissions inventory of 2010 emissions and projected emissions through 2040 for three different growth scenarios. The County Board of Supervisors also approved the CAP on November 8, 2022. The CAP identifies existing and projected GHG emissions, sets GHG reduction targets, establishes policies and actions to meet reduction targets, integrates climate adaptation and resilience strategies, engages the community, and provides an implementation program (County 2022). As discussed under impact GHG-1, construction and operation of individual fiber projects would not generate significant construction or operational GHG emissions.

The Countywide program would be consistent with the County General Plan, Tuolumne County Regional Blueprint Greenhouse Gas Study, and CAP. Additionally, the program would not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases. Impacts would be less than significant.

Significance without Mitigation: Less than significant impact.

4.6.4 Cumulative Impact

GHG-3 The proposed project would not contribute to a significant cumulative impact to regional and State GHG emissions.

As noted above, climate change impacts are cumulative. Given the relatively small levels of emissions generated by a project in relationship to the total amount of GHG emissions generated on a national or global basis, individual fiber projects are not expected to result in significant, direct impacts with respect to climate change. However, given the magnitude of the impact of GHG emissions on the global climate, GHG emissions from new development could result in significant, cumulative impacts with respect to climate change. As discussed in impacts GHG-1 and GHG-2 above, the Countywide program would not

make a cumulatively considerable contribution to significant cumulative GHG emissions and would not conflict with or obstruct applicable plans related to GHG emission reductions. Therefore, the Countywide program contribution to global climate change would be less than cumulatively considerable.

Significance without Mitigation: Less than significant impact.

4.6.5 References

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4.7 Hazards and Hazardous Materials

This section describes the regulatory framework and existing conditions related to hazards and hazardous materials, evaluates the potential impacts that could occur as a result of implementation of the proposed Countywide program, and details mitigation measures needed to reduce significant impacts, as necessary. No issues were raised during scoping that pertain to hazards or hazardous materials.

4.7.1 Environmental Setting

4.7.1.1 Regulatory Framework

Development of the proposed Countywide program is subject to numerous regulatory requirements and industry standards related to the storage, transport, and use of hazardous materials. Most regulations originate at the State and federal levels, with enforcement by local agencies.

Federal Regulations

Resource Conservation and Recovery Act of 1976

Federal hazardous waste laws are largely promulgated under the Resource Conservation and Recovery Act (RCRA; 40 CFR, Part 260), as amended by the Hazardous and Solid Waste Amendments of 1984 (which are primarily intended to prevent releases from leaking underground storage tanks). These laws provide for the “cradle to grave” regulation of hazardous wastes. Specifically, under RCRA any business, institution or other entity that generates hazardous waste is required to identify and track it from the point of generation until it is recycled, reused, or disposed of. The USEPA has the primary responsibility for implementing RCRA, although individual states are encouraged to seek authorization to implement some or all RCRA provisions.

Hazardous Material Transportation Act

The U.S. Department of Transportation regulates hazardous materials transportation under 49 CFR, which requires the U.S. Department of Transportation’s Office of Hazardous Materials Safety to generate regulations for the safe transportation of hazardous materials. The California Highway Patrol and Caltrans are the State agencies with primary responsibility for enforcing federal and state regulations and responding to hazardous materials transportation emergencies. These agencies also govern permitting for hazardous materials transportation within the state.

Comprehensive Environmental Response, Compensation, and Liability Act

The 1980 Comprehensive Environmental Response, Compensation, and Liability Act, commonly known as Superfund, provides federal authority to respond directly to releases or threatened releases of hazardous substances that may endanger public health or the environment. Federal actions related to the Superfund are limited to sites on the National Priorities List for cleanup activities, with the listings based on the USEPA Hazard Ranking System which is a numerical ranking system used to screen potential sites based on criteria such as the likelihood and nature of hazardous material release, and the potential to affect people or environmental resources. The Superfund was amended by the Superfund Amendments and Reauthorization Act (SARA) in 1986 as outlined below.

Superfund Amendments and Reauthorization Act

SARA is intended primarily to address the emergency management of accidental releases, and to establish state and local emergency planning committees responsible for collecting hazardous material inventory, handling, and transportation data. Specifically, under Title III of SARA, a nationwide emergency planning and response program established reporting requirements for businesses that store, handle or produce significant quantities of hazardous or acutely toxic substances as defined under federal laws. Title III of SARA also requires each state to implement a comprehensive system to inform federal authorities, local agencies and the public when significant quantities of hazardous or acutely toxic substances are stored or handled at a facility. These data are made available to the community at large under the “right-to-know” provision, with SARA also requiring annual reporting of continuous emissions and accidental releases of specified compounds.

State Regulations

California hazardous materials and waste regulations are equally or more stringent than federal regulations. The USEPA has granted the State primary oversight responsibility to administer and enforce hazardous waste management programs. State regulations require planning and management to ensure that hazardous materials are handled, stored, and disposed of properly to reduce risks to human health and the environment. Several important State laws pertaining to hazardous materials and wastes are discussed below.

California Environmental Protection Agency

The California Environmental Protection Agency (CalEPA) was created in 1991, unifying California’s environmental authority in a single cabinet-level agency and bringing the California Air Resources Board, State Water Resources Control Board, Regional Water Quality Control Boards (RWQCB), California Department of Resources Recycling and Recovery (formerly the Integrated Waste Management Board), Department of Toxic Substances Control (DTSC), Office of Environmental Health Hazard Assessment, and Department of Pesticide Regulation under one agency. These agencies were placed within the CalEPA as the “umbrella” for the protection of human health and the environment and to ensure the coordinated deployment of State resources. Its mission is to restore, protect, and enhance the environment, to ensure public health, environmental quality, and economic vitality.

California Department of Toxic Substances Control

The DTSC, which is a department of the CalEPA, is authorized to carry out the federal hazardous waste program in California to protect people from exposure to hazardous wastes. The department regulates hazardous waste, cleans up existing contamination, and looks for ways to control and reduce the hazardous waste produced in California. Permitting, inspection, compliance, and corrective action programs ensure that people who manage hazardous waste follow federal and State requirements and other laws that affect hazardous waste specific to handling, storage, transportation, disposal, treatment, reduction, cleanup, and emergency planning.

California Division of Occupational Safety and Health

Occupational safety standards exist in federal and state laws to minimize worker safety risks from both physical and chemical hazards in the workplace. The California Division of Occupational Safety and

Health (Cal/OSHA) and the federal Occupational Safety and Health Administration (OSHA) are the agencies responsible for assuring worker safety in the workplace.

Cal/OSHA assumes primary responsibility for developing and enforcing standards for safe workplaces and work practices within the state. At sites known to be contaminated, a site safety plan must be prepared to protect workers. The site safety plan establishes policies and procedures to protect workers and the public from exposure to potential hazards to the contaminated site.

California Building Code

The State of California provided a minimum standard for building design through the California Building Code (CBC), which is located in Part 2 of Title 24 of the California Code of Regulations. The CBC is based on the 2015 International Building Code but has been modified for California conditions. The CBC is updated every three years, and the current (2022) CBC went into effect January 1, 2023. It is generally adopted on a jurisdiction-by-jurisdiction basis, subject to further modification based on local conditions. Commercial and residential buildings are plan-checked by local county building officials for compliance with the typical fire safety requirements of the CBC, including the installation of sprinklers in all high-rise buildings; the establishment of fire resistance standards for fire doors, building materials, and particular types of construction; and the clearance of debris and vegetation within a prescribed distance from occupied structures in wildlife hazard areas.

California Emergency Management Agency

The California Emergency Management Agency adopted the State Hazard Mitigation Plan in 2007. This plan is the official statement of California's statewide hazard mitigation goals, strategies, and priorities. Hazard mitigation can be defined as any action taken to reduce or eliminate long-term risk to life and property by natural and human caused disasters. The plan, required under federal law, includes chapters on hazard assessment, local hazard mitigation planning, and mitigation strategy, and it must be updated every three years.

California Fire Code

The California Fire Code (CFC) incorporates, by adoption, the International Fire Code of the International Code Council, with California amendments. This is the official Fire Code for the State and all political subdivisions. It is located in Part 9 of Title 24 of the California Code of Regulations. The CFC is revised and published approximately every three years by the California Building Standards Commission, and the current CFC went into effect January 1, 2023.

California Department of Forestry and Fire Protection

The California Department of Forestry and Fire Protection (CAL FIRE) has mapped fire threat potential throughout California. The CAL FIRE ranks fire threat based on the availability of fuel and the likelihood of an area burning (based on topography, fire history, and climate). The rankings include no fire threat, moderate, high, and very high fire threat. Additionally, the CAL FIRE produced the *2010 Strategic Fire Plan for California*, which contains goals, objectives, and policies to prepare for and mitigate for the effects of fire on California's natural and built environments (CAL FIRE 2010).

State Responsibility Areas Fire Safe Regulations

State Responsibility Area (SRA) Fire Safe Regulations outline basic wildland fire protection standards and can decrease the risk of wildfire events. SRA Fire Safe Regulations do not supersede local regulations that equal or exceed minimum State regulations. The State statute for wildfire protection is PRC Section 4290. Requirements in the PRC include information on:

- Road standards for fire equipment access
- Standards for signs identifying streets, roads, and buildings
- Minimum private water supply reserves for emergency fire use
- Fuel breaks and greenbelts
- Basic emergency access

Local Regulations

Central Valley Regional Water Quality Control Board

The Porter-Cologne Water Quality Act established the State Water Resources Control Board and divided the State into nine regional basins, each under the jurisdiction of a RWQCB. The Central Valley RWQCB regulates water quality in the Countywide program area. The Central Valley RWQCB has the authority to require groundwater investigations when the quality of groundwater or surface waters of the state is threatened and to require remediation actions, if necessary.

Tuolumne County Environmental Health Division

The Tuolumne County Environmental Health Division is the Certified Unified Program Agency (CUPA) for the project site and consolidates, coordinates, and makes consistent the following existing programs:

- Aboveground Storage Tank Spill Prevention, Control Countermeasure Plan (California Health and Safety Code, Chapter 6.6.7)
- Underground Storage Tank Program (UST)
- California Accidental Release Prevention program
- Hazardous Waste Generator and Onsite Hazardous Waste Treatment (tiered permitting) Programs (California Health and Safety Code, Chapter 6.5) Hazardous Materials Business Plan (HMBP)

Tuolumne County Fire Department

The Tuolumne County Fire Department (TCFD) operates in cooperation with CAL FIRE (County 2023a). Within the TCFD/CAL FIRE along with eight fire districts provide life and property emergency response. In addition to services traditionally provided by most fire protection agencies nationwide, the County has the responsibility of addressing severe wildland fire protection. Wildland fires constitute the most significant major disaster threat in the County.

Tuolumne County Evacuation Needs Assessment and Communication Strategies

In June of 2020 the Tuolumne County Transportation Council (TCTC) received an award from the Sustainable Communities Transportation Planning Grant for the Evacuation Needs Assessment and Communication Strategies for Safer Communities Project (Kittelson & Associates 2023). Work began in

late July 2021 and continued until March 2023 when the final project document was adopted by the TCTC board.

The Tuolumne County Evacuation Needs Assessment and Communication Strategies study establishes an understanding of wildfire risk across the County, identifies locations where roadways may exceed capacity during an evacuation, and recommends potential strategies and treatments to increase capacity and resiliency of evacuation routes. The Tuolumne County Evacuation Needs Assessment and Communication Strategies Report is structured in three sections: Potential Wildfire Risk, Roadway Evacuation Needs Assessment, and Communication Strategies. The study provides a tool to TCTC, OES, and partners to evaluate opportunities to further enhance emergency response during evacuations and develop capital improvement projects to support a more resilient roadway network during large-scale evacuations. It also provides a status report on existing conditions which can be used moving forward to measure progress made by the County to measure improvements to evacuation operations.

Tuolumne County Office of Emergency Services

The County of Tuolumne Office of Emergency Services (OES) provides preparedness before, and coordination direction during, large-scale emergencies and disasters. OES coordinates with partner agencies, special districts, and key private agencies in providing planning, response, recovery, and mitigation activities as a result of disaster related incidents. The County OES created a pamphlet to advise how to evacuate in the event of a wildland fire (County 2023b).

The California OES coordinates the overall state agency response to major disasters in support of local government. The office is responsible for assuring the state's readiness to respond to and recover from both natural and man-made disasters, and for assisting local governments in their emergency preparedness, response, and recovery efforts.

Emergency Operations Plan for Tuolumne County

The Emergency Operations Plan (EOP) for Tuolumne County, adopted in June 2012, establishes County procedures and policies when responding to significant disasters, including wildland fires (County 2012). The area covered by this plan encompasses Tuolumne County, private agencies, and businesses within jurisdiction limits of the county. The EOP describes how emergencies will be managed through the Standard Emergency Management System and the Incident Command System, to ensure effective management of emergency operations within Tuolumne County. Emergency operations are split into eight phases:

- Event recognition
- Notification of response personnel
- Mobilization of response personnel
- Activation of emergency response facilities and resources
- Situation Reporting and Assessment
- Public alerting and information
- Protective action determination and implementation
- Re-entry and recovery

Tuolumne County is currently in the process of developing the 2023 Tuolumne County EOP and its Annexes in collaboration with various county stakeholders (County 2023c). The EOP is currently being updated to ensure it remains relevant and effective in responding to new and evolving hazards.

Tuolumne County Multi-Jurisdictional Hazard Mitigation Plan

The Tuolumne County Multi-Jurisdictional Hazard Mitigation Plan (MJHMP), adopted in December 2017 and updated in 2018, is a guide to hazard mitigation throughout the County and services as a tool to help decision makers direct hazard mitigation activities and resources (County 2018a). In the context of the MJHMP, mitigation is an action that reduces or eliminates long-term risk to people and property from hazards, including wildfire. The MJHMP contains the hazard mitigation actions to help reduce the risk of damage and injury from wildfire under Goal 5: Minimize the level of damage and losses to people, existing and future critical facilities, and infrastructure due to wildland fires.

Tuolumne County Code of Ordinances

Chapter 13.25, *Hazardous Materials Management*, of the County's Code of Ordinances establishes administrative procedures for the effective local implementation of hazardous materials, hazardous waste, and regulated hazardous substances regulatory requirements and to bring all hazardous material and hazardous waste regulatory authority of the Unified Program Agency and compliance requirements into one ordinance.

Chapter 15.20, *Fire Safety Standards*, has local fire safe ordinances in place including requirements for adequate setbacks, defensible space, and fuel modification. The chapter also includes requirements for the provision of adequate fire flows.

Tuolumne County Integrated Waste Management Plan

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 CalSierra 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 (County 2018c).

Tuolumne County Airport Land Use Commission

The Tuolumne County Airport Land Use Commission (TCALUC) promotes compatibility between the airports and heliports in Tuolumne County and the land uses that surround them. The TCALUC reviews compatibility criteria applicable to local agencies in their preparation or amendment of land use plans and ordinances and to landowners in their design of new development. Under TCALUC standards, heliports and helipads are regulated per Caltrans definitions, and EHLFs are therefore exempt from Caltrans Division of Aeronautics heliport permitting requirements.

Tuolumne County General Plan

Hazards and hazardous materials are addressed within the *Transportation Element*, *Noise Element*, and *Safety Element* of the General Plan (County 2018b).

The *Transportation Element* contains the following goals, policies, and implementation programs that address airport facilities within the County:

- **Goal 4F:** Maintain land use and development patterns in the vicinity of the County airports which are compatible with aircraft operations.
 - **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.

The *Noise Element* contains the following goals, policies, and implementation programs that address airport facilities within the County:

- **Goal 5A:** Protect the economic base of Tuolumne County and preserve the tranquility of residential areas by minimizing potential conflicts between transportation and stationary noise sources and noise sensitive land uses.
 - **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.

The *Safety Element* contains the following goals, policies, and implementation programs that address emergency evacuation, hazards, and hazardous materials within the County:

- **Goal 9B:** Create plans to effectively prepare for, respond to, and recover from the effects of natural or manmade disasters or other emergencies.
 - **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.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.

- **Goal 9E:** Provide structural fire protection to persons and property within Tuolumne County consistent with the needs dictated by the level of development and in accordance with current Federal, State, and local fire protection agency regulations and policies.
 - **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.
- **Goal 9G:** Establish and maintain a codified fire protection risk management strategy which requires new development within Tuolumne County to incorporate or supply fire protection infrastructure and improvements necessary so that such development does not exceed the capabilities of the County's fire protection resources.
 - **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
- **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.
- **Goal 9I:** Minimize the risk of loss of life, injury, illness, property damage and alteration of established land use patterns resulting from the use, transport, treatment, and disposal of hazardous materials and hazardous wastes.
 - **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.

4.7.1.2 Existing Conditions

Environmental Setting

Hazardous Materials

For purposes of this section, the term “hazardous materials” refers to both hazardous substances and hazardous wastes. A “hazardous material” is defined in the CFR as “a substance or material that ... is capable of posing an unreasonable risk to health, safety, and property when transported in commerce” (49 CFR 171.8). California Health and Safety Code Section 25501 defines a hazardous material as follows:

“Hazardous material” means any material that, because of its quantity, concentration, or physical, or chemical characteristics, poses a significant present or potential hazard to human health and safety or to the environment if released into the workplace or the environment.

“Hazardous materials” include, but are not limited to, hazardous substances, hazardous waste, and any material which a handler or the administering agency has a reasonable basis for believing that it would be injurious to the health and safety of persons or harmful to the environment if released into the workplace or the environment.

“Hazardous wastes” are defined in California Health and Safety Code Section 25141(b) as wastes that:

... because of their quantity, concentration, or physical, chemical, or infectious characteristics, [may either] cause, or significantly contribute to an increase in mortality or an increase in serious illness [or] pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, disposed of, or otherwise managed.

Hazardous materials in Tuolumne County, California, are regulated through a combination of federal, State, and local regulations to ensure their safe handling, storage, transportation, and disposal. Several agencies and departments play a role in overseeing and enforcing these regulations.

At the federal level, the USEPA sets standards and regulations for hazardous materials under various laws, such as RCRA and the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). These regulations govern the proper management, storage, and disposal of hazardous materials and address issues related to hazardous waste, contaminated sites, and emergency response.

At the State level, the DTSC has authority over hazardous materials and hazardous waste management. They establish regulations and programs to ensure the safe handling, storage, and disposal of hazardous materials, including requirements for permits, inspections, and reporting.

Within Tuolumne County, the Environmental Health Division of the Tuolumne County Public Health Department plays a crucial role in regulating hazardous materials. They enforce local ordinances and regulations pertaining to hazardous materials storage, handling, and disposal. This includes permitting and inspection of facilities that handle hazardous materials, responding to hazardous materials incidents, and providing guidance and education to businesses and the community on safe practices.

In addition to these regulatory agencies, there are also emergency response teams, such as the local fire department and hazardous materials response teams, that are trained and equipped to handle and mitigate hazardous materials incidents.

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 (County 2018c).

Hazardous Materials Transportation

Major access routes to Tuolumne County include SR 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 USEPA and the U.S. Department of Transportation (DOT) regulate the overall transportation of hazardous waste and material, including transport via highway and rail. USEPA 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), Caltrans, and the 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 (County 2018c).

Evacuation Route/ Emergency Response Plan

Information on emergency response plan and evacuation plan is contained in the Natural Hazards Element of the 2018 Tuolumne County General Plan and the Tuolumne County Multi-Jurisdiction Hazard Mitigation Plan. Tuolumne County does not have a static emergency plan or evacuation plan due to the dynamic nature of emergencies. In the event of an emergency, the Tuolumne County Sheriff Office is the responsible entity for declaring and directing evacuations in the case of emergencies. The Sheriff's Department would inform members of the public via the Everbridge Emergency Notification System, local media, and door-to-door when feasible.

Environmental Database Search

The 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 227 records for Tuolumne County. The database indicates that there are 139 LUST cleanup sites, 23 Cleanup Project Sites, 12 Land Disposal Sites, two WDR Sites, four AGLand Domestic Wells, 37 Permitted Underground Storage Tank (UST) Sites, six Single-Walled UST Sites, four Non-Case Information Sites, most of which have been fully remediated (SWRCB 2023). A total of six sites are currently active, including four AGLand Domestic Wells and two WDR Sites. The open sites include private residences and wastewater treatment facilities (SWRCB 2023).

DTSC also maintains a list of cleanup sites and hazardous waste permitted facilities on its EnviroStor database. The EnviroStor database has 37 records for Tuolumne County, two of which are active. The two active records are dry cleaning sites within the City of Sonora (DTSC 2023).

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.

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 prospective purchasers and lessees. Additionally, all LBP abatement activities must comply with Cal/OSHA, federal 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.

Wildfires

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 (County 2018c). 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.

Fire Protection Services

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, and the unincorporated community of Tuolumne are the State’s responsibility and CAL FIRE is responsible for wildland fire protection. Tuolumne County Fire Department has 13 fire stations throughout the County.

Airports

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) (County 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. Land uses prohibited by the ALUCP zones are described in **Table 4.7-1**.

Table 4.7-1
AIRPORT LAND USE COMPATIBILITY ZONES

Zone	Location	Prohibited Uses
A	Runway Protection Zone or Within Building Restriction Line	<ul style="list-style-type: none"> • 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

Zone	Location	Prohibited Uses
B1	Approach/Departure Zone and Adjacent to Runway	<ul style="list-style-type: none"> • 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	Same as B1.
C	Common Traffic Pattern	<ul style="list-style-type: none"> • Children’s schools, day care centers, libraries • Hospitals, nursing homes • Hazards to flight
D	Other Airport Envisions	<ul style="list-style-type: none"> • Hazards to flight

Source: County 2003

4.7.2 Significance Thresholds

Based on Appendix G of the CEQA Guidelines, a hazards and hazardous materials impact is considered significant if implementation of the proposed Countywide program would:

1. Create a significant hazard to the public or the environment through routine transport, use, or disposal of hazardous materials;
2. Create a significant hazard to the public hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment;
3. Emit hazardous emissions or require handling of hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school;
4. Be located on a site that is included on a list of hazardous materials sites compiled pursuant to Section 65962.5 of the California Government Code and, as a result, would create a significant hazard to the public or the environment;
5. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area;
6. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan; or
7. Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires.

4.7.3 Impact Analysis

HAZ-1 **The proposed project would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.**

The proposed Countywide program would not require long-transport, use or disposal of hazardous materials; however, small quantities of hazardous materials may be stored, used, and handled during construction activities as part of the installation of fiber optic lines for individual fiber projects. Construction activities would mainly involve the use of hazardous materials such as fuels, lubricants, and solvents typically associated with construction equipment and vehicles. These materials are commonly used during construction and are not acutely hazardous. Operation of either underground or aboveground fiber optic conduit would not require long-transport, use, or disposal of hazardous materials; however, small quantities of hazardous materials may be used or handled during routine maintenance checks.

Project applicants, builders, and contractors for individual fiber projects 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 individual fiber 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 (DMV) 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.

Because individual fiber 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 less than significant.

Significance without Mitigation: Less than significant.

HAZ-2 The proposed project would not 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.

HAZ-4 The proposed project would not be located on a site that is included on a list of hazardous materials compiled pursuant to Section 65962.5 of the California Government Code and, as a result, would not create a significant hazard to the public or the environment.

The Countywide program would install fiber optic conduit either underground in buried conduits, overhead on pole lines, or in a combination of both. Utility structures, such as a telecommunications utility pole have the potential to emit radiofrequency (RF) energy, a type of electromagnetic energy. According to the Federal Communications Commission (FCC) Office of Engineering & Technology, levels of RF energy routinely encountered by the general public are typically far below levels necessary to produce significant heating and increased body temperature (FCC 1999). There have been no conclusive results that have examined the possibility of a link between RF exposure and cancer, and other studies have failed to find evidence for a causal link to cancer or any related conditions (FCC 1999). As no conclusive or causal evidence of biological effects from RF energy has been determined, there is no evidence to suggest the proposed telecommunications utility poles would cause health problems to the surrounding communities. Due to lack of evidence, impacts regarding RF energy would be less than significant.

Disturbance of sites with known or 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 RWQCB.

Spills during on-site fueling of equipment during construction or an upset condition could result in a release of fuel or oils into the environment, including sensitive waterways within the vicinity of the proposed activity. In addition, subsurface hazardous materials may be encountered during construction. Procedures regarding spill prevention and response, as well as proper handling and disposal of hazardous materials are established by federal, State, and local regulations and would be implemented as part of each individual fiber project.

As mentioned in Section 4.7.1.2, *Existing Conditions*, SWRCB's GeoTracker database contains 227 records for Tuolumne County. The database indicates that there are 139 LUST cleanup sites, 23 Cleanup Project Sites, 12 Land Disposal Sites, two WDR Sites, four AGLand Domestic Wells, 37 Permitted Underground Storage Tank (UST) Sites, six Single-Walled UST Sites, four Non-Case Information Sites, most of which have been fully remediated (SWRCB 2023). A total of six sites are currently active, including four AGLand Domestic Wells and two WDR Sites. The open sites include private residences and wastewater treatment facilities (SWRCB 2023). DTSC also maintains a list of cleanup sites and hazardous

waste permitted facilities on its EnviroStor database. The EnviroStor database has 37 records for Tuolumne County, two of which are active. The two active records are dry cleaning sites within the City of Sonora (DTSC 2023). Any development of individual fiber projects 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.

Although the exact locations of fiber optic line along roadways are not known at this time, installation and maintenance activities have potential to occur within the boundaries of a known hazardous waste site or in areas with existing soil or groundwater contamination. Proposed fiber optic lines could be constructed in areas that have existing buried utilities that could contain hazardous waste. Therefore, excavation activities for fiber optic line installation or during operational maintenance activities could result in the accidental release of hazardous materials to the environment. All individual fiber projects would be required to implement and comply with federal, State, and local regulatory requirements to reduce the potential for exposure to the public or environment to hazards. For any individual fiber project that would disturb an area greater than one acre, a SWPPP would be required to be prepared and implemented to reduce soil erosion and contain stormwater with construction and operational BMP.

Due to the limited area of ground disturbance and short exposure window, the potential for construction activities to encounter hazardous conditions that could affect worker health, or the environment would be limited. However, as the location of individual fiber projects relative to hazardous materials sites is not yet known, there would be some potential for exposure of construction workers and the public to hazardous materials contamination during construction. If encountered, contaminated materials may be classified as hazardous waste, a designated waste, or a special waste, depending on the type and degree of contamination. If it is determined that an individual fiber project may be located near or on a hazardous materials site, a Phase I Environmental Site Assessment (ESA) would be prepared. Therefore, impacts to reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment would be less than significant for Impacts HAZ-2 and HAZ-4.

Significance without Mitigation: Less than significant.

HAZ-3 The proposed project would not emit hazardous emissions or require handling of hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.

Multiple elementary, middle, and high schools in the County are located near roadways. Some of these schools may be located within one-quarter mile of proposed fiber installation activities. As noted under Impacts HAZ-1 and HAZ-2, the Countywide program would comply with existing federal, State, and local regulations regarding transport, use, disposal, and reasonably foreseeable upset and accident conditions of hazardous materials. However, because the location of individual fiber projects relative to hazardous materials sites is unknown and may be located within one-quarter mile of a school, there would be some potential for exposure of construction workers and the public to hazardous materials contamination during construction. If it is determined that an individual fiber project may be located near or on a hazardous materials site, a Phase I ESA would be prepared to evaluate and address potential exposure. Therefore, the impact would be less than significant.

Significance without Mitigation: Less than significant.

HAZ-5 The proposed project may be 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, however the proposed project would not result in a safety hazard or excessive noise for people residing or working in the project area.

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) 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 (County 2003). Land uses prohibited by the ALUCP zones are described in **Table 4.7-1**.

The Countywide program would install fiber optic conduit either underground in buried conduits, overhead on pole lines, or in a combination of both. The installation of underground or overhead cables would be located within existing County maintained road ROW, public utility easements, and/or overhead public utility easements of record throughout the County. The exact alignment of future broadband infrastructure is unknown at this time and would be based on such considerations as construction feasibility, local preference, and locations of sensitive environmental resources.

As outlined under **Table 4.7-1**, various uses are prohibited within ALUCP zones. The proposed aboveground fiber optic poles would not exceed 77 feet in height; and therefore, would not be tall enough to interfere with airport operations within Zone A. Additionally, the Countywide program would not include permanent structures for human occupancy and would therefore not create the potential to expose residents to airport-related noise. Compliance with the ALUCP would substantially limit the potential for exposure of people to aircraft-related hazards. Therefore, individual fiber projects would not pose a safety hazard with regard to airport operations. The impact would be less than significant.

Significance without Mitigation: Less than significant.

HAZ-6 The proposed project would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.

As discussed under Impacts HAZ-1 and HAZ-2, each individual fiber project would be required to comply with various federal, State, and local regulations to minimize the potential for emergencies, such as procedures to follow in the event of accidental spills or other releases of hazardous materials into the environment. Compliance with these regulations would ensure that on-site emergencies are addressed quickly and efficiently, and in cooperation with local emergency services providers.

Tuolumne County maintains an MJHMP and Emergency Operations Plan. In the event of an emergency, the Tuolumne County Sheriff's Office is the responsible entity for declaring and directing evacuations in the case of emergencies. The Sheriff's Department would inform members of the public via the Everbridge Emergency Notification System, local media, and door-to-door when feasible. The County OES created a pamphlet to advise how to evacuate in the event of a wildland fire (County 2023b). Additionally, the Tuolumne County Evacuation Needs Assessment and Communication Strategies Study establishes an understanding of wildfire risk across the County, identifies locations where roadways may

exceed capacity during an evacuation, and recommends potential strategies and treatments to increase capacity and resiliency of evacuation routes. The study provides a tool to TCTC, OES, and partners to evaluate opportunities to further enhance emergency response during evacuations and also provides a status report on existing conditions which can be used moving forward to measure progress made by the County to measure improvements to evacuation operations.

Construction

Construction and maintenance activities may require temporary lane closures, which have the potential to impede or interfere with emergency access routes or services. Coordination with local agencies (e.g., California Highway Patrol, Caltrans, and local police and fire departments) for any necessary and temporary road closures would be required, especially for construction within designated emergency access routes or in areas that would impede or otherwise affect evacuation and emergency access or services. To minimize or avoid lane closures that could interfere with traffic circulation during emergencies and disrupt access to private properties and roadways, each individual fiber project would be required to develop and implement a Transportation Management Plan consistent with an Encroachment Permit and code requirements of Tuolumne County. An Encroachment Permit application would be submitted to the County Department of Public Works. With adherence to these requirements, potential impacts during construction would be less than significant.

Operation

Operation of the proposed Countywide program would introduce a wider and more reliable network that would benefit communications to emergency services. The program would improve public health and safety through enabling faster emergency response, enhanced communication between emergency services, and access to critical information during disasters or emergencies. Therefore, the program would benefit evacuations and impacts would be less than significant.

Significance without Mitigation: Less than significant.

HAZ-7 The proposed project would not expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires.

Fire hazards in Tuolumne County range from moderate in the far western portion of the County to very high in the central portion. 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 MJHMP indicates that the probability of significant wildfire occurring in the future is high (County 2018a). The risk for personal injury and loss of life, and the potential losses of structures and personal property, is also rated as high. For further evaluation of wildfire risks and response, see Section 4.13, *Wildfire*, of this EIR.

The proposed Countywide program would install broadband infrastructure within Tuolumne County limits. As the proposed Countywide program would install broadband infrastructure, there would be no occupants that would be exposed to wildfire risks. However, broadband infrastructure may pass through existing communities.

Construction

Construction activities that could result in sparks, such as welding or grinding, have a greater likelihood of creating a source of ignition than other construction-related activities. To decrease the wildfire hazards in the County, the Strategic Fire Plan for the Tuolumne/Calaveras Unit was prepared to provide guidance to reduce structural ignitability. Additionally, adherence to the CBC Chapter 7A, Fire Hazard Severity Zones and Building Standards and Materials, and Public Resource Code 4291, requires property owners to maintain clearance of flammable vegetation of 100 feet from structures in order to reduce the risk of fire. 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. Additionally, construction workers would be trained in basic firefighting, and the availability of tools and training would allow construction crews to help control or extinguish fires they may come upon. Therefore, adherence to existing regulations would ensure that impacts related to fire risks from construction would be less than significant.

Operation

The Countywide program would install fiber optic conduit either underground in buried conduits, overhead on pole lines, or in a combination of both. Buried conduits would not exacerbate fire risk as all infrastructure would be underground. Overhead fiber optic lines would be attached to proposed or existing pole lines. The proposed poles would adhere to CBC Chapter 7A, Fire Hazard Severity Zones and Building Standards and Materials, and Public Resource Code 4291, which require property owners to maintain clearance of flammable vegetation of 100 feet from structures in order to reduce the risk of fire. However, fiber optic lines do not carry an electrical charge and are therefore not a source of heat (Fluke Networks 2022). Therefore, underground, or aboveground fiber optic lines would not exacerbate fire risk. Impacts related to fire risks from operation would be less than significant.

Significance without Mitigation: Less than significant impact.

4.7.4 Cumulative Impacts

HAZ-8 The proposed project would not contribute to a significant cumulative impact with respect to hazards and hazardous substances.

Cumulative impacts related to hazards and hazardous materials would occur when the Countywide program, in combination with other projects or plans/projections in Tuolumne County, would directly or indirectly create a significant hazard through the transport, use, or disposal of hazardous materials; accidental release of hazardous materials; release of hazardous emissions in proximity to a school; be located on a hazardous materials site; result in a safety hazard or excessive noise in proximity to an airport; or impair implementation of or physically interfere with an adopted emergency plan. As discussed above, implementation of the proposed project would result in a less than significant impact related to hazards and hazardous materials. If it is determined that an individual fiber project may be located near or on an existing hazardous materials site, a Phase I ESA would be prepared.

The residential and commercial cumulative development projects included in **Table 4-1** could involve the storage, use, disposal, and transport of hazardous materials to some degree during construction and operation. None of the cumulative projects are associated with the production and manufacturing of hazardous materials other than incidental hazardous materials as a by-product of the site activity. All listed development projects, including the proposed Countywide program, when considered with the

cumulatively would not create a cumulatively considerable hazard to the public or environment related to the handling or accidental release of hazardous materials. Implementation of the proposed Countywide program would allow for individual fiber projects in areas that are prone to wildland fires. Where cumulative projects are constructed in close proximity, the potential for wildfires as a result of these projects may be increased. However, cumulative projects located in proximity to the proposed project would also follow the Strategic Fire Plan and MJHMP and adhere to CBC requirements, which would lessen the potential for wildfires. Therefore, the Countywide program would have a less than cumulatively considerable impact related to hazards and hazardous materials.

Significance without Mitigation: Less than significant impact.

4.7.5 References

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4.8 Hydrology and Water Quality

This section describes the regulatory framework and existing conditions related to hydrology and water quality, evaluates the potential impacts that could occur as a result of implementation of the proposed Countywide program, and details mitigation measures needed to reduce significant impacts, as necessary. On May 30, 2023, the Central Valley Regional Water Quality Control Board (CVRWQCB) sent a letter to Tuolumne County Community Development Department to provide comments on the Countywide Program EIR. CVRWQCB noted that the environmental review document should evaluate potential impacts to both surface and groundwater quality. CVRWQCB also included permitting requirements for the Construction Storm Water General Permit, Clean Water Act (CWA) Section 404 Permit, Clean Water Act Section 401 Permit – Water Quality Certification, Waste Discharge Requirements – Dischargers to Waters of the State, Dewatering Permit, and NPDES Permit. The NOP public comments letters are included in Appendix B.

4.8.1 Environmental Setting

4.8.1.1 Regulatory Framework

Federal Regulations

Federal Water Pollution Control Act, also known as the Clean Water Act

The following are potentially applicable sections of the CWA (33 USC 1251-13176).

Sections 303 and 305 - Total Maximum Daily Load Program

The State of California has adopted water quality standards to protect beneficial uses of state waters as required by the Clean Water Act (CWA) 303 Total Maximum Daily Load (TMDL) Program and the State's Porter-Cologne Water Quality Control Act of 1969 (Porter-Cologne Act). CWA 303(d) established the TMDL process to guide the application of state water quality standards (see the discussion of state water quality standards below). To identify candidate water bodies for TMDL analysis, a list of water quality-limited streams is generated. Such streams are considered to be impaired by the presence of pollutants, including sediments, and to have no additional capacity for these pollutants.

In addition to the impaired water body list required by CWA Section 303(d), CWA Section 305(b) requires states to develop a report that assesses statewide surface water quality. Both CWA requirements are addressed through the development of a 303(d)/305(b) Integrated Report, which provides both an update to the 303(d) list and a 305(b) assessment of statewide water quality. The SWRCB statewide 2014/2016 California Integrated Report was based on Integrated Reports from each of the nine Regional Water Quality Control Boards (RWQCB). After approval of the Section 303(d) list portion of the California Integrated Report by the SWRCB, the complete 2014 and 2016 California Integrated Report was approved by the USEPA on April 6, 2018.

Section 401 - Water Quality Certification

CWA Section 401 requires that an applicant obtain a water quality certification (or waiver) for pursuing a federal permit to conduct any activity that may result in a discharge of a pollutant to a regulated water body. Water quality certifications are issued by the RWQCB in California, and the CVRWQCB is responsible for issuing certifications in the Tuolumne County area. Under the CWA, the state (as

implemented by the relevant RWQCB) must issue or waive a CWA Section 401 water quality certification for a project to be permitted under CWA Section 404. Water quality certification requires the evaluation of water quality considerations associated with dredging or the placement of fill materials into waters of the United States. Construction of the proposed project would require a CWA 401 certification for the project if CWA Section 404 requirements are triggered.

Section 402 - National Pollutant Discharge Elimination System Program

The 1972 amendments to the Federal Water Pollution Control Act established the NPDES permit program to control discharges of pollutants from point sources (CWA Section 402). The 1987 amendments to the CWA created a new section of the CWA that is devoted to stormwater permitting (CWA 402[p]). USEPA has granted the State of California primacy in administering and enforcing the provisions of CWA and the NPDES permit program. The NPDES permit program is the primary federal program that regulates point-source and nonpoint-source discharges to waters of the United States.

The SWRCB issues both general and individual permits for certain activities. Although implemented at the state and local level, relevant general and individual NPDES permits are discussed below.

Construction Activities

Dischargers whose projects disturb one or more acres of soil, or whose projects disturb less than one acre but are part of a larger common plan of development that in total disturbs one or more acres, are required to file a notice of intent to obtain coverage under the NPDES General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (Order No. 2009-0009-DWQ, as amended by 2010-0014-DWQ and 2012-006-DWQ) (Construction General Permit). Construction activities subject to this permit include clearing, grading, and disturbances to the ground such as stockpiling or excavation, but do not include regular maintenance activities performed to restore the original line, grade, or capacity of the facility.

The Construction General Permit requires the preparation and implementation of a SWPPP, which must be completed before construction begins. The SWPPP should contain a site map that shows the construction site perimeter; existing and proposed buildings, lots, roadways, and stormwater collection and discharge points; general topography both before and after construction; and drainage patterns across the project site. The SWPPP must list the BMP that the discharger will use to manage stormwater runoff and describe the placement of those BMP. Additionally, the SWPPP must contain a visual monitoring program, a monitoring program for pollutants that are not visible to be implemented if there is a failure of BMP, and a pH and turbidity monitoring program if the site discharges to a water body listed on the CWA 303(d) list for sediment. The Construction General Permit describes the elements that must be contained in a SWPPP.

Section 404 - Permits for Fill Placement in Waters and Wetlands

CWA Section 404 regulates the discharge of dredged and fill materials into waters of the United States, which include oceans, bays, rivers, streams, lakes, ponds, and wetlands. Project proponents must obtain a permit from the USACE for all discharges of dredged or fill material into waters of the United States before proceeding with a proposed activity. Before any actions are implemented that may affect surface waters, a delineation of jurisdictional waters of the United States must be completed, following USACE protocols, to determine whether the study area contains wetlands or other waters of the United States that qualify for CWA protection. These areas include the following:

- Sections within the ordinary high-water mark of a stream, including non-perennial streams with a defined bed and bank and any stream channel that conveys natural runoff, even if it has been realigned.
- Seasonal and perennial wetlands, including coastal wetlands.

CWA Section 404 permits may be issued for only the least environmentally damaging practical alternative (i.e., authorization of a proposed discharge is prohibited if there is a practical alternative that would have fewer significant effects and lacks other significant consequences). CWA Section 404 would apply if project construction was proposed within waters of the United States.

State Regulations

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act (Porter-Cologne Act, Water Code Section 13000 et seq.) is California's statutory authority for the protection of water quality in conjunction with the federal CWA. The Porter-Cologne Act requires the SWRCB and RWQCBs under the CWA to adopt and periodically update water quality control plans, or basin plans. Basin plans are plans in which beneficial uses, water quality objectives, and implementation programs are established for each of the nine regions in California. The Porter-Cologne Act also requires dischargers of pollutants or dredged or fill material to notify the RWQCBs of such activities by filing Reports of Waste Discharge and authorizes the SWRCB and RWQCBs to issue and enforce waste discharge requirements, NPDES permits, CWA Section 401 water quality certifications, or other approvals.

California Regional Water Quality Control Board and Basin Plans

Water quality in streams and aquifers of the region is guided and regulated by the respective RWQCB basin plans. State policy for water quality control is directed at achieving the highest water quality consistent with the maximum benefit to the people of the state.

Basin Plan for the Sacramento and San Joaquin River Basins

The preparation and adoption of water quality control plans (Basin Plans) is required by the California Water Code (Section 13240) and supported by the Federal Clean Water Act. Section 303 of the Clean Water Act requires states to adopt water quality standards which "consist of the designated uses of the navigable waters involved and the water quality criteria for such waters based upon such uses." The Basin Plan covers the entire area included in the Sacramento and San Joaquin River drainage basins including the Upper Tuolumne Watershed (CVWQCB 2019).

Sustainable Groundwater Management Act

The Sustainable Groundwater Management Act (SGMA) was signed into California in 2014. SGMA establishes a framework for long-term sustainable groundwater management across California and requires local agencies to bring over drafted basins into balanced levels of pumping and recharge. The California Department of Water Resources (DWR) uses the California Statewide Groundwater Elevation Model Priority List to rank groundwater basins across the State according to priority levels of high, medium, low, or very low, and SGMA specifies deadlines for completion of Groundwater Sustainability Plans (GSP) in order of basin priority. Under SGMA, high- and medium-priority basins, as designated by

the DWR, must establish Groundwater Sustainability Agencies (GSA) that oversee the preparation and implementation of a local GSP. Because the Owens Valley Groundwater Basin is low priority, neither a GSA nor a GSP are required. However, the Owens Valley Groundwater Authority is the recognized GSA for the basin and adopted a GSP on December 9, 2021. The GSP contains groundwater water level and quality criteria at representative monitoring locations to define sustainable groundwater conditions in the basin.

Local Regulations

Central Valley Regional Water Quality Control Board

The Porter-Cologne Water Quality Act (California Water Code Sections 13000 et seq.) established the State Water Resources Control Board and divided the state into nine regional basins, each under the jurisdiction of a RWQCB. The CVRWQCB regulates water quality in the Countywide program area. The Central Valley RWQCB has the authority to require groundwater investigations when the quality of groundwater or surface waters of the state is threatened, and to require remediation actions, if necessary.

Tuolumne County Water Quality Plan

Tuolumne County Water Quality Plan (WQP) contains a comprehensive program that addresses a wide range of water quality concerns within the County. The WQP emphasizes surface (e.g., lakes, streams) water quality, factors affecting surface water quality including stormwater runoff, and mechanisms for maintaining and improving surface water quality.

The WQP includes both regulatory and non-regulatory components. The regulatory component builds upon many existing environmental programs and activities implemented by various County departments and focuses on land development activities subject to the County's permitting requirements and on County public works projects. The non-regulatory stewardship component of the WQP encourages voluntary community participation in maintaining and improving the County's water quality.

Although the County is not currently identified as a small MS4, the WQP represents a proactive approach by the County to address pre-existing water quality issues in terms of the State General Permit for Small Municipal Separate Storm Sewer Systems. Consistent with the requirements for small MS4s, the WQP provides a framework for consistent, effective, and efficient implementation of stormwater management practices for discharges entering drainage conveyance systems. Programs contained in the WQP are intended to provide the initial framework for complying with the requirements of the Phase II NPDES Program (County 2007).

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 (County 2018a).

Stanislaus and Tuolumne Rivers Groundwater Basin Association

In 2017, member agencies of the Stanislaus and Tuolumne Rivers Groundwater Basin Association (STRGBA) - City of Modesto, Modesto Irrigation District, City of Oakdale, Oakdale Irrigation District, City of Riverbank, City of Waterford, and Stanislaus County - formed as a GSA. STRGBA GSA has the authority and responsibility to manage the majority of the Modesto groundwater basin. The STRGBA coordinates its planning process with other neighboring water agencies as well as state agencies.

The Tuolumne County GSA is responsible for the small section of the Modesto Subbasin that falls within Tuolumne County. Many groundwater basins in the San Joaquin Valley have experienced heavy groundwater pumping - especially during the recent 2012-2016 drought. Several are now in a condition of critical overdraft. The Modesto basin isn't considered to be critically over drafted, but since most of the cities within our basin rely solely on groundwater, we're considered a high-priority basin. Due to that designation, SGMA requires the adoption and implementation of the Modesto Subbasin GSP by January 31, 2022 (STRGBA 2022).

Tuolumne County General Plan

Hydrology and water quality are addressed within the *Utilities Element*, *Water Supply Element* and *Natural Hazards Element* of the General Plan (County 2018b).

The *Utilities Element* contains the following goals, policies, and implementation programs that address hydrology and water quality of the County:

- **Goal 3A:** Establish standards for water service for new development and protect the quality and quantity of existing supplies of ground and surface water.
 - **Policy 3.A.5:** Protect the geologic landscape for water quality and quantity and the functionality of the geology for water recharge from new development.

The *Water Supply Element* contains the following goals, policies, and implementation programs that address hydrology and water quality of the County:

- **Goal 14A:** Pursue adequate water supply for all Tuolumne County residents and visitors.
 - **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.
 - **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.
- **Goal 14C:** Protect and improve the quality and quantity of the County's water resources, while protecting the rights of landowners.

- **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:** 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.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 due to 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 have an effect on 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.9:** Promote improved watershed health, improved water quality and water quantity yields of the watersheds in Tuolumne County.

The *Natural Hazards Element* contains the following goals, policies, and implementation programs that address hydrology and water quality of the County:

- **Goal 17A:** Protect structures and land uses from flood hazards in order to minimize loss of life, injury, damage to property, and economic and social dislocations.

- **Policy 17.B.1:** Reduce the potential for future damage 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. (formerly 6.H.c)
 - **Implementation Program 17.B.b:** Review and notify FEMA of errors or other information to correct or update FIRM maps.
- **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.
- **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.
- **Goal 17C:** Manage floodplains for their natural resource value.
 - **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 due to 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.
 - **Goal 17D:** Protect new and existing structures and land uses from geologic hazards in order to minimize loss of life, injury, damage to property, and economic and social dislocations.
 - **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.

- **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.

4.8.1.2 Existing Conditions

Hydrology

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 (County 2018a).

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'Shaughnessy 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.

Groundwater

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 (County 2018a).

The Tuolumne County GSA is responsible for the small section of the Modesto Subbasin that falls within Tuolumne County. The Tuolumne GSA covers approximately 1,000 acres that extends eastward into Tuolumne County (STRGBA 2022).

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

The County is under the jurisdiction of the CVRWQCB, 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, 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 (County 2018a).

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 (County 2018a). Large dams are mostly located along the Tuolumne and Stanislaus rivers.

4.8.2 Significance Thresholds

In accordance with Appendix G of the CEQA Guidelines, Countywide program-related impacts to hydrology and water quality would be significant if the proposed Countywide program would:

1. Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality;
2. Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin;
3. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would: (i) result in substantial erosion or siltation on- or off-site; (ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite; (iii) 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; or (iv) impede or redirect flood flows;
4. In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation; and,

5. Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.

4.8.3 Impact Analysis

HYD-1 The proposed project would not violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality.

Construction

Site clearing, grading, excavation, and construction activities have the potential to impact water quality through soil erosion and increased silt and debris discharged via surface runoff. Additionally, the use of construction materials such as fuels, solvents, and paints may present a risk to surface water quality. Temporary storage of construction materials and equipment in work or staging areas could create the potential for a release of hazardous materials, trash, or sediment to the storm drain system. Individual fiber projects that would result in disturbance of an area greater than one acre would be required to enroll for coverage under the Storm Water Construction General Permit (Construction General Permit) for the NPDES program. The Construction General Permit requires that a project specific SWPPP be prepared, and BMP be implemented during construction of individual fiber projects. Typical BMP would include diversion of runoff from disturbed areas, protective measures for sensitive areas, temporary soil stabilization measures, storm water runoff quality control measures, concrete waste management, watering for dust control, and installation of perimeter silt fences, as needed. Therefore, compliance with the Construction General Permit would reduce impacts to a less than significant level.

Operation

Once individual fiber projects are constructed, the program would require occasional operational maintenance needs. All construction areas would be cleared after construction to ensure all debris is removed. As operation of individual fiber projects would require only a limited amount of temporary ground disturbance during maintenance activities, impact would be less than significant.

Therefore, construction and operation of the proposed Countywide program would not violate water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality.

Significance without Mitigation: Less than significant impact.

HYD-2 The project would not substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin.

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. The Tuolumne County GSA is responsible for the small section of the Modesto Subbasin that falls within Tuolumne County. The Tuolumne GSA covers approximately 1,000 acres that extends eastward into Tuolumne County (STRGBA 2022).

Construction of individual fiber projects could involve minor use of water for dust control, which would be readily available from existing sources. Operation of the fiber optic facilities would not require additional water supplies as no population would be generated. Therefore, the proposed Countywide program is not anticipated to substantially decrease groundwater supplies, and impacts would be less than significant.

Significance with Mitigation: Less than significant impact.

HYD-3 The project may alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would: (i) result in substantial erosion or siltation on- or off-site; (ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite; (iii) 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; or (iv) impede or redirect flood flows.

(i) result in substantial erosion or siltation on- or off-site;

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. Construction of the individual fiber projects would require ground disturbance, including vegetation clearing, trenching, directional drilling, fill placement, pole placement excavation, and staging. The disturbed soil could be exposed to wind and water erosion and loss of topsoil. Any individual fiber project that disturbs over one acre of soil would be required to comply with the California Construction General Permit which requires implementation of a SWPPP and specific BMP to prevent erosion. Typical erosion-prevention measures such as silt fences, stakes straw bales/wattles, silt/sediment basins and traps, check dams, geofabric, sandbag dikes, and temporary revegetation or other ground cover would be used to minimize erosion impacts. As individual fiber projects implemented under the Countywide program would be required to adhere to relevant County code provisions as well as the Construction General Permit, the program's impact on erosion and loss of topsoil would be less than significant.

Significance without Mitigation: Less than significant impact.

(ii) Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site;

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 runoff away quickly and therefore a 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, 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 (County 2018a).

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 (County 2018a). 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.

As individual fiber projects would be constructed within existing County maintained ROW, public utility easements, and/or overhead public utility easements of record throughout the County, it is not likely that individual fiber projects would substantially increase the rate or amount of surface runoff in a manner which would result in flooding. Additionally, individual fiber projects would comply with County ordinances and construction standards to prevent flooding within 100 year flood zones. Therefore, the impacts would be less than significant.

Significance without Mitigation: Less than significant impact.

- (iii) 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; or

Potential other sources of polluted runoff from Countywide program construction and operation would be controlled through the preparation and implementation of a SWPPP with BMP. Through implementation of BMP, substantial new sources of runoff would be intercepted and prevented from entering drainage systems or surface waters. Once individual fiber projects are constructed, the program would require occasional operational maintenance needs that would not exceed the capacity of existing or planned stormwater drainage systems.

Therefore, implementation of the proposed Countywide program would not create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems, and impacts would be less than significant.

Significance without Mitigation: Less than significant impact.

- (iv) Impede or redirect flood flows?

As discussed above under Impacts HYD-3 (i) and (iii), runoff associated with construction of individual fiber projects would be controlled through preparation and implementation of a SWPPP and associated BMP. After construction, operation of individual fiber projects would not impede or redirect flood flows. Impacts would be less than significant.

Significance without Mitigation: Less than significant impact.

HYD-4 The project would not risk release of pollutants due to project inundation due to flood hazards, tsunamis, or seiches.

Tuolumne County is separated from the Pacific Ocean by approximately 150 miles, so the County is not at risk from tsunamis. Additionally, Tuolumne County is located approximately 12 miles east of the

Foothills fault system (County 2018a). Historically, earthquake activity in Tuolumne County has been substantially below the California State average. Therefore, earthquake-induced seiches also do not pose a risk to Tuolumne County (County 2018a). There are no levees located within the County; therefore, flooding as a result of a levee failure would not occur. Due to these conditions within the County, no impact would occur.

Significance without Mitigation: No impact.

HYD-5 The project would not conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.

The Tuolumne County WQP contains a comprehensive program that addresses a wide range of water quality concerns within the County. The WQP emphasizes surface (e.g., lakes, streams) water quality, factors affecting surface water quality including stormwater runoff, and mechanisms for maintaining and improving surface water quality. The WQP includes both regulatory and non-regulatory components. The regulatory component builds upon many existing environmental programs and activities implemented by various County departments and focuses on land development activities subject to the County's permitting requirements and on County public works projects. The non-regulatory stewardship component of the WQP encourages voluntary community participation in maintaining and improving the County's water quality. Individual fiber projects would comply with the County WQP's regulatory and non-regulatory components. Additionally, individual fiber projects that disturb greater than one acre would comply with the Construction General Permit, which would include preparation and implementation of a SWPPP and associated BMP. Therefore, the Countywide program would not conflict with the County WQP, and impacts would be less than significant.

Groundwater resources would be managed in a manner consistent with the SGMA which provides guidance for sustainable groundwater management, including BMP. The Tuolumne County GSA is responsible for the small section of the Modesto Subbasin that falls within Tuolumne County. The Tuolumne GSA covers approximately 1,000 acres that extends eastward into Tuolumne County (STRGBA 2022). As discussed above under Impact HYD-2, construction of individual fiber projects could involve minor use of water for dust control, which would be readily available from existing sources. Operation of the fiber optic facilities would not require additional water supplies as no population would be generated. Therefore, the Countywide program would not conflict with SGMA, and impacts would be less than significant.

Significance without Mitigation: Less than significant impact.

4.8.4 Cumulative Impacts

HYD-6 The proposed project would not contribute to a significant cumulative impact with respect to hydrology and water quality resources.

Cumulative impacts related to hydrology and water quality would occur when the Countywide program, in combination with other projects or plans/projections in Tuolumne County, would violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality, substantially degrade groundwater supplies or interfere substantially with groundwater recharge, substantially alter the existing drainage pattern of the site in a manner which would cause negative environmental effects, increase the risk release of pollutants in flood hazard,

tsunami, or seiche zones, or conflict with or obstruct implementation of a water quality control plan or groundwater management plan. The analysis of cumulative impacts is based on impacts of the Countywide program and the other cumulative residential and commercial projects in the County.

Several residential and commercial cumulative projects are proposed and/or pending within the County. While construction of individual fiber projects and residential and commercial cumulative projects within the County would have the potential to increase pollutants associated with the development and degrade water quality, the projects would be required to comply with water quality standards as administered through the NPDES Construction General Permit. Additionally, the 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. All cumulative projects would be required to prepare and implement a SWPPP with associated BMP and would be subject to the County WQP, SGMA, and County planning and land use ordinances. Therefore, the Countywide program would have a less than cumulatively considerable impact related to hydrology and water quality.

Significance without Mitigation: Less than significant impact.

4.8.5 References

Central Valley Water Quality Control Board (CVWQCB). 2019. The Water Quality Control Plan (Basin Plan) for the California Regional Water Quality Board Central Valley Region, The Sacramento River Basin and The San Joaquin River Basin. Available at: https://www.waterboards.ca.gov/centralvalley/water_issues/basin_plans/sacsjr_201902.pdf.

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4.9 Noise

This section describes the regulatory framework and existing conditions related to noise sources and the overall noise environment in the vicinity of the proposed project, evaluates the potential impacts that could occur as a result of implementation of the proposed project, and details mitigation measures needed to reduce significant impacts, as necessary. No environmental issues related to noise were raised during the public scoping period.

4.9.1 Environmental Setting

4.9.1.1 Noise and Sound Level Descriptors and Terminology

All noise level or sound level values presented herein are expressed in terms of decibels (dB), with A-weighting (dBA) to approximate the hearing sensitivity of humans.

The amplitude of pressure waves generated by a sound source determines the loudness of that source. Sound pressure amplitude is measured in micro-Pascals (mPa). One mPa is approximately one hundred billionth (0.0000000001) of normal atmospheric pressure. Sound pressure amplitudes for different kinds of noise environments can range from less than 100 to 100,000,000 mPa. Because of this wide range of values, sound is rarely expressed in terms of mPa. Instead, a logarithmic scale is used to describe sound pressure level (SPL) in terms of dBA. The threshold of hearing for the human ear is about 0 dBA, which corresponds to 20 mPa.

Because decibels are logarithmic units, SPL cannot be added or subtracted through standard arithmetic. Under the decibel scale, a doubling of sound energy corresponds to a 3 dBA increase. In other words, when two identical sources are each producing sound of the same loudness, the resulting sound level at a given distance would be 3 dBA higher than from one source under the same conditions. For example, if one automobile produces an SPL of 70 dB when it passes an observer, two cars passing simultaneously would not produce 140 dBA—rather, they would combine to produce 73 dBA. Under the decibel scale, three sources of equal loudness together produce a sound level 5 dBA louder than one source.

Under controlled conditions in an acoustical laboratory, the trained, healthy human ear is able to discern 1-dBA changes in sound levels, when exposed to steady, single-frequency (“pure-tone”) signals in the mid-frequency (1,000 Hz–8,000 Hz) range. In typical noisy environments, changes in noise of 1 to 2 dBA are generally not perceptible. It is widely accepted, however, that people begin to detect sound level increases of 3 dBA in typical noisy environments. Further, a 5 dBA increase is generally perceived as a distinctly noticeable increase, and a 10 dBA increase is generally perceived as a doubling of loudness.

Time-averaged noise levels are expressed by the symbol L_{EQ} , followed a specified duration. Noise levels expressed as L_{EQ} without a specified duration are time-averaged for one hour. Maximum noise levels are expressed by the symbol L_{MAX} . The Day Night sound level (L_{DN}) is a 24-hour average with an added 10 dBA weighting during the hours from 10:00 p.m. to 7:00 a.m. The Community Noise Equivalent Level (CNEL) is a 24-hour average similar to L_{DN} , where noise levels during the evening hours of 7:00 p.m. to 10:00 p.m. have an added 5 dBA weighting, and noise levels during the nighttime hours of 10:00 p.m. to 7:00 a.m. have an added 10 dBA weighting. These metrics are used to express noise levels for both measurement and municipal regulations, as well as for land use guidelines and enforcement of noise ordinances.

4.9.1.2 Groundborne Vibration Terminology and Metrics

Groundborne vibration consists of rapidly fluctuating motions or waves transmitted through the ground with an average motion of zero. Sources of groundborne vibrations include natural phenomena and anthropogenic causes (e.g., explosions, machinery, traffic, trains, construction equipment). Vibration sources may be continuous (e.g., factory machinery) or transient (e.g., explosions). Several different methods are typically used to quantify vibration amplitude. This analysis utilizes the peak particle velocity (PPV), defined as the maximum instantaneous positive or negative peak of the vibration wave.

4.9.1.3 Regulatory Framework

The Countywide program is located within Tuolumne County. Regulatory requirements related to environmental noise are typically promulgated at the local level, however, federal and State agencies also provide standards and guidelines to local jurisdictions. Noise standards for Tuolumne County, along with the CEQA Guidelines, were considered in the noise assessment.

Federal Regulations

U.S. Environmental Protection Agency Recommendations

The USEPA provides guidance in Information on Levels of Environmental Noise Requisite to Protect Health and Welfare with an Adequate Margin of Safety (NTIS 550\9-74-004, EPA, Washington, D.C., March 1974), which is commonly referenced as the “Levels Document.” The Levels Document establishes an L_{DN} of 55 dBA as the requisite noise level, with an adequate margin of safety for areas of outdoor uses, including residential and recreational areas. This document does not rely upon USEPA regulations or standards, but it identifies safe levels of environmental noise exposure without consideration of costs for achieving these levels or other potentially relevant considerations. The Levels Document is intended to “provide State and local governments as well as the Federal government and the private sector with an informational point of departure for the purpose of decision-making.” The agency is careful to stress that the recommendations contain a factor of safety and do not consider technical or economic feasibility issues and therefore should not be construed as standards or regulations.

State Regulations

California Noise Control Act

The California Noise Control Act is a section within the California Health and Safety Code that describes excessive noise as a serious hazard to the public health and welfare and that exposure to certain levels of noise can result in physiological, psychological, and economic damage. It also finds that there is a continuous and increasing bombardment of noise in the urban, suburban, and rural areas. The California Noise Control Act declares that the State of California has a responsibility to protect the health and welfare of its citizens by the control, prevention, and abatement of noise. It is the policy of the State to provide an environment for all Californians free from noise that jeopardizes their health or welfare.

California Department of Transportation

Caltrans’ *Transportation and Construction Vibration Guidance Manual* contains guidelines and recommendations for predicting and assessing the vibration impacts of roadway construction projects,

including predicting and assessing the ground-borne vibrations from commonly used construction equipment. The manual contains guidelines for determining thresholds for damage to structures from construction equipment vibrations based on the age and/or construction type of the structures near construction activity (Caltrans 2020).

Local Regulations

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 (ALUC), 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 ALUC 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 ALUC 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

Noise is addressed within the County General Plan Chapter 5, *Noise* (County 2018a).

The Noise Chapter contains the following goals, policies, and implementation programs that address noise within the County:

- **Goal 5A:** Protect the economic base of Tuolumne County and preserve the tranquility of residential areas by minimizing potential conflicts between transportation and stationary noise sources and noise sensitive land uses.
 - 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 Tables 5.A and 5.B.
 - **Implementation Program 5.A.a:** Determine that noise levels from new development will not exceed the noise level standards for specified land uses included in Tables 5.A, 5.B, 5.C, or 5.D [Table 5.C and Table 5.D would be applicable to the project and are reproduced as Tables 4.9-1 and 4.9-2, below].
 - **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 Tables 5.A, 5.B, 5.C, or 5.D of this Element.
 - **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.

- **Implementation Program 5.A.d:** Prepare and adopt a noise ordinance to be used in defining acceptable noise levels received at various land uses and enforcing excessive noise levels have been reported and verified.
- **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 Table 5.3¹. 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 [Federal Interagency Committee on Aviation Noise's] 65 dBA SEL level for sleep disturbance (but conservatively using L_{MAX} , which is more appropriate for construction activities).
 - **Implementation Program 5.A.e:** The County shall ensure that, where residences or other noise sensitive uses are located within 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.
 - **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.

¹ The County 2018 General Plan Chapter 5, Noise, does not contain a Table 5.3.

- **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.

**Table 4.9-1
MAXIMUM ALLOWABLE NOISE EXPOSURE—STATIONARY NOISE SOURCES¹**

	Daytime (7am to 10pm)	Nighttime (10pm to 7am)
Hourly LEQ dB ²	50	45
Maximum Level, dB ³	70	65

Source: County General Plan Chapter 5, Table 5.C (Conty 2018a)

- 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 4.9-2
SIGNIFICANCE OF CHANGES IN CUMULATIVE NOISE EXPOSURE¹**

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

Source: County General Plan Chapter 5, Table 5.D (Conty 2018a)

- 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 Table 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.

4.9.1.4 Existing Conditions

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, travel 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 travel 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.

The Tuolumne County General Plan and Regional Transportation Plan Update Draft EIR Traffic Study provides traffic noise measurements along selected travel corridors in the County. These noise measurements provide existing noise levels during the 3:00 p.m. to 6:00 p.m. peak hour travel period.

Table 4.9-3 shows the measured noise levels (County 2018b).

**Table 4.9-3
EXISTING NOISE MEASUREMENTS**

Measurement Number	Measurement Location	Distance (feet) from Nearest Roadway ¹	Sample Time	Leq (dBA) ²
1	Black Hawk Dr. and Twain Harte Dr., Twain Harte	25	5:00pm-5:15pm	70.6
2	1075 Mono Way, East Sonora (Carl's Jr)	45	5:34pm-5:49pm	69.7
3	22540 Parrotts Ferry Rd., Columbia (Columbia Elementary School)	35	6:02pm-6:17pm	65.1
4	18233 CA-49, Jamestown (Dollar General)	85	6:46pm-7:01pm	65.3
5	Tuolumne County Fire Department Chinese Camp Station 61, Chinese Camp	60	7:14pm-7:29pm	63.3
6	Mary Laveroni Community Park, Groveland	25	7:51pm-8:04pm	66.4

Source: County 2018b

¹ Distance is approximate from the centerline of measured road.

² Leq refers to equivalent continuous sound pressure level (dB).

Noise Sensitive Land Uses

Noise level allowances for various types of land uses reflect the varying noise sensitivities associated with those uses. As described in the County General Plan Noise Element, noise-sensitive land uses (NSLU) include but are not limited to residential development, schools, hospitals, convalescent homes, churches, libraries, or similar facility where quiet is an important attribute of the environment.

4.9.2 Significance Thresholds

The impact analysis provided below is based on the application of the following CEQA Guidelines Appendix G thresholds of significance, which indicate that a project would have a significant noise impact if it would result in:

1. Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies;
2. Generation of excessive groundborne vibration or groundborne noise levels;
3. For a project located within the vicinity of a private airstrip or 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.

The significance of noise and vibration levels, or the increase in noise levels as a result of the project, are based on the following standards from the County General Plan or other agencies:

- **Temporary Construction Noise:** Per the County General Plan Policy 5.A.5, project construction noise would be significant if it nighttime construction noise (between 7 p.m. and 7 a.m.) would exceed 65 dBA L_{MAX} measure at NSLU outdoor use areas or building facades.
- **Long-Term Operational Noise:** Per the County General Plan Policy 5.A.5, long-term project equipment noise would be significant if it resulted in noise measured in the exterior space of nearby NSLUs exceeding the limits shown in **Table 4.9-1**.
- **Ground borne Vibration:** Project construction vibration would be significant if vibration levels exceed the following criteria (Caltrans 2020):
 - A “severe” human response level of 0.4 inch per second PPV measured at any occupied building; or
 - A damage threshold of 0.3 inch per second PPV measured at any older residential building; or
 - A damage threshold of 0.08 inch per second PPV measured at any fragile historic building, ruin, or ancient monument.

4.9.3 Impact Analysis

NOI-1 The proposed project may result in a temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the County General Plan.

Construction Noise

Implementation of the proposed Countywide program would result in a temporary or periodic increase in ambient noise levels related to construction equipment, activities, and vehicles. Noise impacts from construction activities occurring for each individual fiber project would be dependent on the type, location, and duration of the noise-generating construction activities, and the distance to noise sensitive land uses. The installation of underground or overhead cables for each individual fiber project would be located within existing County maintained road ROW, public utility easements, and/or overhead public

utility easements of record throughout the County. However, the exact alignment of future broadband infrastructure was unknown at the time of this analysis.

Construction noise from the development of individual fiber projects would be temporary and short term as construction occurs intermittently and varies depending on the nature or phase of construction (e.g., horizontal directional drilling, plowing, trenching, microtrenching, line installation, aerial stringing, and pavement repair). Construction equipment would vary by construction method, but the construction process could include operation of the following types of equipment: pickup/utility trucks, horizontal drill rigs, auger drill rigs, cranes, generators, excavators, backhoes, dozers, air compressors, trenchers, concrete saws, vibratory rollers, dump trucks, and Man Lifts. Construction activities would be limited to the less noise-sensitive hours (e.g., daytime) of 7:00 a.m. to 7:00 p.m., Monday through Saturday, consistent with the County Maximum Allowable Noise Exposure-Stationary Noise Source standards (County 2018a). Noise generated from these pieces of equipment would be temporary and intermittent as typical use is characterized by short periods of full power operation followed by extended periods of lower power, idling, or powered-off conditions. The noise level of construction equipment anticipated to be used at project sites, from the Federal Highway Administration's (FHWA's) Roadway Construction Noise Model (RCNM) are shown below in **Table 4.9-4**.

Table 4.9-4
REFERENCE NOISE LEVELS FROM TYPICAL CONSTRUCTION EQUIPMENT

Equipment	Typical Noise Level 50 ft from Source, dB
Horizontal Directional Drilling	
Boring Jack Power Unit	80.0
Horizontal Boring Jack	76.0
Cranes	72.6
Generator Sets	77.6
Excavators	76.7
Tractors/Loaders/Backhoes	73.6
Plowing	
Dozer	77.7
Line Installation	
Air Compressors	73.7
Generator Sets	77.6
Aerial Stringing	
Bore/Drill Rigs	77.4
Cranes	72.6
Tractors/Loaders/Backhoes	73.6
Microtrenching	
Trenchers	77.3
Tractors/Loaders/Backhoes	73.6
Trenching	
Concrete/Industrial Saws	82.6
Excavators	
Tractors/Loaders/Backhoes	73.6

Source: FHWA 2008

Tuolumne County does not have adopted daytime construction noise standards. Nighttime (7:00 p.m. to 7:00 a.m.) construction noise would be significant in noise levels would exceed 65 dBA in accordance with County General Plan Policy 5.A.5. As shown in **Table 4.9-4**, equipment noise levels at a distance of 50 feet would exceed the County nighttime standard of 65 dBA. Therefore, nighttime construction noise impact would be potentially significant. Mitigation measure NOI-1 would limit construction hours and require implementation of construction noise best management practices in accordance with applicable County General Plan Implementation Programs 5.A.e and 5.A.h.

Significance without Mitigation: Potentially significant impact.

Mitigation Measure NOI-1: Construction Hours and Best Management Practices

Prior to issuing individual project construction approvals or permits, the County shall insure that construction documentation includes the following restrictions. Project construction activities within 1,900 feet of noise sensitive land uses (NSLUs; e.g., residences, schools, hospitals, convalescent homes, churches, libraries) shall implement the following best management practices:

- All noise-generating activities shall be prohibited between the hours of 7:00 p.m. to 7:00 a.m. Monday through Saturday and at any time on Sundays and County recognized public holidays.
- Equipment and trucks used for project construction shall utilize the best available noise control techniques (including mufflers, use of intake silencers, ducts, engine enclosures and acoustically attenuating shields or shrouds); and,
- Impact equipment (e.g., jack hammers, pavement breakers, and rock drills) used for project construction shall be hydraulically or electrical powered wherever feasible to avoid noise associated with compressed air exhaust from pneumatically powered tools. Whenever feasible, require the use of quieter procedures, such as drilling rather than impact equipment operation.

Significance with Mitigation: Less than significant impact.

Operation Noise

Some remote sites could include the use of generators to provide power for emergency communications during power outages. Specific types of generators that would be installed are unknown. A typical backup generator for a communications site is a Polar Power 15-kilowatt diesel- or natural gas-powered generator housed in an enclosure which has a rated sound level of 66.2 dBA measured at 23 feet. Noise from routine maintenance and testing of any project emergency generators would be subject to the County stationary noise standards shown in **Table 4.9.1**, above. Emergency generators are typically run for maintenance and testing for 15 to 30 minutes during daytime hours, several times per month. A generator producing 66.2 dBA for 30 minutes in one hour would result in 63.2 dBA L_{EQ} at a distance of 23 feet. Therefore, project emergency backup generators located within 105 feet of a NSLU would result in stationary source noise exceeding the daytime County standard of 50 dBA L_{EQ} . Mitigation Measure NOI-2 would require emergency backup generators to be located more than 105 feet from any NSLU or provide sound reduction measures to reduce noise from generators to less than 50 dBA measured at affected NSLUs.

Significance without Mitigation: Potentially significant impact.

Mitigation Measure NOI-2: Backup Generator Noise Control

Prior to approving individual projects that require an emergency back generator, the County shall verify project plans include the following:

- Where feasible, emergency backup generators shall be installed no closer than 105 feet from any noise sensitive land use (NSLU; e.g., residences, schools, hospitals, convalescent homes, churches, libraries). If it is not feasible to locate emergency generators 105 feet or more from all NSLUs, the project proponent shall incorporate noise attenuating features (e.g., generator sound enclosures, noise barriers) into the equipment installation sufficient to reduce generator noise levels to 50 dBA LEQ or less measured at outdoor use areas or building edges of the closest NSLU. Noise levels at NSLUs shall be verified by a qualified acoustical professional.

Significance with Mitigation: Less than significant impact.

NOI-2 The proposed project would not result in the generation of excessive groundborne vibration levels.

Construction Groundborne Vibration

Project construction activities would not require activities known to generate excessive ground-borne vibration, such as pile driving or blasting. A possible source of vibration during general project construction activities would be a vibratory roller used for gravel or pavement compaction. A large vibratory roller can create approximately 0.210 inch per second PPV at 25 feet (Caltrans 2020). Specific locations where vibratory rollers could be used during project construction have not been identified. However, construction vibration impacts would be potentially significant if a vibratory roller were used: within 15 feet of an occupied building (exceeding 0.4 inch per second PPV); within 15 feet of an occupied building (exceeding 0.4 inch per second PPV); within 18 feet of an older residential building; or within 60 feet of a fragile historical building, ruin, or ancient monument.² Mitigation Measure NOI-3 would require vibratory rollers to be used in static mode only (no vibrations) in proximity to occupied buildings or fragile structures.

Operational Groundborne Vibration

Once operation, individual fiber projects would not include significant sources of ground-borne vibration. Therefore, long-term, operational vibration impacts would be less than significant.

Significance without Mitigation: Potentially significant impact.

Mitigation Measure NOI-3: Vibratory Roller Use

Prior to issuing individual project construction approvals or permits, the County shall insure that construction documentation includes the following restrictions. Vibratory rollers shall be used in static mode only (no vibrations) within the following distances:

² Equipment PPV = Reference PPV * (25/D)ⁿ (in/sec), where Reference PPV is PPV at 25 feet, D is distance from equipment to the receiver in feet, and n = 1.1 (the value related to the attenuation rate through the ground); formula from Caltrans 2020.

- Within 15 feet of any occupied building; and,
- Within 18 feet of any older residential building; and,
- Within 60 feet of a fragile historical building, ruin, or ancient monument.

Significance with Mitigation: Less than significant impact.

NOI-3 The proposed project would not expose people residing or working in the project area to excessive noise levels from public use airports or private airstrips.

Aircraft operations associated with the County airports can generate noise levels exceeding 65 dBA CNEL, and individual fiber projects would be potentially subjected to airport-related noise exceeding acceptable levels, depending on its proximity to the airport. Individual fiber projects under the Countywide program could fall within the noise impact areas of the Columbia and Pine Mountain Lake Airports as described in the ALUCP.

Construction would be short-term and temporary. Once operational, individual fiber projects would only require occasional short-term maintenance from employees. The project would not result in persons working for extended periods in proximity to the Columbia and Pine Mountain Lake Airports. Therefore, the proposed Countywide program would not expose people residing or working in the program area to excessive noise levels from public use airports or private airstrips. Impacts would be less than significant.

Significance without Mitigation: Less than significant.

4.9.4 Cumulative Impacts

NOI-4 The proposed project could not contribute to a cumulatively considerable impact on ambient noise levels in the County.

Cumulatively considerable impact would occur if project construction noise or construction vibration combined with construction noise and vibration from other cumulative projects in the County to affect the same NSLU. The exact alignment and timing of the future broadband infrastructure is currently unknown. However, there is the potential that some of the locations for future program components could coincide in location and time with other construction projects resulting in potentially cumulatively considerable impacts. Other cumulative projects in the County would also be subject to CEQA review and would be required to comply with any mitigation measures identified as necessary to reduce potential noise and vibration impacts. Implementation of Mitigation Measures NOI-1 through NOI-3 would ensure that the project's contribution to combined construction noise and vibration would be less than cumulatively considerable.

Significance without Mitigation: Potentially cumulatively considerable.

See Impact NOI-1 for Mitigation Measure NOI-1 and Mitigation Measure NOI-2 and see Impact NOI-2 for Mitigation Measure NOI-3.

Significance with Mitigation: Less than cumulatively considerable.

4.9.5 References

California Department of Transportation (Caltrans). 2020. Transportation and Construction Vibration Guidance Manual. Available at: <https://dot.ca.gov/-/media/dot-media/programs/environmental-analysis/documents/env/tcvgm-apr2020-a11y.pdf>.

Federal Highway Administration (FHWA). 2008. Roadway Construction Noise Model version 1.1. Available at: https://www.fhwa.dot.gov/ENVIRONMENT/noise/construction_noise/rcnm/rcnm.cfm.

Tuolumne County (County). 2018a. Tuolumne County General Plan Volume I: General Plan Policy Document. Accessed June 12, 2023. Available at: <https://www.tuolumnecounty.ca.gov/DocumentCenter/View/11752/Vol-I-Goals-Policies-Policies-Final>.

2018b. Tuolumne County General Plan Update EIR. Accessed July 18, 2023. Available at: <https://www.tuolumnecounty.ca.gov/DocumentCenter/View/11308/Tuolumne-County-GPU-Recirculated-DEIR-full-report>.

4.10 Transportation

This section describes the regulatory framework and existing transportation and traffic conditions related to the proposed Countywide program, evaluates the potential impacts that could occur as a result of implementation of the proposed Countywide program, including potential impacts to intersections, roadway segments, pedestrian and bicycle facilities, and transit service, and details mitigation measures needed to reduce significant impacts, as necessary. On May 23, 2023, the California Department of Transportation (Caltrans) sent a letter to Tuolumne County Community Development Department to provide comments on the Countywide Program EIR. Caltrans noted that if any future project activities encroach into Caltrans ROW, the project proponent must apply for an Encroachment Permit to the Caltrans District 10 Encroachment Permit Office. Caltrans noted that evidence of consultation with local Native American tribes and interested parties will need to be presented within the technical documents for approval of encroachment in the Caltrans ROW. Caltrans also noted that they will need to see all correspondence with the permitting agencies if there are any impacts to federal and state protected waters and requested to review the pre- and post-construction runoff calculations and drainage plans to understand flow patterns. The NOP public comments letters are included in Appendix B.

4.10.1 Environmental Setting

4.10.1.1 Regulatory Framework

This section describes federal, State, and local environmental laws and policies that are relevant to the CEQA review process for transportation and circulation. These policies provide context for the impact discussion related to the proposed Countywide program's consistency with the applicable regulatory conditions.

Federal Regulations

Code of Federal Regulations

Code of Federal Regulations (CFR) Title 49, Subtitle B, provides guidelines pertaining to interstate and intrastate transport of goods and hazardous materials and substances, as well as safety measures for motor carriers and motor vehicles that operate of public highways. The primary transportation corridors within the County are State Routes 49, 108, 120, and 132.

CFR Title 23, Part 658 prescribes national policies that govern truck sizes and weights on the national network of highways based on the Surface Transportation Assistance Act. The maximum length of a semitrailer operating in a truck tractor-semitrailer combination is 48 feet. The maximum length of a semitrailer or trailer operating in a truck tractor, semitrailer-trailer combination, is 28 feet. The maximum width of vehicles operating on the national network is 102 inches (except for mobile home transport, which requires a special permit). The maximum gross vehicle weight is 80,000 pounds.

State Regulations

California Department of Transportation

Caltrans is a State agency overseeing State highway, bridge, and rail transportation planning, construction, maintenance, and operation. For administrative purposes, Caltrans divides the State into

12 districts, supervised by district offices. Tuolumne County is located within District 10 which is headquartered in Stockton. Caltrans requires an encroachment permit for non-transportation activities, including utility construction, occurring within ROW of the State highway system. Caltrans also requires transportation permits for the movement of vehicles or loads exceeding the size and weight limitations of the California Vehicle Code.

State Improvement Program

The California Transportation Commission (CTC) is responsible for the programming and allocating of funds for the construction of highway, passenger rail and transit improvements throughout California (CTC 2023). The CTC also advises and assists the Secretary of the California State Transportation Agency and the Legislature in formulating and evaluating state policies and plans for California's transportation programs. The CTC is an active participant in the initiation and development of State and Federal legislation that seeks to secure financial stability for the State's transportation needs.

California Transportation Plan 2050

The California Transportation Plan 2050 (CTP) was adopted in February 2021. CTP, which is overseen by Caltrans, serves as a blueprint for California's transportation system, as defined by goals, policies, and strategies to meet the State's future mobility needs (Caltrans 2021). The goals defined in the CTP fall into three categories: social equity, prosperous economy, and quality environment. Each goal is tied to performance measures. In turn, members from regional and metropolitan planning organizations (MPO) report these performance measures to Caltrans.

California Streets and Highways Code

The California Streets and Highways Code contains regulations for the care and protection of state and County highways and specifies that permits issued by Caltrans be required for roadway encroachment during truck transportation and delivery, as well as loads that exceed Caltrans' weight, length, or width standards for public roadways. The code also requires permits for utilities constructed within the right-of-way of a public highway.

California Vehicle Code

The California Vehicle Code contains several regulations regarding the safe transport of hazardous materials, hazardous waste, and explosive materials. It also provides weight guidelines and excessive load restrictions for vehicles traveling on highways.

Senate Bill 375

SB 375 provides guidance regarding curbing emissions from cars and light trucks to help the State comply with Assembly Bill (AB 32). There are four major components to SB 375. First, SB 375 requires regional GHG emissions targets. The CARB Regional Targets Advisory Committee guides the adoption of targets to be met by 2020 and 2035 for each MPO in the State. These targets, which MPOs may propose themselves, must be updated every 8 years in conjunction with the revision schedule of the housing and transportation elements of local general plans. Second, the MPOs are required to create a SCS that provides a plan for meeting regional targets. The SCS and the RTP must be consistent, including action items and financing decisions. If the SCS does not meet the regional target, the MPO must produce an alternative planning strategy that details an alternative plan for meeting the target. Third, SB 375

requires planning strategy that details an alternative plan for meeting the target. Third, SB 375 requires regional housing elements and transportation plans to be synchronized on 8-year schedules. In addition, regional housing needs allocation numbers must conform to the SCS. If local jurisdictions are required to rezone land as a result of changes in the housing element, rezoning must take place within three years of adoption of the housing element. Finally, MPOs must use transportation and air emissions modeling techniques that are consistent with the guidelines prepared by the CTC. Regional transportation planning agencies, cities, and counties are encouraged, but not required, to use travel demand models that are consistent with CTC guidelines.

Public Resources Code Section 21099(b)(1) (Senate Bill 743)

Public Resources Code (PRC) Section 21099(b)(1) requires the Office of Planning and Research (OPR) to develop revisions to the CEQA Guidelines, thereby establishing criteria for determining the significance of transportation impacts from projects that “promote the reduction of GHG emissions, the development of multimodal transportation networks, and a diversity of land uses.” PRC Section 21099(b)(2) states that, upon certification of the revised guidelines for determining transportation impacts, pursuant to Section 21099(b)(1), automobile delay, as described solely by level of service (LOS) or similar measures of vehicular capacity, or vehicular traffic congestion shall not be considered a significant impact on the environment under CEQA. In response to PRC Section 21099(b)(2), CEQA Guidelines Section 15064.3 notes that “Generally, vehicle miles traveled (VMT) is the most appropriate measure of transportation impacts.” The Guidelines section further states that although a lead agency may elect to be governed by this section immediately, lead agencies are not required to utilize VMT as the metric to determine transportation impacts until July 1, 2020. These changes to the CEQA guidelines and statutes are now in effect. This shift in transportation impact criteria is expected to better align transportation impact analysis and mitigation outcomes with the State’s goals to reduce GHG emissions, encourage infill development, and improve public health through more active transportation.

Previously, LOS was used to measure the average amount of delay experienced by motorists at an intersection during the most congested time of day, while the new metric – VMT – measures the total number of daily miles traveled by vehicles on the roadway network. SB 743 changes the focus of transportation impact analysis in CEQA from measuring impacts on drivers to measuring the impact of driving.

In December 2018, the Governor’s Office of Planning and Research (OPR) published the Technical Advisory on Evaluating Transportation Impacts in CEQA (Technical Advisory), which contains OPR’s technical recommendations regarding assessment of VMT, thresholds of significance, and mitigation measures. This Technical Advisory provides screening criteria for certain project types, including a daily trip threshold to define “small projects” with respect to their potential to result in significant transportation effects (OPR 2018).

The Technical Advisory recommends VMT significance thresholds for different project types not meeting the screening criteria. The VMT level is commonly assessed using an efficiency metric, such as VMT per capita or VMT per service population. Lead agencies have the discretion to set thresholds of significance or apply thresholds on a case-by-case basis.

Local Regulations

Tuolumne County Vehicle Miles Traveled Threshold

In May 2020, a Memorandum was prepared to present recommendations for potential VMT thresholds for the County and the City. The VMT thresholds were brought to the Board of Supervisors Planning Committee (BOSPC) in February 2020 and June 2020. The first meeting presented general information about the project, and the second meeting identified the threshold options and asked for feedback. The BOSPC members support Option 3—Subarea Baseline Conditions Thresholds.

The Option 3 approach is to develop thresholds custom to unincorporated Tuolumne County based on the currently planned vision for the various regions of the County, considering where and when growth is projected to occur. Under this approach, any project with VMT greater than baseline average VMT would be considered to have significant impacts, and any project with VMT less than or equal to baseline average VMT would be considered to have less than significant impacts. Option 3 includes the following thresholds:

- **Residential:** a project's VMT is less than or equal to the subarea average VMT per capita under baseline conditions, and the project is consistent with the County/City General Plan and the Regional Transportation Plan (RTP).
- **Office/Industrial:** a project's VMT is less than or equal to the subarea average VMT per employee under baseline conditions, and the project is consistent with the County/City General Plan and the RTP.
- **Retail/Non-Office Commercial:** No net increase in total regional VMT
- **Hotel/Campground:** Consistent with General Plan and less than or equal to subarea baseline average VMT per room/site.
- **Mixed-Use:** Analyze each land use individually per the relevant thresholds.
- **Redevelopment:** If the redevelopment of an existing site leads to a net overall increase in VMT, the project would be evaluated based on the relevant thresholds as if it were a new project.

On August 4, 2020, the County Board of Supervisors adopted the VMT threshold for California Environmental quality Act compliance related to transportation analysis (County 2020).

2016 Tuolumne County Regional Transportation Plan

The Tuolumne County Transportation Council (TCTC), as the federally designated rural transportation agency and the State-designated regional transportation planning agency (RTPA) for Tuolumne County, is required by both federal and State law to prepare a long-range (at least 20 year) transportation planning document known as an RTP. The RTP is an action-oriented document used to achieve a coordinated and balanced regional transportation system. Under both federal and State law, TCTC must update its RTP every five years.

The 2016 RTP demonstrates how TCTC plans to meet the transportation needs of the region for the period from 2016 to 2040, considering existing and projected future land use patterns as well as forecasted population and job growth. The 2016 RTP identifies and prioritizes expenditures of anticipated funding for all transportation modes, including highway, local roadway, aviation, rail, non-motorized transportation, and public transportation.

Tuolumne County Evacuation Needs Assessment and Communication Strategies

In June of 2020 TCTC received an award from the Sustainable Communities Transportation Planning Grant for the Evacuation Needs Assessment and Communication Strategies for Safer Communities Project (Kittelson & Associates 2023). Work began in late July 2021 and continued until March 2023 when the final project document was adopted by the TCTC board.

The Tuolumne County Evacuation Needs Assessment and Communication Strategies study establishes an understanding of wildfire risk across the County, identifies locations where roadways may exceed capacity during an evacuation, and recommends potential strategies and treatments to increase capacity and resiliency of evacuation routes. The Tuolumne County Evacuation Needs Assessment and Communication Strategies Report is structured in three sections: Potential Wildfire Risk, Roadway Evacuation Needs Assessment, and Communication Strategies. The study provides a tool to TCTC, the Tuolumne County OES, and partners to evaluate opportunities to further enhance emergency response during evacuations and develop capital improvement projects to support a more resilient roadway network during large-scale evacuations. It also provides a status report on existing conditions which can be used moving forward to measure progress made by the County to measure improvements to evacuation operations.

Tuolumne County Office of Emergency Services

The County of Tuolumne OES provides preparedness before, and coordination direction during, large-scale emergencies and disasters. OES coordinates with partner agencies, special districts, and key private agencies to providing planning, response, recovery, and mitigation activities in response to disaster related incidents. The County OES created a pamphlet to advise how to evacuate in the event of a wildland fire (County 2023a).

The California OES coordinates the overall state agency response to major disasters in support of local government. The office is responsible for assuring the state's readiness to respond to and recover from both natural and man-made disasters, and for assisting local governments in their emergency preparedness, response, and recovery efforts.

Emergency Operations Plan for Tuolumne County

The EOP for Tuolumne County, adopted in June 2012, establishes County procedures and policies when responding to significant disasters, including wildland fires (County 2012). The area covered by this plan encompasses Tuolumne County, private agencies, and businesses within jurisdiction limits of the county. The EOP describes how emergencies will be managed through the Standard Emergency Management System and the Incident Command System, to ensure effective management of emergency operations within Tuolumne County. Emergency operations are split into eight phases:

- Event recognition
- Notification of response personnel
- Mobilization of response personnel
- Activation of emergency response facilities and resources
- Situation Reporting and Assessment
- Public alerting and information
- Protective action determination and implementation
- Re-entry and recovery

Tuolumne County is currently in the process of developing the 2023 Tuolumne County EOP and its Annexes in collaboration with various county stakeholders (County 2023b). The EOP is currently being updated to ensure it remains relevant and effective in responding to new and evolving hazards.

Tuolumne County Traffic Impact Mitigation Fee Program

The local Traffic Impact Mitigation Fee (TIMF) program is a locally administered program that new development pays to help mitigate traffic impacts to the roadway network. The TIMF Program funds are used to improve roadway deficiencies such as intersection improvements or road widening projects. Tuolumne County administers their own TIMF programs.

Tuolumne County General Plan

Transportation is addressed within the *Transportation Element*, *Public Safety Element*, and *Natural Hazards Element* of the General Plan (County 2018a).

The *Transportation Element* contains the following goals, policies, and implementation programs that address transportation and traffic conditions of the County:

- **Goal 4A:** Preserve the County's substantial investment in the existing road system 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.
 - **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 Chapter 4 of the General Plan Technical Background Report:
 - 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 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 LOS 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.

- **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.

- **Policy 4.A.2:** Dedicate, widen and construct roads according to design and access standards generally defined in Chapter 4 of the General Plan Technical Background Report 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 Chapter 4 of the General Plan Technical Background Report 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.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.
- **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.
- **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 and 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 CEQA.
- **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.
- **Goal 4B:** Encourage the use of alternative means of transportation by providing safe bicycle and pedestrian facilities within urban development boundary areas and between identified communities thereby reducing road congestion which improves circulation, health and air quality within the County.
 - **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.

The *Public Safety Element* contains the following goals, policies, and implementation programs that address transportation and traffic conditions of the County:

- **Goal 9B:** Create plans to effectively prepare for, respond to, and recover from the effects of natural or manmade disasters or other emergencies.
 - **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.

The *Natural Hazards Element* contains the following goals, policies, and implementation programs that address transportation and traffic conditions of the County:

- **Implementation Program 17.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 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.

4.10.1.2 Existing Conditions

Circulation System

Circulation in/through Tuolumne County is primarily provided by 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. State routes play a major role in Tuolumne County's transportation system. Each of the major state routes within Tuolumne County are summarized below (County 2018b).

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 of Sonora. 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. Highway 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. Highway 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

SR 132 is a state highway that runs from the east from Modesto/Waterford in the Central Valley through LaGrange and ends in Mariposa County, with a small portion running 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 Facilities

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 and Class II bicycle paths are described below:

- Class I Bike Path: Provides a completely separate right of way designated for exclusive use of bicycles and pedestrians with crossflows 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 crossflows by pedestrians and motorists permitted. In California, the Manual on Uniform Traffic Control Devices sign #R3-17 normally designates Class II facilities.

4.10.2 Significance Thresholds

In accordance with Appendix G of the CEQA Guidelines, the proposed Countywide program would have a significant transportation impact if the Countywide program would:

1. Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities;
2. Conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b);
3. Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment); or,
4. Result in inadequate emergency access.

4.10.3 Impact Analysis

TRA-1 The proposed project would not conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities.

The installation and operation of individual fiber projects would not conflict with any program, plan, ordinance, or policy concerning traffic circulation systems. Construction activities may require temporary lane closures, which have the potential to impede or interfere with emergency access routes or services. Coordination with local agencies (e.g., California Highway Patrol, Caltrans, and local law enforcement and fire departments) for any necessary and temporary road closures would be required, especially for construction within designated emergency access routes or in areas that would impede or otherwise affect evacuation and emergency access or services. To minimize or avoid lane closures that could interfere with traffic circulation during emergencies and disrupt access to private properties and roadways, each individual fiber project would be required to develop and implement a Transportation Management Plan consistent with an Encroachment Permit and code requirements of Tuolumne County. An Encroachment Permit application would be submitted to the County Department of Public Works. Therefore, the impact would be less than significant.

Significance without Mitigation: Less than significant impact.

TRA-2 The proposed project would not conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b).

On September 27, 2013, California Governor Jerry Brown signed SB 743 into law and started a process that changed the way transportation impact analysis is conducted as part of CEQA compliance. These changes include elimination of automobile delay, LOS, and other similar measures of vehicular capacity or traffic congestion as a basis for determining significant impacts under CEQA. According to SB 743, these changes are intended to “more appropriately balance the needs of congestion management with statewide goals related to infill development, promotion of public health through active transportation, and reduction of greenhouse gas emissions.”

In December 2018, the OPR completed an update to the CEQA Guidelines to implement the requirements of SB 743. The Guidelines state that VMT must be the metric used to determine significant transportation impacts. The Guidelines require all lead agencies in California to use VMT-based thresholds of significance in CEQA documents published after July 2020.

The OPR Guidelines recommend that local jurisdictions develop screening criteria to help identify development projects that will not cause a significant impact on VMT. The OPR Guidelines also recommend evaluating VMT impacts using an efficiency-based version of the metric, such as VMT per resident for residential developments and/or VMT per worker for office or other employment-based developments.

On August 4, 2020, the County Board of Supervisors adopted the VMT threshold for California Environmental Quality Act compliance related to transportation analysis (County 2020). The Memorandum prepared in May 2020 presented recommendations for potential VMT thresholds for the County and the City. As noted in the Memorandum, certain types of projects can be assumed to have less than significant impact on VMT, due to project characteristics or location, without a detailed VMT

analysis. If the land use project meets at least one of the screening criteria, the project can be assumed to have a less than significant VMT impact (County 2020). The screening criteria included the following:

- **Local-Serving Public Facility:** Public facility projects that serve the local community or operate as passive facilities. Public facilities that serve the local community include public K-12 schools, local parks, libraries, post offices, police stations, fire stations, transit centers, and park-and-ride lots. Public facilities that operate as passive facilities include utility, communication, water sanitation, and waste management buildings.

As the proposed program would include construction and operation of communication facilities, including broadband infrastructure, the program would meet the screening criteria listed above. Construction of individual fiber projects under the proposed Countywide program would be temporary and intermittent in nature and therefore would not result in a long-term increase in vehicular trips. Individual fiber projects would not involve operational trips other than routine maintenance of the fiber optic cables. Although VMT would increase slightly from existing conditions, individual fiber project operation would generate very few worker vehicle trips and would not lead to a notable increase in VMT per capita within the County. Therefore, as the program would meet the screening criteria outlined in the Memorandum, the program would have a less than significant VMT.

Significance without Mitigation: Less than significant impact.

TRA-3 The proposed project would not substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).

Potential road hazards can occur due to a design feature or physical configuration of existing or proposed access roads that can affect the safe movement of vehicles along a roadway. Future development of the Countywide program would not alter the permanent configuration (alignment) of area roadways and would not introduce types of vehicles that do not already travel on area roads. The Countywide program would install fiber optic conduit either underground in buried conduits, overhead on pole lines, or in a combination of both. The installation of underground or overhead cables would be located within existing County maintained ROW, public utility easements, and/or overhead public utility easements of record throughout the County. As noted under Impact TRA-1, construction activities may require temporary lane closures. Coordination with local agencies (e.g., California Highway Patrol, Caltrans, and local law enforcement and fire departments) for any necessary and temporary road closures would be required. To minimize or avoid lane closures that could interfere with traffic circulation and disrupt access to private properties and roadways, each individual fiber project would be required to develop and implement a Transportation Management Plan consistent with an Encroachment Permit and code requirements of Tuolumne County.

Once construction activities have ceased, any roads impacted by construction would return to pre-construction conditions. Therefore, the proposed Countywide program would not introduce or increase hazards due to a geometric design feature, and impacts would be less than significant.

Significance without Mitigation: Less than significant impact.

TRA-4 The proposed project would not result in inadequate emergency access.

As discussed under Section 4.7, *Hazards and Hazardous Materials*, each individual fiber project under the proposed Countywide program would be required to comply with various federal, State, and local regulations to minimize the potential for emergencies, such as procedures to follow in the event of accidental spills or other releases of hazardous materials into the environment. Compliance with these regulations would ensure that on-site emergencies are addressed quickly and efficiently, and in cooperation with local emergency services providers.

Tuolumne County maintains a MJHMP and an Emergency Operations Plan. In the event of an emergency, the Tuolumne County Sheriff Office is the responsible entity for declaring and directing evacuations. The Sheriff's Department would inform members of the public via the Everbridge Emergency Notification System, local media, and door-to-door when feasible. The County OES created a pamphlet to advise how to evacuate in the event of a wildland fire (County 2023a). Additionally, the Tuolumne County Evacuation Needs Assessment and Communication Strategies Study establishes an understanding of wildfire risk across the County, identifies locations where roadways may exceed capacity during an evacuation, and recommends potential strategies and treatments to increase capacity and resiliency of evacuation routes. The study provides a tool to TCTC, OES, and partners to evaluate opportunities to further enhance emergency response during evacuations and also provides a status report on existing conditions which can be used moving forward to measure progress made by the County to measure improvements to evacuation operations.

Construction

Construction and maintenance activities may require temporary lane closures, which have the potential to impede or interfere with emergency access routes or services. Coordination with local agencies (e.g., California Highway Patrol, Caltrans, and local law enforcement and fire departments) for any necessary and temporary road closures would be required, especially for construction within designated emergency access routes or in areas that would impede or otherwise affect evacuation and emergency access or services. To minimize or avoid lane closures that could interfere with traffic circulation during emergencies and disrupt access to private properties and roadways, each individual fiber project would be required to develop and implement a Transportation Management Plan consistent with an Encroachment Permit and code requirements of Tuolumne County. An Encroachment Permit application would be submitted to the County Department of Public Works.

Operation

Operation of the proposed Countywide program would introduce a wider and more reliable network that would benefit communications to emergency services. The program would improve public health and safety through enabling faster emergency response, enhanced communication between emergency services, and access to critical information during disasters or emergencies. Therefore, the program would benefit evacuations and impacts would be less than significant.

Significance without Mitigation: Less than significant impact.

4.10.4 Cumulative Impacts

TRA-5 The proposed project would not contribute to a significant cumulative impact with respect to transportation.

Cumulative impacts would occur when the Countywide program, in combination with other projects or plans/projections in Tuolumne County, would directly or indirectly have a substantial adverse effect on transportation, VMT, and circulation. The analysis of cumulative impacts is based on impacts of the proposed Countywide program and the other cumulative plan/projections in the County and other cumulative projects in the County as listed in **Table 4-1**.

Several residential and commercial cumulative projects are proposed and/or pending within the County. Because the locations of the individual fiber projects and other cumulative projects are dispersed throughout the County, the cumulative context for analyzing cumulative traffic impacts is the County as a whole. Construction activities may require temporary lane closures, which have the potential to impede or interfere with emergency access routes or services. To minimize or avoid lane closures that could interfere with traffic circulation during emergencies and disrupt access to private properties and roadways, each individual fiber project would be required to develop and implement a Transportation Management Plan consistent with an Encroachment Permit and code requirements of Tuolumne County. An Encroachment Permit application would be submitted to the County Department of Public Works. The proposed Countywide program's contribution to cumulative construction transportation impacts would be less than significant.

Individual fiber projects would not involve operational trips other than occasional routine maintenance of the fiber optic cables. Operation of the proposed Countywide program would introduce a wider and more reliable network that would benefit communications to emergency services. The program would improve public health and safety through enabling faster emergency response, enhanced communication between emergency services, and access to critical information during disasters or emergencies. As discussed above, the proposed Countywide program would not have a significant impact on a transportation plan, program, or policy, VMT, street design, or emergency access. Therefore, the Countywide program would have a less than cumulatively considerable impact related to transportation.

Significance without Mitigation: Less than significant impact.

4.10.5 References

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4.11 Tribal Cultural Resources

This section describes the regulatory framework and existing conditions related to tribal cultural resources, evaluates the potential impacts that could occur as a result of implementation of the proposed Countywide program, and details mitigation measures needed to reduce significant impacts, as necessary.

On May 2, 2023, the Native American Heritage Commission (NAHC) sent a letter to Tuolumne County Community Development Department to provide comments on the Countywide Program EIR. The NAHC requested that consultation with California Native American tribes that are traditionally and culturally affiliated with the geographic area of the proposed project be conducted as early as possible to avoid inadvertent discoveries. The NAHC also requests the proposed project is in compliance with AB 52 and SB 18. Additionally, on May 2, 2023, a member of the public submitted a comment to the Tuolumne County Community Development Department on the Countywide program EIR. The comment noted that Tribal land may present challenges for trenching in their reservation area. The NOP public comments letters are included in Appendix B.

4.11.1 Environmental Setting

Tribal Cultural Resources include pre- and post-contact Native American resources. Pre-contact resources represent the remains of human occupation prior to European settlement. Historic, or post contact, resources represent remains after Europeans settlement and may be part of a “build environment,” including human-made structures used for habitation, work, recreation, education, and religious worship. Native American resources include ethnographic elementals pertaining to Native American issues and values.

4.11.1.1 Regulatory Framework

State Regulations

Native American Heritage Commission

Section 5097.91 of the PRC established the NAHC, whose duties include the inventory of places of religious or social significance to Native Americans and the identification of known graves and cemeteries of Native Americans on private lands. Under Section 5097.9 of the PRC, a State policy of noninterference with the free expression or exercise of Native American religion was articulated along with a prohibition of severe or irreparable damage to Native American sanctified cemeteries, places of worship, religious or ceremonial sites, or sacred shrines located on public property. Section 5097.98 of the PRC specifies a protocol to be followed when the NAHC receives notification of a discovery of Native American human remains from a county coroner.

Government Code Sections 6254(R) AND 6254.10

These sections of the California Public Records Act were enacted to protect archaeological sites from unauthorized excavation, looting, or vandalism. Section 6254(r) explicitly authorizes public agencies to withhold information from the public relating to “Native American graves, cemeteries, and sacred places maintained by the Native American Heritage Commission.” Section 6254.10 specifically exempts from disclosure requests for “records that relate to archaeological site information and reports, maintained by, or in the possession of the Department of Parks and Recreation, the State Historical Resources

Commission, the State Lands Commission, the NAHC, another state agency, or a local agency, including the records that the agency obtains through a consultation process between a Native American tribe and a state or local agency.”

Assembly Bill 52 and Related Public Resources Code Sections

Assembly Bill (AB) 52 (Chapter 532, Statutes of 2014) amended California PRC Section 5097.94, and added PRC Sections 21073, 21074, 21080.3.1, 21080.3.2, 21082.3, 21083.09, 21084.2, and 21084.3. AB 52 applies specifically to projects for which an NOP or a Notice of Intent to Adopt a Negative Declaration or Mitigated Negative Declaration (MND) will be filed on or after July 1, 2015.

The primary intent of AB 52 was to include California Native American Tribes early in the environmental review process and to establish a new category of resources related to Native Americans that require consideration under CEQA, known as Tribal Cultural Resources (TCR). PRC Section 21074(a)(1) and (2) defines TCRs as “sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American Tribe” that are either included or determined to be eligible for inclusion in the California Register or included in a local register of historical resources, or a resource that is determined to be a tribal cultural resource by a Lead Agency, in its discretion and supported by substantial evidence. On July 30, 2016, the California Natural Resources Agency adopted the final text for the TCRs update to Appendix G of the CEQA Guidelines, which was approved by the Office of Administrative Law on September 27, 2016.

PRC Section 21080.3.1 requires that within 14 days of a Lead Agency determining that an application for a project is complete, or a decision by a public agency to undertake a project, the Lead Agency shall: provide formal notification to the designated contact, or a tribal representative, of California Native American Tribes that are traditionally and culturally affiliated with the geographic area of the project and who have requested in writing to be informed by the Lead Agency. Tribes interested in consultation must respond in writing within 30 days from receipt of the Lead Agency’s formal written notification and the Lead Agency must begin consultation within 30 days of receiving the tribe’s request for consultation.

PRC Section 21080.3.2(a) identifies the following as potential consultation discussion topics: the type of environmental review necessary; the significance of TCRs; the significance of the project’s impacts on the TCRs; project alternatives or appropriate measures for preservation; and mitigation measures. Consultation is considered concluded when either: (1) the parties agree to measures to mitigate or avoid a significant effect, if a significant effect exists, on a TCR; or (2) a party, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached.

If a California Native American Tribe has requested consultation pursuant to PRC Section 21080.3.1 and has failed to provide comments to the Lead Agency, or otherwise failed to engage in the consultation process, or if the Lead Agency has complied with Section 21080.3.1(d) and the California Native American Tribe has failed to request consultation within 30 days, the Lead Agency may certify an EIR or adopt an MND.

PRC Section 21082.3(c)(1) states that any information, including, but not limited to, the location, description, and use of the TCRs, that is submitted by a California Native American Tribe during the environmental review process shall not be included in the environmental document or otherwise disclosed by the Lead Agency or any other public agency to the public without the prior consent of the tribe that provided the information. If the Lead Agency publishes any information submitted by a California Native American Tribe during the consultation or environmental review process, that

information shall be published in a confidential appendix to the environmental document unless the tribe that provided the information consents, in writing, to the disclosure of some or all of the information to the public.

Senate Bill 52 and Government Code Section 65352.3

Prior to the adoption or any amendment of a city or county's general plan, proposed on or after March 1, 2005, a city or county shall conduct consultations with California Native American tribes that are on the contact list maintained by the Native American Heritage Commission for the purpose of preserving or mitigating impacts to places, features, and objects described in Sections 5097.9 and 5097.993 of the Public Resources Code that are located within the city or county's jurisdiction.

From the date on which a California Native American tribe is contacted by a city or county pursuant to this subdivision, the tribe has 90 days in which to request a consultation, unless a shorter timeframe has been agreed to by that tribe.

Consistent with the guidelines developed and adopted by the Office of Planning and Research pursuant to Section 65040.2, the city or county shall protect the confidentiality of information concerning the specific identity, location, character, and use of those places, features, and objects.

Local Regulations

Tuolumne County General Plan

Cultural Resources are addressed within the *Cultural Resources Element* of the General Plan (County 2018).

The *Cultural Resources Element* contains the following goals, policies, and implementation programs that address cultural resources within the County:

- **Goal 13.A:** Identify incentives to strengthen the local economic base by providing and promoting a positive atmosphere for visitor, resident, business, and industry activity compatible with an historic environment.
 - **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.
- **Goal 13B:** Encourage historic preservation by adopting a consistent and predictable environmental review process for evaluating impacts to 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 Program 13.B.e. 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: *Process for Cultural Resources Evaluation - Ministerial*, Figure 13.B: *Process for Cultural Resources Investigations for Discretionary Entitlements*, and Table 13.1: *Criteria for Conducting Cultural Resource Investigations*; 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.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.
- **Goal 13C:** Maintain Tuolumne County's cultural heritage, through the identification, management, preservation, use, enhancement, restoration and study of its cultural resources.
 - **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.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.

4.11.2 Ethnographic Background

The Me-Wuk of the Central Sierra Nevada occupy the foothill and mountain portions of the Stanislaus and Tuolumne drainages (Levy 1978) The Central Sierra Me-Wuk were one of five linguistic Me-Wuk groups that formed the Eastern Me-Wuk, the other four being the Saclan, the Plains Me-Wuk, the Northern Sierra Me-Wuk, and the Southern Sierra Me-Wuk. The Central Sierra Me-Wuk spoke a language that consisted of two different dialects, West Central and East Central Me-Wuk (Levy 1978).

The foremost political units were the smaller village complexes or tribal groups (Levy 1978). The groups were independent political entities, each occupying specific territories defined by physiographic features. Access to the natural resources of the territories was controlled by each group. Although each group had one more permanent villages, their territory contained numerous smaller camp sites used as needed during a seasonal round of resources exploitation.

Lineage held a special political significance with the Me-Wuk as well. Lineages were localized and derived their identity from a specific geographical locality, usually the permanent villages or settlements in use by the tribe. Among the Eastern Sierra Me-Wuk, the population of these settlements averaged roughly 25 individuals, however knowledge of these lineage settlements is fragmentary at best.

Research done by Theodoratus (1976) indicated that historically, Central Sierra Me-Wuk lived near American Camp, while others lived on Stanislaus River ridges. There were also settlements near Murphy's Vallecito, Carson Hill, Angels Camp, Albany Flat, Sonora, Clarks Flat, Camp Nine, and Italian Bar to name a few.

Legal and political leadership was provided by a chief, who inherited the position matrilineally and who could be either a man or woman. The duties of the chief included serving as a community advisor, feeding visitors, providing for the impoverished, directing ceremonies, hunting, fishing, and gathering activities (Levy 1798). In addition to the chief speakers and messengers held special significance in the local communities. They announced village edicts from the chief, often standing on the roof of the assembly houses. They were also responsible for delivering messages to chiefs of surrounding settlements (Levy 1978). The families in the permanent villages lived in conical structures constructed of bark slabs, while conical houses made with tule matting were used at lower elevations (Levy 1978). The assembly houses were semisubterranean roundhouses.

The staple foods eaten by the Central Sierra Me-Wuk were wild plant foods, especially varieties of acorns, and mule deer. Seeds and berries, roots, grasses, elk, rabbit, freshwater mussels yellow jacket larvae, grasshoppers and clams were also commonplace within the diet (Levy 1978).

With the European movement westward, the Central Sierra Me-Wuk faced new challenges in the form of hostility from settlers and disease that led to lard reductions in population as well as resulted in population dislocation. When California was annexed by the United States the state began confiscating Indian Land, forcing the few remaining in the foothills to work for local ranchers (Levy 1978).

The descendants of the Me-Wuk still live in the central Sierra Nevada and are active in preserving and reviving elements of their traditional culture such as dance, language, basketry, and song. They are also active participants in the monitoring, consultation, and excavation of archaeological sites.

4.11.3 Significance Thresholds

In accordance with Appendix G of the CEQA Guidelines, the proposed Countywide program would have a significant impact associated with tribal cultural resources if the Countywide program would:

1. Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:
 - a. Listed or eligible for listing in the California Register of Historical Resources, or in the local register of historical resources as defined in Public Resources Code Section 5020.1(k), or
 - b. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American Tribe.

4.11.4 Impact Analysis

TCR-1 The proposed project may cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geologically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is: Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k).

The County acknowledges that TCRs may be present within the Countywide program area, and proposed individual fiber projects could cause a significant impact to unknown TCRs within the County. Therefore, implementation of Mitigation Measure TCR-1 would address unanticipated discoveries of

TCRs, and the proposed Countywide program’s potential impacts to unknown TCRs would be less than significant.

Significance without Mitigation: Potentially significant impact.

Mitigation Measure TCR-1: Tribal Consultation

Tuolumne County shall conduct the appropriate tribal consultation outreach to relevant California Native American tribes, pursuant to PRC § 21080.3.1, for all individual fiber projects included within the scope of the Tuolumne County Broadband EIR. Both local tribes, the Tuolumne Band of Me-Wuks and the Chicken Ranch Rancheria, are to be formally notified once site-specific information has been submitted to the County. Pursuant to PRC § 21080.3.1 (b), the tribes will have 30 days for AB 52 from the receipt of the request for consultation to either request or decline consultation for the individual fiber project, in writing, with the County for each proposed individual fiber project included in the scope of the Tuolumne County Broadband EIR. In the event that a general plan or specific plan adoption or amendment is required for the implementation of an individual fiber project, the County shall comply with the requirements of Senate Bill 18 (SB 18), in coordination with AB 52, as described in California Government Code § 65352.3.

Significance with Mitigation: Less than significant impact.

TCR-2 The proposed project may cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geologically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is: A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

The County acknowledges that TCRs may be present within the Countywide program and proposed individual fiber projects could cause a significant impact to TCRs within the County. Therefore, implementation of Mitigation Measure TCR-1 would address an adverse change in the significance of TCRs, and the proposed Countywide program’s potential impacts to unknown TCRs would be less than significant.

Significance without Mitigation: Potentially significant impact.

Significance with Mitigation: Less than significant impact with implementation of Mitigation Measure TCR-1.

TCR-3 The proposed project may cause a substantial adverse change in the significance of a tribal cultural resource inadvertently discovered during construction.

The County acknowledges that discoveries of an archaeological nature made during individual fiber project construction may qualify as TCRs, which could result in a significant impact to unknown TCRs within the County. Therefore, implementation of Mitigation Measure TCR-2 would address unanticipated discoveries of TCRs, and the Countywide program's potential impacts to unknown TCRs would be less than significant.

Significance without Mitigation: Potentially significant impact.

Mitigation Measure TCR-2: Archaeological Treatment and Tribal Consultation

In the event that TCRs are exposed during ground-disturbing activities, construction activities (e.g., grading, grubbing, or vegetation clearing) shall be halted in the immediate vicinity of the discovery. An archaeologist who meets the Secretary of the Interior's *Professional Qualifications Standards* shall then be retained to evaluate the resource's significance under CEQA in close coordination with tribal members who would provide traditionally based cultural knowledge for the analysis. If the discovery proves to be significant, additional work and mitigation measures, such as those listed in Mitigation Measures CUL-1, CUL-2, and CUL-3 as deemed appropriate by the tribal organization consulting on the find. Such mitigation may include avoidance, data recovery excavation, or traditional ethnographic research into the cultural importance of the find to contemporary descendant communities.

4.11.5 Cumulative Impacts**TCR-3 The proposed project may result in a cumulative impact with respect to tribal cultural resources.**

Cumulative tribal cultural resource impacts may occur when a series of actions leads to the loss of historically or archaeologically significant type of site, building, deposit, or tribal cultural resource. For example, while the loss of a single historic building may not be significant to the character of a neighborhood or streetscape, continued loss of such historic resources on a project-by-project basis could amount to a significant cumulative effect. As discussed above, with the implementation of Mitigation Measures TCR-1 for the inadvertent discovery of TCRs during construction and TCR-2 for tribal consultation, the proposed Countywide program would have less than significant impacts on unknown TCRs. However, the analysis of cumulative impacts to tribal cultural resources is based on impacts of the proposed individual fiber project plus the other cumulative projects in the County.

Significance without Mitigation: Potentially significant impact.

See Impacts TCR-1 and TCR-2 for Mitigation Measure TCR-1 and see Impact TCR-3 for Mitigation Measure TCR-2.

Significance with Mitigation: Less than significant impact.

4.11.6 References

Tuolumne County (County). 2018. Goals and Policies Report for the Tuolumne County General Plan, Chapter 13. Accessed at https://www.tuolumnecounty.ca.gov/185/General-Plan_Policy.

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4.12 Utilities and Service Systems

This section describes the regulatory framework and existing conditions related to utilities and service systems, evaluates the potential impacts to water, sanitary sewers, storm drainage, solid waste facilities, and energy systems as a result of implementation of the proposed project, and details mitigation measures needed to reduce significant impacts, as necessary. On May 2, 2023, a member of the public submitted a comment to the Tuolumne County Community Development Department on the Countywide program EIR. The comment noted that the current wireless communication facilities County ordinance assumes every provider is building huge multi-carrier facilities, which limits an ISP to serve neighborhoods with small sites. The NOP public comments letters are included in Appendix B.

4.12.1 Environmental Setting

4.12.1.1 Regulatory Framework

Federal Regulations

Clean Water Act

Section 304 of the CWA establishes primary drinking water standards and requires states to ensure that potable water retailed to the public meets these standards. State primary and secondary drinking water standards are established in California Code of Regulations Title 22, Sections 64431–64501. Secondary drinking water standards incorporate non-health risk factors including taste, odor, and appearance. The NPDES regulates the discharge of drainage to surface waters. Municipal storm drainage is required to meet board standards under waste discharge regulations and NPDES permits. Federal NPDES regulations are administered by the SWRCB and through RWQCB. The Central Valley RWQCB regulates water quality in the Countywide program area.

State Regulations

Porter-Cologne Water Quality Control Act (Section 13000 et seq.)

The Porter-Cologne Water Quality Control Act (Porter-Cologne Act, Water Code Section 13000 et seq.) is California’s statutory authority for the protection of water quality in conjunction with the federal CWA. The Porter-Cologne Act requires the SWRCB and RWQCBs under the CWA to adopt and periodically update water quality control plans, or basin plans. Basin plans are plans in which beneficial uses, water quality objectives, and implementation programs are established for each of the nine regions in California. The Porter-Cologne Act also requires dischargers of pollutants or dredged or fill material to notify the RWQCBs of such activities by filing Reports of Waste Discharge and authorizes the SWRCB and RWQCBs to issue and enforce waste discharge requirements, NPDES permits, CWA Section 401 water quality certifications, or other approvals.

California Energy Commission

The California Energy Commission (CEC) regulates the provision of natural gas and electricity within the State. The CEC is the State’s primary energy policy and planning agency and has five major responsibilities: forecasting future energy needs and keeping historical energy data, licensing thermal power plants 50 megawatts or larger, promoting energy efficiency through appliance and building

standards, developing energy technologies and supporting renewable energy, and planning for and directing the State response to energy emergencies.

California Integrated Waste Management Act

The California Integrated Waste Management Act of 1989 (Assembly Bill 939) was adopted to redefine waste management practices and to minimize the volume and toxicity of solid waste that is disposed at landfill facilities in the State. The California Integrated Waste Management Board is the State agency designated to oversee, manage, and track California's 76 million tons of waste generated each year. It is one of the six agencies under the umbrella of the California Environmental Protection Agency. The California Integrated Waste Management Board develops laws and regulations to control and manage waste; enforcement authority is typically delegated to the local government. The board works jointly with local government to implement regulations and fund programs.

Pursuant to the California Integrated Solid Waste Management Act of 1989, all cities in California are required to reduce the amount of solid waste disposed in landfills. Contracts that include work that will generate solid waste, including construction and demolition debris, have been targeted for participation in source-reduction, reuse, and recycling programs. Contractors are urged to manage solid waste to divert waste from landfills (particularly Class III landfills) and to maximize source reduction, reuse, and recycling of construction and demolition debris.

Assembly Bill 1826

AB 1826 requires that State agencies, businesses, and multifamily complexes that generate specific quantities of organic or solid waste each week enroll in organic recycling programs through an applicable solid waste disposal company. Organic recycling programs may take the form of composting, mulching, or anaerobic digestion. Businesses and multifamily residential housing complexes that generate the following quantities are required to implement organic or solid waste recycling programs under AB 1826:

- Eight or more cubic yards of organic waste per week as of April 1, 2016.
- Four or more cubic yards of organic waste per week as of January 1, 2017.
- Four or more cubic yards of solid waste per week as of January 1, 2019.
- Two or more cubic yards of solid waste per week as of January 1, 2020, if Statewide disposal of organic waste is not already reduced by half.

The California Department of Resources Recycling and Recovery (CalRecycle) has determined that California has not achieved its Statewide organic disposal goal of reducing organic waste disposal to 50 percent of 2014 levels by 2020, and therefore organic composting and recycling requirements have been expanded such that businesses that generate 2 or more cubic yards of solid waste per week must comply with the requirements of AB 1826 (CalRecycle 2021a).

Local Regulations

Tuolumne County Code of Ordinances

The purpose of Chapter 15.28, *Landscaping Requirements*, of the Tuolumne County Ordinance Code is to promote the values and benefits of landscaping while recognizing it is in the public interest to conserve water. This Chapter establishes regulations for planning, designing, installing, maintaining and managing water efficient landscapes in new construction and in rehabilitated landscape areas. The regulations have been prepared in accordance with the Water Conservation in Landscaping Act codified in the Section 65591 et seq. of the California Government Code.

Chapter 13.16, *Water Wells*, regulates the construction, reconstruction, modification, abandonment and destruction of domestic and agricultural wells, cathodic protection wells, industrial wells, geothermal heat exchange wells, monitoring and observation wells, test wells and test holes and exploration holes in such a manner that the groundwater of the county will not be contaminated or polluted and that water obtained from wells will be suitable for beneficial use and will not jeopardize the health, safety or welfare of the people of the county.

Tuolumne County General Plan

Utilities are addressed within the *Utilities Element*, *Public Safety Element*, and *Water Supply Element* of the General Plan (County 2018a).

The *Utilities Element* contains the following goals, policies, and implementation programs that address water, wastewater, and solid waste within the County:

- **Goal 3A:** Establish standards for water service for new development and protect the quality and quantity of existing supplies of ground and surface water.
 - **Policy 3.A.5:** Protect the geologic landscape for water quality and quantity and the functionality of the geology for water recharge from new development.
 - **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.
- **Goal 3B:** Plan new development and water supply infrastructure in a cooperative fashion.
 - **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.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.
- **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.
- **Goal 3C:** Encourage consolidation of existing small water systems and discourage the creation of new ones.
 - **Policy 3.C.1:** Support the consolidation of water purveyors in the County to facilitate improvements to the infrastructure and consistency of water quality of the systems.
- **Goal 3D:** Promote the logical extension or expansion of sewer system infrastructure as development occurs in areas where the expansion of public sewer systems is feasible.
 - **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.
- **Goal 3E:** Maintain a healthy environment for the citizenry by setting standards for the types and methods of sewage disposal to be used by new development.
 - **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.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.
- **Goal 3F:** Maintain opportunities for residents and businesses to efficiently recycle or dispose of waste products.
 - **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.

The *Economic Development Element* contains the following goals, policies, and implementation programs that address utilities within the County:

- **Goal 6B:** Promote the improvement of the infrastructure, such as water and sewer lines, roads, power, railroads and airports, and communication facilities throughout the County to increase the marketability of the County for the retention, expansion, and attraction of business and industry.
 - **Policy 6.B.3:** Support the efforts of the utility providers to maintain, improve, enhance reliability, and expand where appropriate their infrastructure and service within the County.
 - **Implementation Program 6.B.b:** Continue to cooperate with utility companies in securing funding to improve utilities throughout Tuolumne County.
 - **Implementation Program 6.B.c:** Support water and wastewater agencies in identifying areas zoned for commercial use that are lacking adequate infrastructure, support agency designs for infrastructure of adequate size and types to meet current and future business service needs and support the efforts of agencies that are filing grant applications to fund upgrades to water and wastewater facilities.

The *Water Supply Element* contains the following goals, policies, and implementation programs that address water resources within the County:

- **Goal 14A:** Pursue adequate water supply for all Tuolumne County residents and visitors.
 - **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.
 - **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.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.
 - **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.
- **Goal 14C:** Protect and improve the quality and quantity of the County's water resources, while protecting the rights of landowners.
 - **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.:** 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.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.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.

The *Climate Change Element* contains the following goals, policies, and implementation programs that address power/energy within the County:

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

4.12.1.2 Existing Conditions

Refer to **Figure 4.12-1** for a map of existing utility lines within the County.

Water

Development in Tuolumne County receives water primarily from public utilities such as Tuolumne Utilities District (TUD) and Groveland Community Services District (GCSD) and 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 May 18th, 2021, 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 March 9th, 2023. 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.

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-squaremile 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 (County 2018b). 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 TUD is well-suited to accommodate its population base in the future.

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.

Stormwater Drainage

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 (County 2018b). 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 Development Department 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.

Electric Power

PG&E is the primary electricity supplier in Tuolumne County. As of 2016, PG&E was powered by 33 percent renewables (County 2018b).

Telecommunications

Internet service in Tuolumne County is provided by several ISPs including but not limited to: Comcast Xfinity, AT&T, Cal.net, Volcano Communications Group and Viasat. While some areas of the County have sufficient internet speeds for daily work and home life, there are still large portions of the County with no coverage or coverage so slow that it has become prohibitive to perform daily, essential tasks. Currently, Tuolumne County has 13,826 BSL (or 54 percent of all BSL within the County) that lack access to wireline broadband of speeds of up to 25/3 Mbps. Per the State of California's definition, areas with less than existing 25/3 Mbps are considered "unserved" and areas with less than existing 100/20 Mbps are considered "underserved". Additionally, 7,954 parcels are unserved within the County. Parcel information was provided by the County's GIS department and reflects the total number of residential, industrial, and commercial parcels that currently include a building. These unserved, or even underserved, populations in California are missing out on what is now seen as a utility critical to quality of life. This Program EIR would help attract broadband infrastructure investors to bring broadband service to a County in need of reliable connectivity health and safety, economic, and quality of life reasons. Expansion of broadband service and its associated infrastructure is vital to the various communities in the County for many reasons, which include but are not limited to:

- building social and community connections,
- enhancing civic engagement and participation,
- bolstering economic development and sustainability,
- increasing education and continuous learning,
- fostering health care and tele-health services, and
- promoting recreation and tourism.

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 SR 108 corridor from the western County line to Pinecrest, including the communities of East Sonora, Jamestown, Columbia, and Twain Harte. 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 (County 2018b). 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 (County 2018b).

4.12.2 Significance Thresholds

In accordance with Appendix G of the CEQA Guidelines, the proposed Countywide program would have a significant impact on utilities and service systems if the Countywide program would:

1. Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects;
2. Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years;
3. Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments;
4. Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals; or,
5. Comply with federal, State, and local management and reduction statutes and regulations related to solid waste.

4.12.3 Impact Analysis

UTL-1 The proposed project may require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects.

The Countywide program would allow for individual fiber projects to install fiber optic conduit either underground in buried conduits, overhead on pole lines, or in a combination of both. Broadband infrastructure would be installed to provide aboveground or underground lateral connections to private residences and businesses. Although the proposed Countywide program would allow for the construction new telecommunication facilities, this EIR analyzes all potential environmental impacts.

The fiber optic conduit would not require potable water for project construction or operation that could subsequently result in wastewater generation. As no wastewater would be generated, the program would not exceed wastewater treatment requirements of the Central Valley Regional Water Quality Control Board. No new wastewater treatment facilities, or expansion of such facilities, would be required. Construction of individual fiber projects could involve minor use of water for dust control, which would be readily available from existing sources. Operation of the fiber optic facilities would not require additional water supplies as the projects would not use water and no population would be generated. Therefore, with only minimal water use for dust control during construction, no new water treatment or supply facilities would be required.

Construction of individual fiber projects could occur in areas with existing stormwater drainage facilities. Once fiber optic conduits are installed, the ground surface along the individual fiber optic line alignments would be restored to its previous condition (paved or unpaved). Therefore, the amount of pervious and impervious surfaces would not be significantly altered upon completion of individual fiber projects. As such, the Countywide program would not require new or expanded stormwater facilities. Additionally, installation of the fiber optic lines would not require the use of electricity or natural gas for construction or operation. No new or expanded electric power or natural gas utilities would be required.

Therefore, the Countywide program would not require the relocation or construction of new or expanded facilities that would cause significant environmental effects and the impact would be less than significant.

Significance without Mitigation: Less than significant impact.

UTL-2 The proposed project would have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years.

Construction of individual fiber projects could involve minor use of water for dust control during construction, which would be readily available from existing sources. Operation of the fiber optic facilities would not require additional water supplies as no population would be generated. Therefore, the proposed Countywide program would not result in additional water demand and is anticipated to have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years. The impact would be less than significant.

Significance without Mitigation: Less than significant impact.

UTL-3 The proposed project may result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments.

Broadband infrastructure would not require potable water for project construction or operation that would subsequently result in wastewater generation. During construction, it is anticipated that portable toilets could be provided for workers and waste would be hauled to an approved facility for treatment/disposal. As wastewater associated with portable toilets would be a temporary demand, the Countywide program would not exceed wastewater treatment requirements of the CVRWQCB and no new wastewater treatment facilities, or expansion of such facilities would be required. No wastewater would be generated during operations of the individual fiber projects implemented under the proposed Countywide program. Therefore, the impact would be less than significant.

Significance without Mitigation: Less than significant impact.

UTL-4 The proposed project would not generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals.

UTL-5 The proposed project would comply with federal, State, and local management and reduction statutes and regulations related to solid waste.

CALGreen mandates locally permitted construction and demolition projects to recycle and/or salvage for reuse a minimum 65 percent of the nonhazardous construction and demolition debris generated during construction activities (CALGreen Sections 4.408, 5.408, 301.1.1 and 301.3). 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.

Construction of individual fiber projects under the proposed Countywide program would generate minimal waste. Such waste could include the packaging of fiber optic lines, asphalt, and vegetation removal. Due to the minimal amount of solid waste generated by individual fiber projects, the Countywide program would not adversely affect the jurisdiction's abilities to comply with the State waste diversion requirements. Therefore, the Countywide program would not exceed State or local solid waste standards or infrastructure capacity, nor would it fail to comply with solid waste reduction goals. Impacts would be less than significant.

Significance without Mitigation: Less than significant impact.

4.12.4 Cumulative Impacts

UTL-6 The proposed project would not result in a significant cumulative impact with respect to utilities.

Cumulative impacts would occur when the Countywide program, in combination with other projects or plans/projections in Tuolumne County, would require or result in the construction of new or expanded utilities, have insufficient water supplies to serve the projects, result in a determination by a wastewater treatment provider that it has inadequate capacity to serve the project's projected demand, generate

solid waste in excess of local capacity, or not comply with federal, State, and local solid waste regulations. Potential impacts to utilities are evaluated on the level at which the service is provided, which may be Countywide or more local depending on the service.

Potential development under the Countywide program would result in individual fiber projects being constructed concurrently with, and in proximity to, other residential and commercial development projects in the County as shown in **Table 4-1**. Construction and operation of individual fiber projects would result in small but incremental impact to utilities. Although the proposed Countywide program would construct new telecommunication facilities, this EIR analyzes all potential environmental impacts. All projects in Tuolumne County, including the proposed Countywide program and the cumulative projects considered in this analysis, would be subject to the General Plan policies that require projects to demonstrate adequate utility infrastructure prior to project approval. As discussed above, the proposed Countywide program would result in less than significant impacts with mitigation to utilities. Therefore, the Countywide program would have a less than cumulatively considerable impact related to transportation.

Significance without Mitigation: Less than significant impact.

4.12.5 References

Tuolumne County (County). 2018a. Tuolumne County General Plan Volume I: General Plan Policy Document. Accessed June 12, 2023. Available at:

<https://www.tuolumnecounty.ca.gov/DocumentCenter/View/11752/Vol-I-Goals-Policies-Policies-Final>.

2018b. Tuolumne County General Plan Update EIR. Accessed January 26, 2023. Available at:

<https://www.tuolumnecounty.ca.gov/DocumentCenter/View/11308/Tuolumne-County-GPU-Recirculated-DEIR-full-report>.

4.13 Wildfire

This section describes the regulatory framework and existing conditions related to wildfire hazards and risks in the vicinity of the proposed Countywide program, evaluates the potential impacts to wildfire hazards and risks that could occur as a result of the proposed Countywide program, and details mitigation measures needed to reduce significant impacts, as necessary. No issues were raised during scoping that pertain to wildfire.

4.13.1 Environmental Setting

4.13.1.1 Regulatory Framework

Federal Regulations

Disaster Mitigation Act of 2000

The Disaster Mitigation Act of 2000 provides the legal basis for FEMA’s mitigation planning requirements for state, local, and tribal governments as a precursor to mitigation grant assistance. The Disaster Mitigation Act of 2000 requires that local governments prepare a Local Hazard Mitigation Plan that must be reviewed by the State Mitigation Officer, approved by FEMA, and renewed every five years. The plan must include a planning process, a risk assessment, a mitigation strategy, and plan maintenance and updating procedures to identify the natural hazards, risks, and vulnerabilities of the area under the jurisdiction of the government. Natural hazards include earthquakes, tsunamis, tornadoes, hurricanes, floods, and wildfires.

State Regulations

California Fire Code

The California Fire Code (CFC) is Part 9 of CCR Title 24, Building Standards Code. The CFC includes provisions and standards for emergency planning and preparedness, fire service features, fire protection systems, hazardous materials, fire flow requirements, fire hydrant locations and distribution, and the clearance of debris and vegetation within a prescribed distance from occupied structures in wildfire hazard areas. Chapter 49 of the CFC contains requirements for Wildland-Urban Interface (WUI) areas and prescribes construction materials and methods in fire hazard severity zones; requirements generally parallel CBC Chapter 7A. The CFC is updated on a three-year cycle; the current 2019 CFC took effect in January 2020.

California Public Resources Code

California PRC Sections 4291 *et seq.* require that brush, flammable vegetation, or combustible growth within 100 feet of buildings be removed. Vegetation that is more than 30 feet from the building, less than 18 inches high, and important for soil stability, may be maintained; as may single specimens of trees or other vegetation that are maintained so as to manage fuels and not form a means of rapid fire transmission from other nearby vegetation to a structure. Requirements regarding hazardous vegetation and fuel management are also contained in Sections 4906 and 4907 of the CFC.

State Responsibility Areas (SRA) are defined by PRC Section 4102 as areas of the State in which the Board of Forestry and Fire Protection has determined that the financial responsibility for preventing and

suppressing fires lies with the State of California. SRAs are lands in California where CAL FIRE has legal and financial responsibility for wildfire protection. SRA lands typically are unincorporated areas of a county, are not federally owned, have wildland vegetation cover, have housing densities lower than three units per acre, and have watershed or range/forage value. In practice, some local government agencies (in this case, local volunteer fire districts), may also provide first response in some SRAs, in coordination with their local CAL FIRE unit. PRC 4202 directs lands within SRAs to be classified into fire hazard severity zones (FHSZ).

Federal Responsibility Areas (FRA) are lands owned and managed by the federal government, which bears regulatory and financial responsibility for wildfire prevention and suppression on those lands.

Local Responsibility Areas (LRA) include lands that do not meet criteria for SRAs or FRAs, or are lands in incorporated areas, cultivated agricultural lands, and nonflammable areas in the unincorporated parts of a county. LRAs can include flammable vegetation and wildland-urban interface areas. LRA fire protection is provided by city or local fire departments, fire protection districts, county fire departments, or by contract with CAL FIRE.

PRC Section 4290 requires the California Board of Forestry and Fire Protection to adopt regulations implementing minimum fire safety standards for defensible space that would be applicable to lands within SRAs and lands within very high fire hazard severity zones (VHFHSZ) of LRAs.

Government Code 51177: Very High Fire Hazard Severity Zones

VHFHSZs are defined by Government Code Section 51177 as areas designated by the Director of Forestry and Fire Protection as having the highest possibility of having wildfires. These zones are based on consistent statewide criteria and the severity of fire hazard that is expected to prevail in those areas. The zones are also based on fuel loading, slope, fire weather, and other factors, such as wind, that have been identified by CAL FIRE as a major cause of the spreading of wildfires. FHSZ maps are produced and maintained for each county.

Senate Bill 1241 (Statutes of 2012, Kehoe)

Senate Bill 1241 revised the safety element requirements for counties and cities with State Responsibility Areas and/or VHFHSZs with LRAs within their boundaries. The bill requires that any revisions of a general plan's housing element after January 2014 must also include the revision and updating of the safety element, as necessary, to address the risk of fire in SRAs and VHFHSZs with LRAs.

2018 California Strategic Fire Plan

The Board of Forestry and Fire Protection's Strategic Fire Plan provides an overall vision for a built and natural environment that is more fire resilient through coordination and partnerships of local, state, federal, tribal, and private entities. First developed in the 1930s, the Strategic Fire Plan is periodically updated; the current plan was prepared in 2018. The Plan analyzes and addresses the effects of climate change, overly dense forests, prolonged drought, tree mortality, and increased severity of wildland fires through goals and strategies. The primary goals of the 2018 Strategic Fire Plan are to do the following.

- Improve the availability and use of consistent, shared information on hazard and risk assessment.

- Promote the role of local planning processes, including general plans, new development, and existing developments, and recognize individual landowner/homeowner responsibilities.
- Foster a shared vision among communities and the multiple fire protection jurisdictions, including county-based plans and community-based plans such as Community Wildfire Protection Plans.
- Increase awareness and actions to improve fire resistance of man-made assets at risk and fire resilience of wildland environments through natural resource management.
- Integrate implementation of fire and vegetative fuels management practices consistent with the priorities of landowners or managers.
- Determine and seek the needed level of resources for fire prevention, natural resource management, fire suppression and related services.
- Implement needed assessments and actions for post-fire protection and recovery.

Local Regulations

California Wildfire Mitigation Program

The County of Tuolumne is currently working with the California Governor’s OES to pilot the California Wildfire Mitigation Program (CWMP), which will be funded, in part by a FEMA Hazard Mitigation Grant. The CWMP Home Hardening Initiative aims to perform defensible space and retrofit measures on existing residential homesites to mitigate against wildfire losses (Cal OES 2023). The program proposes to target the Ponderosa/Mira Monte area within Tuolumne County.

Tuolumne County Evacuation Needs Assessment and Communication Strategies

In June of 2020 the TCTC received an award from the Sustainable Communities Transportation Planning Grant to prepare an Evacuation Needs Assessment and Communication Strategies for Safer Communities Project (Kittelson & Associates 2023). Work began in late July 2021 and continued until March 2023 when the final project document was adopted by the TCTC board.

The Tuolumne County Evacuation Needs Assessment and Communication Strategies study establishes an understanding of wildfire risk across the County, identifies locations where roadways may exceed capacity during an evacuation, and recommends potential strategies and treatments to increase capacity and resiliency of evacuation routes. The Tuolumne County Evacuation Needs Assessment and Communication Strategies Report is structured in three sections: Potential Wildfire Risk, Roadway Evacuation Needs Assessment, and Communication Strategies. The study provides a tool to TCTC, OES, and partners to evaluate opportunities to further enhance emergency response during evacuations and develop capital improvement projects to support a more resilient roadway network during large-scale evacuations. It also provides a status report on existing conditions which can be used moving forward to measure progress made by the County to measure improvements to evacuation operations.

Tuolumne-Calaveras Unit 2023 Strategic Fire Plan

The CAL FIRE Tuolumne-Calaveras Unit (TCU) developed and continues to update the Unit's Strategic Fire Plan. The 2023 TCU Strategic Fire Plan provides a comprehensive framework for how the TCU will assess the current and anticipated hazards/risks, develop objectives to mitigate those hazards/risks, establish benchmarks for success, develop strategies to meet our objectives, implement those strategies, and facilitate a monitoring system to ensure the plan remains connected to the needs of the Unit and stakeholders (CAL FIRE 2023a).

Tuolumne County Office of Emergency Services

The County of Tuolumne OES provides preparedness before, and coordination direction during, large-scale emergencies and disasters. OES coordinates with partner agencies, special districts, and key private agencies in providing planning, response, recovery, and mitigation activities as a result of disaster related incidents. The County OES created a pamphlet to advise how to evacuate in the event of a wildland fire (County 2023a).

The California OES coordinates the overall state agency response to major disasters in support of local government. The office is responsible for assuring the state's readiness to respond to and recover from both natural and man-made disasters, and for assisting local governments in their emergency preparedness, response, and recovery efforts.

Emergency Operations Plan for Tuolumne County

The Emergency Operations Plan (EOP) for Tuolumne County, adopted in June 2012, establishes County procedures and policies when responding to significant disasters, including wildland fires (County 2012). The area covered by this plan encompasses Tuolumne County, private agencies, and businesses within jurisdiction limits of the county. The EOP describes how emergencies will be managed through the Standard Emergency Management System and the Incident Command System, to ensure effective management of emergency operations within Tuolumne County. Emergency operations are split into eight phases:

- Event recognition
- Notification of response personnel
- Mobilization of response personnel
- Activation of emergency response facilities and resources
- Situation Reporting and Assessment
- Public alerting and information
- Protective action determination and implementation
- Re-entry and recovery

Tuolumne County is currently in the process of developing the 2023 Tuolumne County EOP and its Annexes in collaboration with various county stakeholders (County 2023b). The EOP is currently being updated to ensure it remains relevant and effective in responding to new and evolving hazards.

Tuolumne County Community Wildfire Protection Plan

The Tuolumne County Community Wildfire Protection Plan (CWPP), adopted in December 2004, is intended to provide a foundation for and facilitate continued collaboration between multiple agencies

providing wildfire protection within Tuolumne County. The overall goal of the Community Wildfire Protection Plan is to reduce total costs and losses from wildland fire in the county by protecting assets at risk through pre-fire management and enhancement of strategic fire defense systems. This goal is followed by five key objectives: 1) identify projects which, when completed, will reduce the risks to citizens and firefighters; 2) assess all wildland areas; 3) identify and analyze key policy issues and develop recommendations for changes in public policy; 4) have a strong fiscal policy focus and monitor the wildland fire protection system in fiscal terms; and, 5) translate the analysis into public policies.

In 2022, the Tuolumne Fire Safe Council received a grant award from the CAL FIRE Fire prevention Grants Program to complete a County-wide CWPP update. The CWPP update is currently in progress (County 2023c).

Tuolumne County Multi-Jurisdictional Hazard Mitigation Plan

The Tuolumne County MJHMP, adopted in December 2017 and updated in 2018, is a guide to hazard mitigation throughout the County and services as a tool to help decision makers direct hazard mitigation activities and resources (County 2018a). In the context of the MJHMP, mitigation is an action that reduces or eliminates long-term risk to people and property from hazards, including wildfire. The MJHMP contains the hazard mitigation actions to help reduce the risk of damage and injury from wildfire under Goal 5: Minimize the level of damage and losses to people, existing and future critical facilities, and infrastructure due to wildland fires.

Tuolumne County Hazardous Vegetation Management Ordinance

Since 2013, there have been several major fires in Tuolumne County that have impacted communities including Rim, Donnell, Moccasin, and Washington. This increased fire activity requires an increase in preventive measures to lower the community's chances of experiencing another large fire. It is important to protect lives, property, law enforcement and fire personnel during wildfires. The County's hazardous vegetation management ordinance is one protective strategy.

After studying fire prevention measures in other communities, working with local stakeholders, and holding public meetings, the County developed a draft hazardous vegetation management ordinance that exceeds CAL FIRE's defensible space laws under Public Resource Code 4291. The hazardous vegetation management ordinance requires maintenance of the growth and/or accumulation of weeds, grasses, shrubs, brush, slash, tree limbs or other hazardous vegetation and combustible materials on all parcels within the unincorporated areas of the County.

The purpose of the ordinance is to provide for the removal of hazardous vegetation situated in the unincorporated areas of the county so as to reduce the potential for fire and to promote the safety and welfare of the community, including protection of lives, structures, private property, natural resources, and the environment. The ordinance was adopted in December 2022 and is included in Chapter 8.14 of the County Ordinance Code (County 2022).

Tuolumne County General Plan

Wildfires are addressed within the *Public Safety Element*, *Air Quality Element*, and *Natural Hazards Element* of the General Plan (County 2018b).

The *Public Safety Element* contains the following goals, policies, and implementation programs that address wildfires within the County:

- **Goal 9B:** Create plans to effectively prepare for, respond to, and recover from the effects of natural or manmade disasters or other emergencies.
 - **Policy 9.B.1:** Maintain an effective Tuolumne County Emergency Operation Plan to direct the response for a natural disaster or other emergency.
- **Goal 9E:** Provide structural fire protection to persons and property within Tuolumne County consistent with the needs dictated by the level of development and in accordance with current Federal, State, and local fire protection agency regulations and policies.
 - **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.
 - **Implementation Program 9.E.d:** Consult with the Tuolumne County Fire Department when reviewing plans for new County-maintained roads and improvements to existing County-maintained roads in order to minimize emergency equipment response times.
 - **Policy 9.E.2:** Maintain adopted levels of fire protection service.
 - **Policy 9.E.3:** Require new developments to be consistent with State and County regulations and policies regarding fire protection.
 - **Implementation Program 9.E.f:** Forward applications for new development to the Tuolumne County Fire Department/CAL FIRE for evaluation and identification of necessary fire protection measures for such development based upon contemporary fire prevention measures and protection standards.

- **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.
- **Goal 9G:** Establish and maintain a codified fire protection risk management strategy which requires new development within Tuolumne County to incorporate or supply fire protection infrastructure and improvements necessary so that such development does not exceed the capabilities of the County's fire protection resources.
 - **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.

The *Air Quality Element* contains the following goals, policies, and implementation programs that address wildfires within the County:

- **Goal 15D:** Maintain an effective open burning enforcement program that protects the public health and welfare while recognizing the need to reduce vegetative matter for the purposes of fire hazard reduction, wildland vegetation management and forest ecosystem management.

The *Natural Hazards Element* contains the following goals, policies, and implementation programs that address wildfires within the County:

- **Goal 17A:** Avoid the exposure of people and structures to potential substantial adverse effects, including the risk of loss, injury or death involving natural hazards.
 - **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.
- **Goal 17B:** Protect structures and land uses from flood hazards in order to minimize loss of life, injury, damage to property, and economic and social dislocations.
 - **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.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.
- **Goal 17C:** Manage floodplains for their natural resource value.
 - **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.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.
- **Goal 17D:** Protect new and existing structures and land uses from geologic hazards in order to minimize loss of life, injury, damage to property, and economic and social dislocations.
 - **Policy 17.D.5:** Monitor development to see that construction in landslide or unstable slope areas is accomplished safely.
 - **Implementation Program 17.C.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 landsliding, 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.

- **Goal 17E:** Provide protection to County residents and natural resources from the losses associated with wildland fire.
 - **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.
- **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.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.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.

4.13.1.2 Existing Conditions

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 SRA's and CAL FIRE is responsible for wildland fire protection. Tuolumne County Fire Department has 13 fire stations throughout the County.

Wildfire outbreaks occur routinely during the 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 (County 2018c). Wildland fires can wreak havoc on homes, recreational and commercial lands, destroy fragile habitat, and threaten rare and endangered species. Wildland fires also damage scenic and aesthetic resources in rural areas.

Based on fuel type and load, weather, and topography, the area of Tuolumne County with the greatest wildland fire hazard is on the east side of the SR 49 corridor. However, almost every community in Tuolumne County has been threatened by wildfires.

4.13.2 Significance Thresholds

The CEQA guidelines require that impacts related to wildfire be evaluated for lands in or near SRAs or areas classified as FHSZs. According to Appendix G of the CEQA Guidelines, the Countywide program may have a significant impact related to wildfire if the program would:

1. Substantially impair an adopted emergency response plan or emergency evacuation plan;
2. Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire;
3. Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment;
4. Expose people or structures to significant risks, including downslopes or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes.

4.13.3 Impact Analysis

FIRE-1 The proposed project would not substantially impair an adopted emergency response plan or emergency evacuation plan.

As discussed under Section 4.7, *Hazards and Hazardous Materials*, each individual fiber project would be required to comply with various federal, State, and local regulations to minimize the potential for emergencies, such as procedures to follow in the event of accidental spills or other releases of hazardous materials into the environment. Compliance with these regulations would ensure that on-site emergencies are addressed quickly and efficiently, and in cooperation with local emergency services providers.

Tuolumne County maintains an MJHMP and Emergency Operations Plan. In the event of an emergency, the Tuolumne County Sheriff Office is the responsible entity for declaring and directing evacuations in the case of emergencies. The Sheriff's Department would inform members of the public via the Everbridge Emergency Notification System, local media, and door-to-door when feasible. The County OES created a pamphlet to advise how to evacuate in the event of a wildland fire (County 2023a). This pamphlet is available to download on the Tuolumne County Emergency Services website (County 2023a). Additionally, the Tuolumne County Evacuation Needs Assessment and Communication Strategies Study establishes an understanding of wildfire risk across the County, identifies locations where roadways may exceed capacity during an evacuation, and recommends potential strategies and treatments to increase capacity and resiliency of evacuation routes. The study provides a tool to TCTC, OES, and partners to evaluate opportunities to further enhance emergency response during evacuations and also provides a status report on existing conditions which can be used moving forward to measure progress made by the County to measure improvements to evacuation operations.

Construction

Construction and maintenance activities for individual fiber projects may require temporary lane closures, which have the potential to impede or interfere with emergency access routes or services. Coordination with local agencies (e.g., California Highway Patrol, Caltrans, and local police and fire departments) for any necessary and temporary road closures would be required, especially for construction within designated emergency access routes or in areas that would impede or otherwise affect evacuation and emergency access or services. To minimize or avoid lane closures that could interfere with traffic circulation during emergencies and disrupt access to private properties and roadways, each individual fiber project would be required to develop and implement a Transportation Management Plan consistent with an Encroachment Permit and code requirements of Tuolumne County. An Encroachment Permit application would be submitted to the County Department of Public Works.

Operation

Operation of the proposed Countywide program would introduce a wider and more reliable network that would benefit communications to emergency services. The program would improve public health and safety through enabling faster emergency response, enhanced communication between emergency services, and access to critical information during disasters or emergencies. Therefore, the program would benefit evacuations and impacts would be less than significant.

Significance without Mitigation: Less than significant impact.

FIRE-2 Due to slope, prevailing winds, and other factors, the project would not exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire.

The proposed Countywide program would install broadband infrastructure within Tuolumne County limits. As the proposed Countywide program is an infrastructure improvement project, there would be no project occupants that would be exposed to wildfire risks. However, broadband infrastructure may pass through existing communities.

The area in which future broadband infrastructure could be implemented includes all unincorporated areas of the County; it excludes federal lands, private roads, and State highway rights-of-way. The County has jurisdiction over a total of approximately 610 miles of County-maintained roads. It is envisioned that the vast majority of future broadband infrastructure would be installed within existing County-maintained roads and ROW, public utility easements, and/or existing overhead public utility easements of record throughout the County. The exact alignment of future broadband infrastructure is currently unknown at this time and would be planned based on construction feasibility, local preference, and locations of sensitive environmental resources.

The proposed broadband infrastructure could be constructed in areas characterized by moderate to steep slopes. However, as fiber optic lines and/or utility poles would be located primarily along road shoulders, the risk of localized ground failure is assumed to have already been minimized through previous grading, compaction, and use of engineered fills. Design and construction of individual fiber projects would be conducted in accordance with the CBC and other applicable engineering specifications and grading regulations and practices associated with compaction and treatment of soils along the alignment.

Therefore, the proposed Countywide program would not result in any alterations to slope, wind, or other factors that could exacerbate wildfire risk, and impacts would be less than significant.

Significance without Mitigation: Less than significant impact.

FIRE-3 The proposed project would not require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment.

The proposed Countywide program would install broadband infrastructure within Tuolumne County limits. As the proposed Countywide program would install broadband infrastructure, there would be no project occupants that would be exposed to wildfire risks. However, broadband infrastructure may pass through existing communities. Therefore, the following analysis focuses on the potential for construction and operation to increase the exposure of these communities to wildfire risks.

Construction

The proposed Countywide program may pass through moderate, high, and very high Fire Hazard Severity Zone (VHFHSZ; CAL FIRE 2023b). The primary fire hazards from construction of broadband infrastructure would involve construction vehicles and equipment that could ignite dry vegetation and cause a fire, particularly during the drier, warmer months from June to October. Additionally, construction activities that could result in sparks, such as welding or grinding, have a greater likelihood of creating a source of ignition. To decrease the wildfire hazards in the County, the Strategic Fire Plan for the Tuolumne/Calaveras Unit was prepared to provide guidance to reduce structural ignitability. Adherence to the CBC 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 MJHMP 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. Additionally, construction workers would be trained in basic firefighting, and the availability of tools and training would allow construction crews to help control or extinguish fires they may come upon. Therefore, adherence to existing regulations would ensure that impacts related to fire risks from construction would be less than significant.

Operation

The Countywide program would install fiber optic conduit either underground in buried conduits, overhead on pole lines, or in a combination of both. Buried conduits would not exacerbate fire risk as all infrastructure would be underground. Overhead fiber optic lines would be attached to proposed or existing pole lines. The proposed poles would adhere to the requirements of CBC 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, in order to reduce the risk of fire. Additionally, fiber optic lines do not carry an electrical charge, instead they utilize light to transmit signals and are therefore not a source of heat that could exacerbate fire risk (Fluke Networks 2022). Therefore, impacts related to fire risks from operation would be less than significant.

Significance without Mitigation: Less than significant impact.

FIRE-4 The proposed project would not expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes.

The proposed Countywide program would not result in an increase in population, nor would the Countywide program include the construction of residential or commercial structures. However, broadband infrastructure may pass through existing communities within the County.

Within the County there are a considerable number of areas where the topography can be considered steep to very steep. The proposed broadband infrastructure could be constructed on areas characterized by moderate to steep slopes. However, as fiber optic lines and/or utility poles would be located primarily along road shoulders, the risk of localized ground failure is assumed to have already been minimized through previous grading, compaction, and use of engineered fills. Design and construction of individual fiber projects would be conducted in accordance with the CBC and other applicable engineering specifications and grading regulations and practices associated with compaction and treatment of soils along the alignment. Additionally, as outlined in Section 4.8, *Hydrology and Water Quality*, individual fiber projects would implement a SWPPP and BMPs for erosion control which would reduce potential impacts related to drainage patterns during construction to a less than significant level.

The Countywide program would adhere to the CBC 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 reduce the risk of fire during construction and operation of the Countywide program. Therefore, the potential for the Countywide program to exacerbate the risk of downstream flooding or landslides would be less than significant.

Significance without Mitigation: Less than significant impact.

4.13.4 Cumulative Impacts

FIRE-5 The proposed project would be located in a State Responsibility Area but would not contribute to a significant cumulative impact with respect to wildfire.

Fire hazards in Tuolumne County range from moderate in the far western portion of the County to very high in the central portion. Communities in the VHFHZ include Twain Harte, Moccasin, Columbia, and Harden Flat. The analysis of cumulative impacts is based on impacts of the proposed Countywide program and the other cumulative plan/projections in the County and other cumulative projects in the County as listed in **Table 4-1**.

Several residential and commercial cumulative projects are proposed and/or pending within the County. Because the locations of the individual fiber projects and other cumulative projects are dispersed throughout the County, the cumulative context for analyzing cumulative wildfire impacts is the County as a whole. Construction activities may require temporary lane closures, which have the potential to impede or interfere with emergency access routes or services. To minimize or avoid lane closures that could interfere with traffic circulation during emergencies and disrupt access to private properties and roadways, each individual fiber project would be required to develop and implement a Transportation Management Plan consistent with an Encroachment Permit and code requirements of Tuolumne County. An Encroachment Permit application would be submitted to the County Department of Public Works.

Implementation of the proposed Countywide program would lead to individual fiber projects in areas that are prone to wildland fires which could result in significant loss, damage, or death. Where cumulative projects are constructed in close proximity, the cumulative impact is increased. However, the Strategic Fire Plan for the Tuolumne/Calaveras Unit was prepared to provide guidance to reduce structural ignitability. Adherence to the CBC 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 MJHMP 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. Additionally, fiber optic lines do not carry an electrical charge and are therefore not a source of heat that could exacerbate fire risk. Therefore, cumulative projects located in proximity to the proposed project would also follow the Strategic Fire Plan and MJHMP and adhere to CBC requirements. Accordingly, the Countywide program would have a less than cumulatively considerable impact related to wildfire.

Significance without Mitigation: Less than significant impact.

4.13.5 References

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5.0 PROJECT ALTERNATIVES

This section of the EIR evaluates whether there may be feasible alternatives to the proposed Countywide program that could avoid or substantially lessen any of the identified significant effects of the Countywide program as proposed. Section 15126.6(a), Consideration and Discussion of Alternatives to the Project, of the CEQA Guidelines states that:

An EIR shall describe a range of reasonable alternatives to the project, or 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 reasonable range of potentially feasible alternatives that will foster informed decision making and public participation. An EIR is not required to consider alternatives which 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.

The following discussion is intended to inform the public and decision makers of a reasonable range of feasible alternatives to the proposed Countywide program that would avoid or substantially lessen any significant effect of the proposed Countywide program. This section describes the purpose of the alternative's discussion; provides a summary of the reasonable range of alternatives, including a summary of potentially significant impacts and the relationship of each alternative to the Countywide program objectives; and, as required, identifies the environmentally superior alternative.

5.1 RATIONALE FOR ALTERNATIVE SELECTION

Section 15126.6(c) of the CEQA Guidelines states:

The range of potential alternatives to the proposed project shall include those that could feasibly accomplish most of the basic objectives of the project and could avoid or substantially lessen one or more of the significant effects. The EIR should briefly describe the rationale for selecting the alternatives to be discussed. The EIR should also identify any alternatives that were considered by the lead agency but were rejected as infeasible during the scoping process and briefly explain the reasons underlying the lead agency's determination. Additional information explaining the choice of alternatives may be included in the administrative record. Among the factors that may be used to eliminate alternatives from detailed consideration in an EIR are: (i) failure to meet most of the basic project objectives, (ii) infeasibility, or (iii) inability to avoid significant environmental impacts.

According to the CEQA Guidelines Section 15364, feasibility is defined as:

[The capability] of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social, and technological factors.

5.2 PROJECT OBJECTIVES AND SIGNIFICANT IMPACTS

As described in Chapter 3.0, Project Description, the following objectives have been established for the proposed Countywide program:

- promote upgradable and expandable high-speed broadband capacity in the service areas with minimum speeds of 100 Mbps for downloads and 20 Mbps for uploads, which is labeled as “served” areas within California;
- promote the construction of a wireless broadband network in unserved and underserved areas of unincorporated Tuolumne County;
- enable an increase in telecommuting, with a commensurate decrease in vehicle miles traveled;
- improve public health and safety through enabling faster emergency response, enhanced communication between emergency services and access to critical information during disasters or emergencies;
- streamline the environmental review process for individual broadband projects that are implemented in the County;
- promote a reliable foundation of data and acceptable methodology to assess impacts for any specific broadband deployment project;
- identify known environmental and cultural assets to be protected and/or restored with an approved set of preservation measures and/or mitigations; and,
- save time and money for both the County of Tuolumne and broadband project applicants, resulting in greater government and economic efficiencies, reducing the amount of County staff time required to review broadband projects and avoiding duplication of applicant costs.

As described in Section 4.1 through 4.13, the proposed Countywide program would not result in any significant and unavoidable impacts.

5.3 ALTERNATIVES ANALYSIS

This EIR analyzes four project alternatives, the No Project Alternative, the Aerial Installation Only Alternative, the Underground Installation Only Alternative, and the Use of Existing Infrastructure Alternative, in detail to compare to the proposed Countywide program because of their potential to reduce the potential impacts. The four alternatives are discussed in more detail in the following subsections.

5.3.1 Alternative 1: No Project Alternative

This alternative is required under Section 15126.6(e) of the State CEQA Guidelines and represents a possible scenario that could occur if the proposed project is not approved. According to Section 15126.6 (e)(3)(B) of the State CEQA Guidelines, if the project is other than a land use or regulatory plan, for example a development project on identifiable property, the “no project” alternative is the circumstance under which the project does not proceed. Under the No Project Alternative, no actions would be taken to expand broadband availability and the service area would remain unchanged from current conditions. The No Project Alternative would not meet the project objectives. However, as required by CEQA, the No Project Alternative is evaluated in this Draft EIR.

Although it is acknowledged that with the No Project Alternative, there would be no discretionary action by Tuolumne County, and thus no impact, for purposes of comparison with the other action alternatives,

conclusions for each technical area are characterized as “impacts” that are greater, similar, or less, to describe conditions that are worse than, similar to, or better than those of the proposed Countywide program.

5.3.2 Alternative 2: Aerial Installation Only

This alternative would include only individual fiber projects that install aboveground fiber optic line that would utilize existing or newly constructed utility poles. No underground fiber optic line or new conduit would be installed under this alternative. This alternative was considered because it would avoid all impacts associated with underground installation, including construction impacts associated with Horizontal Directional Drilling, Plowing, Trenching, Microtrenching, Line Installation, and Pavement Repair. This alternative could also avoid the impacts associated with the spillage of drilling fluid.

However, this alternative would not meet the basic project objectives associated with providing a reliable system of broadband communications. Aboveground fiber optic lines are susceptible to damage from high winds, snowstorms, wildfires, and other natural disasters. Such damage would reduce the reliability of communications system, which could disrupt emergency communications during extreme storms, wildfires, or other emergency conditions when reliable communication is most important. The addition of utility poles may not be feasible in some locations in the County due to the rocky subsurface conditions that would make it nearly impossible to reach the boring depth required for the poles. Furthermore, this alternative would result in additional aesthetics impacts associated with the additional utility poles. It should also be noted that existing poles are owned by certain utilities or exist as joint poles with shared use between utilities. Additional joint pole users may not be feasible, and the ability to add joint pole users may be difficult to augment.

5.3.3 Alternative 3: Underground Installation Only

This alternative would include individual fiber projects that would only install underground fiber optic lines and would utilize existing or newly installed underground conduit. No aboveground fiber optic line would be installed under this alternative. This alternative was considered because it could avoid possible impacts associated with aboveground installation, including aesthetic impacts and construction impacts associated with the installation of new utility poles and stringing fiber optic line on existing poles.

This alternative would not meet the basic project objectives associated with providing a reliable system of broadband communications. This alternative could be susceptible to biological, cultural, and geological impacts due to underground installation, including construction impacts associated with Horizontal Directional Drilling, Plowing, Trenching, Microtrenching, and Line Installation. Additionally, this alternative could be susceptible to hazard, and hazardous material impacts due to possible digging into existing, unmarked infrastructure. Depending on the prevailing geological conditions, including bedrock near the surface, it may be impossible to install underground infrastructure in some parts of the County.

5.3.4 Alternative 4: Use of Existing Infrastructure

This alternative would include individual fiber projects that install fiber optic line in existing fiber-specific conduit or along existing utility poles. This alternative was considered because it would avoid impacts associated with installation of new utility pole and new underground fiber-specific conduit infrastructure. This alternative would avoid or substantially reduce all potential impacts associated with

the proposed Countywide program, as outlined in this EIR. However, it would not meet most of the basic objectives of the project because it would not provide for the expansion of broadband infrastructure into portions of the service area that do not already include sufficient conduit, utility poles, and supporting infrastructure.

5.3.5 Assumptions and Methodology

The following analysis compares the environmental impacts of the Countywide program alternatives with the program-related impacts for each of the environmental topics analyzed in detail in Sections 4.1 through 4.13 of this EIR. Table 5-1, *Comparison of Countywide Program Alternatives*, summarizes the impacts of each of the alternatives compared to the proposed Countywide program.

**Table 5-1
COMPARISON OF COUNTYWIDE PROGRAM ALTERNATIVES**

Topic	No Project	Aerial Installation Only	Underground Installation Only	Use of Existing Infrastructure Only
Aesthetics	-	+	-	-
Air Quality	-	-	-	-
Biological Resources	-	=	=	=
Cultural Resources	-	=	-	-
Geology and Soils	-	=	+	-
Greenhouse Gas Emissions	-	-	-	-
Hazards and Hazardous Materials	-	+	+	+
Hydrology and Water Quality	-	=	=	-
Noise	-	=	=	=
Transportation	-	+	+	+
Tribal Cultural Resources	-	=	=	=
Utilities and Service Systems	-	=	=	-
Wildfire	-	+	+	+

Notes:

- Reduced impact in comparison to the proposed project.
- = Similar impacts in comparison to the proposed project.
- + Greater impact, or loss of beneficial impact, in comparison to the proposed project.

5.4 COMPARATIVE IMPACT ANALYSIS

5.4.1 No Project Alternative

Under the No Project Alternative, no actions would be taken to expand broadband availability within Tuolumne County and the service area would remain unchanged from current conditions.

5.4.1.1 Aesthetics

Under the No Project Alternative, no construction would occur, and no new broadband infrastructure would be installed. Because there would be no visible changes in the service area, there would be no effects on scenic vistas, no damage to scenic resources adjacent to a state scenic highway, no degradation of scenic character or views, and no conflict with scenic regulations. There would be no impact on aesthetics. *(No Impact)*

5.4.1.2 Air Quality

Under the No Project Alternative, the proposed broadband infrastructure would not be constructed. Because no construction would occur and the service area would remain unchanged, there would be no effects on air quality. The No Project Alternative would not conflict with applicable air quality plans, would not increase any criteria pollutant for which the project region is non-attainment, would not expose sensitive receptors to substantial pollutant concentrations, and would not result in substantial emissions of odors adversely affecting a substantial number of people. For these reasons, the No Project Alternative would have no impact on air quality. *(No Impact)*

5.4.1.3 Biological Resources

Because no construction, excavation, or ground disturbance would occur under the No Project Alternative, there would be no effects on biological resources. The No Project Alternative would not affect special-status species or habitat, or riparian habitat or other sensitive natural communities. Nor would it degrade wetlands, interfere with wildlife movement corridors or nursery sites, or conflict with local ordinances or policies. For these reasons, the No Project Alternative would have no impact on biological resources. *(No Impact)*

5.4.1.4 Cultural Resources

No construction, excavation, or ground disturbance would occur under the No Project Alternative. Therefore, there would be no effects on historic resources, unique archeological resources, or tribal cultural resources. Because no construction would occur under the No Project Alternative, there would also be no risk of disturbing human remains. For these reasons, the No Project Alternative would have no impact on archeological and historical resources. *(No Impact)*

5.4.1.5 Geology and Soils

With the No Project Alternative, no construction, excavation, or ground disturbance would occur. Because no changes would occur, the No Project Alternative would not expose people or structures to adverse seismic impacts, result in substantial erosion or loss of topsoil, or expose infrastructure to or cause geologic hazards. Similarly, this alternative would not result in the loss of a unique paleontological resource or geologic feature or result in the loss of availability of a known mineral resource or locally important mineral resource recovery site. For these reasons, the No Project Alternative would have no impact on geology, soils, and mineral resources. *(No Impact)*

5.4.1.6 Greenhouse Gases Emissions

Under the No Project Alternative, no construction or operation of additional broadband infrastructure would occur. As a result, there would be no construction related GHG emissions, and no GHG emissions

would occur from operating new broadband infrastructure. Thus, there would be no impact to greenhouse gas emissions and climate change. *(No Impact)*

5.4.1.7 Hazards and Hazardous Materials

No construction would occur, and no new broadband infrastructure would be installed under the No Project Alternative. Because there would be no construction or operation of new broadband infrastructure, there would be no risk of exposure to hazards from the routine transport, use, or disposal of hazardous materials. Similarly, there would be no risk of upset or accident conditions or development on a hazardous waste site, and no risk of emitting or handling hazardous materials near a school. The No Project Alternative would also not result in hazards due to construction near an airport, conflict with an emergency response or evacuation plan, or increase wildfire risk or exposure to wildfire. For these reasons, there would be no impact associated with hazards and hazardous materials. *(No Impact)*

5.4.1.8 Hydrology and Water Quality

Because no construction, excavation, or ground disturbance would occur under the No Project Alternative, the alternative would not affect hydrology and water quality. With no construction activities or new infrastructure, the No Project Alternative would not violate any water quality standards or degrade surface or groundwater quality, nor would it affect groundwater supply or result in substantial erosion, flooding, or runoff. The No Project Alternative would also not change the existing risk of the release of pollutants due to inundation for seiche or flood. Therefore, the No Action Alternative would have no impact on hydrology and water quality. *(No Impact)*

5.4.1.9 Noise

Under the No Project Alternative, no construction or operation of additional broadband infrastructure would occur. As a result, there would be no construction or operational noise. Thus, there would be no impact related to noise. *(No Impact)*

5.4.1.10 Transportation

The No Project Alternative would not impact transportation because it would not result in the construction or operation of new broadband infrastructure. Because there would be no construction activity or new infrastructure, the alternative would not conflict with plans, ordinances, or policies addressing the circulation system; nor would it affect vehicle miles travelled. Similarly, the No Project Alternative would not substantially increase transportation hazards or result in inadequate emergency access. For these reasons, there would be no impact on transportation and traffic. *(No Impact)*

5.4.1.11 Tribal Cultural Resources

No construction, excavation, or ground disturbance would occur under the No Project Alternative. Therefore, there would be no effects on historic resources, unique archeological resources, or tribal cultural resources. Because no construction would occur under the No Project Alternative, there would also be no risk of disturbing human remains. For these reasons, the No Project Alternative would have no impact on tribal cultural resources. *(No Impact)*

5.4.1.12 Utilities

The No Project Alternative would not affect utilities because it would not result in the construction or operation of new broadband infrastructure. There would be no increase to the limited existing broadband within the County. With no new infrastructure, the No Project Alternative would not impact water supplies available and wastewater treatment capacity and would not generate solid waste access that would impact solid waste reduction goals. For these reasons, there would be no impact on utilities. *(No Impact)*

5.4.1.13 Wildfire

The No Project Alternative would not affect wildfires as no construction or operation of additional broadband infrastructure would occur. With no new infrastructure, there would be no impact on an adopted emergency response plan or emergency evacuation plan. Additionally, wildfire risks would not be exacerbated, and people or structures would not be exposed to risks as a result of runoff, post-fire slope instability, or drainage changes. For these reasons, there would be no impact on wildfire. *(No Impact)*

5.4.1.14 Conclusion and Relationship to Project Objectives

The No Project Alternative would result in fewer impacts to aesthetics, air quality, biological resources, cultural and tribal cultural resources, geology and soils, greenhouse gases, hazards and hazardous materials, hydrology and water quality, noise, transportation, utilities, and wildfire when compared to the proposed project. Following is a discussion of the No Project Alternative's ability to attain the Project Objectives:

- 1. Provide upgradable and expandable high-speed broadband capacity in the service areas with minimum speeds of 25 megabits per second (Mbps) for downloads and 3 Mbps for uploads, which is labeled as "served" areas within California;**

The No Project Alternative would not install any broadband infrastructure within the County and the existing conditions would remain as is. The No Project Alternative would not achieve this objective.

- 2. Provide a broadband network in unserved and underserved areas of Tuolumne County;**

The No Project Alternative would not install any broadband infrastructure within the County and the existing conditions would remain as is. The No Project Alternative would not achieve this objective.

- 3. Enable an increase in telecommuting, with a commensurate decrease in vehicle miles traveled;**

The No Project Alternative would not install any broadband infrastructure within the County and the existing conditions would remain as is. The No Project Alternative would not achieve this objective.

- 4. Improve public health and safety through enabling faster emergency response, enhanced communication between emergency services, and access to critical information during disasters or emergencies;**

The No Project Alternative would not install any broadband infrastructure within the County and the existing conditions would remain as is. The No Project Alternative would not achieve this objective.

5. Streamline the environmental review process for individual broadband projects that are implemented in the County;

The No Project Alternative would not install any broadband infrastructure within the County and the existing conditions would remain as is. The No Project Alternative would not achieve this objective.

6. Provide a reliable foundation of data and acceptable methodology to assess impacts for any specific broadband deployment project;

The No Project Alternative would not install any broadband infrastructure within the County and the existing conditions would remain as is. The No Project Alternative would not achieve this objective.

7. Identify known environmental and cultural assets to be protected and/or restored with an approved set of preservation measures and/or mitigations; and,

The No Project Alternative would not install any broadband infrastructure within the County and the existing conditions would remain as is. The No Project Alternative would not achieve this objective.

8. Save time and money for both the County of Tuolumne and broadband project applicants, resulting in greater government and economic efficiencies, reducing the amount of County staff time required to review broadband projects and avoiding duplication of applicant costs.

The No Project Alternative would not install any broadband infrastructure within the County and the existing conditions would remain as is. The No Project Alternative would not achieve this objective.

5.4.2 Aerial Installation Only Alternative

5.4.2.1 Aesthetics

Under the Aerial Installation Only Alternative, individual fiber projects would only install aboveground fiber optic line on existing or newly constructed utility poles. No underground fiber optic line or new conduit would be installed under this alternative. Aesthetic impacts related to construction under this alternative would be similar to the proposed project as all construction activities would be temporary and short-term. Operation under this alternative would only include aboveground utility poles that would be visible, which could result in greater impacts as compared to the proposed Countywide program. Existing poles are owned by certain utilities or exist as joint poles with shared use between utilities. Additional joint pole users may not be feasible, and the ability to add joint pole users may be difficult to augment. As with the proposed Countywide program, lighting would be minimal and downward facing to prevent light spillover and glare.

Section 4.1, Aesthetics, of this EIR concluded that the proposed Countywide program would result in less than significant impact to aesthetics. The Aerial Installation Only Alternative would result in similar or slightly greater, but still less than significant impacts as compared to the Countywide program. (*Less than Significant Impact*)

5.4.2.2 Air Quality

Under the Aerial Installation Only Alternative, construction activities would mainly include Line Installation and Aerial Stringing. This alternative would avoid construction activities such as Horizontal

Directional Drilling, Plowing, Trenching, Microtrenching, and Pavement Repair. Section 4.2, Air Quality, of this EIR, concluded that the Countywide program would result in a less than significant impact to air quality associated with construction. This alternative could potentially result in reduced impacts to air quality associated with construction as new or existing utility poles would be constructed and there would be no underground fiber optic cable construction. Operation under this alternative would be similar to the Countywide program, as this alternative would not generate new vehicle trips beyond occasional maintenance activities. A backup generator may be used in the event of a power outage or for routine testing, similar to the Countywide program.

Section 4.2, Air Quality, of this EIR concluded that the proposed Countywide program would result in less than significant impact to air quality. The Aerial Installation Only Alternative would result in similar or slightly smaller, less than significant impacts as compared to the Countywide program. (*Less than Significant Impact*)

5.4.2.3 Biological Resources

Under the Aerial Installation Only alternative, individual fiber projects would only install aboveground fiberoptic line on existing or newly constructed utility poles. No underground fiber optic line or new conduit would be installed under this alternative. However, similar to the Countywide program, individual fiber projects would be required to prepare a BRA, as outlined in Mitigation Measure BIO-1 to reduce impacts to a less than significant level. Additionally, if sensitive natural communities would be impacted by project implementation, the project proponent would apply to the necessary permits from the USACE, CDFW, and the RWQCB as outlined in Mitigation Measure BIO-2 and would prepare an oak resources inventory as outlined in Mitigation Measure BIO-3. Similar to the Countywide program if the individual fiber project would impact federally protected aquatic resources, Mitigation Measure BIO-2 would be implemented, and if individual fiber projects would impact the movement of wildlife species or wildlife corridors, Mitigation Measure BIO-1 would be implemented.

Section 4.3, Biological Resources, of this EIR concluded that the proposed Countywide program would result in less than significant impact to biological resources with implementation of Mitigation Measure BIO-1 through BIO-3. The Aerial Installation Only Alternative would result in similar, less than significant impacts with mitigation as compared to the Countywide program. (*Less than Significant Impact with Mitigation*)

5.4.2.4 Cultural Resources

Under the Aerial Installation Only alternative, individual fiber projects would only install aboveground fiberoptic line on existing or newly constructed utility poles. No underground fiber optic line or new conduit would be installed under this alternative. Similar to the Countywide program, installation of utility poles under this alternative would introduce a new visual element to areas with concentrations of historical built environment cultural resources such as buildings and structures that comprise historic districts. The use of existing or newly constructed utility poles for the collocation of fiber optic cable would change the visual signature of the poles and their vicinity. However, these collocations and new installations would be relatively minor additions to existing utility corridors in the County already populated with other utility infrastructure, including in and near historic districts and historical resources. The installation of these fiber optic lines, as proposed, would not diminish a built-environment resource's ability to convey its significance or justify the reasons for its qualification as a historical resource, two of the criteria of material impairment in the definition of a substantial adverse

change in the significance of a historical resource. Additionally, similar to the Countywide program, individual fiber projects under this alternative could impede or destroy archaeological cultural resource's ability to convey their significance, which can embody scientific and/or traditional cultural value. Mitigation Measure CUL-1 and CUL-2 would be implemented under this alternative, and under the Countywide program, to mitigate or avoid archaeological cultural resource impact scenarios. The Countywide program and this alternative would also implement Mitigation Measure CUL-3 to avoid substantial adverse changes to human remains.

Section 4.4, Cultural Resources, of this EIR concluded that the proposed Countywide program would result in less than significant impact to cultural resources with implementation of Mitigation Measure CUL-1 through CUL-3. The Aerial Installation Only Alternative would result in similar, less than significant impacts with mitigation as compared to the Countywide program. (*Less than Significant Impact with Mitigation*)

5.4.2.5 Geology and Soils

Under the Aerial Installation Only Alternative, individual fiber projects would only install aboveground fiber optic line on existing or newly constructed utility poles. No underground fiber optic line or new conduit would be installed under this alternative. As compared to the Countywide program, this alternative would have similar risks of exposing people or structures to landslides, lateral spreading, subsidence, liquefaction, soil erosion, or seismic impacts as construction would occur within County limits. However, CBC and local requirements would be required to be met to address potential risks associated with these geologic concerns. Additionally, similar to the Countywide program, if this alternative would disturb more than one acre of soil, a SWPPP with project specific BMPs will be required for each individual fiber project. However, the addition of only utility poles under this alternative, including utility pole installation, may not be feasible in some locations in the County due to the rocky subsurface conditions that would make it nearly impossible to reach the boring depth required for the poles, which could result in greater impacts as compared to the proposed Countywide program.

Section 4.5, Geology and Soils, of this EIR concluded that the proposed Countywide program would result in no impact, less than significant impact, or less than significant impact with mitigation to geology and soils. The Aerial Installation Only Alternative would result in similar, less than significant impacts as compared to the Countywide program. (*Less than Significant Impact with Mitigation*)

5.4.2.6 Greenhouse Gas Emissions

Under the Aerial Installation Only Alternative, construction activities would mainly include Line Installation and Aerial Stringing. This alternative would avoid construction activities such as Horizontal Directional Drilling, Plowing, Trenching, Microtrenching, and Pavement Repair. Section 4.6, Greenhouse Gas Emissions, of this EIR, concluded that the Countywide program would result in a less than significant impact to GHGs associated with construction. This alternative could potentially result in reduced impacts to GHGs associated with construction as this alternative would utilize new or existing utility poles and would not include any underground construction. Operation under this alternative would be similar to the Countywide program, as this alternative would also not generate new vehicle trips beyond occasional maintenance activities. Similar to the Countywide program, this alternative would be consistent with the County General Plan, Tuolumne County Regional Blueprint Greenhouse Gas Study, and CAP.

Section 4.6, Greenhouse Gas Emissions, of this EIR concluded that the proposed Countywide program would result in less than significant impact to GHGs. The Aerial Installation Only Alternative would result in similar or slightly smaller, less than significant impacts as compared to the Countywide program. (*Less than Significant Impact*)

5.4.2.7 Hazards and Hazardous Materials

Under the Aerial Installation Only Alternative, individual fiber projects would only install aboveground fiber optic line on existing or newly constructed utility poles. Similar to the Countywide program, small quantities of hazardous materials may be stored, used, and handled during construction activities or during routine maintenance checks, and may be located within one quarter mile of a school. As underground construction would not be utilized, this alternative could avoid impacts associated with the spillage of drilling fluid. However, this alternative would still be required to implement and comply with existing hazardous material regulations. Additionally, as with the Countywide program, this alternative would not include utility poles over 77 feet in height or include permanent structures for human occupancy; therefore, this alternative would not interfere with airport operations or expose residents to airport-related noise.

Similar to the Countywide program, construction under this alternative may cause lane closures and would be required to submit an Encroachment Permit application to the County Department of Public Works. Operation under this alternative would not introduce a wider or more reliable network that would improve public health and safety through enabling faster emergency response, enhanced communication between emergency services, and access to critical information during disasters or emergencies. Therefore, impacts related to emergency access may be greater than the Countywide program. Fire risks associated with construction and operation under this alternative would require adherence to CBC Chapter 7A and Public Resources Code 4291, similar to the Countywide program. As this alternative would include only aboveground infrastructure, the utility poles could be more susceptible to wildfires or other natural disasters. Such damage would reduce the reliability of communications system, which could disrupt emergency communications during extreme storms, wildfires, or other emergency conditions when reliable communication is most important. However, fiber optic lines do not carry an electrical charge and would therefore not exacerbate fire risk.

Section 4.7, Hazards and Hazardous Materials, of this EIR concluded that the proposed Countywide program would result in less than significant impact to hazards and hazardous materials. Under this alternative, broadband infrastructure would not be widened to create a more reliable network that would improve public health and safety through enabling faster emergency response, enhanced communication between emergency services, and access to critical information during disasters or emergencies. Therefore, the Aerial Installation Only Alternative would result in similar or slightly greater, but still less than significant impacts as compared to the Countywide program. (*Less than Significant Impact*)

5.4.2.8 Hydrology and Water Quality

The Aerial Installation Only Alternative would only install aboveground fiber optic line on existing or newly constructed utility poles. No underground fiber optic line or new conduit would be installed under this alternative. As compared to the Countywide program, this alternative may also alter existing drainage patterns which would result in erosion on- or off-site, increase surface runoff that would cause flooding or exceed stormwater drainage systems, or impede flood flows. Similar to the Countywide

program, if this alternative would disturb more than one acre of soil, a SWPPP with project specific BMPs will be required for each individual fiber project. Operation under this alternative would require occasional maintenance needs and all construction areas would be cleared, similar to the Countywide program. As with the Countywide program, this alternative could involve minor use of water for dust control during construction; however, it is not anticipated this alternative would require additional water supplies during operation as no population would be generated.

Section 4.8, Hydrology and Water, of this EIR concluded that the proposed Countywide program would result in a less than significant impact to hydrology and water quality. The Aerial Installation Only Alternative would result in similar, less than significant impacts as compared to the Countywide program. (*Less than Significant Impact*)

5.4.2.9 Noise

The Aerial Installation Only Alternative would only install aboveground fiber optic line on existing or newly constructed utility poles. No underground fiber optic line or new conduit would be installed under this alternative. Similar to the Countywide program, construction under this alternative would be required to limit construction hours and implement construction noise best management practices, as outlined under Mitigation Measure NOI-1. Similar to the Countywide program, the Aerial Installation Only Alternative would require emergency backup generators to be located more than 105 feet from any NSLU or provide sound reduction measures to reduce noise from generators to less than 50 dBA measured at affected NSLUs, as outlined in Mitigation Measure NOI-2. Additionally, similar to the Countywide program, if construction under this alternative would use a vibratory roller, Mitigation Measure NOI-3 would require vibratory rollers to be used in static mode only (no vibrations) in proximity to occupied buildings or fragile structures. Both the Countywide program and this alternative would not expose people residing or working in the project area to excessive noise levels from public use or private airstrips.

Section 4.9, Noise, of this EIR concluded that the proposed Countywide program would result in less than significant impact to noise impacts with implementation of Mitigation Measure NOI-1 through NOI-3. The Aerial Installation Only Alternative would result in similar, less than significant impacts with mitigation as compared to the Countywide program. (*Less than Significant Impact with Mitigation*)

5.4.2.10 Transportation

Under the Aerial Installation Only Alternative, individual fiber projects would only install aboveground fiber optic line on existing or newly constructed utility poles. Similar to the Countywide program, construction under this alternative may cause lane closures and would be required to submit an Encroachment Permit application to the County Department of Public Works. Additionally, construction under this alternative would be temporary in nature and would not result in a long-term increase in vehicular trips.

Operational VMT would increase slightly from existing conditions; however, individual fiber project operation would generate very few worker vehicle trips and would not lead to a notable increase in VMT per capita within the County. However, operation under this alternative would not introduce a wider or more reliable network that would improve public health and safety through enabling faster emergency response, enhanced communication between emergency services, and access to critical information

during disasters or emergencies. Therefore, impacts related to emergency access may be greater than the Countywide program.

Section 4.10, Transportation, of this EIR concluded that the proposed Countywide program would result in less than significant impact to transportation. Under this alternative, broadband infrastructure would not be widened to create a more reliable network that would improve public health and safety through enabling faster emergency response, enhanced communication between emergency services, and access to critical information during disasters or emergencies. Therefore, the Aerial Installation Only Alternative would result in similar or slightly greater, but still less than significant impacts as compared to the Countywide program. (*Less than Significant Impact*)

5.4.2.11 Tribal Cultural Resources

Under the Aerial Installation Only Alternative, individual fiber projects would only install aboveground fiber optic line on existing or newly constructed utility poles. No underground fiber optic line or new conduit would be installed under this alternative. Similar to the Countywide program, under this alternative, Mitigation Measure TCR-1 would be implemented to address an adverse change in the significance of TCRs and Mitigation Measure TCR-2 would be implemented to address unanticipated discoveries of TCRs.

Section 4.11, Tribal Cultural Resources, of this EIR concluded that the proposed Countywide program would result in less than significant impact to cultural resources with implementation of Mitigation Measure TCR-1 and TCR-2. The Aerial Installation Only Alternative would result in similar, less than significant impacts with mitigation as compared to the Countywide program. (*Less than Significant Impact with Mitigation*)

5.4.2.12 Utilities and Service Systems

Under the Aerial Installation Only Alternative, individual fiber projects would only install aboveground fiber optic line on existing or newly constructed utility poles. No underground fiber optic line or new conduit would be installed under this alternative. Similar to the Countywide program, new aboveground telecommunication facilities would be installed; however, this EIR analyzes all potential environmental impacts regarding installation of broadband infrastructure. Additionally, similar to the Countywide program, this alternative would not require relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, or natural gas facilities. As with the Countywide program, this alternative could involve minor use of water for dust control during construction; however, it is not anticipated this alternative would require additional water supplies during operation as no population would be generated. Additionally, during construction, it is anticipated that portable toilets could be provided for workers, and waste would be hauled to an approved facility for treatment/disposal. As wastewater associated with portable toilets would be a temporary demand, this alternative, as with the Countywide program, would not exceed wastewater treatment requirements of the Central Valley Regional Water Quality Control Board. Due to the minimal amount of solid waste generated by individual fiber projects, this alternative would not adversely affect the jurisdictions' abilities to comply with the State waste diversion requirements.

Section 4.12, Utilities and Service Systems, of this EIR concluded that the proposed Countywide program would result in a less than significant impact to utilities and service systems. The Aerial Installation Only

Alternative would result in similar, less than significant impacts as compared to the Countywide program. (*Less than Significant Impact*)

5.4.2.13 Wildfire

Under the Aerial Installation Only Alternative, individual fiber projects would only install aboveground fiber optic line on existing or newly constructed utility poles. Similar to the Countywide program, construction under this alternative may cause lane closures and would be required to submit an Encroachment Permit application to the County Department of Public Works. Operation under this alternative would not introduce a wider or more reliable network that would improve public health and safety through enabling faster emergency response, enhanced communication between emergency services, and access to critical information during disasters or emergencies. Therefore, impacts related to emergency access may be greater than the Countywide program.

Fire risks associated with construction and operation under this alternative would require adherence to CBC Chapter 7A and Public Resources Code 4291, similar to the Countywide program. As this alternative would include only aboveground infrastructure, the utility poles could be more susceptible to wildfires or other natural disasters. Such damage would reduce the reliability of communications system, which could disrupt emergency communications during extreme storms, wildfires, or other emergency conditions when reliable communication is most important. However, fiber optic lines do not carry an electrical charge and would therefore not exacerbate fire risk.

Section 4.13, Wildfire, of this EIR concluded that the proposed Countywide program would result in a less than significant impact to wildfires. The Aerial Installation Only Alternative would result in similar or slightly greater, but still less than significant impacts as compared to the Countywide program. (*Less than Significant Impact*)

5.4.2.14 Conclusion and Relationship to Project Objectives

The Aerial Installation Only Alternative would result in fewer impacts to air quality and greenhouse gases; similar impacts to biological resources, cultural resources, hydrology and water quality, noise, tribal cultural resources and utilities and service systems; and greater impacts to aesthetics, geology and soils, hazards and hazardous materials, transportation, and wildfire. Following is a discussion of the Aerial Installation Only Alternative's ability to attain the Project Objectives:

- 1. Provide upgradable and expandable high-speed broadband capacity in the service areas with minimum speeds of 25 megabits per second (Mbps) for downloads and 3 Mbps for uploads, which is labeled as "served" areas within California;**

The Aerial Installation Only alternative would install aboveground fiber optic cables on new or previously constructed utility poles. The Aerial Installation Only alternative would attain this objective but not as effectively as the Countywide program.

- 2. Provide a broadband network in unserved and underserved areas of Tuolumne County;**

The Aerial Installation Only alternative would install aboveground fiber optic cables on new or previously constructed utility poles. The Aerial Installation Only alternative would attain this objective but not as effectively as the Countywide program.

3. Enable an increase in telecommuting, with a commensurate decrease in vehicle miles traveled;

The Aerial Installation Only alternative would install aboveground fiber optic cables on new or previously constructed utility poles. The Aerial Installation Only alternative would attain this objective but not as effectively as the Countywide program.

4. Improve public health and safety through enabling faster emergency response, enhanced communication between emergency services, and access to critical information during disasters or emergencies;

The Aerial Installation Only alternative would install aboveground fiber optic cables on new or previously constructed utility poles. The Aerial Installation Only alternative would attain this objective but not as effectively as the Countywide program.

5. Streamline the environmental review process for individual broadband projects that are implemented in the County;

The Aerial Installation Only alternative would install aboveground fiber optic cables on new or previously constructed utility poles. The Aerial Installation Only alternative would attain this objective but not as effectively as the Countywide program.

6. Provide a reliable foundation of data and acceptable methodology to assess impacts for any specific broadband deployment project;

The Aerial Installation Only alternative would install aboveground fiber optic cables on new or previously constructed utility poles. The Aerial Installation Only alternative would attain this objective but not as effectively as the Countywide program.

7. Identify known environmental and cultural assets to be protected and/or restored with an approved set of preservation measures and/or mitigations; and,

The Aerial Installation Only alternative would install aboveground fiber optic cables on new or previously constructed utility poles. The Aerial Installation Only alternative would attain this objective but not as effectively as the Countywide program.

8. Save time and money for both the County of Tuolumne and broadband project applicants, resulting in greater government and economic efficiencies, reducing the amount of County staff time required to review broadband projects and avoiding duplication of applicant costs.

The Aerial Installation Only alternative would install aboveground fiber optic cables on new or previously constructed utility poles. The Aerial Installation Only alternative would attain this objective but not as effectively as the Countywide program.

5.4.3 Underground Installation Only Alternative

5.4.3.1 Aesthetics

Under the Underground Installation Only Alternative, individual fiber projects would only install underground fiber optic lines and would utilize existing or newly installed underground conduit. No aboveground fiber optic line would be installed under this alternative. Aesthetic impacts related to construction under this alternative would be similar to the proposed project as all construction activities would be temporary and short-term. Operation under this alternative would only include underground fiber optic conduit that would mainly not be visible. Therefore, this alternative could potentially result in reduced aesthetic impacts as compared to the Countywide program. As with the proposed Countywide program, lighting would be minimal and downward facing to prevent light spillover and glare.

Section 4.1, Aesthetics, of this EIR concluded that the proposed Countywide program would result in less than significant impact to aesthetics. The Underground Installation Only Alternative would result in similar or slightly smaller, less than significant impacts as compared to the Countywide program. (*Less than Significant Impact*)

5.4.3.2 Air Quality

Under the Underground Installation Only Alternative, construction activities would mainly include Horizontal Directional Drilling, Plowing, Trenching, Microtrenching, Line Installation, and Pavement Repair. This alternative would avoid construction activities such as Aerial Stringing. Section 4.2, Air Quality, of this EIR, concluded that the Countywide program would result in a less than significant impact to air quality associated with construction. This alternative could potentially result in reduced impacts to air quality associated with construction as new or existing fiber optic conduit would be utilized and there would be no aboveground utility pole construction. Operation under this alternative would be similar to the Countywide program, as this alternative would also not generate new vehicle trips beyond occasional maintenance activities. A backup generator may be used in the event of a power outage or for routine testing, similar to the Countywide program.

Section 4.2, Air Quality, of this EIR concluded that the proposed Countywide program would result in less than significant impact to air quality. The Underground Installation Only Alternative would result in similar or slightly smaller, less than significant impacts as compared to the Countywide program. (*Less than Significant Impact*)

5.4.3.3 Biological Resources

Under the Underground Installation Only alternative, individual fiber projects would only install underground fiber optic lines and would utilize existing or newly installed underground conduit. No aboveground fiber optic line would be installed under this alternative. However, similar to the Countywide program, individual fiber projects would be required to prepare a BRA, as outlined in Mitigation Measure BIO-1 to reduce impacts to a less than significant level. Additionally, if sensitive natural communities would be impacted by project implementation, the project proponent would apply to the necessary permits from the USACE, CDFW, and the RWQCB as outlined in Mitigation Measure BIO-2 and would prepare an oak resources inventory as outlined in Mitigation Measure BIO-3. Similar to the Countywide program if the individual fiber project would impact federally protected aquatic resources, Mitigation Measure BIO-2 would be implemented, and if individual fiber projects would

impact the movement of wildlife species or wildlife corridors, Mitigation Measure BIO-1 would be implemented.

Section 4.3, Biological Resources, of this EIR concluded that the proposed Countywide program would result in less than significant impact to biological resources with implementation of Mitigation Measure BIO-1 through BIO-3. The Underground Installation Only Alternative would result in similar, less than significant impacts with mitigation as compared to the Countywide program. (*Less than Significant Impact with Mitigation*)

5.4.3.4 Cultural Resources

Under the Underground Installation Only alternative, individual fiber projects would only install underground fiber optic lines and would utilize existing or newly installed underground conduit. No aboveground fiber optic line would be installed under this alternative. As this alternative would not install utility poles, individual fiber project would not introduce a new visual element to areas with concentrations of historical built environment cultural resources such as buildings and structures that comprise historic districts. There would be no change in the visual signature of the vicinity. Therefore, this alternative could result in slightly less impact than the Countywide program.

Additionally, similar to the Countywide program, individual fiber projects under this alternative could impede or destroy archaeological cultural resource's ability to convey their significance, which can embody scientific and/or traditional cultural value. Mitigation Measure CUL-1 and CUL-2 would be implemented under this alternative, and under the Countywide program, to mitigate or avoid archaeological cultural resource impact scenarios. The Countywide program and this alternative would also implement Mitigation Measure CUL-3 to avoid substantial adverse changes to human remains.

Section 4.4, Cultural Resources, of this EIR concluded that the proposed Countywide program would result in less than significant impact to cultural resources with implementation of Mitigation Measure CUL-1 through CUL-3. The Underground Installation Only Alternative would result in slightly less than significant impacts with mitigation as compared to the Countywide program. (*Slightly Less than Significant Impact with Mitigation*)

5.4.3.5 Geology and Soils

Under the Underground Installation Only Alternative, individual fiber projects would only install underground fiber optic lines and would utilize existing or newly installed underground conduit. No aboveground fiber optic line would be installed under this alternative. As compared to the Countywide program, this alternative would have similar risks of exposing people or structures to landslides, lateral spreading, subsidence, liquefaction, soil erosion, or seismic impacts as construction would occur within County limits. All CBC and local requirements would be met to address potential risks associated with these geologic concerns. If this alternative would disturb more than one acre of soil, a SWPPP with project specific BMPs will be required for each individual fiber project, as also required in the Countywide program. However, the addition of only underground fiber optic conduit under this alternative, including Horizontal Directional Drilling, Plowing, Trenching, Microtrenching, and Line Installation, may not be feasible in some locations in the County due to the rocky subsurface conditions that would make it nearly impossible to reach the boring depth required for the conduit, which could result in greater impacts as compared to the proposed Countywide program.

Section 4.5, Geology and Soils, of this EIR concluded that the proposed Countywide program would result in no impact, less than significant impact, or less than significant impact with mitigation to geology and soils. The Underground Installation Only Alternative would result in similar or slightly greater, but still less than significant impacts as compared to the Countywide program. (*Less than Significant Impact with Mitigation*)

5.4.3.6 Greenhouse Gas Emissions

Under the Underground Installation Only Alternative, construction activities would mainly include Horizontal Directional Drilling, Plowing, Trenching, Microtrenching, Line Installation, and Pavement Repair. This alternative would avoid construction activities such as Aerial Stringing. Section 4.6, Greenhouse Gas Emissions, of this EIR, concluded that the Countywide program would result in a less than significant impact to GHGs associated with construction. This alternative could potentially result in reduced impacts to GHGs associated with construction as this alternative would utilize new or existing fiber optic conduit and would not include any aboveground construction. Operation under this alternative would be similar to the Countywide program, as this alternative would also not generate new vehicle trips beyond occasional maintenance activities. Similar to the Countywide program, this alternative would be consistent with the County General Plan, Tuolumne County Regional Blueprint Greenhouse Gas Study, and CAP.

Section 4.6, Greenhouse Gas Emissions, of this EIR concluded that the proposed Countywide program would result in less than significant impact to GHGs. The Underground Installation Only Alternative would result in similar or slightly smaller, less than significant impacts as compared to the Countywide program. (*Less than Significant Impact*)

5.4.3.7 Hazards and Hazardous Materials

Under the Underground Installation Only Alternative, individual fiber projects would only install underground fiber optic lines and would utilize existing or newly installed underground conduit. No aboveground fiber optic line would be installed under this alternative. Similar to the Countywide program, small quantities of hazardous materials may be stored, used, and handled during construction activities or during routine maintenance checks, and may be located within one quarter mile of a school. Additionally, this alternative could be susceptible to hazard, and hazardous material impacts due to possible digging into existing, unmarked infrastructure. However, this alternative would be required to implement and comply with existing hazardous material regulations. This alternative would not include utility poles or include permanent structures for human occupancy; therefore, this alternative would not interfere with airport operations or expose residents to airport-related noise.

Similar to the Countywide program, construction under this alternative may cause lane closures and would be required to submit an Encroachment Permit application to the County Department of Public Works. Operation under this alternative would not introduce a wider or more reliable network that would improve public health and safety through enabling faster emergency response, enhanced communication between emergency services, and access to critical information during disasters or emergencies. Therefore, impacts related to emergency access may be greater than the Countywide program. Fire risks associated with construction and operation under this alternative would require adherence to CBC Chapter 7A and Public Resources Code 4291, similar to the Countywide program. As this alternative would include only underground infrastructure, the fiber optic conduit could be less susceptible to wildfires or other natural disasters, as compared to aboveground utility poles.

Additionally, fiber optic lines do not carry an electrical charge and would therefore not exacerbate fire risk.

Section 4.7, Hazards and Hazardous Materials, of this EIR concluded that the proposed Countywide program would result in less than significant impact to hazards and hazardous materials. Under this alternative, broadband infrastructure would not be widened to create a more reliable network that would improve public health and safety through enabling faster emergency response, enhanced communication between emergency services, and access to critical information during disasters or emergencies. Therefore, the Underground Installation Only Alternative would result in similar or slightly greater, but still less than significant impacts as compared to the Countywide program. (*Less than Significant Impact*)

5.4.3.8 Hydrology and Water Quality

The Underground Installation Only Alternative would only install underground fiber optic lines and would utilize existing or newly installed underground conduit. No aboveground fiber optic line would be installed under this alternative. As compared to the Countywide program, this alternative may also alter existing drainage patterns which would result in erosion on- or off-site, increase surface runoff that would cause flooding or exceed stormwater drainage systems, or impede flood flows. Similar to the Countywide program, if this alternative would disturb more than one acre of soil, a SWPPP with project specific BMPs will be required for each individual fiber project. Operation under this alternative would require occasional maintenance needs and all construction areas would be cleared, similar to the Countywide program. As with the Countywide program, this alternative could involve minor use of water for dust control during construction; however, it is not anticipated this alternative would require additional water supplies during operation as no population would be generated.

Section 4.8, Hydrology and Water, of this EIR concluded that the proposed Countywide program would result in a less than significant impact to hydrology and water quality. The Underground Installation Only Alternative would result in similar, less than significant impacts as compared to the Countywide program. (*Less than Significant Impact*)

5.4.3.9 Noise

The Underground Installation Only Alternative would only install underground fiber optic lines and would utilize existing or newly installed underground conduit. No aboveground fiber optic line would be installed under this alternative. Similar to the Countywide program, construction under this alternative would be required to limit construction hours and implement construction noise best management practices, as outlined under Mitigation Measure NOI-1. Similar to the Countywide program, the Underground Installation Only Alternative would require emergency backup generators to be located more than 105 feet from any NSLU or provide sound reduction measures to reduce noise from generators to less than 50 dBA measured at affected NSLUs, as outlined in Mitigation Measure NOI-2. Additionally, similar to the Countywide program, if construction under this alternative would use a vibratory roller, Mitigation Measure NOI-3 would require vibratory rollers to be used in static mode only (no vibrations) in proximity to occupied buildings or fragile structures. Both the Countywide program and this alternative would not expose people residing or working in the project area to excessive noise levels from public use or private airstrips.

Section 4.9, Noise, of this EIR concluded that the proposed Countywide program would result in less than significant impact to noise impacts with implementation of Mitigation Measure NOI-1 through NOI-3. The Underground Installation Only Alternative would result in similar, less than significant impacts with mitigation as compared to the Countywide program. (*Less than Significant Impact with Mitigation*)

5.4.3.10 Transportation

Under the Underground Installation Only Alternative, individual fiber projects would only install underground fiber optic lines and would utilize existing or newly installed underground conduit. No aboveground fiber optic line would be installed under this alternative. Similar to the Countywide program, construction under this alternative may cause lane closures and would be required to submit an Encroachment Permit application to the County Department of Public Works. Additionally, construction under this alternative would be temporary in nature and would not result in a long-term increase in vehicular trips.

Operational VMT would increase slightly from existing conditions; however, individual fiber project operation would generate very few worker vehicle trips and would not lead to a notable increase in VMT per capita within the County. However, operation under this alternative would not introduce a wider or more reliable network that would improve public health and safety through enabling faster emergency response, enhanced communication between emergency services, and access to critical information during disasters or emergencies. Therefore, impacts related to emergency access may be greater than the Countywide program.

Section 4.10, Transportation, of this EIR concluded that the proposed Countywide program would result in less than significant impact to transportation. Under this alternative, broadband infrastructure would not be widened to create a more reliable network that would improve public health and safety through enabling faster emergency response, enhanced communication between emergency services, and access to critical information during disasters or emergencies. Therefore, the Underground Installation Only Alternative would result in similar or slightly greater, but still less than significant impacts as compared to the Countywide program. (*Less than Significant Impact*)

5.4.3.11 Tribal Cultural Resources

Under the Underground Installation Only Alternative, individual fiber projects would only install underground fiber optic lines and would utilize existing or newly installed underground conduit. No aboveground fiber optic line would be installed under this alternative. Similar to the Countywide program, under this alternative, Mitigation Measure TCR-1 would be implemented to address an adverse change in the significance of TCRs and Mitigation Measure TCR-2 would be implemented to address unanticipated discoveries of TCRs.

Section 4.11, Tribal Cultural Resources, of this EIR concluded that the proposed Countywide program would result in less than significant impact to cultural resources with implementation of Mitigation Measure TCR-1 and TCR-2. The Underground Installation Only Alternative would result in similar, less than significant impacts with mitigation as compared to the Countywide program. (*Less than Significant Impact with Mitigation*)

5.4.3.12 Utilities and Service Systems

Under the Underground Installation Only Alternative, individual fiber projects would only install underground fiber optic lines and would utilize existing or newly installed underground conduit. No aboveground fiber optic line would be installed under this alternative. Similar to the Countywide program, new underground telecommunication facilities would be installed; however, this EIR analyzes all potential environmental impacts regarding installation of broadband infrastructure. Additionally, similar to the Countywide program, this alternative would not require relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, or natural gas facilities. As with the Countywide program, this alternative could involve minor use of water for dust control during construction and is not anticipated to require additional water supplies during operation as no population would be generated. Additionally, during construction, it is anticipated that portable toilets could be provided for workers, and waste would be hauled to an approved facility for treatment/disposal. As wastewater associated with portable toilets would be a temporary demand, this alternative, as with the Countywide program, would not exceed wastewater treatment requirements of the Central Valley Regional Water Quality Control Board. Due to the minimal amount of solid waste generated by individual fiber projects, this alternative would not adversely affect the jurisdictions' abilities to comply with the State waste diversion requirements.

Section 4.12, Utilities and Service Systems, of this EIR concluded that the proposed Countywide program would result in a less than significant impact to utilities and service systems. The Underground Installation Only Alternative would result in similar, less than significant impacts as compared to the Countywide program. (*Less than Significant Impact*)

5.4.3.13 Wildfire

Under the Underground Installation Only Alternative, individual fiber projects would only install underground fiber optic lines and would utilize existing or newly installed underground conduit. No aboveground fiber optic line would be installed under this alternative. Similar to the Countywide program, construction under this alternative may cause lane closures and would be required to submit an Encroachment Permit application to the County Department of Public Works. Operation under this alternative would not introduce a wider or more reliable network that would improve public health and safety through enabling faster emergency response, enhanced communication between emergency services, and access to critical information during disasters or emergencies. Therefore, impacts related to emergency access may be greater than the Countywide program.

Fire risks associated with construction and operation under this alternative would require adherence to CBC Chapter 7A and Public Resources Code 4291, similar to the Countywide program. As this alternative would include only underground infrastructure, the fiber optic conduit could be less susceptible to wildfires or other natural disasters, as compared to aboveground utility poles. Additionally, fiber optic lines do not carry an electrical charge and would therefore not exacerbate fire risk.

Section 4.13, Wildfire, of this EIR concluded that the proposed Countywide program would result in a less than significant impact to wildfires. The Underground Installation Only Alternative would result in similar, but still less than significant impacts as compared to the Countywide program. (*Less than Significant Impact*)

5.4.3.14 Conclusion and Relationship to Project Objectives

The Underground Installation Only Alternative would result in fewer impacts to aesthetics, air quality, cultural resources, and greenhouse gases; similar impacts to biological resources, hydrology and water quality, noise, tribal cultural resources and utilities and service systems; and greater impacts to geology and soils, hazards and hazardous materials, transportation, and wildfire. Following is a discussion of the Underground Installation Only Alternative's ability to attain the Project Objectives:

- 1. Provide upgradable and expandable high-speed broadband capacity in the service areas with minimum speeds of 25 megabits per second (Mbps) for downloads and 3 Mbps for uploads, which is labeled as "served" areas within California;**

The Underground Installation Only alternative would install underground fiber optic conduits. The Underground Installation Only alternative would attain this objective but not as effectively as the Countywide program.

- 2. Provide a broadband network in unserved and underserved areas of Tuolumne County;**

The Underground Installation Only alternative would install underground fiber optic conduits. The Underground Installation Only alternative would attain this objective but not as effectively as the Countywide program.

- 3. Enable an increase in telecommuting, with a commensurate decrease in vehicle miles traveled;**

The Underground Installation Only alternative would install underground fiber optic conduits. The Underground Installation Only alternative would attain this objective but not as effectively as the Countywide program.

- 4. Improve public health and safety through enabling faster emergency response, enhanced communication between emergency services, and access to critical information during disasters or emergencies;**

The Underground Installation Only alternative would install underground fiber optic conduits. The Underground Installation Only alternative would attain this objective but not as effectively as the Countywide program.

- 5. Streamline the environmental review process for individual broadband projects that are implemented in the County;**

The Underground Installation Only alternative would install underground fiber optic conduits. The Underground Installation Only alternative would attain this objective but not as effectively as the Countywide program.

- 6. Provide a reliable foundation of data and acceptable methodology to assess impacts for any specific broadband deployment project;**

The Underground Installation Only alternative would install underground fiber optic conduits. The Underground Installation Only alternative would attain this objective but not as effectively as the Countywide program.

7. Identify known environmental and cultural assets to be protected and/or restored with an approved set of preservation measures and/or mitigations; and,

The Underground Installation Only alternative would install underground fiber optic conduits. The Underground Installation Only alternative would attain this objective but not as effectively as the Countywide program.

8. Save time and money for both the County of Tuolumne and broadband project applicants, resulting in greater government and economic efficiencies, reducing the amount of County staff time required to review broadband projects and avoiding duplication of applicant costs.

The Underground Installation Only alternative would install underground fiber optic conduits. The Underground Installation Only alternative would attain this objective but not as effectively as the Countywide program.

5.4.4 Use of Existing Infrastructure Only Alternative

5.4.4.1 Aesthetics

Under the Use of Existing Infrastructure Only Alternative, fiber optic line would be installed in existing fiber-specific conduit or along existing utility poles. Construction under this alternative would include the installation of fiber optic lines to existing poles and/or conduits. Aesthetic impacts related to construction under this alternative would be similar to the proposed Countywide program as all construction activities would be temporary and short-term. Under this alternative, the addition of fiber optic lines in existing underground conduit would not be visible, which would result in similar impacts as the proposed Countywide program. The addition of aboveground fiber optic line under this alternative would not change the visual character of the program area as the utility poles already exist. Existing poles are owned by certain utilities or exist as joint poles with shared use between utilities. Additional joint pole users may not be feasible, and the ability to add joint pole users may be difficult to augment. As with the proposed Countywide program, lighting would be minimal and downward facing to prevent light spillover and glare. Therefore, this alternative could potentially result in reduced aesthetic impacts as compared to the Countywide program.

Section 4.1, Aesthetics, of this EIR concluded that the proposed Countywide program would result in less than significant impact to aesthetics. The Use of Existing Infrastructure Alternative would result in similar, less than significant impacts as compared to the Countywide program. (*Less than Significant Impact*)

5.4.4.2 Air Quality

Under the Use of Existing Infrastructure Only Alternative, less construction activities would occur including less Horizontal Directional Drilling, Plowing, Trenching, Microtrenching, Line Installation, Aerial Stringing, and Pavement Repair. Section 4.2, Air Quality, of this EIR, concluded that the Countywide program would result in a less than significant impact to air quality associated with construction. This alternative could potentially result in reduced impacts to air quality associated with construction as existing conduit and/or existing utility poles would be utilized and there would be no new construction. Operation under this alternative would be similar to the Countywide program, as this alternative would not generate new vehicle trips beyond occasional maintenance activities. A backup generator may be used in the event of a power outage or for routine testing, similar to the Countywide program.

Section 4.2, Air Quality, of this EIR concluded that the proposed Countywide program would result in less than significant impact to air quality. The Use of Existing Infrastructure Alternative would result in similar, less than significant impacts as compared to the Countywide program. (*Less than Significant Impact*)

5.4.4.3 Biological Resources

Under the Use of Existing Infrastructure Only alternative, fiber optic line would be installed in existing fiber-specific conduit or along existing utility poles. However, similar to the Countywide program, individual fiber projects would be required to prepare a BRA, as outlined in Mitigation Measure BIO-1 to reduce impacts to a less than significant level. Additionally, if sensitive natural communities would be impacted by project implementation, the project proponent would apply to the necessary permits from the USACE, CDFW, and the RWQCB as outlined in Mitigation Measure BIO-2 and would prepare an oak resources inventory as outlined in Mitigation Measure BIO-3. Similar to the Countywide program if the individual fiber project would impact federally protected aquatic resources, Mitigation Measure BIO-2 would be implemented, and if individual fiber projects would impact the movement of wildlife species or wildlife corridors, Mitigation Measure BIO-1 would be implemented.

Section 4.3, Biological Resources, of this EIR concluded that the proposed Countywide program would result in less than significant impact to biological resources with implementation of Mitigation Measure BIO-1 through BIO-3. The Use of Existing Infrastructure Only Alternative would result in similar, less than significant impacts with mitigation as compared to the Countywide program. (*Less than Significant Impact with Mitigation*)

5.4.4.4 Cultural Resources

Under the Use of Existing Infrastructure Only alternative, fiber optic line would be installed in existing fiber-specific conduit or along existing utility poles. As this alternative would not install new utility poles, individual fiber project would not introduce a new visual element to areas with concentrations of historical built environment cultural resources such as buildings and structures that comprise historic districts. There would be no change in the existing visual signature of the vicinity. Therefore, this alternative could result in slightly less impact than the Countywide program.

Additionally, similar to the Countywide program, individual fiber projects under this alternative could impede or destroy archaeological cultural resource's ability to convey their significance, which can embody scientific and/or traditional cultural value. Mitigation Measure CUL-1 and CUL-2 would be implemented under this alternative, and under the Countywide program, to mitigate or avoid archaeological cultural resource impact scenarios. The Countywide program and this alternative would also implement Mitigation Measure CUL-3 to avoid substantial adverse changes to human remains.

Section 4.4, Cultural Resources, of this EIR concluded that the proposed Countywide program would result in less than significant impact to cultural resources with implementation of Mitigation Measure CUL-1 through CUL-3. The Use of Existing Infrastructure Only Alternative would result in slightly less than significant impacts with mitigation as compared to the Countywide program. (*Slightly Less than Significant Impact with Mitigation*)

5.4.4.5 Geology and Soils

Under the Use of Existing Infrastructure Only Alternative, less aboveground, and underground broadband infrastructure construction would occur because fiber optic lines would utilize existing poles or conduit. As compared to the Countywide program, this alternative would have similar risks of exposing people or structures to landslides, lateral spreading, subsidence, liquefaction, soil erosion, or seismic impacts as construction would occur within County limits. All CBC and local requirements would be met to address potential risks associated with these geologic concerns. Additionally, similar to the Countywide program, if this alternative would disturb more than one acre of soil, a SWPPP with project specific BMPs will be required for each individual fiber project. This alternative would not require a preliminary soils report or Site-Specific Paleontological Resources Inventory Assessment as the area associated with existing conduit and utility poles would have already been disturbed. Therefore, this alternative could potentially result in reduced geology and soil impacts as compared to the Countywide program.

Section 4.5, Geology and Soils, of this EIR concluded that the proposed Countywide program would result in no impact, less than significant impact, or less than significant impact with mitigation to geology and soils. The Use of Existing Infrastructure Alternative would result in similar, less than significant impacts as compared to the Countywide program. (*Less than Significant Impact with Mitigation*)

5.4.4.6 Greenhouse Gas Emissions

Under the Use of Existing Infrastructure Only Alternative, less construction activities would occur including less Horizontal Directional Drilling, Plowing, Trenching, Microtrenching, Line Installation, Aerial Stringing, and Pavement Repair. Section 4.6, Greenhouse Gas Emissions, of this EIR, concluded that the Countywide program would result in a less than significant impact to GHGs associated with construction. This alternative could potentially result in reduced impacts to GHGs associated with construction as the alternative would utilize existing conduit and/or existing utility poles. Operation under this alternative would be similar to the Countywide program, as this alternative would also not generate new vehicle trips beyond occasional maintenance activities. Similar to the Countywide program, this alternative would be consistent with the County General Plan, Tuolumne County Regional Blueprint Greenhouse Gas Study, and CAP.

Section 4.6, Greenhouse Gas Emissions, of this EIR concluded that the proposed Countywide program would result in less than significant impact to GHGs. The Use of Existing Infrastructure Alternative would result in similar, less than significant impacts as compared to the Countywide program. (*Less than Significant Impact*)

5.4.4.7 Hazards and Hazardous Materials

The Use of Existing Infrastructure Only Alternative would include the same construction methods as the Countywide program but would result in less overall construction of new infrastructure as existing conduit and utility poles would be utilized. Similar to the Countywide program, small quantities of hazardous materials may be stored, used, and handled during construction activities or during routine maintenance checks, and may be located within one quarter mile of a school. This alternative would be required to implement and comply with existing hazardous material regulations. Additionally, as with the Countywide program, this alternative would not include utility poles over 77 feet in height or include permanent structures for human occupancy; therefore, this alternative would not interfere with airport

operations or expose residents to airport-related noise. As this alternative would utilize existing conduit and/or utility poles, the area would have already been evaluated for hazardous materials and would therefore not be required to prepare a Phase I ESA.

Similar to the Countywide program, construction under this alternative may cause lane closures and would be required to submit an Encroachment Permit application to the County Department of Public Works. Operation under this alternative would not introduce a wider or more reliable network that would improve public health and safety through enabling faster emergency response, enhanced communication between emergency services, and access to critical information during disasters or emergencies. Therefore, impacts related to emergency access may be greater than the Countywide program. Fire risks associated with construction and operation under this alternative would require adherence to CBC Chapter 7A and Public Resources Code 4291, similar to the Countywide program. Additionally, fiber optic lines do not carry an electrical charge and would therefore not exacerbate fire risk.

Section 4.7, Hazards and Hazardous Materials, of this EIR concluded that the proposed Countywide program would result in less than significant impact to hazards and hazardous materials. Under this alternative, broadband infrastructure would not be widened to create a more reliable network that would improve public health and safety through enabling faster emergency response, enhanced communication between emergency services, and access to critical information during disasters or emergencies. Therefore, the Use of Existing Infrastructure Alternative would result in similar or slightly greater, but still less than significant impacts as compared to the Countywide program. (*Less than Significant Impact*)

5.4.4.8 Hydrology and Water Quality

The Use of Existing Infrastructure Only Alternative would include the same construction methods as the Countywide program but would result in less overall construction of new infrastructure as existing conduit and utility poles would be utilized. As compared to the Countywide program, this alternative may alter existing drainage patterns which would result in erosion on- or off-site, increase surface runoff that would cause flooding or exceed stormwater drainage systems, or impede flood flows. Similar to the Countywide program, if this alternative would disturb more than one acre of soil, a SWPPP with project specific BMPs will be required for each individual fiber project. Operation under this alternative would require occasional maintenance needs and all construction areas would be cleared, similar to the Countywide program. As with the Countywide program, this alternative could involve minor use of water for dust control during construction; however, it is not anticipated this alternative would require additional water supplies during operation as no population would be generated.

Section 4.8, Hydrology and Water, of this EIR concluded that the proposed Countywide program would result in a less than significant impact to hydrology and water quality. The Use of Existing Infrastructure Alternative would result in similar, less than significant impacts as compared to the Countywide program. (*Less than Significant Impact*)

5.4.4.9 Noise

The Use of Existing Infrastructure Only Alternative would include the same construction methods as the Countywide program but would result in less overall construction of new infrastructure as existing conduit and utility poles would be utilized. Similar to the Countywide program, construction under this

alternative would be required to limit construction hours and implement construction noise best management practices, as outlined under Mitigation Measure NOI-1. Similar to the Countywide program, the Use of Existing Infrastructure Only Alternative would require emergency backup generators to be located more than 105 feet from any NSLU or provide sound reduction measures to reduce noise from generators to less than 50 dBA measured at affected NSLUs, as outlined in Mitigation Measure NOI-2. Additionally, similar to the Countywide program, if construction under this alternative would use a vibratory roller, Mitigation Measure NOI-3 would require vibratory rollers to be used in static mode only (no vibrations) in proximity to occupied buildings or fragile structures. Both the Countywide program and this alternative would not expose people residing or working in the project area to excessive noise levels from public use or private airstrips.

Section 4.9, Noise, of this EIR concluded that the proposed Countywide program would result in less than significant impact to noise impacts with implementation of Mitigation Measure NOI-1 through NOI-3. The Use of Existing Infrastructure Only Alternative would result in similar, less than significant impacts with mitigation as compared to the Countywide program. (*Less than Significant Impact with Mitigation*)

5.4.4.10 Transportation

Under the Use of Existing Infrastructure Only Alternative, fiber optic line would be installed in existing fiber-specific conduit or along existing utility poles. Similar to the Countywide program, construction under this alternative may cause lane closures and would be required to submit an Encroachment Permit application to the County Department of Public Works. Additionally, construction under this alternative would be temporary in nature and would not result in long-term increase in vehicular trips.

Operational VMT is not expected to increase from existing conditions as worker vehicle trips would already be generated with existing conduit or utility poles. However, operation under this alternative would not introduce a wider or more reliable network that would improve public health and safety through enabling faster emergency response, enhanced communication between emergency services, and access to critical information during disasters or emergencies. Therefore, impacts related to emergency access may be greater than the Countywide program.

Section 4.10, Transportation, of this EIR concluded that the proposed Countywide program would result in less than significant impact to transportation. Under this alternative, broadband infrastructure would not be widened to create a more reliable network that would improve public health and safety through enabling faster emergency response, enhanced communication between emergency services, and access to critical information during disasters or emergencies. Therefore, the Use of Existing Infrastructure Alternative would result in similar or slightly greater, but still less than significant impacts as compared to the Countywide program. (*Less than Significant Impact*)

5.4.4.11 Tribal Cultural Resources

Under the Use of Existing Infrastructure Only Alternative, fiber optic line would be installed in existing fiber-specific conduit or along existing utility poles. Similar to the Countywide program, under this alternative, Mitigation Measure TCR-1 would be implemented to address an adverse change in the significance of TCRs and Mitigation Measure TCR-2 would be implemented to address unanticipated discoveries of TCRs.

Section 4.11, Tribal Cultural Resources, of this EIR concluded that the proposed Countywide program would result in less than significant impact to cultural resources with implementation of Mitigation

Measure TCR-1 and TCR-2. The Use of Existing Infrastructure Only Alternative would result in similar, less than significant impacts with mitigation as compared to the Countywide program. (*Less than Significant Impact with Mitigation*)

5.4.4.12 Utilities and Service Systems

Under the Use of Existing Infrastructure Only Alternative, fiber optic line would be installed in existing fiber-specific conduit or along existing utility poles. As existing conduit or utility poles would be used, there would be no construction of new telecommunication facilities, as compared to the Countywide program. Therefore, this alternative could potentially result in reduced telecommunication impacts as compared to the Countywide program. However, similar to the Countywide program, this alternative would not require relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, or natural gas facilities. As with the Countywide program, this alternative could involve minor use of water for dust control during construction and is not anticipated to require additional water supplies during operation as no population would be generated. Additionally, during construction, it is anticipated that portable toilets could be provided for workers, and waste would be hauled to an approved facility for treatment/disposal. As wastewater associated with portable toilets would be a temporary demand, this alternative, as with the Countywide program, would not exceed wastewater treatment requirements of the Central Valley Regional Water Quality Control Board. Due to the minimal amount of solid waste generated by individual fiber projects, this alternative would not adversely affect the jurisdictions' abilities to comply with the State waste diversion requirements.

Section 4.12, Utilities and Service Systems, of this EIR concluded that the proposed Countywide program would result in a less than significant impact to utilities and service systems. The Use of Existing Infrastructure Alternative would result in similar, less than significant impacts as compared to the Countywide program. (*Less than Significant Impact*)

5.4.4.13 Wildfire

Under the Use of Existing Infrastructure Only Alternative, less aboveground, and underground broadband infrastructure construction would occur because fiber optic lines would utilize existing poles or conduit. Similar to the Countywide program, construction under this alternative may cause lane closures and would be required to submit an Encroachment Permit application to the County Department of Public Works. Operation under this alternative would not introduce a wider or more reliable network that would improve public health and safety through enabling faster emergency response, enhanced communication between emergency services, and access to critical information during disasters or emergencies. Therefore, impacts related to emergency access may be greater than the Countywide program.

Fire risks associated with construction and operation under this alternative would require adherence to CBC Chapter 7A and Public Resources Code 4291, similar to the Countywide program. Similar to the Countywide program, if this alternative would disturb more than one acre of soil, a SWPPP with project specific BMPs will be required for each individual fiber project. Workers would be trained in basic firefighting, and the availability of tools and training would allow construction crews to help control or extinguish fires they may come upon. Additionally, fiber optic lines do not carry an electrical charge and would therefore not exacerbate fire risk.

Section 4.13, Wildfire, of this EIR concluded that the proposed Countywide program would result in a less than significant impact to wildfires. The Use of Existing Infrastructure Alternative would result in similar or slightly greater, but still less than significant impacts as compared to the Countywide program. (*Less than Significant Impact*)

5.4.4.14 Conclusion and Relationship to Project Objectives

The Use of Existing Infrastructure Only Alternative would result in fewer impacts to aesthetics, air quality, cultural resources, geology and soils, greenhouse gases, hydrology and water quality, and utilities and service systems; similar impacts to biological resources, noise, and tribal cultural resources; and greater impacts to hazards and hazardous materials, transportation, and wildfire. Following is a discussion of the Use of Existing Infrastructure Only Alternative's ability to attain the Project Objectives:

- 1. Provide upgradable and expandable high-speed broadband capacity in the service areas with minimum speeds of 25 megabits per second (Mbps) for downloads and 3 Mbps for uploads, which is labeled as "served" areas within California;**

The Use of Existing Infrastructure Only Alternative would install fiber optic line in existing fiber-specific conduit or along existing utility poles. No new broadband infrastructure would be installed within the County. The Use of Existing Infrastructure Only Alternative would not achieve this objective.

- 2. Provide a broadband network in unserved and underserved areas of Tuolumne County;**

The Use of Existing Infrastructure Only Alternative would install fiber optic line in existing fiber-specific conduit or along existing utility poles. No new broadband infrastructure would be installed within the County. The Use of Existing Infrastructure Only Alternative would not achieve this objective.

- 3. Enable an increase in telecommuting, with a commensurate decrease in vehicle miles traveled;**

The Use of Existing Infrastructure Only Alternative would install fiber optic line in existing fiber-specific conduit or along existing utility poles. No new broadband infrastructure would be installed within the County. The Use of Existing Infrastructure Only Alternative would not achieve this objective.

- 4. Improve public health and safety through enabling faster emergency response, enhanced communication between emergency services, and access to critical information during disasters or emergencies;**

The Use of Existing Infrastructure Only Alternative would install fiber optic line in existing fiber-specific conduit or along existing utility poles. No new broadband infrastructure would be installed within the County. The Use of Existing Infrastructure Only Alternative would not achieve this objective.

- 5. Streamline the environmental review process for individual broadband projects that are implemented in the County;**

The Use of Existing Infrastructure Only Alternative would install fiber optic line in existing fiber-specific conduit or along existing utility poles. No new broadband infrastructure would be installed within the County. The Use of Existing Infrastructure Only Alternative would attain this objective but not as effectively as the Countywide program.

6. Provide a reliable foundation of data and acceptable methodology to assess impacts for any specific broadband deployment project;

The Use of Existing Infrastructure Only Alternative would install fiber optic line in existing fiber-specific conduit or along existing utility poles. No new broadband infrastructure would be installed within the County. The Use of Existing Infrastructure Only Alternative would not achieve this objective.

7. Identify known environmental and cultural assets to be protected and/or restored with an approved set of preservation measures and/or mitigations; and,

The Use of Existing Infrastructure Only Alternative would install fiber optic line in existing fiber-specific conduit or along existing utility poles. No new broadband infrastructure would be installed within the County. The Use of Existing Infrastructure Only Alternative would not achieve this objective.

8. Save time and money for both the County of Tuolumne and broadband project applicants, resulting in greater government and economic efficiencies, reducing the amount of County staff time required to review broadband projects and avoiding duplication of applicant costs.

The Use of Existing Infrastructure Only Alternative would install fiber optic line in existing fiber-specific conduit or along existing utility poles. No new broadband infrastructure would be installed within the County. The Use of Existing Infrastructure Only Alternative would attain this objective but not as effectively as the Countywide program.

5.5 ENVIRONMENTALLY SUPERIOR ALTERNATIVE

The environmentally superior alternative is the alternative expected to generate the least amount of significant impacts. In addition to the discussion and comparison of impacts of the project and the alternatives, Section 15126.6 of the CEQA Guidelines requires that an “environmentally superior” alternative be identified. Identification of the environmentally superior alternative is an informational procedure and the alternative identified may not be the alternative that best meets the goals or needs of Tuolumne County.

The No Project Alternative has the least impact on the environment because it would not involve any construction of broadband infrastructure within the County. However, the No Project Alternative would not meet any of the project objectives presented in Section 5.2. When the environmentally superior alternative is the No Project Alternative, the CEQA Guidelines (Section 15126[d][2]) require selection of an environmentally superior alternative from among the other action alternatives evaluated.

The Aerial Installation Only Alternative would induce a greater impact to aesthetics, hazards and hazardous materials, transportation, and wildfire as it would not introduce a wider or more reliable network that would improve public health and safety through enabling faster emergency response, enhanced communication between emergency services, and access to critical information during disasters or emergencies when compared to the proposed Countywide program. However, as this alternative would require less construction, it would result in slightly less impact to air quality and greenhouse gas emissions as compared to the proposed project. While this alternative is feasible and would achieve most project objectives, it would not achieve the project objectives effectively as the Countywide program.

Similarly, the Underground Installation Only Alternative would induce greater impact to geology and soils as only underground fiber optic conduits would be utilized, which may not be feasible in some locations in the County due to the rocky subsurface conditions that would make it nearly impossible to reach the boring depth required for the conduit. Additionally, this alternative would induce a greater impact to hazards and hazardous materials, transportation, and wildfire as it would not introduce a wider or more reliable network that would improve public health and safety through enabling faster emergency response, enhanced communication between emergency services, and access to critical information during disasters or emergencies when compared to the proposed Countywide program. However, as this alternative would require less aboveground construction, it would result in slightly less impact to aesthetics, air quality, and greenhouse gas emissions as compared to the proposed project. While this alternative is feasible and would achieve most project objectives, it would not achieve the project objectives effectively as the Countywide program.

Based on Table 5-1, the Use of Existing Infrastructure Only Alternative is environmentally superior to the Countywide program and other alternatives as it would most greatly reduce potential impacts associated with the Countywide program. Under the Use of Existing Infrastructure Only Alternative, less aboveground, and underground broadband infrastructure construction would occur because fiber optic lines would utilize existing poles or conduit. This alternative would reduce impacts to aesthetics, air quality, cultural resources, geology and soils, greenhouse gas emissions, hydrology and water quality, and utilities and service systems. However, the Use of Existing Infrastructure Only Alternative would not meet six out of the eight project objectives.

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6.0 ENVIRONMENTAL IMPACTS FOUND NOT TO BE SIGNIFICANT

CEQA provides that an EIR shall focus on the potentially significant effects on the environment, discussing the effects with emphasis in proportion to their severity and probability of occurrence. As concluded by the Countywide Program's NOP (included in Appendix B of this Draft PEIR) and after consideration of all comments received by the County on the scope of this Draft PEIR and documented in the County's administrative record, seven environmental subjects were determined by the County to have clearly no potential to be significantly impacted by the Project: Agriculture and Forestry Resources, Energy, Land Use and Planning, Mineral Resources, Population and Housing, Public Services, and Recreation.

6.1 Agriculture and Forestry Resources

Typically, agricultural land is considered under CEQA in terms of its designation as Important Farmland under the FMMP, which is maintained by the California Department of Conservation (CDC 2023a). However, mapping for the entire County has not been prepared. The County determined that approximately 120,000 acres of agricultural lands within County limits are protected in Williamson Act contracts (County 2018a).

Based on the areas that have been mapped by the California Department of Conservation (CDC), the project area could potentially include small strips or plots of land that are designated Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, zoned for agricultural or forest land use, or be located under Williamson Act contract. However, because the Countywide program would be located within existing County maintained road ROW, public utility easements, and/or overhead public utility easements of record throughout the County, construction, staging, and equipment lay-down areas of broadband infrastructure would not be sited on lands that are currently in agricultural production by the respective landowners. The program would consist of underground fiber optic lines and/or aboveground aerial stringing using existing or new utility poles in areas where trenching would be difficult. The fiber optic lines would not cross any U.S. Forest Service managed lands. The installation of broadband infrastructure would not interfere with the continuation of existing aboveground uses after construction is completed. Therefore, impacts on agricultural resources would be less than significant. This environmental topic area does not require further evaluation in the program EIR.

6.2 Energy

The program would not generate additional energy demand beyond existing conditions within the project area, but rather seeks to improve the connectivity of rural communities in Tuolumne County through improved broadband access. The program would comprise multiple segments of new fiber optic lines throughout Tuolumne County, which would require the use of heavy-duty construction equipment. Energy would be consumed in the form of gasoline and diesel fuel to power this equipment and would be consumed in worker commute vehicles. However, this energy use would be inherently short-term and not substantial and would be a necessary energy expenditure to facilitate the expansion of Tuolumne County's broadband network, which could ultimately result in a decrease in gasoline consumption as rural workers are provided better telecommuting opportunities. Because the program would not induce new energy demand, would not conflict with a local or Statewide plan for renewable

energy or energy efficiency, and would support better internet for telecommuting, resulting in a reduction in VMT countywide, energy impacts from program implementation would be less than significant. This environmental topic area does not require further evaluation in the program EIR.

6.3 Land Use and Planning

The proposed project area would be located within Tuolumne County limits. The area in which future broadband infrastructure could be implemented includes all unincorporated areas of the County; it excludes federal lands, private roads, and highway rights-of-ways. The County includes a total of approximately 610 miles of County-maintained roads. The future broadband would be installed within existing County maintained road ROW, public utility easements, and/or overhead public utility easements of record throughout the County. Future broadband would be placed within areas of the County that are currently unserved or underserved. The exact alignment of future broadband infrastructure is currently unknown at this time and would be based on such considerations as construction feasibility, local preference, and locations of sensitive environmental resources.

There are various general plan land use designations and zoning designations within County limits. Public roads are currently designated in County general plans, zoning codes, and ordinances to accommodate utility infrastructure. Although some temporary construction-related traffic disturbances could occur, the proposed program would not permanently divide an established community. Potential traffic will be evaluated in Section 4.10, Transportation. The proposed broadband would be used to connect communities that are currently unserved or underserved. Prior to issuance of use permits, grading, and/or encroachment permits by Tuolumne County, the proposed program would be required to demonstrate compliance with all applicable laws, regulations, policies, and ordinances. See the following policies outlined in the General Plan regarding communication facilities (County 2018b):

- **Policy 6.B.4:** Support efforts to install state of the art communication facilities throughout Tuolumne County.
 - **Implementation Program 6.B.d** – Support the efforts of communications companies to identify the key facilities and technology required to facilitate increasing business needs for communications services and to keep Tuolumne County competitive in attracting new businesses which depend on such services.
 - **Implementation Program 6.B.e** – Actively work to improve the telecommunications infrastructure in the County in order to increase opportunities for telecommuting and facilitate economic development.
- **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.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

Impacts related to land use and planning would be less than significant. This environmental topic area does not require further evaluation in the program EIR.

6.4 Mineral Resources

The County includes a total of six mines and three Surface Mining and Reclamation Act of 1975 (SMARA) mineral land classification studies according to the CDC Division of Mine Reclamation (CDC 2023b). However, because the project would be located within existing County maintained road ROW, public utility easements, or overhead public utility easements of record throughout the County, construction, staging, and equipment lay-down areas of broadband infrastructure would not interfere with the existing mines or mineral land classification studies. Additionally, geology and mineral resources would be assessed in Section 4.5 Geology and Soils. Therefore, impacts on minerals resources would be less than significant. This environmental topic area does not require further evaluation in the program EIR.

6.5 Population and Housing

The proposed program does not involve constructing housing and, thus, would not contribute to unplanned growth. Instead, the program would include installation of broadband infrastructure within existing County maintained road ROW, public utility easements, and/or overhead public utility easements of record throughout the County. The program would not displace people or housing, as it would improve broadband within areas of the County that are currently unserved or underserved. The potential for the program to have indirect growth inducing effects will be addressed in other sections of the program EIR. Therefore, the proposed program would have a less than significant impact on population and housing and a detailed discussion of the program's potential impacts on this environmental issue is not warranted.

6.6 Public Services

Tuolumne County currently receives structural fire protection from the Tuolumne Fire Department and wildfire protection from the State of California Forestry and Fire Protection Department. The proposed project would comply with the Tuolumne Fire District ordinances regarding access and wildland fire protection. The potential for a minor increase in demand for fire services may occur during construction or maintenance of the future broadband infrastructure. These minor public service demands would not overburden the Tuolumne County Fire Department and no mitigation measures are proposed or warranted; the impact is less than significant.

Additionally, the proposed program would comply with the Tuolumne Fire District and Tuolumne County Ambulance Service regarding emergency responses. With implementation of the proposed project, individuals may have the option to telehealth which could reduce the need for medical emergency response vehicles. The use of telehealth could reduce the demand for emergency response service. Therefore, the impact is less than significant.

Police protection services within the County would continue to be provided by the Tuolumne County Sheriff's Department. The potential for a minor increase in demand for services may occur for police protection provided by the Sheriff Department if a crime or accident occurs during construction or

maintenance of the future broadband infrastructure. These minor public service demands would not overburden the Sheriff Department; the impact is less than significant.

The proposed project would not generate any additional residential population that would create demand for additional schools or increase attendance or enrollment at existing schools. Additionally, the proposed project is not expected to increase use of or demand for parks within the County. The proposed project would have a less than significant impact. This environmental topic area does not require further evaluation in the program EIR.

6.7 Recreation

The County is proposing to expand access to broadband technology throughout the County. The proposed program would not contribute to unplanned growth and would not include new housing. The potential for the program to have indirect growth inducing effects will be addressed in other sections of the program EIR. Therefore, the program would not increase the use of existing recreational facilities or demand for new recreational facilities that would adversely affect the environment. The program would have a less than significant impact on recreation. This environmental topic area does not require further evaluation in the program EIR.

6.8 References

California Department of Conservation (CDC). 2023a. Farmland under the Farmland Mapping and Monitoring Program. Accessed February 3, 2023 at:
<https://maps.conservation.ca.gov/DLRP/CIFF/>.

2023b. Mines Online. Accessed February 3, 2023 at:
<https://maps.conservation.ca.gov/mol/index.html>.

Tuolumne County (County). 2018a. Tuolumne County General Plan Volume II: Technical Background Report. Accessed June 12, 2023. Available at:
<https://www.tuolumnecounty.ca.gov/DocumentCenter/View/11281/Vol-II-TBR-Public-Review-Draft>.

2018b. Tuolumne County General Plan Volume I: General Plan Policy Document. Accessed June 12, 2023. Available at:
<https://www.tuolumnecounty.ca.gov/DocumentCenter/View/11752/Vol-I-Goals-Policies-Policies-Final>.

7.0 SIGNIFICANT IRREVERSIBLE ENVIRONMENTAL CHANGES

Section 15126.2(c) of the CEQA Guidelines requires an EIR to discuss the extent to which a proposed project or plan would commit nonrenewable resources to uses that future generation would probably be unable to reverse. Significant irreversible changes include the use of nonrenewable resources, the commitment of future generations to similar use, irreversible damage resulting from environmental accidents associated with the project, and irretrievable commitments of resources. The three CEQA-required categories of irreversible changes are discussed below.

7.1 IRREVERSIBLE DAMAGE FROM ENVIRONMENTAL ACCIDENTS

Potential environmental accidents of concern include those that would have adverse effects on the environment or public health due to the nature or quantity of material released during an accident and the receptors exposed to that release. Construction activities associated with individual fiber projects under the Countywide program would involve some risk for environmental accidents. These activities would be monitored, however, by local, State, and federal agencies that would follow industry standards governing the use, storage, transport, and disposal of hazardous materials. Additionally, the proposed land use would not include any activities that are likely to contribute to or be the cause of a significant environmental accident. As a result, the proposed Countywide program would not pose a substantial risk of environmental accidents.

7.2 LARGE COMMITMENT OF NON-RENEWABLE RESOURCES

Non-renewable resources include fossil fuels and metals. Energy will be consumed during both construction and operation of individual fiber projects under the Countywide program. Materials that could be used for construction of individual fiber projects include rocks, wood, concrete, glass, and steel. However, the use of non-renewable resources would account for only a minimal portion of the region's resources and would not affect the availability of these resources for other needs within the region. Construction contractors for individual fiber projects would use best available engineering techniques, construction and design practices, and equipment operating procedures. The operational phase would consume energy for potential security lighting. Energy in the form of fossil fuels will be used by vehicles traveling to and from the program area for routine maintenance trips or for emergency purposes; however, the Countywide program would not require new, permanent staff in compared to existing conditions. Therefore, implementing the Countywide program would not result in inefficient use of energy.

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8.0 GROWTH INDUCEMENT

Section 15126.2(d) of the CEQA Guidelines requires that an EIR discuss the ways in which a proposed project or plan could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment.

A project could be considered to have growth-inducing effects if it: 1) either directly or indirectly fosters economic or population growth or the construction of additional housing in the surrounding area; 2) removes obstacles to population growth; 3) requires the construction of new community facilities that could cause significant environmental effects; or, 4) encourages and facilitates other activities that could significantly affect the environment, either individually or cumulatively. Growth-related impacts are those that are expected to occur later in time or are farther removed in distance, but which are still reasonably foreseeable.

A project's potential to induce growth does not automatically mean that it will result in growth. This potential growth-inducing effect is regulated by local governments in California through the development, adoption, and implementation of land use plans and policies intended to avoid or minimize the growth inducing potential or pressure created by projects, individually or cumulatively. Growth occurs through capital investment in new economic opportunities from both public and private entities. Development occurs as a result of economic investment in a particular region. New economic (i.e., employment) opportunities will naturally create the need for infrastructure to support an increased population.

Growth typically is the result of numerous factors that affect the location, size, direction, timing, type, and rate of population increase and does not necessarily result from a single project or factor. Such factors include local government planning, availability of public services, natural resources, the economic climate, and political and environmental concerns. Local planning agencies adopt and administer general and specific plans, zoning maps and ordinances, and other planning documents that contain policies and maps to identify the intensity and type of development allowed in specific locations.

Although local governments play a major role in growth management, the location and timing of growth also depends on economic factors such as the availability and cost of developable land, regional and national economic cycles, and mortgage interest rates and the demand for new housing. Political factors that affect growth include state and local laws that mandate businesses to comply with certain rules and regulations, permitting requirements that address environmental and community concerns, and tax incentives designed to attract businesses.

8.1 GROWTH INDUCING IMPACTS

Economic growth in a community that is caused by a project can induce secondary development or growth. The following discussion focuses on the proposed Countywide program’s potential to result in physical changes in the environment, from development of new infrastructure.

8.1.1 Additional Infrastructure

The County is proposing to expand access to broadband technology throughout the County, including the unincorporated areas of the County. The Countywide program would install fiber optic conduit either underground in buried conduits, overhead on pole lines, or in a combination of both. This Countywide project would help attract broadband infrastructure investors to bring broadband service to a County in need of reliable connectivity for increasing health and safety factors, as well as for economic and quality of life reasons.

However, the Countywide program would not directly induce growth as the program would not create a significant number of jobs, promote the construction of homes, or remove any obstacles that impede growth in the County. Construction of individual fiber projects would begin in Spring of 2025 and occur over many years. Operation of individual fiber projects would be limited to routine maintenance or emergencies. It is anticipated that construction or operation under the Countywide program would not generate sufficient number of jobs, either temporarily or during maintenance operation, to generate population growth in the County. Additionally, operation of the Countywide program would provide and expand the availability of high-speed internet access to existing rural residents, businesses, schools, etc. in the County. Implementation of the Countywide program would be expected to contribute to the retention of existing residents and businesses, which could indirectly contribute to a limited amount of future growth. However, the introduction of improved internet access would not be expected to trigger an influx beyond the anticipated growth evaluated and mitigated in the General Plan and EIR. Therefore, it would not induce additional growth beyond what has been evaluated in this EIR as the proposed Countywide program.

8.1.2 Additional Economic Growth

Construction of the proposed Countywide program would result in short-term economic growth for the area as it is anticipated that jobs would be filled by local residents, employees, and suppliers in the area. Given that construction of individual fiber projects generates temporary jobs, it would be speculative to assume that these jobs would induce substantial new housing or commercial development.

All of the public facilities within the area are adequate to serve the proposed Countywide program. Police protection would be provided by the Tuolumne County Sheriff’s Department, while fire protection would be provided by the Tuolumne County Fire Department and by CALFIRE. The proposed Countywide program would be adequately served by the existing fire protection, police protection, library, recreation, and other services in the County and would not require expansion of these services that could induce growth beyond the proposed Countywide program. As discussed in Section 4.12, Utilities and Service Systems, the Countywide program would construct new telecommunication facilities, as analyzed in the EIR. All other utilities including water, wastewater treatment or storm water drainage, electric power, and natural gas are adequate to serve the proposed Countywide program and would not require expansion which could potentially induce growth beyond the proposed program.

One of CEQA's primary purposes in addressing "growth inducing impacts" is to identify the environmental impacts or consequences of growth that results from implementing a project. To attempt to predict specifically where growth would occur would be speculative. It is known that this indirect growth could result in transportation, air quality, noise, and hydrology impacts. These indirect impacts could also include temporary construction impacts related to air quality, noise, and hydrology. The severity of these impacts depends on the size and location of the induced growth. Based upon the limited possible amount of growth that could occur as a result of the proposed Countywide program, the proposed Countywide program would not result in a significant growth inducing impact.

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9.0 SIGNIFICANT UNAVOIDABLE IMPACTS

9.1 BACKGROUND

Sections 21067, 15126(b), and 15126.2(b) of the CEQA Guidelines require that an EIR describe any potentially significant project impacts, including those that can be mitigated but not reduced to a less than significant level.

9.2 PROJECT SIGNIFICANT AND UNAVOIDABLE IMPACTS

This program EIR identified no significant and unavoidable impacts.

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10.0 LIST OF PREPARERS

This document has been completed by the County of Tuolumne, as CEQA Lead Agency for the proposed project, with support from the following organizations and professional staff:

ENVIRONMENTAL IMPACT REPORT

County of Tuolumne Community Development Department

Quincy Yaley, Community Development Director
Len De Groot, IT Manager

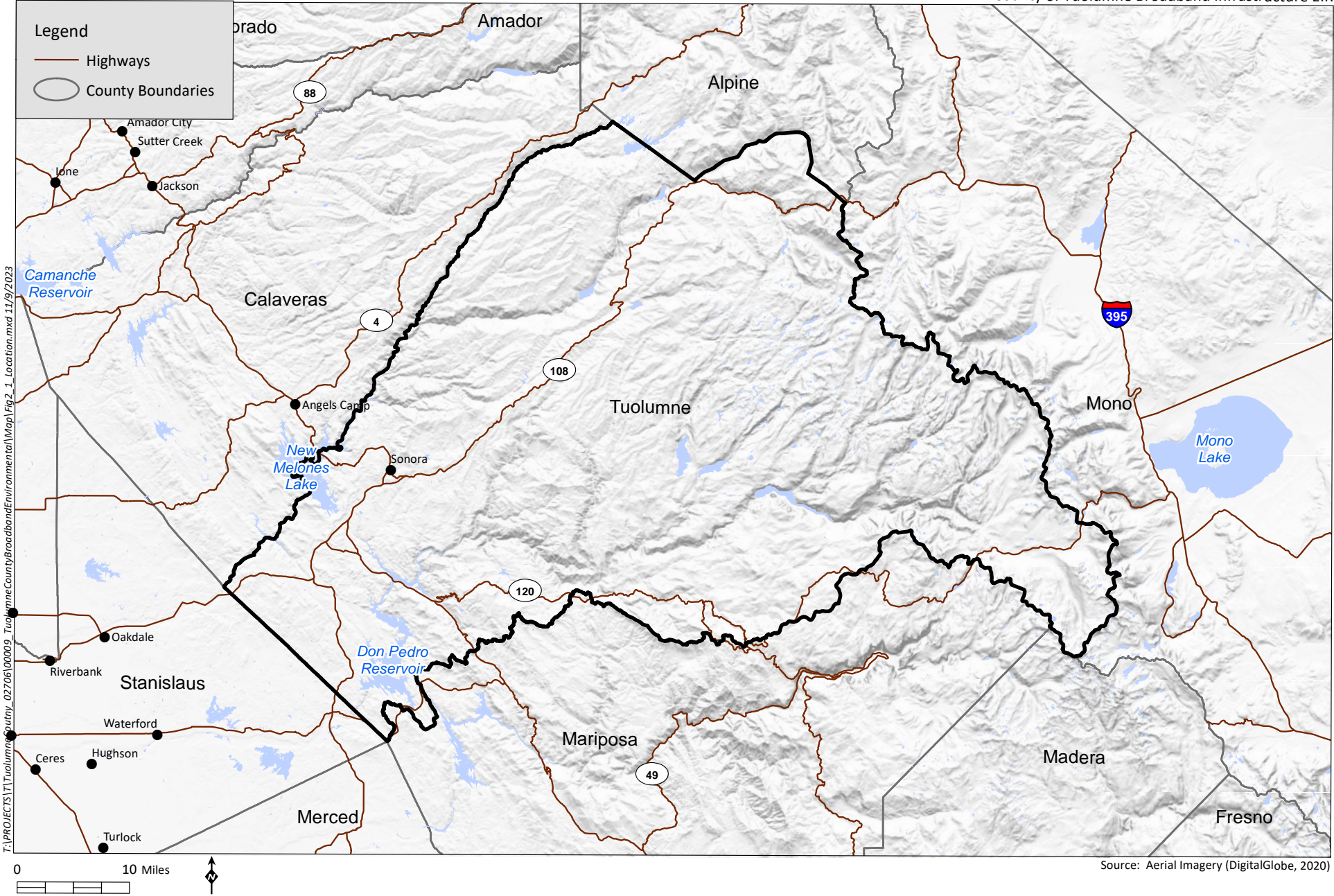
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Erin Gustafson, Senior Environmental Planner
Greg Davis, Senior Biologist
Lesley Owing, Environmental Group Manager
Lika Loechler, GIS Specialist
Victor Ortiz, Senior Air Quality Specialist
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Michael Hoke, Archaeologist

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
Appendix A

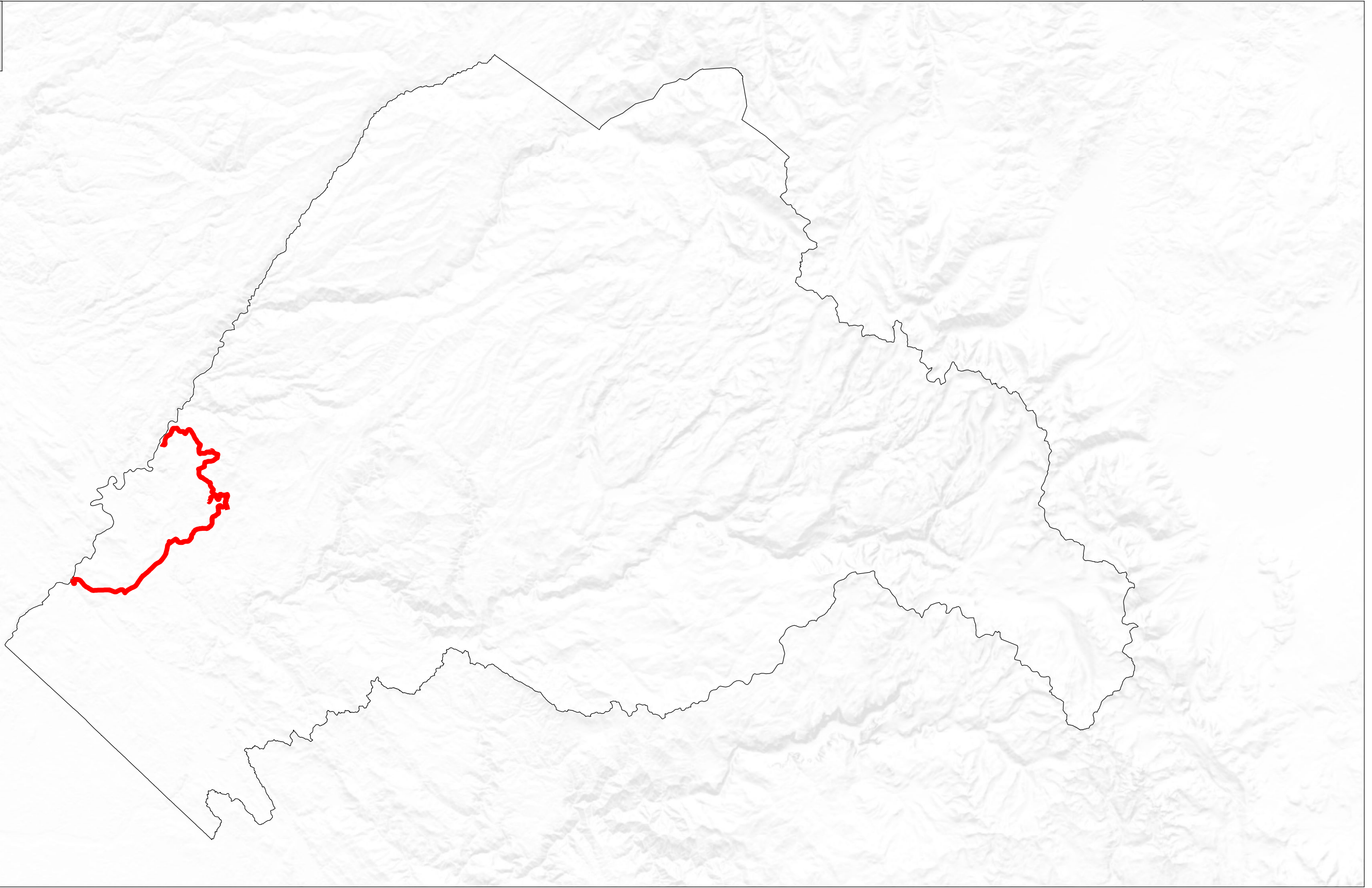
Figures



T:\PROJECTS\Tuolumne County Broadband Infrastructure EIR\Map\Fig 2-1 Location.mxd 11/9/2023

Legend

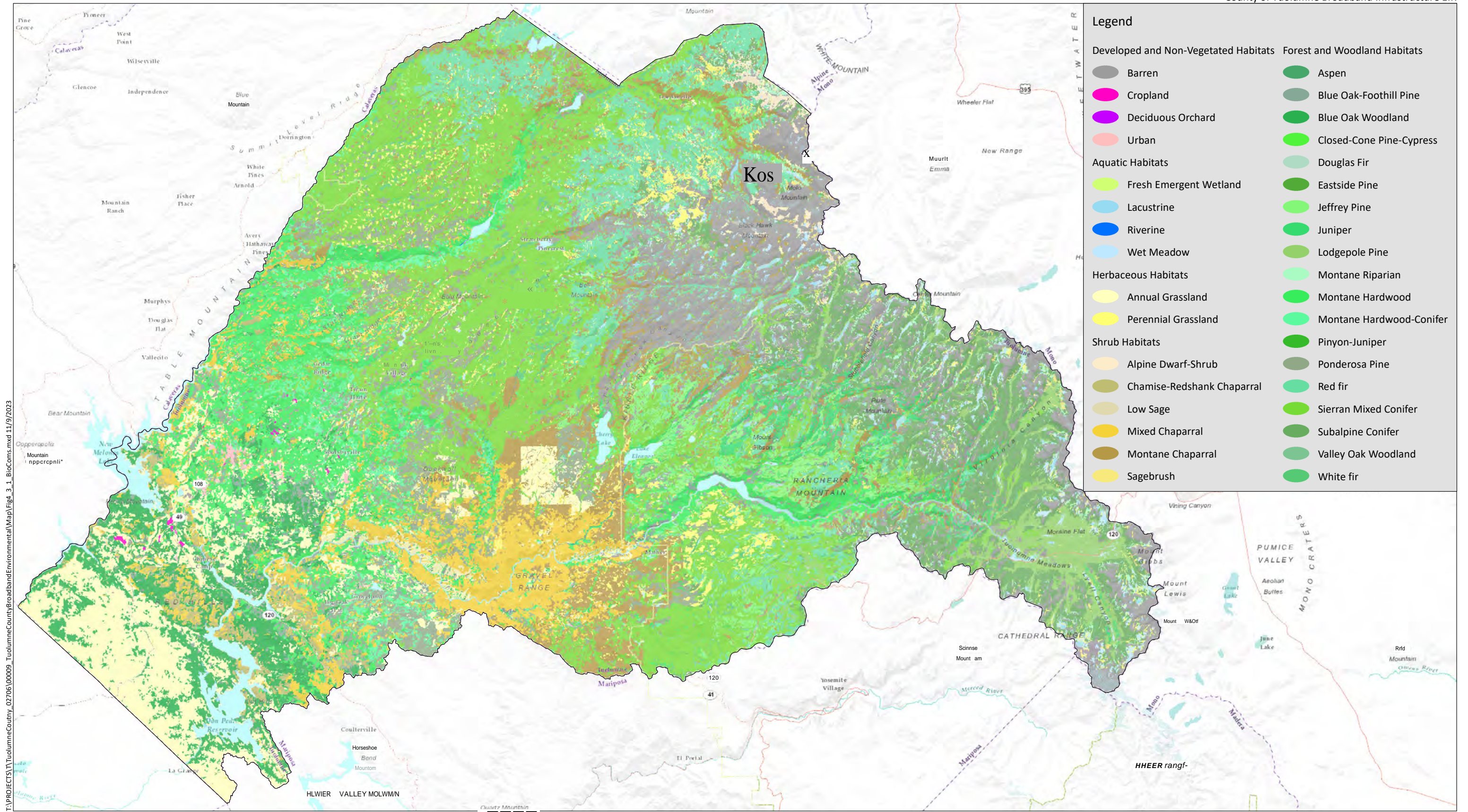
 Existing Broadband Trunkline



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Source: Base Map Layers (Esri, USGS, NGA, NASA)



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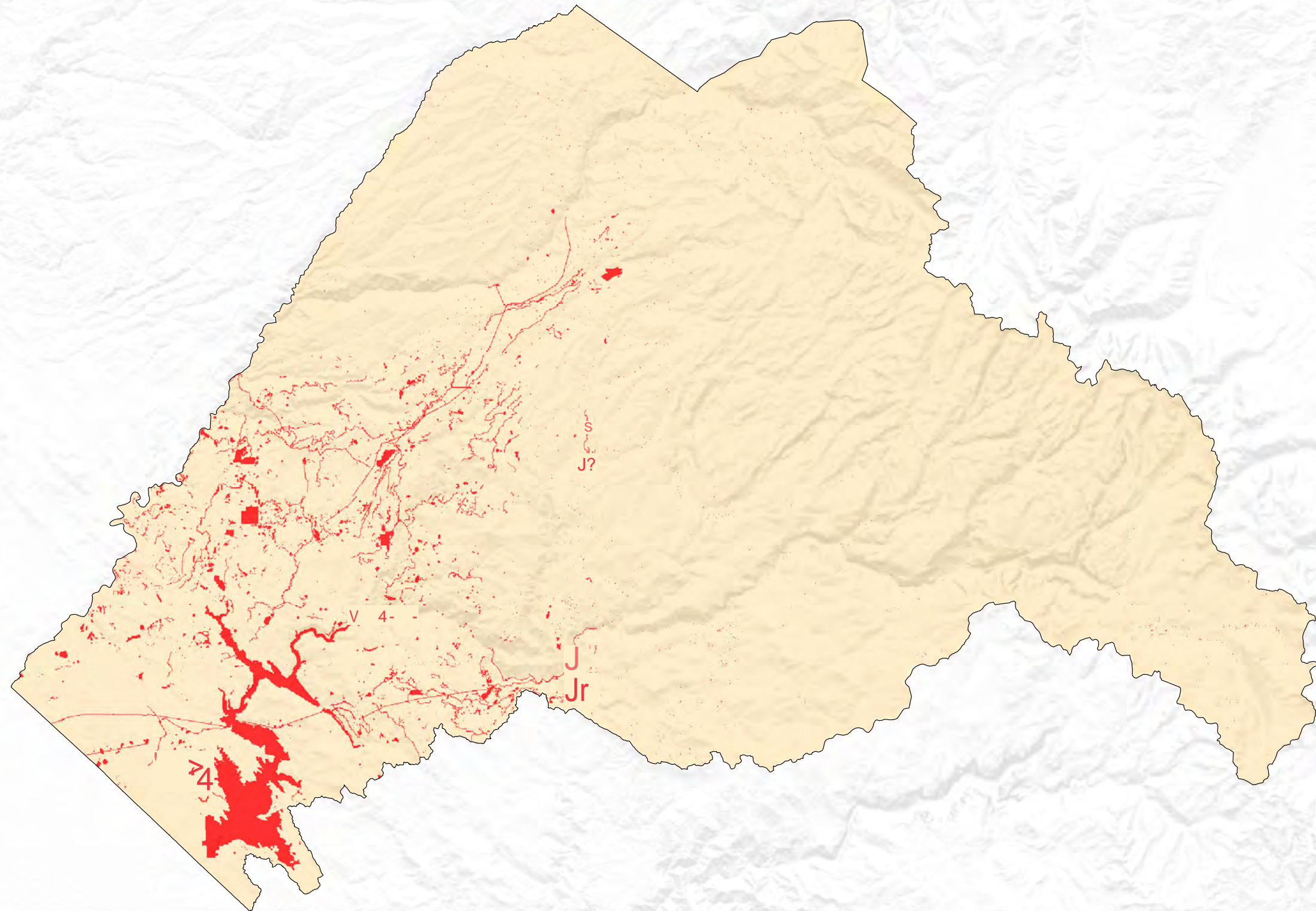
Developed and Non-Vegetated Habitats	Forest and Woodland Habitats
Barren	Aspen
Cropland	Blue Oak-Foothill Pine
Deciduous Orchard	Blue Oak Woodland
Urban	Closed-Cone Pine-Cypress
	Douglas Fir
Aquatic Habitats	Eastside Pine
Fresh Emergent Wetland	Jeffrey Pine
Lacustrine	Juniper
Riverine	Lodgepole Pine
Wet Meadow	Montane Riparian
Herbaceous Habitats	Montane Hardwood
Annual Grassland	Montane Hardwood-Conifer
Perennial Grassland	Pinyon-Juniper
Shrub Habitats	Ponderosa Pine
Alpine Dwarf-Shrub	Red fir
Chamise-Redshank Chaparral	Sierran Mixed Conifer
Low Sage	Subalpine Conifer
Mixed Chaparral	Valley Oak Woodland
Montane Chaparral	White fir
Sagebrush	

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Source: CNDDB (CDFW, 2023); Base Map Layers (Esri, USGS, NGA, NASA)

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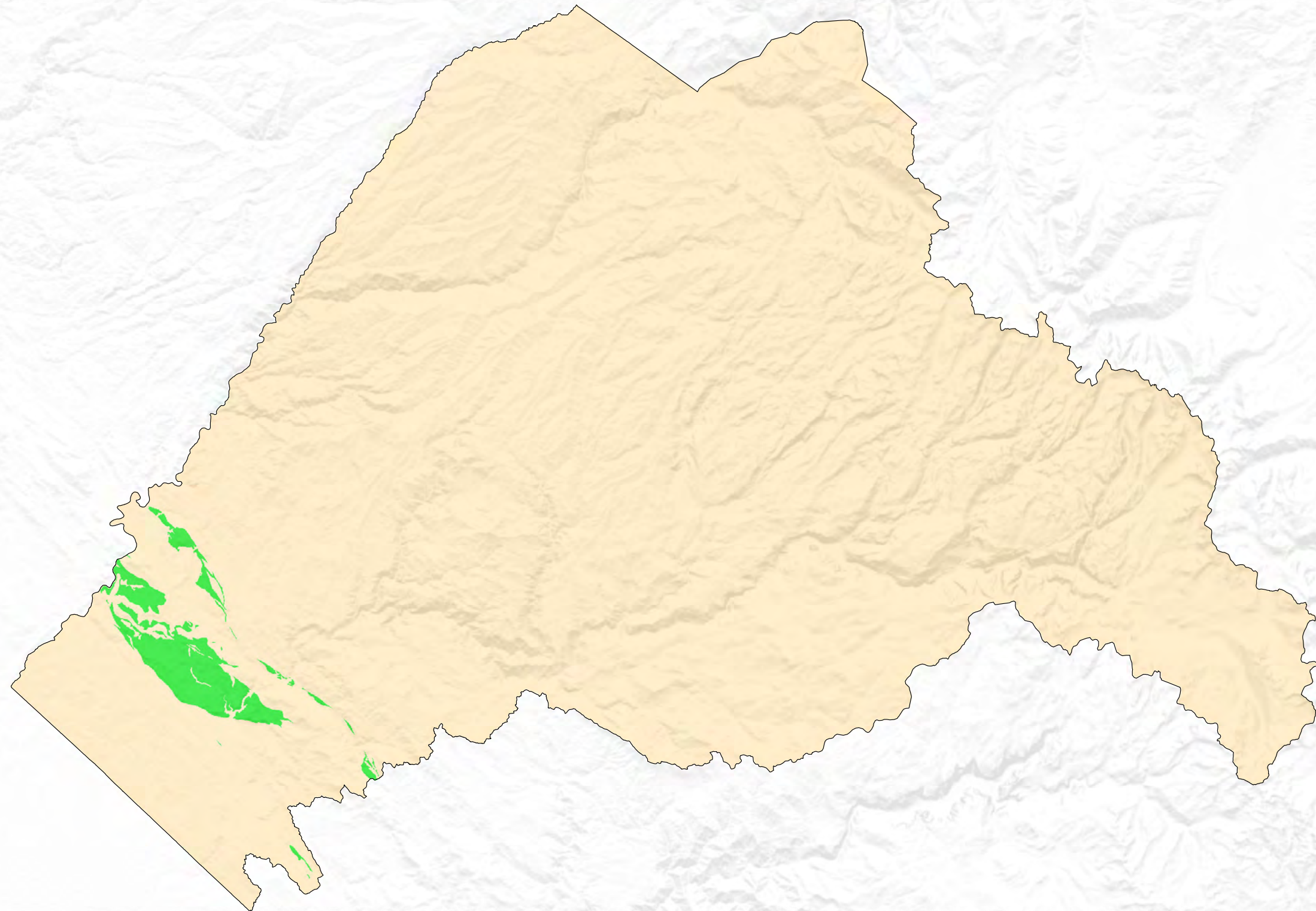
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Source: Base Map Layers (Esri, USGS, NGA, NASA)

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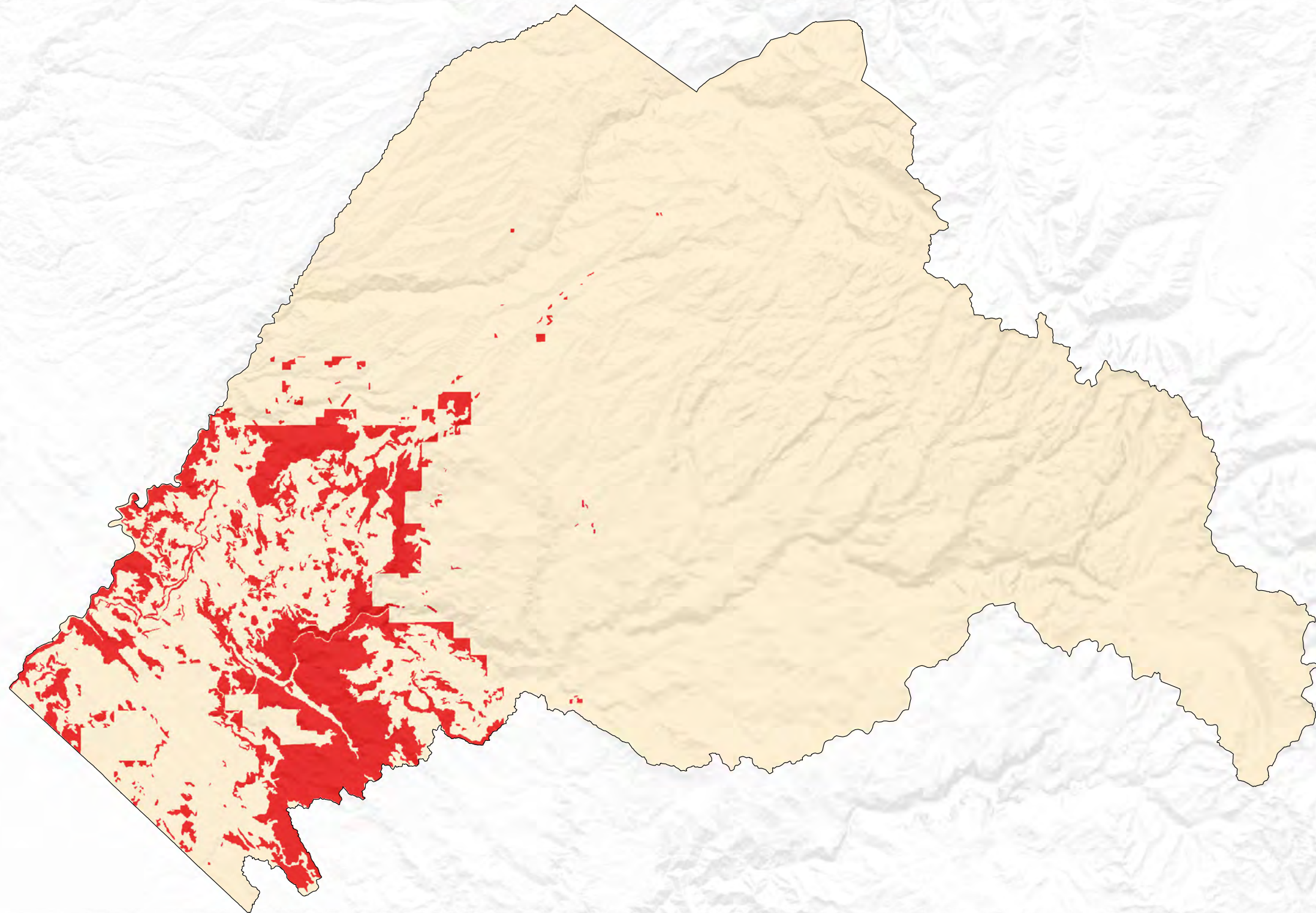
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Source: Soils (USGS, 2023); Base Map Layers (Esri, USGS, NGA, NASA)

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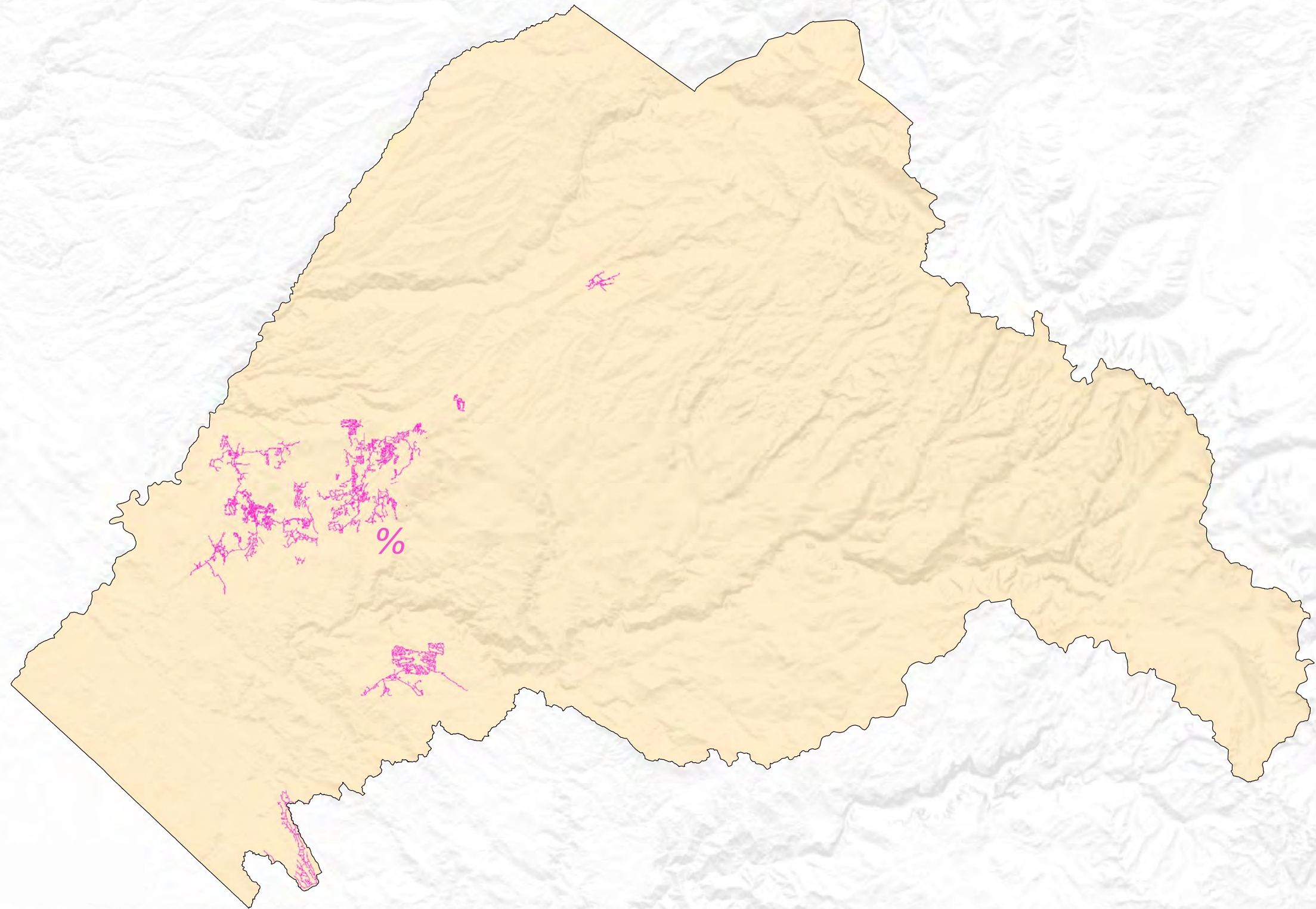
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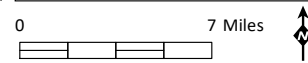
Source: Base Map Layers (Esri, USGS, NGA, NASA)

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-  No Value
-  Existing Utilities



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Source: Base Map Layers (Esri, USGS, NGA, NASA)

Appendix B

Notice of Preparation Comment Letters

NATIVE AMERICAN HERITAGE COMMISSION

May 2, 2023

David Ruby
County of Tuolumne
2 S Green St.
Sonora, CA 95370

Re: 2023050017, County of Tuolumne Broadband Infrastructure Strategic Plan, Tuolumne County

Dear Mr. Ruby:

The Native American Heritage Commission (NAHC) has received the Notice of Preparation (NOP), Draft Environmental Impact Report (DEIR) or Early Consultation for the project referenced above. The California Environmental Quality Act (CEQA) (Pub. Resources Code §21000 et seq.), specifically Public Resources Code §21084.1, states that a project that may cause a substantial adverse change in the significance of a historical resource, is a project that may have a significant effect on the environment. (Pub. Resources Code § 21084.1; Cal. Code Regs., tit.14, §15064.5 (b) (CEQA Guidelines §15064.5 (b))). If there is substantial evidence, in light of the whole record before a lead agency, that a project may have a significant effect on the environment, an Environmental Impact Report (EIR) shall be prepared. (Pub. Resources Code §21080 (d); Cal. Code Regs., tit. 14, § 5064 subd.(a)(1) (CEQA Guidelines §15064 (a)(1))). In order to determine whether a project will cause a substantial adverse change in the significance of a historical resource, a lead agency will need to determine whether there are historical resources within the area of potential effect (APE).

CEQA was amended significantly in 2014. Assembly Bill 52 (Gatto, Chapter 532, Statutes of 2014) (AB 52) amended CEQA to create a separate category of cultural resources, "tribal cultural resources" (Pub. Resources Code §21074) and provides that 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. (Pub. Resources Code §21084.2). Public agencies shall, when feasible, avoid damaging effects to any tribal cultural resource. (Pub. Resources Code §21084.3 (a)). **AB 52 applies to any project for which a notice of preparation, a notice of negative declaration, or a mitigated negative declaration is filed on or after July 1, 2015.** If your project involves the adoption of or amendment to a general plan or a specific plan, or the designation or proposed designation of open space, on or after March 1, 2005, it may also be subject to Senate Bill 18 (Burton, Chapter 905, Statutes of 2004) (SB 18). **Both SB 18 and AB 52 have tribal consultation requirements.** If your project is also subject to the federal National Environmental Policy Act (42 U.S.C. § 4321 et seq.) (NEPA), the tribal consultation requirements of Section 106 of the National Historic Preservation Act of 1966 (154 U.S.C. 300101, 36 C.F.R. §800 et seq.) may also apply.

The NAHC recommends consultation with California Native American tribes that are traditionally and culturally affiliated with the geographic area of your proposed project as early as possible in order to avoid inadvertent discoveries of Native American human remains and best protect tribal cultural resources. Below is a brief summary of portions of AB 52 and SB 18 as well as the NAHC's recommendations for conducting cultural resources assessments.

Consult your legal counsel about compliance with AB 52 and SB 18 as well as compliance with any other applicable laws.

AB 52



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May 04 2023

AB 52 has added to CEQA the additional requirements listed below, along with many other requirements:

1. Fourteen Day Period to Provide Notice of Completion of an Application/Decision to Undertake a Project:

Within fourteen (14) days of determining that an application for a project is complete or of a decision by a public agency to undertake a project, a lead agency shall provide formal notification to a designated contact of, or tribal representative of, traditionally and culturally affiliated California Native American tribes that have requested notice, to be accomplished by at least one written notice that includes:

- a. A brief description of the project.
- b. The lead agency contact information.
- c. Notification that the California Native American tribe has 30 days to request consultation. (Pub. Resources Code §21080.3.1 (d)).
- d. A "California Native American tribe" is defined as a Native American tribe located in California that is on the contact list maintained by the NAHC for the purposes of Chapter 905 of Statutes of 2004 (SB 18). (Pub. Resources Code §21073).

2. Begin Consultation Within 30 Days of Receiving a Tribe's Request for Consultation and Before Releasing a Negative Declaration, Mitigated Negative Declaration, or Environmental Impact Report: A lead agency shall begin the consultation process within 30 days of receiving a request for consultation from a California Native American tribe that is traditionally and culturally affiliated with the geographic area of the proposed project. (Pub. Resources Code §21080.3.1, subs. (d) and (e)) and prior to the release of a negative declaration, mitigated negative declaration or Environmental Impact Report. (Pub. Resources Code §21080.3.1 (b)).

- a. For purposes of AB 52, "consultation shall have the same meaning as provided in Gov. Code §65352.4 (SB 18). (Pub. Resources Code §21080.3.1 (b)).

3. Mandatory Topics of Consultation If Requested by a Tribe: The following topics of consultation, if a tribe requests to discuss them, are mandatory topics of consultation:

- a. Alternatives to the project.
- b. Recommended mitigation measures.
- c. Significant effects. (Pub. Resources Code §21080.3.2 (a)).

4. Discretionary Topics of Consultation: The following topics are discretionary topics of consultation:

- a. Type of environmental review necessary.
- b. Significance of the tribal cultural resources.
- c. Significance of the project's impacts on tribal cultural resources.
- d. If necessary, project alternatives or appropriate measures for preservation or mitigation that the tribe may recommend to the lead agency. (Pub. Resources Code §21080.3.2 (a)).

5. Confidentiality of Information Submitted by a Tribe During the Environmental Review Process: With some exceptions, any information, including but not limited to, the location, description, and use of tribal cultural resources submitted by a California Native American tribe during the environmental review process shall not be included in the environmental document or otherwise disclosed by the lead agency or any other public agency to the public, consistent with Government Code §6254 (r) and §6254.10. Any information submitted by a California Native American tribe during the consultation or environmental review process shall be published in a confidential appendix to the environmental document unless the tribe that provided the information consents, in writing, to the disclosure of some or all of the information to the public. (Pub. Resources Code §21082.3 (c)(1)).

6. Discussion of Impacts to Tribal Cultural Resources in the Environmental Document: If a project may have a significant impact on a tribal cultural resource, the lead agency's environmental document shall discuss both of the following:

- a. Whether the proposed project has a significant impact on an identified tribal cultural resource.
- b. Whether feasible alternatives or mitigation measures, including those measures that may be agreed to pursuant to Public Resources Code §21082.3, subdivision (a), avoid or substantially lessen the impact on the identified tribal cultural resource. (Pub. Resources Code §21082.3 (b)).

- 7. Conclusion of Consultation:** Consultation with a tribe shall be considered concluded when either of the following occurs:
- a.** The parties agree to measures to mitigate or avoid a significant effect, if a significant effect exists, on a tribal cultural resource; or
 - b.** A party, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached. (Pub. Resources Code §21080.3.2 (b)).
- 8. Recommending Mitigation Measures Agreed Upon in Consultation in the Environmental Document:** Any mitigation measures agreed upon in the consultation conducted pursuant to Public Resources Code §21080.3.2 shall be recommended for inclusion in the environmental document and in an adopted mitigation monitoring and reporting program, if determined to avoid or lessen the impact pursuant to Public Resources Code §21082.3, subdivision (b), paragraph 2, and shall be fully enforceable. (Pub. Resources Code §21082.3 (a)).
- 9. Required Consideration of Feasible Mitigation:** If mitigation measures recommended by the staff of the lead agency as a result of the consultation process are not included in the environmental document or if there are no agreed upon mitigation measures at the conclusion of consultation, or if consultation does not occur, and if substantial evidence demonstrates that a project will cause a significant effect to a tribal cultural resource, the lead agency shall consider feasible mitigation pursuant to Public Resources Code §21084.3 (b). (Pub. Resources Code §21082.3 (e)).
- 10. Examples of Mitigation Measures That, If Feasible, May Be Considered to Avoid or Minimize Significant Adverse Impacts to Tribal Cultural Resources:**
- a.** Avoidance and preservation of the resources in place, including, but not limited to:
 - i.** Planning and construction to avoid the resources and protect the cultural and natural context.
 - ii.** Planning greenspace, parks, or other open space, to incorporate the resources with culturally appropriate protection and management criteria.
 - b.** Treating the resource with culturally appropriate dignity, taking into account the tribal cultural values and meaning of the resource, including, but not limited to, the following:
 - i.** Protecting the cultural character and integrity of the resource.
 - ii.** Protecting the traditional use of the resource.
 - iii.** Protecting the confidentiality of the resource.
 - c.** Permanent conservation easements or other interests in real property, with culturally appropriate management criteria for the purposes of preserving or utilizing the resources or places.
 - d.** Protecting the resource. (Pub. Resource Code §21084.3 (b)).
 - e.** Please note that a federally recognized California Native American tribe or a non-federally recognized California Native American tribe that is on the contact list maintained by the NAHC to protect a California prehistoric, archaeological, cultural, spiritual, or ceremonial place may acquire and hold conservation easements if the conservation easement is voluntarily conveyed. (Civ. Code §815.3 (c)).
 - f.** Please note that it is the policy of the state that Native American remains and associated grave artifacts shall be repatriated. (Pub. Resources Code §5097.991).
- 11. Prerequisites for Certifying an Environmental Impact Report or Adopting a Mitigated Negative Declaration or Negative Declaration with a Significant Impact on an Identified Tribal Cultural Resource:** An Environmental Impact Report may not be certified, nor may a mitigated negative declaration or a negative declaration be adopted unless one of the following occurs:
- a.** The consultation process between the tribes and the lead agency has occurred as provided in Public Resources Code §21080.3.1 and §21080.3.2 and concluded pursuant to Public Resources Code §21080.3.2.
 - b.** The tribe that requested consultation failed to provide comments to the lead agency or otherwise failed to engage in the consultation process.
 - c.** The lead agency provided notice of the project to the tribe in compliance with Public Resources Code §21080.3.1 (d) and the tribe failed to request consultation within 30 days. (Pub. Resources Code §21082.3 (d)).

The NAHC's PowerPoint presentation titled, "Tribal Consultation Under AB 52: Requirements and Best Practices" may be found online at: http://nahc.ca.gov/wp-content/uploads/2015/10/AB52TribalConsultation_CalEPAPDF.pdf

SB 18

SB 18 applies to local governments and requires local governments to contact, provide notice to, refer plans to, and consult with tribes prior to the adoption or amendment of a general plan or a specific plan, or the designation of open space. (Gov. Code §65352.3). Local governments should consult the Governor's Office of Planning and Research's "Tribal Consultation Guidelines," which can be found online at: https://www.opr.ca.gov/docs/09_14_05_Updated_Guidelines_922.pdf.

Some of SB 18's provisions include:

1. **Tribal Consultation**: If a local government considers a proposal to adopt or amend a general plan or a specific plan, or to designate open space it is required to contact the appropriate tribes identified by the NAHC by requesting a "Tribal Consultation List." If a tribe, once contacted, requests consultation the local government must consult with the tribe on the plan proposal. **A tribe has 90 days from the date of receipt of notification to request consultation unless a shorter timeframe has been agreed to by the tribe.** (Gov. Code §65352.3 (a)(2)).
2. **No Statutory Time Limit on SB 18 Tribal Consultation**. There is no statutory time limit on SB 18 tribal consultation.
3. **Confidentiality**: Consistent with the guidelines developed and adopted by the Office of Planning and Research pursuant to Gov. Code §65040.2, the city or county shall protect the confidentiality of the information concerning the specific identity, location, character, and use of places, features and objects described in Public Resources Code §5097.9 and §5097.993 that are within the city's or county's jurisdiction. (Gov. Code §65352.3 (b)).
4. **Conclusion of SB 18 Tribal Consultation**: Consultation should be concluded at the point in which:
 - a. The parties to the consultation come to a mutual agreement concerning the appropriate measures for preservation or mitigation; or
 - b. Either the local government or the tribe, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached concerning the appropriate measures of preservation or mitigation. (Tribal Consultation Guidelines, Governor's Office of Planning and Research (2005) at p. 18).

Agencies should be aware that neither AB 52 nor SB 18 precludes agencies from initiating tribal consultation with tribes that are traditionally and culturally affiliated with their jurisdictions before the timeframes provided in AB 52 and SB 18. For that reason, we urge you to continue to request Native American Tribal Contact Lists and "Sacred Lands File" searches from the NAHC. The request forms can be found online at: <http://nahc.ca.gov/resources/forms/>.

NAHC Recommendations for Cultural Resources Assessments

To adequately assess the existence and significance of tribal cultural resources and plan for avoidance, preservation in place, or barring both, mitigation of project-related impacts to tribal cultural resources, the NAHC recommends the following actions:

1. Contact the appropriate regional California Historical Research Information System (CHRIS) Center (https://ohp.parks.ca.gov/?page_id=30331) for an archaeological records search. The records search will determine:
 - a. If part or all of the APE has been previously surveyed for cultural resources.
 - b. If any known cultural resources have already been recorded on or adjacent to the APE.
 - c. If the probability is low, moderate, or high that cultural resources are located in the APE.
 - d. If a survey is required to determine whether previously unrecorded cultural resources are present.
2. If an archaeological inventory survey is required, the final stage is the preparation of a professional report detailing the findings and recommendations of the records search and field survey.
 - a. The final report containing site forms, site significance, and mitigation measures should be submitted immediately to the planning department. All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum and not be made available for public disclosure.
 - b. The final written report should be submitted within 3 months after work has been completed to the appropriate regional CHRIS center.

3. Contact the NAHC for:
 - a. A Sacred Lands File search. Remember that tribes do not always record their sacred sites in the Sacred Lands File, nor are they required to do so. A Sacred Lands File search is not a substitute for consultation with tribes that are traditionally and culturally affiliated with the geographic area of the project's APE.
 - b. A Native American Tribal Consultation List of appropriate tribes for consultation concerning the project site and to assist in planning for avoidance, preservation in place, or, failing both, mitigation measures.

4. Remember that the lack of surface evidence of archaeological resources (including tribal cultural resources) does not preclude their subsurface existence.
 - a. Lead agencies should include in their mitigation and monitoring reporting program plan provisions for the identification and evaluation of inadvertently discovered archaeological resources per Cal. Code Regs., tit. 14, §15064.5(f) (CEQA Guidelines §15064.5(f)). In areas of identified archaeological sensitivity, a certified archaeologist and a culturally affiliated Native American with knowledge of cultural resources should monitor all ground-disturbing activities.
 - b. Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the disposition of recovered cultural items that are not burial associated in consultation with culturally affiliated Native Americans.
 - c. Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the treatment and disposition of inadvertently discovered Native American human remains. Health and Safety Code §7050.5, Public Resources Code §5097.98, and Cal. Code Regs., tit. 14, §15064.5, subdivisions (d) and (e) (CEQA Guidelines §15064.5, subds. (d) and (e)) address the processes to be followed in the event of an inadvertent discovery of any Native American human remains and associated grave goods in a location other than a dedicated cemetery.

If you have any questions or need additional information, please contact me at my email address: Pricilla.Torres-Fuentes@nahc.ca.gov

Sincerely,

Pricilla Torres-Fuentes

Pricilla Torres-Fuentes
C i i l t i m l P o c n i r r o c A n < - i l V c +

cc: State Clearinghouse

California Department of Transportation

OFFICE OF THE DISTRICT 10 PLANNING P.O. BOX 2048 |
STOCKTON, CA 95201 (209) 948-7325 | FAX (209)
948-7164 TTY 711 www.dot.ca.gov



Governor's Office of Planning & Research

May 23, 2023

May 25 2023

STATE CLEARING HOUSE

David Ruby
Planning Manager
Tuolumne County Community
Development Department
2 South Green Street Sonora, CA
95370

**TUO- All- Countywide Tuolumne
Broadband Infrastructure SCH
20230500017**

Dear Mr. Ruby,

The California Department of Transportation (Caltrans) appreciates the opportunity to review and comment on the Tuolumne County Broadband Project Notice of Preparation (NOP) and Initial Study (IS).

The County is proposing to expand access to broadband technology throughout the County, including the unincorporated areas and the one incorporated City of Sonora. Location and installation of fiber optic cable by a variety of potential methods (e.g., underground, and aerial installation) would be evaluated at a programmatic level in the Environmental Impact Report (EIR) for the County as a whole.

The proposed project area would be located within Tuolumne County limits. Tuolumne County encompasses approximately 2,274 total square miles, or 1,455,360 acres. The area in which future broadband infrastructure could be implemented includes all unincorporated areas of the County and the incorporated City of Sonora; it excludes federal lands, private roads, and state highway rights-of-way. The County has jurisdiction over a total of approximately 610 miles of County-maintained roads. It is envisioned that the vast majority of the future broadband infrastructure would be installed within existing County maintained road rights-of-way (ROW), public utility easements (PUE), and/or overhead public utility easements of record throughout the County.

The exact alignments of future broadband are unknown at this time and would be planned based on such considerations as construction feasibility, local preference, and locations of sensitive environmental resources.

Caltrans has the following comments:

Please ensure coordination with Caltrans' Broadband Middle Mile efforts and consider where feasible, if instead of construction, review for lease opportunities to reduce environmental impacts.

Environmental

If any construction related activities will encroach into Caltrans Right of Way (ROW), the project proponent must apply for an Encroachment Permit to the Caltrans District 10 Encroachment Permit Office. All California Environmental Quality Act (CEQA) documentation, with supporting technical studies, must be submitted with the Encroachment Permit Application. These studies will include an analysis of potential impacts to any cultural sites, historic properties, biological resources, hazardous waste locations, scenic highways, and/or other environmental resources within Caltrans Right of Way, at the project site(s).

Efforts encompass county wide activity that anticipates heavy ground disturbance that has potential to impact biological resources known to this area. The Draft IS describes that a Programmatic EIR will further analyze, in detail, the impacts to biological resources. Caltrans will need to review the Programmatic Environmental Impact Report (PEIR) to ensure all impacts anticipated to occur within Caltrans ROW is appropriately analyzed. If there are impacts to any Special Status Species (plant, fish, or wildlife) because of this project, we will need to review their correspondence with United States Fish and Wildlife (USFWS), National Oceanic and Atmospheric Administration (NOAA), National Marine Fisheries Services (NMFS), and/or California Department Fish and Wildlife Services (CDFW). According to the Draft IS, there are anticipated impacts to protected "Waters". If there are any impacts to federally and state protected Waters, Caltrans will need to see all correspondence with the permitting agencies (i.e., USACE, Water Board, and/or CDFW).

Evidence of consultation with local Native American tribes and interested parties will need to be presented within the technical documents for approval of encroachment in the Caltrans ROW. Caltrans should be sent all cultural studies and given an opportunity to provide feedback regarding the identification, consultation, evaluation, and treatment of any resources in our ROW. Appropriate indigenous communities should be contacted under Assembly Bill (AB) 52 for precontact resources/culturally sensitive areas within Caltrans ROW, if guidance on this is required, contact Caltrans. All cultural resources within Caltrans ROW need to be identified and protection measures need to be fully addressed in the Draft Environmental Impact Report (DEIR) and Final Environmental Impact Report (FEIR).

Hydrology

The developer needs to ensure that the existing State drainage facilities will not be significantly impacted by the project. If historical undeveloped topography shows drainage from this site flowed into the State Right-of-Way, it may continue to do so with the conditions that peak flows may not be increased from the pre-construction quantity and the site runoff be treated to meet present storm water quality standards. If historical undeveloped topography shows drainage from this site did not flow into the State Right-of-Way, then it will not be allowed to flow into the State ROW at this time.

We request to review the pre- and post-construction runoff calculations and drainage plans to understand flow patterns. We would also like to review the floodplain study. Additional review will be done once drainage plans, floodplain study, and calculations are submitted.

Traffic Operations

Once the location is determined, the applicant will need to apply for an encroachment permit if there will be encroachment within the state right of way.

If any future project activities encroach into Caltrans ROW, the project proponent must submit an application for an Encroachment Permit to the Caltrans District 10 Encroachment Permit Office. Appropriate environmental studies must be submitted with this application. These studies will analyze potential impacts to any cultural sites, biological resources, hazardous waste locations, and/or other resources within Caltrans ROW at the project site(s). For more information, please visit the Caltrans Website at: <https://dot.ca.gov/programs/traffic-operations/ep/applications>

Please contact David Karnes at (209) 986-9830 (david.karnes@dot.ca.gov), or me at (209) 483-7234 (Gregoria.Ponce@dot.ca.gov) if you have any questions or concerns.

Sincerely,

Gregoria Ponce'

Gregoria Ponce', Chief
Office of Rural Planning

cc: State Clearinghouse (SCH)



State of California – Natural Resources Agency
DEPARTMENT OF FISH AND WILDLIFE
Central Region
1234 East Shaw Avenue
Fresno, California 93710
(559) 243-4005
www.wildlife.ca.gov

GAVIN NEWSOM, Governor
CHARLTON H. BONHAM, Director



Governor's Office of Planning & Research

MAY 31 2023

May 30, 2023

STATE CLEARINGHOUSE

Quincy Yaley, Director
County of Tuolumne, Community Development Department
2 South Green Street
Sonora, California 95370
qyaley@co.tuolumne.ca.us

**Subject: County of Tuolumne Broadband Infrastructure Program Environmental Impact Report (Project)
Notice of Preparation (NOP)
SCH No.: 2023050017**

Dear Quincy Yaley:

The California Department of Fish and Wildlife (CDFW) received a NOP from the Tuolumne County Community Development Department for the above-referenced Project pursuant to the California Environmental Quality Act (CEQA) and CEQA Guidelines.¹

Thank you for the opportunity to provide comments and recommendations regarding those activities involved in the Project that may affect California fish and wildlife. Likewise, CDFW appreciates the opportunity to provide comments regarding those aspects of the Project that CDFW, by law, may be required to carry out or approve through the exercise of its own regulatory authority under Fish and Game Code.

CDFW ROLE

CDFW is California's **Trustee Agency** for fish and wildlife resources and holds those resources in trust by statute for all the people of the State (Fish & G. Code, §§ 711.7, subd. (a) & 1802; Pub. Resources Code, § 21070; CEQA Guidelines § 15386, subd. (a)). CDFW, in its trustee capacity, has jurisdiction over the conservation, protection, and management of fish, wildlife, native plants, and habitat necessary for

¹ CEQA is codified in the California Public Resources Code in section 21000 et seq. The "CEQA Guidelines" are found in Title 14 of the California Code of Regulations, commencing with section 15000.

biologically sustainable populations of those species (*Id.*, § 1802). Similarly, for purposes of CEQA, CDFW is charged by law to provide, as available, biological expertise during public agency environmental review efforts, focusing specifically on projects and related activities that have the potential to adversely affect fish and wildlife resources.

CDFW is also submitting comments as a **Responsible Agency** under CEQA (Pub. Resources Code, § 21069; CEQA Guidelines, § 15381). CDFW expects that it may need to exercise regulatory authority as provided by the Fish and Game Code. As proposed, for example, the Project may be subject to CDFW's lake and streambed alteration regulatory authority (Fish & G. Code, § 1600 et seq.). Likewise, to the extent implementation of the Project as proposed may result in "take" as defined by State law of any species protected under the California Endangered Species Act (CESA) (Fish & G. Code, § 2050 et seq.), related authorization as provided by the Fish and Game Code will be required.

PROJECT DESCRIPTION SUMMARY

Proponent: County of Tuolumne

Objective: The Project proposes a Countywide, programmatic-level EIR/EA (PEIR/EA) for future broadband project construction in County-maintained road rights-of-way and public utility easements throughout Tuolumne County. The Countywide program would install fiber optic conduit either underground in buried conduits, overhead on pole lines, or a combination of both. In some circumstances, fiber optic conduit could be installed under roadways where space is limited alongside the roadways. Where topography or underground substrate would prohibit or impede construction of subsurface fiber optic cables, project would install aboveground fiber optic cables that would utilize existing or newly constructed utility poles.

Location: The Project site area would be located within Tuolumne County limits.

Timeframe: n/a

COMMENTS AND RECOMMENDATIONS

Special-Status Species: Given the Countywide nature of the Project, there is the potential for the Project to impact State-listed species. Records from the California Natural Diversity Database (CNDDDB) show that the following special-status species, including CESA-listed species (CDFW 2023) could be impacted: the State endangered great gray owl (*Strix nebulosa*; GGO), the State endangered and federally proposed endangered foothill yellow-legged frog (*Rana boylei*; FYLF), the State threatened and federally endangered Sierra Nevada yellow-legged frog (*Rana sierrae*; SNYLF), the

State threatened and federally endangered Sierra Nevada red fox (*Vulpes macrotis necator*; SNRF), the State endangered and fully protected bald eagle (*Haliaeetus leucocephalus*), the State threatened tricolored blackbird (*Agelaius tricolor*; TRBL), the State candidate-listed endangered Crotch bumblebee (*Bombus crotchii*), and the following State species of special concern California spotted owl (*Strix occidentalis occidentalis*; CSO) and western pond turtle (*Actinemys marmorata*).

The primary purpose of a EIR is to consider all the potential impacts associated with the suite of projects that would eventually tier from the PEIR over time. As such, the PEIR should serve primarily as a planning level EIR and consider, in detail, the cumulative impacts of the reasonably foreseeable projects, in this case broadband installation, on the environment, on the species CDFW has identified in this comment letter. CDFW recommends that habitat assessments be conducted in and surrounding all locations for planned broadband work in the PEIR and identify all the potential plant, animal, invertebrate, and fish species that could be present. Then, for those species, CDFW recommends a robust analysis of cumulative impacts for each of those species along with avoidance, minimization, and mitigation measures that could be implemented on each project to reduce harm. For many species, subsequent protocol level surveys may be required during biological studies conducted in support of the future CEQA documents that will be tiered from this PEIR and, depending on the results, avoidance and minimization measures, permits, and mitigation may be required.

CDFW recommends that survey-level protocols be conducted for these species as part of the biological technical studies prepared in support of each future CEQA document tiered from this PEIR, with conclusions of those studies summarized therein and repeated as necessary prior to Project ground-disturbing activities. For all future projects tiered from this PEIR, CDFW recommends that focused GGO surveys be conducted by qualified biologists familiar with GGO following the protocol prepared by Beck and Winter (2000) for the United States Forest Service. For SNRF, CDFW recommends that the protocol in Appendix B of *Ecology of Red Fox (Vulpes vulpes) in the Lassen Peak Region of California, USA* (Perrine, 2005) be followed. For SNYLF and FYLF, focused surveys following the survey methods described in pages 16–22 of “A Standardized Protocol for Surveying Aquatic Amphibians” (Fellers and Freel 1995) is recommended; however, please note that dip-netting would constitute take as defined by Fish and Game Code § 86, so it is recommended this survey technique be avoided. For CSO, CDFW recommends that focused surveys be conducted by qualified biologists familiar with CSO following the protocol prepared by the United States Fish and Wildlife Service (USFWS 2011, revised 2012). In the future CEQA documents tiered from this PEIR, CDFW advises that special status species be addressed with appropriate avoidance and minimization measures and that the above survey methods be included. If take could occur as a result of Project implementation, consultation with CDFW would be warranted.

Cumulative Impacts: CDFW recommends that a cumulative impact analysis be conducted for all biological resources that will either be significantly or potentially significantly impacted by implementation of the Project, including those whose impacts are determined to be less than significant with mitigation incorporated or for those resources that are rare or in poor or declining health and will be impacted by the project, even if those impacts are relatively small (i.e. less than significant). CDFW recommends cumulative impacts be analyzed using an acceptable methodology to evaluate the impacts of past, present, and reasonably foreseeable future projects on resources and be focused specifically on the resource, not the Project. An appropriate resource study area identified and utilized for this analysis is advised. CDFW staff is available for consultation in support of cumulative impacts analyses as a trustee and responsible agency under CEQA and we recommend that Tuolumne County reach out to CDFW to discuss various methodologies and strategies for an analysis of this type for CDFW trustee agency resources

CNDDDB: Please note that the CNDDDB is populated by and records voluntary submissions of species detections. As a result, species may be present in locations not depicted in the CNDDDB but where there is suitable habitat and features capable of supporting species. A lack of an occurrence record in the CNDDDB does not mean a species is not present. In order to adequately assess any potential Project-related impacts to biological resources, surveys conducted by a qualified wildlife biologist during the appropriate survey period(s) and using the appropriate protocol survey methodology are warranted in order to determine whether or not any special status species are present at or near the Project area.

Lake and Stream Alteration: The Project may be subject to CDFW's regulatory authority pursuant to Fish and Game Code section 1600 et seq. Fish and Game Code section 1602 requires the project proponent to notify CDFW prior to commencing any activity that may (a) substantially divert or obstruct the natural flow of any river, stream, or lake; (b) substantially change or use any material from the bed, bank, or channel of any river, stream, or lake; or (c) deposit debris, waste or other materials that could pass into any river, stream, or lake. "Any river, stream, or lake" includes those that are ephemeral or intermittent as well as those that are perennial in nature. For additional information on notification requirements, please contact our staff in the LSA Program at (559) 243-4593, or R4LSA@wildlife.ca.gov.

Federally Listed Species: CDFW recommends consulting with the USFWS on potential impacts to federally listed species including, but not limited to, SNRF, FYLF, and SNYLF. Take under the Federal Endangered Species Act (FESA) is more broadly defined than CESA; take under FESA also includes significant habitat modification or degradation that could result in death or injury to a listed species by interfering with essential behavioral patterns such as breeding, foraging, or nesting. Consultation with

Quincy Yaley, Director
County of Tuolumne, Community Development Department
May 30, 2023
Page 5

the USFWS in order to comply with FESA is advised well in advance of any ground disturbing activities.

CDFW is available to meet with you ahead of draft PEIR preparation to discuss potential impacts and possible mitigation measures for some or all of the resources that may be analyzed in the PEIR. If you have any questions, please contact Jim Vang, Environmental Scientist, at the address provided on this letterhead, by telephone at (559) 580-3203, or by electronic mail at Jim.Vang@wildlife.ca.gov.

Sincerely,

Julie A. Vance
Regional Manager

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LITERATURE CITED

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Central Valley Regional Water Quality Control Board

30 May 2023

Quincy Yaley
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Community Development Department
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COMMENTS TO REQUEST FOR REVIEW FOR THE NOTICE OF PREPARATION FOR THE DRAFT ENVIRONMENTAL IMPACT REPORT, COUNTY OF TUOLUMNE BROADBAND INFRASTRUCTURE PROJECT, SCH#2023050017, TUOLUMNE COUNTY

Pursuant to the State Clearinghouse's 1 May 2023 request, the Central Valley Regional Water Quality Control Board (Central Valley Water Board) has reviewed the *Request for Review for the Notice of Preparation for the Draft Environmental Impact Report* for the County of Tuolumne Broadband Infrastructure Project, located in Tuolumne County.

Our agency is delegated with the responsibility of protecting the quality of surface and groundwaters of the state; therefore, our comments will address concerns surrounding those issues.

I. Regulatory Setting

Basin Plan

The Central Valley Water Board is required to formulate and adopt Basin Plans for all areas within the Central Valley region under Section 13240 of the Porter-Cologne Water Quality Control Act. Each Basin Plan must contain water quality objectives to ensure the reasonable protection of beneficial uses, as well as a program of implementation for achieving water quality objectives with the Basin Plans. Federal regulations require each state to adopt water quality standards to protect the public health or welfare, enhance the quality of water and serve the purposes of the Clean Water Act. In California, the beneficial uses, water quality objectives, and the Antidegradation Policy are the State's water quality standards. Water quality standards are also contained in the National Toxics Rule, 40 CFR Section 131.36, and the California Toxics Rule, 40 CFR Section 131.38.

The Basin Plan is subject to modification as necessary, considering applicable laws, policies, technologies, water quality conditions and priorities. The original Basin Plans were adopted in 1975, and have been updated and revised periodically as required, using Basin Plan amendments. Once the Central Valley Water Board has

adopted a Basin Plan amendment in noticed public hearings, it must be approved by the State Water Resources Control Board (State Water Board), Office of Administrative Law (OAL) and in some cases, the United States Environmental Protection Agency (USEPA). Basin Plan amendments only become effective after they have been approved by the OAL and in some cases, the USEPA. Every three (3) years, a review of the Basin Plan is completed that assesses the appropriateness of existing standards and evaluates and prioritizes Basin Planning issues. For more information on the *Water Quality Control Plan for the Sacramento and San Joaquin River Basins*, please visit our website:

http://www.waterboards.ca.gov/centralvalley/water_issues/basin_plans/

Antidegradation Considerations

All wastewater discharges must comply with the Antidegradation Policy (State Water Board Resolution 68-16) and the Antidegradation Implementation Policy contained in the Basin Plan. The Antidegradation Implementation Policy is available on page 74 at:

https://www.waterboards.ca.gov/centralvalley/water_issues/basin_plans/sacsjr_2018_05.pdf

In part it states:

Any discharge of waste to high quality waters must apply best practicable treatment or control not only to prevent a condition of pollution or nuisance from occurring, but also to maintain the highest water quality possible consistent with the maximum benefit to the people of the State.

This information must be presented as an analysis of the impacts and potential impacts of the discharge on water quality, as measured by background concentrations and applicable water quality objectives.

The antidegradation analysis is a mandatory element in the National Pollutant Discharge Elimination System and land discharge Waste Discharge Requirements (WDRs) permitting processes. The environmental review document should evaluate potential impacts to both surface and groundwater quality.

II. Permitting Requirements

Construction Storm Water General Permit

Dischargers whose project disturb one or more acres of soil or where projects disturb less than one acre but are part of a larger common plan of development that in total disturbs one or more acres, are required to obtain coverage under the General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (Construction General Permit), Construction General Permit Order No. 2009-0009-DWQ. Construction activity subject to this permit includes clearing, grading, grubbing, disturbances to the ground, such as stockpiling, or excavation, but does not include regular maintenance activities performed to restore the original line, grade, or capacity of the facility. The Construction General Permit requires the development and implementation of a Storm Water Pollution Prevention Plan (SWPPP). For more information on the Construction General Permit, visit the

State Water Resources Control Board website at:

http://www.waterboards.ca.gov/water_issues/programs/stormwater/constpermits.shtml

Clean Water Act Section 404 Permit

If the project will involve the discharge of dredged or fill material in navigable waters or wetlands, a permit pursuant to Section 404 of the Clean Water Act may be needed from the United States Army Corps of Engineers (USACE). If a Section 404 permit is required by the USACE, the Central Valley Water Board will review the permit application to ensure that discharge will not violate water quality standards. If the project requires surface water drainage realignment, the applicant is advised to contact the Department of Fish and Game for information on Streambed Alteration Permit requirements. If you have any questions regarding the Clean Water Act Section 404 permits, please contact the Regulatory Division of the Sacramento District of USACE at (916) 557-5250.

Clean Water Act Section 401 Permit – Water Quality Certification

If an USACE permit (e.g., Non-Reporting Nationwide Permit, Nationwide Permit, Letter of Permission, Individual Permit, Regional General Permit, Programmatic General Permit), or any other federal permit (e.g., Section 10 of the Rivers and Harbors Act or Section 9 from the United States Coast Guard), is required for this project due to the disturbance of waters of the United States (such as streams and wetlands), then a Water Quality Certification must be obtained from the Central Valley Water Board prior to initiation of project activities. There are no waivers for 401 Water Quality Certifications. For more information on the Water Quality Certification, visit the Central Valley Water Board website at:
https://www.waterboards.ca.gov/centralvalley/water_issues/water_quality_certification/

Waste Discharge Requirements – Discharges to Waters of the State

If USACE determines that only non-jurisdictional waters of the State (i.e., “non-federal” waters of the State) are present in the proposed project area, the proposed project may require a Waste Discharge Requirement (WDR) permit to be issued by Central Valley Water Board. Under the California Porter-Cologne Water Quality Control Act, discharges to all waters of the State, including all wetlands and other waters of the State including, but not limited to, isolated wetlands, are subject to State regulation. For more information on the Waste Discharges to Surface Water NPDES Program and WDR processes, visit the Central Valley Water Board website at:
https://www.waterboards.ca.gov/centralvalley/water_issues/waste_to_surface_water/

Projects involving excavation or fill activities impacting less than 0.2 acre or 400 linear feet of non-jurisdictional waters of the state and projects involving dredging activities impacting less than 50 cubic yards of non-jurisdictional waters of the state may be eligible for coverage under the State Water Resources Control Board Water Quality Order No. 2004-0004-DWQ (General Order 2004-0004). For more information on the General Order 2004-0004, visit the State Water Resources

Control Board website at:

https://www.waterboards.ca.gov/board_decisions/adopted_orders/water_quality/2004/wqo/wqo2004-0004.pdf

Dewatering Permit

If the proposed project includes construction or groundwater dewatering to be discharged to land, the proponent may apply for coverage under State Water Board General Water Quality Order (Low Threat General Order) 2003-0003 or the Central Valley Water Board's Waiver of Report of Waste Discharge and Waste Discharge Requirements (Low Threat Waiver) R5-2018-0085. Small temporary construction dewatering projects are projects that discharge groundwater to land from excavation activities or dewatering of underground utility vaults. Dischargers seeking coverage under the General Order or Waiver must file a Notice of Intent with the Central Valley Water Board prior to beginning discharge.

For more information regarding the Low Threat General Order and the application process, visit the Central Valley Water Board website at:

http://www.waterboards.ca.gov/board_decisions/adopted_orders/water_quality/2003/wqo/wqo2003-0003.pdf

For more information regarding the Low Threat Waiver and the application process, visit the Central Valley Water Board website at:

https://www.waterboards.ca.gov/centralvalley/board_decisions/adopted_orders/waivers/r5-2018-0085.pdf

Limited Threat General NPDES Permit

If the proposed project includes construction dewatering and it is necessary to discharge the groundwater to waters of the United States, the proposed project will require coverage under a National Pollutant Discharge Elimination System (NPDES) permit. Dewatering discharges are typically considered a low or limited threat to water quality and may be covered under the General Order for *Limited Threat Discharges to Surface Water* (Limited Threat General Order). A complete Notice of Intent must be submitted to the Central Valley Water Board to obtain coverage under the Limited Threat General Order. For more information regarding the Limited Threat General Order and the application process, visit the Central Valley Water Board website at:

https://www.waterboards.ca.gov/centralvalley/board_decisions/adopted_orders/general_orders/r5-2016-0076-01.pdf

NPDES Permit

If the proposed project discharges waste that could affect the quality of surface waters of the State, other than into a community sewer system, the proposed project will require coverage under a National Pollutant Discharge Elimination System (NPDES) permit. A complete Report of Waste Discharge must be submitted with the Central Valley Water Board to obtain a NPDES Permit. For more information regarding the NPDES Permit and the application process, visit the Central Valley Water Board website at: <https://www.waterboards.ca.gov/centralvalley/help/permit/>

If you have questions regarding these comments, please contact me at (916) 464-4684 or Peter.Minkel2@waterboards.ca.gov.

Peter Minkel

Peter Minkel
Engineering Geologist

cc: State Clearinghouse unit, Governor's Office of Planning and Research,
Sacramento

ID	Completion time	Do you have any concerns about any particular environmental conditions or issues that could be affected by future broadband infrastructure projects? If so, please explain:	Do you have any concerns about tribal, cultural, or archeological sites that could be affected by future broadband infrastructure projects? If so, please explain:	Do you have any comments on the scope of the Program EIR? Is there any addition to the scope that you feel is warranted? Any additional issues that you believe need further study? Please explain:	Do you have any other comments about the Program EIR	May we contact you if there are any questions about your feedback?	Your Name	Organization	Your email	Phone number
1	5/2/23 9:22:36	Yes. The current wireless communication facilities county ordinance is a one size fits all, assuming every provider is building huge multi-carrier facilities. This limits our ability to serve neighborhoods with small sites, because it categorizes any mast, telephone pole, or tower as a major wireless facility. Even in the utility easements.	No, We can work around these issues if we had another option than always building major wireless facilities.	Unfortunately, the county defines wireless communication facilities to broadly for our organization to invest in expanding into smaller neighborhoods using the public utility easements.	We have been talking to the county about how the ordinance code limits our ability to reach the most vulnerable and lowest income consumers in the county for years. We could do more but permitting and EIR costs to develop a site for 1000 or 12 consumers cannot be the same.	Yes	Wayne Collins	Cal.net Inc	wcollins@corp.cal.net	209-677-7847
2	5/2/23 9:23:07	In general in the City of Tuolumne, no.	yes, the Tuolumne Rancheria (MiWuk) might present challenges to Frontier on trenching in their reservation area. Obviously, we need permission, but not really sure what their concerns would be.	No	No	Yes	Eric Elms	Frontier Communications	eric.l.elms@ftr.com	2092390369

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CalEEMod Output

Tuolumne Broadband PEIR Detailed Report

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1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Tuolumne Broadband PEIR
Construction Start Date	5/1/2024
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	2.80
Precipitation (days)	53.0
Location	Tuolumne County, CA, USA
County	Tuolumne
City	Unincorporated
Air District	Tuolumne County APCD
Air Basin	Mountain Counties
TAZ	3029
EDFZ	4
Electric Utility	Pacific Gas & Electric Company
Gas Utility	Pacific Gas & Electric
App Version	2022.1.1.19

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
User Defined Linear	1.00	Mile	0.80	0.00	0.00	—	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.02	0.86	8.29	9.88	0.02	0.33	0.54	0.75	0.30	0.06	0.31	—	2,047	2,047	0.08	0.02	0.14	2,055
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.01	0.01	0.09	0.11	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	—	18.6	18.6	< 0.005	< 0.005	< 0.005	18.7
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	3.08	3.08	< 0.005	< 0.005	< 0.005	3.09

2.2. Construction Emissions by Year, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	1.02	0.86	8.29	9.88	0.02	0.33	0.54	0.75	0.30	0.06	0.31	—	2,047	2,047	0.08	0.02	0.14	2,055
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	0.01	0.01	0.09	0.11	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	—	18.6	18.6	< 0.005	< 0.005	< 0.005	18.7
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	3.08	3.08	< 0.005	< 0.005	< 0.005	3.09

3. Construction Emissions Details

3.1. Horizontal Directional Drilling (2024) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.99	0.83	8.27	9.01	0.02	0.33	—	0.33	0.30	—	0.30	—	1,908	1,908	0.08	0.02	—	1,914
Dust From Material Movement:	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	5.23	5.23	< 0.005	< 0.005	—	5.25

Dust From Material Movement:	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.87	0.87	< 0.005	< 0.005	—	0.87
Dust From Material Movement:	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.02	0.02	0.28	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	33.7	33.7	< 0.005	< 0.005	0.14	34.3
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.09	0.09	< 0.005	< 0.005	< 0.005	0.09
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.01	0.01	< 0.005	< 0.005	< 0.005	0.01
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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3.3. Plowing (2024) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e	
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.39	0.33	2.84	2.51	< 0.005	0.22	—	0.22	0.20	—	0.20	—	349	349	0.01	< 0.005	—	350	
Dust From Material Movement	—	—	—	—	—	—	0.53	0.53	—	0.06	0.06	—	—	—	—	—	—	—	
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Off-Road Equipment	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.96	0.96	< 0.005	< 0.005	—	0.96	
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—	
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Off-Road Equipment	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.16	0.16	< 0.005	< 0.005	—	0.16	

Dust From Material Movement:	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	< 0.005	< 0.005	0.06	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	6.75	6.75	< 0.005	< 0.005	0.03	6.85
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.02	0.02	< 0.005	< 0.005	< 0.005	0.02
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.5. Line Installation (2024) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.34	0.28	2.01	2.06	< 0.005	0.08	—	0.08	0.07	—	0.07	—	282	282	0.01	< 0.005	—	283
Dust From Material Movement:	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.77	0.77	< 0.005	< 0.005	—	0.77
Dust From Material Movement:	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.13	0.13	< 0.005	< 0.005	—	0.13
Dust From Material Movement:	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.11	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	13.5	13.5	< 0.005	< 0.005	0.06	13.7
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.03	0.03	< 0.005	< 0.005	< 0.005	0.04
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.01	0.01	< 0.005	< 0.005	< 0.005	0.01
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.7. Aerial Stringing (2024) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipmer	0.85	0.72	7.84	9.65	0.02	0.30	—	0.30	0.27	—	0.27	—	2,020	2,020	0.08	0.02	—	2,027

Dust From Material Movement:	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.02	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	5.54	5.54	< 0.005	< 0.005	—	5.55
Dust From Material Movement:	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.92	0.92	< 0.005	< 0.005	—	0.92
Dust From Material Movement:	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.01	0.23	0.00	0.00	0.02	0.02	0.00	0.01	0.01	—	27.0	27.0	< 0.005	< 0.005	0.11	27.4
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.07	0.07	< 0.005	< 0.005	< 0.005	0.07
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.01	0.01	< 0.005	< 0.005	< 0.005	0.01
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.9. Pavement Repair (2024) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.38	0.32	2.54	3.25	< 0.005	0.12	—	0.12	0.11	—	0.11	—	488	488	0.02	< 0.005	—	490
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.34	1.34	< 0.005	< 0.005	—	1.34

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipmer	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.22	0.22	< 0.005	< 0.005	—	0.22	
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Worker	0.01	0.01	0.01	0.11	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	13.5	13.5	< 0.005	< 0.005	0.06	13.7	
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.03	0.03	< 0.005	< 0.005	< 0.005	0.04	
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.01	0.01	< 0.005	< 0.005	< 0.005	0.01	
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	

3.11. Microtrenching (2024) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
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Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.39	0.33	2.55	3.40	< 0.005	0.12	—	0.12	0.11	—	0.11	—	498	498	0.02	< 0.005	—	500
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.36	1.36	< 0.005	< 0.005	—	1.37
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.23	0.23	< 0.005	< 0.005	—	0.23
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.11	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	13.5	13.5	< 0.005	< 0.005	0.06	13.7
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.03	0.03	< 0.005	< 0.005	< 0.005	0.04
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.01	0.01	< 0.005	< 0.005	< 0.005	0.01
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.13. Trenching (2024) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.76	0.64	5.68	7.72	0.01	0.21	—	0.21	0.20	—	0.20	—	1,109	1,109	0.04	0.01	—	1,112
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	3.04	3.04	< 0.005	< 0.005	—	3.05
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.50	0.50	< 0.005	< 0.005	—	0.50
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.02	0.02	0.28	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	33.7	33.7	< 0.005	< 0.005	0.14	34.3
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.09	0.09	< 0.005	< 0.005	< 0.005	0.09
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.01	0.01	< 0.005	< 0.005	< 0.005	0.01
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

4. Operations Emissions Details

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetatio	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
---------	-----	-----	-----	----	-----	-------	-------	-------	--------	--------	--------	------	-------	------	-----	-----	---	------

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Horizontal Directional Drilling	Linear, Grading & Excavation	5/1/2024	5/1/2024	5.00	1.00	—
Plowing	Linear, Grading & Excavation	5/2/2024	5/2/2024	5.00	1.00	—
Line Installation	Linear, Drainage, Utilities, & Sub-Grade	5/3/2024	5/3/2024	5.00	1.00	—
Aerial Stringing	Linear, Drainage, Utilities, & Sub-Grade	5/6/2024	5/6/2024	5.00	1.00	—
Pavement Repair	Linear, Paving	5/9/2024	5/9/2024	5.00	1.00	—
Microtrenching	Linear, Trenching	5/7/2024	5/7/2024	5.00	1.00	—
Trenching	Linear, Trenching	5/8/2024	5/8/2024	5.00	1.00	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Horizontal Directional Drilling	Bore/Drill Rigs	Diesel	Average	1.00	8.00	83.0	0.50
Horizontal Directional Drilling	Cranes	Diesel	Average	1.00	8.00	367	0.29

Horizontal Directional Drilling	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
Horizontal Directional Drilling	Excavators	Diesel	Average	1.00	8.00	36.0	0.38
Horizontal Directional Drilling	Tractors/Loaders/Backhoes	Diesel	Average	1.00	8.00	84.0	0.37
Plowing	Crawler Tractors	Diesel	Average	1.00	8.00	87.0	0.43
Line Installation	Air Compressors	Diesel	Average	1.00	8.00	37.0	0.48
Line Installation	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
Aerial Stringing	Bore/Drill Rigs	Diesel	Average	1.00	8.00	83.0	0.50
Aerial Stringing	Cranes	Diesel	Average	1.00	8.00	367	0.29
Aerial Stringing	Rough Terrain Forklifts	Diesel	Average	1.00	8.00	96.0	0.40
Aerial Stringing	Tractors/Loaders/Backhoes	Diesel	Average	1.00	8.00	84.0	0.37
Pavement Repair	Tractors/Loaders/Backhoes	Diesel	Average	1.00	8.00	84.0	0.37
Pavement Repair	Rollers	Diesel	Average	1.00	8.00	36.0	0.38
Pavement Repair	Cement and Mortar Mixers	Diesel	Average	1.00	8.00	10.0	0.56
Microtrenching	Trenchers	Diesel	Average	1.00	8.00	40.0	0.50
Microtrenching	Tractors/Loaders/Backhoes	Diesel	Average	1.00	8.00	84.0	0.37
Trenching	Concrete/Industrial Saws	Diesel	Average	1.00	8.00	33.0	0.73
Trenching	Excavators	Diesel	Average	2.00	8.00	36.0	0.38
Trenching	Tractors/Loaders/Backhoes	Diesel	Average	2.00	8.00	84.0	0.37

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Horizontal Directional Drilling	—	—	—	—
Horizontal Directional Drilling	Worker	3.13	13.0	LDA,LDT1,LDT2
Horizontal Directional Drilling	Vendor	0.00	8.76	HHDT,MHDT
Horizontal Directional Drilling	Hauling	0.00	20.0	HHDT
Horizontal Directional Drilling	Onsite truck	—	—	HHDT
Plowing	—	—	—	—
Plowing	Worker	0.63	13.0	LDA,LDT1,LDT2
Plowing	Vendor	0.00	8.76	HHDT,MHDT
Plowing	Hauling	0.00	20.0	HHDT
Plowing	Onsite truck	—	—	HHDT
Trenching	—	—	—	—
Trenching	Worker	3.13	13.0	LDA,LDT1,LDT2
Trenching	Vendor	—	8.76	HHDT,MHDT
Trenching	Hauling	0.00	20.0	HHDT
Trenching	Onsite truck	—	—	HHDT
Microtrenching	—	—	—	—
Microtrenching	Worker	1.25	13.0	LDA,LDT1,LDT2
Microtrenching	Vendor	—	8.76	HHDT,MHDT
Microtrenching	Hauling	0.00	20.0	HHDT
Microtrenching	Onsite truck	—	—	HHDT
Line Installation	—	—	—	—
Line Installation	Worker	1.25	13.0	LDA,LDT1,LDT2
Line Installation	Vendor	0.00	8.76	HHDT,MHDT
Line Installation	Hauling	0.00	20.0	HHDT
Line Installation	Onsite truck	—	—	HHDT
Aerial Stringing	—	—	—	—

Aerial Stringing	Worker	2.50	13.0	LDA,LDT1,LDT2
Aerial Stringing	Vendor	0.00	8.76	HHDT,MHDT
Aerial Stringing	Hauling	0.00	20.0	HHDT
Aerial Stringing	Onsite truck	—	—	HHDT
Pavement Repair	—	—	—	—
Pavement Repair	Worker	1.25	13.0	LDA,LDT1,LDT2
Pavement Repair	Vendor	0.00	8.76	HHDT,MHDT
Pavement Repair	Hauling	0.00	20.0	HHDT
Pavement Repair	Onsite truck	—	—	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Non-applicable. No control strategies activated by user.

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
------------	--	--	--	--	-----------------------------

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (cy)	Material Exported (cy)	Acres Graded (acres)	Material Demolished (sq. ft.)	Acres Paved (acres)
Horizontal Directional Drilling	—	—	0.80	0.00	—
Plowing	—	—	0.80	0.00	—
Line Installation	—	—	0.80	0.00	—
Aerial Stringing	—	—	0.80	0.00	—

5.6.2. Construction Earthmoving Control Strategies

Non-applicable. No control strategies activated by user.

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
User Defined Linear	0.80	100%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2024	0.00	204	0.03	< 0.005

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres
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5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres
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5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)
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6. Climate Risk Detailed Report

6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	28.5	annual days of extreme heat
Extreme Precipitation	18.9	annual days with precipitation above 20 mm
Sea Level Rise	0.00	meters of inundation depth
Wildfire	55.8	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider different increments of sea level rise coupled with extreme storm events. Users may select from four model simulations to view the range in potential inundation depth for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 50 meters (m) by 50 m, or about 164 feet (ft) by 164 ft.

Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A
Extreme Precipitation	5	0	0	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	1	0	0	N/A
Flooding	N/A	N/A	N/A	N/A

Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	0	0	0	N/A
Air Quality Degradation	N/A	N/A	N/A	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.

The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.

The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A
Extreme Precipitation	5	1	1	4
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	1	1	1	2
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	1	1	1	2
Air Quality Degradation	N/A	N/A	N/A	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.

The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.

The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	69.6
AQ-PM	1.13
AQ-DPM	0.56
Drinking Water	86.4
Lead Risk Housing	49.0
Pesticides	0.00
Toxic Releases	0.19
Traffic	1.91
Effect Indicators	—
CleanUp Sites	17.1
Groundwater	35.0
Haz Waste Facilities/Generators	16.6
Impaired Water Bodies	33.2
Solid Waste	83.3
Sensitive Population	—
Asthma	33.4
Cardio-vascular	29.4
Low Birth Weights	45.9
Socioeconomic Factor Indicators	—
Education	17.2
Housing	53.1
Linguistic	7.38
Poverty	30.0
Unemployment	23.8

7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	43.29526498
Employed	3.323495445
Median HI	34.42833312
Education	—
Bachelor's or higher	46.25946362
High school enrollment	100
Preschool enrollment	19.04273066
Transportation	—
Auto Access	55.28037983
Active commuting	12.02361093
Social	—
2-parent households	8.417810856
Voting	83.74181958
Neighborhood	—
Alcohol availability	83.74181958
Park access	42.53817529
Retail density	6.185037854
Supermarket access	21.96843321
Tree canopy	99.9101758
Housing	—
Homeownership	70.21686129
Housing habitability	48.14577185
Low-inc homeowner severe housing cost burden	29.87296292

Low-inc renter severe housing cost burden	12.22892339
Uncrowded housing	85.268831
Health Outcomes	—
Insured adults	64.90440139
Arthritis	0.0
Asthma ER Admissions	70.2
High Blood Pressure	0.0
Cancer (excluding skin)	0.0
Asthma	0.0
Coronary Heart Disease	0.0
Chronic Obstructive Pulmonary Disease	0.0
Diagnosed Diabetes	0.0
Life Expectancy at Birth	65.9
Cognitively Disabled	3.3
Physically Disabled	16.0
Heart Attack ER Admissions	11.2
Mental Health Not Good	0.0
Chronic Kidney Disease	0.0
Obesity	0.0
Pedestrian Injuries	43.2
Physical Health Not Good	0.0
Stroke	0.0
Health Risk Behaviors	—
Binge Drinking	0.0
Current Smoker	0.0
No Leisure Time for Physical Activity	0.0
Climate Change Exposures	—

Wildfire Risk	91.0
SLR Inundation Area	0.0
Children	72.4
Elderly	4.0
English Speaking	98.1
Foreign-born	0.1
Outdoor Workers	26.0
Climate Change Adaptive Capacity	—
Impervious Surface Cover	97.4
Traffic Density	2.4
Traffic Access	0.0
Other Indices	—
Hardship	46.0
Other Decision Support	—
2016 Voting	88.3

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	17.0
Healthy Places Index Score for Project Location (b)	36.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	No
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Construction: Construction Phases	Each construction method would be completed in one day for each individual fiber project.
Construction: Off-Road Equipment	Equipment per HELIX Air Quality Specialist.
Construction: Trips and VMT	Assumes each construction activity will be completed in one day.

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Appendix D

Table of Special-Status Plant and
Animal Species Occurring in the
Program Region

Species Name/ Common Name ¹	Status ²	Habitat, Ecology and Life History	Potential to Occur
Plants			
<i>Agrostis humilis</i> mountain bent grass	--/--/2B.3	A perennial herb found in alpine boulder and rock fields, meadows, seeps, and subalpine coniferous forest from 1,525 – 3,400 meters above msl. This species is a high elevation grass that sometimes occurs on calcareous substrates (CDFW 2023). Blooms July – September (CNPS 2023).	May occur. This species is known to occur in Tuolumne County. A site-specific analysis will be required to determine its potential to occur within the project footprint of the proposed broadband infrastructure.
<i>Allium jepsonii</i> Jepson's onion	--/--/1B.2	A perennial bulbiferous herb found on serpentine or volcanic soils in chaparral, lower montane coniferous forest, and cismontane woodlands from 300 – 1,320 meters above msl. Blooms April – August (CNPS 2023).	May occur. This species is known to occur in Tuolumne County. A site-specific analysis will be required to determine its potential to occur within the project footprint of the proposed broadband infrastructure.
<i>Allium tribracteatum</i> three-bracted onion	--/--/1B.2	A perennial bulbiferous herb found on volcanic soils in chaparral, lower montane coniferous forest, and upper montane coniferous forest from 1,100 – 3,000 meters above msl. Blooms April – August (CNPS 2023).	May occur. This species is known to occur in Tuolumne County. A site-specific analysis will be required to determine its potential to occur within the project footprint of the proposed broadband infrastructure.
<i>Allium tuolumnense</i> Rawhide Hill onion	--/--/1B.2	A perennial bulbiferous herb found on serpentine soils in cismontane woodland from 300 – 600 meters above msl. Blooms March – May (CNPS 2023).	May occur. This species is known to occur in Tuolumne County. A site-specific analysis will be required to determine its potential to occur within the project footprint of the proposed broadband infrastructure.
<i>Allium yosemitense</i> Yosemite onion	--/SR/1B.3	A perennial bulbiferous herb found on rocky, metamorphic or granitic soils in broadleafed upland forest, chaparral, cismontane woodland, and lower montane coniferous forest from 535 – 2,200 meters above msl. Blooms April – July (CNPS 2023).	May occur. This species is known to occur in Tuolumne County. A site-specific analysis will be required to determine its potential to occur within the project footprint of the proposed broadband infrastructure.
<i>Arctostaphylos nissenana</i> Nissenan manzanita	--/--/1B.2	A perennial evergreen tree found on rocky soils in closed cone coniferous forest and chaparral from 450 – 1,100 meters above msl. Blooms February – March (June) (CNPS 2023).	May occur. This species is known to occur in Tuolumne County. A site-specific analysis will be required to determine its potential to occur within the project footprint of the proposed broadband infrastructure.

Species Name/ Common Name ¹	Status ²	Habitat, Ecology and Life History	Potential to Occur
<i>Balsamorhiza macrolepis</i> big-scale balsamroot	--/--/1B.2	A perennial herb found on slopes in chaparral, cismontane woodland, and valley and foothill grassland, sometimes in serpentine soil from 45 – 1,555 meters above msl. Blooms March – June (CNPS 2023).	May occur. This species is known to occur in Tuolumne County. A site-specific analysis will be required to determine its potential to occur within the project footprint of the proposed broadband infrastructure.
<i>Botrychium ascendens</i> upswept moonwort	--/--/2B.3	A perennial non-flowering plant (pteridophyte) found in mesic lower montane coniferous forest and meadows and seeps from 1,115 – 3,045 meters above msl. Reproduces (June) July – August (CNPS 2023).	May occur. This species is known to occur in Tuolumne County. A site-specific analysis will be required to determine its potential to occur within the project footprint of the proposed broadband infrastructure.
<i>Botrychium crenulatum</i> scalloped moonwort	--/--/2B.2	A perennial rhizomatous non-flowering plant (pteridophyte) found in bogs, fens, lower and upper montane coniferous forest, meadows and seeps, freshwater marshes, and swamps from 1,258 – 3,280 meters above msl. Reproduces June – September (CNPS 2023).	May occur. This species is known to occur in Tuolumne County. A site-specific analysis will be required to determine its potential to occur within the project footprint of the proposed broadband infrastructure.
<i>Botrychium lineare</i> slender moonwort	--/--/1B.2	A perennial herb found in disturbed areas in subalpine forest, upper montane coniferous forest, meadows, and seeps from 2,560 – 2,600 meters above msl. No blooming period (CNPS 2023).	May occur. This species is known to occur in Tuolumne County. A site-specific analysis will be required to determine its potential to occur within the project footprint of the proposed broadband infrastructure.
<i>Botrychium montanum</i> western goblin	--/--/2B.1	A perennial rhizomatous non-flowering plant (pteridophyte) found in mesic sites in meadows, seeps, and upper montane coniferous forest from 1,465 to 2,180 meters above msl. Reproduces July – September (CNPS 2023).	May occur. This species is known to occur in Tuolumne County. A site-specific analysis will be required to determine its potential to occur within the project footprint of the proposed broadband infrastructure.
<i>Botrychium neolunaria</i> North American moonwort	--/--/2B.3	A perennial rhizomatous herb found in rocky, mesic sites associated with meadow and seeps from 1,980 to 3,415 meters above msl. Reproduces from June to September (CNPS 2023).	May occur. This species is known to occur in Tuolumne County. A site-specific analysis will be required to determine its potential to occur within the project footprint of the proposed broadband infrastructure.

Species Name/ Common Name ¹	Status ²	Habitat, Ecology and Life History	Potential to Occur
<i>Botrychium paradoxum</i> paradox moonwort	--/--/2B.1	A perennial rhizomatous herb found in limestone and marble alpine boulder and rock fields, and moist upper montane coniferous forest from 1740 – 4200 meters above msl. Reproduces in August (CNPS 2023)	May occur. This species is known to occur in Tuolumne County. A site-specific analysis will be required to determine its potential to occur within the project footprint of the proposed broadband infrastructure.
<i>Botrychium pedunculosum</i> stalked moonwort	--/--/2B.1	A perennial rhizomatous herb found on granitic, volcanic, and andesitic soils in meadows, seeps, and upper montane coniferous forests. Known from a single occurrence in California in Tuolumne County. Reproduces in August (CNPS 2023).	May occur. This species is known to occur in Tuolumne County. A site-specific analysis will be required to determine its potential to occur within the project footprint of the proposed broadband infrastructure.
<i>Botrychium pinnatum</i> northwestern moonwort	--/--/2B.3	A perennial rhizomatous herb found in mesic sites within lower/upper montane coniferous forest and meadows/seeps from 1,770 to 2,040 meters above msl. Reproduces from July to October (CNPS 2023).	May occur. This species is known to occur in Tuolumne County. A site-specific analysis will be required to determine its potential to occur within the project footprint of the proposed broadband infrastructure.
<i>Botrychium yaaxudakeit</i> giant moonwort	--/--/2B.1	A perennial rhizomatous herb found on limestone and marble soils in meadows in alpine boulder and rock fields. Known only from Virginia Canyon in Yosemite NP. Reproduces in August (CNPS 2023).	May occur. This species is known to occur in Tuolumne County. A site-specific analysis will be required to determine its potential to occur within the project footprint of the proposed broadband infrastructure.
<i>Brasenia schreberi</i> watershield	--/--/2B.3	A rhizomatous aquatic herb found in ponds and slow streams from 30 – 2,200 meters above msl. Blooms June to September (CNPS 2023).	May occur. This species is known to occur in Tuolumne County. A site-specific analysis will be required to determine its potential to occur within the project footprint of the proposed broadband infrastructure.
<i>Brodiaea pallida</i> Chinese Camp brodiaea	FT/SE/1B.1	A perennial bulbiferous herb found in vernal streambeds in cismontane woodland and valley and foothill grassland from 165 – 385 meters above msl, often on serpentine soils. Known from only 5 extant locations near Chinese Camp and Tulloch Reservoir. Blooms May – June (CNPS 2023).	May occur. This species is known to occur in Tuolumne County. A site-specific analysis will be required to determine its potential to occur within the project footprint of the proposed broadband infrastructure.

Species Name/ Common Name ¹	Status ²	Habitat, Ecology and Life History	Potential to Occur
<i>Camissonia lacustris</i> grassland suncup	--/--/1B.2	An annual herb found in gravelly substrates, derived either from granite or serpentinite, within chaparral, cismontane woodland, lower montane coniferous forest, and valley and foothill grassland from 180 – 1,220 meters above msl (CNPS 2023). Blooms March – June (CNPS 2023).	May occur. This species is known to occur in Tuolumne County. A site-specific analysis will be required to determine its potential to occur within the project footprint of the proposed broadband infrastructure.
<i>Camissonia sierrae</i> ssp. <i>alticola</i> Mono Hot Springs evening-primrose	--/--/1B.2	An annual herb found on granitic gravel and sand pans in lower montane coniferous forests and upper montane coniferous forests from 1,035 – 2,410 meters above msl. Blooms May – August (CNPS 2023)	May occur. This species is known to occur in Tuolumne County. A site-specific analysis will be required to determine its potential to occur within the project footprint of the proposed broadband infrastructure.
<i>Carex davyi</i> Davy's sedge	--/--/1B.3	A perennial herb found in subalpine coniferous forest and upper montane coniferous forest from 1,500 – 3,200 meters above msl. Blooms May – August (CNPS 2023).	May occur. This species is known to occur in Tuolumne County. A site-specific analysis will be required to determine its potential to occur within the project footprint of the proposed broadband infrastructure.
<i>Carex limosa</i> mud sedge	--/--/2B.2	A perennial rhizomatous herb found in bogs, fens, meadows, seeps, marshes, swamps in lower- and upper montane coniferous forest from 1,200 – 2,700 meters above msl. Blooms June – August (CNPS 2023).	May occur. This species is known to occur in Tuolumne County. A site-specific analysis will be required to determine its potential to occur within the project footprint of the proposed broadband infrastructure.
<i>Carex praticola</i> northern meadow sedge	--/--/2B.2	A perennial herb found in mesic meadows and seeps from 0 – 3,200 meters above msl. Blooms May – July (CNPS 2023).	May occur. This species is known to occur in Tuolumne County. A site-specific analysis will be required to determine its potential to occur within the project footprint of the proposed broadband infrastructure.
<i>Carex scirpoidea</i> ssp. <i>pseudoscirpoidea</i> western single-spiked sedge	--/--/2B.2	A perennial rhizomatous herb found in mesic, often carbonate, microsites in alpine boulder and rock fields, subalpine coniferous forest, meadows, and seeps from 2,990 – 3,700 meters above msl. Blooms July and September (CNPS 2023).	May occur. This species is known to occur in Tuolumne County. A site-specific analysis will be required to determine its potential to occur within the project footprint of the proposed broadband infrastructure.

Species Name/ Common Name ¹	Status ²	Habitat, Ecology and Life History	Potential to Occur
<i>Carex tiogana</i> Tioga Pass sedge	--/--/1B.3	A perennial herb found on mesic soils in meadows and seeps around lake margins from 3,100 – 3,300 meters above msl. Bloom July – August (CNPS 2023).	May occur. This species is known to occur in Tuolumne County. A site-specific analysis will be required to determine its potential to occur within the project footprint of the proposed broadband infrastructure.
<i>Carex viridula</i> ssp. <i>viridula</i> green yellow sedge	--/--/2B.3	A perennial herb found in bogs, fens, freshwater marshes and swamps, and mesic North Coast coniferous forests from 0 – 1,600 meters above msl. Blooms (June) July – September (November) (CNPS 2023).	May occur. This species is known to occur in Tuolumne County. A site-specific analysis will be required to determine its potential to occur within the project footprint of the proposed broadband infrastructure.
<i>Castilleja campestris</i> ssp. <i>succulenta</i> fleshy owl's-clover	FT/SE/1B.2	An annual herb found in vernal pools from 50 – 750 meters elevation. Blooms (March) April – May (CNPS 2023).	May occur. There is Critical Habitat for this species mapped by the USFWS along the border of Tuolumne and Stanislaus Counties, therefore there is potential that this species may occur within Tuolumne County. A site-specific analysis will be required to determine its potential to occur within the project footprint of the proposed broadband infrastructure.
<i>Chaenactis douglasii</i> var. <i>alpina</i> alpine dusty maidens	--/--/2B.3	A perennial herb found in alpine boulder and rock fields from 2,865 – 3,400 meters above msl. Blooms July – September (CNPS 2023).	May occur. This species is known to occur in Tuolumne County. A site-specific analysis will be required to determine its potential to occur within the project footprint of the proposed broadband infrastructure.
<i>Chlorogalum grandiflorum</i> Red Hills soaproot	--/--/1B.2	A perennial bulbiferous herb found on serpentine and gabbroic soils in lower montane coniferous forest, cismontane woodland and chaparral from 245 – 1,690 meters above msl. Blooms April – May (CNPS 2023).	May occur. This species is known to occur in Tuolumne County. A site-specific analysis will be required to determine its potential to occur within the project footprint of the proposed broadband infrastructure.
<i>Clarkia australis</i> Small's southern clarkia	--/--/1B.2	An annual herb found in cismontane woodland and lower montane coniferous forest from 800 – 2,075 meters above msl. Blooms May – August (CNPS 2023).	May occur. This species is known to occur in Tuolumne County. A site-specific analysis will be required to determine its potential to occur within the project footprint of the proposed broadband infrastructure.

Species Name/ Common Name ¹	Status ²	Habitat, Ecology and Life History	Potential to Occur
<i>Clarkia biloba ssp. australis</i> Mariposa clarkia	--/--/1B.2	An annual herb found on substrates derived from serpentinite within chaparral and cismontane woodland from 300 to 1,460 meters above msl. Blooms April – July (CNPS 2023).	This species is known to occur in Tuolumne County. A site-specific analysis will be required to determine its potential to occur within the project footprint of the proposed broadband infrastructure.
<i>Clarkia rostrata</i> beaked clarkia	--/--/1B.3	An annual herb found in cismontane woodland and valley and foothill grassland from 60 – 500 meters above msl. Blooms April – May (CNPS 2023).	May occur. This species is known to occur in Tuolumne County. A site-specific analysis will be required to determine its potential to occur within the project footprint of the proposed broadband infrastructure.
<i>Claytonia crawfordii</i> Crawford’s spring beauty	--/--/1B.2	A perennial herb found on rocky, volcanic substrates within openings in upper montane coniferous forest from 1,540 to 1,920 meters above msl. Blooms April – May (CNPS 2023).	May occur. This species is known to occur in Tuolumne County. A site-specific analysis will be required to determine its potential to occur within the project footprint of the proposed broadband infrastructure.
<i>Claytonia megarhiza</i> fell-fields claytonia	--/--/2B.3	A perennial herb found in alpine boulder and rock fields, as well as gravelly/rocky areas within subalpine coniferous forest, from 2,600 to 3,532 meters above msl. Blooms July – September (CNPS 2023).	May occur. This species is known to occur in Tuolumne County. A site-specific analysis will be required to determine its potential to occur within the project footprint of the proposed broadband infrastructure.
<i>Cryptantha mariposae</i> Mariposa cryptantha	--/--/1B.3	An annual herb found only on rocky serpentine soils in chaparral from 200 – 650 meters above msl. Blooms April – June (CNPS 2023).	May occur. This species is known to occur in Tuolumne County. A site-specific analysis will be required to determine its potential to occur within the project footprint of the proposed broadband infrastructure.
<i>Cryptantha spithamaea</i> Red Hills cryptantha	--/--/1B.3	An annual herb found on serpentine soils in streambeds and openings in cismontane woodland and chaparral from 275 – 460 meters above msl. Known from only 6 extant locations. Blooms April – May (CNPS 2023).	May occur. This species is known to occur in Tuolumne County. A site-specific analysis will be required to determine its potential to occur within the project footprint of the proposed broadband infrastructure.

Species Name/ Common Name ¹	Status ²	Habitat, Ecology and Life History	Potential to Occur
<i>Cuscuta jepsonii</i> Jepson's dodder	--/--/1B.2	A parasitic annual vine found in broadleaf upland forests, and upper and lower montane coniferous forests from 1,200 – 2,300 meters above msl. Host species are <i>Ceanothus diversifolius</i> and <i>C. prostratus</i> . A synonym of <i>C. indecora</i> var. <i>indecora</i> in TJM (1993). Blooms (June) July – September (CNPS 2023).	May occur. This species is known to occur in Tuolumne County. A site-specific analysis will be required to determine its potential to occur within the project footprint of the proposed broadband infrastructure.
<i>Dermatocarpon meiophylizum</i> silverskin lichen	--/--/2B.3	An aquatic, foliose lichen found along rocky streambanks/lake margins within coastal prairie, lower/upper montane coniferous forest, subalpine coniferous forest, and North Coast coniferous forest from 295 to 3,495 meters above msl (CNPS 2023).	May occur. This species is known to occur in Tuolumne County. A site-specific analysis will be required to determine its potential to occur within the project footprint of the proposed broadband infrastructure.
<i>Diplacus pulchellus</i> yellow-lip pansy monkeyflower	--/--/1B.2	An annual herb found in vernal mesic, often disturbed areas of clay soils in meadows, seeps, and lower montane coniferous forest from 600 – 2,000 meters above msl. Blooms April – July (CNPS 2023).	May occur. This species is known to occur in Tuolumne County. A site-specific analysis will be required to determine its potential to occur within the project footprint of the proposed broadband infrastructure.
<i>Draba asterophora</i> var. <i>asterophora</i> Tahoe draba	--/--/1B.2	A perennial herb found in alpine boulder and rock field, and subalpine coniferous forest from 2,500 – 3,505 meters above msl. Blooms July – August (September) (CNPS 2023).	May occur. This species is known to occur in Tuolumne County. A site-specific analysis will be required to determine its potential to occur within the project footprint of the proposed broadband infrastructure.
<i>Draba praealta</i> tall draba	--/--/2B.3	A perennial herb found on mesic soils in meadows and seeps from 2,500 – 3,415 meters above msl. Blooms July – August (CNPS 2023)	May occur. This species is known to occur in Tuolumne County. A site-specific analysis will be required to determine its potential to occur within the project footprint of the proposed broadband infrastructure.
<i>Elodium blandowii</i> Blandow's bog moss	--/--/2B.2	A moss found in damp soil in meadows and seeps, and subalpine coniferous forest from 1,862 – 2,700 meters above msl. (CNPS 2023)	May occur. This species is known to occur in Tuolumne County. A site-specific analysis will be required to determine its potential to occur within the project footprint of the proposed broadband infrastructure.

Species Name/ Common Name ¹	Status ²	Habitat, Ecology and Life History	Potential to Occur
<i>Eriogonum luteolum</i> var. <i>saltuarium</i> Jack's wild buckwheat	--/--/1B.2	An annual herb found on sandy granitic soils in Great Basin scrub and upper montane coniferous forest from 1,700 – 2,400 meters above msl. Blooms July – September (CNPS 2023).	May occur. This species is known to occur in Tuolumne County. A site-specific analysis will be required to determine its potential to occur within the project footprint of the proposed broadband infrastructure.
<i>Eriophyllum nubigenum</i> Yosemite woolly sunflower	--/--/1B.3	An annual herb on gravelly and granitic soil in chaparral, lower and upper montane coniferous forests from 1,525 – 2,750 meters above msl. Blooms May – August (CNPS 2023).	May occur. This species is known to occur in Tuolumne County. A site-specific analysis will be required to determine its potential to occur within the project footprint of the proposed broadband infrastructure.
<i>Eryngium pinnatisectum</i> Tuolumne button-celery	--/--/1B.2	An annual/perennial herb found in vernal pools in cismontane woodland and lower montane coniferous forest from 70 – 915 meters above msl. Blooms May – August (CNPS 2023).	May occur. This species is known to occur in Tuolumne County. A site-specific analysis will be required to determine its potential to occur within the project footprint of the proposed broadband infrastructure.
<i>Eryngium spinosepalum</i> spiny-sepaled button-celery	--/--/1B.2	An annual/perennial herb found in valley and foothill grassland and vernal pools from 80 – 975 meters above msl. Blooms April – June (CNPS 2023).	May occur. This species is known to occur in Tuolumne County. A site-specific analysis will be required to determine its potential to occur within the project footprint of the proposed broadband infrastructure.
<i>Erythranthe filicaulis</i> slender-stemmed monkeyflower	--/--/1B.2	An annual herb found in vernal mesic cismontane woodland, meadows and seeps, and lower- and upper montane coniferous forest from 900 – 1,750 meters above msl. Blooms April – August (CNPS 2023).	May occur. This species is known to occur in Tuolumne County. A site-specific analysis will be required to determine its potential to occur within the project footprint of the proposed broadband infrastructure.
<i>Erythranthe marmorata</i> Stanislaus monkeyflower	--/--/1B.1	An annual herb found in cismontane woodland and lower montane coniferous forest from 100 – 900 meters above msl. Blooms March – May (CNPS 2023).	May occur. This species is known to occur in Tuolumne County. A site-specific analysis will be required to determine its potential to occur within the project footprint of the proposed broadband infrastructure.

Species Name/ Common Name ¹	Status ²	Habitat, Ecology and Life History	Potential to Occur
<i>Erythronium taylorii</i> Pilot Ridge fawn lily	--/--/1B.2	A perennial bulbiferous herb found on metamorphic, rocky cliffs in lower montane coniferous forests from 1,340 – 1,400 meters above msl. Known only from the type locality near Pilot Ridge. Blooms April – May (CNPS 2023).	May occur. This species is known to occur in Tuolumne County. A site-specific analysis will be required to determine its potential to occur within the project footprint of the proposed broadband infrastructure.
<i>Erythronium tuolumnense</i> Tuolumne fawn lily	--/--/1B.2	A perennial bulbiferous herb in broad-leaved upland forest, chaparral, cismontane woodland, and lower montane coniferous forest from 510 – 1,365 meters above msl. Blooms March – June (CNPS 2023).	May occur. This species is known to occur in Tuolumne County. A site-specific analysis will be required to determine its potential to occur within the project footprint of the proposed broadband infrastructure.
<i>Euphorbia (=Chamaesyce) hooveri</i> Hoover's spurge	FT/--/1B.2	An annual herb found in vernal pools from 25 to 250 meters above msl. Currently known to occur in Butte, Colusa, Glenn, Merced, Stanislaus, Tehama, and Tulare counties. Blooms July through September (occasionally October) (CNPS 2023).	May occur. There is Critical Habitat for this species mapped by the USFWS along the border of Tuolumne and Stanislaus Counties, therefore there is potential that this species may occur within Tuolumne County. A site-specific analysis will be required to determine its potential to occur within the project footprint of the proposed broadband infrastructure.
<i>Festuca minutiflora</i> small-flowered fescue	--/--/2B.3	A perennial herb found in alpine boulder and rock fields from 3,200 – 4,050 meters above msl. Blooms in July (CNPS 2023).	May occur. This species is known to occur in Tuolumne County. A site-specific analysis will be required to determine its potential to occur within the project footprint of the proposed broadband infrastructure.
<i>Gilmania luteola</i> golden-carpet gilmania	--/--/1B.3	An annual herb found in chenopod scrub (alkaline barrens) from -15 – 610 meters above msl. Blooms (February) March – April (CNPS 2023).	May occur. This species is known to occur in Tuolumne County. A site-specific analysis will be required to determine its potential to occur within the project footprint of the proposed broadband infrastructure.
<i>Githopsis tenella</i> delicate bluecup	--/--/1B.3	An annual herb found in on mesic serpentine soils in chaparral and cismontane woodlands from 325 – 1,900 meters above msl. Blooms April – June (CNPS 2023).	May occur. This species is known to occur in Tuolumne County. A site-specific analysis will be required to determine its potential to occur within the project footprint of the proposed broadband infrastructure.

Species Name/ Common Name ¹	Status ²	Habitat, Ecology and Life History	Potential to Occur
<i>Horkelia parryi</i> Parry's horkelia	--/--/1B.2	A perennial herb found in chaparral and cismontane woodland on lone formation soils and other soils from 80 – 1,070 meters above msl. Blooms April – September (CNPS 2023).	May occur. This species is known to occur in Tuolumne County. A site-specific analysis will be required to determine its potential to occur within the project footprint of the proposed broadband infrastructure.
<i>Hulsea brevifolia</i> short-leaved hulsea	--/--/1B.2	A perennial herb on granitic, volcanic or sandy soil in lower montane coniferous forest, and upper montane coniferous forest from 1,500 – 3,200 meters above msl. Blooms May – August (CNPS 2023).	May occur. This species is known to occur in Tuolumne County. A site-specific analysis will be required to determine its potential to occur within the project footprint of the proposed broadband infrastructure.
<i>Iris hartwegii</i> ssp. <i>columbiana</i> Tuolumne iris	--/--/1B.2	A perennial rhizomatous herb found in cismontane woodland and lower montane coniferous forest from 425 – 1,400 meters above msl. Currently known from only 3 extant locations in Calaveras and Tuolumne Counties. Blooms May – June (CNPS 2023).	May occur. This species is known to occur in Tuolumne County. A site-specific analysis will be required to determine its potential to occur within the project footprint of the proposed broadband infrastructure.
<i>Lewinskya holzingeri</i> Holzinger's bristle moss	--/--/1B.3	A moss found in cismontane woodland, lower/upper montane coniferous forest, and pinyon and juniper woodland from 715 to 1,800 meters above msl (CNPS 2023).	May occur. This species is known to occur in Tuolumne County. A site-specific analysis will be required to determine its potential to occur within the project footprint of the proposed broadband infrastructure.
<i>Lomatium congdonii</i> Congdon's lomatium	--/--/1B.2	A perennial herb found on serpentine soils in chaparral and cismontane woodlands from 300 – 2,100 meters above msl. Blooms March – June (CNPS 2023).	May occur. This species is known to occur in Tuolumne County. A site-specific analysis will be required to determine its potential to occur within the project footprint of the proposed broadband infrastructure.
<i>Lomatium stebbinsii</i> Stebbins' lomatium	--/--/1B.1	A perennial herb found on gravelly, volcanic clay soils in chaparral and cismontane woodlands from 1,245 – 2,375 meters above msl. Blooms March – May (CNPS 2023).	May occur. This species is known to occur in Tuolumne County. A site-specific analysis will be required to determine its potential to occur within the project footprint of the proposed broadband infrastructure.

Species Name/ Common Name ¹	Status ²	Habitat, Ecology and Life History	Potential to Occur
<i>Lupinus gracilentus</i> slender lupine	--/--/1B.3	A perennial herb found in subalpine coniferous forest from 2,500 – 3,500 meters above msl. Blooms July – August (CNPS 2023).	May occur. This species is known to occur in Tuolumne County. A site-specific analysis will be required to determine its potential to occur within the project footprint of the proposed broadband infrastructure.
<i>Lupinus spectabilis</i> shaggyhair lupine	--/--/1B.2	An annual herb in serpentinite soils in chaparral and cismontane woodlands from 260 – 825 meters above msl. Blooms April – May (CNPS 2023).	May occur. This species is known to occur in Tuolumne County. A site-specific analysis will be required to determine its potential to occur within the project footprint of the proposed broadband infrastructure.
<i>Meesia longiseta</i> long seta hump moss	--/--/2B.3	A moss found on carbonate soils in bogs, fens, meadows, seeps, and upper montane coniferous forests from 1,750 – 3,045 meters above msl. No bloom period (CNPS 2023).	May occur. This species is known to occur in Tuolumne County. A site-specific analysis will be required to determine its potential to occur within the project footprint of the proposed broadband infrastructure.
<i>Monardella venosa</i> veiny monardella	--/--/1B.1	An annual herb found on heavy clay soils in cismontane woodland and valley and foothill grassland from 60 – 410 meters above msl. Previously thought extinct until rediscovered in 1992; currently known from 2 extant locations. Blooms May – July (CNPS 2023).	May occur. This species is known to occur in Tuolumne County. A site-specific analysis will be required to determine its potential to occur within the project footprint of the proposed broadband infrastructure.
<i>Navarretia miwukensis</i> Mi-Wuk navarretia	--/--/1B.2	An annual herb found lower montane coniferous forests in openings from 800 – 1500 meters above msl. Blooms May – June (July) (CNPS 2023).	May occur. This species is known to occur in Tuolumne County. A site-specific analysis will be required to determine its potential to occur within the project footprint of the proposed broadband infrastructure.
<i>Navarretia paradoxiclara</i> Patterson’s navarretia	--/--/1B.3	An annual herb found in drainages, openings, vernal mesic sites and serpentine soils from 150 – 430 meters above msl. Blooms April – July (CNPS 2023).	May occur. This species is known to occur in Tuolumne County. A site-specific analysis will be required to determine its potential to occur within the project footprint of the proposed broadband infrastructure.

Species Name/ Common Name ¹	Status ²	Habitat, Ecology and Life History	Potential to Occur
<i>Neostaphia colusana</i> Colusa grass	FT/SE/1B.1	An annual herb found in the bottoms of large, deep vernal pools, typically on adobe substrate, from 5 to 200 meters above msl. Blooms May – August (CNPS 2023).	May occur. There is Critical Habitat for this species mapped by the USFWS along the border of Tuolumne and Stanislaus Counties, therefore there is potential that this species may occur within Tuolumne County. A site-specific analysis will be required to determine its potential to occur within the project footprint of the proposed broadband infrastructure.
<i>Orcuttia pilosa</i> Hairy Orcutt	FE/SE/1B.1	An annual herb found in vernal pools from 46 – 200 meters above msl. Blooms May – September (CNPS 2023).	May occur. There is Critical Habitat for this species mapped by the USFWS along the border of Tuolumne and Stanislaus Counties, therefore there is potential that this species may occur within Tuolumne County. A site-specific analysis will be required to determine its potential to occur within the project footprint of the proposed broadband infrastructure.
<i>Oreocarya cymophila</i> subalpine cryptantha	--/--/1B.3	A perennial herb found on rocky carbonate soils in subalpine coniferous forest 2,440 – 3,230 meters above msl. Known only from the Mazourka Peak area in the Inyo Mountains. Blooms June – July (CNPS 2023).	May occur. This species is known to occur in Tuolumne County. A site-specific analysis will be required to determine its potential to occur within the project footprint of the proposed broadband infrastructure.
<i>Packera layneae</i> Layne’s ragwort	FT/SR/1B.2	An annual herb found on serpentine, rocky, or gabbroic soils in chaparral and cismontane woodlands from 200 – 1,085 meters above msl. Blooms April – August (CNPS 2023).	May occur. This species is known to occur in Tuolumne County. A site-specific analysis will be required to determine its potential to occur within the project footprint of the proposed broadband infrastructure.
<i>Pinus albicaulis</i> whitebark pine	FT/--/--	A tree found in upper red fir coniferous forest and subalpine forests to timberline from 2,000 – 3,700 meters above msl (CNPS 2023).	May occur. This species is known to occur in Tuolumne County. A site-specific analysis will be required to determine its potential to occur within the project footprint of the proposed broadband infrastructure.

Species Name/ Common Name ¹	Status ²	Habitat, Ecology and Life History	Potential to Occur
<i>Plagiobothrys torreyi</i> var. <i>torreyi</i> Yosemite popcornflower	--/--/1B.2	An annual herb found in lower montane coniferous forests, meadows and seeps from 1,200 – 1,370 meters above msl. Known only from the Yosemite Valley. Blooms April – June (CNPS 2023).	May occur. This species is known to occur in Tuolumne County. A site-specific analysis will be required to determine its potential to occur within the project footprint of the proposed broadband infrastructure.
<i>Pohlia tundrae</i> tundra thread moss	--/--/2B.3	A moss found on gravelly, damp soil in alpine boulder and rock fields from 2,700 – 3,000 meters above msl. No blooming period (CNPS 2023).	May occur. This species is known to occur in Tuolumne County. A site-specific analysis will be required to determine its potential to occur within the project footprint of the proposed broadband infrastructure.
<i>Potamogeton epihydrus</i> Nuttall's ribbon-leaved pondweed	--/--/2B.2	An aquatic herb found in assorted shallow freshwater habitats from 369 – 2,172 meters above msl. Blooms (June) July – September (CNPS 2023).	May occur. This species is known to occur in Tuolumne County. A site-specific analysis will be required to determine its potential to occur within the project footprint of the proposed broadband infrastructure.
<i>Potamogeton robbinsii</i> Robbins' pondweed	--/--/2B.3	A perennial, aquatic rhizomatous herb found in deep water, lakes, marshes, and swamps from 1,530 – 3,300 meters above msl. Blooms July – August (CNPS 2023).	May occur. This species is known to occur in Tuolumne County. A site-specific analysis will be required to determine its potential to occur within the project footprint of the proposed broadband infrastructure.
<i>Pseudobahia bahiifolia</i> Hartweg's golden sunburst	FE/SE/1B.1	An annual herb in acidic clay soils in cismontane woodlands and valley and foothill grassland from 15 – 150 meters above msl. Blooms March – April (CNPS 2023).	May occur. This species is known to occur in Tuolumne County. A site-specific analysis will be required to determine its potential to occur within the project footprint of the proposed broadband infrastructure.
<i>Rhynchospora alba</i> white beaked-rush	--/--/2B.2	A perennial rhizomatous herb found in bogs and fens, and marshes and swamps from 60 – 2,040 meters above msl. Blooms July – August (CNPS 2023).	May occur. This species is known to occur in Tuolumne County. A site-specific analysis will be required to determine its potential to occur within the project footprint of the proposed broadband infrastructure.
<i>Rhynchospora capitellata</i> brownish beaked-rush	--/--/2B.2	A perennial herb found in mesic microsites in lower- and upper montane coniferous forest, meadows, seeps, marshes, and swamps from 45 – 2,000 meters above msl. Blooms July – August (2023).	May occur. This species is known to occur in Tuolumne County. A site-specific analysis will be required to determine its potential to occur within the project footprint of the proposed broadband infrastructure.

Species Name/ Common Name ¹	Status ²	Habitat, Ecology and Life History	Potential to Occur
<i>Sabulina stricta</i> bog sandwort	--/--/2B.3	A perennial herb found in alpine boulder and rock fields, alpine dwarf scrub, and meadows, and seeps from 2,440 – 3,960 meters above msl. Blooms July – September (CNPS 2023).	May occur. This species is known to occur in Tuolumne County. A site-specific analysis will be required to determine its potential to occur within the project footprint of the proposed broadband infrastructure.
<i>Salix nivalis</i> snow willow	--/--/2B.3	A perennial deciduous shrub found in alpine dwarf scrub from 3,100 – 3,500 meters above msl. A synonym of <i>S. reticulata</i> ssp. <i>nivalis</i> in The Jepson Manual. Blooms July – August (CNPS 2023).	May occur. This species is known to occur in Tuolumne County. A site-specific analysis will be required to determine its potential to occur within the project footprint of the proposed broadband infrastructure.
<i>Schoenoplectus subterminalis</i> water bulrush	--/--/2B.3	A perennial rhizomatous aquatic herb found in bogs, fens, and montane lake margins from 750 – 2,250 meters above msl. Blooms June – August (September) (CNPS 2023).	May occur. This species is known to occur in Tuolumne County. A site-specific analysis will be required to determine its potential to occur within the project footprint of the proposed broadband infrastructure.
<i>Scytinium siskiyouense</i> Siskiyou jellyskin lichen	--/--/1B.1	A foliose lichen found in lower montane coniferous forest and North Coast coniferous forest from 635 to 1,460 meters above msl (CNPS 2023).	May occur. This species is known to occur in Tuolumne County. A site-specific analysis will be required to determine its potential to occur within the project footprint of the proposed broadband infrastructure.
<i>Senecio clevelandii</i> var. <i>heterophyllus</i> Red Hills ragwort	--/--/1B.2	A perennial herb in serpentinite seeps in cismontane woodlands from 260 – 385 meters above msl. Blooms May – July (CNPS 2023).	May occur. This species is known to occur in Tuolumne County. A site-specific analysis will be required to determine its potential to occur within the project footprint of the proposed broadband infrastructure.
<i>Silene oregana</i> Oregon campion	--/--/2B.2	A perennial herb found in Great Basin scrub and subalpine coniferous forests from 1,500 – 2,500 meters above msl. Blooms July – September (CNPS 2023).	May occur. This species is known to occur in Tuolumne County. A site-specific analysis will be required to determine its potential to occur within the project footprint of the proposed broadband infrastructure.
<i>Streptanthus oliganthus</i> Masonic Mountain jewelflower	--/--/1B.2	A perennial herb found on rocky volcanic or granitic rocky soils in pinyon-juniper woodland from 1,980 – 3,050 meters above msl. Blooms June – July (CNPS 2023).	May occur. This species is known to occur in Tuolumne County. A site-specific analysis will be required to determine its potential to occur within the project footprint of the proposed broadband infrastructure.

Species Name/ Common Name ¹	Status ²	Habitat, Ecology and Life History	Potential to Occur
<i>Triglochin palustris</i> marsh arrow-grass	--/--/2B.3	A perennial rhizomatous herb found in mesic microsites in meadows, seeps, marshes, and subalpine coniferous forests, and freshwater marshes and swamps from 2,285 – 3,700 meters above msl. Blooms July – August (CNPS 2023).	May occur. This species is known to occur in Tuolumne County. A site-specific analysis will be required to determine its potential to occur within the project footprint of the proposed broadband infrastructure.
<i>Tuctoria greenei</i> Greene’s tuctoria	FE/SR/1B.1	An annual herb found in vernal pools from 30 to 1,070 meters above msl. Blooms May – July (September) (CNPS 2023).	May occur. There is Critical Habitat for this species mapped by the USFWS along the border of Tuolumne and Stanislaus Counties, therefore there is potential that this species may occur within Tuolumne County. A site-specific analysis will be required to determine its potential to occur within the project footprint of the proposed broadband infrastructure.
<i>Verbena californica</i> Red Hills vervain	FT/ST/1B.1	A perennial herb found in cismontane woodland and valley/foothill grassland, usually in mesic sites associated with serpentinite, from 260 to 400 meters above msl. Blooms May – September (CNPS 2023).	May occur. This species is known to occur in Tuolumne County. A site-specific analysis will be required to determine its potential to occur within the project footprint of the proposed broadband infrastructure.
Wildlife			
Crustaceans			
<i>Branchinecta conservatio</i> conservancy fairy shrimp	FE/--/--	Occupies large clay bottomed vernal pools to vernal lakes with turbid water in grasslands. The historical distribution of this species is unknown, and it is currently distributed throughout the Central Valley and southern coastal regions of California (USFWS 2005).	Will not occur. Tuolumne County is outside of the known range of this species.

Species Name/ Common Name ¹	Status ²	Habitat, Ecology and Life History	Potential to Occur
<i>Branchinecta lynchi</i> vernal pool fairy shrimp	FT/--/--	Vernal pools ranging from small, clear, sandstone rock pools to large, turbid, alkaline, grassland valley floor pools. It is most frequently found in pools measuring less than 0.05 acre, although has been collected from vernal pools exceeding 25 acres. The known range within California includes the Central Valley and southern California (USFWS 2005).	May occur. This species is known to occur in Tuolumne County. A site-specific analysis will be required to determine its potential to occur within the project footprint of the proposed broadband infrastructure.
<i>Lepidurus packardii</i> vernal pool tadpole shrimp	FE/--/--	Vernal pools from 54 square feet to 89 acres, containing clear- to highly-turbid water. Its known range is within the Central Valley of California and in the San Francisco Bay area (USFWS 2005).	May occur. This species is known to occur near the border of Tuolumne and Stanislaus Counties outside of Knights Ferry. A site-specific analysis will be required to determine its potential to occur within the project footprint of the proposed broadband infrastructure.
Insects			
<i>Bombus crotchii</i> Crotch bumble bee	--/SCE/--	Crotch bumble bee occurs in grassland and scrub habitats (CDFW 2019). New colonies are initiated by solitary queens, generally in the early spring, which typically occupy abandoned rodent burrows (CDFW 2019). This species is a generalist forager and has been reported visiting a wide variety of flowering plants. A short-tongued bumble bee; food plants include <i>Asclepias</i> spp., <i>Antirrhinum</i> spp., <i>Clarkia</i> spp., <i>Eschscholzia</i> spp., <i>Eriogonum</i> spp., <i>Chaenactis</i> spp., <i>Lupinus</i> spp., <i>Medicago</i> spp., <i>Phacelia</i> spp., and <i>Salvia</i> spp. (Koch et al. 2012). The flight period for queens in California is from February to October. New queens hibernate over the winter and initiate a new colony the following spring (CDFW 2019). Rare throughout its range and in decline in the Central Valley and southern California (CDFW 2019).	May occur. This species is known to occur in Tuolumne County. A site-specific analysis will be required to determine its potential to occur within the project footprint of the proposed broadband infrastructure.

Species Name/ Common Name ¹	Status ²	Habitat, Ecology and Life History	Potential to Occur
<p><i>Bombus occidentalis</i> Western bumble bee</p>	<p>--/SCE/--</p>	<p>Bumble bees are primitively eusocial insects that live in underground colonies made up of one queen, female workers, and reproductive members of the colony. New colonies are initiated by solitary queens, generally in the early spring, which typically occupy abandoned rodent burrows (Thorp <i>et al.</i> 1983). This species occurs in meadows and grasslands with an abundance of floral resources (CDFW 2019). This species is a generalist forager and have been reported visiting a wide variety of flowering plants. A short-tongued bumble bee; select food plants include <i>Melilotus</i> spp., <i>Cirsium</i> spp., <i>Trifolium</i> spp., <i>Centaurea</i> spp., <i>Eriogonum</i> spp., and <i>Chrysothamnus</i> spp. (Koch et al. 2012). This species has a short tongue and typically prefers open flowers with short corollas but is known to chew through the base of flowers with long corollas. The flight period for queens in California is from early February to late November, peaking in late June and late September. New queens hibernate over the winter and initiate a new colony the following spring (Thorp <i>et al.</i> 1983). Rare throughout its range and in decline west of the Sierra Nevada crest.</p>	<p>May occur. This species is known to occur in Tuolumne County. A site-specific analysis will be required to determine its potential to occur within the project footprint of the proposed broadband infrastructure.</p>

Species Name/ Common Name ¹	Status ²	Habitat, Ecology and Life History	Potential to Occur
<i>Danaus plexippus</i> pop. 1 monarch - California overwintering population	FCE/--/--	Overwintering populations of Monarch butterflies roost in wind protected tree groves, especially with Eucalyptus sp., and species of pine or cypress with nectar and water sources nearby. Winter roost sites extend along the coast from Mendocino County to Baja California. As caterpillars, monarchs feed exclusively on the leaves of milkweed (<i>Asclepias</i> sp.) (Nial et al. 2019 and USFWS 2020). Monarch butterfly migration routes pass east over the Sierra Nevada in the fall and back to the California coast in the spring (USFWS 2020). The overwintering population is located along the Coast while summer breeding areas occur in interior California and North America with spring breeding areas located further east (USFWS 2020).	May occur. This species is known to occur in Tuolumne County. A site-specific analysis will be required to determine its potential to occur within the project footprint of the proposed broadband infrastructure.
<i>Desmocerus californicus dimorphus</i> valley elderberry longhorn beetle	FT/--/--	Endemic to elderberry shrubs (<i>Sambucus</i> spp.) occurring in riparian habitat in the Sacramento and San Joaquin Valleys, riparian habitats in the Sacramento and San Joaquin Valleys, and less common throughout riparian forests of the Central Valley from Redding to Fresno County (USFWS 2014b) typically below 152 meters above msl (USFWS 2017a).	May occur. This species is known to occur in Tuolumne County. A site-specific analysis will be required to determine its potential to occur within the project footprint of the proposed broadband infrastructure.

Species Name/ Common Name ¹	Status ²	Habitat, Ecology and Life History	Potential to Occur
Fishes			
<i>Acipenser medirostris</i> pop. 1 green sturgeon – southern DPS	FT/--/--	Spawn in freshwater streams, in fast, deep water, over gravel, cobble, or boulders. Juveniles inhabit estuarine waters for 1-4 years until dispersing into coastal marine waters as adults. Adults return to spawn in fresh water every 6-10 years. Sacramento River watershed, including the Feather River, is the only known historical and present spawning areas for green sturgeon (NMFS 2018).	May occur. This species has been documented within the Stanislaus River and may occur within Tuolumne County, however the dams associated with Tulloch Reservoir function as complete barriers to fish passage (CDFW 2023). A site-specific analysis will be required to determine its potential to occur within the project footprint of the proposed broadband infrastructure.
<i>Hesperoleucus symmetricus serpentinus</i> Red Hills roach	--/--/SSC	Red Hills roach are similar to the San Joaquin roach, albeit with an extremely limited range along Six Bit Gulch and its tributaries near Don Pedro Reservoir (Moyle et al. 2015). This species is particularly well adapted to life in intermittent streams that dry up and form pools, however this subspecies of roach is especially vulnerable as a result of its limited range (Moyle et. al 2015).	May occur. This species is known to occur in Tuolumne County. A site-specific analysis will be required to determine its potential to occur within the project footprint of the proposed broadband infrastructure.
<i>Hesperoleucus symmetricus symmetricus</i> central California roach	--/--/SSC	Central California roach are found in mid-elevation small streams but may also occur in main channels of larger rivers. May occupy a wide-range of temperature and dissolved oxygen (DO) fluctuations from cold water to warm water habitats with DO as low as 1-2 parts per million (Moyle et. al 2015). This species is particularly well adapted to life in intermittent streams that dry up and form pools. Populations may become dense and isolated (Moyle et. al 2015).	May occur. This species is known to occur in Tuolumne County. A site-specific analysis will be required to determine its potential to occur within the project footprint of the proposed broadband infrastructure.

Species Name/ Common Name ¹	Status ²	Habitat, Ecology and Life History	Potential to Occur
<i>Oncorhynchus clarkii henshawi</i> Lahontan cutthroat trout	FT/--/--	Lahontan cutthroat trout are an inland trout species native to the Lahontan Basin, which includes a large portion of northern Nevada, the northern portion of the eastern Sierra Nevada mountains of California, and a small portion of southeastern Oregon (USFWS 2023). Inhabits cold waters of alpine lakes and streams. This species is sensitive to the presence of other salmonids and requires gravel riffles in streams for spawning.	May occur. Tuolumne County is outside of the native range of this species; however, it has previously been transplanted in alpine lakes within the county. A site-specific analysis will be required to determine its potential to occur within the project footprint of the proposed broadband infrastructure.
<i>Oncorhynchus clarkii seleniris</i> Paiute cutthroat trout	FT/--/--	Paiute cutthroat trout are an inland trout species native to Silver King Creek within the East Fork Carson River watershed in the Humboldt-Toiyabe National Forest, Alpine County, California. Outside of its native range, this species has been introduced into several other lakes and streams in California and has at least four self-sustaining populations that have been established outside the historic range, which includes North Fork Cottonwood Creek and Cabin Creek in Inyo County, Sharktooth Creek in Fresno County, and Stairway Creek in Madera County (USFWS 2004). Inhabits cold waters of alpine lakes and streams. This species is sensitive to the presence of other salmonids and requires gravel riffles in streams for spawning.	May occur. Tuolumne County is outside of the native range of this species; however, it has previously been transplanted in alpine lakes within the county. A site-specific analysis will be required to determine its potential to occur within the project footprint of the proposed broadband infrastructure.

Species Name/ Common Name ¹	Status ²	Habitat, Ecology and Life History	Potential to Occur
<i>Oncorhynchus mykiss irideus</i> pop. 11 steelhead – Central Valley DPS	FT/--/--	This distinct population segment includes all naturally spawned anadromous steelhead populations below natural and manmade impassable barriers in the Sacramento and San Joaquin Rivers and their tributaries, excluding steelhead from San Francisco and San Pablo Bays and their tributaries, as well as two artificial propagation programs: the Coleman NFH, and Feather River Hatchery steelhead hatchery programs (NMFS 2016). Steelhead spawn in rivers and streams with cool, clear, water and suitable silt free substrate (NMFS 2016).	May occur. This species has been documented within the Stanislaus River and may occur within Tuolumne County, however the dams associated with Tulloch Reservoir function as complete barriers to fish passage (CDFW 2023). A site-specific analysis will be required to determine its potential to occur within the project footprint of the proposed broadband infrastructure.
<i>Oncorhynchus tshawytscha</i> Central Valley chinook salmon spring-run ESU	FT/ST/--/--	Central Valley spring-run Chinook salmon spawn in rivers and streams with cool, clear, water and suitable cobble and gravel substrate. Historically occurred in all major rivers and tributaries of the Central Valley. Spawning is currently located in tributary streams of the Sacramento River (NMFS 2014). Immigration of adults through the Delta and lower Sacramento River occurs from March through September. Spawning occurs between late-August through October (NMFS 2014).	May occur. This species has been documented within the Stanislaus River and may occur within Tuolumne County, however the dams associated with Tulloch Reservoir function as complete barriers to fish passage (CDFW 2023). A site-specific analysis will be required to determine its potential to occur within the project footprint of the proposed broadband infrastructure.
Amphibians			
<i>Ambystoma macrodactylum sigillatum</i> southern long-toed salamander	--/--/SSC	Inhabits alpine meadows, high mountain ponds and lakes. Adults spend much of their lives underground, often utilizing the tunnels of burrowing mammals such as moles and ground squirrels (Stebbins and McGinnis 2012).	May occur. This species is known to occur in Tuolumne County. A site-specific analysis will be required to determine its potential to occur within the project footprint of the proposed broadband infrastructure.

Species Name/ Common Name ¹	Status ²	Habitat, Ecology and Life History	Potential to Occur
<p><i>Ambystoma californiense</i> pop. 1 California tiger salamander – central California DPS</p>	<p>FT/ST/WL</p>	<p>California tiger salamanders are generally restricted to vernal pools and seasonal ponds, including many constructed stock ponds, in grassland and oak savannah plant communities from sea level to about 1,500 feet in central California. This species spends the majority of its life in upland areas in the vicinity of suitable breeding ponds, where it inhabits rodent burrows. In order to provide suitable habitat for this species, suitable breeding habitat must be present in combination with suitable upland habitat. In the Coastal region, populations are scattered from Sonoma County in the northern San Francisco Bay Area to Santa Barbara County, and in the Central Valley and Sierra Nevada foothills from Yolo to Kern counties (USFWS 2017b).</p>	<p>May occur. This species is known to occur in Tuolumne County. A site-specific analysis will be required to determine its potential to occur within the project footprint of the proposed broadband infrastructure.</p>
<p><i>Anaxyrus canorus</i> Yosemite toad</p>	<p>FT/--/SSC</p>	<p>A high elevation toad that breeds in wet meadows and snowmelt pools from approximately 1,950 –3,400 meters above msl. This species has a maximum known upland movement of 1.09 miles from breeding ponds. In uplands, springheads and seeps are important upland habitats for this species. They also utilize ground cover, such as mammal burrows, logs, rocks (USFWS 2014a).</p>	<p>May occur. This species is known to occur in Tuolumne County. Additionally, there is Critical Habitat mapped within the County for this species by the USFWS. A site-specific analysis will be required to determine its potential to occur within the project footprint of the proposed broadband infrastructure.</p>

Species Name/ Common Name ¹	Status ²	Habitat, Ecology and Life History	Potential to Occur
<i>Hydromantes platycephalus</i> Mount Lyell salamander	--/--/WL	Inhabits massive rock areas in mixed conifer, red fir, lodgepole pine, and subalpine habitats from 1,260 – 3,640 meters above msl. This species only occurs in the Sierra Nevada range from Placer County south to Tulare County and an isolated population in Sierra County (Jennings and Hayes 1994).	May occur. This species is known to occur in Tuolumne County. A site-specific analysis will be required to determine its potential to occur within the project footprint of the proposed broadband infrastructure.
<i>Rana boylei</i> pop. 5 foothill yellow-legged frog – south Sierra DPS	FE/SE/--	The foothill yellow-legged frog occurs along the coast ranges from Oregon to Los Angeles and along the western side of the Sierra Nevada. This species uses perennial rocky streams in a wide variety of habitats up to 6,400 feet above msl. This species rarely ventures far from water, is usually found basking in the water, or under surface debris or underground within 165 feet of water. Eggs are laid in clusters attached to gravel or rocks along stream margins in flowing water. Tadpoles typically require up to four months to complete aquatic development. Breeding typically follows winter rainfall and snowmelt, which varies based upon location (Jennings and Hayes 1994).	May occur. This species is known to occur in Tuolumne County. A site-specific analysis will be required to determine its potential to occur within the project footprint of the proposed broadband infrastructure.

Species Name/ Common Name ¹	Status ²	Habitat, Ecology and Life History	Potential to Occur
<p><i>Rana draytonii</i> California red-legged frog</p>	<p>FT/--/SSC</p>	<p>The California red-legged frog occupies a distinct habitat, combining both specific aquatic and riparian components. The adults require dense, shrubby or emergent riparian vegetation closely associated with deep (greater than 2 1/3-foot deep) still or slow-moving water. The largest densities of California red-legged frogs are associated with deep-water pools with dense stands of overhanging willows (<i>Salix</i> spp.) and an intermixed fringe of cattails (<i>Typha latifolia</i>). Well-vegetated terrestrial areas within the riparian corridor may provide important sheltering habitat during winter. California red-legged frogs aestivate (enter a dormant state during summer or dry weather) in small mammal burrows and moist leaf litter. They have been found up to 100 feet from water in adjacent dense riparian vegetation. Studies have indicated that this species cannot inhabit water bodies that exceed 70° F, especially if there are no cool, deep portions (USFWS 2002a).</p>	<p>May occur. This species has previously been documented within Tuolumne County, which is within its current range. A site-specific analysis will be required to determine its potential to occur within the project footprint of the proposed broadband infrastructure.</p>
<p><i>Rana sierrae</i> Sierra Nevada yellow-legged frog</p>	<p>FE/ST/WL</p>	<p>A high elevation frog that requires permanent water bodies that do not freeze solid over winter, which may include lakes, streams, tarns, and perennial plunge pools in intermittent streams. Habitats include montane riparian, lodgepole pine, subalpine conifer, and wet meadow habitats from 1,370 – 3,650 meters above msl (Zeiner et al. 1990).</p>	<p>May occur. This species is known to occur in Tuolumne County. Additionally, there is Critical Habitat mapped within the County for this species by the USFWS. A site-specific analysis will be required to determine its potential to occur within the project footprint of the proposed broadband infrastructure.</p>

Species Name/ Common Name ¹	Status ²	Habitat, Ecology and Life History	Potential to Occur
Reptiles			
<i>Emys marmorata</i> western pond turtle	--/--/SSC	Turtle that typically inhabits slow-moving water with dense submerged vegetation, abundant basking sites, gently sloping banks, and dry clay or silt soils in nearby uplands. Turtles will lay eggs up to 400 meters from water, but typically go no more than 183 meters (Jennings and Hayes 1994).	May occur. This species is known to occur in Tuolumne County. A site-specific analysis will be required to determine its potential to occur within the project footprint of the proposed broadband infrastructure.
<i>Phrynosoma blainvillii</i> coast horned lizard	--/--/SSC	Occurs in the Coast Ranges, southwestern Sierra Nevada, Transverse and Peninsular Ranges, and the southern deserts. Requires sandy soils, chaparral vegetation, and native ant prey (Jennings and Hayes 1994).	May occur. This species is known to occur in Tuolumne County. A site-specific analysis will be required to determine its potential to occur within the project footprint of the proposed broadband infrastructure.
Birds			
<i>Accipiter cooperii</i> Cooper's hawk	--/--/WL	Nests in woodlands and urban trees. Preys on medium-sized birds and small mammals. Forages in open woodland and habitat edges (Zeiner et al. 1990).	May occur. This species is known to occur in Tuolumne County. A site-specific analysis will be required to determine its potential to occur within the project footprint of the proposed broadband infrastructure.
<i>Accipiter gentilis</i> Northern goshawk	--/--/SSC	Nests and forages in mature and old-growth forest stands in a broad range of conifer and coniferous hardwood types, including Pacific Ponderosa, Jeffrey and lodgepole pine, mixed conifer, firs, and pinyon-juniper with relatively dense canopies. May also forage in meadow edges and open sagebrush. Nesting and fledgling period: March 1 – August 15 (Woodbridge and Hargis 2006).	May occur. This species is known to occur in Tuolumne County. A site-specific analysis will be required to determine its potential to occur within the project footprint of the proposed broadband infrastructure.
<i>Accipiter striatus</i> sharp-shinned hawk	--/--/WL	Breeds in ponderosa pine, black oak, riparian deciduous, mixed conifer, and Jeffrey pine habitats. Prefers, but not restricted to, riparian habitats. North facing slopes, with plucking perches are critical requirements. Generally, nests relatively close to water (Zeiner et al. 1990).	May occur. This species is known to occur in Tuolumne County. A site-specific analysis will be required to determine its potential to occur within the project footprint of the proposed broadband infrastructure.

Species Name/ Common Name ¹	Status ²	Habitat, Ecology and Life History	Potential to Occur
<i>Agelaius tricolor</i> tricolored blackbird	--/ST/SSC	Common locally throughout central California. Nests and seeks cover in emergent wetland vegetation, specifically cattails and tules. Nesting area must be large enough to support a minimum colony of 50 pairs as they are a highly colonial species. Forages on ground in croplands, grassy fields, flooded land, and edges of ponds (Shuford and Gardali 2008).	May occur. This species is known to occur in Tuolumne County. A site-specific analysis will be required to determine its potential to occur within the project footprint of the proposed broadband infrastructure.
<i>Aquila chrysaetos</i> golden eagle	--/--/FP	Typically occurs in rolling foothills, mountain areas, deserts, and other open habitats up to 3,822 meters above msl. Typically nests on cliff ledges or large trees in open areas in canyons. Will occasionally use other tall structures for nesting, such as electrical transmission towers. Prey consists mostly of rodents, carrion, birds, reptiles, and occasionally small livestock (Zeiner et al. 1990).	May occur. This species is known to occur in Tuolumne County. A site-specific analysis will be required to determine its potential to occur within the project footprint of the proposed broadband infrastructure.
<i>Athene cunicularia</i> burrowing owl	--/--/SSC	Forages in grasslands, agricultural fields, and disturbed places where burrowing mammals are abundant with low and sparse vegetation. Nests in burrows, especially those of California ground squirrel (<i>Otospermophilus beecheyi</i>) but will use other refuge sites (Shuford and Gardali 2008). In the Central Valley of California, most foraging occurs within a 600-meter radius of the nest (Gervais et al. 2003).	May occur. Tuolumne County is within the wintering range of this species. A site-specific analysis will be required to determine its potential to occur within the project footprint of the proposed broadband infrastructure.

Species Name/ Common Name ¹	Status ²	Habitat, Ecology and Life History	Potential to Occur
<i>Coccyzus americanus occidentalis</i> western yellow-billed cuckoo	FT/SE/--	Occurs at isolated sites in Sacramento Valley in northern California, and along Kern and Colorado River systems in southern California. Frequents valley foothill and desert riparian habitats. Inhabits open woodlands with clearings, and riparian habitats with dense understory foliage along slow-moving drainages, backwaters, or seeps. Prefers dense willows for roosting but will use adjacent orchard in the Sacramento Valley (CDFW 2005).	May occur. Tuolumne County is outside of the known range of this species. A site-specific analysis will be required to determine its potential to occur within the project footprint of the proposed broadband infrastructure.
<i>Coturnicops noveboracensis</i> yellow rail	--/--/SSC	An uncommon winter migrant in California uses marsh and deep grass habitat. Breeds in northeastern interior California. Forages and breeds in shallow marshes, wet meadows. Winters in drier fresh and brackish marshes in the Suisun Marsh area. Will also use hayfield and rice fields or other deep grass habitat during the winter (Shuford and Gardali 2008).	May occur. This species has been documented within Tuolumne County and therefore may occur. A site-specific analysis will be required to determine its potential to occur within the project footprint of the proposed broadband infrastructure.
<i>Empidonax traillii</i> willow flycatcher	--/SE/--	Nests in expansive montane riparian or wet meadows in shrubs, typically willows up to 10 feet high. Forages in willow thickets or in adjacent meadows (Zeiner et al. 1990). Typically found nesting between 600 – 2,500 meters above msl (Zeiner et al. 1990).	May occur. Tuolumne County is within the known range of this species. A site-specific analysis will be required to determine its potential to occur within the project footprint of the proposed broadband infrastructure.
<i>Empidonax traillii extimus</i> southwestern willow flycatcher	FE/SE/--	Nests in dense riparian habitats in southwestern North America. Forages within and above the riparian canopy, along the patch edge, in openings within the territory, above water, and glean from tall trees and herbaceous ground cover (USFWS 2002b). Typically found below 8,500 feet above msl.	Not expected. Tuolumne County borders the known range of this species. Although this species may occur in the Eastern Sierra, it is not expected to occur in Tuolumne County.

Species Name/ Common Name ¹	Status ²	Habitat, Ecology and Life History	Potential to Occur
<i>Falco mexicanus</i> prairie falcon	--/--/WL	An uncommon permanent resident of the deserts, Central Valley, inner Coast Ranges, and Sierra Nevada in California. Primarily found in grasslands, rangelands, desert scrub, and some agricultural areas. Requires sheltered cliffs and ledges for cover. Dives from a perch or from flight to take prey on the ground (Zeiner et al. 1990).	May occur. This species is known to occur in Tuolumne County. A site-specific analysis will be required to determine its potential to occur within the project footprint of the proposed broadband infrastructure.
<i>Haliaeetus leucocephalus</i> Bald eagle	FD/SE/FP	Requires large bodies of water with an abundant fish population. Feeds on fish, carrion, small mammals, and water-fowl. Nests are usually located within a 1-mile radius of water. Nests are most often situated in large trees with a commanding view of the area (Zeiner et al. 1990).	May occur. This species is known to occur in Tuolumne County. A site-specific analysis will be required to determine its potential to occur within the project footprint of the proposed broadband infrastructure.
<i>Strix nebulosa</i> great gray owl	--/SE/--	Lives in mixed conifer or red fir forest in or on the edge of meadows. Requires large diameter snags (greater than 60 cm in diameter) in a forest with a high canopy closure which provide a cool sub-canopy microclimate. Snags include conifers and oaks (Wu et al. 2015). They typically use larger quality meadow habitat areas of at least 25 acres (Beck and Winter 2000) and select territories by the abundance of prey. Nests tend to be within 250 m of quality meadow habitat at higher elevations (above 1,800 m amsl). At lower elevations, it was documented that nearly a third of nests were greater than 750 m from meadows (at elevations from 700 m – 1,500 m), and likely not associated with meadows (Wu et al. 2015).	May occur. This species is known to occur in Tuolumne County. A site-specific analysis will be required to determine its potential to occur within the project footprint of the proposed broadband infrastructure.

Species Name/ Common Name ¹	Status ²	Habitat, Ecology and Life History	Potential to Occur
<i>Strix occidentalis</i> California spotted owl	FPT/--/SSC	Lives in old-growth coniferous forests and rocky canyons. Prefers late seral-stage forests with large, old trees, multiple canopy layers, and downed woody debris. In the Sierra Nevada it uses Sierran mixed conifer forests at mid-elevations (Shuford and Gardali 2008). At lower elevations it inhabits ponderosa pine forests and blue oak-gray pine woodlands and valley foothill riparian forests (Shuford and Gardali 2008). At higher elevations, this species occupies red fir forests at high elevations (Shuford and Gardali 2008). Nests in tree cavities, broken-topped trees, and platforms, such as old raptor or squirrel nests. Does not build own nest (Zeiner et al. 1990).	May occur. This species is known to occur in Tuolumne County. A site-specific analysis will be required to determine its potential to occur within the project footprint of the proposed broadband infrastructure.
Mammals			
<i>Antrozous pallidus</i> pallid bat	--/--/SSC	Occurs throughout California except for the high Sierra Nevada and the northern Coast Ranges. Habitats include grasslands, shrublands, woodlands, and forests from sea level to 6,000 feet. Most common in open, dry habitats with rocky areas for roosting; roosts also include cliffs, abandoned buildings, bird boxes, and under bridges (Bolster 1998).	May occur. This species is known to occur in Tuolumne County. A site-specific analysis will be required to determine its potential to occur within the project footprint of the proposed broadband infrastructure.
<i>Aplodontia rufa californica</i> Sierra Nevada mountain beaver	--/--/SSC	Sierra Nevada mountain beaver has a limited range in the Sierra Nevada, California and Nevada. This subspecies is patchily distributed in cool, moist habitats from 1,675 to 3,050 meters above msl. Typically maintains burrow systems through the narrow willow fringes along streams. Meadows areas with deep soils for burrowing adjacent to streams are preferred (Beier 1989).	May occur. This species is known to occur in Tuolumne County. A site-specific analysis will be required to determine its potential to occur within the project footprint of the proposed broadband infrastructure.

Species Name/ Common Name ¹	Status ²	Habitat, Ecology and Life History	Potential to Occur
<i>Bassariscus astutus</i> ringtail	--/--/FP	Widely distributed throughout California in riparian forests, woodlands and shrub dominated habitats with rocky outcrops or tree snags with cavities. This species is omnivorous relying on a variety of vertebrate and invertebrate prey in addition to seasonal berry producing plants such as mistletoe (<i>Phoradendron</i> spp.). Avoids open ground and prefers moving from tree to tree through the canopy or jumping from trunk to trunk. This species is poorly known and is currently not tracked by the California Department of Fish and Wildlife (Zeiner et al. 1990).	May occur. This species is known to occur in Tuolumne County. A site-specific analysis will be required to determine its potential to occur within the project footprint of the proposed broadband infrastructure.
<i>Corynorhinus townsendii</i> Townsend's big-eared bat	--/--/SSC	Widely distributed throughout California except alpine and subalpine habitats. This species eats moths, beetle and other insects which it catches on the wing or by gleaning from vegetation. Typically found near water since it is poor at concentrating its urine. This species uses caves, mines, tunnels, buildings, and human made structures for roosting. Maternity roosts are typically in warm sites. Hibernation sites are typically cold, but not freezing. This species is very sensitive to disturbance and may abandon its roost after one visit (Zeiner et al. 1990).	May occur. This species is known to occur in Tuolumne County. A site-specific analysis will be required to determine its potential to occur within the project footprint of the proposed broadband infrastructure.
<i>Euderma maculatum</i> spotted bat	--/--/SSC	Occurs in deserts, grasslands and mixed coniferous forests up to 10,000 feet. Forages over water or close to the ground primarily on moths. Prefers to roost in rocky cliffs and rock walls with crevices but may also use caves or buildings. This species also forages and roosts individually but may on occasion roost in groups. Spotted bat is considered to be one of the rarest mammals in North America (Zeiner et al. 1990).	May occur. This species is known to occur in Tuolumne County. A site-specific analysis will be required to determine its potential to occur within the project footprint of the proposed broadband infrastructure.

Species Name/ Common Name ¹	Status ²	Habitat, Ecology and Life History	Potential to Occur
<i>Eumops perotis californicus</i> western mastiff bat	--/--/SSC	The largest bat in the U.S. is found in arid to semi-arid habitats such as deserts, grasslands, conifer forest, deciduous woodlands and chaparral. Forages close to the ground in woodlands but will forage significantly higher in rugged terrain. Prefers to roost in rocky cliffs with crevices but may also use tall trees, tunnels or buildings. When roosting in cliff faces, this species requires vertical space below to drop and catch flight. This species may be found roosting with other species of large bats (Zeiner et al. 1990).	May occur. This species is known to occur in Tuolumne County. A site-specific analysis will be required to determine its potential to occur within the project footprint of the proposed broadband infrastructure.
<i>Gulo gulo</i> California wolverine	FPT/ST/FP	Found in alpine, subalpine and riparian habitats in remote areas with low levels of human use. In the Sierra Nevada may also use red fir, mixed conifer and lodgepole forests, typically above 1,311 m amsl in areas that typically support deep snow through May in most years (Spencer and Rustigian-Romsos 2012). Dens in caves, cliffs, log hollows and/or burrows (Zeiner et al. 1990). Considered to be extirpated from California (Moriarity et al. 2009). Recent wolverine detections were determined to be dispersers from Idaho (Moriarity et al. 2009).	May occur. This species has been documented within Tuolumne County. A site-specific analysis will be required to determine its potential to occur within the project footprint of the proposed broadband infrastructure.

Species Name/ Common Name ¹	Status ²	Habitat, Ecology and Life History	Potential to Occur
<i>Lasiurus frantzii</i> western red bat	--/--/SSC	Roosts primarily in woodlands and forests amongst branches and avoids roosting in caves or buildings (Bolster 1998). Forages in open habitat such as croplands, grasslands and shrublands. This species is typically associated with water and has a poor urine concentrating ability. Primarily roosts solitarily in trees from 2–40 feet high in the trees, with females and young roosting higher in the trees than males. Forages along edge habitats (Zeiner et al. 1990). This species is rarely found in the winter at locations that freeze (Pierson et al. 2006).	May occur. This species is known to occur in Tuolumne County. A site-specific analysis will be required to determine its potential to occur within the project footprint of the proposed broadband infrastructure.
<i>Lepus americanus tahoensis</i> Sierra Nevada snowshoe hare	--/--/SSC	The Sierra Nevada snowshoe hare occurs in riparian communities characterized by thickets of deciduous trees and shrubs such as willows and alders (Williams 1986). During the summer, snowshoe hares in the Lake Tahoe area are associated with brush situated close to meadows or deciduous riparian vegetation rather than on ridgetops or brush-covered upper slopes.	May occur. This species is known to occur in Tuolumne County. A site-specific analysis will be required to determine its potential to occur within the project footprint of the proposed broadband infrastructure.

Species Name/ Common Name ¹	Status ²	Habitat, Ecology and Life History	Potential to Occur
<i>Lepus townsendii townsendii</i> western white-tailed jackrabbit	--/--/SSC	An uncommon to rare year-round resident of the crest and upper eastern slope of the Sierra Nevada, primarily from the Oregon border south to Tulare and Inyo counties. Preferred habitats include sagebrush, subalpine conifer, juniper, alpine dwarf-shrub, and perennial grassland. Found in open areas with scattered shrubs and exposed flat-topped ridges above 2600 meters. Open meadows and flat-topped hills with open stands of trees, some brush, and herbaceous understory are preferred for summer feeding. Young or stunted conifers, or shrubs, are required for day-time cover. Winters are spent in areas with sagebrush, or in thickets of young trees (Zeiner et al. 1990).	May occur. This species is known to occur in Tuolumne County. A site-specific analysis will be required to determine its potential to occur within the project footprint of the proposed broadband infrastructure.
<i>Ovis canadensis sierrae</i> Sierra Nevada bighorn sheep	FE/SE/FP	This species uses rocky, steep terrain for escape and bedding, remains near rugged terrain while feeding in open habitat. Found in a variety of open habitats, including rocky barrens, meadows, and low, sparse brushlands (Zeiner et al. 1990).	May occur. Tuolumne County is within the known range of this species. A site-specific analysis will be required to determine its potential to occur within the project footprint of the proposed broadband infrastructure.

Species Name/ Common Name ¹	Status ²	Habitat, Ecology and Life History	Potential to Occur
<i>Pekania pennanti</i> fisher	--/--/SSC	Occupy late-successional conifer and mixed conifer-hardwood forests with an abundance of downed wood, snags, large trees, and a dense canopy (Zielinski 2014). Typically found at elevations from 1,070 – 2,135 m amsl, where persistent snow does not accumulate and impede movement (Zielinski 2014). Riparian forests and habitat close to open water such as streams are important. Cavities and branches in trees, snags, stumps, rock piles, and downed timber are used as resting sites, and large diameter live, or dead trees are selected for natal and maternal dens (Zielinski 2014). There is a significant gap in the range of fisher between the southern Sierra Nevada population and the northern Sierra Nevada/southern Cascade population that stretches approximately 400 km wide (Zielinski 2014).	May occur. This species has been documented within Tuolumne County. A site-specific analysis will be required to determine its potential to occur within the project footprint of the proposed broadband infrastructure.
<i>Sorex lyelli</i> Mount Lyell shrew	--/--/SSC	Found at high montane and cold steppe communities of the central and eastern slopes of the Sierra Nevada. Typically associated with Mt. Lyell, this species is known to occur within or near Yosemite National Park. Requires moist soil and utilizes grass or stream-side willows in riparian sites for cover (Zeiner et al. 1990).	May occur. This species is known to occur in Tuolumne County. A site-specific analysis will be required to determine its potential to occur within the project footprint of the proposed broadband infrastructure.
<i>Taxidea taxus</i> American badger	--/--/SSC	Inhabits drier open stages of most shrub, forest, and herbaceous habitats with loose, friable soils. Preys on a wide variety of mammals, reptiles, birds, and carrion, and hunts mostly by digging out fossorial prey. Occasionally takes prey on the surface. Not tolerant of cultivation. No longer occur in the Central Valley except in the extreme western edge (Williams 1986).	May occur. This species has been documented within Tuolumne County. A site-specific analysis will be required to determine its potential to occur within the project footprint of the proposed broadband infrastructure.

Species Name/ Common Name ¹	Status ²	Habitat, Ecology and Life History	Potential to Occur
<i>Vulpes macrotis mutica</i> San Joaquin kit fox	FE/ST/--	Inhabits grasslands, agricultural areas, playas, and scrublands. Formerly widespread in the Central Valley; now primarily found in foothills at the margins of the Central Valley and in the interior Coast Ranges. Uses natural and artificial burrows with entrances between 8 and 10 inches in diameter and occupies many different burrows in a single season (USFWS 2010).	May occur. Tuolumne County is on the edge of the range of this species. A site-specific analysis will be required to determine its potential to occur within the project footprint of the proposed broadband infrastructure.
<i>Vulpes vulpes necator pop. 2</i> Sierra Nevada red fox – Sierra Nevada DPS	FE/ST/--	Habitat consists of subalpine habitat characterized by a mosaic of high-elevation meadows, rocky areas, scrub vegetation, and woodlands. Has been documented migrating down to high elevation forested habitats below subalpine zones in the Sierra Nevada from 6,000 to 9,000 feet elevation in the Cascades (USFWS 2018). Opportunistic predator of rodents and lagomorphs and also eats seeds such as pine nuts. Currently in California, this species is limited to a small population near Sonora Pass and another near Mt. Lassen (USFWS 2018). These populations include hybrids.	May occur. This species is known to occur in Tuolumne County. A site-specific analysis will be required to determine its potential to occur within the project footprint of the proposed broadband infrastructure.

¹ Sensitive species reported in CDFW CNDDDB, CNPS, or in the USFWS list for Tuolumne County.

² Status is as follows: Federal (ESA) listing/State (CESA) listing/other CDFW status or CRPR. F = Federal; S = State of California; E = Endangered; T = Threatened; R = Rare; C = Candidate; FP=Fully Protected; FPT=Federally Proposed Threatened; SSC=Species of Special Concern; WL=Watch List.

³ Status in the Study Area is assessed as follows. **Will Not Occur:** Species is either sessile (*i.e.* plants) or so limited to a particular habitat that it cannot disperse on its own and/or habitat suitable for its establishment and survival does not occur on the Study Area; **Not Expected:** Species moves freely and might disperse through or across the Study Area, but suitable habitat for residence or breeding does not occur on the Study Area, potential for an individual of the species to disperse through or forage in the site cannot be excluded with 100% certainty; **Presumed Absent:** Habitat suitable for residence and breeding occurs on the Study Area; however, focused surveys conducted for the current project were negative; **May Occur:** Species was not observed on the site and breeding habitat is not present but the species has the potential to utilize the site for dispersal; **High:** Habitat suitable for residence and breeding occurs on the Study Area and the species has been recorded recently on or near the Study Area, but was not observed during surveys for the current project; **Present:** The species was observed during biological surveys for the current project and is assumed to occupy the Study Area or utilize the Study Area during some portion of its life cycle.

CRPR = California Rare Plant Rank: 1B – rare, threatened, or endangered in California and elsewhere; 2B – rare, threatened, or endangered in California but more common elsewhere; 3 – plants about which we need more information – A Review List. Extension codes: .1 – seriously endangered; .2 – moderately endangered; .3 – Not very threatened in California.

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Appendix E

Mitigation Monitoring and Reporting Program

MITIGATION MONITORING AND REPORTING PROGRAM

INTRODUCTION

Mitigation Monitoring and Reporting Programs (MMRP) are required by the California Environmental Quality Act (CEQA) Section 21081.6 to be adopted by CEQA Lead Agencies for projects having the potential to cause significant environmental impacts. The MMRP describes changes to the project or conditions of project approval that mitigate or avoid the project’s potential significant effects on the environment. This MMRP addresses the County of Tuolumne Broadband Infrastructure Program Environmental Impact Report (EIR) proposed by Tuolumne County. A brief description of the proposed Countywide program is provided below. The proposed program is located within Tuolumne County (County); the County is the Lead Agency under CEQA and has discretionary authority over the proposed program.

MMRP FORMAT AND IMPLEMENTATION

Mitigation measures that would reduce or eliminate potential environmental impacts of the proposed project are identified in the County of Tuolumne Broadband Infrastructure Program EIR. These mitigation measures will become conditions of project approval if the program is approved. The County is required to verify that all adopted mitigation measures are implemented properly and to ensure compliance, this MMRP (including the checklist) has been formulated. The MMRP shall be adopted, along with CEQA Findings, by the County (Lead Agency) and must be administered by County personnel from the County Planning Department. Specific responsibilities are delineated for each measure in the attached checklist table and these responsibilities may be delegated to qualified County staff or consultants.

The checklist, in the following table, is intended to be used by the applicant, grading/construction contractors, and personnel from the above-listed County Departments, as the appointed mitigation implementation and monitoring entities. Information contained within the checklist clearly identifies each mitigation measure, defines the conditions required to verify compliance, and delineates the monitoring schedule. Following is an explanation of the three columns that constitute each MMRP checklist.

- | | |
|-----------------|---|
| <u>Column 1</u> | <i>Mitigation Measure:</i> An inventory of each mitigation measure is provided. |
| <u>Column 2</u> | <i>Monitoring Responsibility:</i> Identifies who are responsible for determining compliance with each mitigation measure (e.g., Tuolumne County Planning Department, construction contractor, project applicant, qualified biologist). |
| <u>Column 3</u> | <i>Implementation Schedule:</i> As scheduling is dependent upon the progression of the overall program, specific dates are not used within the “Schedule” column. Instead, scheduling describes a logical succession of events (e.g., prior to ground-disturbing activities, etc.) and, if necessary, delineates a follow-up program. |
| <u>Column 4</u> | <i>Monitoring Compliance Record Name/Date:</i> Column is left blank and is to be signed and dated when compliance with the mitigation measure has been met. |

Mitigation Measure	Monitoring Responsibility	Implementation Schedule	Monitoring Compliance Record Name/Date
<p>Biological Resources</p> <p>Mitigation Measure BIO-1: Prepare a Site-Specific Biological Resources Assessment</p> <p>Prior to project approval, the project applicant shall retain a qualified biologist to prepare a site-specific biological resources assessment (BRA). The BRA shall consist of a desktop review of relevant biological databases and online resources, a general biological reconnaissance survey, vegetation mapping, aquatic resources assessment, analysis of potential impacts to biological resources, and proposed measures to reduce and/or avoid potential impacts.</p> <p>If it is determined during the biological resources assessment that special-status species have the potential to occur within a project area, then project-specific mitigation measures should be recommended to reduce and/or avoid potential impacts. Potential measures for special-status species may include, but are not limited to, protocol-level surveys, nesting bird surveys, and other focused pre-construction surveys.</p> <p>If it is determined that special-status species are present within or adjacent to the project area, or if the project has potential to impact USFWS designated critical habitat and/or NMFS essential fish habitat, then the project proponent shall coordinate with CDFW and/or USFWS, as necessary, to determine mitigation and/or avoidance measures to reduce potential impacts to a level that would be less than significant. Depending on site-specific conditions, agency involvement may be triggered through the regulatory permitting process or direct agency consultation.</p>	<p>Project Applicant; Qualified Biologist</p>	<p>Prior to project approval</p>	

Mitigation Measure	Monitoring Responsibility	Implementation Schedule	Monitoring Compliance Record Name/Date
<p>Mitigation Measure BIO-2: Jurisdictional Delineation and Regulatory Permitting</p> <p>If it is determined that impacts to jurisdictional waters or other sensitive natural communities cannot be avoided, then the project proponent shall apply for any necessary permits from the USACE, CDFW, and the RWQCB (e.g., Section 401/404 permits, CDFW Lake or Streambed Alteration Agreement, etc.). If necessary, a formal delineation of wetlands and “other waters” of the United States shall be prepared in accordance with the U.S. Army Corps of Engineers’ (USACE) <i>Corps of Engineers Wetlands Delineation Manual</i> and appropriate regional supplements to determine the extent of aquatic resources and quantify impacts. Impacts to jurisdictional waters and/or sensitive natural habitat shall be mitigated in accordance with agency requirements.</p>	Project Proponent	Prior to construction	
<p>Mitigation Measure BIO-3: Oak Resources Inventory</p> <p>If is determined during the biological resources assessment that a project will result in impacts to oak resources, then the County may require mitigation for impacts to oak resources or regulated individual oak trees. Prior to project approval, the Community Development Department may require an inventory of prematurely removed trees or canopy cover to determine the extent of the loss. The inventory shall be prepared by a resource professional with expertise in oak woodlands ecology who is on the list of qualified consultants maintained by the Community Development Department. Resource professionals may include botanists, ecologists, wildlife biologists, and foresters.</p>	Tuolumne County Community Development Department; Resource Professional	Prior to project approval	

Mitigation Measure	Monitoring Responsibility	Implementation Schedule	Monitoring Compliance Record Name/Date
Cultural Resources			
<p>Mitigation Measure CUL-1: Archaeological Cultural Resources Investigations</p> <p><i>Preconstruction Screening Identification</i></p> <p>Prior to each phase of fiber optic installation, including appurtenant structures, unpaved staging areas, and fiber optic line, Tuolumne County shall request a records search from the Central California Information Center (CCIC) for project footprints for which ground disturbance is required in areas that have not been previously subject to such disturbance. For those areas of native, unpaved soil that have not been previously surveyed for archaeological cultural resources, the County shall require a pedestrian field survey by a qualified professional archaeologist. If archaeological cultural resources are identified as a result of that survey, the County shall implement the recommendations of the consulting archaeologist to avoid or substantially reduce the severity of impacts to such resources. For those areas that have been surveyed previously, the County shall abide by the recommendations of the professional archaeologist who conducted the original survey.</p> <p><i>Known Resource Conflicts</i></p> <p>In the event that the records search described above identify archaeological cultural resources that would be subject to project-related impact, the County shall evaluate the status of the resource under CEQA. The archaeological cultural resource shall be assessed for significance through the implementation of a Phase II investigation by a qualified archaeologist. This may require some or all of the following:</p>	<p>Tuolumne County Planning Department; Qualified Archaeologist</p>	<p>Prior to each phase of fiber optic installation</p>	

Mitigation Measure	Monitoring Responsibility	Implementation Schedule	Monitoring Compliance Record Name/Date
<ul style="list-style-type: none"> • Development of a research design that guides assessments of site significance and scientific potential. • Mapping and systematic collection of a representative sample of surface artifacts • Subsurface investigation through shovel test pits, surface scrapes, or 1 by 1 meter excavation units; a combination of such methods; or equivalent methods • Analysis of recovered material to determine significance pursuant to the CEQA Guidelines • Preparation of a report, including an evaluation of site significance, and recommendations for mitigation, if appropriate • Appropriate curation of collected artifacts <p>If the resource is precontact in nature, the Phase II investigation shall be coordinated with descendant tribal communities.</p> <p>If the Phase II evaluation concludes that the archaeological cultural resource does not qualify as a historical resource (PRC Section 21084.1) or unique archaeological resource (PRC Section 21083.2), then no further study or protection of the resource is necessary. If the resource does qualify as a historical or unique archaeological resource, then the County shall require the implementation of the Phase III approach described below.</p>			

Mitigation Measure	Monitoring Responsibility	Implementation Schedule	Monitoring Compliance Record Name/Date
<p>A Phase III data recovery effort, in accordance with CEQA Guidelines, shall be implemented by the consulting archaeologist for those sites that are shown by the Phase II efforts to qualify as significant under CEQA. The County shall ensure that data recovery conducted to the level that reduces impacts to below the level of significance has been completed prior to project implementation. The Phase III data recovery program shall include all or a combination of the following methods:</p> <ul style="list-style-type: none"> • Development of a research design to identify important research questions that may be answered through a systematic study of the resource. • Mapping and systematic collection of surface artifacts, possibly complete data recovered depending on site size • Subsurface investigation through methods such as controlled hand-excavation units, machine excavations, deep testing, or a combination of methods. When applicable, other techniques, such as geophysical testing, may be warranted. • Analysis of recovered material through visual inspection and chemical analysis when applicable • Preparation of a report • Appropriate curation of collected artifacts 			

Mitigation Measure	Monitoring Responsibility	Implementation Schedule	Monitoring Compliance Record Name/Date
<p>If the resource is precontact in nature, the Phase III investigation shall be coordinated with descendant tribal communities. Mitigation Measure CUL-2: Inadvertent Discovery of Archaeological Cultural Resources</p> <p>In the event that cultural resources are exposed during ground-disturbing activities, construction activities shall be halted within 100 feet of the discovery. Cultural resources could consist of but are not limited to stone, bone, wood, or shell artifacts, or features, including hearths, structural remains, or historic dumpsites. If the resources cannot be avoided during the remainder of construction, a consulting archaeologist, who meets the Secretary of the Interior’s <i>Professional Qualifications Standards</i> for archaeology, shall assess the resource and provide appropriate management recommendations. The County shall implement those recommendations to avoid or substantially reduce the severity of impact to significant resources.</p>	<p>Tuolumne County Planning Department; Qualified Archaeologist</p>	<p>Immediately upon discovery</p>	
<p>Mitigation Measure CUL-3: Human Remains</p> <p>In the event of an accidental discovery or recognition of any human remains, PRC Section 5097.98 must be followed. Once project-related earthmoving begins and if there is a discovery or recognition of human remains, the following steps shall be taken:</p> <ol style="list-style-type: none"> 1. There shall be no further excavation or disturbance of the specific location or any nearby area reasonably suspected to overlie adjacent human remains until the County Coroner is contacted to determine if the remains are Native American and if an investigation of 	<p>Tuolumne County Planning Department; Landowner; County Coroner</p>	<p>Immediately upon discovery</p>	

Mitigation Measure	Monitoring Responsibility	Implementation Schedule	Monitoring Compliance Record Name/Date
<p>the cause of death is required. If the coroner determines the remains are Native American, the coroner shall contact the NAHC within 24 hours, and the NAHC shall identify the person or persons it believes to be the “most likely descendant” of the deceased Native American. The most likely descendant may make recommendations to the landowner or the person responsible for the excavation work, for means of treating or disposing of, with appropriate dignity, the human remains, and any associated grave goods as provided in PRC Section 5097.98, or</p> <p>2. Where the following conditions occur, the landowner or their authorized representative shall reburial the Native American human remains and associated grave goods with appropriate dignity either in accordance with the recommendations of the most likely descendent or on the project area in a location not subject to further subsurface disturbance:</p> <ul style="list-style-type: none"> • The NAHC is unable to identify a most likely descendent or the most likely descendent failed to make a recommendation within 48 hours after being notified by the commission; • The descendent identified fails to make a recommendation; or 			

Mitigation Measure	Monitoring Responsibility	Implementation Schedule	Monitoring Compliance Record Name/Date
<ul style="list-style-type: none"> The landowner or his authorized representative rejects the recommendation of the descendent, and the mediation by the NAHC fails to provide measures acceptable to the landowner. 			
Geology and Soils			
<p>Mitigation Measure GEO-1: Perform a Site-Specific Paleontological Resources Inventory Assessment</p> <p>Before submitting a grading permit application, the applicant for an individual fiber project shall retain the services of a qualified professional paleontologist who shall prepare a paleontological resources inventory and assessment for any affected rock units. This report shall include the following components:</p> <ul style="list-style-type: none"> A report of any fossils observed during a reconnaissance-level field survey. The results of a records search of appropriate paleontological databases (at a minimum, the database at the University of California, Berkeley Museum of Paleontology) to determine whether any previously recorded fossil localities are located within or immediately adjacent to the fiber optic facilities where rock boring or excavation that would reach paleontological soil is proposed. A determination as to whether the geologic formations are of high or low paleontological 	<p>Individual Fiber Project Applicant; Qualified Paleontologist</p>	<p>Prior to submission of grading permit application</p>	

Mitigation Measure	Monitoring Responsibility	Implementation Schedule	Monitoring Compliance Record Name/Date
<p>sensitivity, and a discussion supporting the reasons why the sensitivity determinations were made.</p> <p>Prior to issuance of grading permits, the approving local jurisdiction shall review the reports and its findings to confirm no paleontological resources would be affected.</p>			
Noise			
<p>Mitigation Measure NOI-1: Construction Hours and Best Management Practices</p> <p>Prior to issuing individual project construction approvals or permits, the County shall insure that construction documentation includes the following restrictions. Project construction activities within 1,900 feet of noise sensitive land uses (NSLUs; e.g., residences, schools, hospitals, convalescent homes, churches, libraries) shall implement the following best manage practices:</p> <ul style="list-style-type: none"> • All noise-generating activities shall be prohibited between the hours of: 7:00 p.m. to 7:00 a.m. Monday through Saturday and at any time on Sundays and County recognized public holidays. • Equipment and trucks used for project construction shall utilize the best available noise control techniques (including mufflers, use of intake silencers, ducts, engine enclosures and acoustically attenuating shields or shrouds); and • Impact equipment (e.g., jack hammers, pavement breakers, and rock drills) used for project construction shall be hydraulically or electrically powered wherever feasible to avoid noise 	<p>Tuolumne County Planning Department</p>	<p>Prior to issuing individual project construction permits</p>	

Mitigation Measure	Monitoring Responsibility	Implementation Schedule	Monitoring Compliance Record Name/Date
<p>associated with compressed air exhaust from pneumatically powered tools. Whenever feasible, require the use of quieter procedures, such as drilling rather than impact equipment operation.</p>			
<p>Mitigation Measure NOI-2: Backup Generator Noise Control</p> <p>Prior to approving individual projects that require an emergency back generator, the County shall verify project plans include the following: Where feasible, emergency backup generators shall be installed no closer than 105 feet from any noise sensitive land use (NSLU; e.g., residences, schools, hospitals, convalescent homes, churches, libraries). If it is not feasible to locate emergency generators 105 feet or more from all NSLUs, the project proponent shall incorporate noise attenuating features (e.g., generator sound enclosures, noise barriers) into the equipment installation sufficient to reduce generator noise levels to 50 dBA LEQ or less measured at outdoor use areas or building edges of the closest NSLU. Noise levels at NSLUs shall be verified by a qualified acoustical professional.</p>	<p>Tuolumne County Planning Department; Project Proponent</p>	<p>Prior to approving individual projects</p>	
<p>Mitigation Measure NOI-3: Vibratory Roller Use</p> <p>Prior to issuing individual project construction approvals or permits, the County shall insure that construction documentation includes the following restrictions. Vibratory rollers shall be used in static mode only (no vibrations) within the following distances:</p> <ul style="list-style-type: none"> • Within 15 feet of any occupied building; and • Within 18 feet of any older residential building; and <p>Within 60 feet of a fragile historical building, ruin, or ancient monument.</p>	<p>Tuolumne County Planning Department</p>	<p>Prior to issuing individual project construction permits</p>	

Mitigation Measure	Monitoring Responsibility	Implementation Schedule	Monitoring Compliance Record Name/Date
Tribal Cultural Resources			
<p>Mitigation Measure TCR-1: Tribal Consultation</p> <p>Tuolumne County shall conduct the appropriate tribal consultation outreach to relevant California Native American tribes, pursuant to PRC § 21080.3.1, for all future individual fiber projects included within the scope of the Tuolumne County Broadband EIR. Both local tribes, the Tuolumne Band of Me-Wuks and the Chicken Ranch Rancheria, are to be formally notified once site-specific information has been submitted to the County. Pursuant to PRC § 21080.3.1 (b), the tribes will have 30 days for AB 52 from the receipt of the request for consultation to either request or decline consultation for the individual fiber project, in writing, with the County for each proposed individual fiber project included in the scope of the Tuolumne County Broadband EIR. In the event that a general plan or specific plan adoption or amendment is required for the implementation of an individual fiber project, the County shall comply with the requirements of Senate Bill 18 (SB 18), in coordination with AB 52, as described in California Government Code § 65352.3.</p>	<p>Tuolumne County Planning Department; Tuolumne Band of Me-Wuks; Chicken Ranch Rancheria</p>	<p>Once site-specific information has been submitted to the County</p>	
<p>Mitigation Measure TCR-2: Archaeological Treatment and Tribal Consultation</p> <p>In the event that TCRs are exposed during ground-disturbing activities, construction activities (e.g., grading, grubbing, or vegetation clearing) shall be halted in the immediate vicinity of the discovery. An archaeologist who meets the Secretary of the Interior's <i>Professional Qualifications Standards</i> shall then be retained to evaluate the resource's significance under CEQA in close coordination with tribal</p>	<p>Professional Archaeologist</p>	<p>Immediately upon discovery</p>	

Mitigation Measure	Monitoring Responsibility	Implementation Schedule	Monitoring Compliance Record Name/Date
<p>members who would provide traditionally based cultural knowledge for the analysis. If the discovery proves to be significant, additional work and mitigation measures, such as those listed in CUL-1, CUL-2, and CUL-3 as deemed appropriate by the tribal organization consulting on the find. Such mitigation may include avoidance, data recovery excavation, or traditional ethnographic research into the cultural importance of the find to contemporary descendant communities.</p>			

Appendix F

NEPA Environmental Assessment



Environmental Assessment

Department of
Commerce

National
Telecommunications
and
Communications
Service

County of Tuolumne Broadband Infrastructure Project

Tuolumne County, California

April 2024

For Information Contact:
Tuolumne County Planning Department
2 S. Green Street, Sonora, CA 95370

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1.0 Executive Summary

Introduction

The County is proposing to expand access to broadband technology throughout the County, including the unincorporated areas of the County. The Countywide program would install fiber optic conduit either underground in buried conduits, overhead on pole lines, or in a combination of both. The County includes a total of approximately 610 miles of County-maintained roads. The installation of underground or overhead cables would be located within existing County maintained road right-of-way (ROW), public utility easements, and/or overhead public utility easements of record throughout the County. The future location of broadband infrastructure would focus on areas of the County that are currently unserved or underserved. The exact alignment of future broadband infrastructure is unknown at this time and would be based on such considerations as construction feasibility, local preference, and locations of sensitive environmental resources.

While some areas of the County have sufficient internet speeds for daily work and home life, there are still large portions of the County with no coverage or coverage so slow that it has become prohibitive to perform daily, essential tasks. Currently, Tuolumne County has approximately 13,826 Broadband Service Locations (BSL) (or 54 percent of all BSL within the County) that lack access to wireline broadband of speeds of 25/3 megabits per second (Mbps). Per the State of California's definition, areas with less than 25/3 Mbps are considered "unserved". These pockets of unserved, or even underserved, populations in California are missing out on what is now seen as a utility critical to quality of life. This Countywide program would help attract broadband infrastructure investors to bring broadband service to a County in need of reliable connectivity for increasing health and safety factors, as well as for economic and quality of life reasons.

Alternatives

No Project Alternative

This alternative represents a possible scenario that could occur if the proposed project is not approved. If the project is other than a land use or regulatory plan, for example a development project on identifiable property, the "no project" alternative is the circumstance under which the project does not proceed. Under the No Project Alternative, no actions would be taken to expand broadband availability and the service area would remain unchanged from current conditions. The No Project Alternative would not meet the project objectives. However, the No Project Alternative is evaluated in this Draft EA.

Although it is acknowledged that with the No Project Alternative, there would be no discretionary action by Tuolumne County, and thus no impact, for purposes of comparison with the other action alternatives, conclusions for each technical area are characterized as "impacts" that are greater, similar, or less, to describe conditions that are worse than, similar to, or better than those of the proposed Countywide program.

Aerial Installation Only Alternative

This alternative would include only individual fiber projects that install aboveground fiber optic line that would utilize existing or newly constructed utility poles. No underground fiber optic line or new conduit would be installed under this alternative. This alternative was considered because it would avoid all impacts associated with underground installation, including construction impacts associated with horizontal directional drilling, plowing, trenching, microtrenching, line installation, and pavement repair. This alternative could also avoid the impacts associated with the spillage of drilling fluid.

However, this alternative would not meet the basic project objectives associated with providing a reliable system of broadband communications. Aboveground fiber optic lines are susceptible to damage from high winds, snowstorms, wildfires, and other natural disasters. Such damage would reduce the reliability of communications

system, which could disrupt emergency communications during extreme storms, wildfires, or other emergency conditions when reliable communication is most important. The addition of utility poles may not be feasible in some locations in the County due to the rocky subsurface conditions that would make it nearly impossible to reach the boring depth required for the poles. Furthermore, this alternative would result in additional aesthetics impacts associated with the additional utility poles. It should also be noted that existing poles are owned by certain utilities or exist as joint poles with shared use between utilities. Additional joint pole users may not be feasible, and the ability to add joint pole users may be difficult to augment.

Underground Installation Only Alternative

This alternative would include individual fiber projects that would only install underground fiber optic lines and would utilize existing or newly installed underground conduit. No aboveground fiber optic line would be installed under this alternative. This alternative was considered because it could avoid possible impacts associated with aboveground installation, including aesthetic impacts and construction impacts associated with the installation of new utility poles and stringing fiber optic line on existing poles.

This alternative would not meet the basic project objectives associated with providing a reliable system of broadband communications. This alternative could be susceptible to biological, cultural, and geological impacts due to underground installation, including construction impacts associated with horizontal directional drilling, plowing, trenching, microtrenching, and line installation. Additionally, this alternative could be susceptible to hazard, and hazardous material impacts due to possible digging into existing, unmarked infrastructure. Depending on the prevailing geological conditions, including bedrock near the surface, it may be impossible to install underground infrastructure in some parts of the County.

Use of Existing Infrastructure Alternative

This alternative would include individual fiber projects that install fiber optic line in existing fiber-specific conduit or along existing utility poles. This alternative was considered because it would avoid impacts associated with installation of new utility pole and new underground fiber-specific conduit infrastructure. This alternative would avoid or substantially reduce all potential impacts associated with the proposed Countywide program, as outlined in this EA. However, it would not meet most of the basic objectives of the project because it would not provide for the expansion of broadband infrastructure into portions of the service area that do not already include sufficient conduit, utility poles, and supporting infrastructure.

Impact Analysis

The proposed Countywide program does not have the potential to generate significant environmental impacts.

Table 1 below summarizes the conclusions of the environmental analysis contained in this EA and presents a summary of impacts and mitigation measures identified.

Project Background

Broadband or high-speed Internet access allows users to access the Internet and Internet-related services at significantly higher speeds than those available through "dial-up" services (FCC 2023). Broadband provides high-speed internet access via multiple types of technologies, including fiber optics, wireless, cable modem, digital subscriber line (DSL), broadband over powerlines (BPL), and satellite. The proposed Countywide project would utilize fiber optic technology that converts light electrical signals and sends the light through transparent glass fibers about the diameter of a human hair (FCC 2023). Fiber optic technology transmits data at speeds far exceeding current DSL or cable modem speeds.

Table 1: Environmental Analysis Summary

Significant Impact	Significance Without Mitigation	Mitigation Measures	Significance with Mitigation
Noise	Potentially significant	<p>Mitigation Measure NOI-1: Construction Hours and Best Management Practices Prior to issuing individual project construction approvals or permits, the County shall insure that construction documentation includes the following restrictions. Project construction activities within 1,900 feet of noise sensitive land uses (NSLUs; e.g., residences, schools, hospitals, convalescent homes, churches, libraries) shall implement the following best manage practices:</p> <ul style="list-style-type: none"> • All noise-generating activities shall be prohibited between the hours of: 7:00 p.m. to 7:00 a.m. Monday through Saturday and at any time on Sundays and County recognized public holidays. • Equipment and trucks used for project construction shall utilize the best available noise control techniques (including mufflers, use of intake silencers, ducts, engine enclosures and acoustically attenuating shields or shrouds); and • Impact equipment (e.g., jack hammers, pavement breakers, and rock drills) used for project construction shall be hydraulically or electrically powered wherever feasible to avoid noise associated with compressed air exhaust from pneumatically powered tools. Whenever feasible, require the use of quieter procedures, such as drilling rather than impact equipment operation. <p>Mitigation Measure NOI-2: Backup Generator Noise Control Prior to approving individual projects that require an emergency back generator, the County shall verify project plans include the following: Where feasible, emergency backup generators shall be installed no closer than 105 feet from any noise sensitive land use (NSLU; e.g., residences, schools, hospitals, convalescent homes, churches, libraries). If it is not feasible to locate emergency generators 105 feet or more from all NSLUs, the project proponent shall incorporate noise attenuating features (e.g., generator sound enclosures, noise barriers) into the equipment installation sufficient to reduce generator noise levels to 50 dBA LEQ or less measured at outdoor use areas or building edges of the closest NSLU. Noise levels at NSLUs shall be verified by a qualified acoustical professional.</p> <p>Mitigation Measure NOI-3: Vibratory Roller Use Prior to issuing individual project construction approvals or permits, the County shall insure that construction documentation includes the following restrictions.</p>	Less than significant

Significant Impact	Significance Without Mitigation	Mitigation Measures	Significance with Mitigation
		Vibratory rollers shall be used in static mode only (no vibrations) within the following distances: <ul style="list-style-type: none"> • Within 15 feet of any occupied building; and • Within 18 feet of any older residential building; and • Within 60 feet of a fragile historical building, ruin, or ancient monument. 	
Air Quality	N/A	N/A	Less than significant
Geology and Soils	Potentially significant	<p>Mitigation Measure GEO-1: Perform a Site-Specific Paleontological Resources Inventory Assessment</p> <p>Before submitting a grading permit application, the applicant for an individual fiber project shall retain the services of a qualified professional paleontologist who shall prepare a paleontological resources inventory and assessment for any affected rock units. This report shall include the following components:</p> <ul style="list-style-type: none"> • A report of any fossils observed during a reconnaissance-level field survey. • The results of a records search of appropriate paleontological databases (at a minimum, the database at the University of California, Berkeley Museum of Paleontology) to determine whether any previously recorded fossil localities are located within or immediately adjacent to the fiber optic facilities where rock boring is proposed. • A determination as to whether the geologic formations are of high or low paleontological sensitivity, and a discussion supporting the reasons why the sensitivity determinations were made. <p>Prior to issuance of grading permits, the approving local jurisdiction shall review the reports and its findings to confirm no paleontological resources would be affected.</p>	Less than significant
Water Resources	N/A	N/A	Less than significant
Biological Resources	Potentially significant	<p>Mitigation Measure BIO-1: Prepare a Site-Specific Biological Resources Assessment</p> <p>Prior to project approval, the project applicant shall retain a qualified biologist to prepare a site-specific biological resources assessment (BRA). The BRA shall consist of a desktop review of relevant biological databases and online resources, a general biological reconnaissance survey, vegetation mapping, aquatic resources assessment, analysis of potential impacts to biological resources, and proposed measures to reduce and/or avoid potential impacts.</p>	Less than significant

Significant Impact	Significance Without Mitigation	Mitigation Measures	Significance with Mitigation
		<p>If it is determined during the biological resources assessment that special-status species have the potential to occur within a project area, then project-specific mitigation measures should be recommended to reduce and/or avoid potential impacts. Potential measures for special-status species may include, but are not limited to, protocol-level surveys, nesting bird surveys, and other focused pre-construction surveys.</p> <p>If it is determined that special-status species are present within or adjacent to the project area, or if the project has potential to impact USFWS designated critical habitat and/or NMFS essential fish habitat, then the project proponent shall coordinate with CDFW and/or USFWS, as necessary, to determine mitigation and/or avoidance measures to reduce potential impacts to a level that would be less than significant. Depending on site-specific conditions, agency involvement may be triggered through the regulatory permitting process or direct agency consultation.</p> <p>Mitigation Measure BIO-2: Jurisdictional Delineation and Regulatory Permitting If it is determined that impacts to jurisdictional waters or other sensitive natural communities cannot be avoided, then the project proponent shall apply for any necessary permits from the USACE, CDFW, and the RWQCB (e.g., Section 401/404 permits, CDFW Lake or Streambed Alteration Agreement, etc.). If necessary, a formal delineation of wetlands and “other waters” of the United States shall be prepared in accordance with the U.S. Army Corps of Engineers’ (USACE) <i>Corps of Engineers Wetlands Delineation Manual</i> and appropriate regional supplements to determine the extent of aquatic resources and quantify impacts. Impacts to jurisdictional waters and/or sensitive natural habitat shall be mitigated in accordance with agency requirements.</p> <p>Mitigation Measure BIO-3: Oak Resources Inventory If it is determined during the biological resources assessment that a project will result in impacts to oak resources, then the County may require mitigation for impacts to oak resources or regulated individual oak trees. Prior to project approval, the Community Development Department may require an inventory of prematurely removed trees or canopy cover to determine the extent of the loss. The inventory shall be prepared by a resource professional with expertise in oak woodlands ecology who is on the list of qualified consultants maintained by the Community Development Department. Resource professionals may</p>	

Significant Impact	Significance Without Mitigation	Mitigation Measures	Significance with Mitigation
Historic and Cultural Resources	Potentially significant	<p>include botanists, ecologists, wildlife biologists, and foresters.</p> <p>Mitigation Measure CUL-1: Archaeological Cultural Resources Investigations</p> <p><i>Preconstruction Screening Identification</i></p> <p>Prior to each phase of fiber optic installation, including appurtenant structures, unpaved staging areas, and fiber optic line, Tuolumne County shall request a records search from the Central California Information Center (CCIC) for project footprints for which ground disturbance is required in areas that have not been previously subject to such disturbance. For those areas of native, unpaved soil that have not been previously surveyed for archaeological cultural resources, the County shall require a pedestrian field survey by a qualified professional archaeologist. If archaeological cultural resources are identified as a result of that survey, the County shall implement the recommendations of the consulting archaeologist to avoid or substantially reduce the severity of impacts to such resources. For those areas that have been surveyed previously, the County shall abide by the recommendations of the professional archaeologist who conducted the original survey.</p> <p><i>Known Resource Conflicts</i></p> <p>In the event that the records search described above identify archaeological cultural resources that would be subject to project-related impact, the County shall evaluate the status of the resource. The archaeological cultural resource shall be assessed for significance through the implementation of a Phase II investigation by a qualified archaeologist. This may require some or all of the following:</p> <ul style="list-style-type: none"> <li>• Development of a research design that guides assessments of site significance and scientific potential. <li>• Mapping and systematic collection of a representative sample of surface artifacts <li>• Subsurface investigation through shovel test pits, surface scrapes, or 1 by 1 meter excavation units; a combination of such methods; or equivalent methods <li>• Analysis of recovered material to determine significance <li>• Preparation of a report, including an evaluation of site significance, and recommendations for mitigation, if appropriate <li>• Appropriate curation of collected artifacts 	Less than significant

Significant Impact	Significance Without Mitigation	Mitigation Measures	Significance with Mitigation
		<p>If the resource is precontact in nature, the Phase II investigation shall be coordinated with descendant tribal communities.</p> <p>If the Phase II evaluation concludes that the archaeological cultural resource does not qualify as a historical resource (PRC Section 21084.1) or unique archaeological resource (PRC Section 21083.2), then no further study or protection of the resource is necessary. If the resource does qualify as a historical or unique archaeological resource, then the County shall require the implementation of the Phase III approach described below.</p> <p>A Phase III data recovery effort shall be implemented by the consulting archaeologist for those sites that are shown by the Phase II efforts to qualify as significant. The County shall ensure that data recovery conducted to the level that reduces impacts to below the level of significance has been completed prior to project implementation. The Phase III data recovery program shall include all or a combination of the following methods:</p> <ul style="list-style-type: none"> • Development of a research design to identify important research questions that may be answered through a systematic study of the resource. • Mapping and systematic collection of surface artifacts, possibly complete data recovered depending on site size • Subsurface investigation through methods such as controlled hand-excavation units, machine excavations, deep testing, or a combination of methods. When applicable, other techniques, such as geophysical testing, may be warranted. • Analysis of recovered material through visual inspection and chemical analysis when applicable • Preparation of a report • Appropriate curation of collected artifacts <p>If the resource is precontact in nature, the Phase III investigation shall be coordinated with descendant tribal communities.</p> <p>Mitigation Measure CUL-2 Inadvertent Discovery of Archaeological Cultural Resources</p> <p>In the event that cultural resources are exposed during ground-disturbing activities, construction activities shall be halted within 100 feet of the discovery. Cultural resources could consist of but are not limited to stone, bone, wood, or shell artifacts, or features, including hearths, structural remains, or historic dumpsites. If the resources cannot be</p>	

Significant Impact	Significance Without Mitigation	Mitigation Measures	Significance with Mitigation
		<p>avoided during the remainder of construction, a consulting archaeologist, who meets the Secretary of the Interior’s <i>Professional Qualifications Standards</i> for archaeology, shall assess the resource and provide appropriate management recommendations. The County shall implement those recommendations to avoid or substantially reduce the severity of impact to significant resources.</p> <p>Mitigation Measure CUL-3: Human Remains In the event of an accidental discovery or recognition of any human remains, PRC Section 5097.98 must be followed. Once project-related earthmoving begins and if there is a discovery or recognition of human remains, the following steps shall be taken:</p> <ol style="list-style-type: none"> 1. There shall be no further excavation or disturbance of the specific location or any nearby area reasonably suspected to overlie adjacent human remains until the County Coroner is contacted to determine if the remains are Native American and if an investigation of the cause of death is required. If the coroner determines the remains are Native American, the coroner shall contact the NAHC within 24 hours, and the NAHC shall identify the person or persons it believes to be the “most likely descendant” of the deceased Native American. The most likely descendant may make recommendations to the landowner or the person responsible for the excavation work, for means of treating or disposing of, with appropriate dignity, the human remains, and any associated grave goods as provided in PRC Section 5097.98, or 2. Where the following conditions occur, the landowner or their authorized representative shall rebury the Native American human remains and associated grave goods with appropriate dignity either in accordance with the recommendations of the most likely descendent or on the project area in a location not subject to further subsurface disturbance: <ul style="list-style-type: none"> • The NAHC is unable to identify a most likely descendent or the most likely descendent failed to make a recommendation within 48 hours after being notified by the commission; • The descendent identified fails to make a recommendation; or • The landowner or his authorized representative rejects the recommendation of the descendent, and the mediation by the NAHC fails to provide measures acceptable to the landowner. 	

Significant Impact	Significance Without Mitigation	Mitigation Measures	Significance with Mitigation
		<p>Mitigation Measure TCR-1: Tribal Consultation Tuolumne County shall conduct the appropriate tribal consultation outreach to relevant California Native American tribes, pursuant to PRC § 21080.3.1, for all future individual fiber projects included within the scope of the Tuolumne County Broadband EIR. Both local tribes, the Tuolumne Band of Me-Wuks and the Chicken Ranch Rancheria, are to be formally notified once site-specific information has been submitted to the County. Pursuant to PRC § 21080.3.1 (b), the tribes will have 30 days for AB 52 from the receipt of the request for consultation to either request or decline consultation for the individual fiber project, in writing, with the County for each proposed individual fiber project included in the scope of the Tuolumne County Broadband EA. In the event that a general plan or specific plan adoption or amendment is required for the implementation of an individual fiber project, the County shall comply with the requirements of Senate Bill 18 (SB 18), in coordination with AB 52, as described in California Government Code § 65352.3.</p> <p>Mitigation Measure TCR-2: Archaeological Treatment and Tribal Consultation In the event that TCRs are exposed during ground-disturbing activities, construction activities (e.g., grading, grubbing, or vegetation clearing) shall be halted in the immediate vicinity of the discovery. An archaeologist who meets the Secretary of the Interior’s Professional Qualifications Standards shall then be retained to evaluate the resource’s significance in close coordination with tribal members who would provide traditionally based cultural knowledge for the analysis. If the discovery proves to be significant, additional work and mitigation measures, such as those listed in CUL-1, CUL-2, and CUL-3 as deemed appropriate by the tribal organization consulting on the find. Such mitigation may include avoidance, data recovery excavation, or traditional ethnographic research into the cultural importance of the find to contemporary descendant communities.</p>	
Aesthetic and Visual Resources	N/A	N/A	Less than significant
Land Use	N/A	N/A	Less than significant
Infrastructure	N/A	N/A	Less than significant
Socioeconomic Resources	N/A	N/A	Less than significant
Human Health and Safety	N/A	N/A	Less than significant

2.0 Purpose and Need

Project Need

While some areas of the County have sufficient internet speeds for daily work and home life, there are still large portions of the County with no coverage or coverage so slow that it has become prohibitive to perform daily, essential tasks. The ability to provide broadband internet in the County has been challenging for a several reasons. Primarily, the topography and geography of the County present physical barriers to broadband connectivity. Subsurface rock throughout the County is difficult and expensive to trench while dense forests, hills, and canyons may obstruct the sight lines needed for wireless technology. Finally, the rural nature of the County results in low population densities to attract market-rate broadband infrastructure investors.

Currently, Tuolumne County has 13,826 Broadband Service Locations (BSL) (or 54 percent of all BSL within the County) that lack access to wireline broadband of speeds of up to 25/3 megabits per second (Mbps). Per the State of California's definition, areas with less than existing 25/3 Mbps are considered "unserved" and areas with less than existing 100/20 Mbps are considered "underserved". Additionally, 7,954 parcels are unserved within the County. Parcel information was provided by the County's GIS department and reflects the total number of residential, industrial, and commercial parcels that currently include a building. These pockets of unserved, or even underserved, populations in California are missing out on what is now seen as a utility critical to quality of life. This Countywide project would help attract broadband infrastructure investors to bring broadband service to a County in need of reliable connectivity for increasing health and safety factors, as well as for economic and quality of life reasons. Expansion of broadband service and its associated infrastructure is vital to the various communities in the County for many reasons, which include but are not limited to:

- building social and community connections,
- enhancing civic engagement and participation,
- bolstering economic development and sustainability,
- increasing education and continuous learning,
- fostering health care and tele-health services, and
- promoting recreation and tourism.

Project Purpose

In order to achieve the need of broadband within the County, the following objectives should be met:

- promote upgradable and expandable high-speed broadband capacity in the service areas with minimum speeds of 100 megabits per second (Mbps) for downloads and 20 Mbps for uploads, which is labeled as "served" areas within California;
- promote the construction of a broadband network in unserved and underserved areas of unincorporated Tuolumne County;
- enable an increase in telecommuting, with a commensurate decrease in vehicle miles traveled;
- improve public health and safety through enabling faster emergency response, enhanced communication between emergency services, and access to critical information during disasters or emergencies;
- streamline the environmental review process for individual broadband projects that are implemented in the County;
- promote a reliable foundation of data and acceptable methodology to assess impacts for any specific broadband deployment project;
- identify known environmental and cultural assets to be protected and/or restored with an approved set of preservation measures and/or mitigations; and,

- save time and money for both the County of Tuolumne and broadband project applicants, resulting in greater government and economic efficiencies, reducing the amount of County staff time required to review broadband projects and avoiding duplication of applicant costs.

3.0 Description of Proposed Action and Alternatives

3.1 Introduction

This EA analyzes four project alternatives, the No Project Alternative, the Aerial Installation Only Alternative, the Underground Installation Only Alternative, and the Use of Existing Infrastructure Alternative, in detail to compare to the proposed Countywide program because of their potential to reduce the potential impacts.

3.2 Proposed Action

Project Components

The County is proposing to expand access to broadband technology throughout the County, including the unincorporated areas of the County. See **Figure 1** for the project location map. The Countywide program would install fiber optic conduit either underground in buried conduits, overhead on pole lines, or in a combination of both. Broadband infrastructure would be installed to provide above ground or underground lateral connections to private residences and businesses. Individual connections typically would be located in previously disturbed and/or developed areas (e.g., in ROW or public utility easements). The broadband infrastructure could follow other utility installations; therefore, it is likely that the ground along these alignments has been previously disturbed by prior utility work. Additionally, many of these connections would generally follow the route of the roadway, particularly if the applicable areas have other issues that could affect access, such as vegetation, geologic, landscape, and/or water features that should not be disturbed. If deemed feasible, the new broadband infrastructure constructed under an individual project or phase would connect to existing infrastructure in the project area supported by existing service providers.

The area in which future broadband infrastructure could be implemented includes all unincorporated areas of the County; it excludes federal lands, private roads, and State highway ROW. The County includes a total of approximately 610 miles of County-maintained roads. Refer to **Figure 2** for a map of the existing broadband trunkline within the County. The installation of underground or overhead cables would be located within existing County maintained road ROW, public utility easements, and/or overhead public utility easements of record throughout the County. The future location of broadband infrastructure would focus on areas of the County that are currently unserved or underserved. The exact alignment of future broadband infrastructure is unknown at this time and would be based on such considerations as construction feasibility, local preference, and locations of sensitive environmental resources.

Project Construction

The broadband infrastructure program would begin construction of individual fiber projects in Spring 2025. Implementation of future individual fiber projects under the program would likely occur over many years. It is possible that multiple, individual fiber projects could have overlapping construction timeframes (or phases). Additionally, any individual segment could involve multiple construction crews working simultaneously, with plowing, trenching, and directional drilling occurring at the same time in different locations of the segment. Construction activities would occur between 7:00 a.m. and 7:00 p.m. on weekdays, and not at night.

The construction methods for future individual fiber projects in Tuolumne County would be determined based on various factors such as location, micro-site conditions, and constraints present at each future individual fiber project site. These methods include horizontal directional drilling, plowing, trenching, and microtrenching. Horizontal directional drilling involves drilling a pilot bore string towards existing access points, then attaching

the conduit and pulling it back to install it. Temporary work areas would be established at the entry and exit pits for the bore rig and installation of access vaults. A plowing technique could be used in unpaved areas, where a vibratory cable plow incises the soil and lays the conduits simultaneously. Tracked vehicles are typically used for plowing, and the disturbance caused by the plow is usually restored within two days. In wet or soft conditions, a specialized "spider plow" may be used to minimize disturbance. Trenching would be employed in areas where plowing is unsuitable, typically due to rocky soil or existing underground infrastructure. A backhoe or similar equipment would create a trench of varying width and depth, and the conduit would be placed at the bottom before backfilling and compacting the trench. In narrow or sensitive areas, pavement cutting, and narrow trenching may be necessary, with slurry backfilling and repaving. Microtrenching is an option for paved areas or sidewalks, involving a narrow excavation trench that is backfilled with slurry or cement and sealed with grout, epoxy, or other sealer.

Once the conduit system is in place, the fiber optic line or microducts would be installed by pulling or blowing them into the conduits. Compressed air or hydraulic pullers would be used for the installation, ensuring smooth pulling within specified tension limits. A pull line would be attached to a plug pushed through the conduit, and then the pull line would be pulled back, threading the fiber optic line through the conduit. Tension limiters and monitors would be used to record the pulling tensions encountered.

To facilitate fiber installation, temporary assist points may be excavated if there is damage to the conduit. Access vaults, also known as handholes or pull boxes, could be placed along the alignment to allow for fiber optic line-splicing locations and future access to the buried conduits. Each vault would typically house a length of line slack and would be equipped with a traffic-bearing cover. These vaults would be installed as the final step in the horizontal directional drill process, usually in the same excavations used for drill entry and exit points.

In areas where trenching is challenging or topography is extreme, aerial stringing could be used, utilizing existing utility poles, or installing new poles. Guy wires may be used for additional stability, and self-supporting poles may be used where guy wires are not feasible or burying the pole base is not possible.

Staging Areas

Staging areas are planned to be established along public roadways or existing disturbed areas along the construction routes in the project area. If road constraints prevent locating staging areas along roadways, alternative areas such as paved or graveled yards would be used. The exact locations of staging areas and equipment lay-down areas would be determined during the final construction plans for each individual fiber project. Construction companies awarded contracts for specific segments would select the staging area locations. Staging areas would be used to mobilize crews, and refueling would not take place in the field. Any construction within the County ROWs would require an encroachment permit from the relevant jurisdiction. Standard traffic control measures, specified in a Transportation Management Plan, would be employed for all construction activities along roadways, subject to review and approval by the Tuolumne County Public Works Department for work within their respective limits.

The construction activities would involve different types of vehicles and equipment depending on the specific installation taking place. The five main construction activity types are trenching, directional drilling, fiber blowing, aerial fiber installation, and fiber splicing. The equipment used may include pickup/utility trucks, plows, trenchers, jackhammers, cutting blades, excavators with rock saws or rock breakers, dump trucks, backhoes, boring rigs, and bucket trucks for aerial installation. It is assumed that all fiber installation locations would be accessible by trucks and other construction equipment, and helicopter use is not expected to be necessary. The specific equipment required for each project will vary based on construction methods and site conditions.

Project Operations

Operational activities for any individual fiber projects implemented under the program would be limited to routine maintenance and emergencies. Infrastructure such as circuit cabinets with cooling fans and/or stand-by generators associated with individual fiber projects may be routinely checked, as needed. This infrastructure would be located on aboveground utility poles or within existing County maintained road ROW, public utility easements, and/or overhead public utility easements of record throughout the County.

3.3 No Action Alternative

Section 1502.14(d) of NEPA requires the analysis of a No Action Alternative. Analysis of a no action alternative provides a benchmark, enabling decision makers to compare the magnitude of the environmental effects to the proposed action or alternatives. No action means that an action would not take place, and the resulting environmental effects from taking no action would be compared with the effects of allowing the proposed activity to go forward.

Under the no action alternative, broadband investors would not be attracted to bring broadband service to the County, and the program area would remain in its existing condition. None of the impacts associated with construction and operational activities would occur if the no action alternative was selected. However, under the County would continue to not serve the 13,826 BSL (or 54 percent of all BSL within the County) that lack access to wireline broadband of speeds of up to 25/3 Mbps.

3.4 Alternatives

Alternative 1: Aerial Installation Only

This alternative would include only individual fiber projects that install aboveground fiber optic line that would utilize existing or newly constructed utility poles. No underground fiber optic line or new conduit would be installed under this alternative. This alternative was considered because it would avoid all impacts associated with underground installation, including construction impacts associated with horizontal directional drilling, plowing, trenching, microtrenching, line installation, and pavement repair. This alternative could also avoid the impacts associated with the spillage of drilling fluid.

However, this alternative would not meet the basic project objectives associated with providing a reliable system of broadband communications. Aboveground fiber optic lines are susceptible to damage from high winds, snowstorms, wildfires, and other natural disasters. Such damage would reduce the reliability of communications system, which could disrupt emergency communications during extreme storms, wildfires, or other emergency conditions when reliable communication is most important. The addition of utility poles may not be feasible in some locations in the County due to the rocky subsurface conditions that would make it nearly impossible to reach the boring depth required for the poles. Furthermore, this alternative would result in additional aesthetics impacts associated with the additional utility poles. It should also be noted that existing poles are owned by certain utilities or exist as joint poles with shared use between utilities. Additional joint pole users may not be feasible, and the ability to add joint pole users may be difficult to augment.

Alternative 2: Underground Installation Only

This alternative would include individual fiber projects that would only install underground fiber optic lines and would utilize existing or newly installed underground conduit. No aboveground fiber optic line would be installed under this alternative. This alternative was considered because it could avoid possible impacts associated with aboveground installation, including aesthetic impacts and construction impacts associated with the installation of new utility poles and stringing fiber optic line on existing poles.

This alternative would not meet the basic project objectives associated with providing a reliable system of broadband communications. This alternative could be susceptible to biological, cultural, and geological impacts due to underground installation, including construction impacts associated with horizontal directional drilling, plowing, trenching, microtrenching, and line installation. Additionally, this alternative could be susceptible to hazard, and hazardous material impacts due to possible digging into existing, unmarked infrastructure. Depending on the prevailing geological conditions, including bedrock near the surface, it may be impossible to install underground infrastructure in some parts of the County.

Alternative 3: Use of Existing Infrastructure

This alternative would include individual fiber projects that install fiber optic line in existing fiber-specific conduit or along existing utility poles. This alternative was considered because it would avoid impacts associated with installation of new utility pole and new underground fiber-specific conduit infrastructure. This alternative would avoid or substantially reduce all potential impacts associated with the proposed Countywide program, as outlined in this EA. However, it would not meet most of the basic objectives of the project because it would not promote the expansion of broadband infrastructure into portions of the service area that do not already include sufficient conduit, utility poles, and supporting infrastructure.

3.5 Alternatives Considered but Eliminated from Further Discussion

Not applicable.

4.0 Description of the Affected Environment

4.1 Noise

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.

The Tuolumne County General Plan and Regional Transportation Plan Update Draft EIR Traffic Study provides traffic noise measurements along selected travel corridors in the County. These noise measurements provide existing noise levels during the 3:00 p.m. to 6:00 p.m. peak hour travel period.

Noise level allowances for various types of land uses reflect the varying noise sensitivities associated with those uses. As described in the County General Plan Noise Element, noise-sensitive land uses (NSLU) include but are not limited to residential development, schools, hospitals, convalescent homes, churches, libraries, or similar

facility where quiet is an important attribute of the environment.

4.2 Air Quality

The Countywide program is located in Tuolumne County, which is part of the Mountain Counties Air Basin (MCAB). The MCAB also includes Amador, Calaveras, El Dorado (western), Mariposa, Nevada, Placer (central), Sierra, and Plumas counties. Air quality in the MCAB is regulated by the U.S. Environmental Protection Agency (USEPA) at the federal level, by the California Air Resources Board (CARB) at the State level, and by the Tuolumne County Air Pollution Control District (TCAPCD) at the regional level. The Tuolumne County portion of the MCAB is a nonattainment area for the State and federal standards for ozone and is unclassified or in attainment for the federal and State standards for CO, nitrogen dioxide, SO₂, PM₁₀, PM_{2.5}, and lead (CARB 2023). 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 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.

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 (County 2018a).

Local control in air quality management from the CARB is provided through county or regional level air pollution control districts. The Countywide program is located, as previously mentioned, within the Tuolumne TCAPCD. The TCAPCD is responsible for enforcing the standards discussed above under the Federal and State Regulations, and regulating stationary sources, while the CARB is responsible for control of mobile emission sources. The TCAPCD's 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 have a natural tendency to cause injury or damage to business or property" (County 2020).

The GHGs defined under California's Assembly Bill (AB) 32 include carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF₆). The County Board of Supervisors approved the Climate Action Plan (CAP) on November 8, 2022. The CAP identifies existing and projected GHG emissions, sets GHG reduction targets, establishes policies and actions to meet reduction targets, integrates climate adaptation and resilience strategies, engages the community, and provides an implementation program (County 2022).

CARB performs Statewide GHG inventories. The inventory is divided into six broad sectors: agriculture and forestry, commercial, electricity generation, industrial, residential, and transportation. Emissions are quantified in MMT CO₂e. Statewide GHG emissions totaled approximately 431 MMT CO₂e in 1990, 462 MMT CO₂e in 2000, 442 MMT CO₂e in 2010, and 369 MMT CO₂e in 2020. Transportation-related emissions consistently contribute the most GHG emissions, followed by electricity generation and industrial emissions.

4.3 Geology and Soils

Tuolumne County is located in the central Sierra Nevada region of California. The County lies within the western foothills of the Sierra Nevada mountain range and is influenced by both ancient and ongoing geologic processes.

The dominant rock types in Tuolumne County are granitic and metamorphic rocks, which form the core of the Sierra Nevada batholith. This batholith represents a vast intrusive body of granitic rock that was emplaced deep within the Earth's crust during the Mesozoic Era. These rocks have been exposed through uplift and erosion over millions of years, giving rise to the iconic granite cliffs, domes, and peaks that define the landscape of the County. The geologic history of Tuolumne County is also marked by the presence of volcanic activity. In the eastern part of the County, the remnants of ancient volcanic flows and volcanoclastic deposits can be found, representing past episodes of volcanic eruptions. This volcanic activity, combined with tectonic forces, has shaped the topography of the county, resulting in deep canyons, steep slopes, and rugged terrain. Furthermore, Tuolumne County is intersected by the Sierra Nevada frontal fault system, which represents a zone of ongoing tectonic activity. This fault system contributes to the seismicity of the region and has played a role in the formation of the Sierra Nevada Mountains.

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 (County 2018a).

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. Typically, agricultural land is considered 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 (CDC 2023). However, mapping for the entire County has not been prepared. The County determined that approximately 120,000 acres of agricultural lands within County limits are protected in Williamson Act contracts (County 2018a). Based on the areas that have been mapped by the California Department of Conservation (CDC), the project area could potentially include small strips or plots of land that are designated Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, zoned for agricultural or forest land use, or be located under Williamson Act contract.

4.4 Water Resources

4.4.1 Surface Water (i.e., Lakes and Rivers)

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 (County 2018b).

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'Shaughnessy 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.

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 (County 2018b). Large dams are mostly located along the Tuolumne and Stanislaus rivers.

4.4.2 Groundwater

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 (County 2018b).

The Tuolumne County GSA is responsible for the small section of the Modesto Subbasin that falls within Tuolumne County. The Tuolumne GSA covers approximately 1,000 acres that extends eastward into Tuolumne County (STRGBA 2022).

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.

4.4.3 Coastal Zone, Estuary, and Inter-tidal Areas

Tuolumne County is separated from the Pacific Ocean by approximately 150 miles, so the County is not at risk from tsunamis. Tuolumne County is located approximately 12 miles east of the Foothills fault system (County 2018b). Historically, earthquake activity in Tuolumne County has been substantially below the California State average. Therefore, earthquake-induced seiches also do not pose a risk to Tuolumne County (County 2018b). There are no levees located within the County; therefore, flooding as a result of a levee failure would not occur. Due to these conditions within the County, no impact would occur.

4.4.4 Flood Plains

4.4.5 Wild and Scenic Rivers

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.

4.5 Biological Resources

Biological Communities

Biological community mapping provided in **Figure 3** for the County is sourced from the Existing Vegetation (Eveg)

data associated with the Classification and Assessment with LANDSAT of Visible Ecology Groupings (CALVEG) Zones 4 (South Sierra) and 5 (Central Valley) (USFS 2014). The CALVEG habitat classification system is easily cross-walked to other classification systems, such as the California Wildlife Habitat Relationships System (CWHR), which is described in detail in the CWHR publication A Guide to Wildlife Habitats of California (Mayer and Laudenslayer 1988). Biological communities within the County broadly include aquatic, herbaceous, shrub, and forest and woodland habitats, as well as developed and non-vegetated lands. These broadly classified communities are further expanded into 35 CWHR habitat types within the County, which are displayed in **Figure 3** and **Table 4.5-1**. **Table 4.5-1** also provides acreages of each habitat type mapped within the County.

Table 4.5-1: Biological Communities in Tuolumne County

Habitat Type ¹	Acres in Tuolumne County ²
Developed and Non-Vegetated Habitats	
Barren	146,816
Cropland	645
Deciduous Orchard	15
Urban	2,779
Aquatic Habitats	
Fresh Emergent Wetland	19
Lacustrine	31,110
Riverine	791
Wet Meadow	14,293
Herbaceous Habitats	
Annual Grassland	112,661
Perennial Grassland	32,420
Shrub Habitats	
Alpine Dwarf-Shrub	4,471
Low Sage	7
Mixed Chaparral	83,943
Montane Chaparral	101,456
Sagebrush	3,107
Chamise-Redshank Chaparral	17,058
Forest and Woodland Habitats	
Aspen	1,920
Blue Oak Woodland	68,202
Blue Oak-Foothill Pine	14,185
Closed-Cone Pine-Cypress	24
Douglas Fir	506
Eastside Pine	3
Jeffrey Pine	40,756
Juniper	17,784
Lodgepole Pine	45,437
Montane Hardwood	123,299
Montane Hardwood-Conifer	33,753
Montane Riparian	12,190
Pinyon-Juniper	76
Ponderosa Pine	66,605
Red Fir	88,859

Habitat Type ¹	Acres in Tuolumne County ²
Sierran Mixed Conifer	276,634
Subalpine Conifer	101,681
Valley Oak Woodland	372
White Fir	11,615

¹ Habitat type classification is based on the CDFW California Wildlife Habitat Relationships System (CWHR) (Mayer and Laudenslayer 1988).

² Acreage values are rounded to the nearest whole number.

4.5.1 Threatened and Endangered Species

Special-Status Species

According to the database queries, a total of 93 regionally occurring special-status plant species and 53 special-status wildlife species are either known to occur or have the potential to occur in Tuolumne County and vicinity. Based on published information and literature review, 139 of the 141 species have potential to occur within Tuolumne County.

Within Tuolumne County, USFWS has mapped eight designated critical habitats, which includes proposed critical habitat for fisher (*Pekania pennanti*) and final critical habitat for Colusa grass (*Neostapfia colusana*), fleshy owl's-clover (*Castilleja campestris* ssp. *succulenta*), Greene's tuctoria (*Tuctora greenei*), Hoover's spurge (*Euphorbia* [= *Chamaesyce*] *hooveri*), Sierra Nevada bighorn sheep (*Ovis canadensis sierrae*), Sierra Nevada yellow-legged frog (*Rana sierrae*), and Yosemite toad (*Anaxyrus canorus*).

Additionally, NMFS Essential Fish Habitat (EFH) Mapper has EFH for chinook salmon (*Onchorhynchus tshawytscha*) mapped within Tuolumne County in the Upper Stanislaus watershed (HUC8-18040010) below Goodwin Dam. The NMFS EFH Mapper also indicated the Upper Tuolumne watershed (HUC8-18040009) as EFH for chinook salmon, however it indicates that the EFH is below La Grange Dam, which is outside and downstream of Tuolumne County.

4.5.2 Critical or Threatened / Endangered Habitat

Wildlife Movement Corridors

Wildlife corridors link areas of suitable wildlife habitat that are otherwise separated by rugged terrain, changes in vegetation, or human disturbance. This fragmentation of habitat can also occur when a portion of one or more habitats is converted into another habitat; for instance, when woodland or scrub habitat is altered or converted into grasslands after a disturbance such as fire, mudslide, or construction activities. Wildlife corridors mitigate the effects of this fragmentation by: (1) allowing animals to move between remaining habitats thereby permitting depleted populations to be replenished and promoting genetic exchange; (2) providing escape routes from fire, predators, and human disturbances, thus reducing the risk of catastrophic events (such as fire or disease) on population or local species extinction; and, (3) serving as travel routes for individual animals as they move within their home ranges in search of food, water, mates, and other needs.

Some areas along the northern and southwestern boundary of the County are mapped as Essential Connectivity Areas (ECA) by the California Essential Habitat Connectivity Project. Other wildlife movement corridors are likely present throughout the program area, such as riparian areas, drainages, or contiguous vegetated areas; however, these potential corridors will need to be evaluated on a site-specific level to determine the presence or absence within the project footprint.

4.5.3 Wetland Habitats

Sensitive Natural Communities

Sensitive natural communities include those that are of special concern to resource agencies or those that are protected under Section 1600 of the California Fish and Game Code (i.e., riparian areas), the Porter-Cologne Act, and/or Sections 401 and 404 of the Clean Water Act, which includes wetlands and other waters of the U.S. and State.

Sensitive natural communities, such as wetlands and other waters of the U.S. and State, are present within the Tuolumne County and have potential of being within the footprint of the proposed broadband infrastructure given the numerous stream crossings present along County ROWs. Other sensitive natural communities within the County may include riparian areas and other terrestrial habitats deemed sensitive by CDFW.

4.6 Historic and Cultural Resources

4.6.1 Archaeological Resources

4.6.2 Architectural Resources

The County's Indigenous peoples, the Central Sierra Me-Wuks, arrived in the area between 2000 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 3500-4000 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 used intensively for hunting and gathering, which is reflected by many thousands of temporary camps throughout the County. It is estimated that before 1849, there were 35 permanent or semi-permanent villages in the County, indicating that the County was a significant residential and resource procurement area for the Central Sierra Me-Wuk.

Few pre-1849 accounts of historic excursions into Tuolumne County have survived. Gabreil Moraga and his fellow explorers are the earliest known non-native to venture into what would become 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 Tuolumne County's physical and cultural landscape.

Non-native 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 Native American refugees into their areas. Former traditions were completely disrupted, and settlement patterns were altered due to high mortality and the encroachment of white settlers on the land. Villages were abandoned or moved because of the decreased number of residents or because of forced removal by non-natives. 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 Tuttle town 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 are artifacts dating from 1848 (Tuolumne County 2013). In the early 1850's, 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-1860's 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 populations decreased by nearly 50 percent.

From the late 1880's 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 for Tuolumne. 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 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.

4.6.3 Native American Traditional, Cultural or Religious Resources

The Me-Wuk of the Central Sierra Nevada occupy the foothill and mountain portions of the Stanislaus and Tuolumne drainages (Levy 1978) The Central Sierra Me-Wuk were one of five linguistic Me-Wuk groups that formed the Eastern Me-Wuk, the other four being the Saclan, the Plains Me-Wuk, the Northern Sierra Me-Wuk, and the Southern Sierra Me-Wuk. The Central Sierra Me-Wuk spoke a language that consisted of two different dialects, West Central and East Central Me-Wuk (Levy 1978).

The foremost political units were the smaller village complexes or tribal groups (Levy 1978). The groups were independent political entities, each occupying specific territories defined by physiographic features. Access to the natural resources of the territories was controlled by each group. Although each group had one more permanent villages, their territory contained numerous smaller camp sites used as needed during a seasonal round of resources exploitation.

Lineage held a special political significance with the Me-Wuk as well. Lineages were localized and derived their identity from a specific geographical locality, usually the permanent villages or settlements in use by the tribe. Among the Eastern Sierra Me-Wuk, the population of these settlements averaged roughly 25 individuals, however knowledge of these lineage settlements is fragmentary at best.

Research done by Theodoratus (1976) indicated that historically, Central Sierra Me-Wuk lived near American Camp, while others lived on Stanislaus River ridges. There were also settlements near Murphy's Vallecito, Carson Hill, Angels Camp, Albany Flat, Sonora, Clarks Flat, Camp Nine, and Italian Bar to name a few.

Legal and political leadership was provided by a chief, who inherited the position matrilineally and who could be either a man or woman. The duties of the chief included serving as a community advisor, feeding visitors, providing for the impoverished, directing ceremonies, hunting, fishing, and gathering activities (Levy 1798). In addition to the chief speakers and messengers held special significance in the local communities. They announced village edicts from the chief, often standing on the roof of the assembly houses. They were also responsible for delivering messages to chiefs of surrounding settlements (Levy 1978). The families in the permanent villages lived in conical structures constructed of bark slabs, while conical houses made with tule matting were used at lower elevations (Levy 1978). The assembly houses were semisubterranean roundhouses.

The staple foods eaten by the Central Sierra Me-Wuk were wild plant foods, especially varieties of acorns, and mule deer. Seeds and berries, roots, grasses, elk, rabbit, freshwater mussels yellow jacket larvae, grasshoppers and clams were also commonplace within the diet (Levy 1978).

With the European movement westward, the Central Sierra Me-Wuk faced new challenges in the form of hostility from settlers and disease that led to large reductions in population as well as resulted in population dislocation. When California was annexed by the United States the state began confiscating Indian Land, forcing the few remaining in the foothills to work for local ranchers (Levy 1978).

The descendants of the Me-Wuk still live in the central Sierra Nevada and are active in preserving and reviving elements of their traditional culture such as dance, language, basketry, and song. They are also active participants in the monitoring, consultation, and excavation of archaeological sites.

4.7 Aesthetic and Visual Resources

Tuolumne County is located in the central part of California, within the Sierra Nevada region. It is situated in the heart of the Mother Lode Country, an area historically renowned for its gold mining activities during the California Gold Rush in the mid-19th century. The County is bordered by Calaveras County to the northwest, Alpine County to the northeast, Mono County to the east, Mariposa County to the south, and Stanislaus County to the west. The visual environment of Tuolumne County is characterized by its natural landscapes, scenic vistas, and diverse terrain. The County is nestled within the Sierra Nevada Mountains, offering views of peaks, rolling hills, and expansive forests. The rugged mountain ranges, such as the Sierra Crest and the Stanislaus National Forest, create a backdrop that adds to the visual appeal of the region. Overall, the visual environment of Tuolumne County is characterized by its natural splendor, ranging from the grandeur of the mountains to the tranquility of the lakes and rivers. The combination of rugged landscapes, scenic waterways, and historic elements creates a captivating visual experience that attracts visitors and residents alike. The County's visual appeal is a testament to its rich natural resources, cultural heritage, and commitment to preserving its aesthetic qualities.

The viewer groups in the Countywide program vicinity are residents, cyclists, motorists, and recreationists. For

residents, viewer sensitivity is high due to their long-term, constant presence in the area and the moderate to high visual quality of the surrounding scenery. It is also presumed that these viewer groups were drawn to the Countywide program area, in part, because of the viewshed, although motorists/cyclists may travel the area's roadways solely to reach a destination and generally experience the scenery in the short term.

4.8 Land Use

The proposed Countywide program would be located within Tuolumne County limits. The area in which future broadband infrastructure could be implemented includes all unincorporated areas of the County; it excludes federal lands, private roads, and State highway ROW. The County has jurisdiction over a total of approximately 610 miles of County-maintained roads. There are various general plan land use designations and zoning designations within County limits. Public roads are currently designated in County general plans, zoning codes, and ordinances to accommodate utility infrastructure. It is envisioned that the vast majority of future broadband infrastructure would be installed within existing County ROW, public utility easements, and/or existing overhead public utility easements of record throughout the County. The exact alignment of future broadband infrastructure is currently unknown at this time and would be planned based on such considerations as construction feasibility, local preference, and locations of sensitive environmental resources.

4.9 Infrastructure

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 May 18th, 2021, 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 March 9th, 2023. 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.

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-squaremile 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 (County 2018b). 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. 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.

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 (County 2018b). 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 Development Department 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.

PG&E is the primary electricity supplier in Tuolumne County. As of 2016, PG&E was powered by 33 percent renewables (County 2018b). Internet service in Tuolumne County is provided by several internet service providers including but not limited to: Comcast Xfinity, AT&T, Cal.net, Volcano Communications Group and Viasat. While some areas of the County have sufficient internet speeds for daily work and home life, there are still large portions of the County with no coverage or coverage so slow that it has become prohibitive to perform daily, essential tasks. Currently, Tuolumne County has 13,826 Broadband Service Locations (BSL) (or 54 percent of all BSL within the County) that lack access to wireline broadband of speeds of up to 25/3 Mbps. Per the State of California's definition, areas with less than existing 25/3 Mbps are considered "unserved" and areas with less than existing 100/20 Mbps are considered "underserved". Additionally, 7,954 parcels are unserved within the County. Parcel information was provided by the County's GIS department and reflects the total number of residential, industrial, and commercial parcels that currently include a building. These pockets of unserved, or even underserved, populations in California are missing out on what is now seen as a utility critical to quality of life. This EA would help attract broadband infrastructure investors to bring broadband service to a County in need of reliable connectivity for increasing health and safety factors, as well as for economic and quality of life reasons. Refer to **Figure 7** for a map of existing utility lines within the County.

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 SR 108 corridor from the western County line to Pinecrest, including the communities of East Sonora, Jamestown, Columbia, and Twain Harte. 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 (County 2018b). 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 (County 2018b).

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. State routes play a major role in Tuolumne County's transportation system.

Tuolumne County has two public airports, Columbia Airport and Pine Mountain Lake Airport. 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. 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.

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.

4.10 Socioeconomic Resources

Tuolumne County has a population of 54,531 (US Census Bureau 2022). Approximately 90.1 percent of the population are White, 1.8 percent are Black or African American, 2.3 percent are American Indian and Alaska Native, 1.6 percent are Asian, 0.3 percent are Native Hawaiian and Other Pacific Islander, 3.8 percent are two or more races, and 13.6 percent are Hispanic or Latino. Within the County, 13.2 percent of the population are in poverty.

4.11 Human Health and Safety

Hazardous materials in Tuolumne County, California, are regulated through a combination of federal, State, and local regulations to ensure their safe handling, storage, transportation, and disposal. Several agencies and departments play a role in overseeing and enforcing these regulations. At the federal level, the USEPA sets standards and regulations for hazardous materials under various laws, such as the Resource Conservation and Recovery Act (RCRA) and the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). These regulations govern the proper management, storage, and disposal of hazardous materials and address issues related to hazardous waste, contaminated sites, and emergency response. At the State level, the California Department of Toxic Substances Control (DTSC) has authority over hazardous materials and hazardous waste management. They establish regulations and programs to ensure the safe handling, storage, and disposal of hazardous materials, including requirements for permits, inspections, and reporting. Within Tuolumne County, the Environmental Health Division of the Tuolumne County Public Health Department plays a crucial role in regulating hazardous materials. They enforce local ordinances and regulations pertaining to hazardous materials storage, handling, and disposal. This includes permitting and inspection of facilities that handle hazardous materials, responding to hazardous materials incidents, and providing guidance and education to businesses and the community on safe practices. In addition to these regulatory agencies, there are also emergency response teams, such as the local fire department and hazardous materials response teams, that are trained and equipped to handle and mitigate hazardous materials incidents.

Major access routes to Tuolumne County include SR 49, 108, and 120. Both the USEPA and the U.S. Department of Transportation (DOT) regulate the overall transportation of hazardous waste and material, including transport via highway and rail. 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), Caltrans, and the 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.

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 227 records for Tuolumne County. The database indicates that there are 139 LUST cleanup sites, 23 Cleanup Project Sites, 12

Land Disposal Sites, 2 WDR Sites, 4 AGLand Domestic Wells, 37 Permitted Underground Storage Tank (UST) Sites, 6 Single-Walled UST Sites, 4 Non-Case Information Sites, most of which have been fully remediated (SWRCB 2023). A total of 6 sites are currently active, including 4 AGLand Domestic Wells and 2 WDR Sites. The open sites include private residences and wastewater treatment facilities (SWRCB 2023). DTSC also maintains a list of cleanup sites and hazardous waste permitted facilities on its EnviroStor database. The EnviroStor database has 37 records for Tuolumne County, two of which are active. The two active records are dry cleaning sites within the City of Sonora (DTSC 2023).

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 (County 2018b). 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.

5.0 Analysis of Environmental Impacts

5.1 Noise

Implementation of the proposed Countywide program would result in a temporary or periodic increase in ambient noise levels related to construction equipment, activities, and vehicles. Noise impacts from construction activities occurring for each individual fiber project would be dependent on the type, location, and duration of the noise-generating construction activities, and the distance to noise sensitive land uses. The installation of underground or overhead cables for each individual fiber project would be located within existing County maintained road ROW, public utility easements, and/or overhead public utility easements of record throughout the County. However, the exact alignment of future broadband infrastructure was unknown at the time of this analysis.

Construction noise from the development of individual fiber projects would be temporary and short term as construction occurs intermittently and varies depending on the nature or phase of construction (e.g., horizontal directional drilling, plowing, trenching, microtrenching, line installation, aerial stringing, and pavement repair). Construction equipment would vary by construction method, but the construction process could include operation of the following types of equipment: pickup/utility trucks, horizontal drill rigs, auger drill rigs, cranes, generators, excavators, backhoes, dozers, air compressors, trenchers, concrete saws, vibratory rollers, dump trucks, and man lifts. Construction activities would be limited to the less noise-sensitive hours (e.g., daytime) of 7:00 a.m. to 7:00 p.m., Monday through Saturday, consistent with the County Maximum Allowable Noise Exposure-Stationary Noise Source standards (County 2018b). Noise generated from these pieces of equipment would be temporary and intermittent as typical use is characterized by short periods of full power operation followed by extended periods of lower power, idling, or powered-off conditions.

Tuolumne County does not have adopted daytime construction noise standards. Nighttime (7:00 p.m. to 7:00 a.m.) construction noise would be significant in noise levels would exceed 65 dBA in accordance with County General Plan Policy 5.A.5. Equipment noise levels at a distance of 50 feet would exceed the County nighttime standard of 65 dBA. Therefore, nighttime construction noise impact would be potentially significant. Mitigation measure NOI-1 would limit construction hours and require implementation of construction noise best management practices in accordance with applicable County General Plan Implementation Programs 5.A.e and

5.A.h.

Some remote sites could include the use of generators to provide power for emergency communications during power outages. Specific types of generators that would be installed are unknown. A typical backup generator for a communications site is a Polar Power 15-kilowatt diesel- or natural gas-powered generator housed in an enclosure which has a rated sound level of 66.2 dBA measured at 23 feet. Noise from routine maintenance and testing of any project emergency generators would be subject to the County stationary noise standards. Emergency generators are typically run for maintenance and testing for 15 to 30 minutes during daytime hours, several times per month. A generator producing 66.2 dBA for 30 minutes in one hour would result in 63.2 dBA L_{EQ} at a distance of 23 feet. Therefore, project emergency backup generators located within 105 feet of a NSLU would result in stationary source noise exceeding the daytime County standard of 50 dBA L_{EQ} . Mitigation Measure NOI-2 would require emergency backup generators to be located more than 105 feet from any NSLU or provide sound reduction measures to reduce noise from generators to less than 50 dBA measured at affected NSLUs.

Project construction activities would not require activities known to generate excessive ground-borne vibration, such as pile driving or blasting. A possible source of vibration during general project construction activities would be a vibratory roller used for gravel or pavement compaction. A large vibratory roller can create approximately 0.210 inch per second PPV at 25 feet (Caltrans 2020). Specific locations where vibratory rollers could be used during project construction have not been identified. However, construction vibration impacts would be potentially significant if a vibratory roller were used: within 15 feet of an occupied building (exceeding 0.4 inch per second PPV); within 15 feet of an occupied building (exceeding 0.4 inch per second PPV); within 18 feet of an older residential building; or within 60 feet of a fragile historical building, ruin, or ancient monument.¹ Mitigation Measure NOI-3 would require vibratory rollers to be used in static mode only (no vibrations) in proximity to occupied buildings or fragile structures. Once operation, individual fiber projects would not include significant sources of ground-borne vibration. Therefore, long-term, operational vibration impacts would be less than significant.

Aircraft operations associated with the County airports can generate noise levels exceeding 65 dBA CNEL, and individual fiber projects would be potentially subjected to airport-related noise exceeding acceptable levels, depending on its proximity to the airport. Individual fiber projects under the Countywide program could fall within the noise impact areas of the Columbia and Pine Mountain Lake Airports as described in the ALUCP.

Construction would be short-term and temporary. Once operational, individual fiber projects would only require occasional short-term maintenance from employees. The project would not result in persons working for extended periods in proximity to the Columbia and Pine Mountain Lake Airports. Therefore, the proposed Countywide program would not expose people residing or working in the program area to excessive noise levels from public use airports or private airstrips. Impacts would be less than significant.

Mitigation Measure NOI-1: Construction Hours and Best Management Practices

Prior to issuing individual project construction approvals or permits, the County shall insure that construction documentation includes the following restrictions. Project construction activities within 1,900 feet of noise sensitive land uses (NSLUs; e.g., residences, schools, hospitals, convalescent homes, churches, libraries) shall implement the following best manage practices:

¹ Equipment PPV = Reference PPV * (25/D)ⁿ (in/sec), where Reference PPV is PPV at 25 feet, D is distance from equipment to the receiver in feet, and n = 1.1 (the value related to the attenuation rate through the ground); formula from Caltrans 2020.

- All noise-generating activities shall be prohibited between the hours of: 7:00 p.m. to 7:00 a.m. Monday through Saturday and at any time on Sundays and County recognized public holidays.
- Equipment and trucks used for project construction shall utilize the best available noise control techniques (including mufflers, use of intake silencers, ducts, engine enclosures and acoustically attenuating shields or shrouds); and
- Impact equipment (e.g., jack hammers, pavement breakers, and rock drills) used for project construction shall be hydraulically or electrical powered wherever feasible to avoid noise associated with compressed air exhaust from pneumatically powered tools. Whenever feasible, require the use of quieter procedures, such as drilling rather than impact equipment operation.

Mitigation Measure NOI-2: Backup Generator Noise Control

Prior to approving individual projects that require an emergency back generator, the County shall verify project plans include the following:

- Where feasible, emergency backup generators shall be installed no closer than 105 feet from any noise sensitive land use (NSLU; e.g., residences, schools, hospitals, convalescent homes, churches, libraries). If it is not feasible to locate emergency generators 105 feet or more from all NSLUs, the project proponent shall incorporate noise attenuating features (e.g., generator sound enclosures, noise barriers) into the equipment installation sufficient to reduce generator noise levels to 50 dBA LEQ or less measured at outdoor use areas or building edges of the closest NSLU. Noise levels at NSLUs shall be verified by a qualified acoustical professional.

Mitigation Measure NOI-3: Vibratory Roller Use

Prior to issuing individual project construction approvals or permits, the County shall insure that construction documentation includes the following restrictions. Vibratory rollers shall be used in static mode only (no vibrations) within the following distances:

- Within 15 feet of any occupied building; and
- Within 18 feet of any older residential building; and
- Within 60 feet of a fragile historical building, ruin, or ancient monument.

5.2 Air Quality

Air Quality

Consistency with the air quality plan is determined by whether the project would hinder implementation of control measures identified in the air quality plan or would result in growth of population or employment that is not accounted for in local and regional planning.

Tuolumne County does not currently have an air quality plan; however, air quality is addressed within the Community Development and Design Element and Air Quality Element of the General Plan (County 2018a). CalEEMod was used to determine air quality impacts from construction of individual fiber projects under the proposed Countywide program. The Countywide program daily construction emissions for each individual construction method would be significantly less than TCAPCD thresholds of 1,000 lbs/day. It is likely that construction could simultaneously occur at various individual fiber project sites, however, the daily combined construction emissions would not exceed TCAPCD threshold. It is assumed that no more than 20 individual fiber project construction sites would be active at one time. Operation of the individual fiber projects under the

Countywide program would not result in a population increase and would not generate new vehicle trips beyond occasional maintenance activities. An emergency backup generator may be used in the event of a power outage or for routine testing. Monthly routine testing is assumed to last 15 minutes at one time. As use of the emergency backup generator would be limited, individual fiber projects would produce minimal operational emissions.

The Countywide program would not result in an increase in traffic on the local roadways within the County such that it would impact the efficiency of roadways and/or intersections. As the program would not create congestion or delay, there would be no circumstances in which CO hotspots would occur. Additionally, it is not anticipated that construction of the Countywide program would expose sensitive receptors to substantial DPM concentrations due to the highly dispersive nature of DPM and the fact that construction activities at any single location would be short-term and temporary.

Construction of individual fiber projects may require the use of diesel-powered equipment. Diesel exhaust can be a temporary source of odors. Due to the temporary and intermittent nature of construction methods, construction of individual fiber projects would not result in emissions leading to odors that would adversely affect substantial numbers of people. Therefore, broadband infrastructure is not considered to be a typical significant source of objectionable odors.

The Countywide program construction and operation emissions would not violate any air quality standard, result in a considerable net increase of any criteria pollutant, or result in substantial emissions of odors. Additionally, CO hotspots would not occur, and sensitive receptors would not be exposed to substantial DPM concentrations. Further, individual fiber projects would be consistent with the County General Plan and would be required to comply with all permitting requirements of TCAPCD. Impacts would be less than significant, and no mitigation is required.

Greenhouse Gases

The Countywide program temporary construction method greenhouse gas emissions were estimated using CalEEMod. The emissions for a single day of activity for each construction method total 2.8 MT CO₂e in the year 2024. In order to determine how many days of construction activities it would take to exceed the GHG emissions efficiency threshold, a total service population of 7,954 was utilized. Service population was used as a metric as the broadband infrastructure would provide service to the underserved population in the County.

The efficiency threshold for new development emissions per service population in the year 2050, 1.20, multiplied by the service population, 7,954, yields a total of 9,544 MT CO₂e/year. This represents the total annual emissions threshold. Dividing the total annual emissions, 9,544 MT CO₂e/year by the total daily construction activity emissions, 2.8 MT CO₂e/year, calculates the number of days it would take to exceed the annual emissions threshold. Based on these calculations, it would take approximately 3,408 days of activity to come close to exceeding the threshold. This assumes all activities would occur on the same day. Additionally, construction emissions would be short term and temporary and would not result in long-term emissions. Once construction is completed and the individual fiber projects are installed, GHG emissions would be significantly reduced to negligible levels. There would be no net change in permanent GHG emissions compared to existing conditions. Operation of the individual fiber projects under the Countywide program would not result in a population increase and would not generate new vehicle trips beyond occasional maintenance activities. Therefore, the individual fiber projects would produce negligible operational emissions.

GHG emissions are addressed within the *Climate Change Element* of the General Plan (County 2018a). In addition to the General Plan, the Tuolumne County Transportation Council put together the Tuolumne County Regional Blueprint Greenhouse Gas Study, adopted by the County Board of Supervisors in January 2012, which includes a

countywide GHG emissions inventory of 2010 emissions and projected emissions through 2040 for three different growth scenarios. The County Board of Supervisors also approved the CAP on November 8, 2022. The CAP identifies existing and projected GHG emissions, sets GHG reduction targets, establishes policies and actions to meet reduction targets, integrates climate adaptation and resilience strategies, engages the community, and provides an implementation program (County 2022). As discussed above, construction and operation of individual fiber projects would not generate significant construction or operational GHG emissions. Implementation of the Countywide program would not generate operational GHG emissions, either directly or indirectly, that may have a significant impact on the environment.

Impacts related to construction or operational emission would be less than significant. The Countywide program would be consistent with the County General Plan, Tuolumne County Regional Blueprint Greenhouse Gas Study, and CAP. Additionally, the program would not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases. Impacts would be less than significant.

5.3 Geology and Soils

Tuolumne County is located approximately 12 miles east of the Foothills fault system (County 2018b). 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. 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. Since liquefaction would most likely occur during or following an earthquake and severe earthquake risk is deemed to be low, the risk and danger of liquefaction occurring within the County are also low.

Within the County, there are a considerable number of areas 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. Refer to **Figure 5** for a map of serpentine soils within the County. These areas do not typically slide unless disturbed (i.e., roadways in the area of Don Pedro Reservoir). In addition, as they naturally erode the steep slopes of the Table Mountain area occasionally shed large boulders and rocks. However, major landslides are not common and there is very little development in the area (County 2018b). Due to these conditions, the Tuolumne County Multi-Hazard Mitigation Plan determined that there is a low probability of landslide in the County. Refer to **Figure 6** for a map of high slope area within the County.

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 (County 2018b). Proper engineering, including compliance with the CBC, would minimize the risk to life and property. The proposed broadband infrastructure would be installed within existing County-maintained roads and ROW, public utility easements, and/or existing overhead public utility easements of record throughout the County. As fiber optic lines and/or utility poles would be located primarily in road shoulders, the risk of localized ground failure is assumed to have already been minimized through previous grading, compaction, and use of engineered fills.

Design and construction of individual fiber projects would be conducted in accordance with the CBC and other applicable engineering specifications and grading regulations that would further reduce the potential for adverse effects due to seismic events or landslides. Therefore, this impact 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. Construction of the individual fiber projects would require ground disturbance, including vegetation clearing, trenching, directional drilling, fill placement, pole placement excavation, and staging. The disturbed soil could be exposed to wind and water erosion and loss of topsoil. Any projects that disturb over one acre of soil would be required to comply with the California Construction General Permit Order 2009-0009-DWQ (as amended by 2010-0014-DWQ and 2012- 0006-DWQ), which requires implementation of a Stormwater Pollution Prevention Program (SWPPP) and specific best management practices (BMP) to prevent erosion. Typical erosion-prevention measures such as silt fences, stakes straw bales/wattles, silt/sediment basins and traps, check dams, geofabric, sandbag dikes, and temporary revegetation or other ground cover would be used to minimize erosion impacts. If an individual fiber project would disturb more than one acre of soil, a SWPPP with project specific BMP will be required as part of each individual fiber project.

If an individual fiber project would disturb more than one acre of soil, a SWPPP with project specific BMP would be required. Additionally, adherence to relevant policies and implementation programs, as well as other State and County regulatory programs would adequately address the potential effects on unstable slopes and erosion. Therefore, the impact would be less than significant.

Hazards associated with unstable soils or geologic units are dependent on site-specific conditions, as well as the specific nature of the individual fiber project. With adherence to CBC requirements, including seismic design criteria as required by the CBC and local building code requirements, all improvements and development would be designed to minimize potential risks related to unstable soils and geologic units. Additionally, prior to construction of individual fiber projects, a preliminary soils report would be prepared. If the preliminary soils report indicates soil problems that would lead to structural defects, a soils investigation of each individual fiber project area would be required (County 2018b). Adherence to the Tuolumne County Ordinance Code, policies and implementation programs, and other State regulations as well as preparation of a soil report would adequately address the potential risks of unstable soils. Therefore, the impact 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 of the Countywide program 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. Individual fiber projects would be subject to the CBC Section 1808.6, which requires design features for foundations of buildings and structures in areas subject to expansive soils. Prior to construction of individual fiber projects, a preliminary soils report would be prepared and the potential for expansive soil to occur on the project site would be analyzed. 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 (County 2018b). Preparation of a preliminary soils report prior to construction of individual fiber projects and adherence to CBC requirements would adequately address the potential effects on expansive soils. Therefore, the impact would be less than significant.

The Countywide program would install fiber optic conduit either underground in buried conduits, overhead on pole lines, or in a combination of both. Therefore, development resulting from the proposed Countywide program would not use a septic or alternative water disposal system, and no impact would occur.

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. 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 (County 2018b). Based on geologic mapping, the majority of the County is not considered sensitive for paleontological resources.

Individual fiber projects would primarily be constructed in disturbed public roadways that have been previously graded, compacted, and filled to construct the roads. These previously disturbed portions of the Countywide program area would not contain paleontological resources. Where individual fiber projects would require drilling through rock, it is possible that intact, unique paleontological resources could be present within paleontologically sensitive rock formations and could be affected by the Countywide program. Specifically, those resources could be damaged or destroyed during installation of fiber optic line. Because the Countywide program would primarily be implemented in disturbed or previously developed areas and the County is not considered sensitive for paleontological resources, impacts to paleontological resources would be minimal. However, unique paleontological resources could be present within rock formations and could be affected by construction of individual fiber projects. Implementation of Mitigation Measure GEO-1 would be implemented to reduce potential impacts to a less than significant level.

Mitigation Measure GEO-1: Perform a Site-Specific Paleontological Resources Inventory Assessment

Before submitting a grading permit application, the applicant for an individual fiber project shall retain the services of a qualified professional paleontologist who shall prepare a paleontological resources inventory and assessment for any affected rock units. This report shall include the following components:

- A report of any fossils observed during a reconnaissance-level field survey.
- The results of a records search of appropriate paleontological databases (at a minimum, the database at the University of California, Berkeley Museum of Paleontology) to determine whether any previously recorded fossil localities are located within or immediately adjacent to the fiber optic facilities where rock boring is proposed.
- A determination as to whether the geologic formations are of high or low paleontological sensitivity, and a discussion supporting the reasons why the sensitivity determinations were made.

Prior to issuance of grading permits, the approving local jurisdiction shall review the reports and its findings to confirm no paleontological resources would be affected.

5.4 Water Resources

Site clearing, grading, excavation, and construction activities have the potential to impact water quality through soil erosion and increased silt and debris discharged via surface runoff. Additionally, the use of construction materials such as fuels, solvents, and paints may present a risk to surface water quality. Temporary storage of construction materials and equipment in work areas or staging areas could create the potential for a release of hazardous materials, trash, or sediment to the storm drain system. Projects that would result in disturbance of an area greater than one acre would be required to enroll for coverage under the Storm Water Construction General Permit (Construction General Permit) for the NPDES program. The Construction General Permit requires that a project specific SWPPP be prepared and BMPs be implemented during construction of individual fiber projects. Typical BMPs would include diversion of runoff from disturbed areas, protective measures for sensitive areas, temporary soil stabilization measures, storm water runoff quality control measures, concrete waste management, watering for dust control, and installation of perimeter silt fences, as needed. Therefore, compliance with the Construction General Permit would reduce impacts to a less than significant level.

Once individual fiber projects are constructed, the program would require occasional operational maintenance

needs. All construction areas would be cleared after construction to ensure all debris is removed. As operation of individual fiber projects would require only a limited amount of temporary ground disturbance during maintenance activities, impact would be less than significant.

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. The Tuolumne County GSA is responsible for the small section of the Modesto Subbasin that falls within Tuolumne County. The Tuolumne GSA covers approximately 1,000 acres that extends eastward into Tuolumne County (STRGBA 2022).

Construction of individual fiber projects could involve minor use of water for dust control, which would be readily available from existing sources. Operation of the fiber optic facilities would not require additional water supplies as no population would be generated. Therefore, the proposed Countywide program is not anticipated to substantially decrease groundwater supplies, and impacts would be less than significant.

Construction of the individual fiber projects would require ground disturbance, including vegetation clearing, trenching, directional drilling, fill placement, pole placement excavation, and staging. The disturbed soil could be exposed to wind and water erosion and loss of topsoil. Any individual fiber projects that disturb over one acre of soil would be required to comply with the California Construction General Permit which requires implementation of a SWPPP and specific BMPs to prevent erosion. Typical erosion-prevention measures such as silt fences, stakes straw bales/wattles, silt/sediment basins and traps, check dams, geofabric, sandbag dikes, and temporary revegetation or other ground cover would be used to minimize erosion impacts. Additionally, potential other sources of polluted runoff from Countywide program construction and operation would be controlled through the preparation and implementation of a SWPPP with BMPs. Through implementation of BMPs, substantial new sources of runoff would be intercepted and prevented from entering drainage systems or surface waters. Once individual fiber projects are constructed, the program would require occasional operational maintenance needs that would not exceed the capacity of existing or planned stormwater drainage systems.

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. As individual fiber projects would be constructed within existing County maintained ROW, public utility easements, and/or overhead public utility easements of record throughout the County, it is not likely that individual fiber projects would substantially increase the rate or amount of surface runoff in a manner which would result in flooding.

The Countywide program's impacts on erosion and loss of topsoil would be minimized through the preparation of a SWPPP, implementation of BMPs, and adherence to relevant County code provisions. Additionally, the Countywide program would comply with County ordinances and construction standards to prevent flooding within 100-year flood zones. Therefore, impacts would be less than significant.

Tuolumne County is separated from the Pacific Ocean by approximately 150 miles, so the County is not at risk from tsunamis. Tuolumne County is located approximately 12 miles east of the Foothills fault system (County 2018b). Historically, earthquake activity in Tuolumne County has been substantially below the California State average. Therefore, earthquake-induced seiches also do not pose a risk to Tuolumne County (County 2018b). There are no levees located within the County; therefore, flooding as a result of a levee failure would not occur. Due to these conditions within the County, no impact would occur.

Tuolumne County WQP contains a comprehensive program that addresses a wide range of water quality concerns within the County. The WQP emphasizes surface (e.g., lakes, streams) water quality, factors affecting surface water quality including stormwater runoff, and mechanisms for maintaining and improving surface water quality. The WQP includes both regulatory and non-regulatory components. The regulatory component builds upon many existing environmental programs and activities implemented by various County departments and focuses on land development activities subject to the County's permitting requirements and on County public works projects. The non-regulatory stewardship component of the WQP encourages voluntary community participation in maintaining and improving the County's water quality. Individual fiber projects would comply with the County WQP's regulatory and non-regulatory components. Additionally, individual fiber projects that disturb greater than one acre would comply with the Construction General Permit, which would include preparation and implementation of a SWPPP and associated BMPs. Therefore, the Countywide program would not conflict with the County WQP, and impacts would be less than significant.

Groundwater resources would be managed in a manner consistent with the SGMA which provides guidance for sustainable groundwater management, including BMPs. The Tuolumne County GSA is responsible for the small section of the Modesto Subbasin that falls within Tuolumne County. The Tuolumne GSA covers approximately 1,000 acres that extends eastward into Tuolumne County (STRGBA 2022). Construction of individual fiber projects could involve minor use of water for dust control, which would be readily available from existing sources. Operation of the fiber optic facilities would not require additional water supplies as no population would be generated. Therefore, the Countywide program would not conflict with SGMA, and impacts would be less than significant.

5.5 Biological Resources

As individual projects would be located within previously disturbed and/or developed areas (e.g., in ROW or public utility easement), it is unlikely that the proposed Countywide program would result in a substantial adverse effect on special-status species or their associated habitats, including USFWS designated critical habitats and/or NMFS essential fish habitat. However, individual projects would be required to prepare a biological resources assessment (BRA) that would assess impacts to special-status species on the individual project site, as outlined in Mitigation Measure BIO-1. With implementation of the recommended mitigation and/or avoidance measures included in the project-specific BRA to be prepared as required by Mitigation Measure BIO-1 below, impacts to special-status species would be less than significant.

Sensitive natural communities may include, but are not limited to, aquatic resources under Federal and/or State jurisdiction, riparian habitats, and oak woodlands. It is anticipated that individual projects would be primarily located within previously disturbed and/or developed areas (e.g., in ROW or public utility easement), and it is unlikely that the proposed Countywide program would result in a substantial adverse effect on sensitive natural communities. However, if sensitive natural communities would be impacted by project implementation, then the impact would be potentially significant. With the implementation of Mitigation Measure BIO-2, potential impacts to jurisdictional waters, wetlands, and/or sensitive natural communities that may occur within the program area would be reduced to less than significant. With the implementation of Mitigation Measure BIO-3, potential impacts to oak resources that may occur within the program area would be reduced to less than significant.

Potential impacts to State or federally protected wetlands or other waters of the U.S. or State are currently unknown given the programmatic nature of this Countywide program. As individual projects would be located within previously disturbed and/or developed areas (e.g., in ROW or public utility easement), it is unlikely that the proposed Countywide program would result in a substantial adverse effect on State or federally protected aquatic resources. However, potential impacts to State or federally protected aquatic resources would be addressed by avoidance and/or mitigation measures stipulated by regulatory permits as required by Mitigation Measure BIO-2.

Some areas along the northern and southwestern boundary of the County are mapped as ECAs by the California Essential Habitat Connectivity Project. However, Tuolumne County is a rural county that currently provides extensive open, dispersal habitat for wildlife movement in the program area. Additionally, the Countywide broadband infrastructure program would install fiber optic conduit underground, on overhead pole lines, or a combination of both. Implementation of the Countywide broadband infrastructure program is unlikely to substantially interfere with the movement of wildlife corridors, however, potential impacts to the movement of native resident wildlife species or wildlife corridors would be addressed in the project-specific BRA to be prepared as required by Mitigation Measure BIO-1.

If it is determined during the biological resources assessment that a project will result in impacts to oak resources, then the County may require mitigation for impacts to oak resources or regulated individual oak trees. While some individual oak trees could be damaged by projected development under the Countywide program, the scope of premature removals cannot be anticipated based on the programmatic level of analysis. As noted in Mitigation Measure BIO-3 above, individual projects that would result in impacts to oak resources may be required to conduct an oak tree inventory to determine if mitigation is needed. With the implementation of Mitigation Measure BIO-1 and Mitigation Measure BIO-3, the impact would be less than significant. The proposed project would not conflict with any other local policies or ordinances protecting biological resources.

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, the Countywide program would not conflict with any provisions of an adopted HCP. No impact would occur.

Mitigation Measure BIO-1: Prepare a Site-Specific Biological Resources Assessment

Prior to project approval, the project applicant shall retain a qualified biologist to prepare a site-specific biological resources assessment (BRA). The BRA shall consist of a desktop review of relevant biological databases and online resources, a general biological reconnaissance survey, vegetation mapping, aquatic resources assessment, analysis of potential impacts to biological resources, and proposed measures to reduce and/or avoid potential impacts.

If it is determined during the biological resources assessment that special-status species have the potential to occur within a project area, then project-specific mitigation measures should be recommended to reduce and/or avoid potential impacts. Potential measures for special-status species may include, but are not limited to, protocol-level surveys, nesting bird surveys, and other focused pre-construction surveys.

If it is determined that special-status species are present within or adjacent to the project area, or if the project has potential to impact USFWS designated critical habitat and/or NMFS essential fish habitat, then the project proponent shall coordinate with CDFW and/or USFWS, as necessary, to determine mitigation and/or avoidance measures to reduce potential impacts to a level that would be less than significant. Depending on site-specific conditions, agency involvement may be triggered through the regulatory permitting process or direct agency consultation.

Mitigation Measure BIO-2: Jurisdictional Delineation and Regulatory Permitting

If it is determined that impacts to jurisdictional waters or other sensitive natural communities cannot be avoided, then the project proponent shall apply for any necessary permits from the USACE, CDFW, and the RWQCB (e.g., Section 401/404 permits, CDFW Lake or Streambed Alteration Agreement, etc.). If necessary, a formal delineation of wetlands and "other waters" of the United States shall be prepared in accordance with the U.S. Army Corps of Engineers' (USACE) *Corps of Engineers Wetlands Delineation Manual* and appropriate regional supplements to determine the extent of aquatic resources and quantify impacts. Impacts to jurisdictional waters and/or sensitive natural habitat shall be mitigated in accordance with agency requirements.

Mitigation Measure BIO-3: Oak Resources Inventory

If it is determined during the biological resources assessment that a project will result in impacts to oak resources, then the County may require mitigation for impacts to oak resources or regulated individual oak trees. Prior to project approval, the Community Development Department may require an inventory of prematurely removed trees or canopy cover to determine the extent of the loss. The inventory shall be prepared by a resource professional with expertise in oak woodlands ecology who is on the list of qualified consultants maintained by the Community Development Department. Resource professionals may include botanists, ecologists, wildlife biologists, and foresters.

5.6 Historic and Cultural Resources

Cultural Resources

The Countywide program may require the aerial installation of fiber optic line on utility poles in instances where constraints prevent the installation of subsurface conduit. The aerial installation of such fiber optic lines would entail the use of existing or newly constructed utility poles within existing County maintained road ROW, public utility easements, and/or overhead public utility easements of record throughout the County. Such an installation would introduce a new visual element to areas with concentrations of historical built environment cultural resources such as buildings and structures that comprise historic districts. Historic districts derive much of their significance from their ability to visually convey a sense of time and place from their architecture, street furniture, and streetscape corridor appearance. Refer to **Figure 4** for a map of cultural resources locations within the County.

The use of existing or newly constructed utility poles for the collocation of fiber optic cable would change the visual signature of the poles and their vicinity. However, these collocations and new installations would be relatively minor additions to existing utility corridors in the County already populated with other utility infrastructure, including in and near historic districts and historical resources. The installation of these fiber optic lines, as proposed, would not diminish a built-environment resource's ability to convey its significance or justify the reasons for its qualification as a historical resource, two of the criteria of material impairment in the definition of a substantial adverse change in the significance of a historical resource. The impact would be less than significant.

Tuolumne County has a rich archaeological record with expressions of material culture in almost every environmental setting. Examples of these archaeological cultural resources can range from precontact settlement and resource procurement areas to mining-related features such as adits and tailings, to archaeological features sealed beneath the hardscape of the County's urbanized areas. Their significance can lie in their ability to contain information important in prehistory or history, but also in their value to descendant communities as expressions of their cultural heritage and patrimony.

Because archaeological cultural resources are non-renewable, their disturbance by individual fiber project implementation can impede or destroy their ability to convey their significance, which can embody scientific and/or traditional cultural value. Should that occur, a significant effect on the environment could result.

Implementation of Mitigation Measure CUL-1 contains measures that would identify potential archaeological cultural resources impact scenarios; seek to avoid impacts to such resources if feasible; and mitigate those impacts that cannot be avoided through individual fiber project redesign. Avoidance would prevent the loss of scientific and/or heritage values of the resource, and archaeological mitigation would offset the loss of scientifically consequential data through a program of excavation, analysis, and documentation of information would otherwise be lost.

Archaeological cultural resources encountered during individual fiber project construction may qualify as

significant for their ability to contain information important in prehistory or history, or for their value to descendant communities as expressions of their cultural heritage and patrimony. Because archaeological cultural resources are non-renewable, their disturbance by individual fiber project implementation can impede or destroy their ability to convey their significance, which can be embodied as scientific and/or traditional cultural value. Should that occur, a significant effect on the environment could result.

Implementation of Mitigation Measure CUL-2 contains measures that would identify potential archaeological cultural resources impact scenarios; seek to avoid impacts to such resources if feasible; and mitigate those impacts that cannot be avoided through individual fiber project redesign. Avoidance would prevent the loss of scientific and/or heritage values of the resource, and archaeological mitigation would offset the loss of scientifically consequential data through a program of excavation, analysis, and documentation of information would otherwise be lost.

There is the potential to encounter human remains in almost any environmental context that occurs in Tuolumne County. Therefore, implementation of the Countywide program has the potential to expose human remains during ground-disturbing activities. Substantial adverse changes to human remains resulting from implementation of the proposed Countywide program would be reduced to below the level of significance through the implementation of Mitigation Measure CUL-3. The reduction in severity would be accomplished through the respectful treatment of the remains in consultation with descendant communities who place religious and cultural significance in such remains.

Mitigation Measure CUL-1: Archaeological Cultural Resources Investigations

Preconstruction Screening Identification

Prior to each phase of fiber optic installation, including appurtenant structures, unpaved staging areas, and fiber optic line, Tuolumne County shall request a records search from the Central California Information Center (CCIC) for project footprints for which ground disturbance is required in areas that have not been previously subject to such disturbance. For those areas of native, unpaved soil that have not been previously surveyed for archaeological cultural resources, the County shall require a pedestrian field survey by a qualified professional archaeologist. If archaeological cultural resources are identified as a result of that survey, the County shall implement the recommendations of the consulting archaeologist to avoid or substantially reduce the severity of impacts to such resources. For those areas that have been surveyed previously, the County shall abide by the recommendations of the professional archaeologist who conducted the original survey.

Known Resource Conflicts

In the event that the records search described above identify archaeological cultural resources that would be subject to project-related impact, the County shall evaluate the status of the resource. The archaeological cultural resource shall be assessed for significance through the implementation of a Phase II investigation by a qualified archaeologist. This may require some or all of the following:

- Development of a research design that guides assessments of site significance and scientific potential.
- Mapping and systematic collection of a representative sample of surface artifacts
- Subsurface investigation through shovel test pits, surface scrapes, or 1 by 1 meter excavation units; a combination of such methods; or equivalent methods
- Analysis of recovered material to determine significance

- Preparation of a report, including an evaluation of site significance, and recommendations for mitigation, if appropriate
- Appropriate curation of collected artifacts

If the resource is precontact in nature, the Phase II investigation shall be coordinated with descendant tribal communities.

If the Phase II evaluation concludes that the archaeological cultural resource does not qualify as a historical resource (PRC Section 21084.1) or unique archaeological resource (PRC Section 21083.2), then no further study or protection of the resource is necessary. If the resource does qualify as a historical or unique archaeological resource, then the County shall require the implementation of the Phase III approach described below.

A Phase III data recovery effort shall be implemented by the consulting archaeologist for those sites that are shown by the Phase II efforts to qualify as significant. The County shall ensure that data recovery conducted to the level that reduces impacts to below the level of significance has been completed prior to project implementation. The Phase III data recovery program shall include all or a combination of the following methods:

- Development of a research design to identify important research questions that may be answered through a systematic study of the resource.
- Mapping and systematic collection of surface artifacts, possibly complete data recovered depending on site size
- Subsurface investigation through methods such as controlled hand-excavation units, machine excavations, deep testing, or a combination of methods. When applicable, other techniques, such as geophysical testing, may be warranted.
- Analysis of recovered material through visual inspection and chemical analysis when applicable
- Preparation of a report
- Appropriate curation of collected artifacts

If the resource is precontact in nature, the Phase III investigation shall be coordinated with descendant tribal communities.

Mitigation Measure CUL-2 Inadvertent Discovery of Archaeological Cultural Resources

In the event that cultural resources are exposed during ground-disturbing activities, construction activities shall be halted within 100 feet of the discovery. Cultural resources could consist of but are not limited to stone, bone, wood, or shell artifacts, or features, including hearths, structural remains, or historic dumpsites. If the resources cannot be avoided during the remainder of construction, a consulting archaeologist, who meets the Secretary of the Interior's *Professional Qualifications Standards* for archaeology, shall assess the resource and provide appropriate management recommendations. The County shall implement those recommendations to avoid or substantially reduce the severity of impact to significant resources.

Mitigation Measure CUL-3: Human Remains

In the event of an accidental discovery or recognition of any human remains, PRC Section 5097.98 must be followed. Once project-related earthmoving begins and if there is a discovery or recognition of human remains, the following steps shall be taken:

1. There shall be no further excavation or disturbance of the specific location or any nearby area reasonably suspected to overlie adjacent human remains until the County Coroner is contacted to determine if the remains are Native American and if an investigation of the cause of death is required. If the coroner determines the remains are Native American, the coroner shall contact the NAHC within 24 hours, and the NAHC shall identify the person or persons it believes to be the “most likely descendant” of the deceased Native American. The most likely descendant may make recommendations to the landowner or the person responsible for the excavation work, for means of treating or disposing of, with appropriate dignity, the human remains, and any associated grave goods as provided in PRC Section 5097.98, or
2. Where the following conditions occur, the landowner or their authorized representative shall rebury the Native American human remains and associated grave goods with appropriate dignity either in accordance with the recommendations of the most likely descendent or on the project area in a location not subject to further subsurface disturbance:
 - The NAHC is unable to identify a most likely descendent or the most likely descendent failed to make a recommendation within 48 hours after being notified by the commission;
 - The descendent identified fails to make a recommendation; or
 - The landowner or his authorized representative rejects the recommendation of the descendent, and the mediation by the NAHC fails to provide measures acceptable to the landowner.

Tribal Cultural Resources

The County acknowledges that TCRs may be present within the Countywide program area, and proposed individual fiber projects could cause a significant impact to unknown TCRs within the County. Therefore, implementation of Mitigation Measure TCR-1 would address unanticipated discoveries of TCRs, and the proposed Countywide program’s potential impacts to unknown TCRs would be less than significant.

The County acknowledges that discoveries of an archaeological nature made during individual fiber project construction may qualify as TCRs, which could result in a significant impact to unknown TCRs within the County. Therefore, implementation of Mitigation Measure TCR-2 would address unanticipated discoveries of TCRs, and the Countywide program’s potential impacts to unknown TCRs would be less than significant.

Mitigation Measure TCR-1: Tribal Consultation

Tuolumne County shall conduct the appropriate tribal consultation outreach to relevant California Native American tribes, pursuant to PRC § 21080.3.1, for all future individual fiber projects included within the scope of the Tuolumne County Broadband EA. Both local tribes, the Tuolumne Band of Me-Wuks and the Chicken Ranch Rancheria, are to be formally notified once site-specific information has been submitted to the County. Pursuant to PRC § 21080.3.1 (b), the tribes will have 30 days for AB 52 from the receipt of the request for consultation to either request or decline consultation for the individual fiber project, in writing, with the County for each proposed individual fiber project included in the scope of the Tuolumne County Broadband EA. In the event that a general plan or specific plan adoption or amendment is required for the implementation of an individual fiber project, the County shall comply with the requirements of Senate Bill 18 (SB 18), in coordination with AB 52, as described in California Government Code § 65352.3.

Mitigation Measure TCR-2: Archaeological Treatment and Tribal Consultation

In the event that TCRs are exposed during ground-disturbing activities, construction activities (e.g., grading, grubbing, or vegetation clearing) shall be halted in the immediate vicinity of the discovery. An archaeologist who meets the Secretary of the Interior's Professional Qualifications Standards shall then be retained to evaluate the resource's significance in close coordination with tribal members who would provide traditionally based cultural knowledge for the analysis. If the discovery proves to be significant, additional work and mitigation measures, such as those listed in Mitigation Measures CUL-1, CUL-2, and CUL-3 as deemed appropriate by the tribal organization consulting on the find. Such mitigation may include avoidance, data recovery excavation, or traditional ethnographic research into the cultural importance of the find to contemporary descendant communities.

5.7 Aesthetic and Visual Resources

A scenic vista is generally considered to be a location from which the public can experience unique and high-quality views, including panoramic views of great breadth and depth, often from elevated vantage points (County 2018b). Portions of SR 49, 108, and 120 are eligible for designation as State Scenic Highways; however, the County does not have any officially designated State Scenic Highways (Caltrans 2023). The County has identified three vista points that have been officially designated by the California Department of Transportation (Caltrans). 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 (County 2018b). The National Park Service (NPS) has designated a portion of the Tuolumne River as a Wild and Scenic River Corridor.

Individual fiber projects under the Countywide program would install fiber optic conduit either underground in buried conduits, overhead on pole lines, or in a combination of both. The County includes a total of approximately 610 miles of County-maintained roads. The installation of underground or overhead cables would be located within existing County maintained road ROW, public utility easements, and/or overhead public utility easements of record throughout the County. The exact alignment of future broadband infrastructure is unknown at this time and would be based on such considerations as construction feasibility, local preference, and locations of sensitive environmental resources. Since the Countywide program would not include installation of fiber optic lines on federal lands, private roads, and State highway ROW, no above ground structures would be installed within the viewsheds of established scenic vistas along SR 120. Some roadway segments and previously disturbed and/or developed areas within the Countywide program area may have scenic views of natural features (e.g., streams, hills, forests) and buildings of architectural value. However, many of the roadways within the program area are lined with tall vertical features (e.g., mature trees, utility poles, streetlights, and roadway signs) and horizontal features (e.g., building and pavement edges, fences, and utility lines). The aboveground fiber optic lines on newly or previously constructed utility poles could be introduced in existing viewsheds; however, these structures would be generally consistent with existing vertical and horizontal features within the Countywide program area. New aboveground fiber optic lines and utility poles would not be so large that they would dominate existing viewsheds or detract from existing views. Therefore, operation of individual fiber projects would not obstruct or substantially alter views from scenic vistas.

Additionally, scenic resources would not be impacted by the Countywide program as individual fiber projects would typically be constructed and operated in previously disturbed and/or developed areas (e.g., in ROW or public utility easements). The broadband infrastructure could follow other utility installations; therefore, it is likely that the ground along these alignments has been previously disturbed by prior utility work. Many of these connections would generally follow the route of the roadway, particularly if the applicable areas have other issues that could affect access, such as vegetation, geologic setting, landscape, and/or water features that would not be disturbed. This EA conservatively assumes that new ground disturbance would be required for the entire Countywide program; however, there would be potential for utilizing existing conduit where only installation of fiber optic line would be required. If deemed feasible, the new broadband infrastructure constructed under an

individual fiber project would connect to existing infrastructure in the Countywide program area supported by existing service providers. New aboveground or underground fiber optic lines, utility poles, and temporary staging areas to support their construction would occur primarily within previously disturbed areas. However, potential disturbed or undisturbed areas would be returned to pre-program conditions after construction is complete.

Construction

The construction methods for future individual fiber projects in Tuolumne County would be determined based on various factors such as location, micro-site conditions, and constraints present at each future individual fiber project site. These methods include horizontal directional drilling, plowing, trenching, microtrenching, line installation, and aerial stringing. Staging areas are planned to be established along public roadways or existing disturbed areas along proposed construction routes in the Countywide program area. If road constraints prevent locating staging areas along roadways, alternative areas such as paved or graveled yards would be used. The exact locations of staging areas and equipment lay-down areas would be determined during the final construction plans for each individual fiber project. After construction is complete, the construction staging areas would be returned to conditions similar to those that existed prior to construction of individual fiber projects under the Countywide program. As construction activities would be short-term and temporary, the Countywide program would not permanently or substantially obstruct views from scenic vistas.

Construction activities and equipment would likely be visible to some motorists, residents, employees, tourists, and/or recreationists. Construction activities would add more unnatural elements to views that could contrast with and encroach on natural elements; however, these activities would occur in pockets throughout the County and would be temporary in nature. This would limit the number of viewers of any particular active construction area. Additionally, short-term light and glare impacts associated with construction activities facilitated by implementation of individual fiber projects would likely be limited to nighttime lighting in the evening/nighttime hours. In the event that construction lighting becomes a nuisance to surrounding uses, the County would ensure construction-related lighting would be oriented away from adjacent residential areas, if necessary, and consist of the minimal wattage necessary to provide safety at the construction site. The temporary and small-scale nature of construction that could result from implementation of the Countywide program would ensure that impacts during construction would be less than significant.

Operation

The proposed underground fiber optic lines would not be visible and would therefore not substantially degrade the existing visual character or quality of public views of the site. However, the program proposes aboveground fiber optic lines that would utilize existing or newly construction utility poles. Portions of the program area are lined with tall vertical features, including mature trees, utility poles, streetlights, and roadway signs and horizontal features, including buildings, pavement edges, fences, and utility lines. Although aboveground fiber optic lines and newly constructed utility poles would be introduced into existing viewsheds, these structures would be generally consistent with existing vertical and horizontal features within the program area. New aboveground fiber optic lines and utility poles would not be large enough to dominate existing viewsheds or detract from existing views. Some portions of the program area have higher viewer sensitivity, such as those areas with more residences or recreational resources (e.g., trails) in or near the program area; however, the visual changes from the program would be compatible with the existing environment and the overall change in visual quality would be neutral because aboveground fiber conduit features would not result in any notable changes to existing visual elements, or to the vividness, intactness, or unity of existing views. Additionally, individual fiber projects would not introduce new light sources. Security lighting may be used; however, all lighting would be minimal and downward facing to prevent light spillover and glare. No reflective surfaces that could cause glare would be used for aboveground infrastructure. Therefore, operation of the Countywide program would not substantially degrade existing visual character or quality of public views in non-urbanized

areas and impacts related to long-term light and glare from operation of the Countywide program would be less than significant.

5.8 Land Use

There are various general plan land use designations and zoning designations within County limits. Public roads are currently designated in County general plans, zoning codes, and ordinances to accommodate utility infrastructure. Although some temporary construction-related traffic disturbances could occur, the proposed program would not permanently divide an established community. The proposed broadband would be used to connect communities that are currently unserved or underserved. Prior to issuance of use permits, grading, and/or encroachment permits by Tuolumne County, the proposed program would be required to demonstrate compliance with all applicable laws, regulations, policies, and ordinances. Impacts related to land use and planning would be less than significant.

5.9 Infrastructure

The Countywide program would install fiber optic conduit either underground in buried conduits, overhead on pole lines, or in a combination of both. Broadband infrastructure would be installed to provide aboveground or underground lateral connections to private residences and businesses. Although the proposed Countywide program would construct new telecommunication facilities, this EA analyzes all potential environmental impacts.

The fiber optic conduit would not require potable water for project construction or operation that could subsequently result in wastewater generation. During construction, it is anticipated that portable toilets could be provided for workers, and waste would be hauled to an approved facility for treatment/disposal. As wastewater associated with portable toilets would be a temporary demand, the Countywide program would not exceed wastewater treatment requirements of the Central Valley Regional Water Quality Control Board and no new wastewater treatment facilities, or expansion of such facilities would be required.

Construction of individual fiber projects could involve minor use of water for dust control, which would be readily available from existing sources. Operation of the fiber optic facilities would not require additional water supplies as no population would be generated. Therefore, the Countywide program is anticipated to have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years.

Construction of individual fiber projects could occur in areas with existing stormwater drainage facilities. Once fiber optic conduits are installed, the ground surface along the individual fiber optic line alignments would be restored to its existing condition (paved or unpaved). Therefore, the amount of pervious and impervious surfaces would not be significantly altered upon completion of individual fiber projects. As such, the Countywide program would not require new or expanded stormwater facilities. Additionally, installation of the fiber optic lines would not require the use of electricity or natural gas for construction or operation. No new or expanded electric power or natural gas utilities would be required.

CALGreen mandates locally permitted construction and demolition projects to recycle and/or salvage for reuse a minimum 65 percent of the nonhazardous construction and demolition debris generated during construction activities (CALGreen Sections 4.408, 5.408, 301.1.1 and 301.3). 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. Construction of individual fiber projects would generate minimal waste. Such waste could be associated with packaging of fiber optic lines, asphalt, and vegetation removal. Due to the minimal amount of solid waste generated by individual fiber projects, the Countywide program would not adversely affect the jurisdictions' abilities to comply with the State waste diversion requirements.

Therefore, the Countywide program would not require the relocation or construction of new or expanded facilities that would cause significant environmental effects. Additionally, the Countywide program would not exceed State or local solid waste standards or infrastructure capacity, nor would it fail to comply with solid waste reduction goals. Therefore, the impacts would be less than significant.

5.10 Socioeconomic Resources

The proposed Countywide program would expand access to broadband technology throughout the County, including the unincorporated areas of the County. While some areas of the County have sufficient internet speeds for daily work and home life, there are still large portions of the County with no coverage or coverage so slow that it has become prohibitive to perform daily, essential tasks. Currently, Tuolumne County has 13,826 Broadband Service Locations (BSL) (or 54 percent of all BSL within the County) that lack access to wireline broadband of speeds of 25/3 megabits per second (Mbps). Per the State of California's definition, areas with less than existing 25/3 Mbps are considered "unserved" and areas with less than existing 100/20 Mbps are considered "underserved". Additionally, 7,954 parcels are unserved within the County. Parcel information was provided by the County's geographic information systems department and reflects the total number of residential, industrial, and commercial parcels that currently have a building. These pockets of unserved, or even underserved, populations in California are missing out on what is now seen as a utility critical to quality of life. This Countywide project would help attract broadband infrastructure investors to bring broadband service to a County in need of reliable connectivity for increasing health and safety factors, as well as for economic and quality of life reasons. Expansion of broadband service and its associated infrastructure is vital to the various communities in the County for many reasons, which include but are not limited to:

- building social and community connections,
- enhancing civic engagement and participation,
- bolstering economic development and sustainability,
- increasing education and continuous learning,
- fostering health care and tele-health services, and
- promoting recreation and tourism.

5.11 Human Health and Safety

The proposed Countywide program would not require long-transport, use or disposal of hazardous materials; however, small quantities of hazardous materials may be stored, used, and handled during construction activities as part of the installation of fiber optic lines for individual projects. Construction activities would mainly involve the use of hazardous materials such as fuels, lubricants, and solvents typically associated with construction equipment and vehicles. These materials are commonly used during construction and are not acutely hazardous. Operation of either underground or aboveground fiber optic conduit would not require long-transport, use, or disposal of hazardous materials; however, small quantities of hazardous materials may be used or handled during routine maintenance checks.

Project applicants, builders, and contractors for individual fiber projects 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 individual fiber 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.

Because individual fiber 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 less than significant.

The Countywide program would install fiber optic conduit either underground in buried conduits, overhead on pole lines, or in a combination of both. Utility structures, such as a telecommunications utility pole have the potential to emit radiofrequency (RF) energy, a type of electromagnetic energy. According to the Federal Communications Commission (FCC) Office of Engineering & Technology, levels of RF energy routinely encountered by the general public are typically far below levels necessary to produce significant heating and increased body temperature (FCC 1999). There have been no conclusive results that have examined the possibility of a link between RF exposure and cancer, and other studies have failed to find evidence for a causal link to cancer or any related conditions (FCC 1999). As no conclusive or causal evidence of biological effects from RF energy has been determined, there is no evidence to suggest the proposed telecommunications utility poles would cause health problems to the surrounding communities. Due to lack of evidence, impacts regarding RF energy would be less than significant.

Disturbance of sites with known or 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. Spills during on-site fueling of equipment during construction or an upset condition could result in a release of fuel or oils into the environment, including sensitive waterways within the vicinity of the proposed activity. In addition, subsurface hazardous materials may be encountered during construction. Procedures regarding spill prevention and response, as well as proper handling and disposal of hazardous materials are established by federal, State, and local regulations.

SWRCB's GeoTracker database contains 227 records for Tuolumne County. The database indicates that there are 139 LUST cleanup sites, 23 Cleanup Project Sites, 12 Land Disposal Sites, 2 WDR Sites, 4 AGLand Domestic Wells, 37 Permitted Underground Storage Tank (UST) Sites, 6 Single-Walled UST Sites, 4 Non-Case Information Sites, most of which have been fully remediated (SWRCB 2023). A total of 6 sites are currently active, including 4 AGLand Domestic Wells and 2 WDR Sites. The open sites include private residences and wastewater treatment facilities (SWRCB 2023). DTSC also maintains a list of cleanup sites and hazardous waste permitted facilities on its EnviroStor database. The EnviroStor database has 37 records for Tuolumne County, two of which are active. The two active records are dry cleaning sites within the City of Sonora (DTSC 2023). 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.

Although the exact locations of fiber optic line along roadways are not known at this time, installation and maintenance activities have potential to occur within the boundaries of a known hazardous waste site or in areas with existing soil or groundwater contamination. Proposed fiber optic lines could be constructed in areas that have existing buried utilities that could contain hazardous waste. Therefore, excavation activities for fiber optic line installation or during operational maintenance activities could result in the accidental release of hazardous materials to the environment. All individual fiber projects would be required to implement and comply with federal, State, and local regulatory requirements to reduce the potential for exposure to the public or environment to hazards. For any individual fiber project that would disturb an area greater than one acre, a SWPPP would be required to be prepared and implemented to reduce soil erosion and contain stormwater with construction and operational BMP.

Due to the limited area of ground disturbance and short exposure window, the potential for construction activities to encounter hazardous conditions that could affect worker health, or the environment would be limited. However, as the location of individual fiber projects relative to hazardous materials sites is not yet known, there would be some potential for exposure of construction workers and the public to hazardous materials contamination during construction. If encountered, contaminated materials may be classified as hazardous waste, a designated waste, or a special waste, depending on the type and degree of contamination. If it is determined that an individual fiber project may be located near or on a hazardous materials site, a Phase I Environmental Site Assessment (ESA) would be prepared. Therefore, impacts to reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment would be less than significant.

Multiple elementary, middle, and high schools in the County are located near roadways. Some of these schools may be located within one-quarter mile of proposed fiber installation activities. The Countywide program would comply with existing federal, State, and local regulations regarding transport, use, disposal, and reasonably foreseeable upset and accident conditions of hazardous materials. However, because the location of individual fiber projects relative to hazardous materials sites is unknown and may be located within one-quarter mile of a school, there would be some potential for exposure of construction workers and the public to hazardous materials contamination during construction. If it is determined that an individual fiber project may be located near or on a hazardous materials site, a Phase I ESA would be prepared to evaluate and address potential exposure. Therefore, the impact would be less than significant.

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) 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 (County ALUC 2003). Various uses are prohibited within ALUCP zones. The proposed aboveground fiber optic poles would not exceed 77 feet in height; and therefore, would not be tall enough to interfere with airport operations within Zone A. Additionally, the Countywide program would not include permanent structures for human occupancy and would therefore not create the potential to expose residents to airport-related noise. Compliance with the ALUCP would substantially limit the potential for exposure of people to aircraft-related hazards. Therefore, future individual fiber projects would not pose a safety hazard with regard to airport operations. The impact would be less than significant.

Construction and maintenance activities may require temporary lane closures, which have the potential to impede or interfere with emergency access routes or services. Coordination with local agencies (e.g., California Highway Patrol, Caltrans, and local police and fire departments) for any necessary and temporary road closures would be required, especially for construction within designated emergency access routes or in areas that would

impede or otherwise affect evacuation and emergency access or services. To minimize or avoid lane closures that could interfere with traffic circulation during emergencies and disrupt access to private properties and roadways, each individual fiber project would be required to develop and implement a Transportation Management Plan consistent with an Encroachment Permit and code requirements of Tuolumne County. An Encroachment Permit application would be submitted to the County Department of Public Works. The operation of the proposed Countywide program would introduce a wider and more reliable network that would benefit communications to emergency services. The program would improve public health and safety through enabling faster emergency response, enhanced communication between emergency services, and access to critical information during disasters or emergencies. Therefore, the program would benefit evacuations. With adherence to these requirements, potential impacts during construction would be less than significant.

Construction activities that could result in sparks, such as welding or grinding, have a greater likelihood of creating a source of ignition than other construction-related activities. To decrease the wildfire hazards in the County, the Strategic Fire Plan for the Tuolumne/Calaveras Unit was prepared to provide guidance to reduce structural ignitability. 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. Additionally, construction workers would be trained in basic firefighting, and the availability of tools and training would allow construction crews to help control or extinguish fires they may come upon. The Countywide program would install fiber optic conduit either underground in buried conduits, overhead on pole lines, or in a combination of both. Buried conduits would not exacerbate fire risk as all infrastructure would be underground. Overhead fiber optic lines would be attached to proposed or existing pole lines. Construction and operation of the Countywide program would adhere to the CBC Chapter 7A, Fire Hazard Severity Zones and Building Standards and Materials, and Public Resource Code 4291, which requires property owners to maintain clearance of flammable vegetation of 100 feet from structures in order to reduce the risk of fire. Fiber optic lines do not carry an electrical charge and are therefore not a source of heat such that the underground or aboveground lines would not exacerbate fire risk (Fluke Networks 2022). Therefore, adherence to existing regulations would ensure that impacts related to fire risks from construction and operation would be less than significant.

5.12 Cumulative impacts

Table 5-1: Comparison of the Potential Environmental Impacts by Alternative

Alternative	Potential Impacts
Soils and Geologic Hazards	
Proposed Action	Individual fiber projects would require ground disturbance, including vegetation clearing, trenching, directional drilling, fill placement, pole placement excavation, and staging. Prior to construction of individual fiber projects, a preliminary soils report would be prepared and the potential for expansive soil to occur on the project site would be analyzed. 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. Because the Countywide program would primarily be implemented in disturbed or previously developed areas and the County is not considered sensitive for paleontological resources, impacts to paleontological resources would be minimal. However, unique paleontological resources could be present within rock formations and could be affected by construction of individual fiber projects.

No Action Alternative	With the No Project Alternative, no construction, excavation, or ground disturbance would occur. Because no changes would occur, the No Project Alternative would not expose people or structures to adverse seismic impacts, result in substantial erosion or loss of topsoil, or expose infrastructure to or cause geologic hazards. Similarly, this alternative would not result in the loss of a unique paleontological resource or geologic feature or result in the loss of availability of a known mineral resource or locally important mineral resource recovery site.
Alternative 1	As compared to the Countywide program, this alternative would have similar risks of exposing people or structures to landslides, lateral spreading, subsidence, liquefaction, soil erosion, or seismic impacts as construction would occur within County limits. However, the addition of only utility poles under this alternative, including utility pole installation, may not be feasible in some locations in the County due to the rocky subsurface conditions that would make it nearly impossible to reach the boring depth required for the poles.
Alternative 2	As compared to the Countywide program, this alternative would have similar risks of exposing people or structures to landslides, lateral spreading, subsidence, liquefaction, soil erosion, or seismic impacts as construction would occur within County limits. However, the addition of only underground fiber optic conduit under this alternative, including Horizontal Directional Drilling, Plowing, Trenching, Microtrenching, and Line Installation, may not be feasible in some locations in the County due to the rocky subsurface conditions that would make it nearly impossible to reach the boring depth required for the conduit.
Alternative 3	As compared to the Countywide program, this alternative would have similar risks of exposing people or structures to landslides, lateral spreading, subsidence, liquefaction, soil erosion, or seismic impacts as construction would occur within County limits. This alternative would not require a preliminary soils report or Site-Specific Paleontological Resources Inventory Assessment as the area associated with existing conduit and utility poles would have already been disturbed.
Vegetation	
Proposed Action	<p>The proposed broadband infrastructure program is anticipated to be within previously disturbed and/or developed areas (e.g., in ROW or public utility easements). However, given that the exact alignment of the future broadband infrastructure is currently unknown, there is the potential that some of the locations for future program components may support sensitive biological resources. In general, a project’s potential impacts related to sensitive biological resources depend on the specific project site and whether it supports sensitive natural communities, special-status species, and/or aquatic resources. As discussed above, the proposed program would have potential impacts to special-status species, sensitive natural communities, or State or federally protected aquatic resources and/or conflict with local policies which would be reduced to less than significant levels by the implementation of Mitigation Measures BIO-1 through BIO-3. Several cumulative projects are proposed and/or pending within Tuolumne County. Most of the cumulative projects included in this analysis are residential and commercial development projects, including resorts and residential developments of varying densities.</p> <p>The projects listed as part of this cumulative analysis would also be subject to NEPA review and would be required to comply with any mitigation measures identified as necessary to reduce potential impacts to biological resources. Therefore, the project is not expected to make a cumulatively considerable contribution to losses of sensitive biological resources in Tuolumne County.</p>
No Action Alternative	Because no construction, excavation, or ground disturbance would occur under the No Project Alternative, there would be no effects on biological resources. The No Project Alternative would not affect special-status species or habitat, or riparian habitat or other

	sensitive natural communities. Nor would it degrade wetlands, interfere with wildlife movement corridors or nursery sites, or conflict with local ordinances or policies.
Alternative 1	Similar to the Countywide program, individual fiber projects would be required to prepare a BRA, as outlined in Mitigation Measure BIO-1 to reduce impacts to a less than significant level. Additionally, if sensitive natural communities would be impacted by project implementation, the project proponent would apply to the necessary permits from the USACE, CDFW, and the RWQCB as outlined in Mitigation Measure BIO-2 and would prepare an oak resources inventory as outlined in Mitigation Measure BIO-3. Similar to the Countywide program if the individual fiber project would impact federally protected aquatic resources, Mitigation Measure BIO-2 would be implemented, and if individual fiber projects would impact the movement of wildlife species or wildlife corridors, Mitigation Measure BIO-1 would be implemented.
Alternative 2	Similar to the Countywide program, individual fiber projects would be required to prepare a BRA, as outlined in Mitigation Measure BIO-1 to reduce impacts to a less than significant level. Additionally, if sensitive natural communities would be impacted by project implementation, the project proponent would apply to the necessary permits from the USACE, CDFW, and the RWQCB as outlined in Mitigation Measure BIO-2 and would prepare an oak resources inventory as outlined in Mitigation Measure BIO-3. Similar to the Countywide program if the individual fiber project would impact federally protected aquatic resources, Mitigation Measure BIO-2 would be implemented, and if individual fiber projects would impact the movement of wildlife species or wildlife corridors, Mitigation Measure BIO-1 would be implemented.
Alternative 3	Similar to the Countywide program, individual fiber projects would be required to prepare a BRA, as outlined in Mitigation Measure BIO-1 to reduce impacts to a less than significant level. Additionally, if sensitive natural communities would be impacted by project implementation, the project proponent would apply to the necessary permits from the USACE, CDFW, and the RWQCB as outlined in Mitigation Measure BIO-2 and would prepare an oak resources inventory as outlined in Mitigation Measure BIO-3. Similar to the Countywide program if the individual fiber project would impact federally protected aquatic resources, Mitigation Measure BIO-2 would be implemented, and if individual fiber projects would impact the movement of wildlife species or wildlife corridors, Mitigation Measure BIO-1 would be implemented.
Water Resources, Floodplains, and Fish	
Proposed Action	<p>The proposed broadband infrastructure program is anticipated to be within previously disturbed and/or developed areas (e.g., in ROW or public utility easements). However, given that the exact alignment of the future broadband infrastructure is currently unknown, there is the potential that some of the locations for future program components may support sensitive biological resources. In general, a project’s potential impacts related to sensitive biological resources depend on the specific project site and whether it supports sensitive natural communities, special-status species, and/or aquatic resources. As discussed above, the proposed program would have potential impacts to special-status species, sensitive natural communities, or State or federally protected aquatic resources and/or conflict with local policies which would be reduced to less than significant levels by the implementation of Mitigation Measures BIO-1 through BIO-3. Several cumulative projects are proposed and/or pending within Tuolumne County. Most of the cumulative projects included in this analysis are residential and commercial development projects, including resorts and residential developments of varying densities.</p> <p>The projects listed as part of this cumulative analysis would also be subject to NEPA review and would be required to comply with any mitigation measures identified as necessary to reduce potential impacts to biological resources. Therefore, the project is not expected to make a cumulatively considerable contribution to losses of sensitive</p>

	biological resources in Tuolumne County.
No Action Alternative	Because no construction, excavation, or ground disturbance would occur under the No Project Alternative, the alternative would not affect hydrology and water quality. With no construction activities or new infrastructure, the No Project Alternative would not violate any water quality standards or degrade surface or groundwater quality, nor would it affect groundwater supply or result in substantial erosion, flooding, or runoff. The No Project Alternative would also not change the existing risk of the release of pollutants due to inundation for seiche or flood.
Alternative 1	As compared to the Countywide program, this alternative may also alter existing drainage patterns which would result in erosion on- or off-site, increase surface runoff that would cause flooding or exceed stormwater drainage systems, or impede flood flows. Similar to the Countywide program, if this alternative would disturb more than one acre of soil, a SWPPP with project specific BMPs will be required for each individual fiber project. Operation under this alternative would require occasional maintenance needs and all construction areas would be cleared, similar to the Countywide program. As with the Countywide program, this alternative could involve minor use of water for dust control during construction; however, it is not anticipated this alternative would require additional water supplies during operation as no population would be generated.
Alternative 2	As compared to the Countywide program, this alternative may also alter existing drainage patterns which would result in erosion on- or off-site, increase surface runoff that would cause flooding or exceed stormwater drainage systems, or impede flood flows. Similar to the Countywide program, if this alternative would disturb more than one acre of soil, a SWPPP with project specific BMPs will be required for each individual fiber project. Operation under this alternative would require occasional maintenance needs and all construction areas would be cleared, similar to the Countywide program. As with the Countywide program, this alternative could involve minor use of water for dust control during construction; however, it is not anticipated this alternative would require additional water supplies during operation as no population would be generated.
Alternative 3	As compared to the Countywide program, this alternative may alter existing drainage patterns which would result in erosion on- or off-site, increase surface runoff that would cause flooding or exceed stormwater drainage systems, or impede flood flows. Similar to the Countywide program, if this alternative would disturb more than one acre of soil, a SWPPP with project specific BMPs will be required for each individual fiber project. Operation under this alternative would require occasional maintenance needs and all construction areas would be cleared, similar to the Countywide program. As with the Countywide program, this alternative could involve minor use of water for dust control during construction; however, it is not anticipated this alternative would require additional water supplies during operation as no population would be generated.
Wetlands	
Proposed Action	The proposed broadband infrastructure program is anticipated to be within previously disturbed and/or developed areas (e.g., in ROW or public utility easements). However, given that the exact alignment of the future broadband infrastructure is currently unknown, there is the potential that some of the locations for future program components may support sensitive biological resources. In general, a project’s potential impacts related to sensitive biological resources depend on the specific project site and whether it supports sensitive natural communities, special-status species, and/or aquatic resources. As discussed above, the proposed program would have potential impacts to special-status species, sensitive natural communities, or State or federally protected aquatic resources and/or conflict with local policies which would be reduced to less than significant levels by the implementation of Mitigation Measures BIO-1 through BIO-3. Several cumulative projects are proposed and/or pending within Tuolumne County. Most of the cumulative projects included in this analysis are residential and commercial development projects, including resorts and residential developments of varying

	<p>densities.</p> <p>The projects listed as part of this cumulative analysis would also be subject to NEPA review and would be required to comply with any mitigation measures identified as necessary to reduce potential impacts to biological resources. Therefore, the project is not expected to make a cumulatively considerable contribution to losses of sensitive biological resources in Tuolumne County.</p>
No Action Alternative	<p>Because no construction, excavation, or ground disturbance would occur under the No Project Alternative, there would be no effects on biological resources. The No Project Alternative would not affect special-status species or habitat, or riparian habitat or other sensitive natural communities. Nor would it degrade wetlands, interfere with wildlife movement corridors or nursery sites, or conflict with local ordinances or policies.</p>
Alternative 1	<p>Similar to the Countywide program, individual fiber projects would be required to prepare a BRA, as outlined in Mitigation Measure BIO-1 to reduce impacts to a less than significant level. Additionally, if sensitive natural communities would be impacted by project implementation, the project proponent would apply to the necessary permits from the USACE, CDFW, and the RWQCB as outlined in Mitigation Measure BIO-2 and would prepare an oak resources inventory as outlined in Mitigation Measure BIO-3. Similar to the Countywide program, if the individual fiber project would impact federally protected aquatic resources, Mitigation Measure BIO-2 would be implemented.</p>
Alternative 2	<p>Similar to the Countywide program, individual fiber projects would be required to prepare a BRA, as outlined in Mitigation Measure BIO-1 to reduce impacts to a less than significant level. Additionally, if sensitive natural communities would be impacted by project implementation, the project proponent would apply to the necessary permits from the USACE, CDFW, and the RWQCB as outlined in Mitigation Measure BIO-2 and would prepare an oak resources inventory as outlined in Mitigation Measure BIO-3. Similar to the Countywide program, if the individual fiber project would impact federally protected aquatic resources, Mitigation Measure BIO-2 would be implemented.</p>
Alternative 3	<p>Similar to the Countywide program, individual fiber projects would be required to prepare a BRA, as outlined in Mitigation Measure BIO-1 to reduce impacts to a less than significant level. Additionally, if sensitive natural communities would be impacted by project implementation, the project proponent would apply to the necessary permits from the USACE, CDFW, and the RWQCB as outlined in Mitigation Measure BIO-2 and would prepare an oak resources inventory as outlined in Mitigation Measure BIO-3. Similar to the Countywide program, if the individual fiber project would impact federally protected aquatic resources, Mitigation Measure BIO-2 would be implemented.</p>
Wildlife	
Proposed Action	<p>The proposed broadband infrastructure program is anticipated to be within previously disturbed and/or developed areas (e.g., in ROW or public utility easements). However, given that the exact alignment of the future broadband infrastructure is currently unknown, there is the potential that some of the locations for future program components may support sensitive biological resources. In general, a project's potential impacts related to sensitive biological resources depend on the specific project site and whether it supports sensitive natural communities, special-status species, and/or aquatic resources. As discussed above, the proposed program would have potential impacts to special-status species, sensitive natural communities, or State or federally protected aquatic resources and/or conflict with local policies which would be reduced to less than significant levels by the implementation of Mitigation Measures BIO-1 through BIO-3. Several cumulative projects are proposed and/or pending within Tuolumne County. Most of the cumulative projects included in this analysis are residential and commercial development projects, including resorts and residential developments of varying densities.</p>

	The projects listed as part of this cumulative analysis would also be subject to NEPA review and would be required to comply with any mitigation measures identified as necessary to reduce potential impacts to biological resources. Therefore, the project is not expected to make a cumulatively considerable contribution to losses of sensitive biological resources in Tuolumne County.
No Action Alternative	Because no construction, excavation, or ground disturbance would occur under the No Project Alternative, there would be no effects on biological resources. The No Project Alternative would not affect special-status species or habitat, or riparian habitat or other sensitive natural communities. Nor would it degrade wetlands, interfere with wildlife movement corridors or nursery sites, or conflict with local ordinances or policies.
Alternative 1	Similar to the Countywide program, individual fiber projects would be required to prepare a BRA, as outlined in Mitigation Measure BIO-1 to reduce impacts to a less than significant level. Additionally, if sensitive natural communities would be impacted by project implementation, the project proponent would apply to the necessary permits from the USACE, CDFW, and the RWQCB as outlined in Mitigation Measure BIO-2 and would prepare an oak resources inventory as outlined in Mitigation Measure BIO-3. Similar to the Countywide program if the individual fiber project would impact federally protected aquatic resources, Mitigation Measure BIO-2 would be implemented, and if individual fiber projects would impact the movement of wildlife species or wildlife corridors, Mitigation Measure BIO-1 would be implemented.
Alternative 2	Similar to the Countywide program, individual fiber projects would be required to prepare a BRA, as outlined in Mitigation Measure BIO-1 to reduce impacts to a less than significant level. Additionally, if sensitive natural communities would be impacted by project implementation, the project proponent would apply to the necessary permits from the USACE, CDFW, and the RWQCB as outlined in Mitigation Measure BIO-2 and would prepare an oak resources inventory as outlined in Mitigation Measure BIO-3. Similar to the Countywide program if the individual fiber project would impact federally protected aquatic resources, Mitigation Measure BIO-2 would be implemented, and if individual fiber projects would impact the movement of wildlife species or wildlife corridors, Mitigation Measure BIO-1 would be implemented.
Alternative 3	Similar to the Countywide program, individual fiber projects would be required to prepare a BRA, as outlined in Mitigation Measure BIO-1 to reduce impacts to a less than significant level. Additionally, if sensitive natural communities would be impacted by project implementation, the project proponent would apply to the necessary permits from the USACE, CDFW, and the RWQCB as outlined in Mitigation Measure BIO-2 and would prepare an oak resources inventory as outlined in Mitigation Measure BIO-3. Similar to the Countywide program if the individual fiber project would impact federally protected aquatic resources, Mitigation Measure BIO-2 would be implemented, and if individual fiber projects would impact the movement of wildlife species or wildlife corridors, Mitigation Measure BIO-1 would be implemented.
Cultural Resources	
Proposed Action	Cumulative cultural resource impacts may occur when a series of actions leads to the loss of historically or archaeologically significant type of site, building, deposit, or tribal cultural resource. For example, while the loss of a single historic building may not be significant to the character of a neighborhood or streetscape, continued loss of such historical resources on a project-by-project basis could amount to a significant cumulative effect. As discussed above, with the implementation of Mitigation Measures CUL-1, CUL-2, and CUL-3, the proposed Countywide program would have less than significant impacts on unknown cultural resources. However, the analysis of cumulative impacts to cultural resources is based on impacts of the proposed Countywide program plus the other cumulative projects in the County. As such, each cumulative project that would be subject to NEPA would be required to assess its potential impacts to cultural resources. Mitigation measures conducted for each cumulative individual fiber project

	<p>would ensure that impacts to cultural resources are minimized to the maximum extent feasible. Therefore, with implementation of Mitigation Measures CUL-1, CUL-2, and CUL-3 and the requirement for the other cumulative projects subject to NEPA to adopt similar measures, no cumulatively considerable impact to cultural resources would occur with approval of the proposed project.</p> <p>Cumulative tribal cultural resource impacts may occur when a series of actions leads to the loss of historically or archaeologically significant type of site, building, deposit, or tribal cultural resource. For example, while the loss of a single historic building may not be significant to the character of a neighborhood or streetscape, continued loss of such historic resources on a project-by-project basis could amount to a significant cumulative effect. As discussed above, with the implementation of Mitigation Measures TCR-1 for the inadvertent discovery of TCRs during construction and TCR-2 for tribal consultation, the proposed Countywide program would have less than significant impacts on unknown TCRs. However, the analysis of cumulative impacts to tribal cultural resources is based on impacts of the proposed individual fiber project plus the other cumulative projects in the County.</p>
<p>No Action Alternative</p>	<p>No construction, excavation, or ground disturbance would occur under the No Project Alternative. Therefore, there would be no effects on historic resources, unique archeological resources, or tribal cultural resources. Because no construction would occur under the No Project Alternative, there would also be no risk of disturbing human remains. For these reasons, the No Project Alternative would have no impact on archeological, historical, or tribal cultural resources.</p>
<p>Alternative 1</p>	<p>Similar to the Countywide program, installation of utility poles under this alternative would introduce a new visual element to areas with concentrations of historical built environment cultural resources such as buildings and structures that comprise historic districts. The use of existing or newly constructed utility poles for the collocation of fiber optic cable would change the visual signature of the poles and their vicinity. However, these collocations and new installations would be relatively minor additions to existing utility corridors in the County already populated with other utility infrastructure, including in and near historic districts and historical resources. The installation of these fiber optic lines, as proposed, would not diminish a built-environment resource’s ability to convey its significance or justify the reasons for its qualification as a historical resource, two of the criteria of material impairment in the definition of a substantial adverse change in the significance of a historical resource. Additionally, similar to the Countywide program, individual fiber projects under this alternative could impede or destroy archaeological cultural resource’s ability to convey their significance, which can embody scientific and/or traditional cultural value. Mitigation Measure CUL-1 and CUL-2 would be implemented under this alternative, and under the Countywide program, to mitigate or avoid archaeological cultural resource impact scenarios. The Countywide program and this alternative would also implement Mitigation Measure CUL-3 to avoid substantial adverse changes to human remains.</p> <p>Additionally, similar to the Countywide program, under this alternative, Mitigation Measure TCR-1 would be implemented to address an adverse change in the significance of TCRs and Mitigation Measure TCR-2 would be implemented to address unanticipated discoveries of TCRs.</p>
<p>Alternative 2</p>	<p>As this alternative would not install utility poles, individual fiber project would not introduce a new visual element to areas with concentrations of historical built environment cultural resources such as buildings and structures that comprise historic districts. There would be no change in the visual signature of the vicinity. Therefore, this alternative could result in slightly less impact than the Countywide program.</p>

	<p>Additionally, similar to the Countywide program, individual fiber projects under this alternative could impede or destroy archaeological cultural resource’s ability to convey their significance, which can embody scientific and/or traditional cultural value. Mitigation Measure CUL-1 and CUL-2 would be implemented under this alternative, and under the Countywide program, to mitigate or avoid archaeological cultural resource impact scenarios. The Countywide program and this alternative would also implement Mitigation Measure CUL-3 to avoid substantial adverse changes to human remains.</p> <p>Similar to the Countywide program, under this alternative, Mitigation Measure TCR-1 would be implemented to address an adverse change in the significance of TCRs and Mitigation Measure TCR-2 would be implemented to address unanticipated discoveries of TCRs.</p>
<p>Alternative 3</p>	<p>As this alternative would not install new utility poles, individual fiber project would not introduce a new visual element to areas with concentrations of historical built environment cultural resources such as buildings and structures that comprise historic districts. There would be no change in the existing visual signature of the vicinity. Therefore, this alternative could result in slightly less impact than the Countywide program.</p> <p>Additionally, similar to the Countywide program, individual fiber projects under this alternative could impede or destroy archaeological cultural resource’s ability to convey their significance, which can embody scientific and/or traditional cultural value. Mitigation Measure CUL-1 and CUL-2 would be implemented under this alternative, and under the Countywide program, to mitigate or avoid archaeological cultural resource impact scenarios. The Countywide program and this alternative would also implement Mitigation Measure CUL-3 to avoid substantial adverse changes to human remains.</p> <p>Similar to the Countywide program, under this alternative, Mitigation Measure TCR-1 would be implemented to address an adverse change in the significance of TCRs and Mitigation Measure TCR-2 would be implemented to address unanticipated discoveries of TCRs.</p>

6.0 Applicable Environmental Permits and Regulatory Requirements

Table 6-1: Potential Applicable Statutory, Regulatory, and Other Requirements

Potentially Applicable Requirement	Relevant Project Information
All Resources	
National Environmental Policy Act (NEPA) of 1969 42 U.S.C. § 4321 et seq.	An Environmental Assessment has been prepared in compliance with Federal NEPA requirements.
Vegetation, Wildlife, and Fish	
Endangered Species Act of 1973 16 U.S.C. § 1531 et seq.	This is applicable. This EA is evaluated at a programmatic level for the County as a whole. The objective of this EA is to achieve compliance with NEPA for the proposed program in advance such that individual fiber projects can take advantage of State and federal grant funding programs. Based on an individual fiber project footprint, regulatory permitting may be required. All required permits would be evaluated at the appropriate time.
Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act) of 1976 16 U.S.C. 1801 et seq.	This is applicable. This EA is evaluated at a programmatic level for the County as a whole. The objective of this EA is to achieve compliance with NEPA for the proposed program in advance such that individual fiber projects can take advantage of State and federal grant funding programs. Based on an individual fiber project footprint, regulatory permitting may be

	required. All required permits would be evaluated at the appropriate time.
Bald Eagle and Golden Eagle Protection Act (Eagle Act) of 1940 16 U.S.C. § 668-668d	This is applicable. This EA is evaluated at a programmatic level for the County as a whole. The objective of this EA is to achieve compliance with NEPA for the proposed program in advance such that individual fiber projects can take advantage of State and federal grant funding programs. Based on an individual fiber project footprint, regulatory permitting may be required. All required permits would be evaluated at the appropriate time.
Migratory Bird Treaty Act (MBTA) of 1918 16 U.S.C. § 703-712 Responsibilities to Federal Agencies to Protect Migratory Birds Executive Order 13186	This is applicable. This EA is evaluated at a programmatic level for the County as a whole. The objective of this EA is to achieve compliance with NEPA for the proposed program in advance such that individual fiber projects can take advantage of State and federal grant funding programs. Based on an individual fiber project footprint, regulatory permitting may be required. All required permits would be evaluated at the appropriate time.
Fish and Wildlife Conservation Act 16 U.S.C. § 2901 et seq. Fish and Wildlife Coordination Act 16 U.S.C. § 661 et seq.	This is applicable. This EA is evaluated at a programmatic level for the County as a whole. The objective of this EA is to achieve compliance with NEPA for the proposed program in advance such that individual fiber projects can take advantage of State and federal grant funding programs. Based on an individual fiber project footprint, regulatory permitting may be required. All required permits would be evaluated at the appropriate time.
Waters, Wetlands, and Floodplain Protection	
Clean Water Act 33 U.S.C. § 1251 et seq. Floodplain/Wetlands Environmental Review Requirements 10 CFR 1022.12 Floodplain Management Executive Order 11988 Protection of Wetlands Executive Order 11990	This is applicable. This EA is evaluated at a programmatic level for the County as a whole. The objective of this EA is to achieve compliance with NEPA for the proposed program in advance such that individual fiber projects can take advantage of State and federal grant funding programs. Based on an individual fiber project footprint, regulatory permitting may be required. All required permits would be evaluated at the appropriate time.
Coastal Zone Management Act (CZMA) 16 U.S.C. § 1451 et seq.	N/A
Air Quality and Greenhouse Gases	
The Clean Air Act, as revised in 1990 42 U.S.C. § 4701	N/A

<p>Final Mandatory Reporting of Greenhouse Gases Rule 40 CFR 98</p> <p>Federal Leadership in Environmental, Energy, and Economic Performance Executive Order 13514</p>	<p>N/A</p>
<p>Cultural and Historic Resources</p>	
<p>Antiquities Act of 1906 16 U.S.C. § 431-433</p> <p>Historic Sites Act of 1935 16 U.S.C. § 461-467</p> <p>National Historic Preservation Act of 1966 (NHPA), as amended, inclusive of Section 106 54 U.S.C. § 306108 et seq.</p> <p>Archaeological Data Preservation Act of 1974 (16 U.S.C. § 469 – 469-1)</p> <p>Archaeological Resources Protection Act of 1979, as amended 16 U.S.C. § 469 a-c</p> <p>Native American Graves Protection and Repatriation Act 25 U.S.C. § 3001 et seq.</p> <p>Indian Sacred Sites Executive Order 13007</p> <p>American Indian Religious Freedom Act of 1978 (42 U.S.C. § 1996)</p>	<p>This is applicable. This EA is evaluated at a programmatic level for the County as a whole. The objective of this EA is to achieve compliance with NEPA for the proposed program in advance such that individual fiber projects can take advantage of State and federal grant funding programs. Based on an individual fiber project footprint, regulatory permitting may be required. All required permits would be evaluated at the appropriate time.</p>
<p>Noise, Public Health, and Safety</p>	
<p>Noise Control Act of 1972 42 U.S.C. § 4901 et seq.</p>	<p>This is applicable. This EA is evaluated at a programmatic level for the County as a whole. The objective of this EA is to achieve compliance with NEPA for the proposed program in advance such that individual fiber projects can take advantage of State and federal grant funding programs. Based on an individual fiber project footprint, regulatory permitting may be required. All required permits would be evaluated at the appropriate time.</p>

<p>Spill Prevention Control and Countermeasures Rule 40 CFR 112</p> <p>Comprehensive Environmental Response, Compensation, and Liability Act 42 U.S.C. § 9601 et seq.</p> <p>Resource Conservation and Recovery Act 42 U.S.C. § 6901 et seq.</p>	<p>This is applicable. This EA is evaluated at a programmatic level for the County as a whole. The objective of this EA is to achieve compliance with NEPA for the proposed program in advance such that individual fiber projects can take advantage of State and federal grant funding programs. Based on an individual fiber project footprint, regulatory permitting may be required. All required permits would be evaluated at the appropriate time.</p>
<p>The Toxic Substances Control Act 15 U.S.C. 2601 et seq.</p>	<p>This is applicable. This EA is evaluated at a programmatic level for the County as a whole. The objective of this EA is to achieve compliance with NEPA for the proposed program in advance such that individual fiber projects can take advantage of State and federal grant funding programs. Based on an individual fiber project footprint, regulatory permitting may be required. All required permits would be evaluated at the appropriate time.</p>
<p>Federal Communications Commission (FCC)</p>	<p>This is applicable. This EA is evaluated at a programmatic level for the County as a whole. The objective of this EA is to achieve compliance with NEPA for the proposed program in advance such that individual fiber projects can take advantage of State and federal grant funding programs. Based on an individual fiber project footprint, regulatory permitting may be required. All required permits would be evaluated at the appropriate time.</p>
<p>Environmental Justice</p>	
<p>Environmental Justice</p>	<p>N/A</p>
<p>State, County, and Local Plan Consistency</p>	
<p>U.S. Forest Service</p>	<p>Depending on the individual fiber project-specific character, location, and construction techniques of future broadband, construction easements would be obtained.</p>
<p>Central Valley Regional Water Quality Control Board</p>	<p>Depending on the individual fiber project-specific character, location, and construction techniques of future broadband, a National Pollutant Discharge Elimination Construction General Permit (NPDES) and Section 401 water quality certification or a waiver of discharge requirements would be obtained.</p>
<p>California Department of Fish and Wildlife</p>	<p>Depending on the individual fiber project-specific character, location, and construction techniques of future broadband, a Lake and Streambed Alteration Agreement (LSAA) Section 1602 of the Fish and Game Code would be obtained.</p>
<p>County of Tuolumne</p>	<p>Depending on the individual fiber project-specific character, location, and construction techniques of future broadband, use permits and encroachment permits would be obtained.</p>

7.0 Consultations

Agency and Name	Consultation	Status
N/A	N/A	N/A

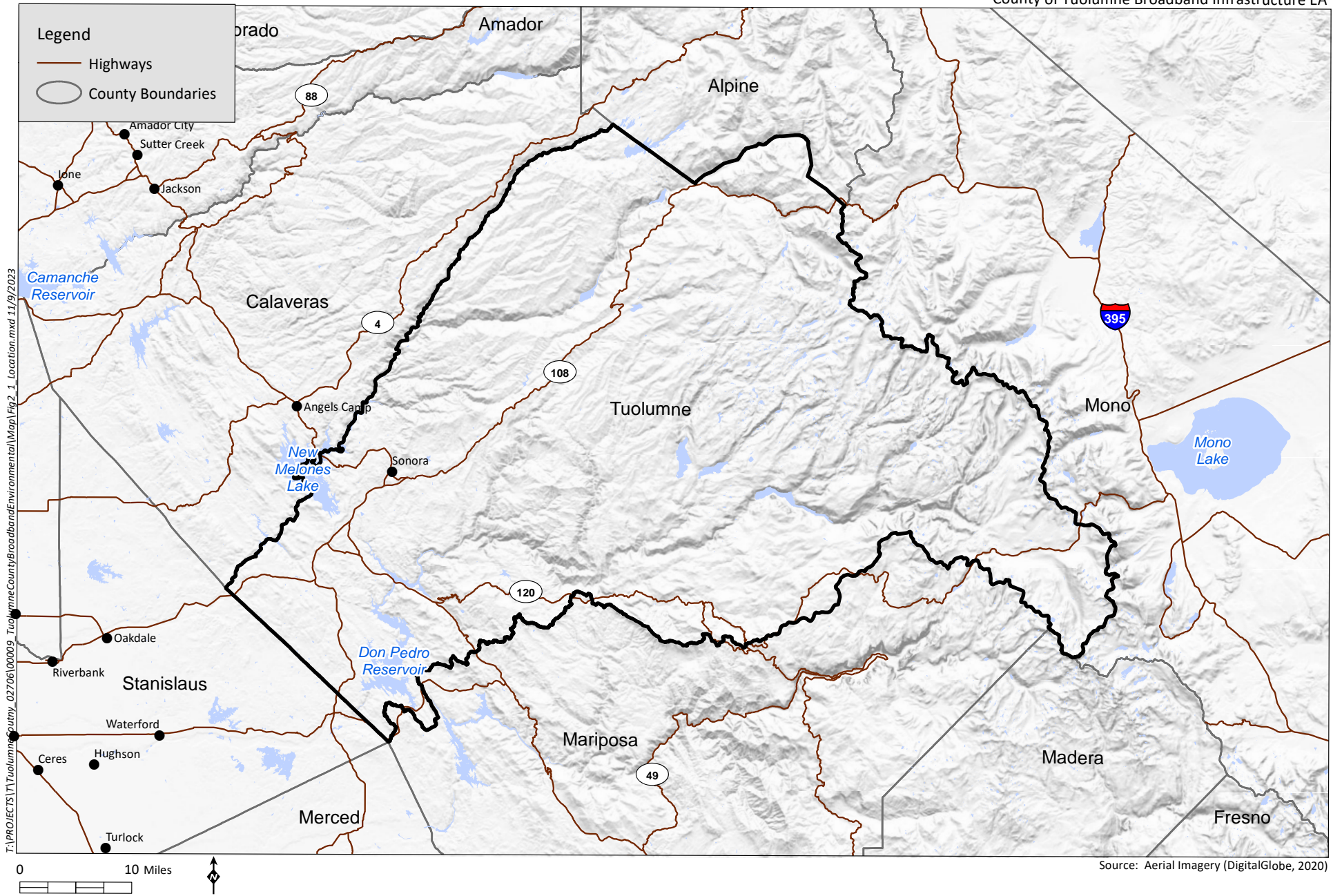
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- California Air Resources Board (CARB). 2023. Maps of State and Federal Area Designations. Available at: <https://ww2.arb.ca.gov/resources/documents/maps-state-and-federal-area-designations>.
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caa](https://caltrans.maps.arcgis.com/apps/webappviewer/index.html?id=465dfd3d807c46cc8e8057116f1aa-
caa)
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
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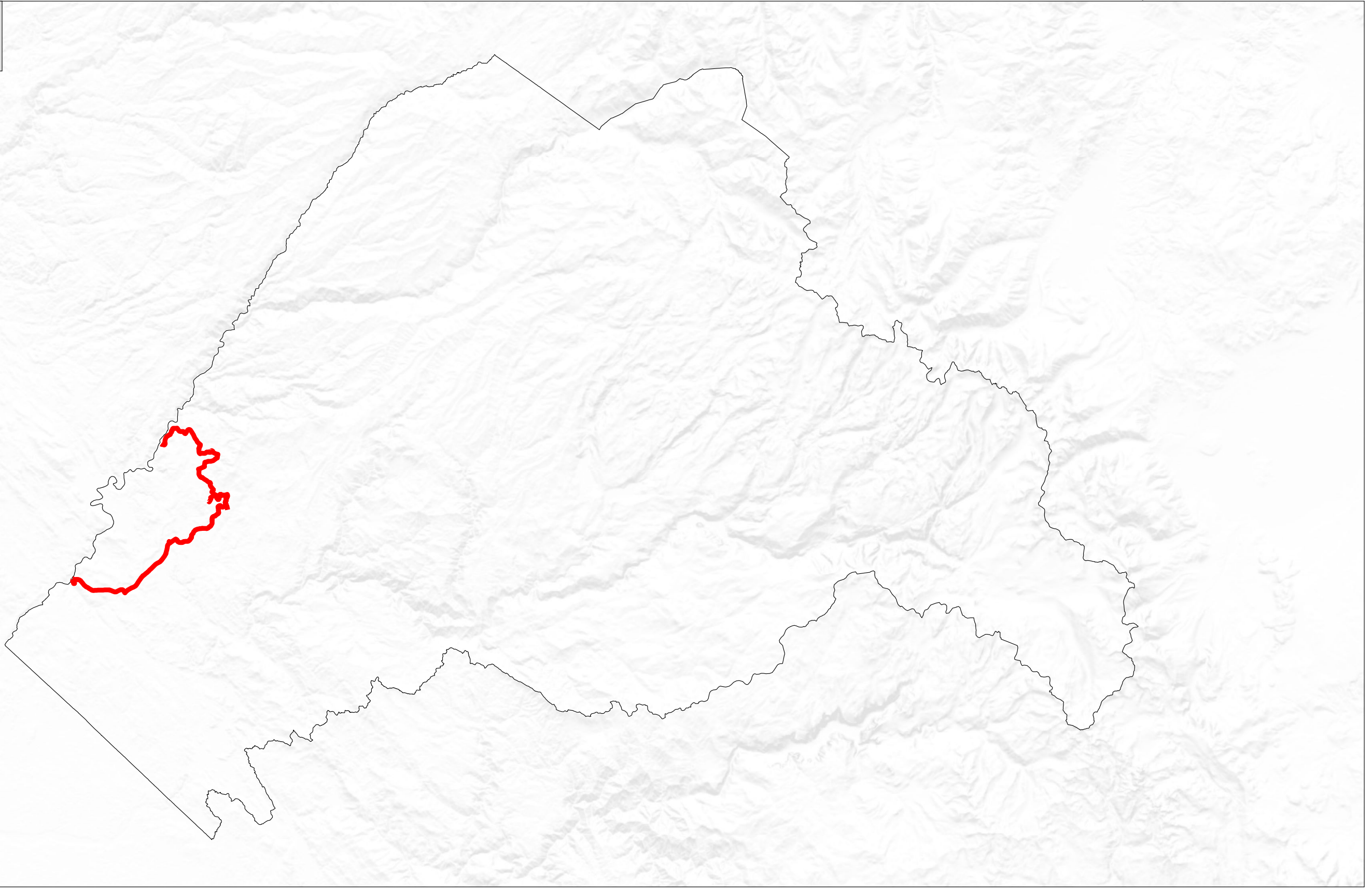
EIR Appendix F

Appendix A: Figures



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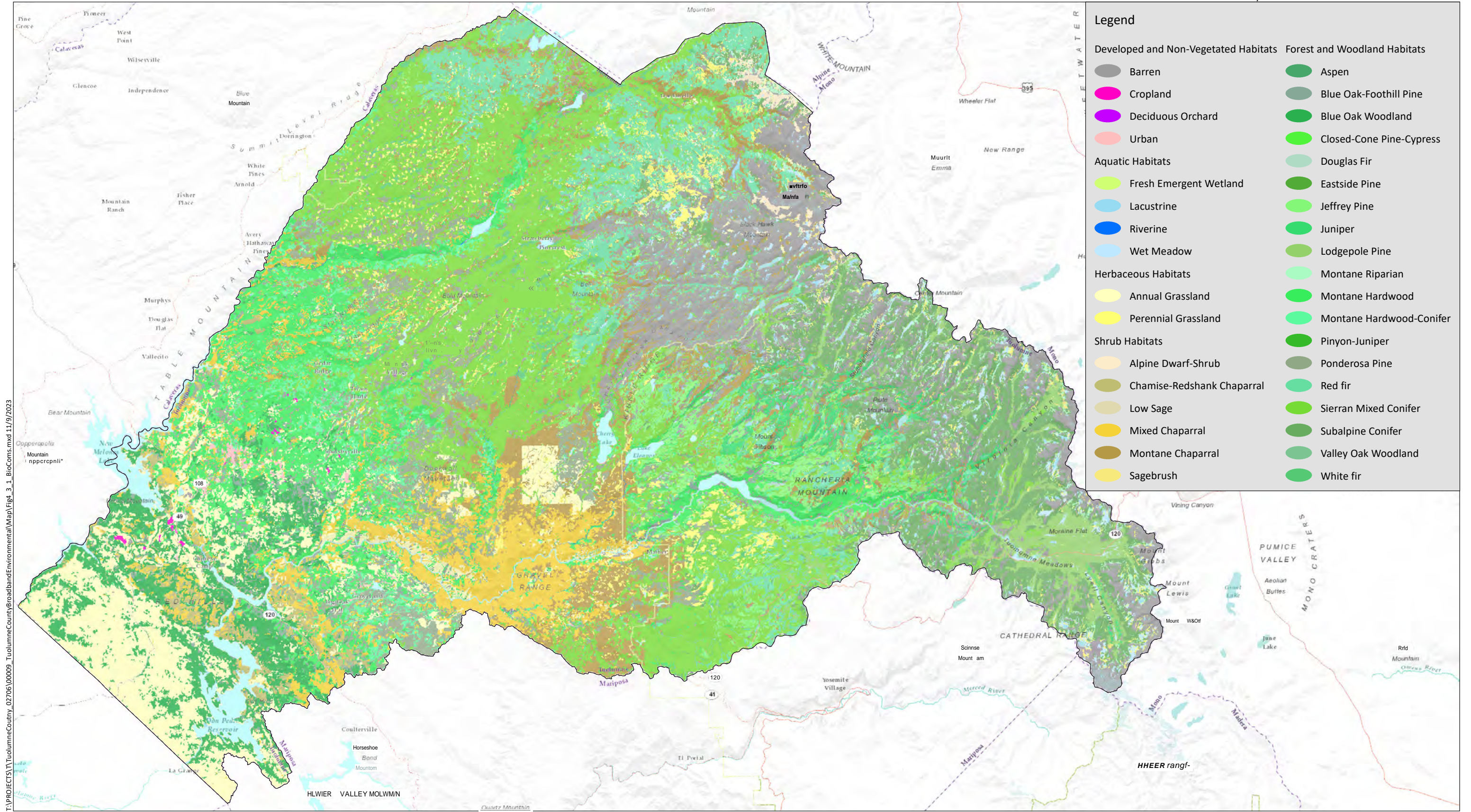
 Existing Broadband Trunkline



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Source: Base Map Layers (Esri, USGS, NGA, NASA)

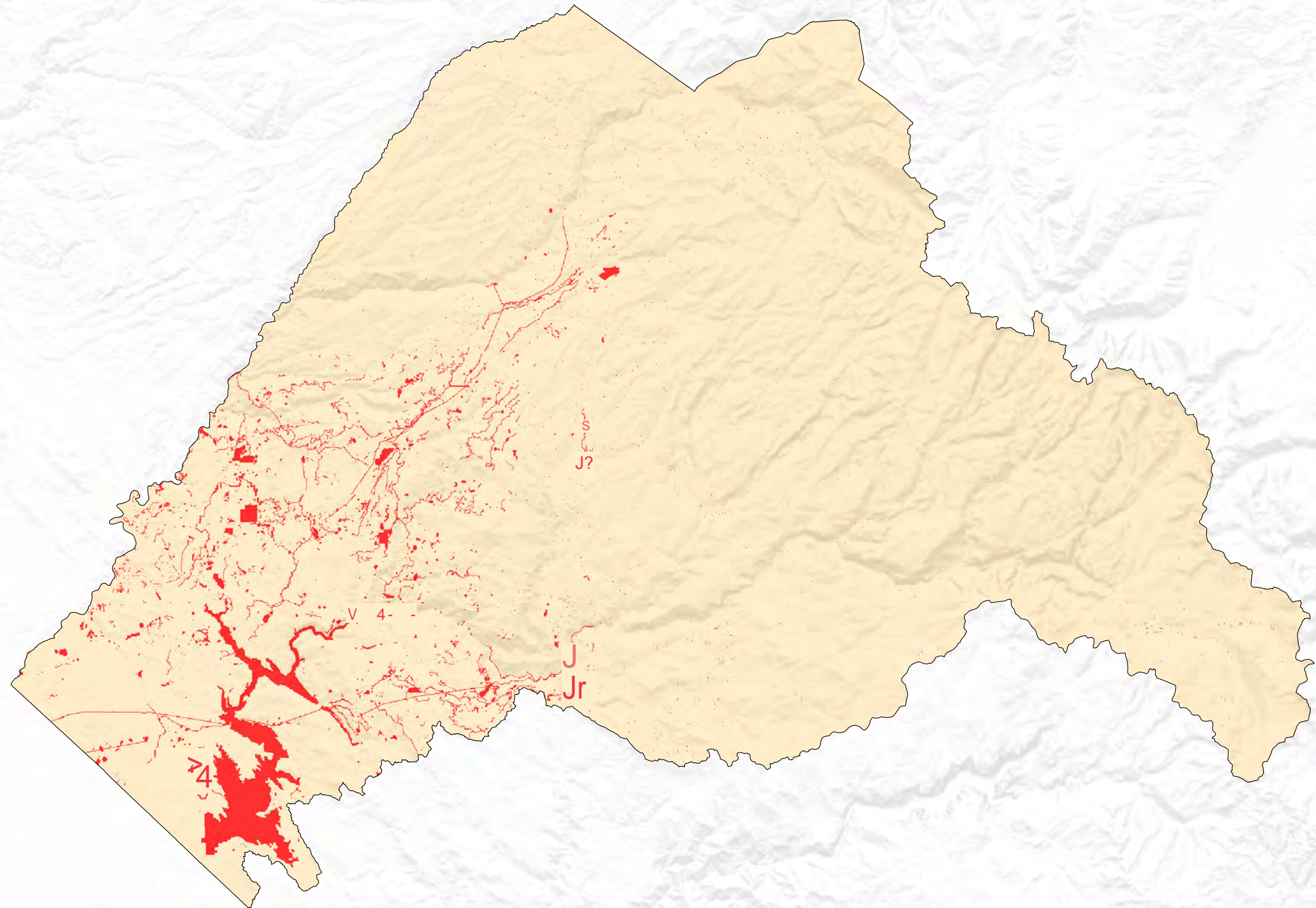


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Source: CNDDB (CDFW, 2023); Base Map Layers (Esri, USGS, NGA, NASA)

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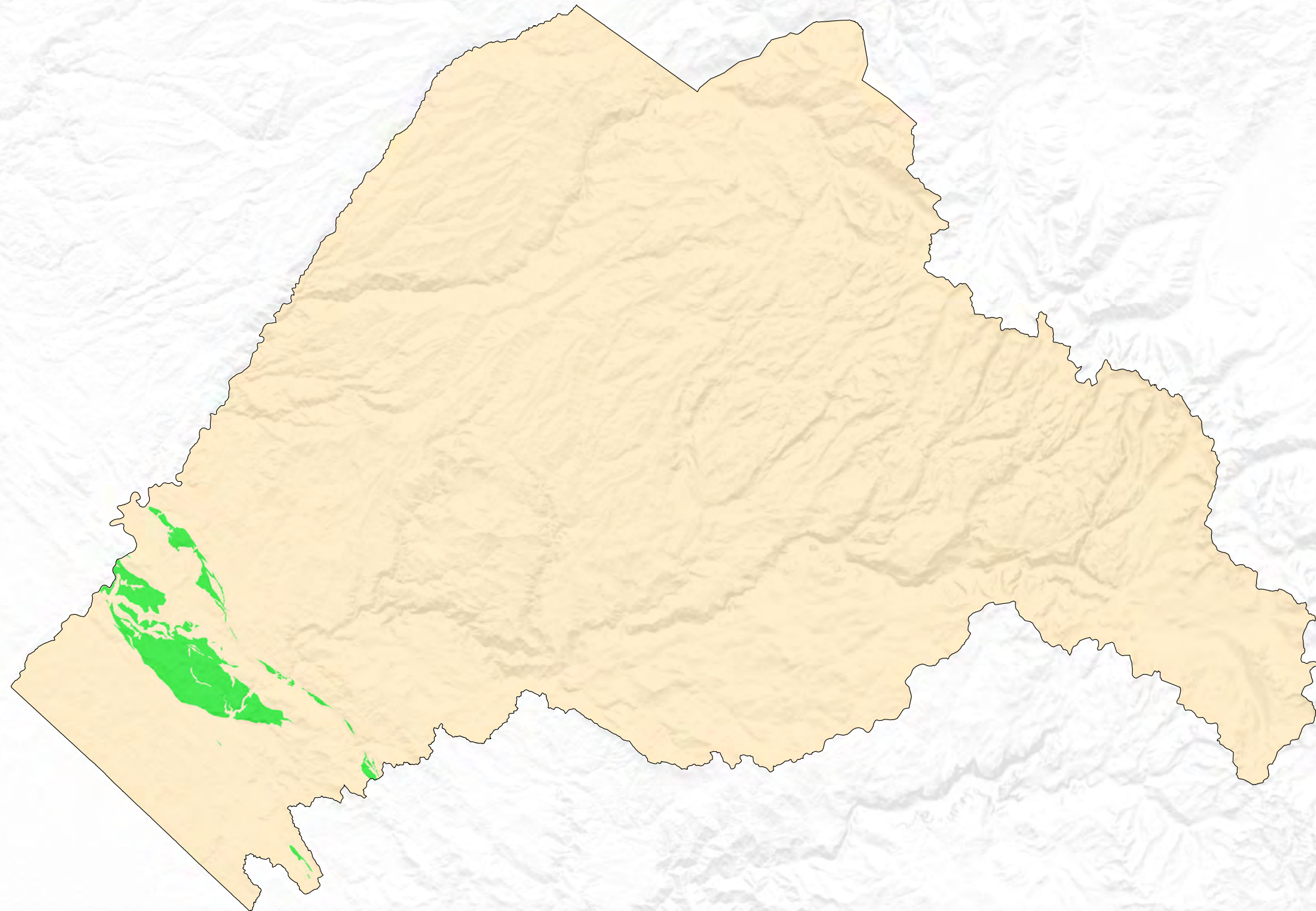
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Source: Base Map Layers (Esri, USGS, NGA, NASA)

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- Serpentine Soils





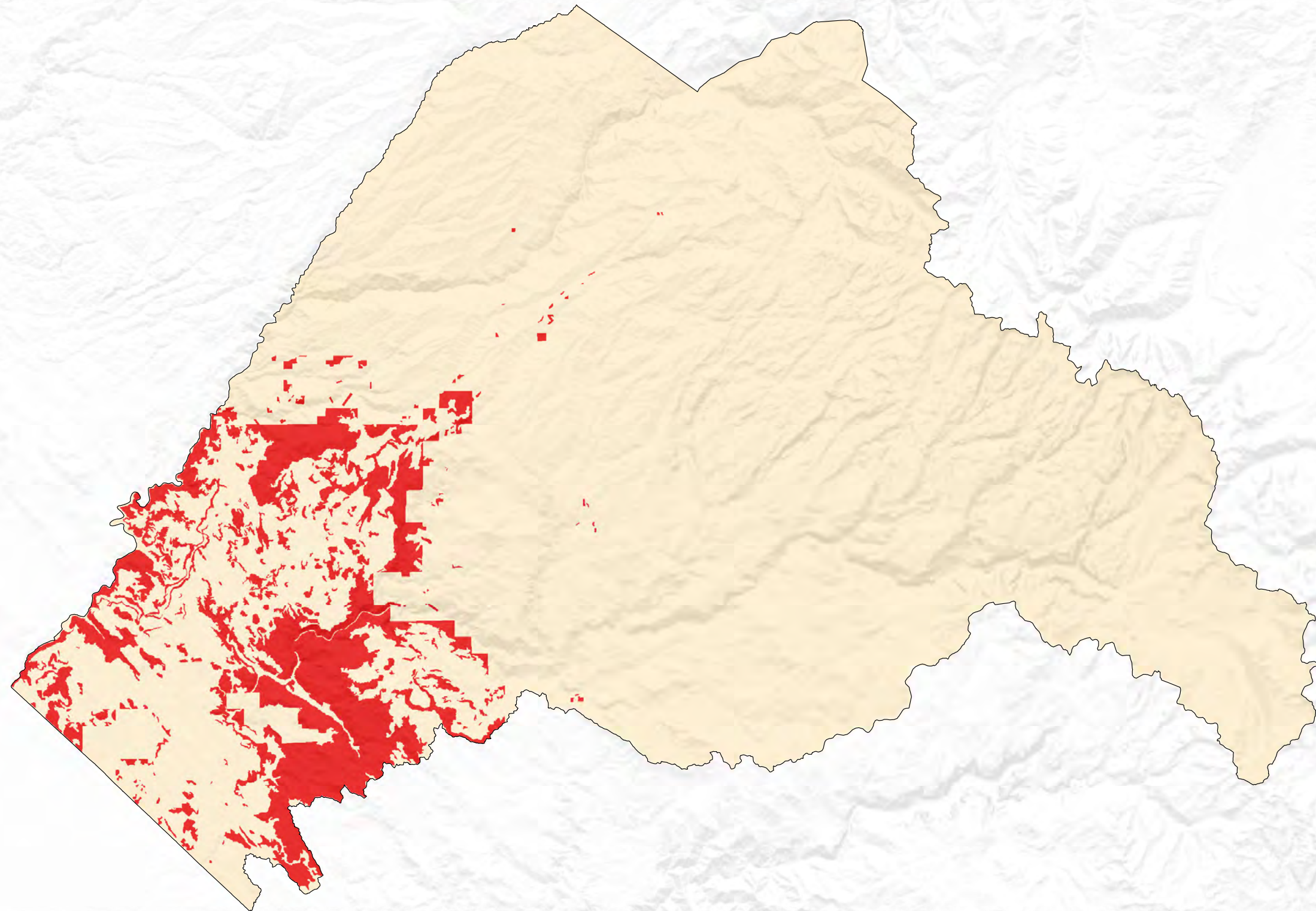
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Source: Soils (USGS, 2023); Base Map Layers (Esri, USGS, NGA, NASA)

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-  High Slope Areas



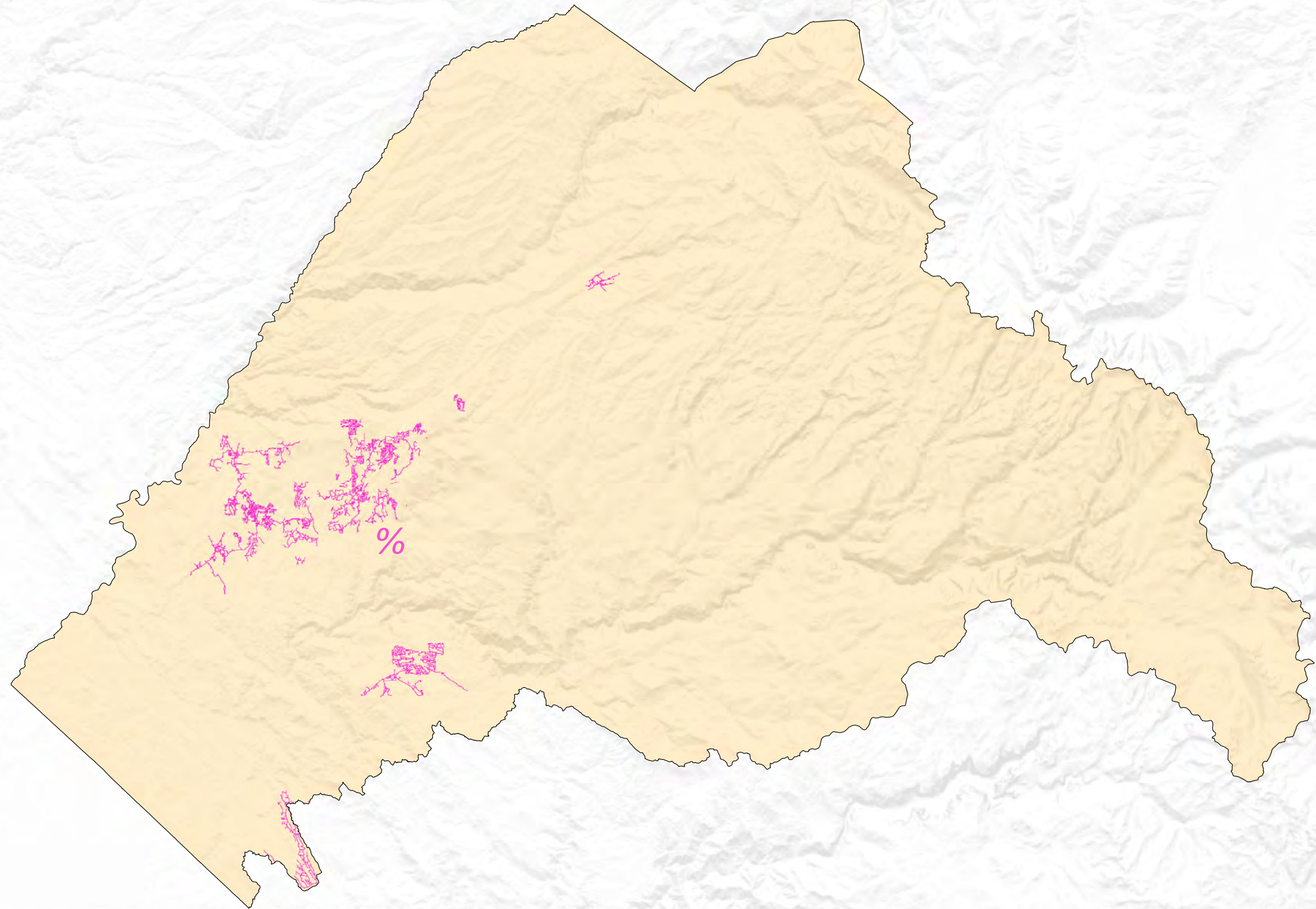
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Source: Base Map Layers (Esri, USGS, NGA, NASA)

Legend

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- Existing Utilities



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Source: Base Map Layers (Esri, USGS, NGA, NASA)

EIR Appendix F

Appendix B: List of Preparers

APPENDIX B: LIST OF PREPARARES

This document has been completed by the County of Tuolumne for the proposed Countywide program, with support from the following organizations and professional staff:

ENVIRONMENTAL ASSESSMENT

County of Tuolumne

Quincy Yaley, Community Development Director
Len De Groot, Project Manager

HELIX Environmental Planning, Inc.

Robert Edgerton, AICP CEP, Project Manager
Erin Gustafson, Senior Environmental Planner
Julia Pano, Lead Environmental Planner
Greg Davis, Lead Biologist
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Lika Loechler, GIS Specialist
Martin Rolph, Noise and Air Quality Specialist
Victor Ortiz, Senior Air Quality Specialist
Michael Hoke, Archaeologist
Andrew Pulcheon, Senior Archaeologist

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