Mt. Murphy Bridge Replacement Project

Draft Environmental Impact Report

SCH#: 2015012056

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Summary

Pursuant to California Environmental Quality Act (CEQA) Guidelines Section 15123, this summary provides information about the environmental impact report (EIR) prepared by El Dorado County Department of Transportation (County) for the proposed replacement of the Mt. Murphy Road Bridge. It presents a description of the Project; summarizes the impacts and mitigation measures; identifies areas of known controversy, including issues raised by agencies and the public; and identifies unresolved issues.

S.1 Project Description Summary

The County is proposing to replace the existing Mt. Murphy Road Bridge (25C0004) in Coloma. The existing bridge is located approximately 250 feet north of the intersection of State Route 49 (SR 49) and Mt. Murphy Road. The existing bridge carries Mt. Murphy Road over the South Fork American River (SFAR) and connects Coloma/ SR 49 with Marshall Road approximately 3 air miles north of the Project site. The bridge is located on the Coloma USGS topographic quad (T11N, R10E, Section 17, Mt. Diablo Meridian) and is in the South Fork American Hydrologic Unit (hydrologic unit code 18020129).

The purpose of the Project is to replace a fracture critical bridge to improve safety and movement for vehicles, pedestrians, and bicyclists across the SFAR in the town of Coloma. The primary project objectives include:

- Correct Structural and Functional Deficiencies
- Direct Access Across the SFAR in Coloma
- Correct Operational Deficiencies and Improve Safety for Vehicles, Bicycles, and Pedestrians

The Project would construct a post tensioned cast-in-place (CIP) concrete box girder bridge built in two stages. The CIP concrete box girder bridge design provides a low maintenance structure that requires a minimal level of repair during its service life (i.e., biennial inspections, occasional joint replacement, and deck rehabilitation as needed). The total replacement bridge length is approximately 445 ft and is anticipated to be composed of two 130 ft end spans and one 185 ft main span. The proposed new bridge and lane configuration will provide two 11-foot lanes, two 2-foot shoulders, an 8-foot sidewalk, and Caltrans Type 85 barriers. The proposed sidewalk would be on the upstream side of the bridge and tie into Mt. Murphy Road on either side of the new bridge. A cable-stay system or portals would be installed at the piers. The structure width necessary to accommodate the roadway, sidewalk, and barriers is approximately 38 feet. Cut depths would range from around 0-4 ft and fill depths for would range from around 0-20 ft.

S.2 Areas of Known Controversy

State CEQA Guidelines Section 15123(b) requires that a summary section include a description of areas of controversy known to the lead agency, including issues raised by agencies and the public; and issues to be resolved, including the choice among alternatives and whether or how to mitigate

the significant impacts. Known areas of controversy include emergency vehicle access, a bridge fully accessible and traversable by all vehicle types, and the preservation of cultural and historic resources.

S.3 Environmental Impact Report Process and Public Review

The County distributed a notice of preparation (NOP) of a Draft EIR for the proposed Project on 21 January 2015 (Appendix A). The NOP was distributed for a 30-day comment period that ended on 20 February 2015. During that time, a public meeting was held to gather public input on the scope of the EIR presented in the NOP. The public meeting was on 28 January 2015, at the Gold Trail Grange Hall in Coloma, California. Comments about the NOP were considered in the preparation of the EIR, and are included in Appendix A.

The County encourages public review of this EIR. This Draft EIR is being circulated for a 45-day public review period. During this time, written comments may be submitted to the following staff person for consideration in the Final EIR.

El Dorado County, Department of Transportation
2850 Fairlane Court
Placerville, CA 95667
Attn: Bridge Project Coordinator
Email: MtMurphyBridge@edcgov.us

Following the close of the public comment period, the County will prepare a Final EIR that contains this Draft EIR plus any technical clarifications and responses to significant environmental points raised in the public review and resource agency consultations. The Draft and Final EIR will be considered by the El Dorado County Board of Supervisors and, subsequently, a decision will be made to approve or deny the proposed Project.

S.4 Project Impacts and Mitigation Measures

The potential significant environmental impacts that would result from implementation of the proposed Project and the proposed mitigation measures are summarized in the table at end of this chapter. The effects of the Project that, when compared to the significance criteria, would result in no impact or would result in a less-than-significant impact are not included in the table but are discussed in Chapter 3, *Impact Analysis*.

S.5 Other CEQA-Related Impact Conclusions

S.5.1 Cumulative Impacts

Section 15130 of the State CEQA Guidelines requires that an EIR consider a project's contribution to any significant cumulative impacts. Section 15355 of the State CEQA Guidelines states that

"Cumulative impacts" refers to two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts. Cumulative impacts are the incremental effects of a proposed project added to the impacts of other closely related past, present, and reasonably foreseeable future projects, which, together, are cumulatively considerable. The purpose of the cumulative impact analysis is to assess the project's contribution in the context of the larger, cumulative impact.

All resource areas were analyzed for cumulative impacts. The proposed Project would not contribute to a cumulative impact in the Project region for the following resource areas.

- Aesthetics
- Agricultural and Forestry Resources
- Air Quality
- Biological Resources
- Tribal Cultural Resources
- Energy
- Geology and Soils
- Greenhouse Gas Emissions
- Hazards and Hazardous Materials
- Hydrology, Water Quality, and Water Resources
- Land Use, Planning, Population, and Housing
- Mineral Resources
- Noise
- Public Services, Utilities, and Service Systems
- Recreation
- Transportation
- Wildfire

The proposed Project's contribution to cumulative impacts is expected to be less than cumulatively considerable for the following resource areas within the Project region (and therefore cumulative impacts would be less than significant).

- Cultural resources

The assessment of the Project's contribution to cumulative impacts is provided in Chapter 5, *Other CEQA Considerations.*

S.5.2 Growth Inducement and Growth-Related Impacts

Section 15126.2 of the State CEQA Guidelines provides guidance for analyzing the growth-inducing impacts of a project. The growth inducement analysis must discuss ways in which a proposed project could foster economic or population growth or the construction of additional housing, either directly or indirectly, in the surrounding environment. Projects that would remove obstacles to

population growth could lead to increased demand for existing community services. Growth in an area is not necessarily considered beneficial, detrimental, or of little significance to the environment. However, the secondary impacts associated with growth (e.g., air quality impacts from new construction) can be significant. This Draft EIR concludes that the Project would not induce growth. Growth inducement and growth-related impacts are discussed in further detail in Chapter 5, *Other CEQA Considerations*.

S.5.3 Significant Irreversible Environmental Changes

The 2020 State CEQA Guidelines Section 15126.2(d) requires the evaluation and discussion in certain EIRs of significant irreversible changes that would be caused by a proposed project. State CEQA Guidelines Section 15127 (Limitations on Discussions of Environmental Impact) of the State CEQA Guidelines states:

'The information required by Section 15126.2(d) concerning irreversible changes, need be included only in EIRs prepared in connection with any of the following activities:

(a) The adoption, amendment, or enactment of a plan, policy, or ordinance of a public agency;

(b) The adoption by a Local Agency Formation Commission (LAFCO of a resolution making determinations; or

(c) A project which will be subject to the requirement for preparing an environmental impact statement pursuant to the requirements of the National Environmental Policy Act of 1969, 42 U.S.C. 4321–4347."

Implementation of the proposed Project would replace a one lane fracture critical bridge to improve safety and movement for vehicles, pedestrians, and bicyclists across the SFAR in the community of Coloma. The Project does not include any of the activities listed in State CEQA Guidelines Section 15127 that would require the evaluation and discussion of significant irreversible environmental impacts. The Project is not a plan, policy, or ordinance, does not include LAFCO approvals, and does not require the preparation of a NEPA environmental impact statement. No further evaluation or documentation is required.

S.6 Project Alternatives

The Draft EIR must examine a reasonable range of alternatives to the Project that could feasibly attain most of the Project objectives and avoid or substantially lessen any of the Project's significant environmental impacts (State CEQA Guidelines 15126 [f]). As required by Section 15126.6 of the State CEQA Guidelines, the range of alternatives must always include the No-Project Alternative. The purpose of describing and analyzing a No-Project Alternative is to allow decision-makers to compare the impacts of approving the proposed Project with the impacts of not approving the proposed Project. Alternatives are discussed in Chapter 4, *Alternatives Analysis*.

Table S- 1. Summary of Significant Impacts and Mitigation Measures

Resource Topic	Significance Criteria and Significant Impact Summary	Mitigation Measures	Significance after Mitigation
Aesthetics			
	Impact AES-3: In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality? • Construction activities would result in a high visual impact for all viewer groups. Temporary impacts during construction would be related to the presence of construction workers, materials, equipment, and vegetation clearing.	**Mitigation Measure BIO-5 (Fremont Cottonwood Riparian)**: See text of measure below under Impact BIO-2 **Mitigation Measure BIO-6 (Oak Trees)**: See text of measure below under Impact BIO-2 **Mitigation Measure BIO-7 (South Fork American River):** See text of measure below under Impact BIO-3	Less than significant
Air Quality			
	Impact AQ-3: Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people? • Potential for construction activities to result in release LBP, ADL, and Earth Material Containing Lead.	**Mitigation Measure HAZ-2 (LBP, ADL, Earth Material Containing Lead):** See text of measure below under Impact HAZ-2.	Less than significant
Biological Resources			
	Impact BIO-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 the California Department of Fish and Game or U.S. Fish and Wildlife Service? • Potential for construction activities to result in impacts to special status species including Foothill Yellow-Legged Frog (FYLF), Western Pond Turtle (WPT), and Birds of Prey and Migratory Birds, bats, big-scale balsamroot, and Sierra arching sedge.	**Mitigation Measure BIO-1 (FYLF):** • A preconstruction survey for FYLF shall be conducted by a qualified biologist within 48 hours prior to the start of vegetation removal and construction activities within the riparian and aquatic habitat in the Project area. The survey methodology will be based on Peek et al. (2017) Visual Encounter Survey Protocol for *Rana Boylii* in Lotic Environments, or the most current guidelines at the time of the survey.	Less than significant

Resource Topic	Significance Criteria and Significant Impact Summary	Mitigation Measures	Significance after Mitigation
		• If FYLF is found, the County will coordinate with CDFW to determine if a 2081(b) CESA ITP is needed. • Environmental awareness training will be conducted by a qualified biologist prior to the onset of project work. All construction personnel will be briefed on how to recognize FYLF and other special-status species with potential to occur in the work zone, and who to contact should any be found in the work area. Construction personnel should also be informed that if a FYLF is encountered in the work area, construction will cease. The crew foreman will be responsible for ensuring that crewmembers adhere to the guidelines and restrictions. Education programs will be conducted for appropriate new personnel as they are brought on the job during the construction period. Upon completion of training, employees will sign a form stating that they attended the training and understand all the conservation and protection measures. • A qualified biologist will be present to monitor for FYLF during work in and adjacent to the river, including, but not limited to, grubbing and clearing activities in the riparian habitat, installation of any diversions and temporary work trestle, and installation of the temporary falsework. The qualified biologist will assist the County if FYLF are found, answer questions and make recommendations regarding implementation of FYLF avoidance and minimization measures at the direction of the CDFW. • During construction, if a FYLF is observed in the active construction zone, construction will cease and a qualified biologist will be notified. FYLF will be allowed to leave the project area on their own. If needed CDFW will be contacted for guidance before construction can resume.	

Resource Topic	Significance Criteria and Significant Impact Summary	Mitigation Measures	Significance after Mitigation
		• Upon completion of construction activities, any barriers to flow shall be removed in a manner that would allow flow to resume with the least disturbance to the substrate. • Plastic monofilament netting (erosion control matting) or similar material containing netting shall not be used at the project site because the FYLF or other animals may become entangled or trapped in it. Acceptable substitutes include coconut coir matting or tackified hydroseeding compounds. • Trees and shrubs scheduled for removal in the riparian habitat and South Fork American River will be removed by hand or hand tools, including chain saws and mowers. Root wads and stumps of trees and shrubs can be removed if determined necessary by the resident engineer. Mechanized vehicles will not be used to clear the brush. • To ensure that diseases are not conveyed between work sites by the qualified biologist, the fieldwork code of practice developed by the Declining Amphibian Population Task Force will be followed at all times. • To avoid attracting predators, a litter control program will be instituted at the entire Project site. All workers will ensure that food scraps, paper wrappers, food containers, cans, bottles, and other trash in the work area are deposited in covered or closed trash containers and removed regularly from the project area. **Mitigation Measure BIO-2 (Birds of Prey and Migratory Birds):** Under the MBTA, nests that contain eggs or unfledged young are not to be disturbed during the breeding season. Nesting or	

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		attempted nesting by migratory birds and birds-of-prey is anticipated from February 15 to September 1. **Swallows** In California, bridge-nesting swallows typically arrive in mid-February, increase in numbers until late March, and remain until October. Nesting begins in April, peaks in June, and continues into August. Measures will be taken to prevent establishment of cliff swallow nests prior to construction. Techniques to prevent nest establishment include using exclusion devices, removing and disposing of partially constructed and unoccupied nests of migratory or nongame birds on a regular basis to prevent their occupation, or perform any combination of these. The following measures will be implemented: • The contractor will visit the site weekly and remove partially completed nests using either hand tools or high-pressure water; and/or • Hang netting from the bridge before nesting begins. If this technique is used, netting should be in place from late February until project construction begins. **Birds of Prey and Birds Protected by the Migratory Bird Treaty Act** • If construction begins outside the 15 February to 1 September breeding season, there will be no need to conduct a preconstruction survey for active nests. • Trees scheduled for removal should be removed during the non-breeding season from 2 September to 14 February. Vegetation removal includes trees and vegetation within the stream zone. Within the riparian community, vegetation will be removed using hand tools, including chain saws and mowers, and may be trimmed several inches above the ground with the roots left intact to prevent erosion.	

Resource Topic	Significance Criteria and Significant Impact Summary	Mitigation Measures	Significance after Mitigation
		• If construction or vegetation removal begins between 15 February and 1 September, a biologist shall conduct a survey for active bird of prey nests and rookeries within 500 ft of the project area and active nests of all other MBTA-protected birds within 100 ft of the project area from publicly accessible areas within two weeks prior to construction. The measures listed below shall be implemented based on the survey results. *No Active Nests Found:* • If no active nest of a bird of prey, MBTA bird, or other CDFW protected bird is found, then no further avoidance and minimization measures are necessary unless one is subsequently found during construction, in which case the applicable measure below will be implemented. *Active Nests Found:* • If an active nest of a bird of prey, MBTA bird, or other CDFW protected bird is discovered that may be adversely affected by construction activities, or an injured or killed bird is found, immediately: 1. Stop all work within a 100-foot radius of the discovery. 2. Notify the Engineer. 3. Do not resume work within the specified radius of the discovery until authorized. • The biologist shall establish a minimum 500-ft Environmentally Sensitive Area (ESA) around the nest if the nest is of a bird of prey or is a rookery, and a minimum 100-ft ESA around the nest if the nest is of an MBTA bird other than a bird of prey.	

Species Protection Areas

Identification	*Location*
Bird of Prey or Rookery	*500 ft no-disturbance buffer*
MBTA protected bird (not bird of prey)	*100 ft no-disturbance buffer*

- Activity in the ESA will be restricted as follows:
  1. Do not enter the ESA unless authorized
  2. If the ESA is breached, immediately:
     a. Secure the area and stop all operations within 100 feet of the ESA boundary.
     b. Notify the Engineer.
  3. If the ESA is damaged, the County determines what efforts are necessary to remedy the damage and who performs the remedy.
- No construction activity shall be allowed in the ESA until the biologist determines that the nest is no longer active, or unless monitoring determines that a smaller ESA will protect the active nest.
- The ESA may be reduced if the biologist monitors the construction activities and determines that no disturbance to the active nest is occurring. Reduction of the ESA depends on the species of bird, the location of the nest relative to the project, project activities during the time the nest is active, and other project-specific conditions.
- Between 15 February and 1 September, if additional trees or shrubs need to be trimmed and/or removed after construction has started, a survey will be conducted for active nests in the area to be affected. If an active nest is found, the above measures will be implemented.

Resource Topic	Significance Criteria and Significant Impact Summary	Mitigation Measures	Significance after Mitigation
		• If an active nest is identified in or adjacent to the construction zone after construction has started, the above measures will be implemented to ensure construction is not causing disturbance to the nest. **Mitigation Measure BIO-3 (Bats):** The maternity season for bats in California is generally considered to be from 15 May through 15 August and the hibernation season from 15 November through the end of February. • A qualified biologist shall conduct a preconstruction survey for roosting bats within 2 weeks prior to the start of construction. Surveys can also be performed earlier than 2 weeks prior to the start of construction. • If no bats or sign or their use is observed during the survey no further measures are required. • If sign of or direct observation of a maternity or hibernation roost is recorded during the survey, no project related disturbance will occur to the structure containing the roosting bats until a qualified biologist determines, by observation, that the bats using the maternity or hibernation roost have departed for the season. • If it is determined during the preconstruction survey that bats are using the bridge outside maternity and hibernation seasons listed in this measure exclusion devices will be installed. Exclusion devices can be installed anytime outside of the maternity and hibernation season of roosting bats listed above. • Exclusion devices shall remain in place until demolition of the bridge.	

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		• Removal or trimming of trees or relocation of any structure that contains an active roost will be avoided between 15 May and 15 August (the maternity period) to avoid impacts on reproductively active females and dependent young. **Mitigation Measure BIO-4: Big-scale balsamroot and Sierra arching sedge** • A botanical survey of the Project area will be conducted prior to initial construction activities during the evident and identifiable period of special-status plant species that could occur in the study area (May-July). The survey will be conducted in accordance with standard 2018 (or most recent) CDFW survey protocols, where applicable. • If no sensitive plant species are detected during the botanical survey, no further avoidance and minimization efforts will be required. • If sensitive plant species are detected during the botanical survey, the plants will be avoided to the maximum extent practicable during construction of the proposed project. Environmentally Sensitive Areas (ESAs) will be established around sensitive plant occurrences within the Project area to exclude construction activities. Temporary exclusionary fencing will be installed to define the limits of the ESA. • If avoidance is not feasible, the plants will be transplanted to a suitable location in the Project area. The County will coordinate transplantation activities with the appropriate regulatory and resource agencies.	
	Impact BIO-2: Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or	**Mitigation Measure BIO-5 (Fremont Cottonwood Riparian)**:	Less than significant

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	by the California Department of Fish and Game or US Fish and Wildlife Service? • Potentail temporary and permanent impacts on oaks and Fremont Cottonwood Riparian.	• Tree removal will be minimized to the extent possible. • Environmentally sensitive area (ESA) fencing will be placed along the limits of construction in the Project area to exclude construction activities from avoided habitat. The ESA fencing will be in place prior to commencement of construction. • Trucks and other vehicles will not be allowed to park beyond, nor shall equipment be stored beyond, the fencing. • No vegetation removal or ground disturbing activities will be permitted beyond the fencing. • Temporarily affected areas will be revegetated and reseeded in accordance with the Revegetation Planting and Erosion Control Specifications in Appendix F of the Project Natural Environment Study (NES). **Mitigation Measure BIO-6 (Oak Trees)**: • Mitigation for removal of individual valley oak trees shall be based on an inch-for-inch replacement standard and shall be quantified and outlined in an oak resources technical report. Prior to construction the County will obtain an Oak Tree Removal Permit in accordance with ORMP implementing ordinance No. 5061, Section 130.39.070. In accordance with ORMP implementing ordinance No. 5061, Sections 130.39.070(D) and (E) the Oak Tree Removal Permit application will be accompanied by an Oak Resources Technical Report and Code Compliance Certificate. The Oak Resources Technical Report must include all pertinent information, documents and recommended mitigation as specified in the ORMP. A Code Compliance Certificate will be submitted verifying that no Oak Resources have been	

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		impacted (in the Project area) within two years prior to application submittal. • The County will pay the individual oak tree in-lieu fee for trees subject to the ORMP that are removed by the Project. The individual oak tree in-lieu fee will be in accordance with Table 6 in section 3.2 (Oak Trees) of the September 2017, ORMP.	
	Impact BIO-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? • Potential temporary and indirect effects on the SFAR.	**Mitigation Measure BIO-7 (South Fork American River):** • During construction, water quality will be protected by implementation of BMPs consistent with the Caltrans Stormwater Quality Handbooks (Caltrans 2011) to minimize the potential for siltation and downstream sedimentation of South Fork American River. • Any water diversion in South Fork American River will be conducted in accordance with the County of El Dorado Stormwater Management Plan (SWMP; August 2004b) and the El Dorado County grading, erosion, and sediment control ordinance (El Dorado County 2010). Minimization efforts will include marking the limits of construction with temporary fencing. • Equipment will be refueled and serviced at designated construction staging areas. All construction material will be stored and contained in a designated area that is located away from channels to prevent transport of materials into the adjacent South Fork American River. The preferred distance is a minimum 100 feet from riparian habitat or water bodies. A silt fence will be installed to collect any discharge, and adequate materials for spill cleanup will be kept on site. Construction vehicles and equipment will be maintained to prevent contamination of soil and water from external grease and oil and from leaking hydraulic fluid, fuel, oil, and grease.	Less than significant

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		• Riparian vegetation will be avoided and preserved to the maximum extent practicable. The limits of vegetation removal will be marked with temporary fencing or flagging. • Areas temporarily disturbed on the banks of South Fork American River within the Project area will be revegetated in accordance with the Revegetation Planting and Erosion Control Specifications in Appendix F of the Project NES and will be coordinated with the MGDSHP and Coloma Resort as applicable. No seed of nonnative species will be used unless certified to be sterile. • Reseeded areas will be covered with a biodegradable erosion control fabric or a hydraulically applied cover where applicable to prevent erosion and downstream sedimentation, as applicable and as determined by the project engineer. The project engineer will determine the specifications needed for erosion control fabric (e.g., sheer strength) based on anticipated maximum flow velocities and soil types. • Environmentally sensitive areas (ESAs) will be fenced to prevent encroachment of equipment and personnel into riparian areas, the river channels and banks, and other sensitive habitats. ESAs will be clearly flagged for the duration of site construction. Access to and use of ESAs will be restricted. Vehicle fueling and staging areas will be located at least 50 feet from flagged ESAs. • The contractor will prepare and implement a Stormwater Pollution Prevention Plan as required during permitting. • Discharging pollutants from vehicle and equipment cleaning into any storm drains or watercourses will be prohibited.	

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		• Concrete waste materials and other debris from demolition and construction activities will not be allowed to enter the flowing water of the South Fork American River. Waste materials will be disposed of offsite, at an approved location, where they cannot enter surface waters. • A Spill Prevention, Control, and Countermeasures (SPCC) Plan will be developed to provide consistent, appropriate responses to spills that may reasonably be expected with implementation of the project. The SPCC Plan will be kept on-site during construction and the appropriate materials and equipment will also be on-site during construction to ensure the SPCC Plan can be implemented. Personnel will be knowledgeable in the use and deployment of the materials and equipment so response to an accidental spill will be timely.	
Cultural Resources			
	Impact CULT-1: Potential to cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5. • The Project will remove and replace the Mt. Murphy Road Bridge which has been determined eligible for listing in the CRHR.	**Mitigation Measure CULT-1 (Design Features)** • The Proposed Bridge Design for the Mt. Murphy Rd. Bridge Replacement shall incorporate bridge features similar and consistent with the earlier bridge crossing structures, examples include: 1. truss portals with cables resembling the current truss bridge and earlier suspension bridge, 2. use of timber texturing and oversized sidewalk resembling a "boardwalk" similar to the earlier timber approaches, and 3. recesses and curvatures in the profile of the proposed bridge similar to the existing concrete approaches. **Mitigation Measure CULT-2 (Historic American Engineering Record (HAER))**	Significant Unavoidable Impact

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		• Prior to the start of construction, Caltrans shall contact the regional Historic American Building Survey/Historic American Engineering Record/Historic American Landscape Survey (HABS/HAER/HALS) coordinator at the National Park Service Interior Regions 8, 9, 10, and 12 Regional Office (NPS) to request that NPS stipulate the level of and procedures for completing the documentation. Within ten (10) days of receiving the NPS stipulation letter, Caltrans shall send a copy of the letter to all consulting parties for their information. • Caltrans will ensure that all recordation documentation activities completed by the County, or its designee are performed or directly supervised by architects, historians, photographers, and/or other professionals meeting the qualification standards in the Secretary of Interior's Professional Qualification Standards (36 CFR 61, Appendix A). • Upon receipt of the NPS written acceptance letter, the County or its designee, with oversight by Caltrans Professionally Qualified Staff (PQS) in the appropriate discipline, will make archival, digital library-quality copies of the documentation and provide them to the Caltrans Library and History Center, Sacramento; the California Office of Historic Preservation; and the Caltrans Cultural Studies Office. Additional copies will be offered to the El Dorado County Public Library, Placerville Branch, the El Dorado County Historical Society, and the California State Library • Caltrans shall notify SHPO that the documentation is complete and all copies distributed, as outlined in section II.B 3 of the Memorandum of Agreement (MOA), and include the completion of the documentation in the annual report.	

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		Mitigation Measure CULT-3: (Interpretive Exhibits) • The County, with oversight from Caltrans PQS and in coordination with State Parks, shall develop and install an interpretive exhibit near the location of the new bridge. The County has identified the "vista point" area on Mt. Murphy Road as a likely location for the interpretive panels; however, the final number, placement, and content of the interpretive panels will be determined in consultation with Caltrans, State Parks, SHPO, and interested Native American parties. The County will coordinate with the Marshall Gold Discovery State Historic Park Museum in the preparation of the exhibit to maintain consistency with the format and style with the Park's existing interpretive program. • The County shall, at a minimum, develop an interpretive display relating to the succession of bridges built historically at or near the Mt. Murphy Road Bridge crossing. The County shall provide the information and materials resulting from the HAER recordation efforts to State Parks. The County and State Parks, with oversight from Caltrans, will use the HAER materials to develop an exhibit which may feature reproductions of photographs of the various timber trestle, wire suspension, and truss bridges at this site and include historical data regarding each bridge. • The County shall submit drafts of the proposed interpretive exhibit materials to consulting parties for a 30-day review and comment period. The County, with oversight from Caltrans PQS and in coordination with State Parks, will take all comments into account in the production of the final interpretive exhibits.	

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		Mitigation Measure CULT-4 (Revised National Register Nomination for Coloma Historic District) • The County, with oversight from Caltrans PQS in the appropriate discipline(s), will contract with PQS historical or historic architectural and archaeological consulting firms to prepare a revised National Register nomination for Coloma Historic District, a nomination that takes into account changes in documentation requirements since the existing forms were prepared in the 1970s. The nomination will conform to National Register Bulletin 16A, "How to Complete National Register Forms" as well as any California-specifics as posted on the website of the SHPO. The revised nomination will include consideration of previously recorded contributing and non-contributing historical archaeological resources that are found to be associated with the Coloma Historic District. Caltrans and the County will provide the signatory parties staff an opportunity to review and comment on the draft nomination before formal submittal to California SHPO. **Mitigation Measure CULT-5 (Reporting Requirements and Related Reviews)** • Within thirty (30) days after the County has determined that all fieldwork required under Stipulation II.E of the MOA has been completed, the County will ensure preparation and concurrent distribution to Caltrans District 3, the Caltrans Cultural Studies Office (CSO) and other MOA parties of a brief letter report that summarizes the field efforts and the preliminary findings that result from them. MOA parties will have thirty (30) days from the date of receipt to review and comment on the preliminary findings. Comments will be shared with the SHPO prior to finalization of letter report. The	

Resource Topic	Significance Criteria and Significant Impact Summary	Mitigation Measures	Significance after Mitigation
		finalized letter report will then subsequently be distributed to MOA parties for their records. • Within twelve (12) months after the County has determined that all fieldwork required by Stipulation II.E of the MOA has been completed, the County will ensure preparation and subsequent concurrent distribution to Caltrans District 3, the CSO, and the other MOA parties, for review and comment, a draft technical report that documents the results of PRDMP. The other MOA parties will be afforded forty-five (45) days following receipt of the draft technical report to submit any written comments to Caltrans District 3. Failure of these parties to respond within this time frame shall not preclude Caltrans District 3 from authorizing revisions to the draft technical report, as Caltrans District 3 may deem appropriate. • Copies of the final technical report document the results of the PRDMP and any other subsequent documentation will be distributed by the County to the other MOA parties and (as applicable) to the Sacramento North Central Information Center (NCIC) of the California Historical Resources Information System (CHRIS).	
	Impact CULT-2: Potential to cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5. • It is possible that a few scattered Native American artifacts are present will have been moved and redeposited during the repeated flood events.	**Mitigation Measure CULT-6 (Post-Review Discovery and Monitoring Plan)** • Caltrans District 3 has prepared a Post Review Discovery and Monitoring Plan (PRDMP), which is attached to the Finding of Effect, in accordance with Stipulation XV.A of the Section 106 PA. This PRDMP shall have in place a plan for treatment of archaeological properties, should they be discovered within the ADI after execution of this MOA.	Less than significant

Resource Topic	Significance Criteria and Significant Impact Summary	Mitigation Measures	Significance after Mitigation
		• If Caltrans District 3, in conjunction with the County, determines, after construction of the Undertaking has commenced, that the Undertaking will affect a previously unidentified property that may be eligible for listing in the NRHP, or affect a known historic property in an unanticipated manner, the County will address the discovery or unanticipated effect in accordance with the PRDMP. Caltrans at its discretion may hereunder assume any discovered property to be eligible for listing in the NRHP in accordance with 36 CFR § 800.13I. **Mitigation Measure CULT-7 (ESA Action Plan)** • The County, with oversight from Caltrans PQS, shall ensure that the Undertaking will not adversely affect known archaeological properties that include: CA-ELD-56 and -57, the multicomponent site identified by Rouse along SR 49 south of Mt. Murphy Road, the area behind the Bekearts building, and Gallagher field on the east side of the river by designating those resources as Environmentally Sensitive Areas (ESA) and through implementation of the ESA Action Plan , which is attached to the Finding of Effect. • The County, with oversight from Caltrans PQS, shall ensure that the portions of archaeological sites contributing or potentially contributing to the Coloma Historic District outside of the Area of Direct Impact (ADI) will not be adversely affected by the Undertaking because they will be established as ESAs and work within these areas will be prohibited or restricted, as detailed in the ESA Action Plan, which is attached to the Finding of Effect.	
Tribal Cultural Resources			
	Impact TRIB CULT-1: Implementation of the proposed project would not cause a substantial adverse change in	**Mitigation Measure CULT-8 (Native American Monitoring)**: Implementation of measures CULT-1 to CULT-7	Less than significant

Resource Topic	Significance Criteria and Significant Impact Summary	Mitigation Measures	Significance after Mitigation
	the significance of a tribal cultural resource, defined in Public Resources Code Sections, 21074, 5020.1(k), or 5024.1. • Native American monitoring.	will reduce potential impacts to Tribal Cultural Resources to less than significant.	
Geology and Soils			
	Impact GEO-3: Location on a geologic unit or soil that is unstable or that would become unstable as a result of the project and potentially result in an on-site or off-site landslide or subsidence • Reduction of potential vibration impacts on buildings.	**Mitigation Measure NOI-1 (Vibration):** See text of measure below under Impact NOI-2	Less than significant
Hazards and Hazardous Materials			
	Impact HAZ-2: 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? • Potential for arsenic in soil. • Potential disturbance of LBP, ADL, Earth Material Containing Lead • Potential treated wood	**Mitigation Measure HAZ-1 Arsenic Containing Soil** • Contract provisions will require soil excavated from the west bank of the South Fork American River be kept in separate from other spoils and disposed of as Non-hazardous waste at a Class II or Class III landfill depending on facility acceptance standard. **Mitigation Measure HAZ-2 LBP, ADL, Earth Material Containing Lead** • Contract provisions will require that LBP, on the existing metal trusses of the bridge, be abated prior to demolition in accordance with Caltrans Standard Special Provision 14-11.13 (Disturbance of Existing Paint Systems on Bridges) and 36-4 (Containing Lead from Paint and Thermoplastic). • Contract provisions will require the existing striping and pavement marking materials on Mt. Murphy Rd along east side of bridge be abated prior to demolition in accordance with Caltrans Standard Special Provision 14-11.12 (Remove Yellow Traffic Stripe and Pavement Marking with Hazardous Waste Residue), Caltrans	Less than significant

Resource Topic	Significance Criteria and Significant Impact Summary	Mitigation Measures	Significance after Mitigation
		Standard Special Provision 36-4 (Containing Lead from Paint and Thermoplastic), and 84-9.03C (Remove Traffic Stripes and Pavement Markings Containing Lead). • Contract provisions will require exposed soil waste/ spoils be managed in accordance with Caltrans- DTSC Soil Management Agreement for Aerially Deposited Lead-Contaminated Soils (29 June 2016), Caltrans Standard Special Provisions 7-1.02K(6)(j)(iii) (Earth Material Containing Lead), Caltrans Standard Specification 14-11.08 Regulated Material Containing Aerially Deposited Lead, and 14-11.09 Minimal Disturbance of Regulated Material Containing Aerially Deposited Lead. **Mitigation Measure HAZ-3 Treated Wood Waste** • Contract provisions will require wooden railings on the bridge are managed in accordance with Caltrans Standard Specifications 14-11.14 (Treated Wood Waste) and DTSC's Treated Wood Waste Alternative Management Standard (22 CCR Chapter 34).	
	Impact HAZ-7: Exposure of people or structures to a significant risk of loss, injury, or death involving wildland fires • Minimize potential for construction caused wildland fire potential	**Mitigation Measure WILD-1 (Prepare and Implement a Fire Protection Plan)**: See text of measure below under Impact WILD-2	Less than significant
Hydrology, Water Quality, and Water Resources			
	Impact WQ-1: Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	**Mitigation Measures BIO-1 (FYLF) and BIO-7 (South Fork American River)**: See text of measures above under Impact BIO-1 and Impact BIO-3	Less than significant
Noise			
	Impact NOI-2: Generation of excessive ground-borne vibration or ground-borne noise levels?	**Mitigation Measure NOI-1 (Vibration)**	Less than significant

Resource Topic	Significance Criteria and Significant Impact Summary	Mitigation Measures	Significance after Mitigation
	• Reduction of potential vibration impacts on buildings.	• The construction contract will specify a maximum peak particle velocity (PPV) threshold (anticipated to be approximately 0.12 inches per second for transient sources and 0.08 inches per second for continuous/frequent intermittent sources at the historic buildings (the receiving structure) within the MGDSHP during active construction of the Project). • If the contactor proposes use of impact type equipment (i.e., impact pile driver, vibratory, rollers) the construction contractor will prepare a plan to minimize construction vibration damage using all reasonable and feasible means available. At a minimum the plan will include: o A procedure for establishing threshold and limiting vibration values for potentially affected structures based on an assessment of each structure's ability to withstand the loads and displacements due to construction vibrations. o A vibration compliance monitoring plan to be implemented during construction.	
Recreation			
	Impact REC-2: Construction or expansion of recreational facilities that might have an adverse physical effect on the environment. • Impacts to vegetation • Potential conflicts with recreational users during construction.	**Mitigation Measure REC-1 (Relocate Existing Park Uses and Protect Subsurface Artifacts in Staging Areas as needed)** • Prior to commencing construction, the construction limits and detailed plans for relocating existing recreational activities will be coordinated through MGDSHP and Coloma Resort staff. The plans will require that construction limits be fenced or clearly delineated and that the relocation of uses, such as the Levee Trail, gold panning stations, and resort activities will include	Less than significant

Resource Topic	Significance Criteria and Significant Impact Summary	Mitigation Measures	Significance after Mitigation
		accessibility and recreational value throughout construction. **Mitigation Measure REC-2 (Protective Channel for Whitewater Boaters)** • During final design, the protected channel corridor will be designed in consultation with the MGDSHP and the State Lands Commission as applicable. The design will provide for safe passage horizontally and vertically and include floating fender barriers approximately 50 feet upstream to help direct boats through the channel, as well as adequate netting under construction area to prevent debris from reaching the SFAR. **Mitigation Measure REC-3 (Maintain Park Character at SR 49 Intersection with Mt. Murphy Road)** • During final design, the improvements to SR 49 and Mt. Murphy Road, affecting MGDSHP property, will be designed in consultation with the MGDSHP. Materials, plantings, and landscape features will be consistent with the State Park's historic theme of design and safe accessibility standards, as well as Caltrans requirements for rural roadways. **Mitigation Measure REC-4 (Advance Coordination on Traffic Delays)** • Construction activities during peak tourism periods will be restricted to 7 a.m. through 8 p.m. (although these hours may be adjusted as appropriate with advance notification and coordination with the MGDSHP). The Project Traffic Management Plan (TMP) will require the contractor to provide a minimum of 2-week advanced notice to MGDSHP and local property owners located within 2 miles about any change in the work hours.	

Resource Topic	Significance Criteria and Significant Impact Summary	Mitigation Measures	Significance after Mitigation
		Signage regarding any change in the work hours will be posted at least 72-hours prior to the work.	
Wildfire			
	Impact WILD-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? • Potential for construction to cause a wildland fire.	**Mitigation Measure WILD-1: Prepare and Implement a Fire Protection Plan** The County will require its contractors to prepare a Fire Protection Plan before construction begins in areas with moderate to high fire hazards. The Fire Protection Plan will include the following measures. • Internal combustion engines, stationary and mobile, will be equipped with spark arresters. Spark arresters shall be in good working order. • Contractor will keep all construction sites and staging areas free of grass, brush, and other flammable materials. • Personnel will be trained in the practices of the fire safety plan relevant to their duties. Construction and maintenance personnel shall be trained and equipped to extinguish small fires. • Work crews shall have fire-extinguishing equipment on hand, as well as emergency numbers and cell phone or other means of contacting the Fire Department. • Smoking will be prohibited while operating equipment and shall be limited to paved or graveled areas or areas cleared of all vegetation. Smoking will be prohibited within 30 feet of any combustible material storage area (including fuels, gases, and solvents). Smoking will be prohibited in any location during a Red Flag Warning issued by the National Weather Service for the project area (Red-Flag Warning" is a term used by fire-weather forecasters to call attention to limited weather conditions of particular importance that may result in extreme burning conditions.	Less than significant

Chapter 1
Introduction

1.1 Introduction

The El Dorado County, Department of Transportation (Transportation) proposes to replace the existing Mt. Murphy Road Bridge over the South Fork American River (SFAR). The existing Mt. Murphy Road Bridge is located in the community of Coloma approximately 250 feet north of the intersection of State Route 49 (SR 49) and Mt. Murphy Road. Transportation will use Highway Bridge Program funds to replace the existing structure to improve roadway safety and comply with the American Association of State Highway and Transportation Officials (AASHTO) design guidelines and El Dorado County standards.

1.2 Purpose of this Environmental Impact Report

The Project is being funded by the Federal Highway Bridge Program and therefore requires compliance with both the National Environmental Policy Act and the California Environmental Quality Act (CEQA). The lead agency for NEPA is the California Department of Transportation (Caltrans) as assigned by the Federal Highway Administration. El Dorado County is the CEQA lead agency.

This Draft Environmental Impact Report (EIR) has been prepared according to CEQA (California Public Resources Code § 21000 et seq.) and the State CEQA Guidelines (California Code of Regulations, Title 14, Chapter 3) to evaluate the potential environmental impacts associated with implementing the Project.

CEQA requires public agencies to consider the potential adverse environmental impacts of projects under their consideration. Adverse environmental impacts include both direct impacts and reasonably foreseeable indirect impacts. A discretionary project that would have a significant adverse impact on the environment cannot be approved without the preparation of an EIR.

According to Section 15002 of the State CEQA Guidelines, the basic purposes of CEQA include the following.

- Inform government decision makers and the public about the potential significant environmental effects of proposed activities.
- Identify 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 governing 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.

The County Board of Supervisors will review the Draft EIR to understand the Project's impacts before taking action. They will also consider other information and testimony that will arise during deliberations on the Project before making their decision.

1.3 Notice of Preparation

A Notice of Preparation of an EIR was prepared for the proposed Project and published for a 30-day public review and comment period beginning 21 January 2015 and ending 20 February 2015. The County held a public scoping meeting on 28 January 2015, at Gold Trail Grange Hall (319 State Route 49, Coloma, CA) from 5:30 to 7:30 p.m. The scoping meeting included a presentation by County staff and consultants and was followed by a question-and-answer period. Comment cards were handed out to facilitate the receipt of written comments regarding the Project and the EIR.

Approximately 19 individuals, including both public agency representatives and members of the general public, provided written comments on the NOP. These comments were considered in preparing this Draft EIR and are included in Appendix A.

1.4 Scope of the Environmental Impact Report

After review of all relevant comments received during the NOP comment period on environmental issues, the County determined that the following 20 resource areas would be reviewed for potential environmental impacts.

- Aesthetics
- Agricultural and Forestry Resources
- Air Quality
- Biological Resources
- Cultural Resources
- Tribal Cultural Resources
- Energy
- Geology and Soils
- Greenhouse Gas Emission
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use, Planning, Population, and Housing
- Mineral Resources
- Noise
- Public Services, Utilities, and Service Systems
- Recreation
- Transportation
- Wildfire

1.5 Terminology Used to Describe Impacts

To assist the reader in understanding this EIR, terms used are defined as follows.

- *Project*: The whole of an action that has the potential for resulting in a physical change in the environment, directly or ultimately.
- *Environment*: Means the physical conditions that exist in the area and would be affected by a proposed project, including land, air, water, minerals, flora, fauna, ambient noise, and objects of

historical or aesthetic significance. The environment includes both natural and human-made conditions.

- *Impacts* analyzed under CEQA must be related to a physical change. There are two types of possible impacts.
    - *Direct* or primary impacts that are caused by the proposed project and occur at the same time and place.
    - *Indirect* or secondary impacts that are caused by the proposed project and are later in time or farther removed in distance but still reasonably foreseeable, including growth-inducing impacts and other impacts related to induced changes in the pattern of land use, population density, or growth rate, and related impact on air and water and other natural systems, including ecosystems.
- *Significant impact on the environment*: A substantial, or potentially substantial, adverse change in any of the physical conditions in the area affected by the project, including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance. An economic or social change by itself is not considered a significant impact on the environment. A social or economic change related to a physical change may be considered in determining whether the physical change is significant.
- *Mitigation* can include any or all of the following.
    - Avoiding the impact altogether by not taking a certain action or parts of an action.
    - Minimizing impacts by limiting the degree or magnitude of the action and its implementation.
    - Rectifying the impact by repairing, rehabilitating, or restoring the affected environment.
    - Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action.
    - Compensating for the impact by replacing or providing substitute resources or environments.
- *Cumulative impacts*: Two or more individual impacts that, when considered together, are considerable or that compound or increase other environmental impacts. The individual impacts may be changes resulting from a single project or separate projects. The cumulative impact from several projects is the change in the environment that results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable probable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time.
- This EIR uses a variety of terms to describe the level of significance of adverse impacts. These terms are defined as follows.
    - *Less-than-significant impact:* An impact that is adverse but does not exceed the defined thresholds of significance. Less-than-significant impacts do not require mitigation.
    - *Potentially significant impact*: An environmental effect that may cause a substantial adverse change in the environment; however, additional information is needed regarding the extent of the impact to make the determination of significance. For CEQA purposes, a potentially significant impact is treated as if it were a significant impact.

- *Significant impact*: An impact that exceeds the defined thresholds of significance and would or could cause a substantial adverse change in the environment. Mitigation measures are recommended to eliminate the impact or reduce it to a less-than-significant level.
- *Significant and unavoidable impact:* An impact that exceeds the defined thresholds of significance and cannot be eliminated or reduced to a less-than-significant level through the implementation of mitigation measures.

1.6 Organization of the Environmental Impact Report

The EIR is organized in the following chapters.

- *Executive Summary* presents a brief summary of the Project; summarizes the impacts and mitigation measures; identifies areas of known controversy, including issues raised by agencies and the public; and identifies unresolved issues. The Executive Summary also summarizes the proposed Project's growth-inducing impacts, cumulative impacts, significant and unavoidable impacts, and significant irreversible impacts.
- Chapter 1, *Introduction*, explains the purpose of this EIR, defines terms used in the analysis, and discusses the environmental review process.
- Chapter 2, *Project Description*, describes the proposed Project, including the Project objectives, the proposed bridge and roadway design, methodologies for construction, and required project approvals.
- Chapter 3, *Impact Analysis*, presents the analysis of potential short-term, long-term, and cumulative impacts of the proposed Project for each environmental topic (e.g., aesthetics, air quality, noise). Each section is organized according to the following framework.
  - Existing Conditions
    - Regulatory Setting
    - Environmental Setting
  - Environmental Impacts
    - Methods of Analysis
    - Thresholds of Significance
    - Impacts and Mitigation Measures
- Chapter 4, *Alternatives*, presents alternatives to the proposed Project. As allowed by CEQA, the impacts of these alternatives are evaluated at a more general and comparative level than the analyses contained in Chapter 3. Chapter 4 also presents alternatives considered but rejected and not analyzed further.
- Chapter 5, *Other CEQA Considerations*, presents the analysis of the proposed Project's growth-inducing impacts, a summary of cumulative impacts, and the identification of significant and irreversible, as well as significant and unavoidable, environmental changes.
- Chapter 6, *List of Preparers*, lists the EIR authors, the technical specialists and members of the production team, and other key individuals who assisted in the preparation and review of this EIR.

- Technical appendices with supporting data and information are included as appendices to this EIR.

1.7 Environmental Review Process

1.7.1 Draft Environmental Impact Report Public Review and Opportunity for Public Comment

Reviewers should focus on the sufficiency of the document in identifying and analyzing the possible impacts on the environment and ways in which the significant effects of the Project might be avoided or mitigated.

This Draft EIR is available for review and comment by the public, responsible agencies, organizations, and other interested parties for a 45-day period. Comments must be received either electronically or physically by 5 p.m. on the last day of the comment period. All comments or questions about the Draft EIR should be addressed to:

El Dorado County, Department of Transportation
2850 Fairlane Court
Placerville, CA 95667
Attn: Bridge Project Coordinator
Email: MtMurphyBridge@edcgov.us

The County will conduct a public meeting to present the conclusions of the Draft EIR and solicit comments on the document. The meeting will also provide agencies and the public with opportunities to clarify any questions or concerns about the Draft EIR. Public meeting information will be posted on the El Dorado County website at https://www.edcgov.us/MtMurphyBridge/.

1.7.2 Final Environmental Impact Report

After the close of the public review period for the Draft EIR, the County will prepare the Final EIR. The Final EIR will consist of the Draft EIR and the Final EIR and will include the comments received during the formal review period of the Draft EIR; responses to the comments received that relate to environmental issues; and any revisions made to the Draft EIR in response to the comments in errata format.

The Final EIR and accompanying Draft EIR will be available to the County Board of Supervisors for consideration during their decision-making process to approve or deny the Project. The County will hold a public hearing during a noticed Board of Supervisors meeting before certifying the Final EIR, during which the public and agencies can provide additional comments.

1.8 Intended Uses of the Environmental Impact Report

This Draft EIR examines the potential impacts of the proposed Project. The Final EIR will be considered by the County Board of Supervisors prior to taking their final action on the Project.

Chapter 2
Project Description

2.1 Project Background

Mt. Murphy Road Bridge is a one lane structure with no shoulders or sidewalks that crosses the South Fork American River (SFAR). The existing narrow, one-lane bridge provides the only direct access across the SFAR in Coloma. Local residents living north of the SFAR use the existing bridge daily to commute to work, school, shopping, or elsewhere. The closest alternate route is Mt. Murphy Road to Marshall Road – an approximate 9-mile detour. The Mt. Murphy Road Bridge has one of the lowest sufficiency ratings for bridges in California.

The bridge is frequently used by recreational vehicles to access the Coloma Resort located on the north side of the SFAR. Tour group and school buses park on the north side of the Mt. Murphy Road Bridge and the passengers walk over the bridge to the Marshall Gold Discovery State Historic Park (MGDSHP). In 2016 approximately 160,000 to 170,000 people visited the MGDSHP (MGDSHP 2017).

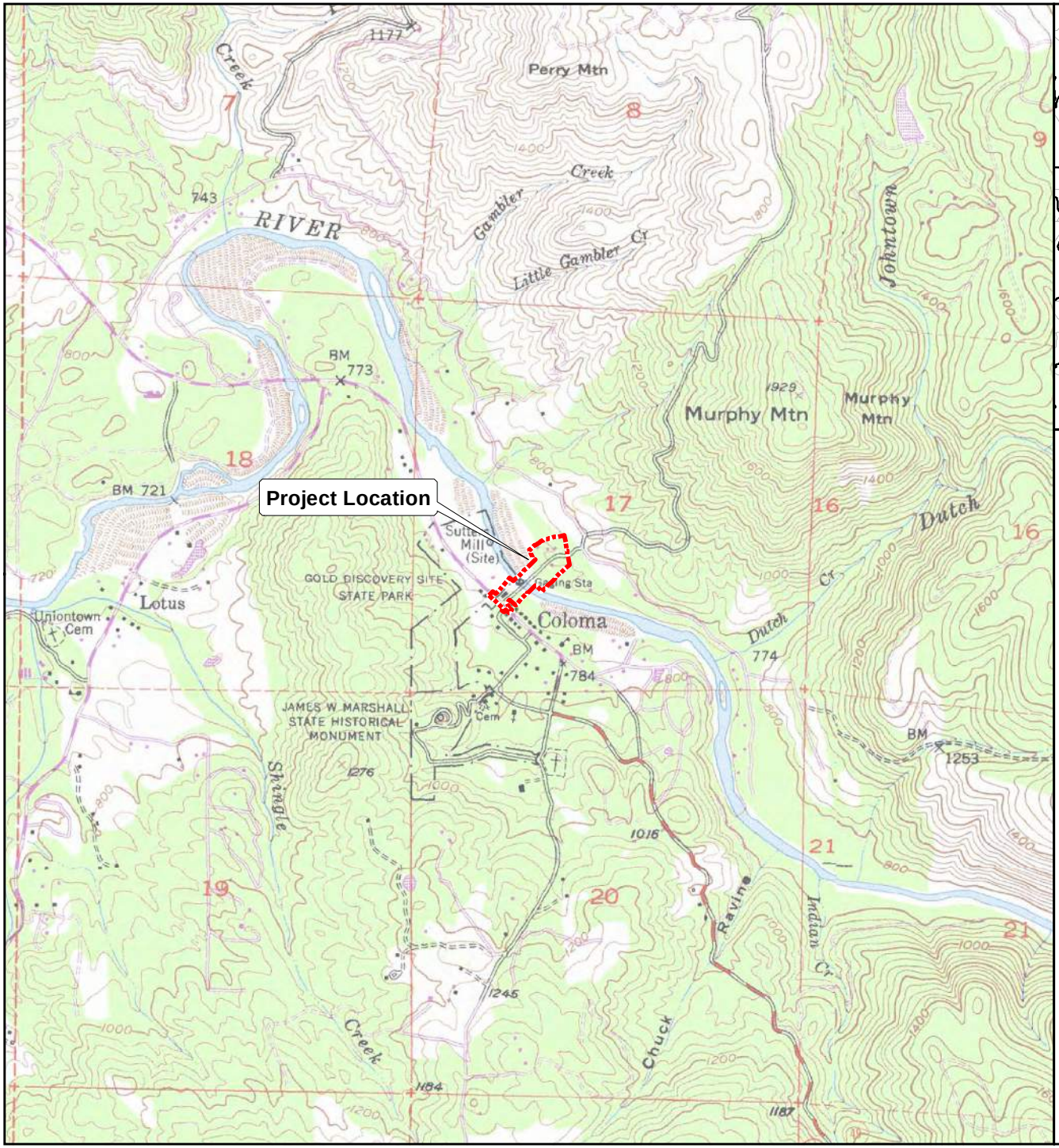
The existing structure is eligible for listing on the National Register of Historic Places (NRHP). The Mt. Murphy Road Bridge is located in the boundary of the Marshall Gold Discovery State Historic Park (MGDSHP). The 1969 National Register of Historic Places, Inventory-Nomination Form for MGDSHP makes the following statement:

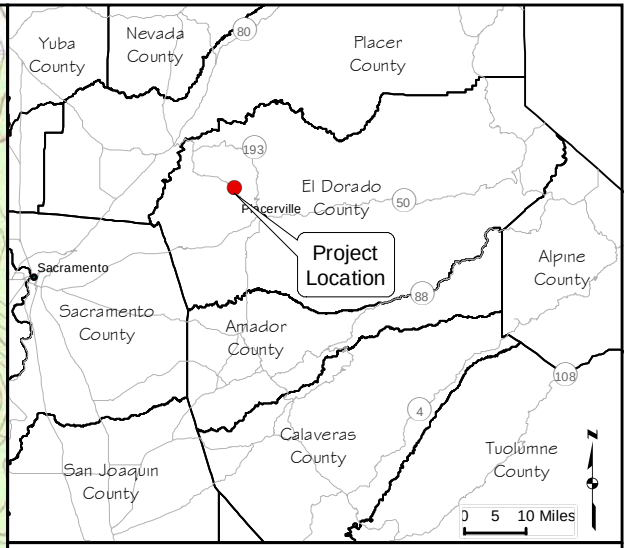
> *…"This area (referring to Coloma), because of its outstanding significance to California and the world at large, has been named a national historic landmark, and is so registered by the N.P.S. (National Park Service)*

2.2 Project Location and Existing Conditions

The Mt. Murphy Road Bridge (25C0004) is located in the community of Coloma in unincorporated El Dorado County. The existing bridge is located approximately 250 feet north of the intersection of SR 49 and Mt. Murphy Road (Figures 2-1 and 2-2). The existing bridge carries Mt. Murphy Road over the SFAR and connects Coloma/ SR 49 with Marshall Road approximately 3 air miles north of the Project site. The bridge is located on the Coloma USGS topographic quad (T11N, R10E, Section 17, Mt. Diablo Meridian) and is in the South Fork American Hydrologic Unit (hydrologic unit code 18020129). The centroid of the Project site is 38.801596° north, 120.890562° west (WGS84), and its UTM coordinates (Zone 10N) are 683,173 m East; 4,296,874 m North. Topography in the Project area is relatively flat and elevation ranges from approximately 740 to 770 feet above sea level. Figure 2-3 is a drawing showing a plan view of the proposed bridge design

Mt. Murphy Road is classified as an off-State Highway System (off-system), local road in the County (Caltrans 2018). The term "off-system" refers to the fact that Mt. Murphy Road is not part of the State Highway System (on-system), whereas SR 49 is "on-system." Per the Project Advanced Planning Study Report (CH2M Hill 2018) the current ADT is 387 and forecasted to have an ADT of 510 vehicles per day in 2040.





Mt. Murphy Road Bridge
Replacement Project
El Dorado County, CA

Figure 2-1. Project Location

Project Location

2,000 1,000 0 2,000 Feet

N

Scale: 1 inch = 2,000 feet

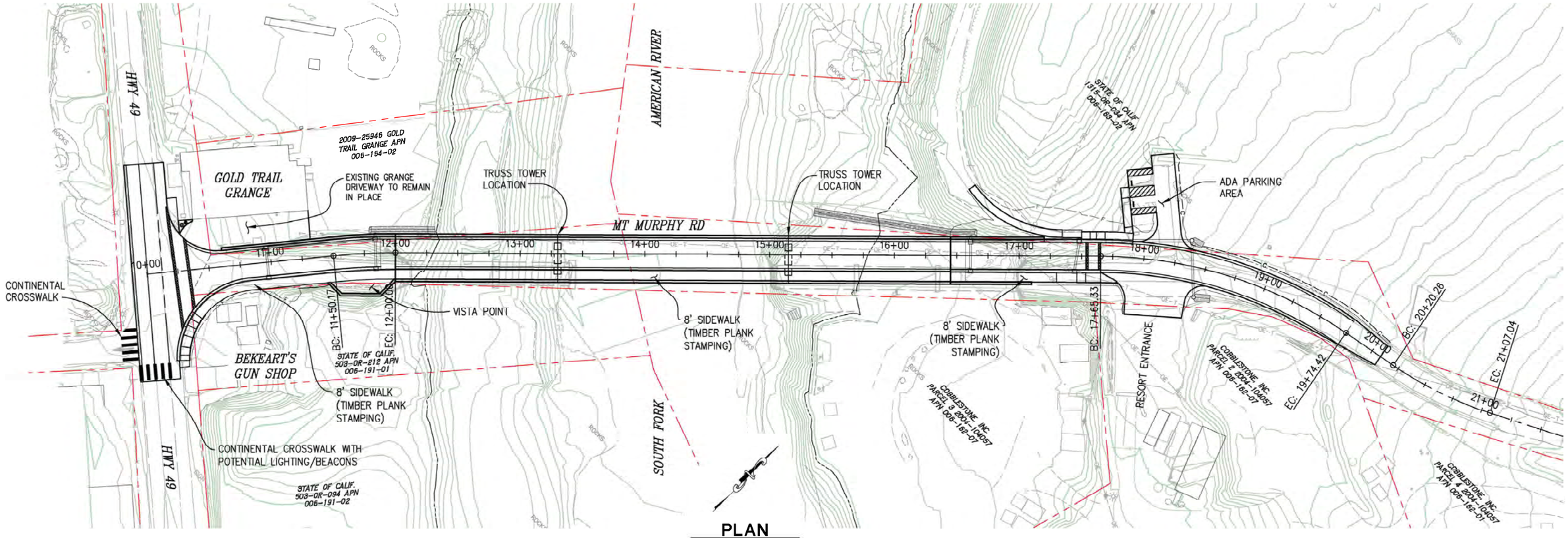
Coloma, CA (Revised 1973)
CASIL California USGS Digital Raster Graphics (DRG),
7.5 Minute (C) Series, Albers Nad83 Mosaics (MrSID)
o_nw0202.sid

Mt. Murphy Road Bridge
Replacement Project
El Dorado County, CA

Figure 2-2. Aerial Photo

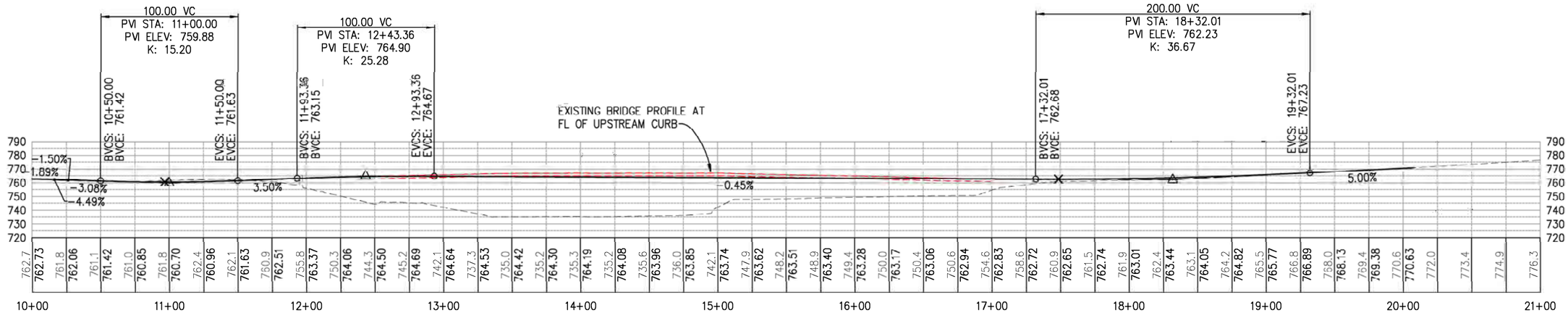
Biological Study Area (BSA)

Aerial Photograph: 11 July 2016
NAIP2014 USDA FSA Imagery
ESRI ArcGIS Basemap Layer



PLAN

SCALE: 1"=40'



PROFILE

SCALE: 1"=40' H,V

FIGURE 2-3: PROPOSED BRIDGE

ALTERNATIVE 1.1C
CONCEPTUAL ON-ALIGNMENT (38' WIDTH)
(EXISTING GRANGE DRIVEWAY REMAINS IN PLACE)
SCALE : AS SHOWN

PRELIMINARY

REVISION			
NUMBER	DATE	DESCRIPTION	BY

PREPARED UNDER THE SUPERVISION OF :

REGISTERED CIVIL ENGINEER

DATE:

DESIGNED: JB	DRAWN: SGM
CHECKED: JB	DATE: 07/19/21
ROAD NUMBER: 075	

COUNTY OF EL DORADO
DEPARTMENT OF TRANSPORTATION

MT MURPHY
BRIDGE REPLACEMENT

SHEET EX-1
1 OF 1
W.O. No. 77129

FOR REDUCED PLANS
0 1 2
ORIGINAL SCALE IS IN INCHES
Drawing name: Z:\Civil 3D Projects\77129 Mt Murphy Bridge Replacement\CADD Files\Production drawings\Master-Alt 1M 2 Alignment.dwg Layout Tab: EX-1 Jan 06,2022 - 10:46am SMcVey

Land use and zoning designations of the parcels in and surrounding the Project site are listed in Table 2.2-1.

Table 2-1. Parcels in the Project Area

APN	Existing Use	County General Plan Land Use Designation*	Zoning Designation*
006-164-02	Gold Trail Grange	Tourist Recreational	Recreational Facility-Low
006-191-01	MGDSHP	Tourist Recreational	Recreational Facility-Low
006-163-02	MGDSHP	Tourist Recreational	Recreational Facility-High
006-162-01	Coloma Resort	Tourist Recreational	Recreational Facility-High
006-162-07	Coloma Resort	Tourist Recreational	Recreational Facility-High

* Per El Dorado County Parcel Data Information, 2015 General Plan Land Use Information (El Dorado County 2019)

The existing bridge was constructed in 1915 with a steel truss span over the SFAR and wooden approach spans. The approach spans were reconstructed in the 1930s using reinforced concrete through-girders. The steel truss span over the main SFAR channel is approximately 165 feet in length and is narrower than the approach spans. It has a clear width of 10 feet between curbs. The two southern approach spans, starting from the abutment, measure 70 and 59 feet, respectively, and have a clear width of 13 feet 4 inches between curbs. The northern approach consists of three 65-foot-6-inch spans with 13 feet 4 inches between curbs.

The abutments and piers are CIP reinforced concrete. The piers supporting the truss span are part of the original 1915 construction while the other piers are part of the 1930s approach span reconstruction. The piers located in the river are founded on spread footings and are considered vulnerable to scour from high velocity river flows during storm events.

The north approach runs along the west boundary of the Coloma Resort, which is an active recreation, camping and cabin resort that is open all year long. A large field, the Levee trail, and parking lot are in a portion of the MGDSHP located opposite the Coloma Resort. The south abutment and approach occur in close proximity to various park features including Bekeart's Gun Shop, Sutter's Mill timber display, and the Gold Discovery Loop Trail. The Project is being designed to avoid features in the MGDSHP and potentially enhance user experience with pedestrian improvements including a dedicated sidewalk on the new bridge structure.

The bridge had a sufficiency rating of 2 (out of a possible 100) and is structurally deficient (Caltrans 2016). The low score reflects the structural and functional deficiencies that need to be corrected, including load-carrying capacity limits. On September 25, 1980, the County reduced the vehicle load capacity on the bridge. The steel truss is posted for reduced load capacity with 14 tons for a two-axle vehicle, 21 tons for a three-axle vehicle, and 27 tons for a four-axle vehicle. Bridge closure has been imposed at times for the Mt. Murphy Road Bridge, for example the bridge was closed briefly in 2007 for emergency repairs.

At approximately 2 am on Saturday, September 25, 2021, a single vehicle accident occurred on the bridge. A full-size pickup truck travelling from SR 49 northbound along Mt. Murphy Road clipped the right (upstream) side of the bridge's wooden barrier rail. The pickup truck then crashed into diagonal beams and a vertical I-beam on the steel truss bridge about midway across the River. The truck pivoted and the bed of the truck collided with a diagonal member on the opposite side of the bridge (the truck being longer than the bridge is wide). These steel elements of the 106-year-old

bridge are fracture critical where failure could lead to the partial or full collapse of the bridge. The County closed the bridge indefinitely pending an evaluation of the structural integrity of the bridge and the bridge's ability to safely convey vehicles up to the posted weight limits.

The closure of the bridge materially affected essential travel. Stretches of Mt. Murphy Road eastbound to Marshall Road are not paved and the travel way in sections is less than 20 ft wide. Some recreational vehicles parked at the Coloma Resort are not able to use Mt. Murphy Rd to Marshall Road due to its steep grades and tight radius curves. Bayne Road is a narrow one lane road.

The reopening was dependent on the results of the safety inspection. The damage might have required repair of structural members prior to reopening. At the time the bridge was closed, it was unknown if closure would extend several days to several months or more once a repair solution was developed after the inspection results. The County did not know if there was a repair solution available to restore the bridge to pre-crash capacity. The permanent closure of the bridge or reduced posted weight loadings was a possibility. After obtaining the testing results, the County completed repairs. The damaged wood barrier rails were repaired. As of October 8, 2021, the bridge was reopened with reduced posted weight limits. Two-axle vehicles which exceed 12 tons and three-axle vehicles which exceed 19 tons are prohibited from using the bridge. The weight limits are a further reduction from the previously posted limits of 14 tons and 21 tons for two- and three-axle vehicles, respectively. The four-axle truck (originally posted at 27 tons) has been removed from the posting.

2.3 Related Projects

The following transportation related projects occur in the general vicinity of the Mt. Murphy Road Bridge Project site.

- **State Route 49 Realignment Study:** The SR 49 Realignment Study is a preliminary Project Initiation Document (PID), essentially a feasibility study that recommends three feasible alternative alignments based upon their ability to meet the project goals and objectives. The primary goals of the project are: 1) eliminate the at-grade intersection of SR 49 and U.S. Highway 50 and the existing alignment of SR 49 through MGDSHP; 2) relieve SR 49 traffic impacts to densely populated residential areas and business districts of the City of Placerville and town of Diamond Springs; and 3) improve the safe and efficient transport of goods and people while maximizing the utilization of existing local roads to achieve improved conditions in the corridor in the most cost effective manner possible (T.Y. Lin 2010).
- **South Fork American River Bridge Widening:** This project replaced the SR 49 Bridge at the SFAR to meet current seismic standards and provide a wider structure to include standard lanes and shoulders, and accommodate bicycles and pedestrians. Completed in August 2018.

2.4 Project Purpose and Objective

2.4.1 Purpose

The purpose of the Project is to replace a fracture critical bridge to improve safety and movement for vehicles, pedestrians, and bicyclists across the SFAR in the town of Coloma, California. The primary project objectives include:

- Correct Structural and Functional Deficiencies
- Direct Access Across the SFAR in Coloma
- Correct Operational Deficiencies and Improve Safety for Vehicles, Bicycles, and Pedestrians

2.4.2 Objectives

2.4.2.1 Correct Structural and Functional Deficiencies

The Mt. Murphy Road Bridge is shown on the Caltrans local bridge list with a sufficiency rating of 2 out of 100 (Caltrans, 2016). Since 2011, the sufficiency rating for the Mt. Murphy Bridge has varied from 0.00 (Caltrans, 2011) to 13.5 (Caltrans 2014). The Mt. Murphy Road Bridge has one of the lowest sufficiency ratings for bridges in California. The low score reflects the structural and functional deficiencies that need to be corrected, including load-carrying capacity limits. Similarly, this low sufficiency rating is also a reflection of the bridge's safety to the public as structural deficiencies (and very low ratings) can require bridges to be closed to its users. Bridge closure has been imposed at times for the Mt. Murphy Road Bridge, for example the bridge was closed in 2007 for emergency repairs.

The bridge's low sufficiency rating is the result of structural deficiencies as well as the functional deficiencies. On 25 September 1980, the County reduced the vehicle load capacity on the bridge. The posted weight limits were based on bridge-load rating calculations of the existing structure that were performed by Caltrans and found in the bridge inspection report dated October 1979. The conclusion was that the truss does not have sufficient weight-carrying capacity to support standard highway trucks. The load rating was controlled by the floor beams. The steel truss was posted for reduced load capacity with 14 tons for a two-axle vehicle, 21 tons for a three-axle vehicle, and 27 tons for a four-axle vehicle. In September 2021, a pickup truck crash on the bridge caused another emergency closure. In October 2021, the bridge was reopened with further reduced posted weight limits. Two-axle vehicles which exceed 12 tons and three-axle vehicles which exceed 19 tons are prohibited from using the bridge. The weight limits are a further reduction from the previously posted limits of 14 tons and 21 tons for two- and three-axle vehicles, respectively. The four-axle truck (originally posted at 27 tons) has been removed from the posting.

The 2016 Bridge Inspection Report records and describes the following deficiencies:

- The entire structure is fracture critical due to fracture critical truss members with eyebars and floor beam members.
- Transverse and longitudinal cracks in the concrete bridge soffit

- Transverse cracks in the approach span deck
- Spalled concrete on the girder diaphragm at Pier 4
- Vertical cracks on the interior faces of the girders.
- Paint system chipped
- Scattered areas of rust on the steel stringers
- Several missing rivets
- Truss members have areas of exposed bare steel which is covered in rust
- Crack in abutment 1 right wingwall
- A vertical, meandering crack along Abutment 7 and its adjacent right side wingwall
- There are minor checks in the timber members of the railings

2.4.2.2 Direct Access Across the SFAR in Coloma

The existing narrow, one-lane bridge provides the only direct access across the SFAR in Coloma. Local residents living north of the SFAR use the existing bridge daily to commute to work, school, shopping, or elsewhere. The closest alternate route for people on the north side of the SFAR to get to Coloma is Mt. Murphy Road to Marshall Road – an approximate 9-mile drive. Mt. Murphy Road north of Carver Road is a curvy, narrow 15-18 ft mostly gravel road that would require significant road improvements to be considered functional. A replacement bridge, built in two stages, maintains access to residences and businesses on the north side of the river and would maintain and improve emergency vehicle access and response times.

The Project does not include long term road closures during construction. Access to residences, businesses, and the MGDSHP will be maintained throughout construction. The two-stage construction approach prevents the need for any detour. As described below a traffic management plan will be prepared to alleviate and minimize construction related traffic delays and provide direction on how to minimize effects on access, including emergency service responders.

2.4.2.3 Correct Operational Deficiencies and Improve Safety for Vehicles, Bicycles, and Pedestrians

The Mt. Murphy Road Bridge is a one-lane bridge, with no shoulders, bicycle facilities or pedestrian walkways. Vehicles, pedestrians, and bicycles must share a single, narrow, travel lane which creates safety conflicts. The 1979 MGDSHP Master Plan recognized lack of pedestrian walkways and bicycle facilities as a safety concern.

The bridge is frequently used by recreational vehicles to access the Coloma Resort located on the north side of the SFAR. Tour group and school busses park on the north side of the Mt. Murphy Road Bridge and the passengers walk over the bridge to the MGDSHP. Pedestrians are frequently seen stepping onto a 1-foot curb adjacent to the concrete barrier walls of the bridge as large RVs pass through the narrow, single-lane bridge.

In 2016 approximately 160,000 to 170,000 people visited the MGDSHP (MGDSHP 2017). Of the total 29,760 were children (MGDSHP 2017). The bridge is used by school groups visiting the State Park and routinely places children in the vehicle traveled way. The MGDSHP projects that school children participating in interpretive programs will potentially reach 33,000 participants in 2017 (MGDSHP 2017).

2.5 Funding

The proposed project is included in the 2019-2022 Metropolitan Transportation Improvement Program and the SACOG 2016 Metropolitan Transportation Plan/Sustainable Communities Strategy (SACOG ID ELD19339 and Federal ID 5925026, SACOG 2016). Replacement of the existing bridge will be funded through the Highway Bridge Program (HBP).

2.6 Construction Details

2.6.1 Cast-In-Place (CIP) Concrete Box Girder Bridge

The County preferred alternative is the post tensioned CIP box girder bridge built in two stages. The CIP concrete box girder bridge design provides a low maintenance structure that requires a minimal level of repair during its service life (i.e. biennial inspections, occasional joint replacement, and deck rehabilitation as needed). The total replacement bridge length is 445 ft and is composed of two 130 ft end spans and one 185 ft main span. The proposed new bridge and lane configuration will provide two 11-foot lanes, two 2-foot shoulders, an 8-foot sidewalk, and Caltrans Type 85 barriers. The proposed sidewalk would be on the upstream side of the bridge and tie into Mt. Murphy Road on either side of the new bridge. A cable-stay system or portals would be installed at the piers. The structure width necessary to accommodate the roadway, sidewalk, and barriers is 38 feet. Cut depths would range from 0-4 ft and fill depths for would range from 0-20 ft.

Falsework columns are required in the river to construct the CIP concrete box girder bridge alternative. Falsework beams can span up to approximately 90-feet, thereby minimizing the number of temporary supports in the river bed. The County will require the contractor to submit falsework designs prior to construction that provide adequate clearance above the river for freeboard and recreational uses.

2.6.2 Substructure Approach

Abutments will consist of CIP concrete seat type abutments supported on cast-in-drilled-hole (CIDH) piles. Piers for the replacement bridge would consist of a two-column pier with the option to place an infill wall between the two columns, approximating a pier wall to better match the style and aesthetic of the existing piers. Two pier locations would be used for the Project (Pier 2 and Pier 3).

Pier 2 is located along the south riverbank and Pier 3 is situated immediately north of the river channel. Columns are supported on Caltrans Type 2 cast in drilled hole (CIDH) foundations. Based on the preliminary roadway profile, existing ground topography, and selected span configuration,

the original ground at Pier 3 is significantly higher than Pier 2. As a result, an approximately 11-foot-tall isolation casing is proposed at the base of Pier 3, thereby providing similar stiffness characteristics for the two piers.

2.6.3 Construction Trestle

The contractor will utilize a construction trestle in the water to facilitate building the new bridge. A trestle is needed downstream of the new bridge for the first stage and upstream of the bridge for the second stage to avoid lifting materials with cranes over live traffic. The trestle can provide a span length of 30 feet to accommodate recreational use of the river. A full- length trestle that spans across the river is expected for all three alternatives due to the following reasons.

- The trestle must extend from the riverbanks to at least the pier locations or falsework bents. The additional trestle length required to achieve a full-length trestle is not a significant additional cost.
- A full-length trestle improves contractor access and allows movement of large construction equipment to each side of the river. Without a full-length trestle, transporting a crane to the north side of the river may be challenging. Access alternatives include Carver's Road, Bayne Road, Mt. Murphy Road, and the existing bridge. Carver's Road is currently incomplete, Mt. Murphy Road turns into a single lane dirt road just north of the river, and Bayne Road is extremely narrow. The existing bridge has vehicular load and height limitations that would likely dictate the crane be disassembled for transport across the bridge.
- Removing construction traffic from the existing structure offers a significant safety benefit. Given the substantial pedestrian traffic, with high percentages of children, and mixed lane use by vehicular traffic and pedestrians, contractor traffic on the existing bridge would increase the risk of conflicts with pedestrians. The additional risk of injury outweighs the increased cost of the full-length trestle.

2.6.4 Project Staging

Staged construction for the Mt. Murphy Bridge replacement requires two construction seasons. The two-stage construction approach allows the existing bridge to remain in service during the first stage of construction until traffic can be shifted to the first stage structure. The first stage of the replacement structure provides a 14-foot-wide travel way for both vehicular and pedestrian traffic, similar to the existing traffic management conditions. The first construction season would consist of erecting the downstream trestle, building the first stage of the replacement bridge, constructing the downstream retaining walls along the approaches, and demolishing part of the existing structure. During the wet season the trestle decking may be temporarily removed at the end of the first construction season contingent on trestle design, permitting constraints, and schedule. In addition, the contractor must realign the pedestrian path along the first stage of the bridge prior to demolition of the existing structure. The second construction season would then involve installing the upstream trestle, demolishing the remaining portion of the existing structure, building the second stage of the replacement bridge, and completing structure approaches and retaining walls. During the second stage, traffic would use the portion of the first stage bridge constructed in the first year. The second trestle can then be removed.

2.6.5 Roadway Improvements

Replacement of the existing bridge on or immediately adjacent to the existing alignment requires minor improvements to the existing SR 49 intersection. Intersection improvements would include conforming the new approaches to the intersection, repaving, and restriping. Cut and fill depths for the roadway improvements would range from approximately 2-20 ft of fill in the areas of the new bridge approaches to 3-4 ft of cut where retaining walls would be constructed to support the reconstructed approach roadway.

The Project will not result in permanent impacts to the Gold Trail Grange driveway and parking lot. During construction the driveway and parking lot of the Gold Trail Grange will be temporarily affected. The Project will likely require construction of a retaining wall near the existing toe of the fill prism associated with the current bridge approach. The location of the driveway in relation to the Mt. Murphy Road/ SR 49 will remain the same. Pending Caltrans direction, the Grange driveway entrance can be reconfigured so that it is isolated from SR 49. Under the proposed condition vehicles would no longer turn directly from SR 49 into the driveway nor would vehicles turn directly from onto SR 49 from the driveway. Under the proposed conditions vehicles would turn from SR 49 onto Mt. Murphy Road and then immediately into the Grange driveway. Vehicles wishing to turn onto SR 49 from the driveway would first have to turn onto Mt. Murphy Road and then complete the turn onto the highway. Following construction, the Grange driveway and parking lot will be accessible and usable.

The proposed Gold Trail Grange driveway configuration would also eliminate the blind corner that currently exists at the Grange building. This improvement will avoid potential pedestrian vs. vehicle conflicts by moving the pedestrian crossing away from the Grange building and providing a protected refuge with clear line of sight for both pedestrians and motorists.

The Project is being designed to avoid impacts to Bekeart's Gun Shop. A segment of new sidewalk would be constructed along the east side of Mt. Murphy Road from the new bridge to its intersection with SR 49 utilizing the existing roadside walk path when possible. The existing segment of sidewalk adjacent to Bekeart's Gun Shop may be resurfaced. No realignment or other improvements to the sidewalk adjacent to Bekeart's Gun Shop are anticipated.

Road improvements on the north side of the new bridge would be limited to approach road conform work and retaining walls. The Coloma Resort driveway and the entrance to the parking lot opposite the resort will be reconstructed. The portion of the Levee Trail in close proximity to the exiting bridge and road may need to be temporarily rerouted during construction.

2.6.6 Traffic Management during Construction

The Project does not include long term road closures during construction. Access to residences, businesses, and the MGDSHP will be maintained throughout construction. The two-stage construction approach avoids the need for any long-term detour. A Traffic Management Plan (TMP) will be prepared to alleviate and minimize construction related traffic delays and provide direction on how to minimize effects on access, including emergency service responders. The two-stage construction approach allows the existing bridge to remain in service during the first stage of construction until traffic can be shifted to the first stage structure. The first stage of the replacement structure provides a 14-foot-wide travel way for both vehicular and pedestrian traffic, similar to the

existing traffic management conditions. In the second stage, the existing bridge is removed, and the second stage of the replacement bridge is built. After the second stage of construction is complete, traffic is shifted to the final configuration.

The County contract special provisions will require the contractor to prepare a TMP. Traffic controls would be implemented throughout all phases of construction to facilitate local traffic circulation and through-traffic requirements. Emergency service providers, including the police and fire departments, would be notified and consulted with as early as possible in order to plan for any possible short-term lane closures (i.e., during parts of a work shift, including, roadway conforms, existing bridge removal periods, etc.) and other potential delays related to construction activity.

2.6.7 Recreational Considerations

On the north side of the SFAR a pedestrian trail (Levee Trail) occurs along the top of the levee. The portion of the Levee Trail in close proximity to the exiting Mt. Murphy Road and bridge may need to be temporarily rerouted during Project construction. No permanent impacts to the Levee Trail are anticipated.

The MGDSHP provides recreational gold panning opportunities along the shore on the south and north side of the SFAR. Construction of the Project may result in temporary impacts to these recreational gold panning areas. The areas may need to be temporary restricted or closed during construction. The completed Project is not expected to result in any permanent impacts to recreational gold panning areas.

Construction would require the use of falsework in the SFAR. The SFAR in the Project is used extensively by white water rafters. Falsework in the SFAR would provide adequate clearance above the river to provide passage to recreational users and to pass anticipated flows.

The Coloma Resort is located immediately northeast of and adjacent to Mt. Murphy Road and the Mt. Murphy Road Bridge. The Resort offers RV and tent camp sites with full (water electric, and sewer) or partial hook-ups (water and electric), group or single tent sites, as well as cabins. Resort facilities in proximity to Mt. Murphy Road and the bridge include a river access ramp, parking spaces, several cabins, three group tent sites with partial hook-ups, and the registration office/ general store.

2.6.8 Right-of-Way and Temporary Easements

Construction of the replacement bridge on or near the current alignment would require both permanent right-of-way and temporary construction easements. Table 1 below summarizes the current anticipated ROW involvement.

Table 2-2. Right of Way

El Dorado County Assessor's Parcel Number	Ownership	Temporary Construction Easements ±ft² (±acre)	Permanent ROW Acquisition ±ft² (±acre)
State Route 49 ROW	State	13,934 (0.32)	--
006-164-02 (MGDSHP)	State	21,809 (0.50)	4,540 (0.10)
006-191-01(MGDSHP)	State	19,904 (0.46)	891 (0.02)
006-163-02 (MGDSHP)	State	140,246 (3.22)	3,768 (0.09)

El Dorado County Assessor's Parcel Number	Ownership	Temporary Construction Easements ±ft² (±acre)	Permanent ROW Acquisition ±ft² (±acre)
006-162-07 (Parcel 2) (Coloma Resort)	Private	44,162 (1.01)	780 (0.02)
006-162-07 (Parcel 3) (Coloma Resort)	Private	58,700 (1.35)	--
006-162-01 (Coloma Resort)	Private	5,128 (0.12)	--
	Total:	**303,883 (6.98)**	**9,979 (0.23)**

2.6.9 Bridge Aesthetics

2.6.9.1 Bridge Shape

The shape of the CIP box girder alternative can be designed to resemble the aesthetic theme of the existing structure by utilizing vertical exterior webs, rectangular or trapezoidal shaped pier caps, and rectangular or square shaped columns. The existing concrete approach spans are slightly haunched. The proposed CIP box girder will have a slight haunch to imitate the simplistic lines of the existing bridge.

2.6.9.2 Concrete Treatments

The current piers and concrete approaches were cast using board forms and not plywood. This method imprints grain patterns from the board form on to the concrete. A relatively inexpensive and effective aesthetic treatment for concrete surfaces involves using form liners or stamps to create textured surfaces that mimic other materials or produce shadows and patterns. Concrete surfaces can also be stained or integrally dyed to add even more detail. Sidewalks and railings could utilize a combination of integral dyes, form liners, stamping, and staining to achieve a wood look that would be representative of the bridge's past. Form liners that mimic board forming could be used to make new bridge piers similar to the historic ones. The County will use a combination of concrete treatments described above to incorporate bridge design features similar to and consistent with the earlier bridge crossing structures. The determination regarding the exact type and extent of concrete treatments will be made during final design and in consultation with State Parks.

2.6.9.3 Decorative Railing

Decorative railing is offered in a variety of shapes and materials, including steel railing, concrete railing, and a mixture of steel and concrete railing. Concrete surfaces would utilize form liners and/or concrete staining and dyes to achieve the desired appearance. Steel railing will be used in conjunction with concrete barriers to provide additional railing height for pedestrian safety. The steel railing will be fabricated from new structural steel or salvaged material from the existing bridge.

If new steel is selected and a weathered appearance is desired, the steel can be galvanized and then treated with a coloring agent. Weathering steel is not desirable when located directly above finished concrete since the micro-layer of rust can bleed and stain the concrete during inclement weather. The coloring agent, such as Natina®, is a product used to give galvanized steel a weathered

appearance without compromising the protective layer of galvanizing. This product is recommended on steel railing located above concrete since it does not leach color and is not susceptible to fading. An alternative to application of a coloring agent is painting the steel or using galvanized steel. Painted or galvanized steel, however, produce a modern appearance and require a regular maintenance cycle to maintain the finish. A determination regarding the type of finish of the planned steel decorative railing will be made during final design.

2.6.9.4 Entry Portal

Another aesthetic treatment is the addition of the entry portals to the bridge that reflect its history. The current bridge provides a framed view for users as they cross the bridge and provides aesthetic interest from the sides of the bridge. The bridge that stood at this site prior to the current one was a timber suspension bridge. The suspension bridge also gave users a framed view and added aesthetic interest when viewed from the side. Entry portals will be provided at the bridge approaches or piers to replicate the aesthetic that users of the bridge have historically had.

While the steel portals and cables are capable of carrying load and will take on some of the load in their final configuration, they are not intended to be primary load carrying elements. This means that the box girder itself will be designed for the service loads and the cables could be easily replaced in the future if maintenance needs arise.

2.6.9.5 Vista Points

Mt. Murphy Road Bridge is located in a picturesque valley and affords its users sweeping views, especially when crossing the bridge on foot. The bridge sees a high volume of pedestrians at certain times of the year due to school field trips and interpretive programs hosted by the MGDSHP. Additionally, many users of the Coloma Resort visit the MGDSHP Visitor Center and cross the bridge on foot. A sidewalk will provide users access across the bridge, and a vista point will add a place for them to stop and enjoy the view, at the bridge abutment location, without impeding traffic.

The vista point would provide a place to take in the view while also providing a unique opportunity for the MGDSHP to incorporate a stop on the bridge as part of their interpretive programs. A determination regarding location of the planned vista point will be made during final design.

2.6.9.6 Historic Plaque Display

There are two existing plaques embedded in the barrier rail on the southern approaches and two plaques bolted to the truss that describe the history of the bridge. These plaques will be salvaged and will be worked into the new bridge. They could stand alone or be incorporated into a story board that documents the history of the earlier bridges. The plaques/story boards will likely be located at vista points. Other historical plaques could be added at vista points as part of a future effort between the County and MGDSHP. A determination regarding the location and arrangement of the plaques will be made during final design.

2.6.10 Utility Relocations

Relocation of overhead utility lines will require the County, utility provider, or their contractors to trim or remove trees prior to construction. Any utility poles impacted will be relocated and coordinated with the responsible utility providers to ensure no disruption of services to utility customers. An El Dorado County Irrigation District water line carried beneath the existing bridge will need to be relocated. The water line will be relocated from the existing structure to the inside of the first stage of the replacement bridge at the end of the first stage of construction.

The existing power and telephone lines adjacent to the downstream side of the bridge will need to be temporarily relocated to avoid construction conflicts. Temporary power and phone service lines will be installed from an existing service box in the Grange Parking lot (APN 006-164-02) to a new temporary utility pole approximately 90 ft south of the existing bridge. The new temporary utility pole would be installed at the western edge of the Grange parking area. The temporary power and phone service would span the SFAR and connect to an existing utility pole on the north side of the SFAR west of the existing bridge in Gallagher field.

Once the new bridge is complete the temporary service will be removed. Permanent power and phone service lines will be carried inside the new bridge structure. Portions of the overhead service lines on APN 006-162-07 will be converted to underground lines as part of the Project.

County Resolution 171-2019 created an underground utility district (UUD) on several of the parcels involved with the proposed bridge replacement Project (APN 006-164-02, 006-191-01, 006-162-07, and 006-163-02). The overhead utilities need to be relocated during construction. Relocating the poles requires more tree and brush clearing than undergrounding. Overhead utility relocation would require a 30-ft wide easement, whereas the undergrounded utilities require only a 10-ft wide easement. The formation of the UUD avoids additional negative impacts to the adjacent residences, simplifies construction sequencing operations, and improves the aesthetics of the Project area by eliminating a heavy concentration of overhead utility lines within the Coloma Historic District.

2.6.11 Construction Equipment and Staging

General construction equipment expected to be used includes, haul trucks, dump trucks, backhoes, bulldozers, scrapers, excavators, water trucks, concrete delivery trucks and extensive pumping systems, multiple high- and low-level cranes, and service vehicles. Installation of temporary falsework (if needed) or a temporary trestle may require use of pile-driving equipment for installation on temporary piles.

Potential staging areas for materials and equipment include the rear-parking area of the Grange, Coloma Resort, potentially a portion of the Coloma Resort maintenance area on the north side of the bridge, as well as a State Parks area opposite the Coloma Resort. Coordination with MGDHSP and or the Coloma Resort will occur prior to a final determination of project staging area location(s).

2.7 Construction Schedule

Construction of the Project is anticipated to begin in 2024 and be completed within two construction seasons. Construction activities would occur Monday through Friday between the

hours of 7 a.m. and 7 p.m. and Saturday between the hours of 8 a.m. and 6 p.m. Construction crews may arrive at the worksite earlier and leave later than the hours of actual construction activity.

2.8 Construction Contract

The County would retain a construction contractor to construct the proposed improvements. The contractor would be responsible for compliance with all applicable rules, regulations, and ordinances associated with proposed Project activities and for implementing construction-related mitigation measures. The County would provide construction contractor oversight and management and would be responsible for verifying implementation of the mitigation measures. The contractor would construct the proposed Project in accordance with the Public Contract Code of the State of California, the Caltrans Standard Plans and Standard Specifications, and the Contract, Project Plans, and Project Special Provisions under development by the County. The following are a combination of standard and project-specific procedures/requirements applicable to Project construction:

- Construction contract special provisions will require that a Traffic Management Plan (TMP) be prepared. The TMP will include construction staging and traffic control measures to be implemented during construction to maintain and minimize impacts to traffic during construction. The TMP will address the coordination issues for access during any potential short-term lane closures (i.e., during parts of a work shift, including, roadway conforms, existing bridge removal periods, etc.) during the construction window as applicable;
- Contract special provisions will require compliance with El Dorado County Air Quality Management District (AQMD) Rules 223, 223-1, and 223-2 to minimize fugitive dust emissions;
- Contract provisions will require notification by the County and compliance with California Health and Safety Code Section 7050.5 and California Public Resources Code Sections 5097.5, 5097.9 et seq., regarding the discovery and disturbance of cultural materials or human remains should any be discovered during project construction;
- Contract provisions will require that in the event unanticipated historical, archeological (including structural features, unusual amounts of bone or shell, artifacts, human remains, or architectural remains) or paleontological resources are encountered during construction, all earthmoving activity shall cease within 60 feet of the find until the County retains the services of a qualified archaeologist and/or paleontologist. Any and all potential archaeological or paleontological resources discovered during construction will be examined by a qualified archaeologist or paleontologist, respectively, who will examine the findings, assess their significance, and offer recommendations for procedures deemed appropriate to either further investigate or mitigate adverse impacts on those archaeological or paleontological resources that have been encountered (e.g., excavate the significant resource).
- Contract provisions will require implementation of BMPs consistent with the Caltrans Stormwater Quality Handbooks and or the California Stormwater Quality Association (CASQA) BMP Handbook to protect water quality and minimize the potential for siltation and downstream sedimentation.

- The County or its construction contractors will conduct early coordination with utility service providers, law enforcement, and emergency service providers to ensure minimal disruption to service during construction. Access will not be restricted without consulting with law enforcement, and emergency service providers.
- The County and its construction contractors will comply with the current State of California Standard Specifications written by Caltrans, for public service provision; and
- The Project would comply with El Dorado County General Plan Policy 6.5.1.11 pertaining to construction noise.

2.9 Required Approvals

In addition to CEQA compliance, implementation of the proposed Project would require compliance and the issuance of other approvals listed below.

- Caltrans — National Environmental Policy Act (NEPA) Categorical Exclusion
- El Dorado County Air Quality Management District — Fugitive Dust Plan Approval
- Army Corps of Engineers (USACE) Section 404 Clean Water Act Nationwide Permit
- Central Valley Regional Water Quality Control Board (CVRWQCB) Section 401 Water Quality Certification (WQC). Per 40 CFR 121.4(a) "*At least 30 days prior to submitting a certification request, the project proponent shall request a pre-filing meeting with the certifying authority.*" This public circulation draft CEQA document serves as the required 40 CFR Part 121.4(a) '*pre-filing meeting request'.*
- Central Valley Regional Water Quality Control Board — Section 402 NPDES
- California Department of Fish and Wildlife (CDFW) Section 1600 Streambed Alteration Agreement

Chapter 3
Impact Analysis

This chapter contains an evaluation of the environmental impacts of the proposed Project for compliance with CEQA. The following sections examine the temporary, permanent, direct, and indirect effects on the physical environment.

Resources Considered in the Environmental Impact Report

Based on the Project description and the County's understanding of the environmental issues associated with the Project, the following topics are analyzed in detail in Chapter 3, Sections 3.1 through 3.17 of this document.

- 3.1 Aesthetics
- 3.2 Agricultural and Forestry Resources
- 3.3 Air Quality
- 3.4 Biological Resources
- 3.5 Cultural Resources
- 3.6 Tribal Cultural Resources
- 3.7 Energy
- 3.8 Geology, Soils
- 3.9 Greenhouse Gas Emissions
- 3.10 Hazards and Hazardous Materials
- 3.11 Hydrology, Water Quality, and Water Resources
- 3.12 Land Use Planning/ Population and Housing
- 3.13 Minerals Resources
- 3.14 Noise
- 3.15 Public Services/ Utilities and Service Systems
- 3.16 Recreation
- 3.17 Transportation
- 3.18 Wildfire

Pursuant to CEQA Guidelines Section 15065(a), the Mandatory Findings of Significance were considered in the selection of the above resource topics and discussions are subsumed within each of the above applicable sections.

Terminology

For each resource topic, the EIR presents following information.

- **Existing Conditions**
    - **Regulatory Setting**—Pertinent federal, state, and local policies, regulations, and standards are described.
    - **Environmental Setting**—Existing site and study area conditions are described.
- **Environmental Impacts**
    - **Methods for Analysis**—describes the technical methodology for impact assessment. If models were used to assess impacts, they are described in this section, as are other technical tools.
    - **Thresholds of Significance**—presents the thresholds used to determine the significance of the impacts. The significance conclusions that can be noted at the end of each impact discussion are defined below.
        - **No Impact:** This level of significance is used for impacts where it was clear at the outset that there would be no impact on a particular resource topic under any of the alternatives.
        - **Less than Significant:** This level of significance is used for impacts where there would be an impact, but the degree of the impact would not meet or exceed the identified thresholds.
        - **Less than Significant with Mitigation:** This level of significance is used for impacts that would meet or exceed the identified thresholds, but implementing mitigation measures would reduce such impacts to less-than-significant levels.
        - **Significant and Unavoidable:** This level of significance is used for significant impacts where mitigation is not available or feasible to reduce the significant impact to a less-than-significant level.
    - **Impacts and Mitigation Measures**—describes the effects of the proposed Project. For each identified significant or potentially significant impact, mitigation measures are identified. As stated above, where mitigation is not available or feasible to reduce the impact to a less-than-significant level, the impact is identified as significant and unavoidable.

CEQA requires that each public agency mitigate or avoid the significant impacts of any project it approves or implements (State CEQA Guidelines Section 15126.4). State CEQA Guidelines Section 15370 defines mitigation as follows.

- Avoiding the impact altogether by not taking a certain action or part of an action.
- Minimizing the impact by limiting the degree or magnitude of the action and its implementation.
- Rectifying the impact by repairing, rehabilitating, or restoring the affected environment.
- Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action.
- Compensating for the impact by replacing or providing substitute resources or improvements to the environment.

This EIR recommends feasible mitigation measures consistent with State CEQA Guidelines to reduce impacts of the proposed Project.

Topics required by CEQA in addition to the resource topics addressed in Chapter 3 are addressed in Chapter 4, *Alternatives Analysis*, and Chapter 5, *Other CEQA Considerations*. Chapter 4 examines a range of feasible alternatives to the Project, including no project, which would reduce one or more of its potential environmental impacts. Chapter 5 includes the following additional topics.

- Cumulative Impacts
- Growth-Inducing Impacts
- Significant and Unavoidable Impacts
- Significant Irreversible Environmental Changes
- Mitigation Measures with the Potential for Environmental Effects Under CEQA

3.1 Aesthetics

This section describes concepts and terminology used to describe and evaluate aesthetics/visual resources and existing conditions related to aesthetics or visual resources and analyzes potential impacts that could result from implementation of the proposed Project.

3.1.1 Existing Conditions

3.1.1.1 Regulatory Setting

State

California Scenic Highway Program: California's Scenic Highway Program was created by the Legislature in 1963. Its purpose is to preserve and protect scenic highway corridors from change which would diminish the aesthetic value of lands adjacent to highways. The state laws governing the Scenic Highway Program are found in the Streets and Highway Code, Section 260 et seq. Per the Streets and Highway Code, Section 260 et seq the stated intent of the California Scenic Highway Program is to protect and enhance California's natural beauty and to protect the social and economic values provided by the State's scenic resources.

California Environmental Quality Act: CEQA establishes the policy of the state to take all action necessary to provide the people of the state "with…enjoyment of aesthetic, natural, scenic and historic environmental qualities" (California PRC § 21001[b]).

Local

El Dorado County General Plan: The El Dorado County General Plan (County General Plan) Land Use Element and Conservation and Open Space Element include goals, objectives, and policies that pertain to this Project that are in place to maintain the rural and open character of the County, minimize the visual impacts of grading and vegetation removal, encourage conforming earthworks to natural contours, and protect native plants and trees (El Dorado County 2004).

County General Plan Goal 2.6 (Corridor Viewsheds) seeks 'Protection and improvement of scenic values along designated scenic road corridors.' (El Dorado County 2004a). Under Objective 2.6.1 (Scenic Corridor Identification) general plan Policy 2.6.1.1 requires the preparation and adoption of a 'Scenic Corridor Ordinance' for the purpose of establishing standards for the protection of identified scenic local roads and State highways. Policy 2.6.1.2 states that 'Until such time as the Scenic Corridor Ordinance is adopted, the County shall review all projects within designated State Scenic Highway corridors for compliance with State criteria.'

Policy 2.6.1.3 states that 'Discretionary projects reviewed prior to the adoption of the Scenic Corridor Ordinance, that would be visible from any of the important public scenic viewpoints identified in Table 5.3-1 and Exhibit 5.3-1 of the El Dorado County General Plan Draft Environmental Impact Report, shall be subject to design review, and Policies 2.6.1.4, 2.6.1.5, and 2.6.1.6 shall be applicable to such projects until scenic corridors have been established.'

Policy 2.6.1.6 states that a Scenic Corridor (-SC) Combining Zone District shall be applied to all lands within an identified scenic corridor. Community participation shall be encouraged in identifying those corridors and developing the regulations.

3.1.1.2 Environmental Setting

Information pertaining to the environmental setting was taken primarily from the Visual Impact Assessment (CH2M Hill 2019). The setting information provides the context for determining the type of changes that would occur to the existing visual environment. The project setting is also referred to as the corridor or project corridor, which is defined as the area of land that is visible from, adjacent to, and outside the project limits, and is determined by topography, vegetation, and viewing distance.

The Project is in Northern California's foothills, in the area commonly referred to as the Gold Rush area. The landscape is characterized by undulating hills, with large valley oak trees and some interspersed evergreen pines and several ornamentals. Because the bridge connects to the MGDSHP, the project corridor is a tourist destination, with land uses primarily related to public park lands. However, the private Coloma Resort is located at the northeast corner of the bridge, and there are private residences farther north on Mt. Murphy Road. In addition, the Gold Trail Grange is privately owned and managed. This is located on the southwest corner of the bridge and assimilates well within the historic character of the MGDSHP surroundings. The project corridor, regarding visual resources, is defined as the area of land that is visible from, adjacent to, and outside the highway right-of-way and is determined by topography, vegetation, and viewing distance.

The surrounding context of the project is scenic, historic, and educational, and the MGDSHP provides a destination for many tourists. Mt. Murphy Road connects to SR 49, which is eligible to be a state scenic highway but has not been officially listed (Caltrans 2020). The SFAR is not a designated national Wild and Scenic River. Tourists come from all over the world to see where gold was discovered in California within a setting that has preserved much of the eras' historic buildings and uses, and, regionally, this area is used for educational, recreational, and relaxation purposes.

Mt. Murphy Road is not a state or El Dorado County designated scenic highway. SR 49 is designated as an '*eligible State Scenic Highway – Not Officially Designated*' by the Caltrans 'California Scenic Highway Mapping System (2020). The SFAR is not a federal designated Wild and Scenic River (NPS 2020).

Table 5.3-1 (Important Public Scenic Viewpoints) and Exhibit 5.3-1 from Section 5.3 (Visual Resources) of the County General Plan EIR identify the following scenic view and scenic resources in and immediately adjacent to the Project area:

- **SR 49 northbound and southbound:** The Historic townsite of Coloma including the Marshall Gold Discovery State Historic Park is a scenic resource.
- **South Fork American River:** The SFAR meanders through the central part of the county and is a scenic view and scenic resource.

3.1.2 Environmental Impacts

3.1.2.1 Methods of Analysis

Analysis of the visual effects of the Project are based on the following.

- The Project Draft Visual Impact Assessment (VIA, CH2M Hill 2019)
- Review of the Project description and land uses and zoning
- Review of the Project in regard to compliance with state and local ordinances and regulations.

The VIA generally follows the guidance outlined in the publication Visual Impact Assessment for Highway Projects published by the Federal Highway Administration (FHWA). The following steps were followed to assess the potential visual impacts of the proposed Project:

- Define the project location and setting.
- Identify key views.
- Analyze existing visual resources, resource change and viewer response.
- Depict the visual appearance of project alternatives.
- Assess the visual impacts of project alternatives.
- Propose measures to offset visual impacts.

To review visual context of the project area and assessment of the potential change to visual resources, a series of key observation points (KOPs) were identified. Once KOPs were identified, photos of the existing condition were recorded. To illustrate project changes, a 3-dimensional computer model was created, complete with texture and color. This model was rendered from the same camera view point as where the corresponding existing condition photo was taken. The modeled project was superimposed on the existing conditions to show the before and after effects.

Visual Assessment Units and Key Views: The project area for the visual resources is restricted to the bridge approaches and the bridge; therefore, all KOPs are of and from the bridge. KOPs that depict views toward the bridge were identified as typical angles where the bridge might most commonly be viewed from the type of viewers identified for this project. The KOPs are described below and their locations shown on Figure 3-1:

- KOP 1: View looking northeast from SR 49 onto Mt. Murphy Road at the intersection
- KOP 2: View looking northeast from midspan of the bridge towards the Coloma Resort
- KOP 3: View looking north-northeast from the Mt. Murphy Road intersection and Bekeart's Gun Shop and gold panning activities
- KOP 4: View looking southwest from the SFAR shoreline on the Coloma Resort, located just south of the bridge
- KOP 5: View looking upstream at the SFAR from the mid-span of the bridge
- KOP 6: View looking northeast from the Gold Discovery Trail within the MGDSHP

LEGEND

- Key Observation Points
- Parking
- Access/Driveway
- Trail
- Marshall Gold Discovery State Historic Park
- Project Footprint
- Project Limits

N

0 500

Feet

Figure 3-1
Locations of Key Observation Points
Mt Murphy Road Bridge Project *El Dorado County, California*

\\BROOKSIDEFILES\GIS_SHARE\ENBG\00_PROJ\EIEL_DORADO_DOT\MT_MURPHY_RD\MAPS\REPORT\2018\VISUAL\FIG8_KOP.MXD 10/1/2018

The visual resources within the project setting are defined and identified. Resource change is assessed by evaluating the visual quality and the visual character of the visual resources that comprise the project corridor before and after the construction of the proposed project.

Visual Quality: The evaluation of visual quality includes identifying the vividness, intactness, and unity present in the project corridor. Public attitudes validate the assessed level of quality and predict how changes to the project corridor can affect these attitudes. This process helps identify specific methods for addressing each project related visual impact. The criteria are combined into a total visual quality rating, the result can range from low, low-medium, medium, medium-high, or high visual quality. The three criteria for evaluating visual quality are defined below:

- **Vividness** is the extent to which the landscape is memorable and is associated with distinctive, contrasting, and diverse visual elements.
- **Intactness** is the integrity of visual features in the landscape and the extent to which the existing landscape is free from non-typical visual intrusions.
- **Unity** is the extent to which all visual elements combine to form a coherent, harmonious visual pattern.

The visual quality in the project area has the following vividness, intactness, and unity characteristics:

- **Vividness:** Overall, the portion of SR 49 that connects with Mt. Murphy Road in the community of Coloma in El Dorado County has a medium-high degree of vividness, meaning that the landscape is memorable. The Project area is distinctive primarily due to its appealing rural landscape and preserved historic setting, consisting of stone and wooden structures and wooden fences. Picturesque views along SR 49 include peekaboo views of the Mt. Murphy Road Bridge which are more visible when fall leaves drop.
- **Intactness:** The level of intactness, or the integrity of the visual order of the landscape, and the extent to which the landscape within the MGDSHP and adjacent foothills is high. Visual resources within the MGDSHP, including views from Mt. Murphy Road to and from the bridge, include many views of the surrounding terrain, historic structures and immediate areas.
- **Unity:** The degree of unity, or the aesthetic integration and visual coherence of the natural and developed environment, within the project area is medium-high. With a few exceptions, constructed elements, including the existing highway facility and the sparse development, blend well with their surroundings and appear to contribute to the visual appeal of the setting. The surroundings are maintained to reflect the historic period of the 1849 Gold Rush. For new or renovated structures, the State Park has maintained the construction materials and forms that would have been common during the historic Gold Rush period.

Visual character includes attributes such as form, line, color, texture, and is used to describe some feature. These attributes are neither considered good nor bad. However, a change in visual character can be evaluated when it is compared with the viewer response to that change. Changes in visual character can be identified by how visually compatible a proposed project would be with the existing condition by using visual character attributes as an indicator. For this project the following attributes were considered:

- The existing bridge is the second historic bridge in this general location.
- It is a 6-span bridge with five concrete approach spans and a steel truss center span.

- The narrow structure barely fits one car and single file pedestrians.
- The concrete approach spans have high walls, which is an enclosure for those passing through.
- The narrow steel truss allows views out toward the river and adjacent properties, but safety dictates continuous movement to minimize conflicts with oncoming vehicles.
- The concrete approaches and girders include indented box relief and concrete piers walls (as opposed to pier columns).
- The colors are matte silver paint and uncolored concrete, both of which have aged, showing rust or discolorations associated with weather and age.
- The variety of crossbars provide a texture to the bridge as a dominant form in the landscape.
- The bridge is tall compared to nearby structures, but vegetation does not allow the viewer to make a direct comparison with other structures from most viewpoints.
- Currently, there are no lights on the bridge, however adjacent buildings may have outside lighting.

The population affected by the project is composed of viewers. Viewers are people whose views of the landscape may be altered by the proposed project, either because the landscape itself has changed or their perception of the landscape has changed.

Viewers, or more specifically the response of viewers to changes in their visual environment, are one of two variables that determine the extent of visual impacts that will be caused by the construction and operation of the proposed project. There are three viewer groups for this project: neighbors near the project, tourists using the roadway, and recreationalists. Each viewer group has its own particular level of viewer exposure and viewer sensitivity (described below), resulting in distinct and predictable visual concerns for each group that help to predict its responses to visual changes.

- **Neighbors** viewing the project area consist of MGDSHP employees, Coloma Resort employees, and residents who access their residence via the Mt. Murphy Road and Bridge. They are all very familiar with the surroundings and the bridge details because they typically drive-by or pass-by the project vicinity on a daily basis. Residents who have static views toward the bridge will become very familiar with and have a high degree of sensitivity to changes.
- **Tourists** are less familiar with the surroundings and come to the MGDSHP and Coloma resort for educational or recreational purposes. Tourists may secondarily use the bridge to access the Coloma Resort, and the Levee trail, or park their vehicles on the north side of the SFAR. These can be persons seeking to engage in recreational water activities, fishing, hiking, gold panning, learning, or merely touring the scenic landscape and wildlife areas. Guests of the Coloma Resort will have static views of the changes throughout their stay, whereas most tourists are one-day visitors. Tourists are typically taking time to observe the surroundings at a slow pace and may look at details closely but typically have a low degree of familiarity and low sensitivity to changes. If staying at the resort during construction, tourists may have a high sensitivity of visual disturbances.
- **Recreationalists** including bicyclists, joggers, and rafters are using the trails and byways within the vicinity of the MGDSHP and the SFAR. Their views are dynamic and not overly focused on details. Rafters are common in mid-spring through mid-fall period, and travel through the project location, viewing the project area from upstream and from underneath the bridge. Each of the recreationalists' views largely depend on their pace of movement; while they are likely aware of

the aesthetics and sensitive to degradation of visual quality, they also are likely to have lower sensitivity than the neighbors and tourists because recreationalists are looking at the surroundings as a whole, not at specific attributes, like the bridge by itself.

Viewer Exposure: The duration of viewer exposure to the proposed Project site would be substantial and distinctive for viewers who need to cross the bridge or would be viewing from the shores of the SFAR or using the trails, but very short for viewers traveling along SR 49. The exposure is closely aligned with whether the views are static or dynamic where the direction and pace of movement determines the viewers' degrees of exposure. Neighbors have more static views, whereas tourists and recreationalists enjoy dynamic viewers based on their pace of movement through the surroundings.

Viewer Sensitivity: Sensitivity is the degree to which change affects the viewers' experience and reaction to changes of the visual environment. Local values and attitudes toward landscape aesthetics include the retention of high visual quality. While all viewers in this area are generally highly sensitive to degradation of the aesthetic environment, as long as the aesthetics treatments are contextually appropriate, tourist and recreationalist viewers are less sensitive to changes, while others, such as residents and nearby employees, will remain highly sensitive.

3.1.2.2 Thresholds of Significance

In accordance with Appendix G of the State CEQA Guidelines, the proposed Project would be considered to have a significant impact if it would result in any of the conditions listed below. Except as provided in Public Resources Code Section 21099, would the project:

- Have a substantial adverse effect on a scenic vista.
- Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?
- In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?
- Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.

3.1.2.3 Impacts and Mitigation Measures

Impact AES-1: Have a substantial adverse effect on a scenic vista (less than significant)

Table 5.3-1 (Important Public Scenic Viewpoints) and Exhibit 5.3-1 from Section 5.3 (Visual Resources) of the County General Plan EIR identify the following in and immediately adjacent to the Project area.:

- **SR 49 northbound and southbound:** The Historic townsite of Coloma including the Marshall Gold Discovery State Historic Park is a scenic resource.
- **American River:** The SFAR meanders through the central part of the county and is a scenic view and scenic resource.

See Impact AES-3 for discussion.

Impact AES-2: Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway. (no impact)

Mt. Murphy Road is not a state or El Dorado County designated scenic highway. SR 49 is classified as an '*eligible State Scenic Highway – Not Officially Designated*' by the Caltrans California Scenic Highway Mapping System (2019).

Impact AES-3: In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality? (potentially significant unless mitigation incorporated)

The replacement of the Mt. Murphy Bridge with a new bridge will not substantially degrade the existing visual character or quality of public views of the site and its surroundings. An existing conditions photograph, visual simulation, description for each KOP, and an assessment of the visual quality for before and simulation of the proposed project is presented below.

KOP 1: View looking northeast from SR 49 onto Mt. Murphy Road at the intersection (Figures 3-2 and 3-3).

Figure 3-2. KOP 1 Existing Condition

Figure 3-3. KOP 1 Visual Simulation

The existing view of the bridge from KOP 1 is somewhat screened by vegetation adjacent to both sides of the south bridge approach. The bridge is a background element to the more memorable historic-appearing buildings of the Grange and Bekeart's Gun Shop, as well as the gold panning activity area. The visual simulation show that the bridge widens to the west and several of the trees in the foreground would be removed, which opens up the view toward the bridge and provides a visually accessible route toward the river. Where the existing bridge lacks a sidewalk, the new sidewalk would be safe and comfortable for pedestrians touring the area and for persons that would like to see the river without having to climb down to the river channel. The visual simulation illustrates that the project may result in a memorable experience but may also be appear newer and thus less intact with the historic nature of small, narrow, and minimalistic roadways of the historic era. The Project would have a negligible effect on the visual quality from this KOP.

KOP 2: View looking northeast from midspan of the bridge towards the Coloma Resort (Figures 3-4 and 3-5).

Figure 3-4. KOP 2: Existing Condition

Figure 3-5. KOP 2: Visual Simulation

From KOP 2, the viewer looks northeast to the Coloma Resort, slightly upstream. With the project, the pedestrian would be directed to look primarily upstream since the sidewalk is proposed on the east side of the bridge. The structure would be a change, since it would look newer, which may reduce intactness with the historic setting, but the visual accessibility is enhanced. Under existing conditions, both drivers and pedestrian have to be focused on whether oncoming traffic would require a change in advancement, the proposed project opens views and safe conditions to allow both drivers and pedestrians to absorb the views. Overall, the changes are noticeable, but the resulting visual quality for the KOP 2 would remain.

KOP 3: View looking north-northeast from the Mt. Murphy Road/ SR 49 intersection and Bekeart's Gun Shop and gold panning activities (Figures 3-6 and 3-7).

Figure 3-6. KOP 3 Existing Condition

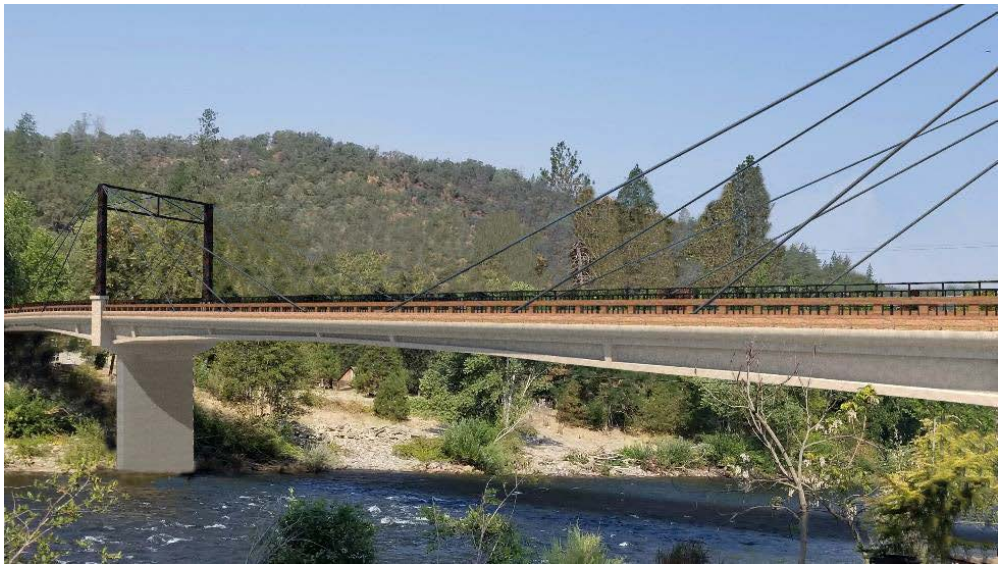
Figure 3-7. KOP 3 Visual Simulation

The existing view from KOP 3 shows that the access is narrow, with overgrown vegetation and minimal maintenance of the fence barrier. The landscape and bridge features are complimentary in the historic and rural setting, but the narrow and minimal sightline provide a sense of trepidation. The visual simulation of the proposed project shows distinct changes. Steel truss replaced with cross bar towers and suspension cables, new and wider bridge deck and much of the vegetation is removed or cut back resulting in an open understandable flow for pedestrians and vehicles. The split rail barriers, rust color and wood texture on the sidewalk will mirror the wood and aged materials of the historic structures. The change from a one-lane to a two-lane and the addition of a pedestrian path cross section does change the experience by enhancing safety, but somewhat reducing the rural character. The proposed Project would result in a positive influence on the visual quality from this KOP.

KOP 4: View looking southwest from the Coloma Resort's SFAR shoreline, located just south of the bridge (Figures 3-8 and 3-9).

Figure 3-8. KOP 4 Existing condition

Figure 3-9. KOP 4 Visual Simulation



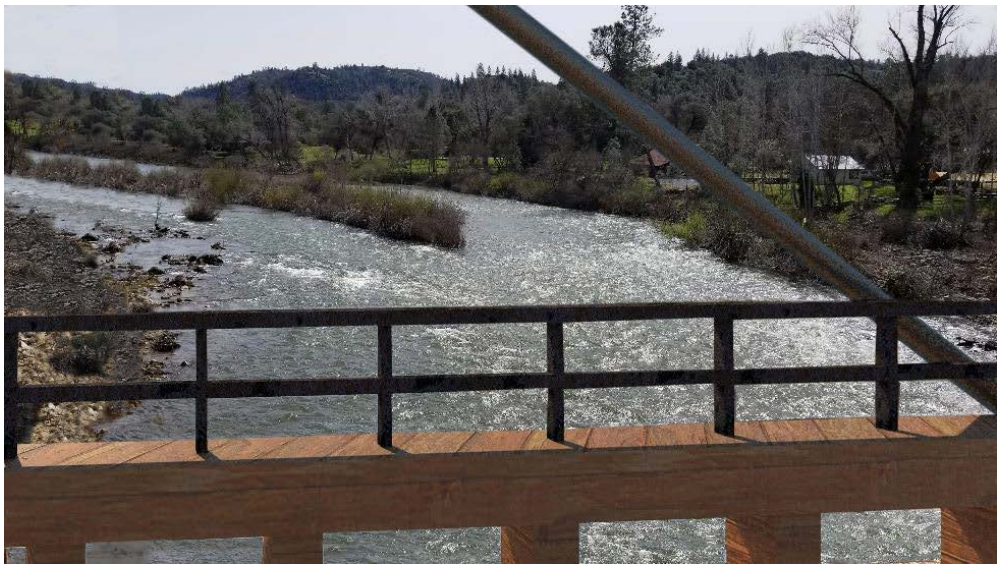
At KOP 4 the view from the beach of the Coloma Resort is impressive because the existing bridge is high, dominant, and graceful above the beach. The visual simulation of the proposed Project shows distinct changes to the backdrop. A steel truss would be replaced with a view of cross bar towers and suspension cables, and the bridge soffit would be approximately 40 percent thicker in places, but the piers would be similar in mass and height. The concrete span over the SFAR is a departure from the steel truss, but the soffit will convey the look and feel of the existing concrete spans. The proposed project with colored and textured concrete aesthetic treatments would result in a slight improvement in the vividness and intactness with the natural landscape. The change in bulk and scale of the substructure denotes a more modern bridge from this angle, thus reducing the unity score slightly.

Visual quality would not be lowered compared to the existing bridge. The features would easily assimilate into the natural setting. The proposed project would result in a neutral or slightly positive influence on the visual quality from this KOP.

KOP 5: View looking upstream at the South Fork of the American River from the mid-span of the bridge (Figures 3-10 and 3-11).

Figure 3-10. KOP 5 Existing Condition

Figure 3-11. KOP 5 Visual Simulation



The KOP 5 view from the bridge looking upstream with the steel truss members surround the experience and the views. The visual experience is vivid because there are visual indicators that the bridge is in need of replacement, such as rusty, corroded metal, cracked railings, and cracked road surface and narrow space for oncoming vehicles. The view is intact, but the unity is weakened by the signs of worn-out materials. The viewer is required to keep looking forward and backward rather than calmly enjoying views of the SFAR because of the potential for conflicting traffic on the bridge. The visual simulation shows that the view does not change, but a protected pedestrian path that allows persons to stop and look at the landscape with adequate space for others to pass. The visual experience would include a slightly higher barrier, but since the viewer is protected from traffic, the view would be calmer and more intact to absorb the surroundings as part of the visual experience. The materials would be new without rust but textured and colored to emulate the historic setting. These enhance the order and aesthetic experience of the views. The proposed project would result in a positive influence on the visual quality from this KOP.

KOP 6: View looking northeast at the bridge from the Gold Discovery Trail (Figures 3-12 and 3-13).

Figure 3-12. KOP 6: Existing Condition

Figure 3-13. KOP 6: Visual Simulation

The KOP 6 visual experience is not particularly vivid because the viewer's experience in the park is more focused on the Gold Rush Era buildings. The bridge interrupts the natural landscape, but may instill curiosity for where the bridge may lead. Since no other buildings or structures are made of steel, the bridge is not harmonious with color or building types.

The visual simulation shows how the replacement towers blend with the natural landscape in color and are lighter in form; and therefore, extend the views beyond the bridge more easily. This enhances the order and aesthetic experience of the views. The concrete soffit is larger and, therefore, more modern, but the color and form do not distract from the surroundings. The visual experience would be calmer and more intact to absorb the surroundings as part of the visual experience. The materials would be new without rust but textured and colored to emulate the historic setting.

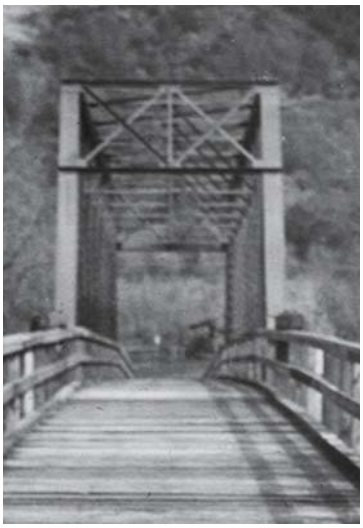
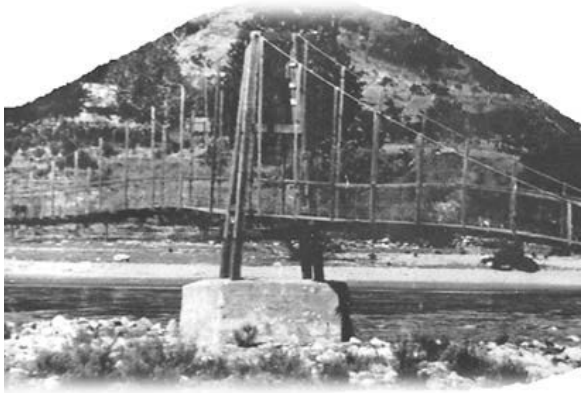
Visual Resources Changes: The Project will result in changes to visual resources. The bridge structure will be wider and include aesthetic treatments (e.g., cross-braced steel towers, box relief in concrete girders, concrete piers walls, color, texture, open railing) that would be compatible with the visual setting and would therefore result in a low degree of change to the visual character.

The removal of approximately 67 native and non-native trees, (final tree removal number to be determined by the County during final design) will alter the visual experience along the bridge approaches and for those within the MGDSHP that are used to seeing thick vegetation. The wider bridge would fill a portion of the areas where trees would be removed. The opening created by vegetation removal would open views toward the MGDSHP and the natural landscape in the middle and background that are otherwise hidden from viewers on the existing bridge.

These changes might be most noticeable to those recreating on or near the SFAR. As shown in Table 3-1, several bridge design elements harken to earlier and existing bridge elements. Changes would be noticeable and would remain "new" to those living nearby but would become less noticeable once the

areas of disturbance are revegetated around the bridge approaches and abutments (approximately 5 to 10 years).

Table 3-1. Bridge Design Elements Compared Against Historic Bridge Elements

Feature	Historic Bridge Reference Image	Proposed Bridge Detail Simulation
Truss crossbars		
Cables		
Wood texture and color tones		

Feature	Historic Bridge Reference Image	Proposed Bridge Detail Simulation
Box relief and arched curves in concrete girders		
Mono slab pier walls with flared pedestals and trim accents		

Summary of Neighbor Viewer Responses: There is one private residence with views of the project site. With vegetation removal, more residents may have views of the project site. These residents, the owners, and workers at the Coloma Resort, and MGDSHP employees have the highest exposure and sensitivity. Other neighbors that only travel through the project area (but do not have views from their homes) would also have high exposure to the proposed bridge because this is the primary route to residences on the northeastern side of the South Fork American River. The preferred alternative design was reviewed by members of the public at a public meeting in September of 2018. Generally, comments were positive and supportive of the aesthetic changes that mimic historic bridge elements.

Coloma Resort owners, employees, and visitors would have high sensitivity during project construction, because the bridge is part of the immediate surrounding of the Resort. Visitors typically stay more than 24 hours, must cross this bridge, and are likely to relax within the resort and the grounds. The bridge is a dominant part of the scenic surroundings. It is anticipated that the average response of these viewer groups would be high during project construction and low to moderate after construction is complete; such responses would be reduced further over time. Sensitivity toward the removal of vegetation may vary between viewers. Some employees and residents may welcome the

increased visual accessibility while others may find the removal of trees to be stark and disturbing. Those areas disturbed by the removal of mature vegetation may need a longer duration to adjust to project changes. For those affected by the vegetation removal, the visual response to the post-construction period would remain a moderate change due to the duration for restoration of mature vegetation. Others may appreciate the enhanced visibility of the road, oncoming vehicles and the views of and from the bridge.

Summary of Tourist Viewer Responses: It is anticipated that the average response of this viewer group would be high to moderate during project construction and low after construction is complete, reducing over a 5 to 10-year time span, as vegetation matures. Given the duration for revegetation to recover, the post construction condition will cause a moderate change to the current condition. Once recovered it is expected that the viewers would not experience a long duration of sensitivity for the more exposed bridge and roadway.

Summary of Recreationalists' Viewer Responses: The average response of this viewer group is anticipated to be moderate during project construction and low after construction is complete, reducing to low as vegetation grows to soften the area disturbed by construction. It is anticipated that the tourist and recreationalist groups would welcome improved visual access toward and from the bridge, since it is less likely that they are sensitive to the vegetation changes (due to lack of familiarity with the before context).

Visual impacts are determined by assessing changes to the visual resources and predicting viewer response to those changes. These impacts can be beneficial or detrimental. Cumulative impacts and temporary impacts due to the contractor's operations are also considered. Table 3-2 provides a reference for determining levels of visual impact by combining resource change and viewer response.

Table 3-2. Visual Impact Ratings Using Viewer Response and Resource Change

		Viewer Response (VR)				
Resource Change (RC)		Low (L)	Moderate-Low (ML)	Moderate (M)	Moderate-High (MH)	High (H)
	Low (L)	L	ML	ML	M	M
	Moderate-Low (ML)	ML	ML	M	M	MH
	Moderate (M)	ML	M	M	MH	MH
	Moderate-High (MH)	M	M	MH	MH	H
	High (H)	M	MH	MH	H	H

The wider bridge deck would not change the total width of the approaching roadway, apart from a more defined pedestrian access at the intersection of SR 49 and Mt. Murphy Road. The sidewalk would be located on the east side of the bridge, providing pedestrians upstream views from the bridge. This view overlooks portions of the Coloma Resort and area that are heavily vegetated. Visual access toward the downstream portion of the bridge would be more limited, since the sidewalk is not located on the west side (downstream).

There would be a noticeable change to the scale of the bridge because the bridge is designed for two lanes and a sidewalk for pedestrians – which would be 24 feet wider than the current bridge. For those looking underneath the bridge, this type of bridge would have a larger bulk. However, the height of the structure and structure of the piers could be made similar to the existing bridge with the current solid-wall concrete approach spans. The visual difference would result from the wider structure and the increase in depth of the soffit. The bridge is likely to feel like a larger structure for the residents that look toward the bridge and the visitors to the MGDSHP and Coloma Resort. The proposed structure would result in approximately 40 percent more bulk in the structure and at least twice as large to include two lanes, shoulders and a sidewalk where there is only currently one shared lane. However, the aesthetic treatments of the bridge incorporate design elements that resemble elements of previous bridges (Table 3-1), as well as textures and colors that would blend with the historic context and not interfere with the aesthetics of the MGDSHP, the Coloma Resort, and residential areas.

Based on the viewer response and resources change ratings the proposed Project would result in moderate to low visual impact on the neighbor viewer and tourist viewer groups during construction and low visual impact following construction. Impacts to the recreationalists' viewer group would be moderate during construction and low following construction.

Underground Utility Relocation: County Resolution 171-2019 created an underground utility district (UUD) on several of the parcels involved with the proposed bridge replacement Project (APN 006-164-02, 006-191-01, 006-162-07, and 006-163-02). The overhead utilities need to be relocated during construction. Relocating the poles requires more tree and brush clearing than undergrounding. Undergrounding utilities along Mt. Murphy Rd in the Project area would result in a visual improvement by removing the utility lines and poles from the immediate view shed. Undergrounding would eliminate a heavy concentration of overhead utility lines within the Coloma Historic District as well.

Temporary Construction Impacts

Construction activities would result in a high visual impact for all viewer groups. Temporary impacts during construction would be related to the presence of construction workers, materials, equipment, and vegetation clearing.

Construction will potentially include staging materials and equipment on both northern and southern sides of the SFAR. Both the rear parking of the Grange and a flat area north of the Loop Trail are proposed equipment and materials staging areas. Additional work space may include the areas under and adjacent to both approach spans. The majority of staging area would be confined to the Grange parking lot, an area between the Grange building and the SFAR that is masked from most of the MGDSHP and shielded on the southern side by the excising bridge abutment. The northside staging area would be behind the Levee Trail, in an open field. The Levee Trail is raised, such that this area would be visually shielded from the southern side of the river, but not from users of Mt. Murphy Road and people coming to and from the Coloma Resort. This staging area would be a visual disturbance for those passing it.

Approximately 34 native trees and 33 non-native trees and other vegetation would be removed to provide workers and equipment access. Following construction, these areas would be regraded and revegetated in agreement with the El Dorado County ORMP (where applicable), MGDSHP, and the Coloma Resort where applicable or lands are under their management.

Other inconveniences visible to the public and residents may involve longer periods of one-way traffic control beyond what is currently occurring on the one-way bridge, temporary traffic barriers, phased

construction of the new bridge, excavation of the embankment beneath the new bridge, and final grading operations. However, these do not result in visual impacts.

Most visual impacts would last only as long as construction. Visual impacts related to the vegetation removal would last longer, equaling the time it would take for restoration of these areas and maturation of the new vegetation to occur. While understory vegetation would re-establish within 5 years, mature trees would require longer periods to return to a natural state. This is considered a permanent change from construction period, but this change does not result in lowering the visual quality of the bridge and surrounding context. Implementation of the revegetation component of mitigation measures BIO-5, BIO-6, and BIO-7 minimizes the temporary construction impact to vegetation.

Impact AES-4: Creation of a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area (less than significant).

Project construction would potentially occur year-round, Monday through Friday between the hours of 7 a.m. and 7 p.m. and Saturday between the hours of 8 a.m. and 6 p.m. This schedule would reduce the need for high-intensity lighting for nighttime construction because construction would primarily take place during daylight hours. El Dorado County Codes chapter 130.34 addresses outdoor lighting. Code section 130.34.030 states that lighting used by public agencies for nighttime public works or road construction projects is exempt from the provisions of chapter 130.34.

The Project may incorporate new user safety lighting. The proposed pedestrian crossing on SR 49 may include safety lighting. Walkway lighting may be installed along the proposed bridge sidewalk to provide a safely lit walkway for nighttime pedestrian use. Low level lighting may be contemplated for the new bridge towers. Project lighting would be designed and installed in accordance with County Code Chapter 130.34 (Outdoor Lighting). County Code Chapter 130.34 (Outdoor Lighting) includes standards consistent with prudent safety practices for the elimination of excess nighttime light and glare and requires that '*All outdoor lighting shall be located, adequately shielded, and directed such that no direct light falls outside the property line…*' Details regarding the final lighting configuration will be determined during final design. While these are potential new sources of light, there design and installation in accordance with current County Code ensures that Project impacts are less than significant.

3.1.3 References

CH2M Hill, Inc. June 2019. Mt. Murphy Road Bridge Project, Visual Impact Assessment.

California Department of Transportation. Accessed: June 2020. California Scenic Highway Mapping System. Officially Designated State and Scenic Highways and Historic Parkways. https://dot.ca.gov/-/media/dot-media/programs/design/documents/desig-and-eligible-aug2019_a11y.xlsx

El Dorado County. 2004. *2004 El Dorado County General Plan*. July.

Federal Highway Administration (FHWA). 1981. Visual Impact Assessment for Highway Projects.

U.S. National Parks Service. Accessed June 2020. Interactive Map of NPS Wild and Scenic Rivers. https://nps.maps.arcgis.com/apps/View/index.html?appid=ff42a57d0aae43c49a88daee0e353142

3.2 Agricultural and Forestry Resources

This section describes the regulatory and environmental setting and identifies potential impacts to agricultural and forestry resources.

3.2.1 Existing Conditions

3.2.1.1 Regulatory Setting

State

Farmland Mapping and Monitoring Program

The Farmland Mapping and Monitoring Program (FMMP) is a non-regulatory program of the California Department of Conservation (DOC) that inventories the state's important farmlands and tracks the conversion of farmland to other land uses. The FMMP publishes reports of mapped farmland and conversions every two years. The FMMP categorizes farmland on the basis of its soil quality, the availability of irrigation water, current use, and slope, among other criteria. Land use categories identified in the FMMP are described below.

- **Prime Farmland**. Farmland with the best combination of physical and chemical features able to sustain long-term agricultural production. This land has the soil quality, growing season, and moisture supply needed to produce sustained high yields. Land must have been used for irrigated agricultural production at some time during the four years prior to the mapping date.
- **Farmland of Statewide Importance**. Farmland similar to Prime Farmland but with minor shortcomings, such as greater slopes or less ability to store soil moisture. Land must have been used for irrigated agricultural production at some time during the four years prior to the mapping date.
- **Unique Farmland**. Farmland of lesser quality soils used for the production of the state's leading agricultural crops. This land is usually irrigated but may include nonirrigated orchards or vineyards as found in some climatic zones in California. Land must have been cropped at some time during the four years prior to the mapping date.
- **Farmland of Local Importance**. Land of importance to the local agricultural economy as determined by each county's board of supervisors and a local advisory committee.
- **Grazing Land**. Land on which the existing vegetation is suited to the grazing of livestock. This category was developed in cooperation with the California Cattlemen's Association, University of California Cooperative Extension, and other groups interested in the extent of grazing activities.
- **Urban and Built-Up Land**. Land occupied by structures with a building density of at least one unit to 1.5 acres, or approximately six structures to a 10-acre parcel. Common examples include residential, industrial, commercial, institutional facilities, cemeteries, airports, golf courses, sanitary landfills, sewage treatment, and water control structures.

- **Other Land**. Land not included in any other mapping category. Common examples include low-density rural developments, brush, timber, wetland, and riparian areas not suitable for livestock grazing, confined livestock, poultry, or aquaculture facilities, strip mines, borrow pits, and water bodies smaller than 40 acres. Vacant and nonagricultural land surrounded on all sides by urban development and greater than 40 acres is mapped as Other Land.

California Land Conservation Act of 1965 (Williamson Act) and Farmland Security Zone Act

The California Land Conservation Act of 1965, commonly referred to as the Williamson Act, enables local governments to enter into contracts with private landowners for the purpose of restricting specific parcels of land to agricultural or related open space use. In return, landowners receive property tax assessments which are much lower than normal because they are based upon farming and open space uses as opposed to full market value.

California Timberland Productivity Act of 1982

The California Timberland Productivity Act of 1982 (Government Code § 51100 et seq.) was enacted to help preserve forest resources. Similar to the Williamson Act, this program gives landowners tax incentives to keep their land in timber production. Contracts involving Timber Production Zones are on 10-year cycles.

Local

El Dorado County General Plan

On 19 July 2004, the El Dorado County Board of Supervisors adopted a new General Plan for the County. The Land Use Element was amended in July 2015, which establishes a land use development pattern that makes the most efficient and feasible use of existing infrastructure and public services, provides guidelines for new and existing development that promotes a sense of community, defines those characteristics which make the county rural and provides strategies for preserving these characteristics, as well as providing opportunities for positive economic growth, greater capture of tourism, increased retail sales, and high technology industries.

The Conservation and Open Space Element, last amended in December 2015, must conserve and improve the County's existing natural resources and open space, including agricultural and forest soils, mineral deposits, water and native plants, fish, wildlife species and habitat, and federally classified wilderness areas; and preserve resources of significant biological, ecological, historical or cultural importance. Through this element, the County has adopted extensive policies relating to the conservation, management, and utilization of the county's agricultural and forest lands "as fundamental components of the County's rural character and way of life."

El Dorado County Zoning Ordinance

The Zoning Ordinance consists of enforceable regulations on the use of land in the county. The unincorporated portion of the County is divided into various residential, commercial, industrial, agricultural, and other "zones," and the Zoning Ordinance describes the standards and regulations applicable to each particular zone. Zoning maps illustrate how the zoning districts are distributed throughout the county.

3.2.1.2 Environmental Setting

The Project is located in the unincorporated town of Coloma. The Project area is mapped as 'Urban and Built-Up Land' and 'Other Land' by the California Farmland Mapping and Monitoring Program (California Department of Conservation 2019a). No Prime Farmland, Unique Farmland, Farmland of Statewide Importance, or lands under Williamson Act contracts occur in the project area. Per Exhibit 5.2-4 (Timber Production Zones) of the County General Plan EIR the Project area is not located in an a 'Timber Production Zone' (El Dorado County 2004).

3.2.2 Environmental Impacts

3.2.2.1 Methods of Analysis

Information on agricultural and timber resources was obtained from the FMMP and from review of County General Plan and zoning designations, and review of the Project vicinity using aerial photographs.

3.2.2.2 Thresholds of Significance

In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:

- Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?
- Conflict with existing zoning for agricultural use, or a Williamson Act contract?
- Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?
- Result in the loss of forest land or conversion of forest land to non-forest use?
- Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?

3.2.2.3 Impacts and Mitigation Measures

Impact AG-1: Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use? (no impact).

No Prime Farmland, Unique Farmland, Farmland of Statewide Importance, or lands under Williamson Act contracts occur in the project area (California Department of Conservation 2020a, 2020b). The Project area is mapped as 'Urban and Built-Up Land' and 'Other Land' by the FMMP (California Department of Conservation 2020a).

Impact AG-2: Conflict with existing zoning for agricultural use, or a Williamson Act contract? (no impact)

See response to AG-1.

Impact AG-3: Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))? (no impact).

The Project area is not located in the area identified as 'Timber Production Zone' per Exhibit 5.2-4 (Timber Production Zones) of the County General Plan EIR (El Dorado County 2004). The proposed Project is consistent with the existing zoning and does not result in any rezoning.

Impact AG-4: Result in the loss of forest land or conversion of forest land to non-forest use? (less than significant).

The proposed Project will result in temporary and permanent impacts to forest land (as defined in Public Resources Code section 12220(g)). Temporary impacts to forest land will result from trees and vegetation removal to allow construction of the proposed Project. Per the analysis provided in the approved NES approximately 0.04 ac of Fremont Cottonwood Riparian Forest will be permanently affected by construction of the replacement bridge (Sycamore Environmental 2019). The permanent loss of less than a quarter of an acre (0.04 ac) of forest land (as defined in Public Resources Code section 12220(g)) is considered less than significant. No mitigation is required.

Impact AG-5: Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use? (no impact)

The Project is not anticipated to involve other changes in the existing environment that could result in conversion of farmland or forest land.

3.2.3 References

California Department of Conservation. Accessed February 2020 (2020a). Farmland Mapping and Monitoring Program. El Dorado County FY 015/ 2016. El Dorado, CA. ftp://ftp.consrv.ca.gov/pub/dlrp/FMMP/pdf/2016/eld16.pdf

California Department of Conservation. Accessed February 2020 (2020b). Farmland Mapping and Monitoring Program. El Dorado County Williamson Act. El Dorado, CA. ftp://ftp.consrv.ca.gov/pub/dlrp/wa/

El Dorado County. Adopted 19 July 2004. El Dorado County general plan, a plan for managed growth and open roads; a plan for quality neighborhoods and traffic relief. El Dorado County Planning Department, Placerville, CA.

Sycamore Environmental Consultants. 2019. Natural Environment Study, Mt. Murphy Road Bridge Replacement Project, El Dorado County, CA. Federal Aid Number: BRLO 5965 (090).

3.3 Air Quality

This section describes the environmental and regulatory setting for air quality and evaluates the Projects' potential impacts to air quality. Greenhouse gases (GHG) and climate change are discussed in Section 3.8.

3.3.1 Existing Conditions

3.3.1.1 Regulatory Setting

The agencies of direct importance to the Project for air quality are the U.S. Environmental Protection Agency (EPA), California Air Resources Board (CARB), and El Dorado County Air Quality Management District (EDCAQMD). The EPA has established federal air quality standards for which CARB and EDCAQMD have primary implementation responsibility. The state has adopted its own, more stringent, ambient air quality standards (CAAQS). The CARB and EDCAQMD are also responsible for ensuring that state air quality standards are met.

Federal Regulations

Clean Air Act and National Ambient Air Quality Standards

The federal Clean Air Act (CAA) was enacted in 1963 and has been amended numerous times in subsequent years (1965, 1967, 1970, 1977, and 1990). The CAA establishes federal air quality standards, known as national ambient air quality standards (NAAQS), and specifies future dates for achieving compliance. The CAA also mandates that the state submit and implement a State Implementation Plan (SIP) for local areas not meeting those standards. The SIP must include pollution control measures that demonstrate how the standards will be met.

The 1990 amendments to the CAA identify specific emission-reduction goals for areas not meeting the NAAQS. These amendments require both a demonstration of reasonable further progress toward attainment and incorporation of additional sanctions for failure to attain or meet interim milestones. Table 3-3 shows the NAAQS currently in effect for each criteria pollutant. The California ambient air quality standards (CAAQS) (described below) are provided in the same table.

Table 3-3. National and State Ambient Air Quality Standards

Pollutant	Averaging Time	California AAQS	National AAQS (Primary)	National AAQS (Secondary)
Ozone	1 Hour	0.09 ppm (180 µg/m^3)	--	--
	8 Hour	0.07 ppm (137 µg/ m^3)	0.07 ppm (137 µg/ m^3)	Same as Primary
Respirable Particulate Matter (PM10)	24 Hour	50 µg/ m^3	150 µg/ m^3	Same as Primary
	Ann. Arith. Mean	20 µg/ m^3	--	--
Fine Particulate Matter (PM2.5)	24 Hour	--	35 µg/ m^3	Same as Primary
	Ann. Arith. Mean	12 µg/ m^3	12.0 µg/ m^3	15.0 µg/ m^3
Carbon Monoxide (CO)	1 Hour	20 ppm (23 mg/ m^3)	35 ppm (40 mg/ m^3)	--
	8 Hour	9 ppm (10 mg/ m^3)	9 ppm (10 mg/ m^3)	--
	8 Hour (Lake Tahoe)	6 ppm (7 mg/ m^3)	--	--
Nitrogen Dioxide (NO_2)	1 Hour	0.18 ppm (339 µg/ m^3)	100 ppb (188 µg/m^3)	--
	Ann. Arith. Mean	0.03 ppm (57 µg/ m^3)	0.053 ppm (100 µg/ m^3)	Same as Primary
Sulfur Dioxide (SO_2)	1 Hour	0.25 ppm (655 µg/ m^3)	75 ppb (196 µg/m^3)	--
	3 Hour	--	--	0.5 ppm (1300 µg/m^3)
	24 Hour	0.04 ppm (105 µg/ m^3)	0.14 ppm for (certain areas)	--
	Ann. Arith. Mean	--	0.03 ppm (certain areas)	--
Lead	30-Day Avg.	1.5 µg/ m^3	--	
	Calendar Quarter	--	1.5 µg/ m^3 (certain areas)	Same as Primary
	Rolling 3-Month Avg.	--	0.15 µg/ m^3	Same as Primary
Visibility Reducing Particles	8 Hour	Ten miles visibility	No National 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)		

Transportation Conformity

The conformity requirement is based on CAA Section 176(c)(1), which prohibits the U.S. Department of Transportation and other federal agencies from funding, authorizing, or approving plans, programs or projects that do not conform to the SIP for attaining the NAAQS. Transportation conformity applies to highway and transit projects and takes place at the regional (planning and programming) level and at the project level. A Project must conform at both levels to be approved or be exempt from the requirement to comply.

State Regulations

California Clean Air Act and California Ambient Air Quality Standards

In 1988, the state legislature adopted the California Clean Air Act (CCAA), which established a statewide air pollution control program. CCAA requires all air districts in the state to endeavor to meet the CAAQS by the earliest practical date. Unlike the federal CAA, the CCAA does not set precise attainment deadlines. Instead, the CCAA establishes increasingly stringent requirements for areas that will require more time to achieve the standards. CAAQS are generally more stringent than the NAAQS and incorporate additional standards for sulfates (SO_4), hydrogen sulfide (H_2S), vinyl chloride, and visibility-reducing particles. The CAAQS and NAAQS are listed together in Table 3-3.

The CARB and local air districts bear responsibility for achieving California's air quality standards, which are to be achieved through district-level air quality management plans that would be incorporated into the SIP. EPA has delegated authority to prepare SIPs to CARB to the State of California, which, in turn, has delegated that authority to individual air districts. CARB traditionally has established state air quality standards, maintaining oversight authority in air quality planning, developing programs for reducing emissions from motor vehicles, developing air emission inventories, collecting air quality and meteorological data, and approving SIPs.

The CCAA substantially adds to the authority and responsibilities of air districts. The CCAA designates air districts as lead air quality planning agencies, requires air districts to prepare air quality plans, and grants air districts authority to implement transportation control measures. The CCAA also emphasizes the control of "indirect and area-wide sources" of air pollutant emissions. The CCAA gives local air pollution control districts explicit authority to regulate indirect sources of air pollution and to establish traffic control measures.

State Tailpipe Emission Standards

To reduce emissions from off-road diesel equipment, on-road diesel trucks, and harbor craft, ARB established a series of increasingly strict emission standards for new engines. New construction equipment used for the Project including heavy duty trucks and off-road construction equipment, will be required to comply with the standards.

Toxic Air Contaminant Regulation

California regulates toxic air contaminants (TACs) primarily through the Toxic Air Contaminant Identification and Control Act (Tanner Act) and the Air Toxics "Hot Spots" Information and Assessment Act of 1987 (Hot Spots Act). In the early 1980s, CARB established a statewide comprehensive air toxics

program to reduce exposure to air toxics. The Tanner Act created California's program to reduce exposure to air toxics. The Hot Spots Act supplements the Tanner Act by requiring a statewide air toxics inventory, notification of people exposed to a significant health risk, and facility plans to reduce these risks. ARB has also approved a comprehensive Diesel Risk Reduction Plan to reduce emissions from both new and existing diesel-fueled engines and vehicles (California Air Resources Board 2000). The goal of the plan is to reduce diesel particulate matter (DPM) emissions and the associated health risk by 75% in 2010 and by 85% by 2020. The proposed Project would be required to comply with applicable diesel control measures.

Local Regulations

Sacramento Area Council of Governments Regional Transportation Plan

The Sacramento Area Council of Governments (SACOG) is the Metropolitan Planning Organization for the Sacramento region, including the western slope of El Dorado County. SACOG adopted its *Metropolitan Transportation Plan/Sustainable Communities Strategy* (MTP/SCS) in February 2016. The MTP/SCS provides a long-range framework to minimize transportation impacts on the environment, improve regional air quality, protect natural resources, and reduce GHG emissions.

El Dorado County General Plan

The Public Health, Safety, and Noise Element of the County General Plan (El Dorado County 2004) includes the following applicable goals, objectives, and policies regarding air quality.

- Goal 6.7, *Air Quality Maintenance*, strives to achieve and maintain ambient air quality standards established by the EPA and ARB, and to minimize public exposure to toxic or hazardous air pollutants and air pollutants that create unpleasant odors. This goal includes:
    - Objective 6.7.2, *Vehicular Emissions*, and implementing Policy 6.7.2.5, which encourages use of and facilities for alternative-fuel vehicles, including low-emission vehicles used in construction.
    - Objective 6.7.6, *Air Pollution–Sensitive Uses*, and implementing Policies 6.7.6.1 and 6.7.6.2, which direct that air pollution–sensitive land uses be separated by significant sources of air pollution.
    - Objective 6.7.7, *Construction-Related, Short-Term Emissions*, and implementing Policy 6.7.7.1, which requires that short-term construction, long-term operations, and toxic and odor-related impacts be evaluated in accordance with EDCAQMD CEQA Guidelines and feasible mitigation for such impacts.

In addition, the Public Health, Safety, and Noise Element includes the following goal that addresses naturally occurring asbestos (NOA).

- Goal 6.3, *Geologic and Seismic Hazards*, addresses minimizing threats to life and property from geologic hazards such as NOA through evaluation of NOA hazards and includes Objective 6.3.1, *Building and Site Standards*, and implementing Policies 6.3.1.1, 6.3.1.2, and 6.3.3.3.

El Dorado County Air Quality Management District

As described above, under the CCAA, the EDCAQMD is required to develop an air quality plan for nonattainment criteria pollutants within the air district. Air districts within the Sacramento Federal Nonattainment Area have adopted the *2008 Sacramento Metropolitan Area 8-Hour Ozone Attainment and Reasonable Further Progress Plan* (Ozone Plan), which was last updated 24 July 2017. This plan outlines how the region continues to meet federal progress requirements and demonstrates that the Sacramento Region will meet the 2008 ozone NAAQS by 2027.

The EDCAQMD develops and adopts rules to regulate sources of air pollution in El Dorado County. The rules most pertinent to the proposed Project are briefly described below.

- **Rule 205 (Nuisance):** Prohibits the discharge of air containments which cause injury, detriment, nuisance, or annoyance.
- **Rule 207 (Particulate Matter):** Limits the quantity of PM through concentration limits.
- **Rule 215 (Architectural Coatings):** Defines the quantities of reactive organic compounds permitted for use in new construction.
- **Rule 223 (Fugitive Dust):** The purpose of this rule is to reduce the amount of particulate matter entrained in the ambient air as a result of anthropogenic (man-made) fugitive dust sources by requiring actions to prevent, reduce or mitigate fugitive dust emissions.
- **Rule 223-1 (Fugitive Dust – Construction):** Requires a Fugitive Dust Control Plan be prepared and submitted to the EDCAQMD prior to ground disturbing activities. Pursuant to Rule 610, the EDCAQMD charges a fee to review the Fugitive Dust Control Plan required by Rule 223-1.
- **Rule 223-2 (Fugitive Dust – Asbestos Hazard Mitigation):** The purpose of this Rule is to reduce the amount of asbestos particulate matter entrained in the ambient air as a result of any construction or construction related activities, that disturbs or potentially disturbs naturally occurring asbestos by requiring actions to prevent, reduce or mitigate asbestos emissions.
- **Rule 224 (Cutback and Emulsified Asphalt Paving Materials):** Limits emissions of ROGs from the use of cutback and emulsified asphalt paving materials, paving, and maintenance operations.
- **Rule 233 (Stationary Internal Combustion Engines):** Limits emissions of NOx and CO from stationary internal combustion engines. (This rule applies to any stationary internal combustion engine rated at more than 50 brake horsepower, operated on any gaseous fuel or liquid fuel, including liquid petroleum gas (LPG), gasoline, or diesel fuel.)

3.3.1.2 Environmental Setting

Regional Climate and Meteorology

The project area is located in the Mountain Counties Air Basin (MCAB). The San Francisco Bay Area Air Basin and the Sacramento Valley Air Basin are located to the west, and the San Joaquin Valley Air Basin is located to the south. Climate in the MCAB relate to elevation and proximity to the Sierra Ridge. Precipitation is greater and temperatures are lower at higher elevations. Summer temperatures in the project area are in the mid- to upper nineties. Winter temperatures are in the upper thirties to lower forties. Because of its proximity to the Sacramento Valley, the MCAB and El Dorado County are prone to receiving pollutant transport from the more populated and traffic-heavy areas.

Criteria Pollutants of Concern

As discussed above, the federal and state governments have established NAAQS and CAAQS, respectively, for six criteria pollutants: ozone, CO, lead (Pb), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), and particulate matter (PM), which consists of PM 10 microns in diameter or less (PM10) and PM 2.5 microns in diameter or less (PM2.5). Ozone and NO_2 are considered regional pollutants because they (or their precursors) affect air quality on a regional scale. Pollutants such as CO, SO_2, and Pb are considered local pollutants that tend to accumulate in the air locally. PM is both a local and a regional pollutant.

The primary criteria pollutants of concern in the study area are ozone (including reactive organic gases [ROG] and NO_X), CO, and PM. Principal characteristics surrounding these pollutants are described below.

Ozone

Ozone, or smog, is a photochemical oxidant that is formed when ROG and NO_X (both by-products of the internal combustion engine) react with sunlight. Ozone poses a health threat to those who already suffer from respiratory diseases as well as to healthy people. Ozone is a respiratory irritant that can cause ear, nose, and throat irritation and increases susceptibility to respiratory infections. Additionally, ozone has been tied to crop damage, typically in the form of stunted growth and premature death. It is also an oxidant that causes extensive damage to plants through leaf discoloration and cell damage. Ozone can also act as a corrosive, resulting in property damage such as the degradation of rubber products.

Reactive Organic Gases

ROG are compounds made up primarily of hydrogen and carbon atoms. Internal combustion from motor vehicle usage is the major source of hydrocarbons. Other sources of ROG are emissions associated with the use of paints and solvents, the application of asphalt paving, and the use of household consumer products such as aerosols. Adverse effects on human health are not caused directly by ROG, but rather by reactions of ROG to form secondary pollutants such as ozone.

Nitrogen Oxides

NO_X are a family of highly reactive gases that are a primary precursor to the formation of ground-level ozone and react in the atmosphere to form acid rain. The two major forms of NO_X are nitric oxide (NO) and NO_2. NO is a colorless, odorless gas formed from atmospheric nitrogen and oxygen when combustion takes place under high temperature and/or high pressure. NO_2 is a reddish-brown irritating gas formed by the combination of NO and oxygen. NO_X acts as an acute respiratory irritant and increases susceptibility to respiratory pathogens.

Carbon Monoxide

CO is a colorless, odorless, toxic gas produced by incomplete combustion of carbon substances, such as gasoline or diesel. In the study area, high CO levels are of greatest concern during the winter, when periods of light winds combine with the formation of ground-level temperature inversions from evening through early morning. These conditions trap pollutants near the ground, reducing the

dispersion of vehicle emissions. Moreover, motor vehicles exhibit increased CO emission rates at low air temperatures. The primary adverse health effect associated with CO is interference with normal oxygen transfer to the blood, which may result in tissue oxygen deprivation.

Particulate Matter

PM consists of finely divided solids or liquids such as soot, dust, aerosols, fumes, and mists. Two forms of particulates are now generally considered: inhalable coarse particles, or PM10, and inhalable fine particles, or PM2.5. Particulate discharge into the atmosphere results primarily from industrial, agricultural, construction, and transportation activities. However, wind on arid landscapes also contributes substantially to local particulate loading. Both PM10 and PM2.5 may adversely affect the human respiratory system, especially in those people who are naturally sensitive or susceptible to breathing problems.

Existing Air Quality Conditions

The CARB collects ambient air quality data through a network of air monitoring stations throughout the state. In El Dorado County, there are three stations that record ozone levels and one station that records PM10 levels. There are no monitoring stations in El Dorado County that collect CO, PM2.5, or NO_2 data.

The closest ozone monitoring station is the Placerville-Gold Nugget Way station (station number 060170010) located approximately 8.25 miles northwest of the Project area. The PM10 monitoring station is located in the Lake Tahoe Air Basin portion of El Dorado County. Given the distinct meteorological conditions in the Lake Tahoe Air Basin that can influence pollutant concentrations, PM10 data from the Sacramento-Branch Center Road monitoring station in Sacramento County are used as representative data for the Project area. The Sacramento-Branch Center Road station is approximately 35 miles west of Project area and located in the Sacramento Valley Air Basin immediately west of the MCAB.

Table 3-4 summarizes ozone and PM10 levels for the last 3 years for which complete data are available (2015–2017). As shown in Table 3-4, the Placerville-Gold Nugget Way station has experienced frequent violations of the ozone standards. A total of 18.4 violations of the state 24-hour PM10 standard were recorded in 2017 at the Sacramento-Branch Center Road station.

Table 3-4. Ambient Criteria Air Pollutant Monitoring Data (2015–2017)

Pollutant Standards	2015	2016	2017
Ozone (O_3)			
Maximum 1-hour concentration (ppm)	0.103	0.112	0.104
Maximum 8-hour concentration (ppm)	0.090	0.094	0.084
Number of days standard exceeded			
CAAQS 1-hour (>0.09 ppm)	4	9	1
CAAQS 8-hour (>0.070 ppm)	23	45	21
2015 NAAQS 8-hour (>0.070 ppm)	19	41	18
Particulate matter (PM10)			
National maximum 24-hour concentration ($\mu g/m^3$)	44.0	45.0	79.0
National second-highest 24-hour concentration ($\mu g/m^3$)	40.0	43.0	64.0

Pollutant Standards	2015	2016	2017
State maximum 24-hour concentration (μg/m³)	45.0	44.0	81.0
State second-highest 24-hour concentration (μg/m³)	41.0	43.0	63.0
National annual average concentration (μg/m³)	19.0	18.6	20.8
State annual average concentration (μg/m³)	19.5	18.9	21.3
Number of days standard exceeded			
NAAQS 24-hour (>150 μg/m³)	0	0	0
CAAQS 24-hour (>50 μg/m³)	0	0	3

Source: California Air Resources Board 2019b.
ppm = parts per million
μg/m³ = micrograms per cubic meter

Attainment Status

Local monitoring data (Table 3-4) are used to designate areas as nonattainment, maintenance, attainment, or unclassified for the NAAQS and CAAQS. The four designations are defined as follows.

- Nonattainment—assigned to areas where monitored pollutant concentrations consistently violate the standard in question.
- Maintenance—assigned to areas where monitored pollutant concentrations exceeded the standard in question in the past but are no longer in violation of that standard.
- Attainment—assigned to areas where pollutant concentrations meet the standard in question over a designated period of time.
- Unclassified—assigned to areas were data are insufficient to determine whether a pollutant is violating the standard in question.

NAAQS and CAAQS attainment status for the El Dorado County portion of MCAB is summarized in Table 3-5.

Table 3-5. Federal and State Attainment Status for El Dorado County

Criteria Pollutant	Federal Designation	State Designation
Ozone (8-hour)	Nonattainment	Nonattainment
CO	Unclassified/ Attainment	Unclassified
PM10	Unclassified	Nonattainment
PM2.5	Nonattainment	Unclassified
NO_2	Unclassified/ Attainment	Attainment
SO_2	Unclassified/ Attainment	Attainment
Lead	Unclassified/ Attainment	Attainment
Sulfates	(No federal standard)	Attainment
Hydrogen sulfide	(No federal standard)	Unclassified
Visibility-reducing particles	(No federal standard)	Unclassified

Source: California Air Resources Board 2019b; U.S. Environmental Protection Agency 2019.

Toxic Air Contaminants

Toxic Air Contaminants (TACs) are pollutants that may result in an increase in mortality or serious illness, or that may pose a present or potential hazard to human health. Health effects of TACs can include cancer, birth defects, neurological damage, damage to the body's natural defense system, and diseases that lead to death. TACs are emitted from a variety of sources, including on-road vehicles, gas stations, and dry-cleaning facilities. The EDCAQMD is primarily concerned with TAC's due to long term operations (not necessarily construction) of land uses.

Sensitive Receptors

EDCAQMD generally defines sensitive receptors as facilities that house or attract children, the elderly, people with illnesses or others who are especially sensitive to the effects of air pollutants e.g., schools, hospitals, clinics, elderly housing, residences. The Coloma Valley caters to tourism, educational programs, camping, fishing, and whitewater rafting. Coloma is a rural area with sparse residential development. The Coloma Resort is adjacent to the Project at the northeast corner of the existing bridge. The resort includes RV and tent camping, as well as cabins. There are three group sites adjacent to the bridge and several cabins that can sleep up to 10 persons immediately adjacent to the bridge. The Coloma Resort is considered a sensitive receptor because it is the host to the Coloma Outdoor Discovery School (Coloma Resort Input to El Dorado County, November 2017).

Gold Trail Middle School occurs approximately 2 miles south of the Project area and Sutter's Mill Elementary School occurs approximately 2.8 miles southwest of the Project site. Both these schools have playground areas. No childcare/daycare facilities occur within one mile of the Project site. One rehabilitation/alcoholism treatment facility occurs approximately 2.75 miles northeast of the Project site. No hospitals occur in Coloma. Given the distance to the above listed locations the schools, playgrounds and rehabilitation/alcoholism treatment facility are not considered sensitive receptors for the Project.

Odors

Although offensive odors rarely cause physical harm, they can be unpleasant and lead to considerable distress among the public. This distress often generates citizen complaints to local governments and air districts. As stated in the EDCAQMD CEQA Guidelines land uses associated with odor complaints typically include sewage treatment plants, landfills, recycling facilities, and manufacturing.

3.3.2 Environmental Impacts

3.3.2.1 Methods of Analysis

The Project would not generate additional traffic on Mt. Murphy Road and would not increase operational emissions. The analysis below is therefore focused on construction related emissions only.

Project construction emissions were estimated using detailed equipment inventories and project construction scheduling information, combined with emissions factors from the EMFAC2014 and CalEEMod (California Air Pollution Control Officers Association [CAPCOA] 2016). The construction-related emissions associated with the Build Alternative are discussed below. The emissions presented

in Table 3-7 are based on the best information available at the time of calculations, and without including any mitigation measures.

3.3.2.2 Thresholds of Significance

In accordance with Appendix G of the State CEQA Guidelines, the proposed Project would have a significant impact related to air quality if it would meet any of the following criteria.

- Conflict with or obstruct implementation of the applicable air quality plan
- 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?
- Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

The El Dorado County Air Quality Management District's (EDCAQMD) has not adopted PM2.5 and PM10 significance thresholds for land use development projects. The adopted Sacramento Metropolitan AQMD thresholds for PM2.5 and PM10 are being used here (Sacramento County AQMD 2009). EDCAQMD CEQA thresholds are presented in Table 3-6 below.

Table 3-6. Significance Thresholds

Criteria Pollutant	Construction	Operations
Reactive Organic Gases (ROG)	82 pounds per day [a]	
Nitrogen Oxides (NO_X)	82 pounds per day	
Carbon Monoxide (CO)	CAAQS (or fuel screening [b])	
Sulfur Oxides (SO_X)	CAAQS (or fuel screening [b])	
Fine Particulates (PM2.5)	82 pounds/day and 15 tons/year [c]	82 pounds/day and 15 tons/year [c]
Particulates (PM10)	80 pounds/day and 14.6 tons/year [c]	80 pounds/day and 14.6 tons/year [c]

Source: El Dorado County Air Quality Management District 2002 and Sacramento Metro AQMD (2009).

[a] During construction, this threshold can be combined to obtain a total ozone threshold of 164 pounds per day. With the combined threshold, construction emissions of one pollutant may be in excess of 82 pounds per day; however, as long as the combined total is below 164 pounds per day, the EDAQMD considers the impact to be less than significant.

[b] If the average amount of daily diesel fuel usage is less than the fuel usage screening threshold of 402 gallons per day (for construction equipment 1996 model year or later), EDCAQMD considers emissions to be less than significant.

[c] From Sacramento Metropolitan AQMD, Guide to Air Quality Assessment in Sacramento County (2009).

3.3.2.3 Impacts and Mitigation Measures

Impact AQ-1: Conflict with or obstruct implementation of the applicable air quality plan (no impact)

The proposed Project is identified as ELD19339 in SACOG's financially constrained *2017/2020 Metropolitan Transportation Improvement Program* (MTIP) (SACOG 2019a) and *2016 Metropolitan Transportation Plan/Sustainable Communities Strategy* (MTP/SCS) (SACOG 2019b) 2016 MTP/SCS. The federally required Metropolitan Transportation Improvement Program (MTIP) is a short-term listing of surface transportation projects that receive federal funds, are subject to a federally required action, or

are regionally significant. Only projects included in the Metropolitan Transportation Plan (MTP) may be incorporated into the MTIP. The MTIP derives all its projects either directly or indirectly from the MTP. Projects included in the MTIP are required to conform to the State Implementation Plan for the region and would therefore not conflict with or obstruct SIP implementation.

Impact AQ-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? (less than significant)

The County is in nonattainment status for both federal and state ozone standards, federal PM 2.5 standard, and the state PM10 standard. Construction activities would result in short-term increases in emissions from the use of heavy equipment that generate dust, exhaust, and tire-wear emissions and from paints and coatings. Project construction would create short-term increases in ROG, NOx, and PM10 emissions from vehicle and equipment operation.

Construction-related impacts on air quality would be greatest when multiple pieces of equipment are operating simultaneously and generating exhaust emissions. Sources of fugitive dust would include disturbed soils at the construction site and trucks carrying uncovered loads of soil. These emissions would predominantly occur during grading and earthmoving activities. Emissions would vary day-to-day, depending on the nature and magnitude of construction activity and local weather conditions.

Modeled daily construction emissions and daily total fuel consumption are shown Tables 3-7 and 3-8, respectively (CH2M/Hill 2018). If emissions generated during a single phase exceed EDCAQMD's thresholds, the Project would result in a significant air quality impact.

Table 3-7. Estimated Construction Emissions

Project Phases	ROG lbs/day	NOx lbs/day	CO lbs/day	PM10 lbs/day	PM2.5 Lbs/day
Construction Year 2021	4.40	39.9	37.4	5.93	3.65
Construction Year 2022	3.21	29.8	29.8	5.18	3.10
Maximum Estimated Emissions 2021	4.40	39.9	37.7	5.93	3.65
Significance Threshold	82	82	CAAQS	80	82
Significant?	**No**	**No**	**No**	**No**	**No**

Table 3-8. Estimated Fuel Use during Construction.

Phase	Fuel Use (average gallons per day)
Build Abutments and Piers and Retaining Walls	269
Build Work Trestle Downstream	142
Construct Superstructure	150
Remove Work Trestle, Remove Falsework, Relocate Waterline	117
Pave Approaches to New Bridge	49

Phase	Fuel Use (average gallons per day)
Demo Existing Bridge	282
Build Abutments and Piers and Retaining Walls 2	270
Build Work Trestle Upstream	113
Construct Superstructure	150
Remove Work Trestle and Falsework	117
Pave Approaches to New Bridge and Restripe Road	70

The EDCAQMD has developed a screening approach based on the average daily fuel use to determine the potential for construction emissions to exceed the CAAQS (EDCAQMD 2002). If the average amount of daily diesel fuel usage is less than the fuel usage screening threshold of 402 gallons per day (for construction equipment 1996 model year or later), it can be concluded that the ROG and NOX emissions would not be significant. If ROG and NOX emissions would not be significant, then CO, SOX, and PM exhaust emissions would also not be significant. Per Table 3-8 above the Project would not exceed the daily fuel use threshold.

The PM2.5 AAQS were not in effect when the AQMD's CEQA Guide was published. Therefore, the CEQA Guide gives no guidance on analysis of PM2.5. PM2.5 is primarily generated by vehicle trips on unpaved roads. Thus, emissions of PM2.5 are likely to be associated with the construction-phase of a project. The modeled PM2.5 construction emissions are below the Sacramento APCD threshold. Emissions of PM2.5 during the operational phase will also be less than significant.

None of the estimated emissions exceed the significance thresholds. The Project would not generate additional traffic. No increased operational emissions will result from the Project. The new bridge will likely have a benefit to local air quality by because the two-lane bridge eliminates the idling/ que time that currently happens with the one lane bridge as vehicles wait to allow on-coming traffic to cross the bridge. Fugitive dust would be controlled through implementation of best management practices, including compliance with Caltrans Standard Specifications 14-9.

Cumulative net increases of criteria pollutants have been evaluated in the 2016 MTP/SCS (SACOG 2016). This Project is referenced and evaluated in the 2016 MTP/SCS. This impact is less than significant, and no mitigation is required.

Impact AQ-3: Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people? (less than significant with mitigation)

Construction activities would involve the use of construction equipment and asphalt paving, which have distinctive odors. Odors are considered less than significant because of the limited number of the public affected and the short-term nature of the emissions.

Diesel Particulate Matter: Project construction would generate DPM, resulting in the potential exposure of nearby existing sensitive receptors (e.g., residences) to increased DPM concentrations. Table 7.1 of the EDCAQMD CEQA Guide provides a list of land use types most commonly associated with long term TAC emissions. The EDCAQMD is primarily concerned with these land use types in

relation to TAC emissions. Transportation land use is not listed in Table 7.1 of the EDCAQMD CEQA Guide. The modeled Project construction related PM emissions (PM10 and PM2.5) were determined to not be significant based on project screening and modeling results. The proposed Projects construction related DPM emissions would be temporary in nature and are considered less than significant.

Regarding operational emissions, health risk assessments are typically completed for substantial long-term sources of DPM emissions (e.g., truck stops and distribution facilities). The Project would not generate additional traffic. No increased operational emissions will result from the Project. This impact would be less than significant, and no mitigation is required.

Carbon Monoxide: Heavy traffic congestion can contribute to high levels of CO. Individuals exposed to these CO "hot spots" may have a greater likelihood of developing adverse health effects. As shown in Table 3-8, daily fuel consumption would be less than the 402 gallons per day screening threshold set by EDCAQMD. Therefore, the proposed Project would not exceed the CO CAAQS in the vicinity of the Project site. This impact would be less than significant, and no mitigation is required.

Naturally Occurring Asbestos: The Project is not located within an area known to contain naturally occurring asbestos (NOA) or an area "more likely to contain naturally occurring asbestos" (California Department of Conservation 2000, El Dorado County 2005). Although it is not anticipated that construction activity would encounter NOA, the proposed Project would be required to comply with EDCAQMD Rule 223-2 requiring activities to reduce asbestos dust created from earth-moving activities. Standard dust control measures such as watering would effectively control unanticipated NOA exposure. This impact would be less than significant, and no mitigation is required.

Structural Asbestos: Based on the results of the ISA, WRECO (2019) conducted a limited Preliminary Site Investigation (PSI) in the Project area. Four Asbestos Containing Material (ACM) samples were collected to evaluate the presence, extent, and condition of any above-ground asbestos containing construction material (ACCM) and regulated asbestos containing material (RACM) that may be present. Laboratory results indicated that all the ACM samples taken from the Mt. Murphy Rd Bridge were below detection limits for asbestos content (less than 1%).

Lead-Based Paint: Six white paint samples from the bridge hand rail and silver paint samples from the metal trusses were tested for LBP (WRECO 2019). Results ranged from 0.00755% to 0.0581% for the hand-rail paint-chip samples and from 10.5% to 15.2% for the silver-paint samples. The metal truss paint samples exceed the regulatory thresholds of the USEPA and CDPH (0.5% by weight or 5,000 parts per million (ppm) by paint chip analysis). Implementation of mitigation measure HAZ-2 (LBP, ADL, Earth Material Containing Lead) will reduce potential impact to less than significant.

Aerially deposited Lead: Aerially deposited lead has been found to occur in soils adjacent to highways and high use roadways. The lead is presumably from the historical use of leaded gasoline and subsequent exhaust emissions. As part of the limited Preliminary Site Investigation (PSI) soil samples were analyzed for lead in accordance with the respective EPA methods (WRECO 2019). Each sample was compared to the San Francisco Bay Regional Water Quality Control Board Environmental Screening Levels (ESLs) and State Total Threshold Limit Concentrations (TTLCs). Lead sample results were below ESLs and TTLCs.

3.3.3 References

California Air Resources Board (CARB). Accessed April 2018 (2019a). Area designations maps / state and national. https://www.arb.ca.gov/desig/adm/adm.htm

California Air Resources Board (CARB). Accessed April 2019 (2019b). iADAM: Air Quality Data Statistics, Select 8 Summary: Choose Statistics, Years, & Areas. https://www.arb.ca.gov/adam/select8/sc8start.php

CH2M Hill. 23 July 2018. Mt. Murphy Road Bridge Replacement Analysis of Potential Air Quality and Greenhouse Gas Impacts. Prepared for: El Dorado County Department of Transportation

El Dorado County Air Quality Management District (AQMD). February 2002. Guide to air quality assessment, determining significance of air quality impacts under the California Environmental Quality Act.

El Dorado County. Adopted 19 July 2004. El Dorado County general plan, a plan for managed growth and open roads; a plan for quality neighborhoods and traffic relief. El Dorado County Planning Department, Placerville, CA.

Sacramento Area Council of Government's (SACOG). Accessed April 2019 (2019a), Adopted on 15 September 2016. Final 2017-20 Metropolitan Transportation Improvement Program (MTIP). https://www.sacog.org/current-2017-20-mtip

Sacramento Area Council of Government's (SACOG). Accessed April 2019 (2019b), Final Plan Released 18 February 2016. 2016 Metropolitan Transportation Plan/Sustainable Communities Strategy (MTP/SCS). https://www.sacog.org/2016-mtpscs

Sacramento Metropolitan Air Quality Management District. December 2009 (last revised September 2018). Guide to Air Quality Assessment in Sacramento County.

WRECO. 15 February 2019. Mt. Murphy Road Bridge Project, Hazardous Waste, Initial Site Assessment/Preliminary Site Investigation. Prepared for El Dorado County. Prepared by WRECO.

3.4 Biological Resources

This section provides information on biological resources in the Project area and analyses potential Project impacts. Specific mitigation measures to avoid, minimize, or compensate for potential significant impacts on biological resources are described for each potential impact, as necessary.

3.4.1 Existing Conditions

This section describes the regulatory setting and environmental setting for biological resources in the Project area. For the purpose of this EIR, "Project area" is defined as all proposed permanent and temporary project impact areas, including staging areas. The Project area consists of portions of the South Fork American River (SFAR) and riparian woodlands along the banks, oak woodlands and developed/landscaped park areas on the surrounding uplands, Mt. Murphy Road, and State Route (SR) 49.

3.4.1.1 Regulatory Setting

This section summarizes the federal and state regulations as well as pertinent local general plan policies and ordinances that protect special-status species, waters of the United States (and waters of the State), including wetlands; and sensitive habitats.

Federal Regulations

Clean Water Act Section 401 Water Quality Certification - Regional Water Quality Control Board (RWQCB)

Under Section 401 of the Clean Water Act (33 U.S.C. 1341), applications for a federal permit or license for any activity that may result in a discharge to a water body require a State Water Quality Certification to ensure that the proposed activity complies with state water quality standards.

Section 402 of the Clean Water Act - NPDES - Regional Water Quality Control Board (RWQCB)

Section 402(p) of Clean Water Act establishes a permit under the NPDES program for discharges of storm water resulting from ground disturbing construction activities, such as grading. For ground-disturbing activities impacting less than one acre, compliance with the County's grading ordinance satisfies the requirements of NPDES. For ground-disturbing construction activities in excess of one acre, a project may obtain NPDES coverage through the State Water Resources Control Board (SWRCB) Construction General Permit (Order 2009-009-DWQ, as amended). The preparation of a Stormwater Pollution Prevention Plan (SWPPP) is a requirement of the NPDES Phase II permit Construction General Permit.

Clean Water Act Section 404 Permit - U.S. Army Corps of Engineers (Corps)

The Corps and the U.S. Environmental Protection Agency regulate the discharge of dredge and fill material into "waters of the United States" under Section 404 of the Clean Water Act (33 U.S.C. 1344). The Corps issues permits for certain dredge and fill activities in waters of the U.S. pursuant to the regulations in 33 CFR 320-330.

Federal Endangered Species Act (FESA)

FESA defines take (Section 9) and prohibits taking of a federal-listed endangered or threatened animal without an Incidental Take Permit (16 U.S.C. 1532, 50 CFR 17.3). If a federal-listed animal could be harmed, harassed, injured, or killed by a project, a Section 7 consultation is initiated by a federal agency or a Section 10 consultation is initiated by a local agency or private applicant. Formal consultations culminate with a Biological Opinion and may result in the issuance of an Incidental Take Permit.

Federal Migratory Bird Treaty Act (MBTA)

All migratory birds are protected under the federal MBTA of 1918 (16 U.S.C. 703-711). The MBTA makes it unlawful to take, possess, buy, sell, purchase, or barter any migratory bird listed in 50 CFR Part 10 including feathers or other parts, nests, eggs, or products, except as allowed by implementing regulations (50 CFR Part 21). Any construction-related disturbance that causes direct injury, death, nest abandonment, or forced fledging of migratory birds is restricted under the MBTA. Any removal of active nests during the breeding season or any disturbance that results in the abandonment of nestlings is considered 'take' of the species under federal law.

Federal Magnuson-Stevens Fishery Conservation and Management Act

Under the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act), Essential Fish Habitat (EFH) for the Pacific coast salmon fishery includes waters and substrates necessary for salmon production to support a long-term sustainable salmon fishery and salmon contributions to a healthy ecosystem. The geographic extent of freshwater EFH is specifically defined as all currently viable waters and most of the habitat historically accessible to salmon within a USGS hydrologic unit (PFMC 1999). Consultation with NOAA Fisheries is required by federal agencies undertaking, permitting, or funding activities that may adversely affect EFH.

Executive Order 13112 - Invasive Species

Executive Order 13112, issued 3 February 1999, is a directive aimed at preventing the introduction and spread of invasive species as a result of federal agency actions. EO 13112 directs federal agencies to use relevant programs and authorities to prevent the introduction of invasive plants and animals, control existing populations of such species, monitor populations of such species, and provide for the restoration of native species. The Federal Highway Administration (FHWA) is ordered to not authorize, fund, or carry out projects that are likely to cause or promote the introduction or spread of invasive species.

The Bald and Golden Eagle Protection Act

The Bald and Golden Eagle Protection Act (16 U.S.C. 668-668c), enacted in 1940, and amended several times since then, prohibits anyone, without a permit issued by the Secretary of the Interior, from "taking" bald eagles, including their parts, nests, or eggs. The Act provides criminal penalties for persons who "take, possess, sell, purchase, barter, offer to sell, purchase or barter, transport, export or import, at any time or any manner, any bald eagle... [or any golden eagle], alive or dead, or any part, nest, or egg thereof." The Act defines "take" as "pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb." There are a number of different types of permits available for authorizing take, possession, and transport of bald and golden eagles.

State Regulations

California Endangered Species Act (CESA)

CESA prohibits take of wildlife and plants listed as threatened or endangered by the California Fish and Game Commission. "Take" is defined under California Fish and Game Code § 86 as any action or attempt to "hunt, pursue, catch, capture, or kill." CESA allows exceptions for take that occurs during otherwise lawful activities. Fish and Game Code § 2081 describes the requirements for incidental take applications under CESA. Incidental take of state-listed species may be authorized if an applicant submits a plan that minimizes and mitigates the impacts of take, and makes financial assurance for the mitigation.

Lake and Streambed Alteration Agreement (CA Fish and Game Code § 1600)

Fish and Game Code § 1600 requires any person, government agency, or public utility proposing any activity that will divert or obstruct the natural flow or change the bed, channel or bank of any river, stream, or lake, or proposing to use any material from a streambed, to first notify CDFW of such proposed activity.

Native Plant Protection Act (NPPA; CA Fish and Game Code § 1900-1913)

The NPPA prohibits the taking, possessing, or sale within the state, of any plants with a state designation of rare, threatened, or endangered. An exception to this prohibition in the Act allows landowners, under specified circumstances, to take listed plant species, provided that the owners first notify CDFW and give that state agency at least 10 days to come and retrieve the plants before they are disturbed or destroyed. Fish and Game Code § 1913 exempts from take prohibition "the removal of endangered or rare native plants from a canal, lateral ditch, building site, or road, or other right of way."

Nesting Birds and Birds-of-Prey (CA Fish and Game Code § 3503, 3503.5)

Fish and Game Code § 3503 protects all nesting native birds. Fish and Game Code § 3503.5 protects all birds in the orders Falconiformes and Strigiformes (collectively known as birds-of-prey). Birds-of-prey include raptors, falcons, and owls. It is unlawful to take, possess, or needlessly destroy the nest or eggs of any native bird or bird-of-prey, except as otherwise provided by Fish and Game Code or any regulation adopted pursuant thereto.

California Migratory Bird Protection Act (CA Fish and Game Code § 3513)

The California Migratory Bird Protection Act makes it unlawful to take or possess any migratory nongame bird as designated in the federal Migratory Bird Treaty Act (16 U.S.C. Sec. 703 et seq.) before January 1, 2017, any additional migratory nongame bird that may be designated in that federal act after that date, or any part of a migratory nongame bird described in this section, except as provided by rules and regulations adopted by the United States Secretary of the Interior under that federal Migratory Bird Treaty Act before January 1, 2017, or subsequent rules or regulations adopted pursuant to that federal act, unless those rules or regulations are inconsistent with this code.

Fully Protected Species (CA Fish and Game Code § 3511, 4700, 5050)

CDFW's classification of "fully protected" species was the State's initial effort in the 1960s to identify and protect animals that were rare or faced possible extinction. Lists of fully protected species were created for birds (§ 3511), mammals (§ 4700), reptiles and amphibians (§ 5050), and fish (§ 5515). The Fish and Game Code states that fully protected species, "… may not be taken or possessed at any time. No provision of this code or any other law shall be construed to authorize the issuance of permits or licenses to take any fully protected species."

Take Prohibition (CA Fish and Game Code § 86, 2080)

Fish and Game Code § 86 defines 'take' and § 2080 prohibits 'taking' of a species listed as threatened or endangered under CESA (CA Fish and Game Code § 2080) or otherwise fully protected, as defined in CA Fish and Game Code § 3511, 4700, and 5050.

Senate Bill 1334 (SB 1334) - The Oak Woodlands Conservation Act.

SB 1334 is an act to add § 21083.4 to the Public Resources Code (PRC), relating to oak woodlands conservation. California PRC § 21083.4 requires each county in California to implement an oak woodland protection policy to mitigate for the loss of oak woodlands resultant from approved projects within their jurisdiction. In this policy, oak trees are defined as all native species of oaks larger than five inches dbh (diameter at breast height, or 4.5 feet above grade). At least one of four mitigation alternatives for significant conversions of oak woodlands are required in this regulation: 1) conserve oak woodlands through the use of a conservation easement, 2) plant an appropriate number of trees, including maintaining plantings and replacing dead or diseased trees (planting maintenance must last for seven years, and mitigation plantings shall not fulfill more than one-half the mitigation requirement for the project; this alternative may also be used to restore former oak woodlands), 3) contribute funds to the Oak Woodlands Conservation Fund, as established under § 1363 (a) of the Fish and Game Code, and 4) other mitigation measures developed by the County.

Porter-Cologne Water Quality Control Act

California Water Code Section 13260 requires "any person discharging waste, or proposing to discharge waste, in any region that could affect the waters of the state to file a report of discharge (an application for waste discharge requirements)." Under the Porter-Cologne Act definition, waters of the state are "any surface water or groundwater, including saline waters, within the boundaries of the state." Although all waters of the United States that are within the borders of California are also waters

of the state, the reverse is not true. California retains authority to regulate discharges of waste into any waters of the state, regardless of whether USACE has concurrent jurisdiction under CWA Section 404.

Local Regulations

El Dorado County General Plan Policies Relating to Forest and Oak Woodlands

Mitigation requirements for impacts to oak resources are defined in the 2017 El Dorado County Oak Resources Management Plan (ORMP, El Dorado County 2017b). In 2017, the County adopted the ORMP to define mitigation requirements for impacts to oak resources and to outline the County's strategy for oak woodland conservation. The ORMP functions as the oak resources component of the County's biological resources mitigation program identified in General Plan Policy 7.4.2.8 (El Dorado County 2004b). Under the ORMP, certain actions are exempt from mitigation requirements, including "*County Road Projects: Road widening and alignment projects necessary to increase capacity, protect public health, and improve safe movement of people and goods in existing public rights-of-way, as well as acquired right-of-way necessary to complete the project, where the new alignment is dependent on the existing alignment are exempt from the mitigation requirements included in the ORMP.*" (El Dorado County 2017b).

Per Section 130.39.050 (Exemptions and Mitigation Reductions) of the ORMP implementing ordinance No. 5061, the various exemptions from mitigation requirements, including County Road Projects, do not apply to heritage trees, individual valley oak trees not in an oak woodland, and valley oak woodland. All impacts to Heritage Trees, individual valley oak trees, and valley oak woodlands are subject to the provisions and mitigation requirements contained in the ORMP, regardless of whether or not the action requires a development permit.

The ORMP provides three options to mitigate impacts to in individual native oak tree/ Heritage Trees:

- In-lieu fee payment for individual oak tree removal
- Replacement planting on-site within an area subject to a Deed Restriction or Conservation Easement
- Replacement planting off-site within an area subject to a Conservation Easement or acquisition in fee title

3.4.1.2 Environmental Setting

Methods

Potential impacts to biological and wetlands resources were evaluated in the Project's 2019 Natural Environment Study (NES; Sycamore Environmental). The NES was signed by Laura Loeffler, Caltrans Environmental Branch Chief, District 3, on 27 June 2019. The NES is a standard Caltrans report format for documenting and evaluating the potential Project impacts to biological resources for projects of limited scope and impact.

An evaluation of biological resources was conducted to determine whether any listed special-status plant/ wildlife species, or their habitat, or other sensitive habitats occur in the Project area. Data on special-status species and habitats known in the area were obtained from state and federal agencies.

Maps and aerial photographs of the Project area and surrounding areas were reviewed. A field survey of the 9.43-acre Project area was conducted 17 December 2017 by Nicole Ibañez, B.S., biologist. The field surveys, map review, and a review of the biology of evaluated species and habitats were used to determine the special-status species and sensitive habitats that could occur in the Project area. Wetland survey work was performed in June 2018.

Special-status species addressed in the 2019 NES include those listed (or candidate or proposed) under the federal or state endangered species acts, under the California Native Plant Protection Act, as a California species of special concern or fully protected by the California Department of Fish and Wildlife (CDFW), or that are California Rare Plant Rank 1 or 2 (CNPS 2018). Special-status natural communities in the 2019 NES are waters, wetlands, riparian communities, and any natural community ranked S1, S2, or S3 by CDFW (2018b), and oak woodlands subject to County General Plan Policies.

The following sources of information were reviewed during preparation of the 2019 NES:

- An official letter and list were obtained from the USFWS, Sacramento Field Office on 17 March 2017, and updated on 28 June 2019. The list identifies federal-listed, candidate, or proposed species that potentially occur in, or could be affected by, the Project.
- The California Natural Diversity Database (CNDDB) was queried for known occurrences of special-status species in or near the Project area (Coloma Quad and the eight surrounding quads; data dated 17 March 2017, updated on 28 June 2019).
- The California Native Plant Society (CNPS) inventory of rare and endangered plants was queried on 17 March 2017, and updated on 28 June 2019 for known occurrences of special-status plant species in or near the Project area (Coloma Quad and the eight surrounding quads).

Physical Conditions

The Project occurs in the Sierra Nevada foothills, at an elevation ranging from approximately 740 ft to 770 ft above sea level. The Project area is within the South Fork American Watershed hydrologic unit (hydrologic unit code 18020129). The SFAR flows through the Project site. The Project is located in a rural setting in unincorporated El Dorado County. The Project area includes unpaved developed and landscaped areas, nonnative grassland, paved portions of SR 49, Bridge Street, and Mt. Murphy Road, a segment of the SFAR, and riparian and upland forest habitat.

Placer Diggings is the only mapped soil unit in the Project area (NRCS 1974; NRCS 2017a & b). The Placer Diggings soil consists of areas of stony, cobbly and gravelly material. It is commonly found in beds of creeks and other streams on 2 to 15 percent slopes, or of areas that have been placer mined and contain enough fine sand or silt to support some grass for grazing. This material is derived from a mixture of rocks and commonly is stratified or poorly sorted. The depth of the soil is variable, from 6 inches to more than 5 feet deep. Areas in streambeds occasionally are flooded during the rainy season. Surface runoff is low and available water storage is very low (NRCS 1974; NRCS 2017a & b).

Land Cover Types

The term land cover type is used here to refer to vegetation communities, water features, and ruderal or disturbed areas. Land cover types present in the Project area are listed in Table 3-9, shown on Figure 3-14 and described below. Impacts to non-special-status land cover types are not discussed.

Table 3-9. Land Cover Types in the Project Area

Natural Community	Vegetation Alliance [1] and CDFW Alliance Code [2]	Rarity Rank [3]	Acres[4]
Fremont Cottonwood Riparian	*Populus fremontii* Forest Alliance (61.130.22)	G4 S3	0.75
Oak Woodland	*Quercus kelloggii* Woodland Alliance (71.010.22)	G4 S4	0.11
Yellow Star-thistle Stand	*Centaurea solstitialis* Semi-natural Herbaceous Stand (42.042.02)	--	1.83
Nonnative Grassland	*Bromus (diandrus, hordeaceus)* Semi-natural Herbaceous Stand (42.026.00)	--	0.87
South Fork American River	--	--	1.14
Disturbed	--	--	0.33
Developed/ Landscaped	--	--	2.87
Paved and Gravel Roads	--	--	1.53
Total:			**9.43**

[1] Vegetation alliances based on descriptions and classification methods in Sawyer et al. (2009).

[2] Alliance codes from CDFW (2010b).

[3] Rarity ranking follows NatureServe's Heritage Methodology and is based on degree of imperilment as measured by rarity, trends, and threats. State (S) ranks of 1-3 are considered sensitive communities (CDFW 2010b).

[4] Acreages per approved Project NES (Sycamore Environmental 2019)

Fremont Cottonwood Riparian

The Fremont cottonwood riparian community occurs along both sides of the SFAR. The overstory is dominated by Fremont cottonwood (*Populus fremontii*) and willows (*Salix* spp.). The understory is dominated by Himalayan blackberry (*Rubus armeniacus*), sedges (*Carex* sp.), and grasses and herbs growing along the rocky banks and shore of the SFAR. There are a total 35 native trees with a dbh of at least 4 inches in the Fremont cottonwood riparian community.

The Fremont cottonwood riparian community has a rarity rank of G4-S3 and is considered vulnerable to extirpation by CDFW (2018b). CDFW provides guidance on addressing high priority vegetation types. The judgment of whether a stand is high quality or not involves a flexible set of criteria that evaluates the range of existing sustainable occurrences of the community based on the site quality, defensibility, size, and surrounding landscapes. These criteria vary based on the type of vegetation or natural community and the range of existing occurrences known. For example, there may be many stands of a particular natural community, but only a few that reflect the most exemplary qualities of natural vegetation. Characteristics of exemplary qualities of a natural community include:

- Lack of invasive exotic species
- No evidence of human-caused disturbance such as roads or excessive livestock grazing, or high-grade logging
- Evidence of reproduction present (sprouts, seedlings, adult individuals of reproductive age)

- No significant insect or disease damage, etc.

Oak Woodland

Black oak (*Quercus kelloggii*) is the dominant tree in this community in the southeast portion of the Project area. Several valley oaks (*Quercus lobata*) are scattered throughout this community. The understory is sparse and primarily consists of leaf litter. Scattered herbaceous species occurring in the understory consists of ripgut grass (*Bromus diandrus*), tall sock-destroyer (*Torilis arvensis*), Italian rye-grass (*Festuca perennis*), and other grasses and herbaceous weeds. Per the Project NES there are 34 native oak trees with a dbh of at least 4 inches in the Project area (Sycamore Environmental 2019). Oak woodland and oak trees are protected under the El Dorado County General Plan Policy 7.4.4.4 (2004.).

Yellow Star-thistle Stand

This land cover includes a dense stand of yellow star thistle (*Centaurea solstitialis*) that occurs north of Mt. Murphy Road, north of the SFAR. The field is nearly a monoculture of yellow star-thistle, with nonnative grass associates. One nonnative magnolia tree (*Magnolia grandiflora*), a valley oak, a couple of Ponderosa pines, and a few native incense cedars (*Calocedrus decurrens)* occur in this community. Yellow star-thistle stand is not a natural community of special concern.

Nonnative Grassland

The nonnative grassland occurs in the northern portion of the Project area adjacent to the MGDSHP ADA compliant parking lot associated with the trail head for the Levee Trail. This community occurs in an area is also known as 'Gallagher's Field'. The nonnative grassland is dominated by grasses such as ripgut grass (*Bromus diandrus*), soft chess (*B. hordeaceus*), red brome (*B. madritensis ssp. rubens*), and wild oat (*Avena* sp.), and associate herbs such as turkey-mullein (*Croton setigerus*). There is a stand of Ponderosa pine (*Pinus ponderosa*) near the MGDSHP ADA parking lot. Nonnative trees such as black locust and tree of heaven are scattered throughout this community. Nonnative grassland is not a natural community of special concern.

South Fork American River (SFAR):

The SFAR flows northwest through the Project area. The SFAR is mapped as a perennial river on the USGS Coloma quad map and is identified as Riverine, Upper Perennial, Unconsolidated Bottom (R3UBH) on the National Wetlands Inventory (NWI) map (USFWS 2017). The SFAR watershed begins in the Sierra Nevada Mountains east and outside the Project area and flows into Folsom Lake. The riverbed consists of sand, gravel, medium rocks and large rocks. The SFAR in the Project area is inaccessible to anadromous fish because it is upstream of the Nimbus Dam, a fish passage barrier. The banks of SFAR mostly consist of sand and rock. Fremont cottonwood community occurs as a narrow upland strip along either side of the SFAR in the Project area. Emergent and overhanging vegetation in the riverbed and on the banks is dominated by Himalayan blackberry, nutsedge (*Cyperus eragrostis*), willows, Fremont cottonwood and various grasses.

Natural Community	Acreage
Fremont cottonwood riparian	0.75
Oak woodland	0.11
Yellow star-thistle (YST) stand	1.83
Nonnative grassland	0.87
South Fork American River	1.14
Disturbed	0.33
Developed/ Landscaped	2.87
Paved/gravel roads	1.53
Total	**9.43**

Mt. Murphy Road Bridge Replacement
Project
El Dorado County, CA
22 September 2020

Biological Study Area (BSA)
South Fork American River
PavedRoad
Developed/ Landscaped
Disturbed
Nonnative grassland
Oak Woodland
Fremont Cottonwood Riparian
YST stand

100 50 0 100 Feet

Scale: 1 inch = 100 feet

Aerial Photograph:
11 July 2016
NAIP 2016, USDA FSA Imagery
ESRI Arcmap Basemap layer

Figure 3-14. Biological Resource Map

15005MtMurphy_Fig4BioResourceMap.mxd

Disturbed

Two disturbed areas were mapped in the Project area. On the north side of the SFAR, a levee and a levee trail have been constructed between the riparian community and the nonnative grassland. This 'Levee Trail' allows access from the MGDSHP ADA compliant parking lot, down to the SFAR for recreational use (including gold panning). Vegetation consists of nonnative trees such as black locust (*Robinia pseudoacacia*) and tree of heaven (*Ailanthus altissima*), and nonnative grasses.

On the south side of the river, just north of the Grange parking lot, there is an area of disturbed ground. The source of disturbance is not known but may be associated with MGDSHP activities.

Developed/ Landscaped

A large portion of the Project area occurs within the MGDSHP. On the south side of the SFAR, there are buildings and landscaping associated with the MGDSHP, including the Bekeart's gun shop outbuildings. A stand of fig trees (*Ficus carica*) occurs behind the Bekeart's gun shop. The Grange, which is privately owned and not a part of the MGDSHP, occurs to the west of Mt. Murphy Road. Scattered, nonnative trees dominate the area north of the Grange building. Black locust (*Robinia pseudoacacia*) is the dominant tree, and tree of heaven (*Ailanthus altissima*) is an associate. The understory consists of irrigated, mowed grass understory.

The developed/landscaped areas north of the SFAR and east of Mt. Murphy Road consists of the Coloma Resort property. Log cabins, office and maintenance buildings, RV camping hook-ups, picnic areas and landscaped area characterize this area. Large trees occur as various locations within the Coloma Resort. Developed and landscaped areas are not communities of special concern.

Paved and Gravel Roads

In the Project area Mt. Murphy Road is single lane paved road that travels roughly northeast-southwest through the Project area. Paved roads that intersect Mt. Murphy Road in the Project area include SR 49, and Bridge Street. There is a paved ADA parking lot north of the SFAR and west of Mt. Murphy Road and is part of the MGDSHP. The Coloma Resort, located north of the SFAR and east of Mt. Murphy Road, includes a paved driveway and gravel roads throughout. Other gravel surfaces in the Project area include some road shoulders and sidewalks.

Special-Status Species

Special-status species addressed here are those listed (or candidate or proposed) under the federal or state endangered species acts, under the California Native Plant Protection Act, as a California species of special concern or fully protected by the California Department of Fish and Wildlife (CDFW 2018a), or that are California Rare Plant Rank 1 or 2 (CNPS 2018). Special-status natural communities in this document are waters, wetlands, riparian communities, and any natural community ranked S1, S2, or S3 by CDFW (2018b), and oak woodlands subject to County General Plan Policies.

Data received from USFWS, CNDDB and CNPS records were used to compile a table of regional species and habitats of concern (Table 3-10). Table 3-10 provides a general habitat description for each species and a rationale as to why habitat is either present or absent from the Project area. The CNDDB tracks other species that have not been designated by CDFW as a California species of

special concern; these species were not evaluated as special-status species in the Project NES. California Rare Plant Rank 3 or 4 plant species are either more common or more information is needed; these species were not evaluated as special-status species in the Project NES.

Special-Status Plant Species

The 2019 NES evaluated the following three special status plant species: big-scale balsamroot (*Balsamorhiza macrolepis*), Sierra arching sedge (*Carex cyrtostachya*), and oval-leaved viburnum (*Viburnum ellipticum*). None of these plant species were encountered during the 21 December 2017 botanical survey or June 2018 wetland survey. Oval-leaved viburnum is a perennial species and would have been evident and identifiable at the time of the December 2017 survey if it were present. Oval-leaved viburnum was not observed in the Project area.

Special-Status Wildlife Species

The 2019 NES evaluated habitat for foothill yellow-legged frog (FYLF), western pond turtle (WPT), American peregrine falcon, bald eagle, pallid bat, and Townsend's big-eared bat. Based on the December 2017 biological survey and June 2018 wetland survey, the Project area provides marginal habitat for FYLF, American peregrine falcon, WPT, bald eagle, pallid bat and Townsend's big-eared bat.

Table 3-10. Special Status Species and Critical Habitat Potentially Occurring or Known to Occur in the Mt. Murphy Road Bridge (25C0004) over South Fork American River Replacement Project Area

Scientific Name	Common Name	Federal Status	State Status [a]	General Habitat Description	Habitat Present/ Absent [c]	Rationale
Invertebrates						
Branchinecta lynchi	Vernal pool fairy shrimp	T	--	Exist only in vernal pools or vernal pool-like habitats. Individuals have never been found in riverine, marine, or other permanent bodies of water. Water movement within complexes allows movement between individual pools. Currently found in 28 counties across the Central Valley and coast ranges of CA. Inhabits a wide variety of vernal pool habitats. Most commonly found in small (<0.05 ac), clear to tea-colored vernal pools with mud, grass, or basalt bottoms in unplowed grasslands (USFWS 2005).	Absent	No vernal pools occur in the Project area.
Desmocerus californicus dimorphus	Valley elderberry longhorn beetle	T, CH	--	Requires an elderberry shrub (*Sambucus* spp.) as a host plant (USFWS 1999). The beetle's range extends throughout CA's Central Valley and associated foothills from about the 3,000 ft levels on the east and the watershed of the Central Valley on the west (USFWS 1991; 1999).	Absent	No suitable elderberry shrubs present in or adjacent to the Project area. Critical habitat does not occur in the BSA (USFWS 1980).
Fish						
Hypomesus transpacificus	Delta smelt	T, CH	E	Euryhaline (tolerant of a wide salinity range) species that spawns in freshwater dead-end sloughs and shallow edge-waters of channels of the Delta (USFWS 1994). Confined to the San Francisco Estuary, principally in the Delta and Suisun Bay. Currently found only from the San Pablo Bay upstream through the Delta in Contra Costa, Sacramento, San Joaquin, Solano, and Yolo cos. Can be washed into San Pablo Bay during high-outflow periods, but do not establish permanent populations there (Moyle 2002).	Absent	The Project area is inaccessible to anadromous fish because it is upstream of Nimbus Dam, a fish passage barrier. Critical habitat does not occur in the Project area (NMFS 2005).

Scientific Name	Common Name	Federal Status	State Status [a]	General Habitat Description	Habitat Present/ Absent [c]	Rationale
Oncorhynchus mykiss irideus	Central Valley steelhead DPS	T, CH	--	Anadromous salmonid historically distributed throughout the Sacramento and San Joaquin river drainages. While steelhead are found elsewhere in the Sacramento River system, the principal remaining wild populations are a few hundred fish that spawn annually in Deer and Mill Creeks in Tehama County and a population of unknown size in the lower Yuba River. With the possible exception of a small population in the lower Stanislaus River, steelhead appear to have been extirpated from the San Joaquin basin (Moyle 2002). Spawning occurs in small tributaries on coarse gravel beds in riffle areas (Busby et al. 1996). The federal listing includes all runs in the Sacramento and San Joaquin Rivers and their tributaries (CDFW 2018a).	Absent	The Project area is inaccessible to anadromous fish because it is upstream of Nimbus Dam, a fish passage barrier. Critical habitat does not occur in the Project area (NMFS 2005).
Amphibians						
Rana boylii	Foothill yellow-legged frog	--	T	Found in or near rocky streams in a variety of habitats, including valley-foothill hardwood, valley-foothill hardwood-conifer, valley-foothill riparian, ponderosa pine, mixed conifer, coastal scrub, mixed chaparral, and wet meadows. Egg clusters are attached to gravel or rocks in moving water near stream margins. This species is rarely encountered (even on rainy nights) far from permanent water. Its elevation range extends from near sea level to 6,370 ft in the Sierra (CWHR 2017).	Habitat Present	See text.
Rana draytonii	California red-legged frog	T, CH	SSC	Inhabits quiet pools of streams, marshes, and occasionally ponds with dense, shrubby, or emergent vegetation. Requires permanent or nearly permanent pools for larval development (CWHR 2017; USFWS 2010). The range of CA red-legged frog extends from near sea level to approximately 5,200 ft, though nearly all sightings have occurred below 3,500 ft. CA red-legged frog was probably extirpated from the floor of the Central Valley before 1960 (USFWS 2002).	Absent	There are no quiet pools or ponds in the Project area. The Project area is not located within critical habitat for this species (USFWS 2017).
Reptiles						
Emys marmorata	Western pond turtle	--	SSC	Prefers aquatic habitats with abundant vegetative cover and exposed basking sites such as logs, rocks, mats of floating vegetation, or open mud banks. Associated with permanent or nearly permanent water in a wide variety of habitat types, normally in ponds, lakes, streams, irrigation ditches, or permanent pools along intermittent streams (CWHR 2017).	Habitat Present	See text.

Scientific Name	Common Name	Federal Status	State Status [a]	General Habitat Description	Habitat Present/ Absent [c]	Rationale
Phrynosoma blainvillii	Coast horned lizard	--	SSC	Occurs in valley-foothill hardwood, conifer and riparian habitats, as well as in pine-cypress, juniper and annual grassland habitats, especially sandy areas, washes, flood plains and wind-blown deposits. Needs loose soil for burrowing and reproduction. Needs open areas for thermoregulation and shrub cover or kangaroo rat burrows for refugia. Negatively associated with non-native Argentine ant (*Linepithema humile*) presence; positively associated with presence of native ants, and chaparral vegetation (Thomson et al. 2016). Occurs in the Sierra Nevada foothills from Butte to Kern cos. and in the central and southern California coast. Found up to 4,000 ft in the northern end of its range and 6,000 ft in the southern end (CWHR 2017).	Absent	There is no suitable habitat in the Project area for this species. The Project area does not contain chaparral.
Birds						
Accipiter gentilis	Northern goshawk	--	SSC	Breeds in the North Coast Ranges, Sierra Nevada, Klamath, Cascade, and Warner Piños, San Jacinto, San Bernardino, and White Mtns. Remains in breeding areas year-round. Prefers middle and higher elevations in dense, mature conifer and deciduous forest. Habitat requirements include meadows and riparian habitat. Casual in winter along north coast, throughout foothills, and in northern deserts. Usually nests near water on north-facing slopes in dense vegetation near openings (CWHR 2017). In the westside Ponderosa pine zone, northern goshawks nest as low as 2,500 ft. Stands with nests consistently have larger trees, greater canopy cover, and more open understories than stands lacking nests (Shuford and Gardali 2008). Goshawks generally do not nest near areas of human habitation or paved roads (Bosakowski and Smith 1997). Nesting sites are of concern to CDFW (2018a).	Absent	There is no habitat for this species in the Project area. The Project area is below the breeding elevation range of this species.
Agelaius tricolor	Tricolored blackbird	--	T	Mostly a resident in California. Common locally throughout the Central Valley and in coastal districts from Sonoma Co. south. Forages on ground in cropland, grassland, and on pond edges. Nests near freshwater, preferably in emergent marsh densely vegetated with cattails or tules, but also in thickets of willow, blackberry, and wild rose. Highly colonial; nesting area must be large enough to support a minimum colony of about 50 pairs (CWHR 2017). Range of this species includes the Sacramento and San Joaquin valleys, the foothills of the Sierra Nevada south to Kern County, the coastal slope from Sonoma County south to the Mexican border (Shuford and Gardali 2008). Nesting colonies are of concern to CDFW (2018a).	Absent	There is no habitat for this species in the Project area. There are no suitable emergent wetlands in the Project area.

Scientific Name	Common Name	Federal Status	State Status [a]	General Habitat Description	Habitat Present/ Absent [c]	Rationale
Aquila chrysaetos	Golden eagle	--	FP	Uncommon permanent resident and migrant throughout California, except in the central portion of the Central Valley. Perhaps more common in southern California than in northern California. Ranges from sea level up to 11,500 ft (Grinnell and Miller 1944). Typically inhabits rolling foothills, mountain areas, sage-juniper flats, and deserts. Uses secluded cliffs with overhanging ledges and large trees for cover. Nest on cliffs of all heights and in large trees in open areas. Rugged, open habitats with canyons and escarpments are used most often for nesting. Needs open terrain for hunting (CWHR 2017). Nesting and wintering sites are of concern to CDFW (2018a).	Absent	The Project area does not contain cliffs or large trees suitable for nesting. The Project area does not contain open areas suitable for foraging habitat.
Athene cunicularia	Burrowing owl	--	SSC	Yearlong resident of open, dry grassland and desert habitat, and in grass, forb, and open shrub stages of pinyon-juniper and ponderosa pine habitats. Uses small mammal burrows, often ground squirrel, for roosting and nesting cover (CWHR 2017). Occurs throughout much of California except the coastal counties north of Marin and mountainous areas (Shuford and Gardali 2008). Burrowing sites and some wintering sites are of concern to CDFW (2018a).	Absent	The Project area is outside of the breeding range of this species. There are no records of this species in El Dorado County.
Elanus leucurus	White-tailed kite	--	FP	Yearlong resident in coastal and valley lowlands; rarely found away from agricultural areas. Inhabits herbaceous and open stages of most habitats mostly in cismontane CA. Substantial groves of dense, broad-leafed deciduous trees are used for nesting and roosting. Nest placed near top of dense oak, willow, or other tree stand located near open foraging area. Forages in undisturbed, open grasslands, meadows, farmlands, and emergent wetlands (CWHR 2017). Nesting sites are of concern to CDFW (2018a).	Absent	No agricultural areas present near the Project area.
Falco peregrinus anatum	American peregrine falcon	D	D, FP	Very uncommon breeding resident, and uncommon as a migrant. Active nesting sites are known along the coast north of Santa Barbara, in the Sierra Nevada, and in other mountains of northern CA. In winter, found inland throughout the Central Valley, and occasionally on the Channel Islands. Breeds mostly in woodland, forest, and coastal habitats near wetlands, lakes, rivers, or other water on high cliffs, banks, dunes, or mounds. Usually nests in a scrape on a depression or ledge in an open site. Will also nest on human-made structures, and occasionally uses tree or snag cavities or old nests of other raptors. Frequents bodies of water in open areas with cliffs and canyons nearby for cover and nesting. Usually feeds near water on birds up to duck-size; occasionally takes mammals, insects, and fish (CWHR 2017). Nesting sites are of concern to CDFW (2018a).	Habitat Present	See text.

Scientific Name	Common Name	Federal Status	State Status [a]	General Habitat Description	Habitat Present/ Absent [c]	Rationale
Haliaeetus leucocephalus	Bald eagle	D	E, FP	Occurs along coasts, rivers, and large, deep lakes and reservoirs in CA. Nests mostly in Butte, Lake, Lassen, Modoc, Plumas, Shasta, Siskiyou, and Trinity cos. Requires large bodies of water, or free flowing rivers with abundant fish, and adjacent snags or other perches. Nests in large, old-growth, or dominant live tree with open branchwork, especially ponderosa pine (CWHR 2017). Nesting and wintering sites are of concern to CDFW (2018a).	Habitat Present	See text.
Laterallus jamaicensis coturniculus	California black rail	--	T, FP	Year-long resident of saline, brackish, and fresh emergent wetlands in the San Francisco Bay area, Sacramento-San Joaquin Delta, coastal southern CA at Morro Bay and a few other locations, the Salton Sea, and the lower Colorado River area. Occurs most commonly in tidal emergent wetlands dominated by pickleweed, or in brackish marshes supporting bulrushes and pickleweed. Found in immediate vicinity of tidal sloughs. In freshwater habitat, usually found in bulrushes, cattails, and saltgrass. Nests are concealed in dense vegetation near upper limits of tidal flooding. Occasionally found away from wetlands in late summer and autumn. May overwinter in locations where it does not breed (CWHR 2017).	Absent	There are no tidal emergent wetlands in the Project area.
Riparia riparia	Bank swallow	--	T	Found primarily in riparian and other lowland habitats in CA west of the deserts during the spring-fall period. In summer, restricted to riparian, lacustrine, and coastal areas with vertical banks, bluffs, and cliffs with fine textured sandy soils, into which it digs nesting holes. Approximately 75% of breeding population in CA occurs along banks of the Sacramento and Feather rivers in the northern Central Valley. Other colonies are known from the central coast from Monterey to San Mateo cos. and northeastern CA in Shasta, Siskiyou, Lassen, Plumas, and Modoc cos. Colonial breeder, with 10 to 1,500, typically 100-200, nesting pairs (CWHR 2017). Nesting sites are of concern to CDFW (2018a).	Absent	There are no cliffs or bluffs of sandy soils to provide nesting habitat in the Project area. The Project area is outside the range of this species.
Mammals						
Antrozous pallidus	Pallid bat	--	SSC	Locally common at low elevations in a wide variety of habitats, including: grasslands, shrub lands, woodlands, and forests – from sea level up through mixed conifer forests. Most common in open, dry habitats with rocky areas for roosting. A yearlong resident in most of CA, feeding on a wide variety of insects and arachnids and foraging over open ground. Many prey items are taken on the ground. Roosts in crevices in rock outcrops, mines, caves, tree hollows, buildings, and bridges. Maternity colonies are formed around April and usually consist of 20 to 100 individuals (CWHR 2017).	Habitat Present	See text.

Scientific Name	Common Name	Federal Status	State Status [a]	General Habitat Description	Habitat Present/ Absent [c]	Rationale
Corynorhinus townsendii	Townsend's big-eared bat	--	SSC	Found throughout CA in all but subalpine and alpine habitats, and may be found at any season throughout its range. Most abundant in mesic habitats. Requires caves, mines, tunnels, buildings, or other human-made structures for roosting. May use separate sites for night, day, hibernation, and maternity roosts. Hibernation sites are located in cold, but not freezing, environments. Maternity roosts are located in warm environments. Gleans from brush and trees, or feeds along habitat edges. Extremely sensitive to disturbance of roosting sites. Shows high site fidelity if undisturbed (CWHR 2017).	Habitat Present	See text.
Pekania (=Martes) pennanti	Fisher, West Coast DPS/ Northern California ESU	--	SSC	Uncommon permanent resident of the Sierra Nevada, Cascades, Klamath Mountains, and the North Coast Ranges (CWHR 2017). Occurs above 3,200 ft in the Sierra Nevada and Cascades (Jameson and Peeters 2004). Today, fisher distribution in CA is represented by two populations: northwestern CA and the southern Sierra Nevada. Fisher apparently no longer inhabit the area between the Pit River in the northern Sierra Nevada/ Cascades to the Merced River in the southern Sierra Nevada, a separation of approximately 270 miles. There is little empirical evidence that fisher previously inhabited the gap in the Sierra Nevada (CDFW 2010). Occurs in intermediate to large-stages of coniferous forests and deciduous-riparian habitats with high percent canopy closure. Canopy closure must be greater than 50% to be suitable habitat. Dens in a variety of protected cavities, brush piles, logs, or under an upturned tree. Hollow logs, trees, and snags are especially important. Mostly nocturnal and crepuscular, some diurnal activity (CWHR 2017).	Absent	There is no habitat for this species in the project area. The project area occurs outside the current known range of this species.
Plants			**CNPS [b]**			
Allium jepsonii	Jepson's onion	--	--/1B.2	Bulbiferous herb found in serpentine or volcanic soils in chaparral, cismontane woodland, and lower montane coniferous forest from 985 to 4,330 ft. Known from Butte, El Dorado, Placer, and Tuolumne cos. Blooms April through August (Baldwin et al. 2012; CNPS 2018).	Absent	There are no serpentine or volcanic soils in the Project area.
Arctostaphylos nissenana	Nissenan manzanita	--	--/1B.2	Perennial evergreen shrub found on highly acidic rocky (slate and shale) soils and is often associated with closed-cone conifer forest and chaparral from about 1,476 to 3,608 ft (USFS 2009; CNPS 2018). Known from approximately 13 occurrences in El Dorado and Tuolumne cos. Blooms February through March (CNPS 2018).	Absent	There are no closed-cone conifer forests or chaparral in the Project area. The Project area is outside the elevation range of this species.

Scientific Name	Common Name	Federal Status	State Status [a]	General Habitat Description	Habitat Present/ Absent [c]	Rationale
Balsamorhiza macrolepis	Big-scale balsamroot	--	--/1B.2	Perennial herb found in chaparral, cismontane woodland, and valley and foothill grassland, sometimes serpentinite soils, from 300 to 5,100 ft. Known from Alameda, Butte, Colusa, El Dorado, Lake, Mariposa, Napa, Placer, Santa Clara, Solano, Sonoma, Tehama, and Tuolumne cos. Blooms March through July (CNPS 2018; Baldwin et al. 2012).	Habitat Present	See text.
Calystegia stebbinsii	Stebbins' morning-glory	E	E/1B.1	Perennial rhizomatous herb found in serpentine or gabbroic soils in chaparral openings and cismontane woodland from 607 to 3,576 ft. Known from fewer than 20 occurrences in El Dorado and Nevada cos. (CNPS 2018). Blooms April to July (CNPS 2018, Baldwin et al. 2012).	Absent	There are no serpentine or gabbroic soils in the Project area.
Calystegia vanzuukiae	Van Zuuk's morning-glory	--	--/1B.3	A perennial rhizomatous herb found in gabbro or serpentine soils in chaparral or cismontane woodland from 1,640 ft. to 3,870 ft. Known from El Dorado and Placer cos. Blooms from May through August (CNPS 2018).	Absent	There are no gabbroic or serpentine soils in the project area. The Project area is outside the elevation range of this species.
Carex cyrtostachya	Sierra arching sedge	--	--/1B.2	Perennial herb found in mesic lower montane coniferous forest, meadows and seeps, marshes and swamps, and riparian forest margins from 2,000 to 4,460 ft. Known from Butte, El Dorado, and Yuba cos. Blooms May through August (CNPS 2018).	Habitat Present	See text.
Carex xerophila	Chaparral sedge	--	/1B.2	Perennial herb found in serpentinite or gabbroic soil in chaparral, cismontane woodland, and lower montane coniferous forest from 1,445 to 2,530 ft. Known from Butte, El Dorado, Nevada and Yuba cos. Blooms March through June (CNPS 2018).	Absent	There are no serpentine or gabbroic soils in the Project area.
Ceanothus roderickii	Pine Hill ceanothus	E	R/1B.2	Perennial evergreen shrub found in nutrient deficient serpentine or gabbroic soils in chaparral and cismontane woodland from 804 to 3,576 ft. Known from El Dorado Co. (CNPS 2018). Blooms April through June (CNPS 2018, Baldwin et al. 2012).	Absent	There are no serpentine or gabbroic soils in the Project area.
Chlorogalum grandiflorum	Red Hills soaproot	--	--/1B.2	Perennial bulbiferous herb found on serpentine, gabbroic, or other soils in chaparral, cismontane woodland, and lower montane coniferous forest from 803 to 5,543 ft (CNPS 2018). Known from Amador, Butte, Calaveras, El Dorado, Placer, and Tuolumne cos. Blooms May through June (CNPS 2018).	Absent	There are no serpentine or gabbroic soils in the Project area.
Crocanthemum (=Helianthe-mum) suffrutescens	Bisbee Peak rush-rose	--	--/3.2	Perennial evergreen shrub often found in gabbroic or Ione soils in chaparral from 245 to 2,198 ft. Often found in burned or disturbed areas. Known from Amador, Calaveras and El Dorado cos. Blooms April through August (CNPS 2018).	Absent	There is no suitable habitat in the Project area.

Scientific Name	Common Name	Federal Status	State Status [a]	General Habitat Description	Habitat Present/ Absent [c]	Rationale
Fremontodendron decumbens (=californicum ssp. *decumbens)*	Pine Hill Flannelbush	E	R/1B.2	Perennial evergreen shrub found on rocky, gabbroic, and serpentine soil in chaparral and cismontane woodland from 1,394 to 2,494 ft. Known from 10 occurrences in El Dorado, Nevada, and Yuba cos. Uncertain about distribution or identity in Nevada and Yuba cos. Blooms April through July (Baldwin et al. 2012, CNPS 2018).	Absent	There are no serpentine or gabbroic soils in the Project area.
Galium californicum ssp. *sierrae*	El Dorado bedstraw	E	R/1B.2	Perennial herb found on gabbroic soils in chaparral, cismontane woodland, and lower montane coniferous forest from 328 to 1,920 ft. Known from fewer than 20 occurrences in El Dorado Co. (CNPS 2018). Blooms March through July (Baldwin et al. 2012).	Absent	There are no serpentine or gabbroic soils in the Project area.
Horkelia parryi	Parry's horkelia	--	--/1B.2	Perennial herb found on stony, disturbed, slightly acidic soils in open chaparral and cismontane woodland from 262 to 3,509 ft (USFS 2009 and CNPS 2018). Known from Amador, Calaveras, El Dorado, Mariposa, and Tuolumne cos. Blooms April to September (CNPS 2018).	Absent	There are no lone formations or chaparral present in the Project area.
Packera (=Senecio) layneae	Layne's butterweed (ragwort)	T	R/1B.2	Perennial herb found in rocky areas with serpentine or gabbroic soils in chaparral and cismontane woodland from 650 to 3,300 ft. Known from Butte, El Dorado, Placer, Tuolumne, and Yuba cos. Blooms April through August (CNPS 2018).	Absent	There are no serpentine or gabbroic soils in the Project area
Sagittaria sanfordii	Sanford's arrowhead	--	--/1B.2	A perennial emergent rhizomatous herb found in assorted shallow freshwater marshes and swamps from 0 to 984 ft. Known from northwestern CA, Cascade foothills, Central Valley, and south coast. Blooms May through November (Baldwin et al. 2012, CNPS 2018).	Absent	There are no shallow freshwater marshes or swamps in the Project area.
Viburnum ellipticum	Oval-leaved viburnum	--	--/2B.3	Perennial deciduous shrub found in chaparral, cismontane woodland, and lower montane coniferous forest from 705 to 4,592 ft. Known from Alameda, Contra Costa, El Dorado, Fresno, Glenn, Humboldt, Lake, Mendocino, Napa, Placer, Shasta, Solano, Sonoma, and Tehama cos. Blooms May through June (CNPS 2018).	Habitat Present	See text.
Wyethia reticulata	El Dorado County mule ears	--	--/1B.2	Perennial herb found in clay or gabbroic soils in chaparral, cismontane woodland, and lower montane coniferous forest from 600 to 2,070 ft. Known from El Dorado and Yuba cos. Blooms April through August (Ayres and Ryan 1999, CNPS 2018).	Absent	There are no clay or gabbroic soils in the Project area.

Scientific Name	Common Name	Federal Status	State Status [a]	General Habitat Description	Habitat Present/ Absent [c]	Rationale
Natural Communities						
Central Valley drainage hardhead/ squawfish stream		--/ --	--	Hardhead occur in low- to mid-elevation streams in the main Sacramento-San Joaquin drainage and Russian River from the Kern River in Kern Co. to the Pit River in Modoc Co. Hardhead are typically found in undisturbed stream areas, but are present in low elevations of the Sacramento River and its tributaries to 4,920 ft. They prefer clear, deep (>32 inches) pools and runs with sand-gravel-boulder substrates and slow velocity. Hardhead tend to be absent from streams dominated by introduced species, especially centrarchids (sunfish) and streams severely altered by human activity. .	Absent	There is no suitable habitat in the Project area. The South Fork American River in the Project area is regularly disturbed by human recreational activity.

[a] **Status**: Endangered (E); Threatened (T); Proposed (P); Candidate (C), Delisted (D), Fully Protected (FP); Rare (R); State Species of Special Concern (SSC); Proposed Critical Habitat (PCH); Critical Habitat (CH) – Critical habitat has been designated for this species.

[b] **CNPS Rare Plant Rank**: 1A = Presumed Extinct in CA; 1B = Rare or Endangered in CA and elsewhere; 2 = R/E in CA and more common elsewhere

CNPS Decimal Extensions: .1 = Seriously endangered in California (over 80% of occurrences threatened / high degree and immediacy of threat); .2 = Fairly endangered in California (20-80% occurrences threatened); .3 = Not very endangered in California (<20% of occurrences threatened or no current threats known).

[c] Absent = No habitat present and no further evaluation required. Present = Habitat is, or may be present. The species may be present. Critical Habitat [CH] = The project footprint is located within a designated critical habitat unit, but does not necessarily mean that appropriate habitat is present.

3.4.2 Environmental Impacts

3.4.2.1 Methods of Analysis

Direct and indirect impacts to biological resources were evaluated based on potential changes to existing biological communities resulting from proposed Project activities including:

- Vegetation removal
- Grading, excavating and fill placement during construction
- Temporary stockpiling and sidecasting of soil, construction materials, or other construction wastes
- Introduction or spread of invasive plant species into adjacent natural habitats
- Runoff of herbicides, fertilizers, diesel fuel, gasoline, oil, raw concrete, or other toxic materials used for Project construction and maintenance into sensitive biological resource areas (e.g., wetlands and streams)

3.4.2.2 Thresholds of Significance

In accordance with Appendix G of the State CEQA Guidelines and professional judgment, the proposed Project would be considered to have a significant effect if it would result in any of the conditions listed below.

- Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?
- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?
- 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?
- Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?
- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?
- Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

3.4.2.3 Impacts and Mitigation Measures

Figure 3.15 shows Project impact areas in relation to biological resources in the study area. Impact findings, including significance and available mitigation, are discussed below.

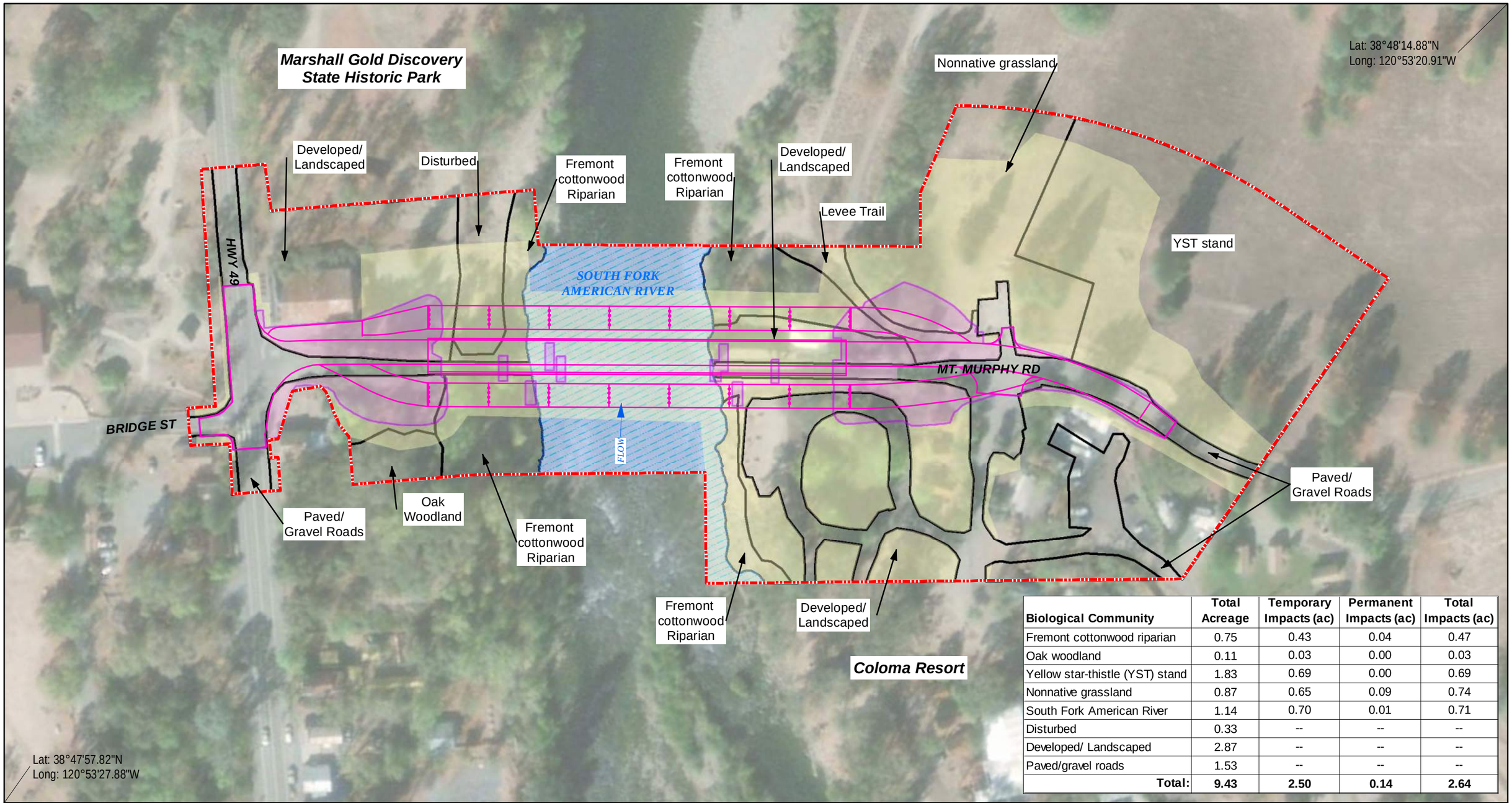
Impact BIO-1: Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service? (*less than significant with mitigation*).

Special-Status Wildlife Species: The Project area provides marginal habitat for special status wildlife species. There is no critical habitat in the Project area and the Project will not affect critical habitat. The Project will not result in the 'take' of state-listed species or species proposed for listing.

Foothill Yellow-Legged Frog (FYLF): In February 2020 FYLF was listed as a State threatened species by the California Fish and Game Commission. FYLF can be found in partly shaded, shallow streams and rocky riffles in a variety of habitats. The species requires some cobble-sized substrate for egg laying and a water source persisting for at least 15 weeks for larval metamorphosis. There are recorded occurrences of the FYLF in the region, the nearest being approximately 1.8 miles from the Project site in Indian Creek, a tributary to the South Fork American River. No FYLF were observed during the 2017 survey. There is a moderate chance for the frog to occur within the project location. Implementation of BIO-1 will ensure that the Project has a less than significant effect on FYLF.

Mitigation Measure BIO-1: FYLF

- *A preconstruction survey for FYLF shall be conducted by a qualified biologist within 48 hours prior to the start of vegetation removal and construction activities within the riparian and aquatic habitat in the Project area. The survey methodology will be based on Peek et al. (2017) Visual Encounter Survey Protocol for Rana Boylii in Lotic Environments, or the most current guidelines at the time of the survey.*
- *If FYLF is found, the County will coordinate with CDFW to determine if a 2081(b) CESA ITP is needed.*
- *Environmental awareness training will be conducted by a qualified biologist prior to the onset of project work. All construction personnel will be briefed on how to recognize FYLF and other special-status species with potential to occur in the work zone, and who to contact should any be found in the work area. Construction personnel should also be informed that if a FYLF is encountered in the work area, construction will cease. The crew foreman will be responsible for ensuring that crewmembers adhere to the guidelines and restrictions. Education programs will be conducted for appropriate new personnel as they are brought on the job during the construction period. Upon completion of training, employees will sign a form stating that they attended the training and understand all the conservation and protection measures.*
- *A qualified biologist will be present to monitor for FYLF during work in and adjacent to the river, including, but not limited to, grubbing and clearing activities in the riparian habitat, installation of any diversions and temporary work trestle, and installation of the temporary falsework. The qualified biologist will assist the County if FYLF are found, answer questions and make recommendations regarding implementation of FYLF avoidance and minimization measures at the direction of the CDFW.*



Biological Community	Total Acreage	Temporary Impacts (ac)	Permanent Impacts (ac)	Total Impacts (ac)
Fremont cottonwood riparian	0.75	0.43	0.04	0.47
Oak woodland	0.11	0.03	0.00	0.03
Yellow star-thistle (YST) stand	1.83	0.69	0.00	0.69
Nonnative grassland	0.87	0.65	0.09	0.74
South Fork American River	1.14	0.70	0.01	0.71
Disturbed	0.33	--	--	--
Developed/ Landscaped	2.87	--	--	--
Paved/gravel roads	1.53	--	--	--
Total:	**9.43**	**2.50**	**0.14**	**2.64**

Mt. Murphy Road Bridge
Replacement Project
El Dorado County, CA
22 September 2020

Figure 3-15. Project Impact Map

Biological Study Area (BSA)
South Fork American River
Biological Community Boundaries
Proposed Project Design
Proposed Grading Limits
Permanent Impacts
Temporary Impacts

100 50 0 100 Feet
Scale: 1 inch = 100 feet

Aerial Photograph:
7 August 2016
NAIP 2016, USDA FSA Imagery
ESRI Arcmap Basemap layer

15005MtMurphy_Fig3ProjectImpactMap.mxd

- *During construction, if a FYLF is observed in the active construction zone, construction will cease and a qualified biologist will be notified. FYLF will be allowed to leave the project area on their own. CDFW will be contacted for guidance before construction can resume.*
- *Upon completion of construction activities, any barriers to flow shall be removed in a manner that would allow flow to resume with the least disturbance to the substrate.*
- *Plastic monofilament netting (erosion control matting) or similar material containing netting shall not be used at the project site because the FYLF or other animals may become entangled or trapped in it. Acceptable substitutes include coconut coir matting or tackified hydroseeding compounds.*
- *Trees and shrubs scheduled for removal in the riparian habitat and South Fork American River will be removed by hand or hand tools, including chain saws and mowers. Root wads and stumps of trees and shrubs can be removed if determined necessary by the resident engineer. Mechanized vehicles will not be used to clear the brush.*
- *To ensure that diseases are not conveyed between work sites by the qualified biologist, the fieldwork code of practice developed by the Declining Amphibian Population Task Force will be followed at all times.*
- *To avoid attracting predators, a litter control program will be instituted at the entire Project site. All workers will ensure that food scraps, paper wrappers, food containers, cans, bottles, and other trash in the work area are deposited in covered or closed trash containers and removed regularly from the project area.*

Western Pond Turtle (WPT): The WPT is not a State or Federally listed species but is a CDFW Species of Special Concern. The WPT is a fully aquatic turtle, inhabiting ponds, marshes, rivers, streams and irrigation ditches with aquatic vegetation. There are recorded occurrences of the turtle in the region, the nearest being approximately 0.5 mile upstream from the Project site along the SFAR.

WPT were not observed in the Project area during the 2017 biological surveys. WPT could use SFAR and the Fremont cottonwood riparian corridor as a movement corridor. Nearby tributaries to the river may provide year-round, breeding habitat for WPT. The Project area does not provide suitable year-round habitat for WPT. The lack of basking sites in the river, and the absence of nearby suitable upland nesting habitat preclude the possibility of WPT from using the Project area year-round. There is a moderate chance for the turtles to occur within the project area. Measures implemented to protect the FYLF (BIO-1) and the SFAR (BIO-7) will also protect WPT. Potential impacts are considered less than significant.

Birds of Prey and Migratory Birds: The Project area provides potential nesting sites for birds listed under the MBTA and regulated by CA Fish and Game Code. Depending on the species, birds may nest on trees, shrubs, in or on the ground, and on artificial structures such as buildings, bridges, culverts, headwalls, poles, and signs. Cliff swallow nests were observed under the existing bridge during field surveys. No other nests were observed during the biological fieldwork. Implementation of BIO-2 will reduce potential impacts to less than significant.

Mitigation Measure BIO-2: Birds of Prey and Migratory Birds
Under the MBTA, nests that contain eggs or unfledged young are not to be disturbed during the breeding season. Nesting or attempted nesting by migratory birds and birds-of-prey is anticipated from February 15 to September 1.

Swallow

In California, bridge-nesting swallows typically arrive in mid-February, increase in numbers until late March, and remain until October. Nesting begins in April, peaks in June, and continues into August. Measures will be taken to prevent establishment of cliff swallow nests prior to construction. Techniques to prevent nest establishment include using exclusion devices, removing and disposing of partially constructed and unoccupied nests of migratory or nongame birds on a regular basis to prevent their occupation, or perform any combination of these. The following measures will be implemented:

- *The contractor will visit the site weekly and remove partially completed nests using either hand tools or high-pressure water; and/or*
- *Hang netting from the bridge before nesting begins. If this technique is used, netting should be in place from late February until project construction begins.*

Birds of Prey and Birds Protected by the Migratory Bird Treaty Act

- *If construction begins outside the 15 February to 1 September breeding season, there will be no need to conduct a preconstruction survey for active nests.*
- *Trees scheduled for removal should be removed during the non-breeding season from 2 September to 14 February. Vegetation removal includes trees and vegetation within the stream zone. Within the riparian community, vegetation will be removed using hand tools, including chain saws and mowers, and may be trimmed several inches above the ground with the roots left intact to prevent erosion.*
- *If construction or vegetation removal begins between 15 February and 1 September, a biologist shall conduct a survey for active bird of prey nests and rookeries within 500 ft of the project area and active nests of all other MBTA-protected birds within 100 ft of the project area from publicly accessible areas within two weeks prior to construction. The measures listed below shall be implemented based on the survey results.*

No Active Nests Found:

- *If no active nest of a bird of prey, MBTA bird, or other CDFW protected bird is found, then no further avoidance and minimization measures are necessary unless one is subsequently found during construction, in which case the applicable measure below will be implemented.*

Active Nests Found:

- *If an active nest of a bird of prey, MBTA bird, or other CDFW protected bird is discovered that may be adversely affected by construction activities, or an injured or killed bird is found, immediately:*
    4. *Stop all work within a 100-foot radius of the discovery.*
    5. *Notify the Engineer.*
    6. *Do not resume work within the specified radius of the discovery until authorized.*
- *The biologist shall establish a minimum 500-ft Environmentally Sensitive Area (ESA) around the nest if the nest is of a bird of prey or is a rookery, and a minimum 100-ft ESA around the nest if the nest is of an MBTA bird other than a bird of prey.*

Species Protection Areas

Identification	*Location*
Bird of Prey or Rookery	*500 ft no-disturbance buffer*
MBTA protected bird (not bird of prey)	*100 ft no-disturbance buffer*

- *Activity in the ESA will be restricted as follows:*
    1. *Do not enter the ESA unless authorized*
    2. *If the ESA is breached, immediately:*
        c. *Secure the area and stop all operations within 100 feet of the ESA boundary.*
        d. *Notify the Engineer.*
    3. *If the ESA is damaged, the County determines what efforts are necessary to remedy the damage and who performs the remedy.*
- *No construction activity shall be allowed in the ESA until the biologist determines that the nest is no longer active, or unless monitoring determines that a smaller ESA will protect the active nest.*
- *The ESA may be reduced if the biologist monitors the construction activities and determines that no disturbance to the active nest is occurring. Reduction of the ESA depends on the species of bird, the location of the nest relative to the project, project activities during the time the nest is active, and other project-specific conditions.*
- *Between 15 February and 1 September, if additional trees or shrubs need to be trimmed and/or removed after construction has started, a survey will be conducted for active nests in the area to be affected. If an active nest is found, the above measures will be implemented.*
- *If an active nest is identified in or adjacent to the construction zone after construction has started, the above measures will be implemented to ensure construction is not causing disturbance to the nest.*

American Peregrine Falcon: American peregrine falcon is a fully protected species (CDFW 2018a). This species breeds mostly in woodland, forest, and coastal habitats near wetlands, lakes, rivers, or other water on high cliffs, banks, dunes, or mounds, in human-made structures, and occasionally tree or snag cavities, or old nests of other raptors (CWHR 2017). Riparian and woodland habitat in the Project area provide potential non-breeding habitat for American peregrine falcon. High cliffs in open areas are not present in the Project area to provide suitable breeding habitat. Trees and human-made structures in the Project area provide marginal breeding habitat for American peregrine falcon. Implementation of BIO-2 will reduce potential impacts to less than significant.

Bald Eagle: Bald eagles are a fully protected species (CDFW 2018a). In California, bald eagles nest in large, old growth, or dominant live trees with open branch work, especially ponderosa pines, most frequently in stands with less than 40% canopy. They often choose the largest tree in a stand on which to build a stick platform nest, 50-200 ft above ground, usually below the tree crown and usually located near a permanent water source. Bald eagles usually do not begin nesting if human disturbance is evident (CWHR 2017). There are recorded occurrences of bald eagles in the region, the nearest being a nest approximately 9.7 miles west of the Project area. The SFAR in the Project area provides potential foraging habitat for bald eagle. Large trees in the Project area provide potential nesting habitat for bald eagle. Bald eagles were not observed during the biological surveys in the Project area. Implementation of BIO- 2 will reduce potential impacts to less than significant.

Pallid Bat: Pallid bat is not a State or Federally-listed species but is a CDFW Species of Special Concern. The pallid bat may roost alone, in small groups, or gregariously. Day and night roosts are similar, consisting of crevices in rocky outcrops and cliffs, caves, mines, basal hollows of coast

redwood and giant sequoia trees, bole cavities of oaks, exfoliating ponderosa pine and valley oak bark, deciduous trees in riparian areas, and fruit trees in orchards. They may also roost in various human structures, such as bridges (especially wooden and concrete girder designs), barns, porches, bat boxes, and human-occupied as well as vacant buildings (WBWG 2018). Pallid bat is very sensitive to roosting site disturbance (CWHR 2017). There are recorded occurrences of pallid bat in the region, the nearest being a record of a known roost site for multiple bat species under the SR 49 bridge over the South Fork American River, approximately 0.7 mile from the Project site. The trees, the bridge and other human-made structures in the Project area provide potential habitat for pallid bat. Pallid bat was not observed during the biological surveys in the Project area. Implementation of BIO- 3 will reduce potential impacts to less than significant.

Mitigation Measure BIO-3: Bats

The maternity season for bats in California is generally considered to be from 15 May through 15 August and the hibernation season from 15 November through the end of February.

- *A qualified biologist shall conduct a preconstruction survey for roosting bats within 2 weeks prior to the start of construction. Surveys can also be performed earlier than 2 weeks prior to the start of construction.*
- *If no bats or sign or their use is observed during the survey no further measures are required.*
- *If sign of or direct observation of a maternity or hibernation roost is recorded during the survey, no project related disturbance will occur to the structure containing the roosting bats until a qualified biologist determines, by observation, that the bats using the maternity or hibernation roost have departed for the season.*
- *If it is determined during the preconstruction survey that bats are using the bridge outside maternity and hibernation seasons listed in this measure exclusion devices will be installed. Exclusion devices can be installed anytime outside of the maternity and hibernation season of roosting bats listed above.*
- *Exclusion devices shall remain in place until demolition of the bridge.*
- *Removal or trimming of trees or relocation of any structure that contains an active roost will be avoided between 15 May and 15 August (the maternity period) to avoid impacts on reproductively active females and dependent young.*

Townsend's Big-Eared Bat: Townsend's big-eared bat is a CDFW species of special concern (CDFW 2018a). Townsend's big-eared bats require caves, mines, tunnels, buildings, or other human-made structures for roosting. They are extremely sensitive to disturbance of roosting sites but show high site fidelity if undisturbed (CWHR 2017). There are recorded occurrences of Townsend's big-eared bats in the region, the nearest being two specimens that were collected approximately 11 miles from the Project site in 1950. The bridge and other human-made structures in the Project area provide marginal habitat for Townsend's big-eared bat. Townsend's big-eared bats were not observed during the biological surveys in the Project area. Implementation of Mitigation Measure BIO- 3 will reduce potential impacts to less than significant.

Special-status Plant Species: The Project area provides suitable habitat for three special-status plants ranked by the California Native Plant Society (CNPS):

- Big-scale balsamroot (*Balsamorhiza macrolepis*)
- Sierra arching sedge (*Carex cyrtostachya*)
- Oval-leaved viburnum (*Viburnum ellipticum*)

Oval-leaved viburnum was not observed in the Project area during the December 2017 biological survey or June 2018 wetland survey. Oval-leaved viburnum is a perennial shrub that would have been evident and identifiable during the surveys. The Project will not impact oval-leaved viburnum.

Big-scale balsamroot and Sierra arching sedge were not observed during the survey conducted in December 2017 and June 2018. The survey was conducted outside the evident and identifiable period for these species. There is potential habitat for the plant in the Project area. Implementation of BIO-4 will ensure that Project impacts to big-scale balsamroot and Sierra arching sedge are less than significant.

Mitigation Measure BIO-4: Big-scale balsamroot and Sierra arching sedge

- *A botanical survey of the Project area will be conducted prior to initial construction activities during the evident and identifiable period of special-status plant species that could occur in the study area (May-July). The survey will be conducted in accordance with standard 2018 (or most recent) CDFW survey protocols, where applicable.*
- *If no sensitive plant species are detected during the botanical survey, no further avoidance and minimization efforts will be required.*
- *If sensitive plant species are detected during the botanical survey, the plants will be avoided to the maximum extent practicable during construction of the proposed project. Environmentally Sensitive Areas (ESAs) will be established around sensitive plant occurrences within the Project area to exclude construction activities. Temporary exclusionary fencing will be installed to define the limits of the ESA.*
- *If avoidance is not feasible, the plants will be transplanted to a suitable location in the Project area. The County will coordinate transplantation activities with the appropriate regulatory and resource agencies.*

Impact BIO-2: Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service? (*less than significant with mitigation*).

The acreages of sensitive natural communities in the Project area and the Project impacts to those communities are listed in Table 3-11. Oak woodlands, heritage trees, individual valley oak trees not in an oak woodland, and valley oak woodlands are protected and conserved in accordance with the El Dorado County Oak Resources Management Plan (ORMP). Impacts to the South Fork American River are discussed under Impact BIO-3 below.

Table 3-11. Land Cover Acreages and Project Impacts

Land Cover Type	Acreage[1]	Temporary Impact (ac)	Permanent Impact (ac)	Total Impacts (ac)
Fremont Cottonwood Riparian	0.75	0.43	0.04	0.47
Oak Woodland	0.11	0.03	0	0.03
South Fork American River	1.14	0.70	0.01	0.71

Land Cover Type	Acreage[1]	Temporary Impact (ac)	Permanent Impact (ac)	Total Impacts (ac)
Yellow Star-thistle Stand	1.83	0.69	0	0.69
Nonnative Grassland	0.87	0.65	0.09	0.74
Other Features[2]				
Land Cover Type	**Acreage**	**Temporary Impact (ac)**	**Permanent Impact (ac)**	**Total Impacts (ac)**
Disturbed	0.33	--	--	--
Developed/ Landscaped	2.87	--	--	--
Paved and Gravel Roads	1.53	--	--	--
Total:	**9.43**	**2.50**	**0.14**	**2.64**

[1] Acreages per approved Project NES (Sycamore Environmental 2019)

[2]Previously disturbed land cover types, thus no impacts are calculated.

Fremont Cottonwood Riparian: Approximately 0.75 acre of Fremont cottonwood riparian occurs in the uplands above both banks of the SFAR in the Project area. This community has a rarity rank of G4-S3 and is considered a natural community vulnerable to extirpation by CDFW (2018b). The Fremont cottonwood riparian is part of the stream zone protected by Fish and Game Code Section 1600.

The proposed Project will result in 0.43 acre of temporary impacts and 0.04 acre of permanent impacts to the Fremont cottonwood riparian community as a result of bridge and pier wall construction, trestle placement, and RSP installation. Approximately 26 native trees with a dbh of at least 4 inches will be removed in the Fremont cottonwood riparian in the Project area. The final tree removal determination will be made by El Dorado County DOT but only trees necessary for the project will be removed.

El Dorado County General Plan Policy 7.3.3.4, and its implementing zoning code (§130.30.050(G)), identifies standards for setbacks to creeks and wetlands. Road and bridge repair and construction are exempted from Policy 7.3.3.4 and its implementing zoning ordinance where avoidance and mitigation measures for potential impacts are identified (El Dorado County 2004a). Implementation of BIO-5 will ensure that Project impacts to Fremont cottonwood riparian are less than significant.

Mitigation Measure BIO-5: Fremont Cottonwood Riparian

- *Tree removal will be minimized to the extent possible.*
- *Environmentally sensitive area (ESA) fencing will be placed along the limits of construction in the Project area to exclude construction activities from avoided habitat. The ESA fencing will be in place prior to commencement of construction.*
- *Trucks and other vehicles will not be allowed to park beyond, nor shall equipment be stored beyond, the fencing.*
- *No vegetation removal or ground disturbing activities will be permitted beyond the fencing.*
- *Temporarily affected areas will be revegetated and reseeded in accordance with the Revegetation Planting and Erosion Control Specifications in Appendix F of the Project Natural Environment Study (NES).*

Oak Woodland: Approximately 0.03 acre of oak woodland occurs in the Project area. There are 34 native trees with a dbh of at least 4 inches in the oak woodland in the Project area.

The proposed Project will temporarily impact approximately 0.03 acre of oak woodland as a result of installing the temporary work trestle. No permanent impacts to oak woodland are anticipated. No native trees will be removed within oak woodland in the Project area. The final tree removal determination will be made by the El Dorado County DOT, but only trees necessary for the project will be removed.

Mitigation requirements for impacts to oak resources are defined in the 2017 El Dorado County Oak Resources Management Plan (El Dorado County 2017b). Per Section 130.39.050 (Exemptions and Mitigation Reductions) of the ORMP implementing ordinance No. 5061, the various exemptions from mitigation requirements, including County Road Projects, do not apply to heritage trees, individual valley oak trees not in an oak woodland, and valley oak woodland (El Dorado County 2017b). All impacts to Heritage Trees, individual valley oak trees, and valley oak woodlands shall be subject to the provisions and mitigation requirements contained in the ORMP, regardless of whether or not the action requires a development permit. Heritage trees are defined as:

> 'Any live native oak tree of the genus *Quercus* including blue oak (*Quercus douglasii*), valley oak (*Quercus lobata*), California black oak (*Quercus kelloggii*), interior live oak (*Quercus wislizeni*), canyon live oak (*Quercus chrysolepis*), Oregon oak (*Quercus garryana*), oracle oak (*Quercus x morehus*), or hybrids thereof) with a single main trunk measuring 36 inches dbh or greater, or with a multiple trunk with an aggregate trunk diameter measuring 36 inches or greater (El Dorado County 2017b).'

The ORMP provides three options to mitigate impacts to individual native oak trees/ heritage trees:

- In-lieu fee payment for individual oak tree removal,
- Replacement planting on-site within an area subject to a Deed Restriction or Conservation Easement, or
- Replacement planting off-site within an area subject to a Conservation Easement or acquisition in fee title.

The Project will remove an estimated 10 native oak trees. Oaks to be removed include five interior live oaks, one black oak, and four valley oaks located in the disturbed and developed land cover types. The final tree removal determination will be made by El Dorado County DOT but only trees necessary for the project will be removed. No valley oak woodland occurs in the Project area. Four of the 10 native oak trees are exempt from the mitigation requirements of County Code 130.39 (Oak Resources Conservation). The two-heritage interior live oaks and four valley oaks trees are subject to the mitigation requirements of the ORMP implementing ordinance No. 5061.

Mitigation Measure BIO-5 will also protect the oak woodland and other native trees. Implementation of BIO-6 will ensure that Project impacts to individual oak trees are less than significant.

Mitigation Measure BIO-6: Oak Trees

- *Mitigation for removal of individual valley oak trees shall be based on an inch-for-inch replacement standard, and shall be quantified and outlined in an oak resources technical report. Prior to construction the County will obtain an Oak Tree Removal Permit in accordance with ORMP implementing ordinance No. 5061, Section 130.39.070. In accordance with ORMP implementing ordinance No. 5061, Sections 130.39.070(D) and (E) the Oak Tree Removal Permit application will be accompanied by an Oak Resources Technical Report and Code Compliance Certificate. The Oak Resources Technical Report must include all pertinent*

information, documents and recommended mitigation as specified in the ORMP. A Code Compliance Certificate will be submitted verifying that no Oak Resources have been impacted (in the Project area) within two years prior to application submittal.

- *The County will pay the individual oak tree in-lieu fee for trees subject to the ORMP that are removed by the Project. The individual oak tree in-lieu fee will be in accordance with Table 6 in section 3.2 (Oak Trees) of the September 2017, ORMP.*

Impact BIO-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? (*less than significant with mitigation*).

The SFAR in the Project area is a perennial channel that flows northwest under the Mt. Murphy Bridge. The Project will result in approximately 0.70 acre of temporary impacts and 0.01 acre of permanent impacts to the SFAR, a potential waters of the U.S., as a result of the construction of temporary structures including work trestles and falsework; and the installation of two pier walls to support the new bridge.

The proposed bridge length is 445 feet to meet hydraulic performance requirements. The bridge main span must extend over the SFAR with two reinforced concrete pier walls (Pier 2 and Pier 3). Pier 2 will be located along the south river bank and Pier 3 will be situated immediately north of the river channel. This span length avoids placing piers in the mid-channel portion of the SFAR. The pier wall foundations consist of CIDH pile supported spread footings. The contractor will utilize a construction trestle in the SFAR to facilitate construction.

Temporary falsework would be required to support the forms for the concrete bridge construction. The minimum falsework opening over the SFAR necessary to accommodate recreational use of the river is approximately 30 feet. This constraint is based on the requirements used for the nearby SR 49 Bridge. Falsework can be designed to provide sufficient clear opening and adequate clearance above the river for freeboard and recreational users.

The two-stage construction requires a trestle downstream of the new bridge for the first stage and upstream of the bridge for the second stage to avoid lifting materials with cranes, supported on the trestle, over live traffic. The trestle can provide a span length of 30 feet to accommodate recreational use of the river.

During construction, water quality will be protected by implementation of best management practices (BMPs) consistent with the most current Caltrans Stormwater Quality Handbooks to minimize the potential for siltation and downstream sedimentation of South Fork American River. Implementation of BIO-7 will reduce Project impacts to potential waters of the State and waters of the U.S. as defined by Section 404 of the Clean Water Act.

Mitigation Measure BIO-7: South Fork American River

- *During construction, water quality will be protected by implementation of BMPs consistent with the Caltrans Stormwater Quality Handbooks (Caltrans 2011) to minimize the potential for siltation and downstream sedimentation of South Fork American River.*
- *Any water diversion in South Fork American River will be conducted in accordance with the County of El Dorado Stormwater Management Plan (SWMP; August 2004b) and the El Dorado County grading, erosion, and sediment control ordinance (El Dorado County 2010). Minimization efforts will include marking the limits of construction with temporary fencing.*

- *Equipment will be refueled and serviced at designated construction staging areas. All construction material will be stored and contained in a designated area that is located away from channels to prevent transport of materials into the adjacent South Fork American River. The preferred distance is a minimum 100 feet from riparian habitat or water bodies. A silt fence will be installed to collect any discharge, and adequate materials for spill cleanup will be kept on site. Construction vehicles and equipment will be maintained to prevent contamination of soil and water from external grease and oil and from leaking hydraulic fluid, fuel, oil, and grease.*
- *Riparian vegetation will be avoided and preserved to the maximum extent practicable. The limits of vegetation removal will be marked with temporary fencing or flagging.*
- *Areas temporarily disturbed on the banks of South Fork American River within the Project area will be revegetated in accordance with the Revegetation Planting and Erosion Control Specifications in Appendix F of the Project NES and will be coordinated with the MGDSHP and Coloma Resort as applicable. No seed of nonnative species will be used unless certified to be sterile.*
- *Reseeded areas will be covered with a biodegradable erosion control fabric or a hydraulically applied cover where applicable to prevent erosion and downstream sedimentation, as applicable and as determined by the project engineer. The project engineer will determine the specifications needed for erosion control fabric (e.g., sheer strength) based on anticipated maximum flow velocities and soil types.*
- *Environmentally sensitive areas (ESAs) will be fenced to prevent encroachment of equipment and personnel into riparian areas, the river channels and banks, and other sensitive habitats. ESAs will be clearly flagged for the duration of site construction. Access to and use of ESAs will be restricted. Vehicle fueling and staging areas will be located at least 50 feet from flagged ESAs.*
- *The contractor will prepare and implement a Stormwater Pollution Prevention Plan as required during permitting.*
- *Discharging pollutants from vehicle and equipment cleaning into any storm drains or watercourses will be prohibited.*
- *Concrete waste materials and other debris from demolition and construction activities will not be allowed to enter the flowing water of the South Fork American River. Waste materials will be disposed of offsite, at an approved location, where they cannot enter surface waters.*
- *A Spill Prevention, Control, and Countermeasures (SPCC) Plan will be developed to provide consistent, appropriate responses to spills that may reasonably be expected with implementation of the project. The SPCC Plan will be kept on-site during construction and the appropriate materials and equipment will also be on-site during construction to ensure the SPCC Plan can be implemented. Personnel will be knowledgeable in the use and deployment of the materials and equipment so response to an accidental spill will be timely.*

Impact BIO-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? (*less than significant*).

Policy 7.4.2.9 of the El Dorado County General Plan identifies and protects areas designated as an Important Biological Corridor (IBC). The IBC overlay applies to lands identified as having high wildlife habitat values because of extent, habitat function, connectivity, and other factors. Applicable provisions in the policy include no hindrances to wildlife movement (El Dorado County

2004a). The Project area is not located within an IBC. The Project is located within the year-round population range of mule deer habitat, but not in a migration corridor (WAFWA 2017).

The proposed bridge spans 130 ft of uplands at the north and south ends of the bridge, allowing for wildlife movement underneath the bridge. Construction of the project could temporarily disrupt movement of native wildlife species that occur in or adjacent to the Project area. Daytime construction activities will result in minimal disruption of nocturnal wildlife movement. If nighttime construction activities would alleviate traffic congestion and safety hazards it would comply with the noise standards for construction activities General Plan Policy 6.5.1.11. The lack of dense nearby development provides ample space for wildlife to easily avoid the construction site. Although construction disturbance may temporarily hinder wildlife movements within the project area, the impact is less than significant due to its short-term nature. The Project proposes to replace the existing bridge and would not significantly affect vegetation corridors and existing upland wildlife passage beneath the bridge. Implementation of BIO-5 requires water diversion to maintain fish passage.

Impact BIO-5: Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance? (*no impact*).

See the discussion under Impact BIO-2 above and discussion under Impact BIO-4. Tree removal will be minimized to the maximum extent possible. Mitigation for unavoidable tree removal will comply with the El Dorado County ORMP (2017b). The final tree removal determination will be made by the County but only trees necessary for the project will be removed. The Project does not conflict with any local policies or ordinances protecting biological resources.

Impact BIO-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? (no impact).

The Project is not located in an area covered by a habitat or natural community conservation plan. In 2017, the County adopted updated biological resources policies and implementation measures within the General Plan and the ORMP. The project does not conflict with the mitigation requirements of the ORMP.

3.4.3 References

Ayres, D. R. and F. J. Ryan. 1999. Genetic diversity and structure of the narrow endemic *Wyethia reticulata* and its congener *W. bolanderi* (Asteraceae) using RAPD and allozyme techniques. American Journal of Botany 86(3):344-353.

Bosakowski, T. and D.G. Smith. 1997. Distribution and species richness of a forest raptor community in relation to urbanization. J. Raptor Res. 31(1):26-33.

California Department of Fish and Wildlife (CDFW). February 2010. (2010). Report to the Fish and Game Commission: A status review of the fisher (*Martes pennanti)* in California. Prepared by the California Department of Fish and Game, Sacramento, CA.

California Department of Fish and Wildlife (CDFW). Accessed 2018 (2018a). CNDDB plant and animal information, including the following lists: Special animals; State and federally listed endangered and threatened animals of California; Special vascular plants, bryophytes, and

lichens list; and State and federally listed endangered, threatened, and rare plants of California. Biogeographic Data Branch, CNDDB, Sacramento, CA. Available at: http://www.dfg.ca.gov/wildlife/nongame/t_e_spp/

California Department of Fish and Wildlife (CDFW). October 2018 (2018b). Vegetation classification and mapping program: Natural Communities – List. Biogeographic Data Branch, Sacramento, CA. https://www.wildlife.ca.gov/Data/VegCAMP/Natural-Communities

California Department of Fish and Wildlife (CDFW). 20 March 2018 (2018c). Protocols for surveying and evaluating impacts to special status native plant populations and natural communities. California Natural Resources Agency, California Department of Fish and Wildlife, Sacramento, CA. https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=18959&inline

California Department of Transportation (Caltrans). June 2011. Stormwater quality handbooks. H. Hakim and C. Suszko, editors. CTSW-RT-11-255.08.01.

California Native Plant Society (CNPS). Accessed June 2019. Inventory of rare and endangered plants (online edition, v8-02). California Native Plant Society, Sacramento, CA. http://www.rareplants.cnps.org/

California Wildlife Habitat Relationships (CWHR) Program. Accessed October 2017. California Wildlife Habitat Relationships System, Life history accounts and range maps (various species). Updated from Zeiner, D.C. et al 1988-1990. CWHR Program, California Department of Fish and Game, Sacramento, CA. nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=87155&inline

El Dorado County. Adopted 19 July 2004. El Dorado County general plan, a plan for managed growth and open roads; a plan for quality neighborhoods and traffic relief. El Dorado County Planning Department, Placerville, CA.

El Dorado County. Revised August 2010. El Dorado County grading, erosion, and sediment control ordinance (Ord. 4909). El Dorado County, CA.

El Dorado County. September 2017 (2017). Oak Resources Management Plan (ORMP), adopted by resolution 129-2017.

Grinnell, J. and A. H. Miller. 1944. The distribution of the birds of California. Pacific Coast Avifauna No. 27. Club, Berkeley, CA and reprinted 1986 by Artemisia Press, Lee Vining, CA.

Holland, R. 1986. Preliminary descriptions of the terrestrial natural communities of California. California Department of Fish and Game, Sacramento, CA.

Jameson, E. W. and H. J. Peeters. 2004. California mammals. University of California Press, Berkeley, CA.

National Marine Fisheries Service (NMFS). 2 September 2005. Endangered and threatened species; Designation of critical habitat for seven evolutionarily significant units of Pacific salmon and steelhead in California; Final rule. Federal Register 70(170): 52488-52627; 50 CFR Part 226.

Moyle, P. B. 2002. Inland fishes of California. University of California Press, Berkeley, CA.

Moyle, P. B. and J. P. Ellison. 1991. A conservation-oriented classification system for the inland waters of California. California Department of Fish and Game 77:161-180.

Natural Resources Conservation Service (NRCS; formerly known as Soil Conservation Service). April 1974. Soil survey of El Dorado Area, California. USDA – Soil Conservation Service.

Natural Resources Conservation Service (NRCS). Accessed March 2017 (2017a). Official soil series descriptions (OSD). Soil Survey Staff, United States Department of Agriculture. http://soils.usda.gov/technical/classification/osd/index.html

Natural Resources Conservation Service (NRCS). Accessed March 2017 (2017b). Web soil survey for El Dorado County. National Soil Survey Center, Lincoln, NE. http://websoilsurvey.nrcs.usda.gov/app/

Pacific Fishery Management Council (PFMC). 1999. Amendment 14 to the Pacific Coast salmon plan. Appendix A: Identification and description of essential fish habitat, adverse impacts, and recommended conservation measures for salmon. Portland, OR.

Sacramento Area Council of Government's (SACOG). Accessed April 2018 (2018a), Adopted on 15 September 2016. Final 2017-20 Metropolitan Transportation Improvement Program (MTIP). https://www.sacog.org/current-2017-20-mtip

Sacramento Area Council of Government's (SACOG). Accessed April 2018 (2018b), Final Plan Released 18 February 2016. 2016 Metropolitan Transportation Plan/Sustainable Communities Strategy (MTP/SCS). https://www.sacog.org/2016-mtpscs

Shuford, W. D. and T. Gardali, eds. 2008. California bird species of special concern: A ranked assessment of species, subspecies, and distinct populations of birds of immediate conservation concern in California. Studies of Western Birds 1. Western Field Ornithologists, Camarillo, CA and California Department of Fish and Game, Sacramento, CA.

Thomson, R.C., A.N. Wright, and H.B. Shaffer. 2016. California Amphibian and Reptile Species of Special Concern. Co-published by University of CA and CA Dept of Fish and Wildlife. University of California Press, Oakland, CA.

Sycamore Environmental Consultants. 2019. Natural Environment Study, Mt. Murphy Road Bridge Replacement Project, El Dorado County, CA. Federal Aid Number: BRLO 5965 (090).

U.S. Fish and Wildlife Service (USFWS). 2002. Recovery plan for the California red-legged frog (*Rana aurora draytonii*). U.S. Fish and Wildlife Service, Portland, OR.

U.S. Fish and Wildlife Service (USFWS). 16 January 2003. Endangered and threatened wildlife and plants: 12-month finding for a petition to list the Sierra Nevada distinct population segment of the mountain yellow-legged frog (*Rana muscosa*). Federal Register 60(11) 2283-2303; 50 CFR Part 17. U.S. Fish and Wildlife Service, Sacramento, CA.

U.S. Fish and Wildlife Service (USFWS). 17 March 2010. Endangered and threatened wildlife and plants: revised designation of critical habitat for California red-legged frog. Final rule; Federal Register 75(51): 12816-12959; 50 CFR Part 17. U.S. Fish and Wildlife Service, Sacramento, CA.

U.S. Fish and Wildlife Service (USFWS). Accessed 17 March 2017 (2017). Critical habitat portal. http://crithab.fws.gov/

U.S. Fish and Wildlife Service. Accessed January 2017 (2017). National Wetlands Inventory, Wetlands Mapper. http://www.fws.gov/wetlands/Data/Mapper.html

U.S. Forest Service (USFS). November 2009. Biological evaluation for sensitive plants and other botanical resources. Stanislaus National Forest Motorized Travel Management Plan. U.S. Forest Service, Pacific Southwest Region. http://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5112613.pdf

Western Association of Fish and Wildlife Agencies (WAFWA). Accessed March 2017. Interactive map of North American black-tailed and mule deer habitat. Mule Deer Working Group, Publications. http://www.wafwa.org/committees__groups/mule_deer_working_group/publications/

Western Bat Working Group (WBWG). Accessed June 2018. Western Bat Species; *Antrozous pallidus*, Pallid Bat: Identifying Characteristics and Life History. Western Bat Working Group.

3.5 Cultural Resources

This section identifies the regulatory and environmental setting for cultural resources. For the purposes of this section, *cultural resources* consist of historic-period and prehistoric archaeological sites, and built environment resources.

Archaeological resources consist of the physical remains of past human activity that have been preserved in the ground but no longer take the form of a standing structure (e.g., a house or building) and can date to the prehistoric or historic period. *Built environment resources* consist of buildings, structures, objects, sites, or districts.

3.5.1 Existing Conditions

3.5.1.1 Regulatory Setting

Federal

National Historic Preservation Act

Archaeological and built environment resources (buildings and structures) are protected through the NHPA of 1966, as amended (54 USC 300101 et seq.) and its implementing regulations: Protection of Historic Properties (36 CFR § 800).

Prior to implementing an *undertaking* (e.g., issuing a federal permit), federal agencies (e.g., USACE) are required by Section 106 of the NHPA to consider the effects of the undertaking on historic properties and to afford the Advisory Council on Historic Preservation (ACHP and the State Historic Preservation Officer (SHPO) a reasonable opportunity to comment on any undertaking that would adversely affect properties eligible for listing in the NRHP. NHPA Section 101(d)(6)(A) allows properties of traditional religious and cultural importance to a tribe to be determined eligible for inclusion in the NRHP. Under the NHPA, a find is significant if it meets the NRHP listing criteria under 36 CFR Part 60.4, as stated below.

> The quality of significance in American history, architecture, archaeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association and:
>
> a) that are associated with events that have made a significant contribution to the broad patterns of our history, or
>
> b) that are associated with the lives of persons significant in our past, or
>
> c) that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction, or
>
> d) that have yielded, or may be likely to yield, information important in prehistory or history.

Federal review of projects is normally referred to as the Section 106 process. The Section 106 process involves step-by-step procedures that are described in detail in the implementing regulations (36 CFR § 800) and summarized here.

- Establish a federal undertaking.
- Delineate the Area of Potential Effects (APE).
- Identify and evaluate historic properties in consultation with the SHPO and interested parties.
- Assess the effects of the undertaking on properties that are eligible for inclusion in the NRHP.
- Consult with the SHPO, other agencies, and interested parties to develop an agreement that addresses the treatment of historic properties and notify ACHP.
- Proceed with the project according to the conditions of the agreement.

The proposed Project would use federal HBP funds from the FHWA and is subject to Section 106 of NHPA as described above.

State

The State of California implements the NHPA through its statewide comprehensive cultural resource preservation programs. The California Office of Historic Preservation (OHP), an office of the California Department of Parks and Recreation, implements the policies of the NHPA on a statewide level. The OHP also maintains the California Historical Resources Inventory. The State Historic Preservation Officer (SHPO) is an appointed official who implements historic preservation programs within the state's jurisdiction.

California Environmental Quality Act

CEQA, as codified in PRC Sections 21000 et seq. and implemented via the State CEQA Guidelines (14 CCR § 15000 et seq.), is the principal statute governing the environmental review of projects in the state. To be considered a historical resource, a resource must be at least 50 years old. In addition, the State CEQA Guidelines define a *historical resource* as listed below.

a. A resource listed in the California Register of Historical Resources (CRHR).

b. A resource included in a local register of historical resources, as defined in PRC Section 5020.1(k) or identified as significant in a historical resource survey meeting the requirements of PRC Section 5024.1(g).

c. Any object, building, structure, site, area, place, record, or manuscript that 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 lead agency's determination is supported by substantial evidence in light of the whole record. The CRHR is "an authoritative listing and guide to be used by state and local agencies, private groups, and citizens in identifying the existing historical resources of the state and to indicate which resources deserve to be protected, to the extent prudent and feasible, from substantial adverse change" (PRC § 5024.1[a]). The CRHR criteria are based on NRHP criteria (PRC § 5024.1[b]). Certain resources are determined by CEQA to be automatically included in the CRHR, including California properties formally eligible for or listed in the NRHP. To be eligible for listing in the CRHR as a historical resource, a prehistoric or historic-period

resource must be significant at the local, state, and/or federal level under one or more of the following criteria.

1) Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage.
2) Is associated with the lives of persons important in our past.
3) Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or,
4) Has yielded, or may be likely to yield, information important in prehistory or history [14 CCR § 4852(b)].

For a resource to be eligible for the CRHR, it must also retain enough integrity to be recognizable as a historical resource and to convey its significance. A resource that does not retain sufficient integrity to meet the NRHP criteria may still be eligible for listing in the CRHR.

CEQA requires lead agencies to determine if a proposed project would have a significant effect on important historical resources or unique archaeological resources. If a lead agency determines that an archaeological site is a historical resource, the provisions of PRC Section 21084.1 and State CEQA Guidelines Section 15064.5 would apply. If an archaeological site does not meet the State CEQA Guidelines criteria for a historical resource, then the site may meet the threshold of PRC Section 21083.2 regarding unique archaeological resources. A *unique archaeological resource* is an archaeological artifact, object, or site that meets any of the following criteria.

- 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 (PRC § 21083.2[g]).

The State CEQA Guidelines note that if a resource is neither a unique archaeological resource nor a historical resource, the effects of the project on that resource shall not be considered a significant effect on the environment (14 CCR § 15064[c][4]).

Madera Oversight Coalition, Inc. v. County of Madera and Tesoro Viejo, Inc. (2011)

In the past, it was common practice for many CEQA practitioners to provide performance-based mitigation for cultural resources, stipulating that further evaluation and treatment of resources would be performed in the future. The 2011 decision from the *Madera Oversight Coalition, Inc. v. County of Madera and Tesoro Viejo, Inc.* (2011 [199 Cal. App.4th 48, 81]) case determined this practice to be unacceptable under CEQA and required evaluation of cultural resources subject to CEQA to be performed at a level sufficient to characterize the resources prior to EIR certification, instead of waiting until preconstruction or construction stages of a project. Additionally, the case determined that if preservation of the resource in the place it is located, the preferred mitigation under CEQA (14 CCR § 15126.4[b][3]) is not employed, the EIR should disclose why that is not feasible. Cultural resources evaluations in this EIR have been completed consistent with the *Madera Oversight* decision.

Discovery of Human Remains

Section 7050.5 of the California Health and Safety Code states the following.

(a) Every person who knowingly mutilates or disinters, wantonly disturbs, or willfully removes any human remains in or from any location other than a dedicated cemetery without authority of law is guilty of a misdemeanor, except as provided in Section 5097.99 of the [California Public Resources Code (CPRC)]. The provisions of this subdivision shall not apply to any person carrying out an agreement developed pursuant to subdivision (l) of Section 5097.94 of the [CPRC] or to any person authorized to implement Section 5097.98 of the [CPRC].

(b) In the event of discovery or recognition of any human remains in any location other than a dedicated cemetery, there shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains until the coroner of the county in which the human remains are discovered has determined, in accordance with Chapter 10 (commencing with Section 27460) of Part 3 of Division 2 of Title 3 of the [California] Government Code [CGC], that the remains are not subject to the provisions of Section 27491 of the [CGC] or any other related provisions of law concerning investigation of the circumstances, manner and cause of any death, and the recommendations concerning the treatment and disposition of the human remains have been made to the person responsible for the excavation, or to his or her authorized representative, in the manner provided in Section 5097.98 of the [CPRC]. The coroner shall make his or her determination within two working days from the time the person responsible for the excavation, or his or her authorized representative, notifies the coroner of the discovery or recognition of the human remains.

(c) If the coroner determines that the remains are not subject to his or her authority and if the coroner recognizes the human remains to be those of a Native American, or has reason to believe that they are those of a Native American, he or she shall contact, by telephone within 24 hours, the [Native American Heritage Commission (NAHC)] (California Health and Safety Code Section 7050.5).

Of particular note to cultural resources is subsection (c), requiring the coroner to contact the NAHC within 24 hours if discovered human remains are determined to be Native American in origin. After notification, the NAHC will follow the procedures outlined in PRC Section 5097.98, which include notification of the most likely descendant (MLD), if possible, and recommendations for treatment of the remains. The MLD will have 24 hours after notification by the NAHC to make recommendations (PRC § 5097.98). In addition, knowing or willful possession of Native American human remains or artifacts taken from a grave or cairn is a felony under State law (PRC § 5097.99).

Local

El Dorado County General Plan

To protect cultural resources, the Conservation and Open Space Element of the County General Plan (El Dorado County 2004) includes the following goal and policies to protect cultural resources.

- Goal 7.5, *Cultural Resources*, addresses preservation of the County's important resources through protection of cultural heritage, and includes implementing Policies 7.5.1.1, 7.5.1.3, and 7.5.1.6.

3.5.1.2 Environmental Setting

This section is based on the information contained in the following technical studies and MGDSHP brochure:

- Archaeological Survey and Extended Phase I Investigations for the Mt. Murphy Road Bridge Replacement Project (Far Western 2020)
- Historic Property Survey Report for the Mt. Murphy Road Bridge Replacement Project (Mikesell Historical Consulting 2020a).
- Historical Resources Evaluation Report Mt. Murphy Road Bridge Replacement Project El Dorado County (Mikesell Historical Consulting 2020b)
- Marshall Gold Discovery State Historic Park brochure (California State Park 2017)

Historical Background

The Mt. Murphy Road Bridge is located in the boundary of the Marshall Gold Discovery State Historic Park (MGDSHP). The 1969 National Register of Historic Places, Inventory-Nomination Form for MGDSHP makes the following statement:

> *…"This area (referring to Coloma), because of its outstanding significance to California and the world at large, has been named a national historic landmark, and is so registered by the N.P.S. (Nation Park Service)*

The MGDSHP was established to recognize the first discovery of gold in California as highlighted in the quote below from Henry Bigler's Diary, January 1848.

> *"Monday 24th. This day some kind of mettle was found in the tail race that looks like gold, first discovered by James Martial, the Boss of the Mill."*

Native Occupation of Coloma

Coloma is named for the Foothill Nisenan village of *Ko-lo-ma* or *Kolo-ma*. Although others place the village on the north(east) side of the SFAR, the large bedrock milling station to the north of the Visitors' Center and picnic area is clear evidence that the village included the area south and west of the SFAR, as well. Researchers note that the placement of villages on both sides of a river was not uncommon for California Native Americans, who might move from one side to the other after a few years or, in the case of larger villages, occupy both sides at once. One researcher expressed the opinion that "Kolo-ma may be a generic name for the triblet or [the] Coloma Valley vicinity, rather than a specific village place name." A tribelet is a small tribe (Mikesell Historical Consulting 2020b).

Excavations adjacent to SR 49 have unearthed archaeological midden, flaked and ground stone implements, at least one glass trade bead, and other indications of Native occupation on the west side of the SFAR, several hundred feet southeast of the bedrock milling station. No doubt much additional evidence of this occupation was destroyed during intensive mining of the SFAR terraces beginning in 1848 and continuing for several decades.

Apparently, there were still Nisenan people living in the village at the time of the gold discovery: Rouse tells us that John Sutter, when he decided to build a sawmill at the site, signed an agreement with the Nisenan that he would not "encroach into the rest of Nisenan territory if the Nisenan agreed not to interfere with the camp at the mill". This agreement was soon nullified, however, as the influx of miners "led to several encounters with the Indians of the village of Koloma in which a large number were killed."

Researchers have interpreted the Native artifacts as reflecting "a pre-Nisenan Maidu population" that established a camp on the river terrace more than 2,000 years ago, and a later Nisenan village "which may represent at least one of the locations of Koloma within the last 1,000 years" and into "the historic present." The same researchers conclude that "the portion of the terrace that was mined away in Coloma was used over several thousand years by the Nisenan Maidu and an earlier population that was probably unknown to them." (Mikesell Historical Consulting 2020b)

James Marshall and Sutter's Mill

On January 24, 1848, James Marshall discovered gold in the tailrace of a lumber mill he was in charge of building on the South Fork of the American River, in what was then Mexican California, but which would become El Dorado County in the State of California. This discovery was a transformative event in the history of California and, in many respects, in the history of the world.

James Marshall is one of the most famous but also one of the least understood major figures in California history. He was born in New Jersey in 1810 and wandered west as a young man. He had learned carpentry from his father, a wagon maker, and found his skills to be highly valued in the pioneer settlements of the American West. He settled in Missouri in 1837 and in the Willamette Valley of Oregon in 1844, where he worked as a carpenter. In early 1845, he re-settled in what would become Sacramento, California, where he found work as a carpenter with John Sutter.

John Sutter (born Johann Suter) was a Swiss immigrant to Mexican California who is widely recognized as the founder of the community of Sacramento and one of the most significant non-Mexican pioneers in pre-1850 California. Sutter was born in Germany in 1803 but settled in Switzerland as a young man. In 1834, he left his Swiss wife and children and boarded a ship to the United States. Almost immediately, he journeyed to the frontier Mexican city of Santa Fe, in what is now New Mexico, then to the Oregon Territory, which was jointly claimed by England and the United States. In 1838, he journeyed from Oregon to Hawaii, then from Hawaii to the Mexican town of Yerba Buena (modern San Francisco) in Alta California. In 1840, he traveled to the Alta California capital in Monterey, requesting a land grant in the Sacramento Valley. He called his grant New Helvetia, using the Latin name for Switzerland. In 1839, he began building what was called Sutter's Fort, a fortified enclosure in what is now Midtown Sacramento.

At his fort, Sutter employed a large work force chiefly comprising local Native Americans as well as a group of Hawaiians he had brought with him to California. Sutter's reliance upon Native American workers, seen by many as essentially slave labor, is the source of greatest controversy in Sutter's treatment in scholarly historical works.

Sutter did hire skilled labor when it was possible to do so, which led him to welcome the arrival of the carpenter James Marshall in 1845. Marshall worked with Sutter at his fort even while establishing his own farm on Butte Creek near modern Chico in Butte County, California. Marshall signed on with John C. Fremont's California Battalion during the Mexican War in 1846. At the end of

his service, he returned to his ranch near Chico but found it had been ransacked during his absence. In need of funds to rebuild his property, Marshall returned to working for Sutter.

Sutter commissioned Marshall to oversee construction of two major structures: a grist mill near Sutter's Fort and a sawmill on unclaimed land on the South Fork of the American River, in what is now Coloma. Marshall began work on the American River sawmill in the fall of 1847 and work was nearing completion on January 24, 1848, when Marshall discovered gold nuggets in the tailrace for the mill.

At the time of the discovery, Marshall was supervising a diverse crew, including several Mormons who had mustered out of the Mormon Battalion at the end of the Mexican War, as well as several other American families and some Native Americans. Marshall instinctively understood that chaos would soon follow, as word of the discovery of gold was made public. On January 28, he reported the finding to his boss, John Sutter, and the two agreed to attempt to stifle the news. Word leaked out nonetheless and the area around Sutter's Mill was quickly transformed into the first of hundreds of California gold camps.

The history of Coloma following the discovery of gold may be seen as comprising four general periods of development. The first was the true Gold Rush, when placer mining harvested the easiest traces of gold. This period extended from 1848 until about 1860. There is a large number of resources that document this period of settlement in Coloma. The second era represented a period of continued gold mining but also the development of a permanent community, including the building of permanent residences, commercial buildings, and cultural buildings, such as churches and schools. This era extended from about 1860 to 1900. There are only a few resources that remain from this era. A third era, from 1900 until the state park was established in 1948, was characterized by a distinct change from a mining-based to an agriculture-based economy. New and different types of permanent structures were built during this period and many important historical buildings and structures represent this period, including the Mt. Murphy Road Bridge. The fourth era extends from 1948 to the present and is dominated by the operations of the State Park. In all eras, the history of Coloma has been affected mightily by a series of major floods of the South Fork of the American River. The flood events destroyed many buildings and structures and resulted in a pattern of settlement further and further from the river bank, away from the destructive flood waters.

Coloma during the Gold Rush, 1848-1860

Settlement in Coloma during the Gold Rush centered on the alignment of Main Street, which closely approximates that of modern SR 49. In the earliest period, there was also an extension of Main Street that pointed east toward the SFAR; it was called Sutter Street. Sutter Street diverted at Main Street near where current Bridge and Main Streets intersect. Persistent flooding in the 1850s caused merchants to abandon the Sutter Street businesses. The Sutter Street area was heavily mined in the 1860s and 1870s, to an extent that very little remains of the pioneer settlement there. The two principal riverside parking lots of the State Park occupy that old part of Coloma. During this period, Coloma was county seat of El Dorado County, between 1850 and 1857.

In 1857, Herman Au, an engineer, created a remarkably detailed map of Coloma showing the location and owners of many if not all buildings in Coloma. That map has been used extensively by State Parks historians and interpreters as well as many professional and avocational historians to document the appearance of the original gold camp during the Gold Rush. There were dozens of

frame buildings and a few masonry buildings lining Main Street, Sutter Street, and on the opposite side of the SFAR.

One of the earliest long-term settlers in Coloma was Frank Bekeart. Born in London, England to a French family, Frank (born Jule Francois) Bekeart came with his family to New York City in 1836. Bekeart was apprenticed to a gunsmith as a young man, and he took that trade with him to Coloma. Bekeart arrived in Coloma in 1849, where he had some success as a miner and a gun merchant. He briefly moved back to New York in 1853 but returned to Coloma in 1854. He purchased a wood frame building on Main Street in 1854 and built a permanent brick building attached to the residence to house his gun shop. The rare use of brick during the Gold Rush can be explained in part by the nature of his gun trade; his exceedingly valuable guns required a safe and fireproof place of storage. Bekeart's Gun Shop building exists today at the corner of SR 49 and Bridge Street, only a short distance from the subject Mt. Murphy Road Bridge.

A second building from this period is the 1852 Coloma Grays Armory, a small wood frame likely built as a carriage house but repurposed in 1857 as an armory for a local militia, which was organized that year. The Grays Armory is on the west side of SR 49, within view of the Mt. Murphy Road Bridge. The Grays comprised a volunteer army or militia and was one of dozens of such militias organized in the remote sections of California during the Gold Rush, when local police were scarce or non-existent. This building remained an armory until the Civil War, when many of the Gray militia members joined the California Volunteers, a more traditional unit of the U.S. Army. After the Grays disbanded, the building was reused many times, chiefly as a stable or a garage. It is an exceedingly rare example of a pre-Civil War militia armory building in California.

A third building with strong historical associations is the home of Thomas Hanford Williams, which still exists but is located a good distance away from the Mt. Murphy Road Bridge project. Williams was born in Kentucky in 1826. He moved to Coloma in the early 1850s and was admitted to practice law in El Dorado County in 1854. He stayed in Coloma until 1858, moving first to Sacramento then to San Francisco. He was elected as State Attorney General in 1859 and served a single term. He became one of California's largest landowners with vast holdings in the Sacramento-San Joaquin Delta. He died in San Francisco in 1886. The house continued to have distinguished occupants even after Williams left. Between 1870 and 1875, the house was occupied by Edwin Markham. Markham, a school teacher in El Dorado County for many years, was best known for writing the poem, "The Man with a Hoe," one of the best-known 19th century works in California.

Another intact Gold Rush era building is the IOOF (Odd Fellows) Building, constructed in 1854. This two-story Greek Revival wood frame building is located within the boundaries of MGDSHP but a good distance away from the Mt. Murphy Road Bridge. IOOF Halls were numbered in the order in which they were established. Coloma is No. 27, i.e., the 27th lodge formed in California. There are not, however, 26 extant IOOF buildings in California that are older than this one. For example, the Placerville Lodge was No. 19 but the current building dates to 1911. The Auburn Lodge is No. 9 but the building dates to 1895. A scan of standing IOOF Halls in California suggest that only the building in Mokelumne Hill is older than this building in Coloma. Whether the oldest or nearly the oldest IOOF Hall in California, the building is certainly a rare example of its property type.

Other resources within MGDSHP from this era include two churches: the Emmanuel Church, a wood frame Episcopalian church building, which is within the boundaries of MGDSHP but perhaps one-half mile from the Mt. Murphy Road Bridge, and St. John's Catholic Church, near Emmanuel Church; it was built in 1856. Two other interesting buildings from the 1850s are side-by-side stone masonry

Chinese stores, located on the west side of SR 49, a short distance north of the Mt. Murphy Road Bridge. These are generally identified as the Man Tee and Wah Hop buildings.

The Weller House, built in 1856, is a rare residential building from this era. It is on the west side of SR 49, not far from the Grays Armory. It was built in the mid-1850s but acquired by Elias Weller, a prominent storeowner in Coloma, in 1865. Weller stayed in this house until the late 1890s. The State of California purchased the home in 1957. The Wellers owned and used the Coloma Grays Building after the militia was disbanded during the Civil War.

Common features within MGDSHP are reconstructed buildings and structures, used by State Parks to interpret historical themes not represented by authentic historic buildings. These reconstructions may be dated either by the date of reconstruction or the age of the building or structure being interpreted. The majority of reconstructed buildings interpret the Gold Rush era. These include: Sutter's Mill, an 1848 structure that was reconstructed in the 1940s and again in 2016; James Marshall's Cabin, an 1848 structure that was rebuilt in the 1940s; the Mormon Cabin and Miner's Cabin, both conjectural reconstructions interpreting Gold Rush buildings.

There are also a number of ruins that date to the 1848-1860 era, some of which are close to the Mt. Murphy Road Bridge site. Immediately behind the Bekeart's Gun Shop site is the foundation for Bekeart's residence, which was a wood frame building attached to the rear of the brick gun shop; that foundation is immediately adjacent to the approaches for the Mt. Murphy Road Bridge. West of SR 49 are the prominent ruins of the Coloma Jail. The remains of the Crescent City Hotel are located directly west of Bridge Street, just beyond the Mt. Murphy Road Bridge. Other prominent ruins include the site of the Sierra Nevada House on the east side of SR 49 and the nearby ruins of Bell's Store, which partially collapsed in late 2016.

Coloma during the mature mining era, 1860-1900

During the last half of the nineteenth century, mining remained an important business in Coloma, although mining methods advanced from the simple placer operations that dominated the Gold Rush to hydraulic and other more destructive mining methods that destroyed many remnants of the true Gold Rush. During the late 19th century, the commercial core of Coloma was still centered on Main Street while non-commercial uses spread up the hill to the west of the highway. During the immediate post-Gold Rush era, the basics of an agricultural economy began to emerge as well, with orchards and a few vineyards sprouting up outside the historic core of Coloma.

There are only a few extant buildings and structures that date to this period. Among them are two residences, the Kane House and the Papini House, both built in the mid-1880s. They sit nearly side by side on the west side of SR 49 near the south end of the park. The tiny Papini house is located near the site of an 1853-1864 bakery and confectionary store owned and operated by Luther Davis, whose house was located on the hill, some 100 feet behind the bakery. Both the house and bakery were dismantled after 1885. This structure was built for Davis' granddaughter, Dorus Hooper Papini, and her husband, Joseph Papini. It is believed that materials from the original bakery building were used to construct it. The Papini's lived on the site until 1903. The residence was then used as a rental. The Kane House was built in 1886 by Thomas Kane, born in Coloma to Irish immigrant parents. He built this house for his bride, Julia. He died 5 years later, and Julia lived here for many years afterward. In 1934 Ralph Hikens owned the house and operated a store and post office in one room. Kane's descendants became prominent landowners in Coloma in the mid-20th century. When State Parks began acquiring parcels in the mid-1950s, many of them belonged to the

Kane family, including the Bekeart's Gun Shop and the Old Jail site. The Kane house now houses the American River Conservancy.

Other farming sites exist near the Mt. Murphy Road Bridge project. The Gallagher family for many years farmed land on the north side of the SFAR, until they sold their land to State Parks in 1957. This orchard was started by the Woodruff Brothers in the 1860s but was acquired by the Gallaghers in the early 20th century. John Gallagher was the son of an Irish immigrant who moved to Coloma from New York State in the 1850s. His son, Henry, bought the land in question and he and his son, Melvin, farmed the plot until Melvin sold it to the State of California. Concrete foundations from the Gallagher homestead can still be seen on the north side of Mt. Murphy Road; no remains of nineteenth-century "North Coloma" are visible on the surface within the area of direct impact (ADI).

The most important agricultural operation in Coloma in the late 19th century was the Vineyard House. Martin Allhoff, a German immigrant, built a large winery along Cold Springs Road in 1860, making it one of the earliest wineries in American California. The remains of that winery still exist. When Allhoff died, Robert Chambers, proprietor of the Sierra Nevada House, married Allhoff's widow and took over the winery operation. He built a massive home near the winery, a house so large it doubled as an inn for visiting wine merchants. The Vineyard House still exists (CHD # 61).

The most striking structure from this era is the Marshall Monument (CHD #22), which was built in 1890 and is at the southwestern corner of the park, high on a hillside overlooking the historic Main Street of Coloma. The Marshall Monument stands at the summit of Marshall Hill. The bronze Marshall figure, holding a gold nugget in one hand, points with the other to the site where he discovered those first few flakes of gold. The monument is made of granite and stands thirty-one feet tall, atop of which is the ten-foot six-inch tall bronze statue of James Marshall. The monument was designed and sculpted by J. Marion Wells, and cast in San Francisco. It was erected by an Act of the Legislature in May of 1890 and paid for by state appropriations. James Wilson Marshall is buried beneath the monument.

Adjacent to the monument is a caretaker's cottage that was constructed as a small cabin at the same time as the Monument. The caretaker's cottage was expanded considerably in 1918, taking on its current appearance at that time.

There are also ruins within MGDSHP that date to the second half of the 19th century. The most impressive of these is the substantial foundation for the Sierra Nevada House. The hotel was built in 1850 along Main Street (SR 49), adjacent to the Bell Store. The original hotel building burned in 1902 but was replaced by a more modestly sized building by Charles Schultz. This newer version of the hotel continued to act as a de facto community center, hosting local events and serving as the first motion picture theater in the town. The second Sierra Nevada Hotel burned in 1921. The Coloma site was abandoned and is a visible ruins today. The Sierra Nevada House site has been excavated on several occasions by State Parks archaeologists and students from California State University, Sacramento. The site is several hundred feet south of the Mt. Murphy Road Bridge.

Coloma during the 20th century, prior to establishment of the State Historic Park, 1900 to 1948

In the early 20th century, Coloma was slowly transformed from a mining to an agricultural community. Although the population declined to a fraction of its 19th century figure, the community began to take on the trappings of a permanent place, with the introduction of a school and a community hall.

One notable aspect of Coloma's history in the early 20th century was its settlement by several African American families. The African American population of El Dorado County or the Mother Lode region has never been numerous at any point in their histories. Various African American families settled in Coloma as early as the 1860s. Peter and Nancy Gooch came to Coloma as slaves to William Gooch, one of the earliest settlers in Coloma. They left behind a son in Missouri, who was sold to a man named Monroe and who adopted Monroe as his last name. Peter and Nancy Gooch were freed in 1850, when California became a Free State. They stayed in Coloma and worked to save money to find their son, Andrew, and bring him to California. In 1870, Nancy Gooch, now a widow, located her son in Missouri, paid off his debts, and brought Andrew Monroe to Coloma with his wife and his children.

In the early 20th century, Pearley Monroe, one of Andrew Monroe's children, became a prominent businessman and landowner in Coloma. He kept buying up distressed properties in Coloma until he owned more than 300 acres. He also built several buildings as speculative rental properties. Two of these remain and are a short distance from the Mt. Murphy Road Bridge. One is called the Monroe Home, although Monroe did not live there; it was a rental property. The other is a blacksmith shop, which he built and probably leased to another African American; it is immediately adjacent to the Monroe House. Monroe also owned the land that held the original Sutter's Mill, which was purchased by the State of California in 1942.

Several other important resources exist today that were built in the 1900-1942 period. One resource is the Gold Trail Grange Hall No. 452, which is immediately adjacent to Bridge Street, leading to the Mt. Murphy Road Bridge. This building was not built as a Grange Hall. It was built by community leaders in Coloma in 1925 to establish a community hall, to replace the social function of the Sierra Nevada House, which had burned in 1925. The building was owned by the Coloma Community Hall Association until 1945, when it was sold to the Gold Trail Grange.

A final resource from this era is the Mt. Murphy Road Bridge (CHD #1). Coloma was served by a variety of bridges prior to 1915, when the existing structure was constructed. The first was built in 1850 some distance from the current crossing; it washed out in 1852. It was replaced by a new bridge in 1853 at nearly the same crossing as the existing bridge. That bridge washed out in 1856 but was replaced by another, which washed out in 1862. A wire suspension footbridge was constructed in 1881 as a toll bridge; that structure was taken over by the county in 1887 and remained in service until the current bridge was built in 1915. The 1915 bridge originally had timber approaches, which were replaced by the current reinforced concrete approaches in the early 1930s. The Mt. Murphy Road Bridge was determined eligible for listing in the NRHP by Caltrans in two versions of its Historic Bridge Inventory.

Coloma after establishment of the State Historic Park in 1948

MGDSHP was established incrementally. One could argue the park dates to erection of the Marshall Monument in 1890, which was carried out by the State of California before the State Parks agency was in existence. Real movement toward establishing the park came in 1942, when the site of the original Sutter's Mill was acquired by the state for the purpose of establishing a state park. Statewide interest in developing a gold discovery state park accelerated in 1948, when a massive celebration was held at Coloma, attended by numerous celebrities and elected officials. This massive celebration is seen by many as the effective date for establishment of the park, even though some land had been acquired by the state in 1890 and 1942. Little by little, State Parks acquired additional acreage and built the necessary buildings for maintenance and interpretation for the

park. The most significant structures in that regard are the Museum and Headquarters, both built in 1962. There is employee housing within the Park as well as parking kiosks, bathrooms, buildings for displaying large historic objects, trails, and other such improvements.

In addition to building new structures, State Parks also removed many buildings that did not fit the interpretive needs of the park, or which otherwise were unneeded by the Park. For example, the Gallagher ranch east of the SFAR included a large collection of structures when the property was acquired in the late 1950s. All have been removed, although concrete foundations are still clearly visible. Parks also acquired a general store, bar, and filling station on the west side of SR 49. The buildings were constructed over many years, most of them in the 1930s. These were removed after they were acquired by State Parks.

Previous Archaeological Investigations

Considering Coloma's importance both as a Native American village and the primary gold discovery site, there are surprisingly few archaeological reports for the Park. The first archaeological "research" conducted at Coloma appears to have been in 1924, when "Philip B. Bekeart, Henry Lahiff, and the Society of California Pioneers determined the exact location of Sutter's sawmill by excavating a small area of the site" (Far Western 2020). Researchers also tells us that archaeologists R. F. Heizer, Franklin Fenenga, and Aubrey Neasham of UC Berkeley, working with the Division of Beaches and Parks in 1947, "unearthed portions of the original tailrace and examined the construction of the mill itself," information that was used to construct a replica of the sawmill. This work was done well outside the current project ADI (the original mill was some 800 feet downstream of the bridge). No mention was made of prehistoric/Native American artifacts or features at that time (Far Western 2020).

State Parks Survey 1977

The next documented investigations in the Park came 30 years later, when archaeologists Lynn Furnis, Philip Hines, and Betty Rivers carried out a complete surface inventory of the extant features (except for private inholdings) and recorded everything they found: "Standing buildings and 'features'…building ruins, discernable building sites…artifact concentrations, structure remains…and ground disturbances" (Far Western 2020). They encountered and recorded 95 features in all, including roads, tailings and other mining remains, agricultural features, commercial establishments, private residences, community buildings, and a few features they could not identify. Furnis also interviewed several long-time Coloma residents, including Melvin Gallagher, whose family owned the field on the northeast side of the bridge for many decades. Again, there was no mention of prehistoric/Native American remains. The report does not include any maps, making it almost impossible to re-locate most of the 95 features recorded.

California State University Sacramento Excavations 1997

In 1997, then-graduate student Wendy Rouse conducted her thesis research in Block 9, Lots 11–15, along Coloma's Main Street and very slightly overlapping the current ADI on its southeastern corner. Her objective was to identify the location of Stephen A. Wright's 1848 store, believed by historians to be the first merchandising firm in Coloma; or, failing that, to locate the remains of later structures that had occupied the block: Weller's Hardware Stores, Zelner's Apothecary, Huntress's Saloon, the

Hook & Ladder Company Fire House, and the offices of Dr. Taylor. Rouse's excavations "revealed pertinent information about the construction, design, occupation and ultimate destruction of these buildings" (Far Western 2020). The location of Wright's store, however, was not identified.

The 1997/1998 excavations consisted of 11 trenches and some 16 units in the area between Bekeart's Gun Shop and what is now the Argonaut Café. The excavations closest to the Project ADI Trench A and Unit 16N/102W.

Trench A is described as being placed in: *a depressed area that appears to have been dug out for the purposes of mining. [Two of Rouse's students] excavated a 15-feet by 2-feet trench in this area for the purpose of determining what, if any, cultural layers existed. Excavators removed approximately 16 inches of light brown river silt and cobbles prior to discovering decomposing granite. Objects uncovered in this area consisted mostly of modern glass and metal debris… It appears that late nineteenth century miners excavated the terrace down to granitic bedrock in search of gold and abandoned the area after the work was completed.*

Unit 16N/102W was placed near the back corner of Bekeart's Gun Shop, on ground that was built up to the same level as SR 49. This unit "disclosed a heavily disturbed deposit of various artifacts and soil types. Both prehistoric and historic materials lay intermixed in brown sandy and orange gravel soils". Rouse's crew did encounter "ground and chipped stone scattered across the site" in other trenches, but these items were dispersed among the tailing cobbles, intermixed with historic-era materials, or otherwise "displaced from their original context"

State Parks Survey 2000

The area of Gallagher's Field (east of the river and north of Mt. Murphy Road) was surveyed by State Parks in preparation for installation of an underground sprinkler system. The survey identified the foundations of "the Teuscher cabin" (outside the current ADI) and "the partial remains of the concrete foundations of a garage, a covered well and a concrete box for a flood irrigation valve" (Far Western 2020). State Parks staff also noted that "the Gallagher home and ranch buildings no longer exist; they were demolished in the late 1970s." No prehistoric or ethnographic artifacts or features were noted at that time, although subsequent monitoring of the trench excavations for the water lines reportedly identified an unknown number of artifacts (Far Western 2020). According to State Parks personnel, these artifacts were collected but have never been catalogued or analyzed. The locations of the Gallagher residence and outbuildings are outside the project ADI.

Other State Parks Activities

Other investigations have taken place within the MGDSHP, although there do not appear to be any reports or other formal documentation of these. Researcher report that "[m]ore recently, state archaeologist [now retired] supervised several test excavations in response to park maintenance and reconstruction activities." No record of these excavations was found during the archival research for this study.

Far Western Surveys 2007–2008

In 2007, archaeologists from Far Western recorded or re-recorded several historic-era features along both sides of SR 49 in Coloma (Far Western 2020). The survey was conducted for Caltrans, as

part of their program of archaeological inventory of rural conventional highways, and was restricted to the highway right-of-way. Within the right-of-way, Far Western recorded "stone walls, brick paving, foundations, wells, an historic-era road…historic-era trees, and split rail fencing…[N]o prehistoric artifacts or features were noted". These features occur just outside the current project ADI.

State Parks Monitoring 2018

In June 2018, State Parks staff archaeologist monitored the excavation of three small test holes in Gallagher's Field as part of the wetland delineation study for the bridge replacement project. The test holes varied from 11 to 15 inches in depth and 10 to 12 inches in diameter. Test Holes 1 and 3 were negative, but Test Hole 2 yielded five historic-era artifacts: a fragment of "black" (very dark green) bottle glass; two tiny fragments of white glazed ceramics with crazing; and two shards of very thin, colorless glass that appeared to be part of a lamp chimney or similar item (Far Western 2020). "Black" glass bottles generally date to 1870 or before; the other items were not temporally diagnostic. However, the fact that three very small excavations yielded nineteenth-century artifacts indicates that subsurface archaeological materials are still present in Gallagher's Field, despite the many disturbances that have occurred there.

Other Prior Disturbances

Historic-period and modern disturbance to the original village site has been extensive. Documentary and archaeological evidence indicates that the lots along both banks of the SFAR were mined-out during the historic period, removing all soils down to river cobbles and bedrock. This intensive mining of the SFAR terraces began in 1848 and continued for several decades. The owners of the various lots along Main Street even leased their lots to miners, who "subsequently tore down the buildings and dug up the ground beneath in search of gold" (Far Western 2020). Some owners even tunneled beneath standing structures. As early as November 20, 1857, the Daily Alta California, a period newspaper, reported that "the whole surface of the country and around the place has been up-turned, and monuments of the industry of the avaricious gold-seeker are visible in the immense pits, piles of rock, ditches, and innumerable other evidences of labor".

A century later, these "immense pits and piles of rock" still mark the landscape (Far Western 2020). The Factual Data Report for the Park, describe the river terraces below Main Street/SR 49 as follows: "the surface of the ground is very irregular with many holes and rock piles. There is very little soil cover, most of it having been washed away during sluicing operations many years ago." (Goodrich and Ford 1959).

Goodrich and Ford (1959) also noted that, after mining had removed the terrace soils down to bedrock, fill was used in some areas to raise the ground back up to the level of the street. They note this regarding the area:

> This parcel [#10] is located at the southeast corner of Main Street and Bridge Street… Portions of the frontage of this lot have been filled so that the area underlying the Bekearts Store and portions of the abandoned store at the corner are the same elevation as Main Street itself… The balance of the lot drops off approximately six feet to a lower elevation and then continues downward as you proceed east towards the American River… The surface of this lot is rough and irregular with very little soil cover.

It is clear from this description that the irregular field of tailings cobbles left behind by mining was still at or very near the ground surface as late as 1959. This is still visible today as a steep drop-off on the river side of Main Street/SR 49 and irregular, hummocky ground between SR 49 and the SFAR (Figure 3-16). This lowering of the terrace also would have made the area more susceptible to flooding, resulting in the layers of alluvial silt and sediment.

Figure 3-16. Bekeart's Gun Shop, showing Fill.

Rouse's 1998 findings support the comments made by Goodrich and Ford (1959) that the banks and terraces on both sides of the river were completely mined out in the nineteenth century. Archival research for this study yielded a few early photographs of the bridge, including one that shows the area now covered by the Grange parking lot and the location of the 1930s bridge abutment and wing wall that are still in place today.

It Is likely that mining and other historic-era activities damaged or destroyed any prehistoric/Native American features or deposits that might once have existed in this area. Some artifacts could still be present, as noted by Rouse, but these will have been redeposited and mixed into tailings and other historic-era debris. There is, therefore, little potential for in situ prehistoric/Native American features or deposits along the terrace below Main Street.

Other disturbances to the Nisenan village in and adjacent to the ADI have included the construction (and later removal) of nineteenth- and twentieth-century structures—including the bridge itself; installation and removal of vineyards and fruit orchards; construction in the mid-twentieth century of an artificial levee of river cobbles (tailings) to protect against flooding; compaction and fill associated with construction of the 1915 bridge and the 1930s upgrades; extensive river dredging and placement of dredge tailings along the terraces in the 1930s–1940s; and installation by State

Parks of a parking area, an underground irrigation system, and a storm drain culvert (Far Western 2020).

Existing Cultural Resources

Efforts to locate cultural resources consisted of archival research, a records search, consultation with the Native American Heritage Commission (NAHC) and Native American representatives, as well as historical societies and other interested parties, a pedestrian survey, examination of geotechnical core samples, and extended phase one (XPI) subsurface testing.

Records Search and Archival Research

The following archival research was carried out in 2014, 2015, and 2017 by (or for) Far Western and historian Stephen Mikesell at the following repositories and online sources:

- Marshall Gold Discovery State Historic Park, Coloma
- California State Parks Gold Fields Office, Folsom
- California State Library, Sacramento
- Shields Library, University of California, Davis
- El Dorado County Historical Museum, Placerville
- Bureau of Land Management Online General Land Office Files
- U.S. Geological Survey (USGS) Online Historical Topographic Maps
- California Digital Newspaper Collection (online)
- North Central Information Center, California Historical Resources Information System, California State University, Sacramento
- Published Ethnographic and Archaeological Studies

These sources provided an array of maps, photographs, oral histories, and other documents, including reports on the few previous archaeological studies conducted in the MGDSHP. The only recorded Native American resource is a large bedrock outcrop with at least 30 mortar cups and three "probable slides," located roughly 400 feet northwest of the current project ADI. The site record for large bedrock outcrop notes that "associated midden is probably present, though its contents, depth, and integrity have not yet been assessed. The 1979 Department of Parks and Recreation's General Plan for the Park stated that large bedrock outcrop is the only Native American archaeological site recorded at the Park up to that time; it remains the only confirmed Native American site in the Park as of January 2020.

Fieldwork

Fieldwork for this study included a pedestrian survey of unobstructed portions of the project ADI, examination of geotechnical cores from the ADI, and limited XPI trenching.

Built Environment: Field survey work for built environment resources was accomplished by Mikesell Historical Consulting in 2017.

Archaeological: Far Western conducted a pedestrian survey of the project ADI on February 21 and December 19, 2019, excluding the paved roadways (SR 49 and Mt. Murphy Road), the existing bridge, built-over areas, and the river and adjacent floodplain. Observations are described below by area.

Gold Trail Grange and Adjacent Areas: The Grange property at the northwest intersection of SR 49 and Mt. Murphy Road consists of a standing structure and a paved and graveled parking lot. The parking lot is built on fill that contains underground septic and electrical lines. Immediately behind (east of) the parking lot, the ground drops away to the river floodplain. West of the Grange is the paved SR 49 and to the south is the bridge abutment, constructed on several feet of fill. This area is planned for staging and vehicle access, relocation of existing underground water and electric lines, and temporary fill for a work trestle.

Area Behind/Below Bekeart's Gun Shop: This is the area described by Goodrich and Ford (1959) as "very irregular with many holes and rock piles" and "with very little soil cover." The ADI behind Bekeart's Gun Shop is limited to a narrow swath of land at the base of the existing bridge approach and fill, including a modern gold panning station built on fill and base material. This area was also driven over by heavy equipment during the construction of the 1915 and 1936 bridge abutments. The current project potential impacts would extend approximately 12 inches below the present ground surface. A small scatter of historic-period artifacts is present just outside the ADI; it was recorded as part of the Extended Phase I investigations described below.

Coloma Resort Property: Portions of the Coloma Resort Property are proposed to be used for Project staging. The ground here has been cut, filled, leveled, paved, built on, and landscaped, removing or obscuring much of the original ground surface. Proposed Project activities here would include staging and vehicle/equipment access on existing developed areas (paved and gravel road/driveway/parking areas) and temporary fill for a work trestle. The pedestrian survey identified no archaeological artifacts, deposits, or features–except the bridge itself and its concrete piers–in the project ADI.

Gallagher's Field (Pleasant Flat): Although this area has been dropped from the project ADI, it was still included at the time of the original pedestrian survey in February 2019. It is very likely that subsurface features, deposits, and artifacts exist in the field, from both the nineteenth-century occupation of "North Coloma" and the twentieth-century Gallagher homestead. For this reason, the County has modified the Project to avoid this area.

Geotechnical Coring: Geotechnical coring of the Project area was conducted during the week of December 4, 2017. The purpose of these samples was to determine engineering constraints for the new bridge. The upper portion of each bore was augured but not recovered, except for small samples. However, the cores were excavated along the existing roadway, and the upper portions of the cores were most likely fill. The purpose of Far Western's examination was twofold: (1) to identify any deposits that might be found within the remaining sediments from the cores and (2) to identify patterns of deposition across the project area as a means of identifying sensitivity for subsurface archaeological materials.

Cores from that boring were transported to CH2M's offices in Sacramento, where Far Western staff inspected them on December 15, 2017. Far Western staff examined cores from locations BB-1

through BB-4, RB-2, and RB- 2a. In each bore the auger hit cobbles and boulders at between 5.5 and 6.5 feet; at that point, the sampling method was switched to coring and the collection of continuous samples.

Far Western staff examined the samples taken from the upper portions of each bore to inspect for archaeology and soils (Table 3-12). Far Western staff did not identify any evidence of cultural material or soils of any kind. Far Western staff concluded that the upper portion of the deposits appeared to be alluvial material but was previously disturbed and/or recently deposited in the majority of the samples. The presence of cobbles and boulders that impeded the augers suggested a high-energy depositional environment not conducive to the preservation of archaeological materials. Decomposing granite was identified in BB-1 through BB-4 at approximate depths between 6.5 and 15 feet (RB-2 and RB-2a were more shallow and decomposing granite was not encountered). There was nothing to suggest the potential for subsurface archaeological deposits.

Table 3-12. Notes on Examination of Geotechnical Cores and Auger Samples.

BORE	OBSERVATIONS
BB-1	Poor recovery, sand and clay mixed with cobbles/boulders; sample from 10.5–12.0 feet mixed with fine clay with gravels; decomposing granite at 15 feet. No soils, no archaeological materials.
BB-2	Sample from 1.0–2.5 feet: brown, loose sand with gravel; 5.0–6.5 feet: sand and clay, high gravel content; decomposing granite at 11 feet. No soils, no archaeological materials.
BB-3	Sample from 1.0–2.5 feet: brown sand and gravel; 5.0–6.5 feet: loose brown sand and gravel with fragments of decomposing granite. Decomposing granite below 6.5 feet. No soils, no archaeological materials.
BB-4	Samples from 1.0–2.5 feet: brown sandy loam, well sorted, no gravel; 5.0–6.5 feet: lighter yellowish brown coarse sand with some gravel; dark brown silty clay with gravel to 8.5–9.0 feet; decomposing granite at 10.5–11.0 feet. No soils, no archaeological materials.
RB-2	Samples from 0.0–0.5 feet: asphalt; 0.5–1.5 feet: road base/artificial fill. No archaeological materials.
RB-2a	Samples from 0.0–0.5 feet: mixed brown sand/silt/gravel; 5.0–6.5 feet: light brown deposits, mixed texture, large gravels; 10.0–11.5 feet: light-brown fine sediments with large gravels. No archaeological materials.

Extended Phase I Investigations (XPI): The 1997 archaeological excavations adjacent to the project ADI encountered artifacts and mining features, however no archaeological test excavations had taken place anywhere in the current ADI. Caltrans determined that such testing was necessary, in the form of Extended Phase I (XPI) investigations within the ADI for the bridge replacement project. In addition, a surface scatter of nineteenth and early twentieth century artifacts were found on a rocky slope just outside and above the ADI, closer to Bekeart's Gun Shop. Caltrans also requested that this scatter be recorded.

Because nearly all of the ADI is within the river channel or is covered with fill, asphalt, buildings, or landscaping, XPI investigations were not feasible in those areas. The exception was the terrace between Bekeart's Gun Shop, the modern Gold Panning Station, and the existing bridge. State Parks, El Dorado County, and Caltrans agreed that this was an appropriate location for subsurface exploration, and State Parks staff stated that trenching would be the most appropriate method. The goals of the trenching were 1) to expose the soil profile in this area to better understand the nature of the terrace; 2) to identify any subsurface archaeological artifacts, deposits, or features that might be present, and 3) to determine whether the nearby surface artifact scatter might have come from the ADI or might continue into it.

On December 19, 2019, a single trench was excavated at the location chosen by State Parks, El Dorado County, and Caltrans, using a backhoe with a two-foot-wide bucket. The excavation was monitored by Far Western. Also present were representatives from State Parks, El Dorado County, and Caltrans. The County had extended an invitation to the Shingle Springs Rancheria, but no representative of that group chose to participate in the trench monitoring.

The trench profile revealed distinct layers of alluvial silts and sands, with the amount and size of rock generally increasing with depth from a low percentage of gravel near the surface to a high percentage of gravel with cobbles and boulders below 60 centimeters/2.0 feet. The excavation revealed no soil development, instead showing evidence of successive episodes of silt and sand deposition reflecting multiple flood events without sufficient intervening time to allow for soil development. Decomposing granite was identified in the trench at a depth of 260 centimeters (8.5 feet). There was no clustering of artifacts and no clear association between artifacts in the trench layers. No prehistoric/Native American artifacts, features, or deposits were found. The trench is described in Table 3-13 below.

Table 3-13. Trench Description.

DEPTH (CM)	OBSERVATIONS	ARTIFACTS IDENTIFIED DIRECTLY IN
0–35	10YR 4/3 (brown); <10% small rounded gravels; very friable; loamy sand to silt; abrupt, wavy lower contact	-
35–50	10YR 3/3 (dark brown); <10% large rounded gravels, with few cobbles; loose to very friable; loamy sand to sand; abrupt, wavy lower contact	Ferrous metal sheet ~six feet long in north trench sidewall, 40 centimeters/16 inches deep
50–65	10YR 3/4 (dark yellowish brown); >10% large rounded gravels; friable; silty clay loam; abrupt wavy lower contact	Neck and three body fragments of a light-aqua glass condiment bottle; southwest corner of trench, 60 centimeters deep
65–80	10YR 3/6 (dark yellowish brown); 75% small rounded gravel, with cobbles and boulders; friable; coarse sand (no indication of soil development)	-
80–120	10YR 4/6 (dark yellowish brown); sand with continuing cobbles and boulders	Base and body fragments of very dark olive-green ("black") wine-type bottle and two lighter olive- green fragments from southern side of trench, 120 centimeters deep
120–260	Mixed alluvium with cobbles and boulders; no evidence of soil development observed in backdirt or trench sidewalls; not split further into separate depositional horizons (did not enter trench after 4 feet/120 centimeters).	Half of base to square bottle, "black" glass, with open pontil scar
260–280	Decomposing granite (~8.5 feet)	-

Mechanical trenching in the ADI on the upper floodplain below Bekeart's Gun Shop and near the (lower) modern gold-panning station revealed that this area contains no developed soils, only layers of sand and silt reflecting multiple flood events. State Parks personnel have stated that the South Fork American River has overflown its banks and flooded this area at least four times in the recent past: 1964, 1996/1997, 2005, and 2016/2017. A likely scenario is that intensive nineteenth century mining removed the native soils on the terrace and, in the process, lowered the ground surface

enough to make the area more susceptible to flooding. A few fragmentary and scattered artifacts (mostly bottle glass) were found in the trench, but no actual features or archaeological deposits.

Findings

Built Environment Resources

Listed in the National Register: The Coloma Historic District (CHD) is listed in the National Register of Historic Places. The boundaries include most but not all of MGDSHP, as well as minor acreage not owned by State Parks. The District comprises 62 total buildings, structures, and sites, of which 42 contribute to the significance of the property and 19 do not. The period of significance extends from the discovery of gold in 1848 to the effective establishment of the State Park in 1948. The CHD is significant at the national level. It is significant under National Register Criteria, having to do with mining and community development, and as a collection of 19th and early 20th century architectural specimens. The majority of the contributing buildings date to the 19th century and include a wide range of architectural styles, with the Greek Revival being dominant. There are also a variety of sites or known ruins which denote the land uses and urban forms from the Gold Rush, which began in this town.

Determined eligible for listing in the National Register of Historic Places: The Mt. Murphy Road Bridge (Bridge 25C0004) was determined individually eligible for listing in the National Register of Historic Places as part of the Caltrans Historic Bridge Inventory in 1987 and again in the Inventory Update in 2003. In a letter dated 23 September 2020 the Department of Parks and Recreation, Office of Historic Preservation (OHP) the State Historic Preservation Officer (SHPO) concurred that '*the Mt. Murphy Road Bridge was found eligible for the NRHP as part of the Caltrans Bridge Survey in 1987 and 2003 and remains eligible.*'

The trusses for the bridge were installed in 1915 while the concrete approaches were built in the mid-1930s, to replace timber approaches. The bridge today appears substantially as it did in the 1980s and in 2003 and for that reason appears to retain its status as eligible for listing in the National Register of Historic Places. It also appears to be a contributing element of the CHD because it retains its historic integrity to the period of significance for the district and because the bridge has long been an integral part of the transportation network of the community. It is significant under NRHP Criterion C as an excellent example of its bridge type. Its boundaries extend from abutment to abutment.

Archaeological Resources:

Extensive archival research and literature reviews, a buried sites sensitivity assessment, examination of geotechnical cores, consultation with State Parks personnel and the Native American community, pedestrian surveys, and XPI investigations have revealed no prehistoric/Native American artifacts, features, or deposits (and no human remains) within the exposed portions of the project ADI.

The Project area has been subject to multiple types of surface and subsurface disturbance since the Nisenan were persuaded by Sutter to abandon the village of *Kolo-ma* in the late 1840s. Most notably, documentary and archaeological evidence indicates that most of the parcels between Main Street and the river were "mined-out" during the historic period, leaving only scattered and

redeposited artifacts from the prehistoric/ethnographic occupation of the site. The mining and other historic-period activities left their own features and artifacts in the process, as revealed by archaeological excavations to the southeast of the current ADI and surface surveys by State Parks and Far Western. Twentieth-century pursuits have included dredging of the river; construction and removal of ranch buildings and orchards; erection/upgrading of the Mt. Murphy Road Bridge; placement of fill for the Grange parking lot; construction of paved roads, concrete sidewalks, and subsurface drainage and irrigation systems; extensive cut-and-fill modifications for the Coloma Resort; and installation of a modern gold-panning station on the terrace below Bekeart's Gun Shop.

Given these impacts, and based on the results of XPI trenching, we conclude that it is highly unlikely for any archaeological features or deposits to have survived in the ADI, unless they lie buried beneath buildings, paved streets, or concrete sidewalks. It is possible that a few scattered Native American artifacts are present in the alluvial silts and sands along the terrace below Main Street/SR 49, but these (like the historic-era bottle shards found in the trench) will have been moved and redeposited during the repeated flood events.

3.5.2 Environmental Impacts

3.5.2.1 Methods of Analysis

This Draft EIR analyzes whether the Project would have the potential to adversely affect existing cultural resources. The identified resources within the APE/ ADI have been examined for their significance and the potential for the proposed Project to result in impacts on that significance. CEQA requires an assessment of a project's potential effects on significant historical resources (i.e., those that are listed or eligible for listing in the CRHR or in a local register or survey that meets the requirements of PRC Sections 5020.1[k] and 5024.1[g]). This assessment entails the following steps.

- Identify potential historical resources.
- Evaluate the significance of identified historical resources.
- Evaluate the anticipated effects of a project on all significant historical resources.

Under CEQA, only effects on significant resources are considered potentially significant, so only those impacts require detailed analysis.

3.5.2.2 California Register of Historic Resources (CRHR) Criteria

The criteria for the National Register are nearly identical to the California Register. To qualify for listing in the California Register of Historic Resources (CRHR) and to be considered a historical resource for the purposes of CEQA, a resource must meet one or more of the criteria set forth in PRC 5024.1 and the California Code of Regulations (CCR Title 14, Chapter 11.5, § 4850 et seq). Criteria include:

- **Criteria 1:** Association with events that have made a significant contribution to broad patterns of local or regional history;
- **Criteria 2:** Association with the lives of persons important to local, California, or national history;

- **Criteria 3:** Embodies the distinctive characteristics of a type, period, or region, has high artistic value, or is the work of master;
- **Criteria 4:** Has potential to yield information important to prehistory or history

3.5.2.3 Thresholds of Significance

In accordance with Appendix G of the State CEQA Guidelines, the proposed Project would be considered to have a significant effect if it would result in any of the conditions listed below.

- Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?
- Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?
- Disturb any human remains, including those interred outside of formal cemeteries.

3.5.2.4 Impacts and Mitigation Measures

Impact CULT-1: Potential to cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5 (Significant Unavoidable Impact)

The Mt. Murphy Road Bridge (Bridge 25C0004) was determined eligible for listing in the National Register of Historic Places as part of the Caltrans Historic Bridge Inventory in 1987 and again in the Inventory Update in 2003. The criteria for the National Register are nearly identical to the California Register.

The trusses for the bridge were installed in 1915 while the concrete approaches were built in the mid-1930s, to replace timber approaches. The Mt. Murphy Bridge structure has changed multiple times over the years from a suspension timber bridge, to truss structure with timber approaches to a current truss structure with concrete approaches. These proposed bridge features are the product of extensive meetings and coordination with State Parks and the public in evaluating the proposed bridge solutions. Through an iterative process of proposing bridge solutions and coordinating with State Parks and the public, and refining these solutions through engineering and architecture, the proposed bridge project was discovered. The features of the proposed design are load bearing.

The bridge today appears substantially as it did in the 1980s and in 2003 and for that reason appears to retain its status as eligible for listing in the National Register of Historic Places and CRHR. It also appears to be a contributing element of the Coloma Historic District because it retains its historic integrity to the period of significance for the district and because the bridge has long been an integral part of the transportation network of the community. It is significant under National Criterion C as an excellent example of its bridge type and under CRHR Criterion 3 "*Embodies the distinctive characteristics of a type, period, region or method of construction or represents the work of a master or possesses high artistic value"*. Its boundaries extend from abutment to abutment.

Public Resource Codes (PRC) section 21084.1 states in part "*A project that may cause a substantial adverse change in the significance of an historical resource is a project that may have a significant effect on the environment. For purposes of this section, an historical resource is a resource listed in, or determined to be eligible for listing in, the California Register of Historical Resources…"* PRC section

5020.1(q) defines a 'substantial adverse change' to an historical resource as "*Substantial adverse change includes demolition, destruction, relocation, or alteration such that the significance of an historical resource would be impaired (PRC § 5020.1(q)).*" The Project will remove and replace the Mt. Murphy Road Bridge which has been determined eligible for listing in the CRHR. Per PRC section 21084.1 the Project will result in a '*substantial adverse change in the significance of an historical resource'* by removing the bridge and therefore the Project will have a significant effect on the environment.

Caltrans consulted with SHPO regarding the project effects to cultural resources pursuant to Section 106 of the NRHP. Caltrans applied the Criteria of Adverse Effect, as set forth in Stipulation X.A of the 106 PA and 36 CFR § 800.5(a)(1), and determined that the project will have an Adverse Effect to the Mt. Murphy Road Bridge and the CHD. The project has been designed to avoid impacts to the CHD to the maximum extent possible while enhancing pedestrian safety, and would ensure the project does not cause adverse effects to the Bekeart's Gun Shop refuse deposits, Gallagher's Field, Rouse's Multicomponent Deposit, CA-ELD-56, or CA-ELD-57 through the establishment and enforcement of ESAs. Via letter dated December 2, 2021, the SHPO concluded that there was no objection to Caltrans' finding of adverse effect for the project.

Mitigation of significant impacts must lessen or eliminate the physical impact that the project will have on the historical resource. This is often accomplished through redesign of a project to eliminate objectionable or damaging aspects of the project. The County has committed to implementation of measures CULT-1 to CULT-8 to reduce impacts. The demolition of a historic structure cannot be mitigated to less than significant. Even with the implementation of measures CULT-1, CULT-, 2, CULT-3, and CULT-4 this is a significant unavoidable impact.

Mitigation Measure CULT-1: Design Features

- *The Proposed Bridge Design for the Mt. Murphy Rd. Bridge Replacement shall incorporate bridge features similar and consistent with the earlier bridge crossing structures, examples include: 1. truss portals with cables resembling the current truss bridge and earlier suspension bridge, 2. use of timber texturing and oversized sidewalk resembling a "boardwalk" similar to the earlier timber approaches, and 3. recesses and curvatures in the profile of the proposed bridge similar to the existing concrete approaches.*

Mitigation Measure CULT-2: Historic American Engineering Record (HAER)

- *Prior to the start of construction, Caltrans shall contact the regional Historic American Building Survey/Historic American Engineering Record/Historic American Landscape Survey (HABS/HAER/HALS) coordinator at the National Park Service Interior Regions 8, 9, 10, and 12 Regional Office (NPS) to request that NPS stipulate the level of and procedures for completing the documentation. Within ten (10) days of receiving the NPS stipulation letter, Caltrans shall send a copy of the letter to all consulting parties for their information.*
- *Caltrans will ensure that all recordation documentation activities completed by the County or its designee are performed or directly supervised by architects, historians, photographers, and/or other professionals meeting the qualification standards in the Secretary of Interior's Professional Qualification Standards (36 CFR 61, Appendix A).*
- *Upon receipt of the NPS written acceptance letter, the County or its designee, with oversight by Caltrans Professionally Qualified Staff (PQS) in the appropriate discipline, will make archival, digital library-quality copies of the documentation and provide them to the Caltrans Library*

and History Center, Sacramento; the California Office of Historic Preservation; and the Caltrans Cultural Studies Office. Additional copies will be offered to the El Dorado County Public Library, Placerville Branch, the El Dorado County Historical Society, and the California State Library.

- *Caltrans shall notify SHPO that the documentation is complete and all copies distributed, as outlined in section II.B.3 of the Memorandum of Agreement (MOA), and include the completion of the documentation in the annual report.*

Mitigation Measure CULT-3: Interpretive Exhibits

- *The County, with oversight from Caltrans PQS and in coordination with State Parks, shall develop and install an interpretive exhibit near the location of the new bridge. The County has identified the "vista point" area on Mt. Murphy Road as a likely location for the interpretive panels; however, the final number, placement, and content of the interpretive panels will be determined in consultation with Caltrans, State Parks, SHPO, and interested Native American parties. The County will coordinate with the Marshall Gold Discovery State Historic Park Museum in the preparation of the exhibit to maintain consistency with the format and style with the Park's existing interpretive program.*
- *The County shall, at a minimum, develop an interpretive display relating to the succession of bridges built historically at or near the Mt. Murphy Road Bridge crossing. The County shall provide the information and materials resulting from the HAER recordation efforts to State Parks. The County and State Parks, with oversight from Caltrans, will use the HAER materials to develop an exhibit which may feature reproductions of photographs of the various timber trestle, wire suspension, and truss bridges at this site and include historical data regarding each bridge.*
- *The County shall submit drafts of the proposed interpretive exhibit materials to consulting parties for a 30-day review and comment period. The County, with oversight from Caltrans PQS and in coordination with State Parks, will take all comments into account in the production of the final interpretive exhibits.*

Mitigation Measure CULT-4: Prepare Revised National Register Nomination for Coloma Historic District

- *The County, with oversight from Caltrans PQS in the appropriate discipline(s), will contract with PQS historical or historic architectural and archaeological consulting firms to prepare a revised National Register nomination for Coloma Historic District, a nomination that takes into account changes in documentation requirements since the existing forms were prepared in the 1970s. The nomination will conform to National Register Bulletin 16A, "How to Complete National Register Forms" as well as any California-specifics as posted on the website of the SHPO. The revised nomination will include consideration of previously recorded contributing and non-contributing historical archaeological resources that are found to be associated with the Coloma Historic District. Caltrans and the County will provide the signatory parties staff an opportunity to review and comment on the draft nomination before formal submittal to California SHPO.*

Mitigation Measure CULT-5: Reporting Requirements and Related Reviews

- *Within thirty (30) days after the County has determined that all fieldwork required under Stipulation II.E of the MOA has been completed, the County will ensure preparation and concurrent distribution to Caltrans District 3, the Caltrans Cultural Studies Office (CSO) and other MOA parties of a brief letter report that summarizes the field efforts and the preliminary findings that result from them. MOA parties will have thirty (30) days from the date of receipt to review and comment on the preliminary findings. Comments will be shared with the SHPO prior to finalization of letter*

report. The finalized letter report will then subsequently be distributed to MOA parties for their records.

- *Within twelve (12) months after the County has determined that all fieldwork required by Stipulation II.E of the MOA has been completed, the County will ensure preparation and subsequent concurrent distribution to Caltrans District 3, the CSO, and the other MOA parties, for review and comment, a draft technical report that documents the results of PRDMP. The other MOA parties will be afforded forty-five (45) days following receipt of the draft technical report to submit any written comments to Caltrans District 3. Failure of these parties to respond within this time frame shall not preclude Caltrans District 3 from authorizing revisions to the draft technical report, as Caltrans District 3 may deem appropriate.*
- *Copies of the final technical report document the results of the PRDMP and any other subsequent documentation will be distributed by the County to the other MOA parties and (as applicable) to the Sacramento North Central Information Center (NCIC) of the California Historical Resources Information System (CHRIS).*

Impact CULT-2: Potential to cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5 (less than significant with mitigation)

Extensive archival research and literature reviews, a buried sites sensitivity assessment, examination of geotechnical cores, consultation with State Parks personnel and the Native American community, pedestrian surveys, and XPI investigations have revealed no prehistoric/Native American artifacts, features, or deposits (and no human remains) within the exposed portions of the project ADI. The Project area has been subject to multiple types of surface and subsurface disturbance since the Nisenan were persuaded by Sutter to abandon the village of *Kolo-ma* in the late 1840s. Based on the results of XPI trenching, Far Western conclude that it is highly unlikely for any archaeological features or deposits to have survived in the ADI, unless they lie buried beneath buildings, paved streets, or concrete sidewalks. It is possible that a few scattered Native American artifacts are present in the alluvial silts and sands along the terrace below Main Street/SR 49, but these (like the historic-era bottle shards found in the trench) will have been moved and redeposited during the repeated flood events. Mitigation Measure CULT-6 Post-Review Discovery and Monitoring Plan provides for Native American monitoring of ground disturbing activities. Implementation of measures CULT-1 to CULT-7 will reduce potential impacts to less than significant.

Mitigation Measure CULT-6: Post-Review Discovery and Monitoring Plan

- *Caltrans District 3 has prepared a Post Review Discovery and Monitoring Plan (PRDMP), which is attached to the Finding of Effect, in accordance with Stipulation XV.A of the Section 106 PA. This PRDMP shall have in place a plan for treatment of archaeological properties, should they be discovered within the ADI after execution of this MOA.*
- *If Caltrans District 3, in conjunction with the County, determines, after construction of the Undertaking has commenced, that the Undertaking will affect a previously unidentified property that may be eligible for listing in the NRHP, or affect a known historic property in an unanticipated manner, the County will address the discovery or unanticipated effect in accordance with the PRDMP. Caltrans at its discretion may hereunder assume any discovered property to be eligible for listing in the NRHP in accordance with 36 CFR § 800.13(c).*

Mitigation Measure CULT-7: ESA Action Plan

- *The County, with oversight from Caltrans PQS, shall ensure that the Undertaking will not adversely affect known archaeological properties that include: CA-ELD-56 and -57, the multicomponent site*

identified by Rouse along SR 49 south of Mt. Murphy Road, the area behind the Bekearts building, and Gallagher field on the east side of the river by designating those resources as Environmentally Sensitive Areas (ESA) and through implementation of the ESA Action Plan , which is attached to the Finding of Effect.

- *The County, with oversight from Caltrans PQS, shall ensure that the portions of archaeological sites contributing or potentially contributing to the Coloma Historic District outside of the Area of Direct Impact (ADI) will not be adversely affected by the Undertaking because they will be established as ESAs and work within these areas will be prohibited or restricted, as detailed in the ESA Action Plan, which is attached to the Finding of Effect.*

Impact CULT-3: Disturbance of any human remains, including those interred outside of formal cemeteries (less than significant)

No known human remains are present within the proposed Project area. There is the possibility of accidental discoveries of human remains during construction-related ground-disturbing activities. Should human remains be discovered during the excavation portion of the Project, the project description includes contract provisions that will require County notification and compliance with California Health and Safety Code Section 7050.5 and California Public Resources Code Sections 5097.5 and 5097.9 et seq.

3.5.3 References Cited

California State Parks. 2004 (Revised 2017). Marshall Gold Discovery State Historic Park brochure. http://parks.ca.gov/pages/484/files/MarshallGoldFinalWebLayout2017.pdf

Far Western Anthropological Research Group, Inc. 2020. *Revised Archaeological Survey Report for the Mt. Murphy Road Bridge Replacement Project, Coloma, El Dorado County, California. Federal Aid Project No.: BRLO 5925 (090)*. Prepared for Caltrans District 3. Marysville, CA.

Goodrich, Donald H., and Robert W. Ford. 1959. Factual Data Report, Marshall Gold Discovery State Park, El Dorado County, California. On file at Marshall Gold Discovery State Historic Park Archives, Coloma.

Mikesell Historical Consulting. June 20192020 (2020a). Historic Property Survey Report Mt. Murphy Road Bridge Replacement Project.

Mikesell Historical Consulting. June 20192020 (2020b). Historic Resource Evaluation Report Mt. Murphy Road Bridge Replacement Project.

3.6 Tribal Cultural Resources

This section identifies the regulatory and environmental setting for tribal cultural resources. For the purposes of this section, *tribal cultural resources* consist of a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place or object with cultural value to a California Native American Tribe.

This section is based on the information obtained through El Dorado County's consultation with Native American tribes and the Archaeological Survey Report for the Mt. Murphy Bridge Project prepared by Far Western Anthropological Research Group, Inc. (Far Western 2020). The results of this report are presented below and do not include any confidential information. The report is confidential and cannot be released for public review to protect any sensitive information related to Native American tribes and archaeological resources; however, the non-sensitive portions are available for review from the County.

3.6.1 Existing Conditions

3.6.1.1 Regulatory Setting

State

California Public Resources Code §21074

(a) Tribal Cultural Resources are either of the following:

1) Sites, features, places, cultural landscapes, sacred places and objects with cultural value to a California Native American tribe that are either of the following:

a) Included or determined to be eligible for inclusion in the California Register of Historical Resources.

b) Included in a local register of historical resources as defined in subdivision (k) of Section 5020.1.

2) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision(c) of Section 5024.1. In applying the criteria set forth in subdivision (c) of Section 5024.1 for the purposes of this paragraph, the lead agency shall consider the significance of the resource to a California Native American tribe.

(b) A cultural landscape that meets the criteria of subdivision (a) is a tribal cultural resource to the extent that the landscape is geographically defined in terms of the size and scope of the landscape.

(c) A historical resource described in Section 21084.1, a unique archaeological resource as defined in subdivision (g) of Section 21083.2, or a "nonunique archeological resource" as defined in subdivision (h) of Section 21083.2 may also be a tribal cultural resource if it conforms with the criteria of subdivision (a).

California Public Resources Code §21084.1

A project that may cause a substantial adverse change in the significance of a historical resource may have a significant effect on the environment. For purposes of this section, a historical resource is a resource listed in, or determined to be eligible for listing in, the California Register of Historical Resources. Historical resources included in a local register of historical resources, as defined in subdivision (k) of §5020.1, or deemed significant pursuant to criteria set forth in subdivision (g) of §5024.1, are presumed to be historically or culturally significant for purposes of this section, unless the preponderance of the evidence demonstrates that the resource is not historically or culturally significant. The fact that a resource is not listed in, or determined to be eligible for listing in, the California Register of Historical Resources, not included in a local register of historical resources, or not deemed significant pursuant to criteria set forth in subdivision (g) of §5024.1 shall not preclude a lead agency from determining whether the resource may be an historical resource for purposes of this section.

Assembly Bill 52

Assembly Bill 52 (AB 52) amended the Native American Historic Resource Protection Act to require consultation with Native American tribes that are traditionally and culturally affiliated with the geographic area in which a project requiring California Environmental Quality Act (CEQA) review is proposed if those tribes have requested to be informed of such proposed projects. The intention of such consultation is to avoid adverse impacts to tribal cultural resources. The changes to the CEQA Guidelines Appendix G (Initial Study) as required by AB 52 were approved by the Office of Administrative Law on 26 September 2016. The changes introduced the tribal cultural resource as a class of cultural resources and additional considerations relating to Native American consultation into CEQA. AB 52 states that tribal cultural resources must meet the following:

1. Included or determined to be eligible for inclusion in the California Register of Historical Resources
2. Included in a local register of historical resources
3. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in PRC Section 5024.1
4. A cultural landscape that meets one of the above criteria and is geographically defined in terms of the size and scope of the landscape
5. A historical resource described in PRC 21084.1, a unique archaeological resource described in PRC 21083.2 or a non-unique archaeological resource if it conforms to the above criteria

A Native American Tribe or the lead agency, supported by substantial evidence, may choose at its discretion to treat a resource as a TCR. AB 52 also mandates lead agencies to consult with tribes, if requested by the tribe, and sets the principles for conducting and concluding consultation.

Local

El Dorado County General Plan

The Conservation and Open Space Element of the County General Plan (El Dorado County 2004) includes the following goal and policies to protect tribal cultural resources.

- Goal 7.5, *Cultural Resources*, addresses preservation of the County's important resources through protection of cultural heritage, and includes implementing Policies 7.5.1.1, 7.5.1.3, and 7.5.1.6.
- Policy 7.5.1.1 requires that the appropriate Native American monitors (as per guidance from the NAHC) are notified regarding projects involving significant ground-disturbing activities that could affect significant resources.

3.6.1.2 Environmental Setting

The following ethnographic (Native American) context is derived from the Archaeological Survey Report (Far Western 2020) and other sources. Caltrans defined the APE as the Coloma Historic District. The Archaeological Survey Report study focused on the horizontal and vertical Area of Direct Impact (ADI).

Ethnographic Background

Coloma is named for the Foothill Nisenan village of Ko-lo-ma or Kolo-ma. Researchers have placed the village on the northeast side of the river, the large bedrock milling station to the north of the visitors' center and picnic area is clear evidence that the village included the area south and west of the river as well. Researchers noted that the placement of villages on both sides of a river was "not uncommon for California Native Americans," who might move from one side to the other after a few years or, in the case of larger villages, occupy both sides at once. One researcher expressed the opinion that "Kolo-ma may be a generic name for the tribelet or [the] Coloma Valley vicinity, rather than a specific village place name."

A detailed synthesis of the available information on Nisenan ethnography and ethnohistory notes that Nisenan villages ranged in size from as few as 25 inhabitants to perhaps 500 or 1,000, living in conical bark- or brush-covered structures with shallowly excavated floors (called hu'pu in the Foothill Nisenan dialect). They constructed granaries for storage of acorns and other winter supplies, and major villages also had ceremonial houses and sweathouses. Researchers have noted that "Nisenan political organization focused on a major village which was associated with one or more satellite settlements," and where a chief (sometimes two or three chiefs) lived. Kolo-ma may have been one of these major settlements. The foothill bands carried out trade with their immediate neighbors, receiving basket roots, oyster shells, salmon, antelope meat, and shell beads in exchange for black oak acorns, woodpecker scalps and feathers, dried deer and bear meat, redbud (for baskets), and salt.

The literature reminds us that "[t]he indigenous patterns of Nisenan society were irrevocably changed with the arrival of Euro Americans in California". While the foothill groups were somewhat less affected by Spanish missionization than were the coastal and valley groups, Foothill Nisenan

territory would be completely overrun by gold seekers and settlers beginning in 1848. The following year, "100,000 miners poured into the Sierran Foothills," destroying villages and disrupting the Native lifeways (Far Western 2020).

Nisenan people were still living in the area shortly before the Gold Rush. According to documents on file at the California State Library, "Captain Sutter and James Marshall attempted to gain legal control of the Coloma Valley by entering into a lease with the local Indians (Far Western 2020). However, California's Military Governor, Colonel R. Mason, rejected the Native people's right to sell or lease the land, as the US Government claimed to own the land, as a result of the Treaty of Guadalupe Hidalgo in February of 1848.

Even had Mason not rejected the lease, it would have been nullified almost immediately, as the influx of miners "led to several encounters with the Indians of the village of Koloma in which a large number were killed" (Far Western 2020). The frenzy of mining that followed the gold discovery would all but obliterate any remains of Native occupation along the edge of the river terrace at Coloma. Excavations carried out along Main Street by archaeologists from CSU Sacramento in 1997 did yield some prehistoric/Native American artifacts, but in highly disturbed and redeposited contexts (see Cultural Section 3.4 for more information)

Native American Consultation

The County contacted the California Native American Heritage Commission (NAHC), which provided a list of Native groups with interest in, or traditional ties to, the project area. The County sent certified letters to all of the tribes on the NAHC list. Only the Shingle Springs Rancheria, the UAIC, and the Colfax-Todds Valley group have requested to consult on the project. The County placed follow-up calls to the other tribes. Only the Washoe Tribe of Nevada and California returned these calls, stating that they were deferring to the Shingle Springs and United Auburn groups. The tribes that did not respond to initial consultation requests are not active in El Dorado County and attempts to contact them went unanswered. Consultation between the County and the tribes is ongoing and will continue throughout the project development process. Table 3-14 provides a summary of the Native American outreach conducted by the County.

Table 3-14. Summary of Native American Outreach by El Dorado County.

DATE	TRIBE/NAME	DISCUSSION SUMMARY
6/9/2017	Native American Heritage Commission	Sent certified letter; responded by letter, dated 9/14/2017
6/9/2017	Shingle Springs Band of Miwok (SSBMI)	Sent certified letter; responded by letter, dated 7/5/2017
6/9/2017	United Auburn Indian Community (UAIC)	Sent certified letter; responded by letter, dated 7/7/2017
6/9/2017	Washoe Tribe of Nevada & California	Sent certified letter; no response.
6/9/2017	T'si-Akim Maidu	Sent certified letter; no response.
6/9/2017	Ione Band of Miwok	Sent certified letter; no response.
6/9/2017	Nashville-El Dorado Miwok	Sent certified letter; no response.
6/9/2017	Wilton Rancheria	Sent certified letter; no response.
6/9/2017	Colfax-Todds Valley Consolidated Tribe	Sent certified letter; no response.
8/23/2017	Ione Band of Miwok	Left phone message regarding consultation letter and letter and provided information on upcoming meeting.
8/23/2017	Wilton Rancheria	Left phone message regarding consultation letter and provided information on upcoming meeting.

8/28/2017	Washoe Tribe	Left phone message regarding consultation letter and provided information on upcoming meeting.
8/29/2017	Washoe Tribe	Tribal representative called back to state they will not be attending the meeting and is deferring to SSBMI and UAIC.
9/7/2017	UAIC SSBMI	Meeting held at the project site with consulting tribes. Tribal representatives expressed preference for the on-alignment alternative.
5/03/2018; 5/16/2018	SSBMI	Two meetings scheduled with the Tribe, State Parks and El Dorado County cancelled by SSBMI. The tribe requested a delay in rescheduling due to unforeseen medical reasons.
11/26/2018	SSBMI	Email from El Dorado County requesting a meeting at the project site. SSBMI sent an email to schedule a meeting.
11/27/2018	SSBMI	Tribal representative emailed back confirming a meeting on 1/17/2019.
12/03/2018	UAIC	Email from El Dorado County with a project update, status of cultural studies and invitation to set up a meeting. No response.
12/03/2018	Colfax-Todds Valley Consolidated Tribe	Reached Tribal representative by phone who confirmed receipt of consultation request letter in 2017. Expressed interest in the project and desire to meet on the project alongside UAIC in 2019.
12/03/2018	Nashville-El Dorado Miwok	Left phone message with Tribal representative regarding consultation.
12/03/2018	T'si-Akim Maidu	Attempts to reach the Chairperson and Cultural Director by phone were unsuccessful due to busy signals. El Dorado County followed up with an email address provided by NAHC.
1/17/2019	SSBMI	El Dorado County held a follow-up meeting with SSMBI at the County offices in Placerville. In attendance were Tribal representatives of SSBMI, State Parks staff, Lisa Caltrans staff, and El Dorado County staff.
3/20/2019	UAIC	El Dorado County followed up on the email sent to UAIC on 12/3/2018 with an offer to meet on the project. The Tribal Historic Preservation Officer responded on 3/28/2019, stating they are checking with SSBMI to get an update and will get back to the County soon.
6/27/2019	SSBMI	Tribe sent County an email requesting updates on County bridge projects. County responded with a summary of various projects, including the status of Mt. Murphy Bridge Replacement Project.
9/12/2019	SSBMI	Meeting at the SSBMI tribal offices, attended by State Parks staff. The Tribe thanked the County for ongoing consultation and repeated their request for construction monitoring and sensitivity training for monitoring crews.
12/7/19	SSBMI	El Dorado County called SSBMI to inform them that as a result of a meeting with Caltrans on 11/7/2019 in Coloma, State Parks and County would performing additional XPI work to facilitate ASR studies onsite. Staff left a voice message and followed up with an email.
12/11/19	SSBMI	SSBMI representative responded to staff thanking them for the update and stated that she should have staff available to monitor but to keep her updated.
12/18/19	SSBMI	9:30am: County staff emailed SSBMI to inform her that Caltrans approved the XPI work plan and the County was coordinating with State Parks to begin this activity at 10am 12/19/19 pending weather and field condition. 11:33am: SSBMI responded saying she would try to coordinate a monitor for the XPI work pending schedules. 5:09pm: County staff called and emailed SSBMI to confirm field plans for 12/19/19 and clarify/ reiterate that they are welcome to attend and that this work is for XPI purposes only.

01/30/20	SSBMI	County staff called (left a message) and emailed SSBMI to discuss project updates and the results of the XPI.
02/05/20	UAIC	County staff called UIAC staff to follow up on any questions or open items regarding the Mt. Murphy Project for UAIC and provide a brief project update. UIAC staff confirmed that there are no questions at this time, and they are looking to SSBMI to take the lead on the project. UIAC staff also stated that she will follow up with SSBMI to confirm SSBMI has no concerns or open items and said she would get back with County (who provided contact information) if any items are discovered or with any other feedback. UIAC staff also requested a copy of the final studies for review when available.
3/21/20	Colfax-Todds Valley Consolidated Tribe	Reached tribal representative by phone. She expressed interest in reviewing the cultural studies and has concerns about the whole cultural landscape. The tribal representative said that Native American monitoring is needed because of the sensitivity along the river and in surrounding areas. The requested cultural study (Archeological Survey Report) was sent by the County to the tribal representative via email on 29 May 2020.
5/29/20	UAIC	The cultural study (Archeological Survey Report) was sent by the County to the UAIC tribal representative via email on 29 May 2020.
5/29/20	SSBMI	The cultural study (Archeological Survey Report) was sent by the County to the SSBMI tribal representative via email on 29 May 2020.
6/1/20	Colfax-Todds Valley Consolidated Tribe	The cultural study (Archeological Survey Report) was sent by the County to the tribal representative via email on 29 May 2020. Ms. Cubbler responded on 6/1/20 saying: "Colfax Todds Valley Consolidated Tribe requests monitoring during ground disturbance on this project. We are concerned with the impact to our Cultural sites, and feel strongly that we should monitor and protect our sites."
7/6/21	SSBMI	The HPSR package along with the SHPO concurrence of eligibility was sent by the County to the SSBMI tribal representative via email on 6 July 2021. The SSBMI tribal representative acknowledged receipt on 9 July 2021.

At the request of these groups, a meeting was held at the project site on September 7, 2017, attended by representatives of both Shingle Springs Rancheria and UAIC, the County of El Dorado, California State Parks, and Far Western. The other groups identified by the Commission were invited but chose not to attend. At that meeting, tribal representatives expressed their preference for the on-alignment alternative, as that would have the least ground disturbance; they also noted that burial sites and artifacts had been found in the area (a known village site). Following the meeting, the participants walked the project area and discussed the various types of impacts that had occurred in the ADI (historic-period mining, road and building construction, bridge replacement). Neither the Shingle Springs Rancheria representatives nor the UAIC representatives were aware of any formal Tribal Cultural Properties in the area.

Following the meeting, both groups sent follow-up emails to the County. The Shingle Springs Rancheria informed the County that the group had three different names for Coloma: "beautiful place," "snow goose place" (where Canadian snow geese stopped over on their southward migrations), and (after the disruption caused by the gold discovery), "to be no more." The UAIC commented that they thought the meeting had gone well. Both groups also expressed interest in having a monitor on-site during all ground disturbance related to the Project.

A renewed attempt to reach out to the Shingle Springs Band of Miwok Indians was initiated with a scheduled meeting on May 3, 2018. The Shingle Springs Band of Miwok Indians and California State Parks were scheduled to attend the meeting to discuss project status, tribal concerns, and potential mitigation measures including bridge design features. On the morning of the meeting the Shingle Springs Band of Miwok representative called to cancel the meeting due to a medical emergency. The Shingle Springs Band of Miwok representative said she would be in touch to reschedule. A subsequent attempt to reschedule the meeting was made on May 16, 2018, but the meeting was postponed again by the Shingle Springs Band because of ongoing medical issues.

On December 3, 2018, the County sent an email to the UAIC with a brief project update and asked them to respond if they wanted to meet again on the project. The UAIC did not respond. The follow-up meeting was held on January 17, 2019, at the County offices in Placerville. In attendance were the Shingle Springs Band, California State Parks, Caltrans, Jacobs Engineering, and El Dorado County. At the meeting, members of the Shingle Springs Band stated that they have no concerns about the County's preferred on-alignment alternative and design, as this will have the least impact on cultural resources. The representatives also expressed that they are supportive of the project design and alternative. The Shingle Springs Band also requested information on the number and locations of trees to be removed. The County provided a map showing these locations, and the Shingle Springs Band had no further comments. They did, however, express interest in participating with the development and installation of exhibits and interpretive signs portraying historic information on Native American cultures from the area. The County responded that such interpretive programs will be added after the project is completed. Finally, the Shingle Springs Band requested sensitivity training for construction personnel before groundbreaking begins, and tribal monitoring of project construction.

Another meeting was held on September 12, 2019, at the Shingle Springs tribal offices, attended by State Parks staff. Shingle Springs and State Parks also further discussed details and opportunities associated with the interpretive program. The Tribe thanked the County for the ongoing consultation and repeated their request for construction monitoring and sensitivity training for monitoring crews.

On December 7, 2019, the County contacted the Shingle Springs Rancheria to inform them that XPI work was planned for December 19; the County also sent a follow-up email on December 18 to say that the XPI work had been approved and that the Tribe was welcome to attend. No tribal members attended the field trenching on December 19, but the County called Shingle Springs on January 30, 2020, to discuss the results of the XPI work.

On February 5, 2020, the County contacted the UAIC tribal liaison, to follow up on any questions the group might have and to provide an update. The UAIC confirmed that the group has no questions at this time and that they are looking to the Shingle Springs Rancheria to take the lead on project consultation. The UAIC also requested a copy of the final ASR, when available.

On March 21, 2020, the County contacted the Colfax-Todds Valley Consolidated Tribe. The Colfax-Todds Valley Consolidated Tribe representative expressed an interest in reviewing the cultural studies for the project, as she has concerns about the entire cultural landscape. She feels that a Native American monitor is needed, because of the sensitivity of the area to contain cultural resources.

The County provided the ASR to the SSBMI and UAIC on May 29, 2020. The County provided the ASR/HPSR package and the SHPO concurrence of eligibility to SSBMI on July 6, 2021. The County

said that monitoring is recommended on this project in the excavation areas given the site's sensitivity and importance. The SSBMI representative acknowledged receipt.

The tribes that did not respond to initial consultation requests are not active in El Dorado County and attempts to contact them went unanswered. Consultation between the County and the tribes is ongoing and will continue throughout the project development process.

Findings

Five archeologically sensitive areas and sites, three which are precontact and two from the historic-era, were identified through consultation, surveys, and the literature review: CA-ELD-56, CA-ELD-57, Rouse's multicomponent deposits, Gallagher's Field, and Bekeart's Gun Shop historic refuse scatter. None of these five deposits have been formally evaluated under Section 106 but are assumed eligible for listing on the National Register for the sake of the project.

Precontact site CA-ELD-56 is recorded with only a single page site record and no precise locational data exists other than it is situated near the Papini Cabin over 100-meter south of the ADI. The site is described vaguely as a village location, but no archaeological manifestation of this resource was identified during the identification effort for this project.

Precontact site CA-ELD-57 is over one hundred meters away from the work area/ADI and consists of a large bedrock milling station with over 30 mortar cups, probable slides, and possible midden. No excavation has been conducted at this site, but it is well outside the ADI and is included within the APE only because it is within the larger Coloma Historic District.

The site record for large bedrock outcrop notes that "associated midden is probably present, though its contents, depth, and integrity have not yet been assessed. The 1979 Department of Parks and Recreation's General Plan for the Park stated that large bedrock outcrop is the only Native American archaeological site recorded at the Park up to that time; it remains the only confirmed Native American site in the Park as of January 2020. The feature is located outside the ADI and will not be affected by the Project. The bedrock mortar location is shown on the Marshall Gold Discovery State Historic Park brochures, variously labeled as the "Native American Bedrock Mortar" and "Indian Grinding Rock" (California State Parks 2019).

Rouse's multicomponent deposits consist of a combination of precontact artifacts intermixed with the historic occupational debris, likely from an early apothecary and cabin. Rouse concluded that the precontact artifacts were all in secondary contexts and were redeposited as a result of historic-era and modern activities. These materials lacked integrity of association and context and therefore offered little research potential. A small pocket of soil that was identified as midden was found in association with excavation units within historic-era Feature 4, but these could not be definitively identified as within a primary context. This deposit is found approximately 100 feet south of the ADI.

Gallagher's field is located on the east side of the South Fork American River in a fenced off field immediately adjacent the Mount Murphy Road and ADI. Archaeological monitoring in the field identified an unquantified number of historic-era artifacts dating to the 19th century. No site record was prepared for these deposits, and no interpretation was posited as to their association or significance.

The Bekeart's Gun Shop historic debris scatter consists of a small and diffuse number of historic-era artifacts likely associated with the running of the shop or nearby residences. The artifacts were identified during the identification phase of this undertaking immediately adjacent the ADI. The artifacts consist of a small number of Chinese and Euroamerican ceramics, aqua, colorless, light green, and "black" glass dating to the mid and late 19th century, within the period of significance for the CHD. The nature of their deposition and association with a specific household or business is undetermined.

No resources were identified within the ADI. No tribal cultural resources were identified within the ADI through survey or consultation efforts. Neither the Shingle Springs Rancheria representatives nor the UAIC representatives had identified any formal tribal cultural resources in the area.

3.6.2 Environmental Impacts

3.6.2.1 Methods of Analysis

This Draft EIR analyzes whether the Project would have the potential to adversely affect existing tribal cultural resources. The identified resources within the study area have been examined for their significance and the potential for the proposed Project to result in impacts on that significance. CEQA requires an assessment of a project's potential effects on significant tribal cultural resources (i.e., those that meet the requirements under California Public Resources Code §21074). This assessment entails the following steps.

- Identify potential tribal cultural resources.
- Evaluate the significance of identified tribal cultural resources.
- Evaluate the anticipated effects of a project on all significant tribal cultural resources.

Under CEQA, only effects on significant resources are considered potentially significant, so only those impacts require detailed analysis.

3.6.2.2 Thresholds of Significance

In accordance with Appendix G of the State CEQA Guidelines, the proposed Project would be considered to have a significant effect if it would result in any of the conditions listed below.

- Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:
    - Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or
    - 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 Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

3.6.2.3 Impacts and Mitigation Measures

Impact TRIB CULT-1: Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is: Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or 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 Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe. (Less Than Significant with Mitigation)

Five archeologically sensitive areas and sites, three which are precontact and two from the historic-era, were identified through consultation, surveys, and the literature review: CA-ELD-56, CA-ELD-57, Rouse's multicomponent deposits, Gallagher's Field, and Bekeart's Gun Shop historic refuse scatter.

The Project does not include any activities at the location of or in close proximity to the precontact archaeologically sensitive areas. The Project avoids impacts to these resources. Tribes consulting with the County have not identified any formal tribal cultural resources in the Project area. Based on the results of XPI trenching, Far Western conclude that it is highly unlikely for any archaeological features or deposits to have survived in the ADI, unless they lie buried beneath buildings, paved streets, or concrete sidewalks. It is possible that a few scattered Native American artifacts are present in the alluvial silts and sands along the terrace below Main Street/SR 49, but these (like the historic-era bottle shards found in the trench) will have been moved and redeposited during the repeated flood events. Mitigation Measure CULT-6 Post-Review Discovery and Monitoring Plan provides for Native American monitoring of ground disturbing activities. Implementation of measures CULT-1 to CULT-7 will reduce potential impacts to less than significant.

Mitigation Measure CULT-8: Tribal Cultural Resources

- *Implementation of measures CULT-1 to CULT-7 will reduce potential impacts to Tribal Cultural Resources to less than significant.*

3.6.3 References Cited

California State Parks. 2004 (Revised 2017). Marshall Gold Discovery State Historic Park, park brochure.

California State Parks. Accessed May 2019. Marshall Gold Discovery State Historic Park, park map. http://www.parks.ca.gov/pages/484/files/MGSHP_park_map.pdf

El Dorado County. 2004. El Dorado County General Plan – Conservation and Open Space Element. July. El Dorado County, CA.

Far Western Anthropological Research Group, Inc. 2020. *Revised Archaeological Survey Report for the Mt. Murphy Road Bridge Replacement Project, Coloma, El Dorado County, California. Federal Aid Project No.: BRLO 5925 (090)*. Prepared for Caltrans District 3. Marysville, CA.

3.7 Energy

This section identifies existing conditions and discusses the regulatory setting for energy, in the Project area and analyzes the potential for the proposed Project to affect this resource.

3.7.1 Existing Conditions

3.7.1.1 Regulatory Setting

Federal Regulations, Plans and Policies

CAFE Standards

The National Highway Traffic Safety Administrations (NHTSA's) Corporate Average Fuel Economy (CAFE) standards regulate how far vehicles must travel on a gallon of fuel. NHTSA sets CAFE standards for passenger cars and for light trucks (collectively, light-duty vehicles), and separately sets fuel consumption standards for medium-and heavy-duty trucks and engines. NHTSA also regulates the fuel-economy window stickers on new vehicles.

On March 31, 2020, NHTSA and the EPA finalize CAFE and carbon dioxide emissions standards for model years 2021-2026. The Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule, issued by NHTSA and EPA, sets fuel economy and carbon dioxide standards that increase 1.5% in stringency each year from model years 2021 through 2026. These standards apply to both passenger cars and light trucks and will continue progress toward energy independence and carbon dioxide reduction, while recognizing the realities of the marketplace and consumers' interest in buying vehicles that meet all of their diverse needs.

California Greenhouse Gas Waiver

In December 2005, the California Air Resources Board (CARB) requested, and on June 14, 2011, the EPA granted, an amendment to California's motor vehicle GHG emission standards beginning with model year 2009. The Clean Air Act (CAA) standards require a waiver for states to enact emission standards for new cars. On June 14, 2011, EPA confirmed that CARB's amendments to its motor vehicle GHG emission standards are within the scope of the existing waiver of preemption issued.

Energy Policy Act of 1992 and 2005 *(EPAct)*

The Energy Policy Act of 1992 was passed to reduce the U.S. dependence on foreign petroleum and improve air quality. The EPAct addresses energy production in the United States, including: (1) energy efficiency; (2) renewable energy; (3) oil and gas; (4) coal; (5) Tribal energy; (6) nuclear matters and security; (7) vehicles and motor fuels, including ethanol; (8) hydrogen; (9) electricity; (10) energy tax incentives; (11) hydropower and geothermal energy; and (12) climate change technology. For example, the Act provides loan guarantees for entities that develop or use

innovative technologies that avoid the by-production of greenhouse gases. Another provision of the Act increases the amount of biofuel that must be mixed with gasoline sold in the United States.

Moving Ahead for Progress in the 21st Century

Moving Ahead for Progress in the 21st Century (MAP 21) legislation makes significant changes to the framework that directs federal transportation funding, giving more flexibility to recipients, while metropolitan planning organizations (MPOs) establish performance measures and targets to evaluate these investments. This flexibility changes requirements and incentives for spending on sustainable transportation initiatives. The bill is the first significant change to transportation funding since the passage of the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users in 2005.

Specifically, MAP 21 requires MPOs to address performance measures in planning and project selection. Long-range plans are required to include performance targets, and transportation improvement programs must discuss the anticipated effects of selected projects toward achieving the performance targets. In addition, electric vehicle (EV) charging and natural gas fueling stations are expressly authorized uses of funding under the Congestion Mitigation and Air Quality Improvement Program, surface transportation, and highway safety programs.

State Regulations, Plans, and Policies

California's 2017 Climate Change Scoping Plan (2017 Scoping Plan)

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

The state has also passed more detailed legislation addressing GHG emissions associated with industrial sources, transportation, electricity generation, and energy consumption, as summarized below. Energy consumption, and the regulations that apply to its generation and consumption, are identified below.

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

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

CARB adopted the Low Carbon Fuel Standard (LCFS) in 2007 to reduce the carbon intensity of California's transportation fuels.

The Sustainable Communities and Climate Protection Act of 2008

The Sustainable Communities and Climate Protection Act (SB 375) supports the State's climate goals by helping reduce greenhouse gas emissions through coordinated transportation, housing, and land use planning.

Under the Sustainable Communities Act, the California Air Resources Board (CARB) sets regional targets for greenhouse gas emissions reductions from passenger vehicle use. CARB set targets for 2020 and 2035 for each of the 18 metropolitan planning organization (MPO) regions in 2010, and updated them in 2018.

Each of the regions must prepare a Sustainable Communities Strategy (SCS), as an integral part of its regional transportation plan, that contains land use, housing, and transportation strategies that, if implemented, would allow the region to meet CARB's targets. Once the SCS is adopted by the MPO, CARB must review the adopted SCS to accept or reject the MPO's determination that the SCS, if implemented, would meet the targets. If the SCS would not meet the regional targets, the MPO must prepare an alternative planning strategy (APS) that shows how it could meet the targets.

The Sustainable Communities Act establishes some incentives to encourage implementation of the development patterns and strategies included in an SCS or APS. Developers can get relief from certain environmental review requirements under the California Environmental Quality Act (CEQA) if their new residential and mixed-use projects are consistent with a regions SCS (or APS) that meets the targets (Cal. Public Resources Code §§ 21155, 21155.1, 21155.2, 21159.28.).

Senate Bill 743 of 2013

California's Senate Bill (SB) 743, enacted in 2013, marks a historic shift in how the traffic impacts of development projects are to be evaluated and mitigated statewide. To help achieve state climate policy and sustainability goals, SB 743 eliminates traffic delay as an environmental impact under the California Environmental Quality Act. State implementing guidelines for SB 743 instead require an assessment of vehicle miles traveled (VMT). The adoption of the guidelines sparked debate and raised far-reaching questions about development planning.

Renewable Portfolio Standard

The Renewables Portfolio Standard (RPS) is one of California's key programs for advancing renewable energy. The program sets continuously escalating renewable energy procurement requirements for the state's load-serving entities. Generation must be procured from RPS-certified facilities. The California Energy Commission verifies RPS claims.

Building Energy Efficiency Standards (Title 24, Part 6)

California's energy code is designed to reduce wasteful and unnecessary energy consumption in newly constructed and existing buildings. The California Energy Commission updates the Building Energy Efficiency Standards (Title 24, Parts 6 and 11) every three years by working with stakeholders in a public and transparent process.

Warren-Alquist Act

The Warren-Alquist Act established the California Energy Commission in 1974 to respond to the energy crisis of the early 1970s and the state's unsustainable growing demand for energy resources. The California Legislature continues to amend the act to address pressing energy needs and issues. The Energy Commission's Chief Counsel's Office publishes an updated version of the act every year.

The act introduced state policy for siting power plants to reduce potential environmental impacts, and additionally sought to reduce demand for these facilities by directing CEC to develop statewide energy conservation measures to reduce wasteful, inefficient, and unnecessary uses of energy.

Conservation measures recommended establishing design standards for energy conservation in buildings that ultimately resulted in the creation of the Title 24 Building Energy Efficiency Standards (California Energy Code), which have been updated regularly and remain in effect today. The act additionally directed CEC to cooperate with OPR, CNRA, and other interested parties in ensuring that a discussion of wasteful, inefficient, and unnecessary consumption of energy is included in all environmental impact reports required on local projects.

Assembly Bill 2076: Reducing Dependence on Petroleum

AB 2076 directs the ARB and the CEC to develop and adopt recommendations for the Governor and the Legislature on a strategy to reduce California's dependence on petroleum.

Alternative Fuels Plan 2005

As required by Assembly Bill 1007, the State Alternative Fuels Plan (Plan) presents strategies and actions California must take to increase the use of alternative non-petroleum fuels in a manner that minimizes costs to California and maximizes the economic benefits of in-state production. The Plan assessed various alternative fuels and developed fuel portfolios to meet California's goals to reduce petroleum consumption, increase alternative fuels use, reduce greenhouse gas emissions, and increase in-state production of biofuels without causing a significant degradation of public health and environmental quality.

Short-Lived Climate Pollutant Reduction Strategy

The Short-Lived Climate Pollutant (SLCP) Reduction Strategy is California's plan for reducing emissions of high global-warming potential gases with short atmospheric lifetimes. SLCPs include the greenhouse gases methane and hydrofluorocarbons (HFC), and anthropogenic black carbon. State law mandates a 40 percent reduction in methane and HFC emissions by 2030 and a 50 percent reduction in anthropogenic emissions of black carbon by 2030.

Cap-and-Trade Program

California cap-and-trade program, launched in 2013, is one of a suite of major policies the state is using to lower its greenhouse gas emissions. California's program is the fourth largest in the world, following the cap-and-trade programs of the European Union, the Republic of Korea, and the Chinese province of Guangdong. In addition to driving emission cuts in one of the world's largest

economies, California's program provides critical experience in creating and managing an economy-wide cap-and-trade system.

California's emissions trading system is expected to reduce greenhouse gas emissions from regulated entities by more than 16 percent between 2013 and 2020, and by an additional 40 percent by 2030. It is a central component of the state's broader strategy to reduce total greenhouse gas emissions to 1990 levels by 2020 and 40 percent below 1990 levels by 2030.

The cap-and-trade rule applies to large electric power plants, large industrial plants, and fuel distributors (e.g., natural gas and petroleum). Around 450 businesses responsible for about 85 percent of California's total greenhouse gas emissions must comply. California has linked its program with similar programs in the Canadian provinces of Ontario and Quebec, meaning that businesses in one jurisdiction can use emission allowances (or offsets) issued by one of the others for compliance. This broadens the number of businesses under the cap, leading to additional economic efficiencies.

Local Regulations, Plans, and Policies

Metropolitan Transportation Plan/Sustainable Communities Strategy

The Metropolitan Transportation Plan/Sustainable Communities Strategy (MTP/SCS) for the Sacramento region, including western El Dorado County, pro-actively links land use, air quality, and transportation needs. The MTP/SCS is federally required to be updated every four years. The SACOG board adopted the 2020 MTP/SCS and accompanying documents at a special board meeting on November 18, 2019.

Environmental Vision for El Dorado County

On March 25, 2008, the El Dorado County Board of Supervisors adopted the "Environmental Vision for El Dorado County" Resolution No. 29-2008, brought forward by the Youth Commission. The Resolution sets forth goals and calls for implementation of positive environmental changes to reduce global impact, improve air quality and reduce dependence on landfills, promote alternative energies, increase recycling, and encourage local governments to adopt green and sustainable practices.

2001 El Dorado County Energy Conservation Policy (A-18)

The purpose of this policy is to identify conservation and cost saving measures related to energy consumption as well as outline procedures in the event of sustained and/or rotating electrical outages.

2004 El Dorado County General Plan

Land Use Element

Measure LU-Q, *Promote Infill Development:* The program shall be linked to land-use, housing, air quality, transportation and circulation strategies that support development within existing

communities, reduce vehicle miles traveled, increase energy efficiency, and encourage the development of affordable housing. The program shall include, but not be limited to:

a) Adopt criteria to be used within existing communities with developed areas currently capable of being served by public water, recycled water, and public or private sewer;

b) Provide incentives for residential and commercial infill development including financial incentives for pedestrian-oriented and transit-friendly design features;

c) Amend the zoning code to include a new Traditional Neighborhood Design zone within Commercial and Multi-Family Land Uses;

d) Support medium and high density residential or mixed-use development along commercial and transportation corridors;

e) Develop and utilize approved standard plan types (i.e., zero-lot line, duplex with carriage house unit over garage, z-lot, bungalow, etc.) to streamline the approval process for infill projects. Standard plans shall include various housing and commercial types and styles. Standard plan(s) approved as part of a project shall be compatible with neighboring residential or commercial district patterns for which the development is located; and

f) Develop or update, as considered necessary, applicable community plans, specific plans and design guidelines to incorporate pedestrian-oriented, transit-friendly, and or energy efficient configurations design as primary goals.

Circulation Element

Policy TC-3d: Signalized intersections shall be synchronized where possible as a means to reduce congestion, conserve energy, and improve air quality.

Housing Element

Goal: HO-5: To increase the efficiency of energy and water use in new and existing homes.

Policy HO-5.1 The County shall require all new dwelling units to meet current state requirements for energy efficiency and shall encourage the retrofitting of existing units.

Policy HO-5.2 New land use development standards and review processes should encourage energy and water efficiency, to the extent feasible.

Measure HO-2013-30: Provide information to the public regarding ways to improve the efficient use of energy and water in the home and to increase energy and water efficiency in new construction in support of the Environmental Vision for El Dorado County, Resolution 29-2008. This program will be promoted by posting information on the County's web site and creating a handout to be distributed with land development applications.

El Dorado County Code of Ordinances

The County has adopted the 2016 California Building Standards Code (CBSC) as the basis for the County Building Code (El Dorado County Code of Ordinances Section 110.16.010). The County's enforcement of its Building Code ensures the Project would be consistent with the CBSC.

3.7.1.2 Environmental Setting

The existing Mt. Murphy Road Bridge does not include lighting or other components that require continuous electrical or other energy source. Routine maintenance or the bridge and adjacent road approaches does require use of maintenance materials, power tools and gas and diesel of service vehicles.

3.7.2 Environmental Impacts

3.7.2.1 Methods of Analysis

Impacts related to energy were assessed based on a review of available data.

3.7.2.2 Thresholds of Significance

In accordance with Appendix G of the State CEQA Guidelines, the proposed Project would be considered to have a significant effect if it would result in any of the conditions listed below.

- Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?
- Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

3.7.2.3 Impacts and Mitigation Measures

Impact ENERGY-1: Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation? (less than significant)

Project construction would result in short-term increased energy requirements through the use of gasoline and diesel fuels for operation of heavy-duty construction equipment and vehicles. Materials manufacturing would also consume energy, although information on the intensity and quantity of fuel used during manufacturing is currently unknown and beyond the scope of project-level environmental analyses. An analysis of energy associated with materials manufacturing is considered speculative and is not presented in this document.

The use of heavy-duty trucks and construction equipment would result in a temporary increase in fuel consumption in the study area relative to the existing condition. As discussed in Section 3.3, *Air Quality*, construction emissions do not exceed the County's significance thresholds. The Project construction emissions from the use of gasoline and diesel fuels for operation of heavy-duty construction equipment are below the significance thresholds. Therefore, the fuel used to generate construction emissions not considered excessive or wasteful.

Overall, in the long term, the proposed Project would be expected to result in lower fuel consumption and energy use. The new bridge structure will provide two through travel lanes lane. The elimination of idling vehicles stopped at the bridge is expected to result in fuel savings.

The Project may incorporate user safety lighting. The proposed pedestrian crossing on SR 49 may include safety lighting. Walkway lighting may be installed along the proposed bridge sidewalk to provide a safely lit walkway for nighttime pedestrian use. Low level lighting may be contemplated for the new bridge towers. Project lighting would be designed and installed in accordance with County Code chapter 130.34 (Outdoor Lighting). Solar lighting has been considered as a potential for the lighting but may not be practical at this location. All proposed lighting will use energy efficient fixtures. Details regarding lighting will be determined during final design.

The new bridge including any potential new lighting would have minimal effect on local or regional energy supplies and would not require additional capacity. There would be no effect on peak- or base-period demands for electricity or other forms of energy.

The energy use associated with construction and operation of the proposed Project would not conflict with applicable state or local energy legislation, policies or standards and would not be considered wasteful, inefficient, or unnecessary. The impact on energy use would be less than significant.

Impact ENERGY-2: Conflict with or obstruct a state or local plan for renewable energy or energy efficiency? (less than significant)

The Metropolitan Transportation Plan/Sustainable Communities Strategy (MTP/SCS) for the Sacramento region, including western El Dorado County, pro-actively links land use, air quality, and transportation needs. The MTP/SCS is federally required to be updated every four years. The SACOG board adopted the 2020 MTP/SCS and accompanying documents at a special board meeting on 18 November 2019. The proposed Project is identified as ELD19321 in SACOG's *2020* MTP/SCS. Projects included in the MTIP are required to conform to the State Implementation Plan for the region. Given its inclusion in the MTP/SCS, the Project would not conflict with or obstruct MTP/SCS implementation. The Project is also consistent with the County General Plan policy's related to energy efficiency as well as the 2001 El Dorado County Energy Conservation Policy as applicable.

3.7.3 References

El Dorado County. Adopted 19 July 2004. El Dorado County general plan, a plan for managed growth and open roads; a plan for quality neighborhoods and traffic relief. El Dorado County Planning Department, Placerville, CA.

Sacramento Area Council of Governments (SACOG). Accessed: May 2020. Final Plan adopted 18 November 2019. 2020 Metropolitan Transportation Plan/Sustainable Communities Strategy. https://www.sacog.org/2020-metropolitan-transportation-plansustainable-communities-strategy-update

3.8 Geology and Soils

This section identifies existing conditions and discusses the regulatory setting for geology and soils, in the Project area and analyzes the potential for the proposed Project to affect these resources.

3.8.1 Existing Conditions

3.8.1.1 Regulatory Setting

Federal

Clean Water Act Section 402/National Pollutant Discharge Elimination System

The 1972 amendments to the federal CWA established the NPDES permit program to control discharges of pollutants from point-source discharges (discharges originating from known source of pollutants including storm drains and pipes) and non-point sources (runoff or precipitation). NPDES is the primary federal program that regulates point-source and nonpoint-source discharges to waters of the United States.

The 1987 amendments to the CWA created a new section of the CWA devoted to stormwater permitting (Section 402), which is directly relevant to excavation and soil erosion. Section 402 mandates that certain types of construction activity comply with the requirements of EPA's NPDES program. EPA has granted the State of California authority to administer and enforce the provisions of the CWA and NPDES within the borders of the state. NPDES permits are issued by one of the nine RWQCBs. Construction activity that disturbs one acre or more must obtain coverage under the state's General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (see *Construction Activities Storm Water Construction General Permit*, below).

U.S. Geological Survey National Landslide Hazard Program

The Landslide Hazards Program (LHP) supports the USGS mission to serve the Nation by providing reliable scientific information to minimize loss of life and property from natural disasters. The LHP's mission is to provide information that leads to the reduction of losses from landslides and an increase in public safety through improved understanding of landslide hazards and strategies for hazard mitigation. In pursuit of the program mission, the LHP conducts landslide hazard assessments, pursues landslide investigations and forecasts, provides technical assistance to respond to landslide emergencies, and engages in outreach activities.

State

Alquist-Priolo Earthquake Fault Zoning Act

The Alquist-Priolo Earthquake Fault Zoning Act was signed into law December 22, 1972 and went into effect March 7, 1973. The Act, codified in the Public Resources Code as Division 2, Chapter 7.5, has been amended eleven times. The law initially was designated as the Alquist-Priolo Geologic Hazard Zones Act but was renamed the Alquist Priolo Special Studies Zones Act effective May 4, 1975, and the Alquist-Priolo Earthquake Fault Zoning Act effective January 1, 1994. The original designation "Special Studies Zones" was changed to "Earthquake Fault Zones" when the Act was last renamed. The purpose of the Act is to prohibit the location of most structures for human occupancy across the traces of active faults and to thereby mitigate the hazard of fault rupture. It also defines criteria for identifying active faults, giving legal weight to terms such as *active*, and establishes a process for reviewing building proposals in and adjacent to Earthquake Fault Zones.

Under the Act, the State Geologist (Chief of the Division of Mines and Geology [DMG]) is required to delineate "Earthquake Fault Zones" (EFZs) along known active faults in California. Cities and counties affected by the zones must regulate certain development "projects" within the zones. They must withhold development permits for sites within the zones until geologic investigations demonstrate that the sites are not threatened by surface displacement from future faulting.

Seismic Hazards Mapping Act

The Seismic Hazards Mapping Act (SHMA) of 1990 (Public Resources Code, Chapter 7.8, Section 2690-2699.6) directs the Department of Conservation, California Geological Survey to identify and map areas prone to earthquake hazards of liquefaction, earthquake-induced landslides and amplified ground shaking. The purpose of the SHMA is to reduce the threat to public safety and to minimize the loss of life and property by identifying and mitigating these seismic hazards. The SHMA was passed by the legislature following the 1989 Loma Prieta earthquake.

Staff geologists in the Seismic Hazard Mapping Program (Program) gather existing geological, geophysical and geotechnical data from numerous sources to compile the Seismic Hazard Zone Maps. They integrate and interpret these data regionally in order to evaluate the severity of the seismic hazards and designate Zones of Required Investigation for areas prone to liquefaction and earthquake–induced landslides. Cities and counties are then required to use the Seismic Hazard Zone Maps in their land use planning and building permit processes.

The Seismic Hazard Zone Maps identify where a site investigation is required. The site investigation determines whether structural design or modification of the project site is necessary to ensure safer development. A copy of each approved geotechnical report including the mitigation measures is required to be submitted to the Program within 30 days of approval of the report. A Certified Engineering Geologist or Registered Civil Engineer with competence in the field of seismic hazard evaluation is required to prepare, review and approve the geotechnical report. The Act requires peer review, and this individual may be either local agency staff or a retained consultant. 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* (California Geological Survey 2008).

Construction Activities Storm Water Construction General Permit (Order No. 2009-0009-DWQ, as amended by 2010-0014-DWQ and 2012-006-DWQ)

The General National Pollutant Discharge Elimination System (NPDES) Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (Order 2009-0009-DWQ, NPDES No. CAS000002) (Construction General Permit) regulates stormwater discharges for construction activities under CWA Section 402. 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 obtain coverage under the Construction General Permit. The Project would involve more than one acre of land disturbance, and therefore the project must obtain coverage under the Construction General Permit.

The Construction General Permit requires the development and implementation of a stormwater pollution prevention plan (SWPPP). The SWPPP must list BMPs that the discharger will use to protect stormwater runoff and document the placement and maintenance of those BMPs. Additionally, the SWPPP must contain a visual monitoring program; a chemical monitoring program for "non-visible" pollutants, to be implemented in case of a BMP failure; and a monitoring plan for turbidity and pH for projects that meet defined risk criteria. The requirements of the SWPPP are based on the construction design specifications detailed in the final design plans of a project and the hydrology and geology of the site expected to be encountered during construction. The Central Valley RWQCB administers the NPDES stormwater permit program in El Dorado County.

2016 California Building Standards Code

The State's minimum standards for structural design and construction are given in the California Building Standards Code (CBSC) (CCR, Title 24, Part 2). The 2016 CBSC is based on the 2015 International Building Code (IBC), which is used widely throughout 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 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.

Local

Geotechnical Investigations

El Dorado County's (2004a) *Design and Improvement Standards Manual* (specifically, Volume III: Grading, Erosion, and Sediment Control, Section D: Grading Permit Application Submittal Requirements) describes when geotechnical and other similar reports are required. El Dorado County also requires investigation of the soils underlying proposed areas of grading in conformance with the mandates of the IBC and CSBC.

Grading, Erosion, and Sediment Control Ordinances

The County Grading, Erosion, and Sediment Control Ordinance (Grading Ordinance) (Chapter 110.14 of the County Code) establishes provisions for public safety and environmental protection associated with grading activities on private property. Section 110.14.090 of the Grading Ordinance prohibits grading activities that would cause flooding where it would not otherwise occur or would aggravate existing flooding conditions. The Grading Ordinance also requires all drainage facilities, aside from those in subdivisions that are regulated by the County's Subdivision Ordinance, be approved by the County Department of Transportation. Pursuant to the ordinance, the design of the drainage facilities in the County must comply with the *County of El Dorado Drainage Manual* (Drainage Manual) (El Dorado County 1995).

El Dorado County Design and Improvement Standards Manual

The County's *Design and Improvement Standards Manual* was adopted in 1990 and provides required erosion and sediment control measures that are applicable to subdivisions, roadways, and other types of development. Volume III: Grading, Erosion and Sediment Control, describes the criteria for when an erosion and sediment control plan is required. If required, erosion and sediment control plans must comply with the adopted County SWMP (El Dorado County 2004a) and the NPDES MS4 Order.

El Dorado County Drainage Manual

The El Dorado County Drainage Manual (El Dorado County 1995) provides standard procedures for future designs of drainage improvements. The Drainage Manual supersedes the stormwater drainage system design standards in the County's *Design Improvements Standards Manual*. The Drainage Manual requires that a hydrologic and hydraulic analysis be submitted for all proposed drainage facilities. This analysis is usually required on projects undergoing discretionary review. However, under the Building Code and Grading Ordinance, the County also reviews ministerial development, including required drainage plans, to ensure that appropriate runoff design and controls are in place.

El Dorado County General Plan

To protect public health and the environment from geologic and seismic hazards, the Public Health, Safety, and Noise Element of the County General Plan (El Dorado County 2004b) includes the following goal, objectives and policies

- Goal 6.3*, Geologic and Seismic Hazards,* addresses minimizing threats to life and property from seismic and geologic hazards through development regulations and building and site standards and on-going evaluation of seismic hazards and includes Objective 6.3.1, *Building and Site Standards*, and implementing Policy 6.3.3.1; and Objective 6.3.2, *County-Wide Seismic Hazards*, and implementing Policy 6.3.2.5.

In addition, the Conservation and Open Space Element includes the following relevant goal, objectives, and policies.

- Goal 7.1*, Soil Conservation,* addresses conservation and protection of the County's soil resources and protection of natural drainage patterns and includes Objective 7.1.2, *Erosion/Sedimentation*,

and implementing Policies 7.1.2.1 and 7.1.2.2; and Objective 7.3.4, *Drainage*, and implementing Policies 7.3.4.1 and 7.3.4.2.

Compliance with El Dorado County Code of Ordinances Chapter 110.16, Uniform Building Code, would ensure the Project would be consistent with County General Plan policies related to geology.

El Dorado County Code of Ordinances

The County has adopted the 2016 CBSC as the basis for the County Building Code (El Dorado County Code of Ordinances Section 110.16.010). The County's enforcement of its Building Code ensures the Project would be consistent with the CBSC.

3.8.1.2 Environmental Setting

Geology and Soils

Regional Geology: El Dorado County is located in the Sierra Nevada geomorphic province of California, east of the Great Valley province and west of the Range and Basin provinces. Steep-sided hills and narrow rocky stream channels characterize the Sierra Nevada province. This province consists of Pliocene and older deposits that have been uplifted as a result of plate tectonics, granitic intrusion, and volcanic activity. Subsequent glaciations and additional volcanic activity are factors that led to the east-west orientation of stream channels. (El Dorado County 2004a).

The southwestern foothills of El Dorado County are composed of rocks of the Mariposa Formation that include amphibolite, serpentine, and pyroxenite. The northwestern areas of the county consist of the Calaveras Formation, which includes metamorphic rock such as chert, slate, quartzite, and mica schist. The higher peaks in the County consist primarily of igneous and metamorphic rocks with granite intrusions, a main soil parent material at the higher elevations. The Project is located in an area composed primarily of Mesozoic granitic rocks (El Dorado County 2004a). The Project is not located within an area known to contain naturally occurring asbestos (NOA) or an area "more likely to contain naturally occurring asbestos" (California Department of Conservation 2000, El Dorado County 2015).

Seismicity: Seismicity is defined as the geographic and historical distribution of earthquake activity. Seismic activity may result in geologic and seismic hazards including seismically induced fault displacement and rupture, ground shaking, liquefaction, lateral spreading, landslides and avalanches, and structural hazards. Based on historical seismic activity and fault and seismic hazards mapping, El Dorado County is considered to have relatively low potential for seismic activity and is located beyond the highly active fault zones of the coastal areas of California. The County's fault systems and associated seismic hazards are described below (El Dorado County 2004a).

Fault Systems: Earthquakes are associated with the fault systems in a particular area. The distribution of known faults in the County is concentrated in the western portion of the county, with several isolated faults in the central county area and the Lake Tahoe Basin. On 10 June 2016 the California Geological Survey published two new Alquist-Priolo Earthquake Fault Zones in the Tahoe area for the Emerald Bay Quadrangle and Echo Lake USGS quadrangles.

Fault systems mapped in the western parts of the County include the West Bear Mountains Fault; the East Bear Mountains Fault; the Maidu Fault Zone; the El Dorado Fault; the Melones Fault Zone of the Clark, Gillis Hill Fault; and the Calaveras–Shoo Fly Thrust.

No active faults have been identified in the western portion of El Dorado County. One western El Dorado County fault, part of the Rescue Lineament–Bear Mountains fault zone, is classified as a well located late-Quaternary fault; therefore, it represents the only potentially active fault in western El Dorado County.

Soils: Soils on the west slope of El Dorado County consist of well-drained silt and gravelly loams divided into two physiographic regions, the Lower and Middle Foothills and the Mountainous Uplands. A total of eight soil associations occur in western El Dorado County.

Placer Diggings is the only mapped soil unit in the Project area (Sycamore Environmental 2018). The Placer Diggings soil unit consists of areas of stony, cobbly and gravelly material. It is commonly found in beds of creeks and other streams on 2 to 15 percent slopes, or of areas that have been placer mined and contain enough fine sand or silt to support some grass for grazing. This soil is derived from a mixture of rocks and commonly is stratified or poorly sorted (NRCS 1974 and 2019).

3.8.2 Environmental Impacts

3.8.2.1 Methods of Analysis

Impacts related to geology and soils were assessed based on geotechnical and foundation reports prepared for the proposed Project, seismic hazard mapping and data available online from the California Geological Survey, and other available data (soil survey maps). This analysis focuses on the proposed Project's potential to result in the risk of personal injury, loss of life, and damage to property as a result of existing geologic conditions within the Project area. The impact analysis assumes that the Project applicant would conform to the latest NPDES requirements, County and other plan policies, standards, and ordinances.

3.8.2.2 Thresholds of Significance

In accordance with Appendix G of the State CEQA Guidelines, the proposed Project would be considered to have a significant effect if it would result in any of the conditions listed below.

- Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:
    - Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault. Refer to Division of Mines and Geology Special Publication 42
    - Strong seismic ground shaking
    - Seismic-related ground failure, including liquefaction
    - Landslides

- Result in substantial soil erosion or the loss of topsoil.
- Be located on a geologic unit or soil that is unstable or that would become unstable as a result of the Project and potentially result in an on-site or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse.
- 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?
- Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems in areas where sewers are not available for the disposal of wastewater.
- Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

3.8.2.3 Impacts and Mitigation Measures

Impact GEO-1: Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving: (1) 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; (2) strong seismic ground shaking; (3) seismic-related ground failure, including liquefaction; and (4) landslides (less than significant)

Based on historical seismic activity and fault-seismic hazards mapping, El Dorado County is considered to have relatively low potential for seismic activity and is located beyond the highly active fault zones of the coastal areas of California. No active faults have been identified in the western portion of the County. For these reasons, the Project would not expose people to rupture of a known earthquake fault. No portion of western El Dorado County occurs in a Seismic Hazard Zone (i.e., regulatory zones that encompass areas prone to liquefaction and earthquake-induced landslides) based on the Seismic Hazards Mapping Program administered by the California Geologic Survey (CGS). Consequently, the Project site is not considered to be at risk from liquefaction and earthquake-induced landslides. No impacts are anticipated.

Impact GEO-2: Potential to result in substantial soil erosion or the loss of topsoil (less than significant)

Contract provisions will require implementation of best management practices (BMPs) consistent with the Caltrans Stormwater Quality Handbooks and or the California Stormwater Quality Association (CASQA) BMP Handbook to protect water quality and minimize the potential for siltation and downstream sedimentation. Construction activities will include implementation of stormwater runoff best management practices. Application of these requirements and measures would prevent substantial erosion or topsoil loss. Areas temporarily disturbed will be revegetated and reseeded with native grasses and other native herbaceous annual and perennial species. No seed of nonnative species will be used unless certified to be sterile.

In addition to the SWPPP, adherence to the NPDES MS4 Order and applicable El Dorado County Grading Ordinance, Subdivision Ordinance, Design and Improvement Standards Manual, and Drainage Manual would all minimize any effects from erosion, runoff, and sedimentation. Accordingly, this impact would be less than significant. No mitigation is required.

Impact GEO-3: Location on a geologic unit or soil that is unstable or that would become unstable as a result of the project and potentially result in an on-site or off-site landslide or subsidence (less than significant with mitigation)

The project area is underlain by granitic bedrock of Mesozoic age (El Dorado County 2004a). Placer Diggings is the only mapped soil unit in the Project area and consists of areas of stony, cobbly and gravelly material. It is commonly found in beds of creeks and areas that have been placer mined.

The area of the Mt. Murphy Road Bridge is surrounded by historic buildings and historically relevant buildings. Do to the stratified poorly sorted nature of the Placer Diggings soil unit, sub surface material under historic structures could consolidate under construction caused vibration. Vibrations could damage the buildings directly or could cause settlement that results in damage.

Preliminary analysis of the construction related vibration considerations and potential impacts were discussed in Appendix E (Vibration Study) of the Preliminary Foundation Report (CH2M Hill 2019) and are discussed further in Section 3.13 (Noise & Vibration) of this document. Implementation of measure NOI-1 will reduce potential impacts to less than significant.

Impact GEO-4: Location on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property (less than significant)

Expansive soils that may swell enough to cause problems with paved surfaces are generally clays falling into the AASHTO A-6 or A-7 groups, or classified as CH, MH, or OH by the Unified Soil Classification System (USCS), with a Plasticity Index greater than about 25 as determined by ASTM D4318. Chapter 610 of the Caltrans Highway Design Manual (2012) defines and expansive subgrade to include soils with a Plasticity Index greater than 12 (Caltrans 2017).

AASHTO group classification is a system that classifies soils specifically for geotechnical engineering purposes that are related to highway and airfield construction. It is based on particle-size distribution and Atterberg limits, such as liquid limit and plasticity index.

AASHTO and USCS classification for the soils in the Project area are in listed Table 3-15 (NRCS 2019, WRECO 2019). The NRCS Web Soil Survey indicates the maximum plasticity index of soils in the Project area is zero (0) (NRCS 2019). Soils in the Project area are not expansive.

Table 3-15. AASHTO and USCS soil classes for Project area

Soil Units in Project Area	Classification	
	AASHTO	USCS
Water	NA	NA
Placer Diggings	A-1	GP (Poorly graded gravel).

Impact GEO-5: Presence of soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems in areas where sewers are not available for the disposal of wastewater (no impact)

The Project does not include the installation of septic tanks or alternative wastewater disposal systems. No impact will occur, and no mitigation is required.

Impact GEO-6: Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature? (no impact)

Paleontological sensitivity is a qualitative assessment that takes into account the paleontological potential of the stratigraphic units presents, the local geology and geomorphology, and any other local factors that may be germane to fossil preservation and potential yield.

According to the Society of Vertebrate Paleontology (2010) paleontological sensitivity is based on two factors:

- the potential for a geological unit to yield abundant or significant vertebrate fossils or to yield significant invertebrate, plant, or trace fossils; and
- the potential importance of the data to contribute to further understanding of paleontology.

Table 3-16 defines paleontological sensitivity ratings.

Table 3-16. Paleontological Sensitivity Ratings

Potential	Definition
High	Rock units from which vertebrate or significant invertebrate, plant, or trace fossils have been recovered are considered to have a high potential for containing additional significant paleontological resources…Paleontological potential consists of both (a) the potential for yielding abundant or significant vertebrate fossils or for yielding a few significant fossils, large or small, vertebrate, invertebrate, plant, or trace fossils and (b) the importance of recovered evidence for new and significant taxonomic, phylogenetic, paleoecologic, taphonomic, biochronologic, or stratigraphic data.
Undetermined	Rock units for which little information is available concerning their paleontological content, geologic age, and depositional environment are considered to have undetermined potential. Further study is necessary to determine if these rock units have high or low potential to contain significant paleontological resources.
Low	Reports in the paleontological literature or field surveys by a qualified professional paleontologist may allow determination that some rock units have low potential for yielding significant fossils. Such rock units will be poorly represented by fossil specimens in institutional collections or based on general scientific consensus only preserve fossils in rare circumstances and the presence of fossils is the exception not the rule.
No	Some rock units have no potential to contain significant paleontological resources, for instance high-grade metamorphic rocks (such as gneisses and schists) and plutonic igneous rocks (such as granites and diorites). Rock units with no potential require neither protection nor impact mitigation measures relative to paleontological resources.
Source: Society of Vertebrate Paleontology 2010.	

Although El Dorado County is well known for abundant fossils found at two limestone cave localities (Hawver Cave and Cool Cave), the geologic unit that underlies the Project area is plutonic granitic rock (igneous origin) from the Mesozoic era. According to Table 3-16 above, plutonic igneous rocks (such as granites and diorites) have no potential to contain significant paleontological resources.

3.8.3 References

California Department of Conservation. August 2000. A general location guide for ultramafic rocks in California – Areas more likely to contain naturally occurring asbestos. Division of Mines and Geology, open-file report 2000-19. https://www.arb.ca.gov/toxics/asbestos/ofr_2000-019.pdf

California Department of Conservation. Accessed March 2019. DOC Maps: Geologic Hazards: Interactive Web Maps. https://maps.conservation.ca.gov/geologichazards/

California Department of Transportation (Caltrans). Last Revised 20 November 2017. Highway Design Manual, Chapter 610 Pavement Engineering Considerations.

California Geological Survey. 2008. Guidelines for Evaluating and Mitigating Seismic Hazards in California. Special Publication 117a. Sacramento, CA.

CH2M Hill. June 2019. Preliminary Foundation Report, Mt. Murphy Road Bridge Replacement Project Bridge (25C0004). Prepared for El Dorado County Department of Transportation

El Dorado County. 1995. County of El Dorado Drainage Manual. Adopted March 4, 1995. Resolution No.: 67-95.

El Dorado County. 2015. El Dorado County Asbestos Review Areas Western Slope, County of El Dorado. El Dorado County Surveyor/G.I.S. Division, G.I.S. Project Id: 71704.

El Dorado County. January 2004, Certified 19 July 2004 (2004a). El Dorado County general plan, final environmental impact report (EIR). Resolution No. 234-2004, State Clearinghouse No. 2001082030. Prepared by EDAW.

Society of Vertebrate Paleontology. 2010. Standard Procedures for the Assessment and Mitigation of Adverse Impacts to Paleontological Resources. Prepared by: Society of Vertebrate Paleontology Impact Mitigation Guidelines Revision Committee.

Sycamore Environmental Consultants, Inc. September 2018. Aquatic Resource Delineation Report, Mt. Murphy Road Bridge (25C0004) Replacement, El Dorado County, CA.

Natural Resources Conservation Service (NRCS). April 1974. Soil survey of El Dorado Area, California. USDA – Soil Conservation Service, Davis, CA.

Natural Resources Conservation Service (NRCS). Accessed March 2019. Web Soil Survey. United States Department of Agriculture. https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx

WRECO. February 2019. Hazardous Waste Initial Site Assessment/ Preliminary Site Investigation for the Mt. Murphy Road Bridge (25C0004) Project at the South Fork American River. Coloma, CA.

3.9 Greenhouse Gas Emissions

This section describes the environmental and regulatory setting for greenhouse gases (GHG) and climate change. It also describes impacts on climate change that would result from implementation of the proposed Project. Impacts related to air quality are described in Section 3.3, *Air Quality.*

3.9.1 Existing Conditions

3.9.1.1 Regulatory Setting

This section summarizes federal, state, and local regulations related to GHG emissions and climate change that are applicable to the proposed Project.

Federal

There is currently no federal overarching law specifically related to climate change or the reduction of GHGs. FHWA recognizes the threats that extreme weather, sea-level change, and other changes in environmental conditions pose to valuable transportation infrastructure and those who depend on it. FHWA therefore supports a sustainability approach that assesses vulnerability to climate risks and incorporates resilience into planning, asset management, project development and design, and operations and maintenance practices. This approach encourages planning for sustainable highways by addressing climate risks while balancing environmental, economic, and social values "the triple bottom line of sustainability." Program and project elements that foster sustainability and resilience also support economic vitality and global efficiency, increase safety and mobility, enhance the environment, promote energy conservation, and improve the quality of life. Addressing these factors up front in the planning process will assist in decision-making and improve efficiency at the program level and will inform the analysis and stewardship needs of project-level decision-making.

Various efforts have been promulgated at the federal level to improve fuel economy and energy efficiency to address climate change and its associated effects.

- **The Energy Policy Act of 1992 (EPACT92, 102nd Congress H.R.776.ENR):** With this act, Congress set goals, created mandates, and amended utility laws to increase clean energy use and improve overall energy efficiency in the United States. EPACT92 consists of 27 titles detailing various measures designed to lessen the nation's dependence on imported energy, provide incentives for clean and renewable energy, and promote energy conservation in buildings. Title III of EPACT92 addresses alternative fuels. It gave the U.S. Department of Energy administrative power to regulate the minimum number of light-duty alternative fuel vehicles required in certain federal fleets beginning in fiscal year 1993. The primary goal of the Program is to cut petroleum use in the United States by 2.5 billion gallons per year by 2020.
- **Energy Policy Act of 2005 (109th Congress H.R.6 (2005–2006):** This act sets forth an energy research and development program covering: (1) energy efficiency; (2) renewable

energy; (3) oil and gas; (4) coal; (5) Indian energy; (6) nuclear matters and security; (7) vehicles and motor fuels, including ethanol; (8) hydrogen; (9) electricity; (10) energy tax incentives; (11) hydropower and geothermal energy; and (12) climate change technology.

- **Energy Policy and Conservation Act of 1975 (42 USC Section 6201) and Corporate Average Fuel Standards:** This act establishes fuel economy standards for on-road motor vehicles sold in the United States. Compliance with federal fuel economy standards is determined through the Corporate Average Fuel Economy (CAFE) program on the basis of each manufacturer's average fuel economy for the portion of its vehicles produced for sale in the United States.
- **Executive Order 13514, Federal Leadership in Environmental, Energy, and Economic Performance, 74 Federal Register 52117 (October 8, 2009):** This federal EO set sustainability goals for federal agencies and focuses on making improvements in their environmental, energy, and economic performance. It instituted as policy that federal agencies measure, report, and reduce their GHG emissions from direct and indirect activities.
- **Executive Order 13693, Planning for Federal Sustainability in the Next Decade, 80 Federal Register 15869 (March 2015):** This EO reaffirms the policy that federal agencies measure, report, and reduce their GHG emissions from direct and indirect activities. It sets sustainability goals for all agencies to promote energy conservation, efficiency, and management by reducing energy consumption and GHG emissions. It builds on the adaptation and resiliency goals in previous executive orders to ensure agency operations and facilities prepare for impacts of climate change. This order revokes EO 13514.

EPA's authority to regulate GHG emissions stems from the U.S. Supreme Court decision in Massachusetts v. EPA (2007). The Supreme Court ruled that GHGs meet the definition of air pollutants under the existing CAA and must be regulated if these gases could be reasonably anticipated to endanger public health or welfare. Responding to the Court's ruling, EPA finalized an endangerment finding in December 2009. Based on scientific evidence it found that six GHGs constitute a threat to public health and welfare. Thus, it is the Supreme Court's interpretation of the CAA and EPA's assessment of the scientific evidence that form the basis for EPA's regulatory actions.

EPA in conjunction with the National Highway Traffic Safety Administration (NHTSA) issued the first of a series of GHG emission standards for new cars and light-duty vehicles in April 2010 and significantly increased the fuel economy of all new passenger cars and light trucks sold in the United States. The standards required these vehicles to meet an average fuel economy of 34.1 miles per gallon by 2016. In August 2012, the federal government adopted the second rule that increases fuel economy for the fleet of passenger cars, light-duty trucks, and medium-duty passenger vehicles for model years 2017 and beyond to average fuel economy of 54.5 miles per gallon by 2025. Because NHTSA cannot set standards beyond model year 2021 due to statutory obligations and the rules' long timeframe, a mid-term evaluation is included in the rule. The Mid-Term Evaluation is the overarching process by which NHTSA, EPA, and ARB will decide on CAFE and GHG emissions standard stringency for model years 2022–2025. NHTSA has not formally adopted standards for model years 2022 through 2025. However, the EPA finalized its mid-term review in January 2017, affirming that the target fleet average of at least 54.5 miles per gallon by 2025 was appropriate. In March 2017, President Trump ordered EPA to reopen the review and reconsider the mileage target.

NHTSA and EPA issued a Final Rule for "Phase 2" for medium- and heavy-duty vehicles to improve fuel efficiency and cut carbon pollution in October 2016. The agencies estimate that the standards will save up to 2 billion barrels of oil and reduce CO2 emissions by up to 1.1 billion metric tons over the lifetimes of model year 2018–2027 vehicles.

Presidential Executive Order 13783, Promoting Energy Independence and Economic Growth, of March 28, 2017, orders all federal agencies to apply cost-benefit analyses to regulations of GHG emissions and evaluations of the social cost of carbon, nitrous oxide, and methane.

State

California has adopted statewide legislation addressing various aspects of climate change and GHG emissions mitigation. Much of this legislation establishes a broad framework for the state's long-term GHG reduction and climate change adaptation program. In the absence of federal regulations, control of GHGs is generally regulated at the state level and is typically approached by setting emission reduction targets for existing sources of GHGs, setting policies to promote renewable energy and increase energy efficiency, and developing statewide action plans. Summaries of key policies, regulations, and legislation at the state level that are relevant to the Project are described below in chronological order.

Assembly Bill 1493—Pavley Rules (2002, Amendments 2009, 2012 Rule-Making)

Known as *Pavley I*, Assembly Bill (AB 1493 (California Health and Safety Code § 42823) standards are the state's first GHG standards for automobiles. AB 1493 requires the ARB to adopt vehicle standards that will lower GHG emissions from new light duty autos to the maximum extent feasible beginning in 2009. Additional strengthening of the Pavley standards (referred to previously as *Pavley II* and now referred to as the *Advanced Clean Cars* measure) has been proposed for vehicle model years 2017–2025. Together, the two standards are expected to increase average fuel economy to roughly 43 miles per gallon by 2020 and reduce GHG emissions from the transportation sector in California by approximately 14%. In June 2009, the EPA granted California's waiver request enabling the state to enforce its GHG emissions standards for new motor vehicles beginning with the current model year.

Executive Order S-03-05 (2005)

EO S-03-05 is designed to reduce California's GHG emissions to: (1) 2000 levels by 2010, (2) 1990 levels by 2020, and (3) 80% below 1990 levels by 2050.

Assembly Bill 32—California Global Warming Solutions Act (2006)

In 2006, the Legislature passed the California Global Warming Solutions Act of 2006 [Assembly Bill 32 (AB 32)], which created a comprehensive, multi-year program to reduce greenhouse gas (GHG) emissions in California. AB 32 required the California Air Resources Board (ARB or Board) to develop a Scoping Plan that describes the approach California will take to reduce GHGs to achieve the goal of reducing emissions to 1990 levels by 2020. The Scoping Plan was first approved by the Board in 2008 and must be updated every five years. The First Update to the Climate Change Scoping Plan was approved by the Board on May 22, 2014. In 2016, the Legislature passed SB 32, which codifies a 2030 GHG emissions reduction target of 40 percent below 1990 levels. With SB 32,

the Legislature passed companion legislation AB 197, which provides additional direction for developing the Scoping Plan.

The initial Scoping Plan was developed in 2008 and, per AB 32, must be updated at least once every five years. The 2014 First Update to the Climate Change Scoping Plan (2014 Update) defined ARB's climate change priorities for the subsequent five years and laid the groundwork to start the transition to the post-2020 goals set forth in Executive Orders S-3-05 and B-16-2012. The 2014 Update recommended establishing a 2030 mid-term GHG reduction target to ensure the State stays on course and expands upon the successes achieved to date to meet the long-term 2050 goal.

Executive Order B-30-15 directed ARB to update the Scoping Plan to chart the path to achieving the 2030 target. The mid-term target of 40 percent below 1990 levels, set by Executive Order B-30-15 and codified by SB 32, is critical to help frame the additional suite of policy measures, regulations, planning efforts, and investments in clean technologies and infrastructure needed to continue reducing GHG emissions in California.

The Proposed Scoping Plan builds upon the successful framework established by the initial Scoping Plan and the 2014 Update by outlining priorities and recommendations for the State to achieve its long-term climate objectives. The Proposed Scoping Plan describes actions for California to undertake to ensure it continues on a path toward a cleaner, more sustainable and prosperous future. This approach is designed to ensure the State is able to meet its long-term climate objectives that will achieve continual emissions reductions, while simultaneously supporting a range of economic, environmental, water supply, energy security, environmental justice, and public health priorities.

On January 20, 2017, ARB released its proposed 2017 Climate Change Scoping Plan Update, which lays out the framework for achieving the 2030 reductions as established in more recent legislation. The proposed 2017 Scoping Plan Update identifies the GHG reductions needed by each emissions sector to achieve a statewide emissions level that is 40 percent below 1990 levels before 2030 consistent with Senate Bill 32.

The update also identifies how GHGs associated with projects could be evaluated under CEQA. Specifically, it states that achieving "no net increase" in GHG emissions is the correct overall objective of projects evaluated under CEQA if conformity with an applicable local GHG reduction plan cannot be demonstrated. ARB recognizes that it may not be appropriate or feasible for every development project to mitigate its GHG emissions to no net increase and that this may not necessarily imply a substantial contribution to the cumulatively significant environmental impact of climate change. The ARB approved the 2017 Climate Change Scoping Plan Update on 14 December 2017.

Executive Order S-01-07—Low Carbon Fuel Standard (2007, 2015)

EO S-01-07 mandates that a statewide goal be established to reduce the carbon intensity of California's transportation fuels by at least 10% by 2020 and that a Low Carbon Fuel Standard (LCFS) for transportation fuels be established in California. The EO initiates a research and regulatory process at ARB. Based on an implementation plan developed by the California Energy Commission, ARB will be responsible for implementing the LCFS. On December 29, 2011, a federal judge issued a preliminary injunction blocking enforcement of the LCFS, ruling that the LCFS violates the interstate commerce clause (Georgetown Climate Center 2012). ARB appealed this ruling in 2012, and on September 18, 2013, a 9th U.S. Circuit Court of Appeals panel upheld the LCFS, ruling

that the program does not violate the Commerce Clause. The ARB re-adopted the LCFS on September 15, 2015, in response to stakeholder feedback received during the legal challenges. The re-adopted regulation includes additional cost containment measures, streamlines the application process for alternative fuels, and improves the process for earning credits for electric vehicles.

SB 97, Chapter 185, 2007, Greenhouse Gas Emissions:

SB 97 required the Governor's Office of Planning and Research to develop recommended amendments to the CEQA Guidelines for addressing GHG emissions. The amendments became effective on March 18, 2010.

Senate Bill 375—Sustainable Communities Strategy (2008)

SB 375 provides for a new planning process that coordinates land use planning, regional transportation plans (RTPs and funding priorities to help California meet the GHG reduction goals established in AB 32. SB 375 requires that the RTPs developed by metropolitan planning organizations include an SCS. The goal of the SCS is to reduce regional vehicle miles traveled (VMT) through land use planning and consequent transportation patterns. ARB released the regional targets in September 2010. SACOG is the metropolitan planning organization for the Sacramento region, including the western slope of El Dorado County. SACOG adopted its SB 375–compliant MTP/SCS in February 2016.

California Environmental Quality Act Guidelines (2010)

The State CEQA Guidelines (Section 15064.4) require lead agencies to describe, calculate, or estimate the amount of GHG emissions that would result from a project. Moreover, the State CEQA Guidelines emphasize the necessity to determine potential climate change effects of a project and propose mitigation as necessary. The State CEQA Guidelines confirm the discretion of lead agencies to determine appropriate significance thresholds but require the preparation of an EIR if "there is substantial evidence that the possible effects of a particular project are still cumulatively considerable notwithstanding compliance with adopted regulations or requirements" (Section 15064.4).

State CEQA Guidelines Section 15126.4 includes considerations for lead agencies related to feasible mitigation measures to reduce GHG emissions, which may include the following, among others.

- Measures in an existing plan or mitigation program for the reduction of emissions that are required as part of the lead agency's decision.
- Implementation of project features, project design, or other measures that are incorporated into the project to substantially reduce energy consumption or GHG emissions.
- Off-site measures, including offsets that are not otherwise required, to mitigate a project's emissions.
- Measures that sequester carbon dioxide (CO_2) emissions.

Executive Order B-30-15 (2015)

EO B-30-15 established a medium-term goal for 2030 of reducing GHG emissions by 40% below 1990 levels and requires ARB to update its current AB 32 Scoping Plan to identify the measures to meet the 2030 target. The EO supports EO S-03-05, described above, but is currently only binding on state agencies. However, there are current (2015/2016) proposals (SB 32) at the state legislature to establish a statutory target for 2030 that would apply to more than just state agencies.

Local

El Dorado County Air Quality Management District Draft Greenhouse Gas Emissions Thresholds

CEQA does not provide explicit directions on addressing climate change. It requires lead agencies identify project GHG emissions impacts and their "significance," but does not define what constitutes a "significant" impact. Not all projects emitting GHG contribute significantly to climate change. CEQA authorizes reliance on previously approved plans (i.e., a Climate Action Plan (CAP), etc.) and mitigation programs adequately analyzing and mitigating GHG emissions to a less than significant level. El Dorado County does not have an adopted CAP or similar program-level document; therefore, the project's GHG emissions must be addressed at the project-level. See section 3.8.2.2 for further information.

3.9.1.2 Environmental Setting

Greenhouse gases (GHGs) are recognized by wide consensus among the scientific community to contribute to global warming/climate change and associated environmental impacts. The major GHGs that are released from human activity include carbon dioxide, methane, and nitrous oxide. The primary sources of GHGs are vehicles (including planes and trains), energy plants, and industrial and agricultural activities (such as dairies and hog farms).

In 2006, the Legislature passed the California Global Warming Solutions Act of 2006 (AB 32), which created a comprehensive, multiyear program to reduce GHG emissions in California. AB 32 required ARB to develop a Scoping Plan that describes the approach California will take to achieve the goal of reducing GHG emissions to 1990 levels by 2020. The Scoping Plan was first approved by ARB in 2008 and must be updated every 5 years. ARB approved the First Update to the Climate Change Scoping Plan on May 22, 2014. ARB is moving forward with a discussion draft of an updated Scoping Plan that will reflect the 2030 target established in EO B-30-15 and SB 32.

The AB 32 Scoping Plan and the subsequent updates contain the main strategies California will use to reduce GHG emissions. As part of its supporting documentation for the Draft Scoping Plan, ARB released the GHG inventory for California. ARB is responsible for maintaining and updating California's GHG Inventory per California Health and Safety Code Section 39607.4. The associated forecast/projection is an estimate of the emissions anticipated to occur in the year 2020 if none of the foreseeable measures included in the Scoping Plan were implemented.

An emissions projection estimates future emissions based on current emissions, expected regulatory implementation, and other technological, social, economic, and behavioral patterns. The projected 2020 emissions represent a business-as-usual (BAU) scenario, assuming none of the Scoping Plan measures are implemented. The 2020 BAU emissions estimate assists ARB in

demonstrating progress toward meeting the 2020 goal of 431 MMT CO_2e). The 2017 edition of the GHG emissions inventory (released June 2017) found total California emissions of 440.4 MMT CO_2e, showing progress towards meeting the AB 32 goals.

Greenhouse gas emissions for transportation projects can be divided into those produced during operations and those produced during construction. The proposed Project does not increase the capacity of Mt. Murphy Road and would not increase operational GHG levels. The Project will result in a decrease in idling traffic by increasing from a one-lane to a two-lane bridge. The decrease in idling traffic will decrease the amount of greenhouse gas emissions associated with vehicle use in the Project area. The discussion below therefore focuses on construction related GHG emissions of the Project.

3.9.2 Environmental Impacts

3.9.2.1 Methods of Analysis

Greenhouse gas emissions related to project construction were estimated using detailed equipment inventories and project construction scheduling information, combined with emissions factors from the EMFAC2014 and CalEEMod (California Air Pollution Control Officers Association [CAPCOA] 2016). The emissions estimates are based on the best information available at the time of calculations, and without including any mitigation measures (CH2M Hill 2018).

3.9.2.2 Thresholds of Significance

In accordance with Appendix G of the State CEQA Guidelines, the proposed Project would have a significant impact related to GHG emissions if it would:

- Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?
- Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

The El Dorado County Air Quality Management District's (EDCAQMD) has not adopted GHG emissions significance thresholds for land use development projects. On 13 October 2016, the Placer County Air Pollution Control District (Placer APCD) Board of Directors adopted the Review of Land Use Projects under CEQA Policy (Policy). The Policy establishes the thresholds of significance for criteria pollutants as well as greenhouse gases and the review principles which serve as guidelines for the Placer APCD staff when the Placer APCD acts as a commenting agency to review and comment on the environmental documents prepared by the lead agencies. In developing the thresholds, the Placer APCD took into account health-based air quality standards and the strategies to attain air quality standards, historical CEQA project review data in Placer County, statewide regulations to achieve emission reduction targets for GHG, and the special geographic and land use features in Placer County.

The Placer APCD approach to developing significance thresholds for GHG emissions is to identify the emissions level for which a project would be expected to substantially contribute a mass amount of emissions and would conflict with existing statewide GHG emission reduction goal adopted by

California legislation. The Placer APCD has developed a 3-step process for determining significance which includes 1) a bright-line threshold, 2) a De Minimis level, and 3) an efficiency matrix for projects that fall between the Bright-line and the De Minimis level. For projects with GHG emissions between 10,000 and 1,100 MT CO2e/yr the efficiency matrix contains a set of efficiency conditions based on the Placer County's special condition (urban and rural area) as well as the type of land use development (residential and non-residential).

The Placer APCD uses a Bright-line threshold of 10,000 MT CO2e/yr for determining the level of significance for the land use construction phase and the stationary source project's operational phase. GHG emissions from the construction phase are considered temporary in nature and would result in short-term impacts. In addition, using 10,000 MT CO2e/yr as the threshold for stationary source projects is consistent with other adopted thresholds throughout California, and it is consistent with the CARB mandatory reporting level for stationary sources.

The State of California set the goal to reduce GHG emissions without limiting population and economic growth. The Placer APCD concept is to look for a reasonable threshold which would capture larger–scale projects with significant GHG emission contributions which should implement mitigation.

The Placer APCD thresholds are primarily associated with land development projects, not transportation projects. However, given the lack of locally adopted GHG emissions significance thresholds the Placer APCD thresholds are being used here. Placer APCD GHG Emissions Significance Thresholds are listed in Table 3-17.

Table 3-17. Placer APCD 2016 Approved GHG Emissions Significance Thresholds.

Greenhouse Gas Thresholds			
Bright line threshold 10,000 Metric Tons (MT) CO2e/yr			
Efficiency Matrix			
Residential		**Non-Residential**	
Urban	**Rural**	**Urban**	**Rural**
(MT CO2e/capita)		(MT/CO2e/1,000 sf)	
4.5	**5.5**	**26.5**	**27.3**
De Minimis Level 1,110 (MT) CO2e/yr			

3.9.2.3 Impacts and Mitigation Measures

Impact GHG-1: Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment? (less than significant)

The proposed Project does not increase the capacity of Mt. Murphy Road and would not increase operational GHG levels. In contrast, the Project will result in a decrease in idling traffic by increasing from a one-lane to a two-lane bridge. The decrease in idling traffic will decrease the amount of greenhouse gas emissions associated with vehicle use in the Project area. Construction of the proposed Project would generate short-term emissions of greenhouse gases.

Greenhouse gas emissions related to project construction were estimated using detailed equipment inventories and project construction scheduling information, combined with emissions factors from

the EMFAC2014 and CalEEMod (California Air Pollution Control Officers Association [CAPCOA] 2016). The same CalEEMod assumptions used in the air quality analysis were used here. The emissions estimates are based on the best information available at the time of calculations, and without including any mitigation measures. Based on the CalEEMod results the two-year Project construction is estimated to produce a maximum of approximately 537 MT CO2e during year one and 457 MT CO2e during year two. The modeled yearly and total Project GHG emissions are below the bright line threshold of 10,000 MT CO2e/yr as well as the de minimis threshold of 1,110 (MT) CO2e/yr threshold. Project impacts area less than significant.

Impact GHG-2: Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases? (no impact)

The proposed Project is identified as ELD19339 in SACOG's financially constrained *2017/2020 Metropolitan Transportation Improvement Program* (MTIP) (SACOG 2019a) and *2016 Metropolitan Transportation Plan/Sustainable Communities Strategy* (MTP/SCS) (SACOG 2019b). The federally required Metropolitan Transportation Improvement Program (MTIP) is a short-term listing of surface transportation projects that receive federal funds, are subject to a federally required action, or are regionally significant. Only projects included in with the Metropolitan Transportation Plan (MTP) may be incorporated into the MTIP. The MTIP derives all its projects either directly or indirectly from the MTP. The 2016 MTP/SCS is the applicable GHG emissions reduction plan for the Project. The Project will not conflict with the applicable GHG reduction plan as it was included in the 2016 MTP/SCS analysis.

3.9.3 References

California Air Resources Board. 2008. Climate Change Scoping Plan, a Framework for Change. December.

CH2M Hill. 23 July 2018. Mt. Murphy Road Bridge Replacement Analysis of Potential Air Quality and Greenhouse Gas Impacts. Prepared for: El Dorado County Department of Transportation

Georgetown Climate Center. 2012. *Summary of the Federal District Court's Order Enjoining California's Low Carbon Fuel Standard*. Available: http://www.georgetownclimate.org/reports/summary-of-the-federal-district-court-eys-order-enjoining-california-eys-low-carbon-fuel-standard.html. Accessed: September 2018.

Sacramento Area Council of Government's (SACOG). Accessed April 2019 (2019a), Adopted on 15 September 2016. Final 2017-20 Metropolitan Transportation Improvement Program (MTIP). https://www.sacog.org/current-2017-20-mtip

Sacramento Area Council of Government's (SACOG). Accessed April 2019 (2019b), Final Plan Released 18 February 2016. 2016 Metropolitan Transportation Plan/Sustainable Communities Strategy (MTP/SCS). https://www.sacog.org/2016-mtpscs

3.10 Hazards and Hazardous Materials

This section identifies existing conditions and discusses the regulatory setting for hazards and hazardous materials and analyzes the potential impacts. The primary concerns pertaining to hazardous materials in the Project area is their use, transportation, storage, and handling (i.e., potential accidents or spills).

3.10.1 Existing Conditions

3.10.1.1 Regulatory Setting

Federal

Comprehensive Environmental Response, Compensation, and Liability Act

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA, commonly known as *Superfund*, provides a Federal "Superfund" to clean up uncontrolled or abandoned hazardous-waste sites as well as accidents, spills, and other emergency releases of pollutants and contaminants into the environment. Through CERCLA, EPA was given power to seek out those parties responsible for any release and assure their cooperation in the cleanup.

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), commonly known as Superfund, was enacted by Congress on December 11, 1980. This law created a tax on the chemical and petroleum industries and provided broad Federal authority to respond directly to releases or threatened releases of hazardous substances that may endanger public health or the environment. Over five years, $1.6 billion was collected and the tax went to a trust fund for cleaning up abandoned or uncontrolled hazardous waste sites. CERCLA did the following:

- Established prohibitions and requirements concerning closed and abandoned hazardous waste sites;
- Provided for liability of persons responsible for releases of hazardous waste at these sites; and
- Established a trust fund to provide for cleanup when no responsible party could be identified.

Amended in 1986, the act establishes two primary actions: (1) to coordinate short-term removal of hazardous materials; and (2) to coordinate and manage the long-term removal of hazardous materials identified on the EPA's National Priorities List (NPL. The NPL is a record of known or threatened releases of hazardous substances, pollutants, or contaminants. A national database and management system, known as the Comprehensive Environmental Response, Compensation, and Liability Information System, is used by EPA to track activities at hazardous waste sites considered for cleanup under CERCLA. CERCLA also maintains provisions and guidelines dealing with closed

and abandoned waste sites and tracks amounts of liquid and solid media treated at sites on the NPL or sites that are under consideration for the NPL.

On October 17, 1986, the Superfund Amendments and Reauthorization Act amended the CERCLA act of 1980. The Superfund Amendments and Reauthorization Act of 1986 (SARA) reflected EPA's experience in administering the complex Superfund program during its first six years and made several important changes and additions to the program. The SARA did the following:

- Stressed the importance of permanent remedies and innovative treatment technologies in cleaning up hazardous waste sites;
- Required Superfund actions to consider the standards and requirements found in other State and Federal environmental laws and regulations;
- Provided new enforcement authorities and settlement tools;
- Increased State involvement in every phase of the Superfund program;
- Increased the focus on human health problems posed by hazardous waste sites;
- Encouraged greater citizen participation in making decisions on how sites should be cleaned up; and
- Increased the size of the trust fund to $8.5 billion.

SARA also required EPA to revise the Hazard Ranking System to ensure that it accurately assessed the relative degree of risk to human health and the environment posed by uncontrolled hazardous waste sites that may be placed on the National Priorities List (NPL).

Occupational Safety and Health Standards

With the Occupational Safety and Health Act of 1970, Congress created the Occupational Safety and Health Administration (OSHA) to assure safe and healthful working conditions for working men and women by setting and enforcing standards and by providing training, outreach, education and assistance. Under the OSHA law, employers are responsible for providing a safe and healthful workplace for their workers.

Resource Conservation and Recovery Act of 1976 (42 United States Code Sections 6901–6987)

The Resource Conservation and Recovery Act (RCRA) is the primary law governing the disposal of solid and hazardous waste. Congress passed RCRA on October 21, 1976 to address the increasing problems the nation faced from our growing volume of municipal and industrial waste. The RCRA, which amended the Solid Waste Disposal Act of 1965, set national goals for:

- Protecting human health and the environment from the potential hazards of waste disposal.
- Conserving energy and natural resources.
- Reducing the amount of waste generated.
- Ensuring that wastes are managed in an environmentally sound manner.

The RCRA established three distinct, yet interrelated, programs to achieve these goals:

- The solid waste program, under RCRA Subtitle D, encourages states to develop comprehensive plans to manage nonhazardous industrial solid waste and municipal solid waste, sets criteria for municipal solid waste landfills and other solid waste disposal facilities, and prohibits the open dumping of solid waste.
- The hazardous waste program, under RCRA Subtitle C, establishes a system for controlling hazardous waste from the time it is generated until its ultimate disposal — in effect, from "cradle to grave."
- The underground storage tank (UST) program, under RCRA Subtitle I, regulates underground storage tanks containing hazardous substances and petroleum products.

Asbestos National Emission Standards for Hazardous Air Pollutants (NESHAP)

EPA's air toxics regulation for asbestos is intended to minimize the release of asbestos fibers during activities involving the handling of asbestos. Air toxics regulations under the Clean Air Act specify work practices for asbestos to be followed during demolitions and renovations of all facilities, including, but not limited to, structures, installations, and buildings (excluding residential buildings that have four or fewer dwelling units). The regulations require a thorough inspection where the demolition or renovation operation will occur. When buildings are under renovation, they are not being demolished, but asbestos-containing building material may be removed or disturbed.

The Asbestos NESHAP requires specific work practices to control the release of asbestos fibers. To help ensure that the work practice standards of the Asbestos NESHAP are followed during a demolition or renovation operation, the asbestos NESHAP requires at least one onsite representative trained in the regulatory provisions and the means of compliance. This trained individual needs to receive refresher training every two years, including: applicability of the rule; notifications; material identification; control procedures for removal; adequate wetting; local exhaust ventilation; negative pressure enclosures; glove-bag procedures; High Efficiency Particulate Air (HEPA) filters; waste disposal work practices; reporting and recordkeeping; and asbestos hazards and worker protection.

State

Asbestos Regulations

Title 8 CCR Section 1529 regulates asbestos exposure in all construction work and defines permissible exposure limits and work practices. Typically, removal or disturbance of more than 100 square feet of material containing more than 0.1% asbestos must be performed by a registered asbestos abatement contractor, but associated waste labeling is not required if the material contains 1% or less asbestos. When the asbestos content of materials exceeds 1%, virtually all requirements of the standard become effective. With respect to potential worker exposure, notification, and registration requirements, the California Division of Occupational Safety and Health (Cal/OSHA) defines asbestos-containing construction material as construction material that contains more than 0.1% asbestos (8 CCR 341.6).

Hazardous Waste Control Act

The state equivalent of the RCRA is the Hazardous Waste Control Act (HWCA). HWCA created the State Hazardous Waste Management Program, which is similar to the RCRA program but generally more stringent. The HWCA establishes requirements for the proper management of hazardous substances and wastes with regard to criteria for:

- Identification and classification of hazardous wastes;
- Generation and transportation of hazardous wastes;
- Design and permitting of facilities that recycle, treat, store, and dispose of hazardous wastes;
- Treatment standards;
- Operation of facilities;
- Staff training;
- Closure of facilities; and
- Liability requirements.

Emergency Services Act

Under the California Emergency Services Act, the State developed an emergency response plan to coordinate emergency services provided by all governmental agencies. The plan is administered by the California Office of Emergency Services (OES). OES coordinates the responses of other agencies, including EPA, the Federal Emergency Management Agency, the California Highway Patrol, water quality control boards, air quality management districts, and county disaster response offices. Local emergency response teams, including fire, police, and sheriff's departments, provide most of the services to protect public health.

California Health and Safety Codes

The California Environmental Protection Agency (Cal-EPA) has been granted primary responsibility by EPA for administering and enforcing hazardous materials management plans within California. Cal-EPA defines a hazardous material more generally than EPA as a 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 (26 CCR 25501).

State regulations include detailed planning and management requirements to ensure that hazardous materials are properly handled, stored, and disposed of to reduce human health risks. In particular, the State has acted to regulate the transfer and disposal of hazardous waste. Hazardous waste haulers are required to comply with regulations that establish numerous standards, including criteria for handling, documenting, and labeling the shipment of hazardous waste (26 CCR 25160 et seq.).

Cortese List

Cal-EPA maintains the Hazardous Wastes and Substances Site (Cortese) List, a planning document used by state and local agencies and developers to comply with CEQA requirements in providing information about the location of hazardous materials release sites. The list must be updated at least once per year, per Government Code Section 65962.5. The California Department of Toxic Substances Control (DTSC), State Water Resources Control Board (SWRCB), and California Department of Resources Recycling and Recovery all contribute to the site listings.

California Public Resources Code Sections 4201–4204

This section of the California Public Resources Code was amended in 1982 to require the California Department of Forestry and Fire Protection (CAL FIRE) to classify Fire Hazard Severity Zones within State Responsibility Areas (SRAs). CAL FIRE classifies lands within SRAs by severity of fire hazard present to identify measures to retard the rate of spreading and reduce the potential intensity of uncontrolled fires that threaten to destroy resources, life, or property.

Local

El Dorado County General Plan

To ensure provision of adequate public human health and safety services in the county, the Public Services and Utilities Element and Public Health, Safety and Noise Element of the County General Plan (County of El Dorado 2015) includes the following goals and policies.

- Goal 5.7, *Emergency Services*, addresses provision of adequate and comprehensive emergency services, including fire protection, law enforcement, and emergency medical services, and includes implementing Policy 5.7.1.1.
- Goal 6.2, *Fire Hazards*, minimizes fire hazards and risks in both wildland and developed areas by implementing Policies 6.2.1.1, 6.2.1.2, 6.2.2.1, 6.2.2.2, 6.2.3.1, 6.2.3.2, 6.2.3.3. 6.2.3.4, 6.2.4.1, 6.2.4.2, and 6.2.5.1.
- Goal 6.6, *Management of Hazardous Materials*, requires measures to reduce the threats to public health and the environment posed by the use, storage, manufacture, transport, release, and disposal of hazardous materials, and includes implementing Policy 6.6.1.2

Certified Uniform Program Agency

Cal-EPA can delegate responsibility for many of its programs to a local government through certification as a Certified Uniform Program Agency (CUPA). A CUPA is responsible for implementing a unified hazardous materials and hazardous waste management program. This program was established under the amendments to the California Health and Safety Code made by Senate Bill 1082 in 1993. California Health and Safety Code 25505 requires handlers of hazardous materials to submit business plans to the CUPA if hazardous materials inventories meet or exceed established thresholds. A CUPA can be a county, city, or joint powers authority that demonstrates its ability to administer the program. The local CUPA for the proposed Project is the Hazardous Materials Division of El Dorado County Environmental Management Department.

El Dorado County Airport Land Use Compatibility Plan

This El Dorado County Airport Land Use Compatibility Plan (ALUCP) contains the individual Compatibility Plan for each of the three public-use airports in the western portion of El Dorado County: Cameron Airpark Airport, Georgetown Airport, and Placerville Airport. As adopted by the El Dorado County Airport Land Use Commission (ALUC), the basic function of the ALUCP is to promote compatibility between these airports and future land use development in the surrounding areas. The plan accomplishes this function through establishment of a set of compatibility criteria applicable to new development. The El Dorado County Transportation Commission (EDCTC) functions as the ALUC for western El Dorado County, having taken over this function from the multi-county Foothill ALUC in 2008.

Hazardous Materials Ordinance of 1990

The Hazardous Materials Ordinance (County Code Chapter 8.38) regulates the handling, storage, use, transport, processing, or disposal of hazardous materials. This ordinance requires reporting of the use of hazardous materials. It also requires disclosure of accidental release of hazardous materials, as well as preventive and mitigative efforts for impacts of hazardous materials. The ordinance is enforced locally by trained staff of fire protection districts and the El Dorado County Environmental Management Department.

El Dorado County Air Quality Management District (EDCAQMD)

EDCAQMD administers the state and federal clean air acts (CAAs) in accordance with state and federal guidelines. The EDCAQMD regulates air quality through its district rules and permit authority. It also participates in planning review of discretionary project applications and provides recommendations.

Solid Waste Management Ordinance (1994)

The Solid Waste Management Ordinance (County Code Chapter 8.42) prohibits the disposal, depositing, or otherwise disposing of any hazardous or biomedical waste onto land, into soil, rock, air, or water or at unauthorized disposal sites, transfer stations, resource recovery facilities, transformation facilities, buy-back centers, drop-off recycling centers, or any container to be collected and ultimately deposited, unless otherwise approved by the County.

3.10.1.2 Environmental Setting

A regulatory agency database review for locations included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 (The Cortese list) was conducted as part of the Project Initial Site Assessment (ISA, WRECO 2019). GeoTracker is the SWRCB (a division of the California DWR) data management system for sites that impact groundwater or have the potential to impact groundwater. GeoTracker's online database contains sites that require groundwater cleanup as well as permitted facilities that could impact groundwater. The Department of Toxic Substances Control (DTSC) EnviroStor Database is an online search and Geographic Information System (GIS) tool for identifying sites that have known contamination or sites for which there may be reasons to

investigate further. It also identifies facilities that are authorized to treat, store, dispose, or transfer (TSDF) hazardous waste.

A review of the online GeoTracker and EnviroStor databases did not list any records for individual sites within 1 mile of the Project area. Three records occur within a 3-mile radius of the Project area. These three records are for Leaking Underground Storage Tank (LUST) cleanup sites listed as 'Completed-Case Closed'.

In accordance with ASTM Standard E1527-13 and part of the ISA, a computerized radius search of pertinent federal, state, and tribal environmental record databases was performed. The database search was conducted to identify environmental regulatory records associated with the Project area and nearby properties that would indicate environmental conditions (i.e., reported releases of hazardous substances and/or petroleum products), which may have the potential to adversely impact the Project area and surrounding vicinity. The Project area (target property) was not listed in any of the federal, state, and local databases searched.

The closest public airport is the county-owned Georgetown Airport (FAA Identifier: G36), located approximately 7.8 miles northeast of the Project area at 6245 Aerodrome Way in Georgetown (AirNav.com 2019). The closest private airstrip is the Bacchi Valley Industries Airport (FAA Identifier: 80CA) located approximately 1.9 miles northwest of the Project area adjacent to Bacchi Road, Lotus (AirNav.com 2019).

The closest school is the Gold Trail School, approximately 1.9 miles to the south. The Sutter's Mill School is located approximately 2.8 miles southwest of the Project area.

Based on County records, regulatory database searches, and site visits, the Initial Site Investigation (ISA) concluded the following current and potential Recognized Environmental Conditions (RECs) occur in the Project Area:

- Former orchards (prior to 1962) NE and SE of the bridge (lead, arsenic, pesticides).
- Historic gold mines upstream (to the south) of the bridge (mercury, arsenic).
- Leaded paint and asbestos on structural elements of the bridge.
- Aerially deposited lead risk (ADL).

Based on the results of the ISA (WRECO 2019), WRECO conducted a limited Preliminary Site Investigation (PSI) in the Project area. Four sample borings were obtained from areas adjacent to the bridge/ roadway and along the river to screen shallow soils for hazardous materials. The results are summarized below:

- **Lead, Arsenic, Pesticides:** Soil samples were analyzed for lead, CAM 17 Metals, pH, and organochlorine pesticides in accordance with their respective EPA methods. Each sample was compared to the San Francisco Bay Regional Water Quality Control Board Environmental Screening Levels (ESLs) and State Total Threshold Limit Concentrations (TTLCs). Pesticides were below detection limits for all sample. One soil sample collected from the west bank of the South Fork American River, had an arsenic concentration (2.6 mg/kg) that exceeded the ESLs for residential, commercial/industrial, and construction worker. All other sample results were below ESLs and TTLCs.

- **Suspect Lead Based Paint (LBP):** Six white paint samples from the bridge handrail and silver paint samples from the metal trusses were tested for LBP. Results ranged from 0.00755% to 0.0581% for the hand-rail paint-chip samples and from 10.5% to 15.2% for the silver-paint samples. The metal truss paint samples exceed the regulatory thresholds of the USEPA and CDPH (0.5% by weight or 5,000 parts per million (ppm) by paint chip analysis)
- **Asbestos Containing Material (ACM):** Four ACM samples were collected to evaluate the presence, extent, and condition of any above-ground asbestos containing construction material (ACCM) and regulated asbestos containing material (RACM) that may be present. Laboratory results indicated that all the ACM samples taken from the Mt. Murphy Rd Bridge were below detection limits for asbestos content (less than 1%).
- **Aerially Deposited Lead (ADL):** Detectable concentrations of lead were identified in shallow soils at the Project site. The concentrations from the soil samples (3.8 to 29 mg/kg) are not indicative of hazardous waste.

Naturally occurring asbestos (NOA) can be released from serpentine and ultramafic rocks when the rock is broken or crushed. The Project is not located within an area known to contain naturally occurring asbestos (NOA) or an area "more likely to contain naturally occurring asbestos" (California Department of Conservation 2000, El Dorado County 2005).

The long, hot, dry summers in El Dorado County, combined with inadequate clearance between structures and vegetation, flammable vegetation, and steep topography, result in conditions conducive to wildfires. Topography is also a central factor when considering the fire hazard of an area. As slopes increase, fires spread faster and can create a *chimney effect*, in which drafts of hot air and gases blow upward from steep ravines, resulting in sudden flashes of fire. Steep terrain can reduce accessibility to wildland fires by fire suppression crews and allows fires to spread into additional areas. Forest management practices, particularly fire suppression activities and the restriction on timber harvest, have resulted in dense, second growth timber mixed with brush and slash (wood waste left from logging, pruning, thinning or brush cutting process). Because of these physical conditions, CAL FIRE has designated all of the Project area as a High Fire Hazard Severity Zone in a State Responsible Area (SRA) (California Department of Forestry and Fire Protection 2007). The financial responsibility of preventing and suppressing fires in the SRA is primarily the responsibility of the state. No portion of the Project site is designated as a Local Responsibility Area (California Department of Forestry and Fire Protection 2009).

3.10.2 Environmental Impacts

3.10.2.1 Methods of Analysis

The analysis of hazards and hazardous materials is based on a review of the County General Plan (El Dorado County 2004); the Project Initial Site Assessment/Preliminary Site Assessment (WRECO 2019), database research prepared in compliance with federal, state, and local ordinances and regulations; and professional standards pertaining to hazards and hazardous materials. The environmental baseline for the analysis consists of the hazards and hazardous materials that are known to occur in the Project area.

3.10.2.2 Thresholds of Significance

In accordance with Appendix G of the State CEQA Guidelines, the proposed Project would be considered to have a significant effect if it would result in any of the conditions listed below.

- Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?
- Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?
- Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?
- Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?
- 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?
- Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?
- Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires.

3.10.2.3 Impacts and Mitigation Measures

Impact HAZ-1: Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials? (less than significant)

Small amounts of hazardous materials would be used during construction activities (i.e., equipment maintenance, fuel, solvents, roadway resurfacing and re-striping materials). Hazardous materials would only be used during construction of the Project, and any hazardous material uses would be required to comply with all applicable local, state, and federal standards associated with the handling and storage of hazardous materials. Use of hazardous materials in accordance with applicable standards ensures that any exposure of the public to hazard materials would have a less-than-significant impact.

Impact HAZ-2: 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 with mitigation)

Arsenic concentration along west bank of the SFAR in the Project area exceeded the residential, commercial, industrial, and construction worker ESLs, but the soil was not RCRA or non-RCRA hazardous waste. The soil from the west bank of the river should be kept in separate stockpiles from other spoils in order to properly screen for waste disposal classification during demolition/ construction. Implementation of HAZ-1 will reduce potential impacts to less than significant.

Mitigation Measure HAZ-1 Arsenic Containing Soil

Contract provisions will require soil excavated from the west bank of the South Fork American River be kept in separate from other spoils and disposed of as Non-hazardous waste at a Class II or Class III landfill depending on facility acceptance standard.

Concentrations of lead in the silver bridge paint exceeded the regulatory thresholds for USEPA and CDPH. Implementation of HAZ-2 will reduce potential impacts to less than significant.

Yellow traffic striping paints made prior to 1995 may exceed hazardous waste criteria under Title 22 CCR and require disposal in a Class I disposal site. Very little yellow stripping paint occurs in the Project area and is located along Mt. Murphy Road east of the existing bridge. Implementation of HAZ-2 will further reduce potential impacts.

Detectable concentrations of lead were identified in shallow soils at the Project site due to ADL. Concentrations of ADL in shallow soils at the Project site are not indicative of hazardous waste. Implementation of HAZ-2 will further reduce potential impacts.

Mitigation Measure HAZ-2 LBP, ADL, Earth Material Containing Lead

- *Contract provisions will require that LBP, on the existing metal trusses of the bridge, be abated prior to demolition in accordance with Caltrans Standard Special Provision 14-11.13 (Disturbance of Existing Paint Systems on Bridges) and 36-4 (Containing Lead from Paint and Thermoplastic).*
- *Contract provisions will require the existing striping and pavement marking materials on Mt. Murphy Rd along east side of bridge be abated prior to demolition in accordance with Caltrans Standard Special Provision 14-11.12 (Remove Yellow Traffic Stripe and Pavement Marking with Hazardous Waste Residue), Caltrans Standard Special Provision 36-4 (Containing Lead from Paint and Thermoplastic), and 84-9.03C (Remove Traffic Stripes and Pavement Markings Containing Lead).*
- *Contract provisions will require exposed soil waste/ spoils be managed in accordance with Caltrans- DTSC Soil Management Agreement for Aerially Deposited Lead-Contaminated Soils (29 June 2016), Caltrans Standard Special Provisions 7-1.02K(6)(j)(iii) (Earth Material Containing Lead), Caltrans Standard Specification 14-11.08 Regulated Material Containing Aerially Deposited Lead, and 14-11.09 Minimal Disturbance of Regulated Material Containing Aerially Deposited Lead.*

The existing wood rails on the bridge have a potential to contain hazardous chemicals used to preserve wood. Implementation of HAZ-3 will reduce potential impacts to less than significant.

Mitigation Measure HAZ-3 Treated Wood Waste

- *Contract provisions will require wooden railings on the bridge are managed in accordance with Caltrans Standard Specifications 14-11.14 (Treated Wood Waste) and DTSC's Treated Wood Waste Alternative Management Standard (22 CCR Chapter 34).*

Impact HAZ-3: Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school? (no impact)

No existing or proposed schools occur within 0.25 mile of the Project site. The closest school Gold Trail School, approximately 1.9 miles to the south. The Sutter's Mill School is located approximately 2.8 miles southwest of the Project area. As noted above, the Project would involve the short- term

handling of hazardous materials during construction. Handling and storage of hazardous materials during construction would comply with all applicable local, state, and federal standards.

Impact HAZ-4: Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment? (no impact)

No listed hazardous materials or waste sites occur within the Project area. Three records occur within a 3-mile radius of the Project area. These three records are for Leaking Underground Storage Tank (LUST) cleanup sites listed as 'Completed-Case Closed'.

Impact HAZ-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? (no impact)

The Project is not located within two miles of a public airport or public use airport. The closest public airport is the county-owned Georgetown Airport (FAA Identifier: G36), located approximately 7.8 miles northeast of the Project area at 6245 Aerodrome Way in Georgetown (AirNav.com 2019). The closest private airstrip is the Bacchi Valley Industries Airport (FAA Identifier: 80CA) located approximately 1.9 miles northwest of the Project area adjacent to Bacchi Road, Lotus (AirNav.com 2019).

Impact HAZ-6: Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan? (less than significant)

Construction of the proposed Project would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. Mt. Murphy Road will remain open during construction. Motorists will make use of the existing bridge during construction. The Project will not require a detour. A TMP will be prepared to alleviate and minimize construction related traffic delays and provide direction on how to minimize effects on access, including emergency service responders. Traffic controls would be implemented during construction, although relatively minimal traffic restrictions are anticipated. The Project contractor would be required to prepare a traffic management plan that must be approved by El Dorado County and the Offices of Emergency Services (OES). Access for emergency vehicles through the Project area would be maintained at current conditions at all times. This impact would be less than significant, and no mitigation is required.

Impact HAZ-7: Exposure of people or structures to a significant risk of loss, injury, or death involving wildland fires (less than significant with mitigation)

The completed Project will not expose people or structures to a new or increased significant risk of loss, injury or death involving wildland fires. Section 3.18 (Wildfire) provides additional detail regarding wildfire. With implementation of WILD-1 impacts are considered less than significant.

3.10.3 References

AirNav.com. Accessed February 2019. Georgetown Airport and Bacchi Valley Industries Airport. http://www.airnav.com/airports/get.

California Department of Conservation. August 2000. A general location guide for ultramafic rocks in California – Areas more likely to contain naturally occurring asbestos. Division of Mines and Geology, open-file report 2000-19. ftp://ftp.consrv.ca.gov/pub/dmg/pubs/ofr/ofr_2000-019.pdf

California Department of Forestry and Fire Protection. 2007 (accessed February 2018). Fire Hazard Severity Zones in State Responsibility Areas. Available: http://www.fire.ca.gov/fire_prevention/fhsz_maps_eldorado

California Department of Forestry and Fire Protection. 2009 (accessed February 2018). Very High Fire Hazard Severity Zones in Local Responsibility Areas. Available: http://www.fire.ca.gov/fire_prevention/fhsz_maps_eldorado

WRECO. 15 February 2019. Mt. Murphy Road Bridge Project, Hazardous Waste, Initial Site Assessment/Preliminary Site Investigation. Prepared for El Dorado County. Prepared by WRECO.

El Dorado County. 2005. El Dorado County Asbestos Review Areas Western Slope, County of El Dorado. El Dorado County Surveyor/G.I.S. Division, G.I.S. Project Id: 3089a.

El Dorado County. Adopted 19 July 2004 (2004b). El Dorado County general plan, a plan for managed growth and open roads; a plan for quality neighborhoods and traffic relief, Public Services and Utilities Element and Public Health, Safety and Noise Element (amended December 2015). El Dorado County Planning Department, Placerville, CA.

3.11 Hydrology, Water Quality, and Water Resources

This section describes the regulatory and environmental setting, evaluates potential project impacts, and proposes mitigation measure as needed to reduce impacts to hydrology and water quality.

3.11.1 Existing Conditions

3.11.1.1 Regulatory Setting

Federal

Clean Water Act

Several sections of the Clean Water Act (CWA) pertain to the regulation of impacts waters of the United States. The term *waters of the United States* generally refers to all surface waters, such as all navigable waters and their tributaries, all interstate waters and their tributaries, all wetlands adjacent to these waters, and all impoundments of these waters. The CWA sections discussed below pertain to the Project.

The EPA is charged with protecting the quality of waters of the United States. In California, the State Water Board administers CWA Sections 303, 401 and 402, and United States Army Corps of Engineers (USACE) has jurisdiction and permit authority over waters of the United States under CWA Section 404.

Section 303 and 305—Impaired Waters

The State of California adopts water quality standards to protect beneficial uses of waters of the state as required by Section 303(d) of the CWA and the Porter-Cologne Act. Section 303(d) of the CWA established the total maximum daily load (TMDL) process to guide the application of state water quality standards. TMDLs have the ultimate goal of reducing the amount of the pollutant entering the waterbody to meet water quality objectives. In order to identify candidate waterbodies for TMDL analysis, a list of water quality–limited segments was generated by the State Water Board. These waterbodies are impaired by the presence of pollutants such as sediment and are more sensitive to disturbance because of this impairment.

CWA Section 305(b) requires states to develop a report assessing statewide surface water quality. Both CWA requirements are being addressed through the development of a 303(d)/305(b) Integrated Report. The State Water Resources Control Board (SWRCB) developed the statewide *Final 2014/2016 California Integrated Report (Clean Water Act Section 303(d) List / 305(b) Report)* based on the Integrated Reports from each of the nine Regional Water Quality Control Boards (RWQCBs) (SWRCB 2019). The 2014/2016 California Integrated Report was approved by the State Water Board on October 3, 2017 and approved by EPA on April 6, 2018.

Section 401—Water Quality Certification

Under Section 401 of the Clean Water Act (33 U.S.C. 1341), applications for a federal permit or license for any activity that may result in a discharge to a water body, require a State Water Quality Certification to ensure that the proposed activity complies with state water quality standards.

Section 402—National Pollutant Discharge Elimination System (NPDES)

Section 402(p) of Clean Water Act establishes a permit under the NPDES program for discharges of storm water resulting from ground disturbing construction activities, such as grading. For ground disturbing activities impacting less than one acre, compliance with the County's grading ordinance satisfies the requirements of NPDES. For ground disturbing construction activities in excess of one acre, a NPDES Phase II permit from the RWQCB is required. The preparation of a Stormwater Pollution Prevention Plan (SWPPP) is a requirement of the NPDES Phase II permit.

Section 404—Dredge/Fill Permitting and Section 10 of the Rivers and Harbors Act

The Corps and the U.S. Environmental Protection Agency regulate the discharge of dredge and fill material into "waters of the United States" under Section 404 of the Clean Water Act (33 U.S.C. 1344). The Corps issues permits for certain dredge and fill activities in waters of the U.S. pursuant to the regulations in 33 CFR 320-330.

Section 10 of the Rivers and Harbors Act, also administered by USACE, requires permits for all structures (such as riprap) and activities (such as dredging) in navigable waters of the United States.

National Flood Insurance Program

The U.S. Congress established the National Flood Insurance Program (NFIP) with the passage of the National Flood Insurance Act of 1968. The NFIP is a Federal program enabling property owners in participating communities to purchase insurance as a protection against flood losses in exchange for State and community floodplain management regulations that reduce future flood damages. A Flood Insurance Rate Map is the official map of a community prepared by FEMA to delineate both the special flood-hazard areas and the flood risk premium zones applicable to the community.

State

Porter-Cologne Water Quality Control Act

California Water Code Section 13260 requires "any person discharging waste, or proposing to discharge waste, in any region that could affect the waters of the state to file a report of discharge (an application for waste discharge requirements)." Under the Porter-Cologne Act definition, waters of the state are "any surface water or groundwater, including saline waters, within the boundaries of the state." Although all waters of the United States that are within the borders of California are also waters of the state, the reverse is not true. California retains authority to regulate discharges of waste into any waters of the state, regardless of whether USACE has concurrent jurisdiction under CWA Section 404.

The Porter-Cologne Act was established and is implemented by the State Water Board and nine RWQCBs. The State Water Board is the primary state agency responsible for protecting the quality of the state's surface and groundwater supplies, or *waters of the state*. More broadly defined than waters of the United States, waters of the state are any surface water or groundwater, including saline waters, within the boundaries of the state. The RWQCBs are responsible for implementing CWA Sections 303(d), 401, and 402 mentioned above.

The Porter-Cologne Act authorizes the State Water Board to draft state policies regarding water quality. The act requires projects that are discharging, or proposing to discharge, wastes that could affect the quality of the state's water to file a Report of Waste Discharge with the appropriate RWQCB.

The Porter-Cologne Act also requires that State Water Board or a RWQCB adopt basin plans for the protection of water quality. Basin plans are updated and reviewed every three years and provide the technical basis for determining Waste Discharge Requirements (WDRs), taking enforcement actions, and evaluating clean water grant proposals. In basin plans, RWQCBs designate beneficial uses for all waterbody segments in their jurisdictions and then set criteria necessary to protect these uses. Consequently, the water quality objectives developed for particular water segments are based on the designated use and vary depending on such use.

In addition, the State Water Board identifies waters failing to meet standards for specific pollutants, which are then state-listed in accordance with CWA Section 303(d). If it is determined that waters are impaired for one or more pollutants and the standards cannot be met through point-source or nonpoint-source controls (NPDES permits or WDRs), then the CWA requires the establishment of TMDLs.

National Pollutant Discharge Elimination System Construction General Permit

The General NPDES Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (Order 2009-0009-DWQ, NPDES No. CAS000002) (Construction General Permit) regulates stormwater discharges for construction activities under CWA Section 402. Dischargers whose projects disturb 1 or more acres of soil (note: certain sites between 1- and 5-acres disturbance qualify for an Erosivity Waiver), or whose projects disturb less than 1 acre but are part of a larger common plan of development that in total disturbs 1 or more acres, are required to obtain coverage under the Construction General Permit. The Project would involve more than 1 acre of land disturbance, and therefore must obtain coverage under the Construction General Permit. The Project schedule will likely rule out the use of an Erosivity Waiver.

National Pollutant Discharge Elimination System General Municipal Stormwater Permit

CWA Section 402 mandates permits for municipal stormwater discharges, which are regulated under the NPDES General Permit for MS4s (MS4 Permit).

Municipal stormwater discharges in El Dorado County are regulated under the State Water Board Water Quality Order No. 2013-0001-DWQ, NPDES General Permit No. CAS000004, WDRs for Storm Water Discharges from Small MS4s (Phase II General Permit).

State Water Board Low Impact Development Policy

The State Water Board is advancing Low Impact Development (LID) in California as a means of complying with municipal stormwater permits. On January 20, 2005, the State Water Board adopted the LID Policy, which promotes the idea of sustainability to be considered during the design and planning process for future development. LID incorporates, in part, site design, the use of vegetated swales and retention basins, and minimizing impermeable surfaces. Implementation of these features to manage stormwater will maintain predevelopment runoff rates and volumes, benefit water supply, and contribute to water quality protection.

Local

El Dorado County Ordinance Code

The Grading, Erosion and Sediment Control Ordinance regulates grading within the unincorporated areas of El Dorado County, to avoid pollution of water, and to ensure that the intended use of a graded site is consistent with the County General Plan (El Dorado County 2004) and any specific adopted plans including the adopted stormwater management plan (El Dorado County 2019a), State Fire Safe Standards, and relevant El Dorado County ordinances. This ordinance establishes the procedures for the issuance of permits, approval of plans, and inspection of construction sites. The Grading, Erosion and Sediment Control Ordinance requires that waterways and adjacent properties be protected from erosion, flooding, or sediment deposits that could result from grading activities (El Dorado County 2019b).

The Flood Damage and Prevention Ordinance implements General Plan Policy 6.4.1.1 requiring continued participation in the National Flood Insurance Program to promote public health, safety, and general welfare, and to minimize public and private losses due to flood conditions in specific areas. This ordinance is applied throughout the community and provides legally enforceable regulations to all publicly and privately owned land within flood-prone areas (El Dorado County 2019c).

The County has authority to impose conditions of approval on a proposed project to ensure that the project is consistent with all applicable standards and regulations, or to mitigate any potential impacts created by the proposed project. Standard conditions of approval related to stormwater drainage and infrastructure include grading plans. Grading plans must be submitted and reviewed by the County in support of permit applications and be consistent with the design standards described in the Grading, Erosion and Sediment Control Chapter of the Design and Improvement Standards Manual.

Western El Dorado County Storm Water Management Plan

The Western El Dorado County Storm Water Management Plan (SWMP) describes a program to reduce the discharge of pollutants associated with the stormwater drainage systems that serve Western El Dorado County (El Dorado County 2019a). It identifies how the County will comply with the provisions of the NPDES MS4 permit proposed by the State Water Board. The Western El Dorado County SWMP addresses its responsibilities for implementing the applicable stormwater management practices as well as training, public education and outreach, monitoring, program evaluation, and reporting activities. The SWMP requires full compliance with El Dorado County's

Grading, Erosion and Sediment Control Ordinance, El Dorado County Design and Improvement Standards Manual, and the El Dorado County Drainage Manual. The Drainage Manual focuses on drainage priorities in the County and provides criteria to address procedures for the analysis and design of drainage facilities within the County.

The SWMP also includes the Construction Site Runoff Control Program, which includes practices to protect water quality and control runoff from all development or redevelopment projects greater than or equal to one acre. The Construction Site Runoff Control Program describes typical construction site practices expected to be implemented for common construction activities, as well as the minimum construction site practices required to protect water quality. The minimum practices include scheduling, preservation of existing vegetation, stockpile management, non-stormwater management, and disturbed soil area management as well as the construction, implementation, and long-term operation and maintenance of BMPs.

County of El Dorado General Plan

The General Plan guides development and use of land within the County. Several goals and policies of the General Plan apply directly and broadly to hydrology and water quality. The El Dorado County Board of Supervisors adopted a new General Plan for the County on July 19, 2004 (El Dorado County 2004). Goals, objectives, and policies within the Conservation and Open Space Element and Public Health, Safety, and Noise Element of the County's General Plan relevant to the Project are related to erosion and sedimentation, grading, drainage patterns, water quality and quantity, and flood hazards.

3.11.1.2 Environmental Setting

Climate

The following climate summary is from the Western Regional Climate Center, Placerville gauge for the period of record extending from 1 January 1900 to 17 May 2011 (Western Regional Climate Center 2019). The Placerville gauge is located approximately 7 miles northwest of the Project area. The area is characterized by warm, dry summers and cool, moist winters. The approximate average maximum temperature in the vicinity of the Project site is 71.3° F; the average minimum is 43.8 ° F. The mean annual precipitation is approximately 38.16 inches, with an average of 2.5 inches of snow. The majority of the precipitation occurs November through March (Western Regional Climate Center 2019).

Surface Water Hydrology

The Project site is located within the South Fork American watershed (hydrologic unit code 18020129). Water features in the Project area are described below (Sycamore Environmental 2018):

South Fork American River (SFAR): SFAR is the only feature in the Project area identified on the National Wetlands Inventory (NWI) online mapper. The SFAR is classified as riverine, upper perennial, unconsolidated bottom, permanently flooded (R3UBH) on the NWI map (USFWS 2019). SFAR is mapped as a perennial river on the USGS Coloma quad map. The river was flowing at

approximately 1,450 cubic feet/second (cfs) during the fieldwork conducted on 21 December 2017. The SFAR watershed begins in the Sierra Nevada Mountains east of the Project area and flows northwest through the Project area to Folsom Lake approximately 7 air miles west of the Project site. The American River flows from Folsom Lake into the Sacramento River.

Runoff and Drainage Patterns

The general topography of the Project area is relatively flat and ranges in elevation from approximately 740 to 770 feet above sea level. Runoff in the Project area primarily drains to the SFAR.

Groundwater

The Project area is not located within a recognized groundwater basin (DWR 2019). The closest recognized groundwater basin is the South American Subbasin, which is part of the larger Sacramento Valley groundwater basin, approximately 14 miles west of the Project area (DWR 2019).

Water Quality

The Project area is within a rural relatively low-density residential area. Typically, water quality is affected primarily by discharges from both point and nonpoint sources. Point and nonpoint sources include winter storms, overland flow, exposed soil, residential runoff, and roads. The SFAR, within the Project Area, is a 'category 5' 303 (d) listed water body from below Slab Creek Reservoir to Folsom Lake (SWRCB 2019). This segment of the South Fork American River is considered impaired by Mercury pollution. A TMDL is expected to be completed by 2021. No other pollutants are listed for this segment.

Flooding

The FEMA/Flood Insurance Rate Map (FIRM) panel 0475E of Map Number 06017C0475E with an effective date of September 26, 2008, shows a Zone A flood hazard zone on both sides of the SFAR within the Project area. Zone A is defined as a special flood hazard area, with no base flood elevations determined, subject to the 1% annual chance flood (100-year flood), also known as the base flood. The base flood is the flood that has a 1% chance of being equaled or exceeded in any given year.

WRECO prepared a Location Hydraulic Study for the proposed Project (February 2019) to analyze the existing floodplain within the Project limits and to document potential impacts to or encroachments on the floodplain resulting from the proposed Project.

The 100-year peak discharge at the Chili Bar Dam USGS Gage No. 11444500 was estimated using the USGS Bulletin 17B method (USGS 2014) with the annual peak flow rates recorded at this gaging station after completion of construction of the Slab Creek Dam and Chili Bar Dam in the year 1968. The 100-year peak discharge was estimated at the Project site based on the peak discharge at the Chili Bar Dam USGS Gage No. 11444500, taking into account the differences in the ratio of watershed at the Project location versus the gaging station (WRECO 2019). The hydraulics of the existing and

proposed conditions were analyzed using the USACE's Hydrologic Engineering Centers River Analysis System (HEC-RAS) Version 5.0.3 hydraulic modeling software. The results of the hydraulic modeling indicate the Project would not result in significant increases in 100-year water surface elevations in the vicinity of the proposed Mt. Murphy Road bridge, as the changes in 100-year WSE were approximately 0.1 ft or less.

3.11.2 Environmental Impacts

This section describes the impact analysis related to hydrology and water quality for the Project. It describes the methods used to determine the impacts of the Project and lists the thresholds used to conclude whether an impact would be significant. Measures to mitigate (i.e., avoid, minimize, rectify, reduce, eliminate, or compensate for) significant impacts accompany each impact discussion as applicable.

3.11.2.1 Methods of Analysis

Analysis focused on issues related to surface hydrology, flood hazards, groundwater supply, and surface and groundwater quality. The key construction-related impacts were identified and evaluated qualitatively based on the physical characteristics of the Project site and the magnitude, intensity, location, and duration of activities.

3.11.2.2 Thresholds of Significance

The Project would be considered to have a significant effect if it would result in any of the conditions listed below.

- Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?
- Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin.
- 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 that would:
    - Result in substantial erosion of siltation on- or off-site.
    - Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site;
    - Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or
    - Impede or redirect flood flows?
- In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?
- Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

3.11.2.3 Impacts and Mitigation Measures

Impact WQ-1: Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality? (potentially significant unless mitigation incorporated)

Implementation of the Project would include construction activities, such as demolition, excavation, grading, paving, and landscaping. Project activities may result in a temporary increase in sediment loads and pollutants to the SFAR. The delivery, handling, and storage of construction materials and wastes (e.g., concrete debris), and the use of heavy construction equipment, could also result in stormwater contamination, affecting water quality. Construction activities may involve the use of chemicals and operation of heavy equipment that could result in accidental spills of hazardous materials (e.g., fuel and oil) during construction activities that could enter nearby surface waterbodies via runoff.

Operations and maintenance of the Project would be similar to existing operation and maintenance activities, including landscape maintenance, bridge maintenance, and vehicle use. Roadside drainage would be constructed to convey stormwater from the roadway. Implementation of the Project would not result in an increase in vehicle use, and therefore the amount and types of pollutants associated with vehicle and road use would not increase compared to existing conditions. In contrast, the Project will result in a decrease in idling traffic by increasing from a one-lane to a two-lane bridge. The decrease in idling traffic will decrease the amount of pollutant associated with vehicle use in the Project area.

Coverage under the Statewide General Permit for Discharges of Storm Water Associated with Construction Activity (Construction General Permit, 2009-0009-DWQ, as amended by 2010-0014-DWQ and 2012-006-DWQ) will be obtained. The County will require the contractor to prepare and implement a Storm Water Pollution Prevention Plan (SWPPP) to reduce or minimize discharge of pollutants from construction activities.

Implementation of the revegetation measures and water quality BMPs in mitigation measures BIO-1, and BIO-7 as well as adherence to Project permit requirements will ensure long-term soil stabilization and protect of water quality during construction.

Impact WQ-2: 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)

The Project would not involve any withdrawals from an aquifer or groundwater table. The Project may include temporary site dewatering or diversion activities during construction of the bridge foundations. Project impacts are less than significant.

Impact WQ-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 that would: 1) Result in substantial erosion of siltation on- or off-site, 2) Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site; 3) 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 impede or redirect flood flows? (less than significant).

The Project does not involve the alteration of the course of the SFAR. The February 2019 Location Hydraulic Study prepared by WRECO concludes the Project would not result in significant increases in 100-year water surface elevations in the vicinity of the proposed Mt. Murphy Road bridge, as the changes in 100-year WSE were approximately 0.1 ft or less. The WRECO report concludes that while the replacement bridge would result in a small increase in impervious surface area within the Project area, it would have an insignificant impact when compared to the overall watershed of South Fork American River, and it would have insignificant impact to the peak flood flow of South Fork American River at the Project location and downstream (WRECO 2019). Impacts are less than significant, and no mitigation is required.

The Project would not provide additional sources of runoff compared with the existing bridge. The added impervious surface from the widening of the bridge and approach areas is not expected to contribute to a substantial increase in water runoff from the site. The impact would be less than significant, and no mitigation is required.

Impact WQ-4: In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation? (no impact)

The Project occurs at an elevation ranging for approximately 740 to 770 ft above sea level. The Project site is located approximately 120 miles from the Pacific Ocean. There are approximately 13 small natural or manmade ponds within 1.5 miles of the Project. None of these features is large enough to develop a seiche of sufficient size to affect the Project site. The proposed Project would not expose people or structures to a substantial risk of inundation by seiche, tsunami, and/or mudflow and there would be no impact.

Impact WQ-5: Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan? (less than significant)

As per the *Final California 2014/ 2016 Integrated Report (303(d) List/305(b) Report)* (SWRCB 2020b) the SFAR in the Project area is a 303(d)-listed waterbody for mercury. The 45-mile reach of the SFAR between the Slab Creek Reservoir and Folsom Lake is listed for mercury (unknown source) (SWRCB 2020b). The Proposed project does not propose the use of mercury containing materials. The proposed Project would not negatively affect any of the designated beneficial uses for surface and groundwater presented in the Water Quality Control Plan (Basin Plan) for the Sacramento and San Joaquin River Basins.

The Project will not expose people to higher levels of risk involving flooding. General Plan Policy 6.4.2.2 protects the life and property of County residents below dams by not allowing new critical or high occupancy structures (e.g., schools, hospitals) to be located within the inundation area resulting from failure of dams. The bridge is not a critical or high occupancy structure.

No additional impacts other than those discussed above are anticipated. The Project would not otherwise degrade water quality and the impact would be less than significant. No mitigation is required.

3.11.3 References

California Department of Transportation. July 2016. Statewide Storm Water Management Plan.

California Department of Water Resources (DWR). Accessed March 2019. Groundwater Basin Boundary Assessment Tool. https://gis.water.ca.gov/app/bbat/

El Dorado County. Accessed March 2019 (2019a). Western El Dorado County Storm Water Management Plan, Proposed Final, August2004. https://www.edcgov.us/government/emd/solidwaste/documents/SWMP.pdf

El Dorado County, Code of Ordinances. Accessed March 2019 (2019b). Available: Code of Ordinances, Online content updated 19 February 2019. Grading, Erosion and Sediment Control Ordinance https://library.municode.com/ca/el_dorado_county/codes/code_of_ordinances?nodeId=TIT110BUCO_CH110.14GRERSECO.

El Dorado County, Code of Ordinances. Accessed March 2019 (2019c). Available: Code of Ordinances, Online content updated 19 February 2019. Title 130, Article 3, Chapter 130.32 Flood Damage Prevention Ordinance. https://library.municode.com/ca/el_dorado_county/codes/code_of_ordinances?nodeId=TIT130ZO_ART3SIPLPRDEST_CH130.32FLDAPR

El Dorado County. Adopted 19 July 2004. El Dorado County general plan, a plan for managed growth and open roads; a plan for quality neighborhoods and traffic relief. El Dorado County Planning Department, Placerville, CA.

Federal Emergency Management Agency (FEMA). Accessed March 2019. Effective Data 26 September 2008. Flood Insurance Rate Map, El Dorado County, CA and Incorporated Areas, Panel 425 of 1125. Map # 06017C0475E. https://msc.fema.gov/portal/search?AddressQuery=El%20Dorado%20County#searchresultsanchor

State Water Resources Control Board (SWRCB). Accessed May 2020. Final 2014/2016 California Integrated Report (Clean Water Act Section 303(d) List / 305(b) Report). https://www.waterboards.ca.gov/water_issues/programs/tmdl/integrated2014_2016.shtml

Sycamore Environmental Consultants, Inc. September 2018. Aquatic Resource Delineation Report, Mt. Murphy Road Bridge (25C0004) Replacement, El Dorado County, CA.

U.S. Fish and Wildlife Service (USFWS). Accessed March 2019. National wetlands inventory. Wetlands mapper. http://www.fws.gov/wetlands/Data/Mapper.html

Western Regional Climate Center. Accessed March 2019. Period of Record Monthly Climate Summary Placerville, California (id 046960), Period of Record: 01/01/1900 to 05/17/2011. https://wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca6960

WRECO. February 2019. Final Location Hydraulic Study Report: Mt. Murphy Road Bridge Project, El Dorado County, Federal Project Number BRLO-5925(090), Existing Bridge No. 25C0004.

3.12 Land Use, Planning, Population, and Housing

This section describes the regulatory and environmental setting and identifies potential impacts on land use, planning, population, and housing.

3.12.1 Existing Conditions

3.12.1.1 Regulatory Setting

Federal

Not applicable.

State

California Constitution

The California Constitution states "A county or city may make and enforce within its limits all local, police, sanitary, and other ordinances and regulations not in conflict with general laws." Cal. Const. at. XI, section 7. The ability to enact ordinances to protect the health, safety and welfare is important in the land use context because it confers very broad rights to adopt regulations that implement local land use vision and values, so long as laws enacted by a city are not in conflict with state general laws including:

- Planning and Zoning Law, Government Code sections 65000 – 66035
- Subdivision Map Act, Government Code sections 66410 – 66499.58
- Mitigation Fee Act, Government Code sections 66000 – 66008
- Housing Element Law, enacted in 1969

Local

El Dorado County General Plan

On July 19, 2004, the El Dorado County Board of Supervisors adopted a new General Plan for the County, which serves as the basic planning document and is the vehicle through which the County addresses and balances the competing needs and interests of its residents.

The Land Use Element was last amended in September of 2018, which establishes a land use development pattern that makes the most efficient and feasible use of existing infrastructure and public services, provides guidelines for new and existing development that promotes a sense of community, defines those characteristics which make the county rural and provides strategies for

preserving these characteristics, as well as providing opportunities for positive economic growth, greater capture of tourism, increased retail sales, and high technology industries.

The Conservation and Open Space Element, last amended in October of 2017, must conserve and improve the County's existing natural resources and open space, including agricultural and forest soils, mineral deposits, water and native plants, fish, wildlife species and habitat, and federally classified wilderness areas; and preserve resources of significant biological, ecological, historical or cultural importance.

The 2013-2021 Housing Element includes the County's plan for addressing the housing needs of residents of unincorporated areas of the county. The Housing Element includes the following components:

- Housing Needs Assessment and Quantified Objectives
- Site Inventory Analysis
- Governmental and Nongovernmental Constraints
- Review of the Previous Housing Element
- Housing Goals and Objectives

El Dorado County Zoning Ordinance

While the General Plan establishes policies to guide the County's land use decision making, the Zoning Ordinance consists of enforceable regulations on the use of land in the county. The unincorporated area is broken into various residential, commercial, industrial, agricultural, and other "zones," and the Zoning Ordinance describes the standards and regulations applicable to each particular zone. Zoning maps illustrate how the zoning districts are distributed throughout the county.

3.12.1.2 Environmental Setting

Existing General Plan Land Use Designations and Zoning on the Project Site

The General Plan land use and zoning designations of the parcels in the Project area are listed in Table 3-18. Note: The SFAR, Mt. Murphy Road right-of -way, and SR 49 right-of -way are not taxed parcels and do not have assessors' parcels numbers. Some County mapping assigns numbers to these areas, these numbers all start with the letters UN, for example 'UN138783'.

Table 3-18. General Plan Land Use and Zoning Designations.

APN	Existing Use	County General Plan Land Use Designation*	Zoning Designation*
006-164-02	Gold Trail Grange	Tourist Recreational (TR)	Recreational Facility-Low (RF-L)
006-191-01	MGDSHP	Tourist Recreational (TR)	Recreational Facility-Low (RF-L)
006-163-02	MGDSHP	Tourist Recreational (TR)	Recreational Facility-High (RF-H)
006-162-01	Coloma Resort	Tourist Recreational (TR)	Recreational Facility-High (RF-H)
006-162-07	Coloma Resort	Tourist Recreational (TR)	Recreational Facility-High (RF-H)

The General Plan Lan Use Element (amended September 2018) designates Coloma, south of the SFAR, as a 'Rural Center'. Rural Centers are centered on smaller communities that provide limited services but are focal points for the surrounding rural areas. Rural Center boundaries establish areas of higher intensity development throughout the rural areas of the County based on the availability of infrastructure, public services, existing uses, parcelization, and impacts on natural resources.

3.12.2 Environmental Impacts

3.12.2.1 Methods of Analysis

The land use, planning, population, and housing analysis was based on research, including review of relevant planning documents and available information regarding existing and planned land uses on the Project site and in the surrounding area.

3.12.2.2 Thresholds of Significance

In accordance with Appendix G of the State CEQA Guidelines, the proposed Project would be considered to have a significant effect if it would result in any of the conditions listed below.

Land Use Planning

- Physically divide an established community
- Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?

Population and Housing

- Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?
- Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?

3.12.2.3 Impacts and Mitigation Measures

Impact LU-PH-1: Physical division of an established community (no impact)

The Project proposes to replace the existing bridge on substantially the same alignment and would not physically divide an established community. The proposed Project will increase the ease of access across the SFAR by replacing the existing structurally and functionally deficient single lane bridge with a new two-lane bridge. The Project will also improve public safety for users of the Mt. Murphy Road.

Impact LU-PH-2: Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect? (no impact)

The Project would not conflict with the goals, objectives or policies intended to mitigate environmental impacts adopted in the 2004 El Dorado County General Plan. Rehabilitation or replacement of the existing bridge has been identified as a needed improvement since 2012. The Project is identified in the El Dorado County Adopted Capital Improvement Program (CIP) as CIP # 77129 (El Dorado County 2019).

The Marshall Gold Discovery State Historic Park (MGDSHP) General Plan was finalized in 1979 (CA Department of Parks and Recreation 1979). The Plan states that "A time period of 20 years is used as a basis for all projections of visitation and development in the park." The 1979 Plan a includes the following specific goals and objectives:

- Identify and evaluate the unit's cultural, natural, and recreational resources.
- Establish policies for the management, protection, and interpretation of these resources.
- Determine visitor activities and land uses that are compatible with the purpose of the park, the available resources.' and the surrounding area.
- Determine the potential environmental impact of visitor activities, land use, and related development.
- Establish guidelines for the sequence of park development.
- Identify lands outside existing park boundaries that would be valuable additions to the unit.
- Provide an informational document for the public, the legislature, park personnel, and other government agencies.

The replacement of the existing Mt. Murphy Road Bridge would not conflict with the Park General Plan. The Project design and implementation are being coordinated with MGDSHP staff. The Project safety improvements including installation of a sidewalk on the new bridge will benefit MGDSHP users, potentially improving the visitor experience.

Impact LU-PH-4: Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)? (no impact)

The Project is the replacement of an existing bridge and will not substantially increase the capacity of Mt. Murphy Road. The Project will not result in substantial population growth in the area, directly or indirectly.

Impact LU-PH-5: Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere? (no impact)

The Project does not include the activities that will permanently displace existing housing, business, farm, or nonprofit organization. The Project will require the acquisition of permanent right-of-way (ROW) totaling approximately 0.23 acre. The ROW acquisition is necessary to accommodate the

wider road approaches for the new bridge. In addition to permanent right-of-way, approximately 6.98 acre of Temporary Construction Easements (TCE) will be needed.

3.12.3 References

El Dorado County, Community Development Agency, Transportation Division. 27 June 2018 (Accessed: March 2019). Adopted 2018 Capital Improvement Programs for: West Slope Road/Bridge; Tahoe Environmental Improvement Program; Airport Program; Transportation Facilities Improvement Program; Capital Overlay and Rehabilitation; Road Maintenance Program, National Pollutant Discharge Elimination System. https://edcgov.us/Government/dot/Pages/cip.aspx

El Dorado County. Adopted 19 July 2004. El Dorado County general plan, a plan for managed growth and open roads; a plan for quality neighborhoods and traffic relief. El Dorado County Planning Department, Placerville, CA.

State of California, The Resource Agency, Department of Parks and Recreation. 20 April 1979. Marshall Gold Discovery State Historic Park General Plan.

3.13 Mineral Resources

This section identifies existing conditions and discusses the regulatory setting for minerals resources in the Project area and analyzes the potential for the proposed Project to affect these resources.

3.13.1 Existing Conditions

3.13.1.1 Regulatory Setting

Federal

General Mining Act of 1872

The General Mining Act of 1872 governs prospecting and mining of locatable economic minerals on federal public lands. Locatable minerals include metallic minerals, such as gold, silver, lead, copper, zinc, and nickel, and nonmetallic minerals, such as mica, gypsum, and gemstones. Not covered by the act are common varieties of sand, gravel, stone, pumice, and cinders, which are governed by the Materials Act of 1947. The General Mining Act allows citizens to stake a mining claim on federal land.

Materials Act of 1947

This law provides for the disposal of mineral materials (including but not limited to common varieties of the following: sand, stone, gravel, pumice, pumicite, cinders, and clay) and vegetative materials (including but not limited to yucca, manzanita, mesquite, cactus, and timber or other forest products) on public lands of the United States.

Federal Land Policy and Management Act

The Federal Land Policy and Management Act (FLPMA) of 1976 establishes an approach to managing and preserving public lands to protect "the quality of scientific, scenic, historical, ecological, environmental, air and atmospheric, water resource, and archeological values." FLPMA directed the BLM to establish a planning process that resembles that used by other federal agencies. Under FLPMA, the BLM must periodically inventory public lands and their resources and develop resource management plans (RMPs). In doing so, FLPMA requires the BLM to manage the public lands using the same principles of multiple use and sustained yield that the Forest Service applies to national forests and grasslands. This means that resources must be used in a combination that will best meet the needs of the American people, taking into account the long-term needs of future generations.

State

Surface Mining and Reclamation Act of 1975

The Surface Mining and Reclamation Act of 1975 (SMARA) is the principal legislation addressing mineral resources in California. SMARA was enacted in response to land use conflicts between urban growth and essential mineral production. The stated purpose of SMARA is to provide a comprehensive surface mining and reclamation policy that will encourage the production and conservation of mineral resources while ensuring that adverse environmental effects of mining are prevented or minimized; that mined lands are reclaimed and residual hazards to public health and safety are eliminated; and that consideration is given to recreation, watershed, wildlife, aesthetic, and other related values.

SMARA mandated the initiation by the State Geologist of mineral land classification in order to help identify and protect mineral resources in areas within the State subject to urban expansion or other irreversible land uses which would preclude mineral extraction. SMARA also allowed the State Mining and Geology Board (SMGB), after receiving classification information from the State Geologist, to designate lands containing mineral deposits of regional or statewide significance.

SMARA governs the use and conservation of a wide variety of mineral resources. However, certain resources and activities are exempt from the provisions of SMARA. Subject to certain conditions, exempted activities include excavation and grading conducted for farming, on-site construction, or recovery from flooding or other natural disaster.

Local

Chapter 130.29. - *Mineral Resource (-MR) Combining Zone: Exploration, Mining, Reclamation, and Protection* of the County Code does the following:

- Identifies those areas that are designated as Mineral Resource Zone 2 (MRZ 2xx) on the State Classification Reports, where the likely extraction of the resource through surface mining methods will be compatible with surrounding uses, in compliance with General Plan Policies 2.2.2.7 (Overlay Land Use Designations: Mineral Resource (-MR) and 7.2.2.2 (Protection of important mineral resources from incompatible development);
- Provides standards and regulations that promote and ensure the continued availability and development of the County's important mineral resources;
- Provides erosion control, groundwater protection, and otherwise protection of the environment;
- Regulates surface mining operations as required by the State of California to ensure that mined lands are reclaimed to a usable condition that is readily adaptable for alternative uses; and
- Protects the public health, safety, and welfare from residual hazards due to surface and sub-surface mining operations.

Chapter 8.36. - Surface Mining and Reclamation of the County Code recognizes that the extraction of minerals is essential to the continued economic well-being of the County and to the needs of society and that the reclamation of mined lands is necessary to prevent or minimize adverse effects on the environment and to protect the public health and safety.

3.13.1.2 Environmental Setting

Per El Dorado County General Plan Conservation and Open Space Element figure CO-1 (Important Mineral Resource Area) no important mineral resource areas as defined by the California Geological Survey occur in the Project area (El Dorado County 2004).

The Surface Mining and Reclamation Act (SMARA) of 1975 requires the State Geologist to classify land into Mineral Resource Zones (MRZs) according to its known or inferred mineral potential. Classification is the process of identifying lands containing significant mineral deposits, based solely on geologic factors, and without regard to present land use or ownership. The California Division of Mines and Geology (2001) Mineral Land Classification includes MRZ's maps designating various categories of mineral (i.e., MRZs for the Industrial Mineral – Limestone or MRZs for gold Deposits formed by Hydrothermal Processes). The 2001 Mineral Land Classification was reviewed to determine if MRZ's occur in Project area (Table 3-19). The results of the review are presented below:

Table 3-19. MRZ's In Project Area

Mineral Resource Zones (MRZs)	Present in Project area?
MRZ Map for the Industrial Mineral – Limestone	No
MRZ Map for Construction Materials - Aggregate, Slate, Specialty Stone, and Decomposed Granite	No
MRZ Map for Gold Deposits formed by Hydrothermal Processes	Yes, MRZ-4 (h). Areas classified as MRZ-4 (h) are areas of no known mineral occurrences but where geologic information does not rule out either the presence or absence of significant mineral resources deposited by hydrothermal processes. MRZ-4 is commonly applied to areas of unknown mineral potential that occur within a broader favorable terrane known to host economic mineral deposits. Exploration work and development of new concepts in economic geology could result in the reclassification of areas assigned to MRZ-4 to the MRZ-3 and MRZ-2 categories.
MRZ Map for Deposits formed by Volcanogenic Processes	Yes, MRZ-1 (v). Areas classified as MRZ-1 (v) are areas for which adequate geologic information indicates that no significant mineral resources of this type are present, or that the likelihood for occurrence of significant mineral deposits is nil or slight. These areas represent geologic terranes within which marine volcanic rocks are not expected to be present at the surface, or at reasonable depth. In El Dorado County, this classification is assigned to areas where intrusive rocks are exposed.
MRZ Map for Gold Deposits formed by Mechanical Concentration (Placer Deposits)	Yes, MRZ 3a (p-1) and MRZ-4 (p). Areas classified MRZ-3a (p) are areas considered to have moderate potential for the discovery of economic gold deposits. Included in this category are areas where the geologic environment, plus the similarities and close proximity to known mineral deposits permit the interpretation that these areas have moderate potential for hosting economic mineral

Mineral Resource Zones (MRZs)	Present in Project area?
	deposits. Placer gold deposits classified MRZ-3a (p) are further identified as (p-1) through (p-4) on the basis of deposit location or type. MRZ-3a (p-1) identifies the deposits within the modern river and stream system. Areas classified MRZ-4 (p) are areas of unknown mineral resource significance.
MRZ Map for Gold Deposits Formed by Contact Metasomatic Processes	Yes, MRZ 4 (s). Areas classified MRZ-4 (s) are areas where geologic information does not rule out either the presence or absence of metasomatic gold deposits. The (s) is for 'skarn' (tactite; contact metasomatic deposit)
Map of Aggregate Resource Areas (ARAs)	No

Historic Mining

Following the discovery of gold by James Marshall on 24 January 1848 the "Gold Rush," lead to extensive placer mining on the South Fork American River (SFAR) in Coloma. The easiest traces of gold were harvested by placer mining from 1848 to 1860. From 1860 to 1900 gold mining was accomplished using hydraulic and more destructive mining methods. The 1949 USGS topographic quad map for Coloma shows mine tailing along the SFAR southeast, southwest and northwest of the Mt. Murphy Road Bridge. A 1946 aerial photo shows the tailings northwest and southwest of the bridge. A tailings pond occurred southeast of the bridge. From 1900 to 1948 mining near Coloma slowly gave way to an agricultural economy and more permanent residences. The Marshall Gold Discovery State Historic Park was established in 1942 to celebrate the Marshall's discovery and commemorate the history of gold mining in Coloma (Mikesell 2019).

3.13.2 Environmental Impacts

3.13.2.1 Methods of Analysis

Impacts related mineral resources were assessed based data available online from the California Geological Survey. This analysis focuses on the proposed Project's potential to result in the loss of availability of a known mineral resource or mineral resource recovery site.

3.13.2.2 Thresholds of Significance

In accordance with Appendix G of the State CEQA Guidelines, the proposed Project would be considered to have a significant effect if it would result in any of the conditions listed below.

- Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state.
- Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan.

3.5.2.3 Impacts and Mitigation Measures

Impact MIN-1: Loss of availability of a known mineral resource that would be of value to the region and the residents of the state (no impact)

Per the California Division of Mines and Geology (CDMG 2001) Mineral Land Classification of El Dorado County (2001) the project area is designated as MRZ 3a (p-1). Areas classified MRZ-3a (p) are areas considered to have moderate potential for the discovery of economic gold deposits. MRZ-3a (p-1) identifies the deposits within the modern river and stream system, in this case the SFAR. The majority of the Project area occurs within the MGDSHP and is not likely subject to any future commercial mining activities. Recreational gold panning occurs on both sides of the SFAR in the Project area. These activities may have to be temporarily restricted (or relocated) within the work area during the construction of the proposed Project. Once the Project is complete recreational gold panning would continue. The Project will not affect the availability to extract known mineral resources, including placer gold mining. No mitigation is required.

Impact MIN-2: Loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan (no impact)

Per El Dorado County General Plan Conservation and Open Space Element figure CO-1 (Important Mineral Resource Area) no important mineral resource areas as defined by the California Geological Survey occur in the Project area (El Dorado County 2004). Because there are no locally important mineral resource recovery sites identified in the general plan, specific plan, or other land use plan within the Project area, there would be no impact. No mitigation is required.

3.13.3 References

California Division of Mines and Geology (Californian Geologic Survey). 2001. Mineral Land Classification of El Dorado County (with maps), California. California Department of Conservation. CGS OPEN-FILE REPORT 2000-03. Prepared by Lawrence Busch. Sacramento, CA.

El Dorado County. Adopted 19 July 2004. El Dorado County general plan, a plan for managed growth and open roads; a plan for quality neighborhoods and traffic relief. El Dorado County Planning Department, Placerville, CA.

Mikesell Historical Consulting. 2020. Historic Resource Evaluation Report Mt. Murphy Road Bridge Replacement Project. El Dorado County, Mt. Murphy Road, Coloma, CA.

3.14 Noise

This section identifies existing conditions and discusses the regulatory setting for noise and vibration, in the Project area and analyzes potential noise and vibration impacts from the proposed Project.

3.14.1 Noise and Vibration Terminology

3.14.1.1 Noise

Noise is commonly defined as unwanted sound that annoys or disturbs people and potentially causes an adverse psychological or physiological effect on human health. Because noise can interfere with human activities, evaluation of noise is necessary when considering the environmental impacts of a proposed project.

Sound is mechanical energy transmitted by pressure waves via a medium such as air or water. Sound is characterized by various parameters that include the rate of oscillation of sound waves (frequency), the speed of propagation, and the pressure level or energy content (amplitude). The sound pressure level is the most common descriptor used to characterize the loudness of an ambient (existing) sound level. Although the decibel (dB) scale, a logarithmic scale, is used to quantify sound intensity, it does not accurately describe how sound intensity is perceived by human hearing. The human ear is not equally sensitive to all frequencies in the entire spectrum, so noise measurements are weighted more heavily for frequencies to which humans are sensitive in a process called A-weighting, referred to as A-weighted decibels (dBA). Table 3-20 defines sound measurements and other terminology used in this chapter, and Table 3-21 summarizes typical A-weighted sound levels for different noise sources.

Table 3-20. Definition of Sound Measurements

Sound Measurements	Definition
Decibel (dB)	A unitless measure of sound on a logarithmic scale, which indicates the squared ratio of sound pressure amplitude to a reference sound pressure amplitude. The reference pressure is 20 micro-pascals.
A-Weighted Decibel (dBA)	An overall frequency-weighted sound level in decibels that approximates the frequency response of the human ear.
C-Weighted Decibel (dBC)	The sound pressure level in decibels as measured using the C-weighting filter network. The C-weighting is very close to an unweighted or *flat* response. C-weighting is only used in special cases when low-frequency noise is of particular importance. A comparison of measured A- and C-weighted level gives an indication of low frequency content.
Maximum Sound Level (L_{max})	The maximum sound level measured during the measurement period.
Minimum Sound Level (L_{min})	The minimum sound level measured during the measurement period.
Equivalent Sound Level (L_{eq})	The equivalent steady state sound level that in a stated period of time would contain the same acoustical energy.
Percentile-Exceeded Sound Level (L_{xx})	The sound level exceeded *xx* % of a specific time period. L_{10} is the sound level exceeded 10% of the time. L_{90} is the sound level exceeded 90% of the time. L_{90} is often considered to be representative of the background noise level in a given area.
Day-Night Level (L_{dn})	The energy average of the A-weighted sound levels occurring during a 24-hour period, with 10 dB added to the A-weighted sound levels occurring during the period from 10:00 p.m. to 7:00 a.m.
Community Noise Equivalent Level (CNEL)	The energy average of the A-weighted sound levels occurring during a 24-hour period with 5 dB added to the A-weighted sound levels occurring during the period from 7:00 p.m. to 10:00 p.m. and 10 dB added to the A-weighted sound levels occurring during the period from 10:00 p.m. to 7:00 a.m.
Peak Particle Velocity (Peak Velocity or PPV)	A measurement of ground vibration defined as the maximum speed (measured in inches per second) at which a particle in the ground is moving relative to its inactive state. PPV is usually expressed in inches/second.
Frequency: Hertz (Hz)	The number of complete pressure fluctuations per second above and below atmospheric pressure.

Table 3-21. Typical A-Weighted Sound Levels

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
	—110—	Rock band
Jet flyover at 1,000 feet		
	—100—	
Gas lawnmower at 3 feet		
	—90—	
Diesel truck at 50 feet at 50 mph		Food blender at 3 feet
	—80—	Garbage disposal at 3 feet
Noisy urban area, daytime		
Gas lawnmower, 100 feet	—70—	Vacuum cleaner at 10 feet
Commercial area		Normal speech at 3 feet
Heavy traffic at 300 feet	—60—	
		Large business office
Quiet urban daytime	—50—	Dishwasher in next room
Quiet urban nighttime	—40—	Theater, large conference room (background)
Quiet suburban nighttime		
	—30—	Library
Quiet rural nighttime		Bedroom at night, concert hall (background)
	—20—	
		Broadcast/recording studio
	—10—	
	—0—	

Source: California Department of Transportation 2013.

Human sound perception, in general, is such that a change in sound level of 1 dB cannot typically be perceived by the human ear, a change in sound level of 3 dB is just noticeable, a change of 5 dB is clearly noticeable, and a change of 10 dB is perceived as doubling (or halving) the sound level. A doubling of actual sound energy is required to result in a 3 dB (i.e., barely noticeable) increase in noise; for example, this means that the volume of traffic on a roadway would typically need to double to result in a noticeable increase in noise.

Different types of measurements are used to characterize the time-varying nature of sound. These measurements include the equivalent sound level (L_{eq}), the minimum and maximum sound levels (L_{min} and L_{max}), percentile-exceeded sound levels (such as L_{10}, L_{20}), the day-night sound level (L_{dn}), and the community noise equivalent level (CNEL). L_{dn} and CNEL values differ by less than 1 dB. As a matter of practice, L_{dn} and CNEL values are considered to be equivalent and are treated as such.

The decibel level of a sound decreases (or attenuates) exponentially as the distance from the source of that sound increases. For a point source such as a stationary compressor or construction equipment, sound attenuates at a rate of approximately 6 dB per doubling of distance. For a line source such as free-flowing traffic on a freeway, sound attenuates at a rate of 3 dB per doubling of distance (Federal Transit Administration 2006). Atmospheric conditions, including wind, temperature gradients, and humidity, can change how sound propagates over distance and affect the level of sound received at a given location. The degree to which the ground surface absorbs acoustical energy also affects sound propagation. Sound that travels over an acoustically absorptive surface such as grass attenuates at a greater rate than sound that travels over a hard surface such as pavement. The increased attenuation is typically in the range of 1 to 2 dB per doubling of distance. Barriers such as buildings and topography that block the line of sight between a source and receiver also increase the attenuation of sound over distance.

Community noise environments are generally perceived as *quiet* when the 24-hour average noise level is below 45 dBA, *moderate* in the 45 to 60 dBA range, and *loud* above 60 dBA. Very noisy urban residential areas are usually around 70 dBA CNEL. Along major thoroughfares, roadside noise levels are typically between 65 and 75 dBA CNEL. Increments of 3 to 5 dB to the existing 1-hour L_{eq}, or to CNEL are commonly used as thresholds for an adverse community reaction to a noise increase. However, there is evidence that incremental thresholds in this range may not be sufficiently protective in areas where noise-sensitive uses are located and CNEL is already high (i.e., above 60 dBA). In these areas, limiting noise increases to 3 dB or less is recommended (Federal Transit Administration 2006). Noise intrusions that cause short-term interior levels to rise above 45 dBA at night can disrupt sleep. Exposures to noise levels greater than 85 dBA of 8 hours or longer can cause permanent hearing damage.

3.14.1.2 Groundborne Vibration

Operation of heavy construction equipment, particularly pile-driving equipment and other impact devices (e.g., pavement breakers), creates seismic waves that radiate along the surface of and downward into the ground. These surface waves can be felt as ground vibration. Vibration from the operation of this type of equipment can result in effects that range from annoyance for people to damage for structures. Variations in geology and distance result in different vibration levels, including different frequencies and displacements. In all cases, vibration amplitudes decrease with increased distance.

Perceptible groundborne vibration is generally limited to areas within a few hundred feet of construction activities. As seismic waves travel outward from a vibration source, they cause rock and soil particles to oscillate. The actual distance that these particles move is usually only a few ten-thousandths to a few thousandths of an inch. The rate or velocity (in inches per second) at which these particles move is the commonly accepted descriptor of vibration amplitude, referred to as peak particle velocity (PPV).

The following equation is used to estimate the vibration level at a given distance for typical soil conditions (Federal Transit Administration 2006). PPV_{ref} is the reference PPV at 25 feet:

$$PPV = PPV_{ref} \times (25/distance)^{1.5}$$

Table 3-22 summarizes typical vibration levels generated by construction equipment at the reference distance of 25 feet and greater distances, as determined with use of the attenuation equation above.

Table 3-22. Vibration Source Levels for Construction Equipment

Equipment	PPV at 25 Feet	PPV at 50 Feet	PPV at 75 Feet	PPV at 100 Feet	PPV at 175 Feet
Pile driver (impact)	1.518	0.537	0.292	0.190	0.082
Pile driver (sonic/vibratory)	0.734	0.260	0.141	0.0918	0.0396
Hoe ram	0.089	0.032	0.017	0.0111	0.0048
Large bulldozer	0.089	0.032	0.017	0.0111	0.0048
Loaded trucks	0.076	0.027	0.015	0.0095	0.0041
Jackhammer	0.035	0.012	0.007	0.0044	0.0019
Small bulldozer	0.003	0.001	0.001	0.0004	0.0002
Vibratory Roller	0.21	0.074	0.040	0.026	0.011

Source: Federal Transit Administration 2006.

Tables 3-23 and 3-24 summarize the guidelines developed by Caltrans for damage and annoyance potential from the transient and continuous vibration that is usually associated with construction activity. The activities that are typical of continuous vibration include the use of excavation equipment, static compaction equipment, tracked vehicles, vehicles on a highway, vibratory pile drivers, pile-extraction equipment, and vibratory compaction equipment. The activities that are typical of single-impact (transient) or low-rate, repeated impact vibration include drop balls, blasting, the use of impact pile drivers, "pogo stick" compactors, and crack-and-seat equipment (California Department of Transportation 2013a).

Table 3-23. Vibration Damage Potential Threshold Criteria Guidelines

	Maximum PPV (in/sec)	
Structure and Condition	Transient Sources	Continuous/Frequent Intermittent Sources
Extremely fragile historic buildings, ruins, ancient monuments	0.12	0.08
Fragile buildings	0.2	0.1
Historic and some old buildings	0.5	0.25
Older residential structures	0.5	0.3
New residential structures	1.0	0.5
Modern industrial/commercial buildings	2.0	0.5

Source: California Department of Transportation 2013a.

Note: Transient sources create a single, isolated vibration event (e.g., blasting or drop balls). Continuous/frequent intermittent sources include impact pile drivers, pogo-stick compactors, crack-and-seat equipment, vibratory pile drivers, and vibratory compaction equipment.

Table 3-24. Vibration Annoyance Potential Criteria Guidelines

	Maximum PPV (in/sec)	
Structure and Condition	Transient Sources	Continuous/Frequent Intermittent Sources
Barely perceptible	0.04	0.01
Distinctly perceptible	0.25	0.04
Strongly perceptible	0.9	0.10
Severe	2.0	0.4

Source: California Department of Transportation 2013b.
Note: Transient sources create a single, isolated vibration event (e.g., blasting or drop balls). Continuous/frequent intermittent sources include impact pile drivers, pogo-stick compactors, crack-and-seat equipment, vibratory pile drivers, and vibratory compaction equipment.

Groundborne vibration can also be quantified by the root-mean-square velocity amplitude, which is useful for assessing human annoyance. The root-mean-square amplitude is expressed in terms of the velocity level in decibel units (VdB). The background vibration velocity level in residential areas is usually around 50 VdB or lower. The vibration velocity level threshold of perception for humans is approximately 65 VdB. Most perceptible indoor vibration is caused by sources within buildings, such as the operation of mechanical equipment, movement of people, or the slamming of doors. Typical outdoor sources of perceptible groundborne vibration are heavy construction equipment, steel-wheeled trains, and traffic on rough roads. If a roadway is smooth, the groundborne vibration from traffic is rarely perceptible.

Table 3-25 summarizes the typical groundborne vibration velocity levels and average human response to vibration that may be anticipated when a person is at rest in quiet surroundings. If the person is engaged in any type of physical activity, vibration tolerance increases considerably. The duration of the event has an effect on human response, as does its daily frequency of occurrence. Generally, as the duration and frequency of occurrence increase, the potential for adverse human response increases.

Table 3-25. Typical Levels of Groundborne Vibration

Human or Structural Response	Vibration Velocity Level (VdB)	Typical Sources (50 feet from source)
Threshold for minor cosmetic damage to fragile buildings	100	Blasting from construction project
		Bulldozer or heavy-tracked construction equipment
Difficulty in reading computer screen	90	
		Upper range of commuter rail
Threshold for residential annoyance for occasional events (e.g., commuter rail)	80	Upper range of rapid transit
Threshold for residential annoyance for frequent events (e.g., rapid transit)		Typical commuter rail Bus or truck over bump
	70	Typical rapid transit

Human or Structural Response	Vibration Velocity Level (VdB)	Typical Sources (50 feet from source)
Approximate threshold for human perception of vibration; limit for vibration-sensitive equipment		Typical bus or truck on public road
	60	
		Typical background vibration
	50	

Source: Federal Transit Administration 2006.

Groundborne noise is a secondary component of groundborne vibration. When a building structure vibrates, noise is radiated into the interior of the building. Typically, this is a low-frequency sound that can be perceived as a low rumble. The magnitude of the sound depends on the frequency characteristic of the vibration and the manner in which the room surfaces in the building radiate sound. Groundborne noise is quantified by the A-weighted sound level inside the building. The sound level accompanying vibration is generally 25 to 40 dBA lower than the vibration velocity level in VdB. Groundborne vibration levels of 65 VdB can result in groundborne noise levels of up to 40 dBA, which can disturb sleep. Groundborne vibration levels of 85 VdB can result in groundborne noise levels of up to 60 dBA, which can be annoying to daytime noise-sensitive land uses such as schools (Federal Transit Administration 2006).

3.14.2 Existing Conditions

3.14.2.1 Regulatory Setting

Federal, state, and local agencies regulate various aspects of environmental noise. Generally, the federal government sets noise standards for transportation-related noise sources closely linked to interstate commerce. The state government sets noise standards for transportation noise sources such as automobiles, light trucks, and motorcycles. Noise sources associated with industrial, commercial, and construction activities are generally subject to local control through noise ordinances and general plan policies.

Federal

For highway transportation projects with federal involvement, the Federal-Aid Highway Act of 1970 and the associated implementing regulations (23 CFR 772) govern the analysis and abatement of traffic noise impacts.

State

California Environmental Quality Act (CEQA)

CEQA requires a baseline versus build analysis to assess whether a proposed project will result in a noise impact. If a proposed project is determined to cause a substantial increase in noise levels, CEQA requires that feasible mitigation measures be incorporated into the project.

Local

El Dorado County General Plan

Policies and standards for noise exposures at noise sensitive land uses during construction are outlined in the 2004 County General Plan Public Health, Safety, and Noise Element (amended in December 2015). Noise-sensitive land uses are generally considered to include those uses that would result in noise exposure that could cause health-related risks to individuals. Places where quiet is essential are also considered noise-sensitive uses. Residential dwellings are of primary concern because of the potential for increased and prolonged exposure of individuals to both interior and exterior noise levels. Other land uses such as parks, historic sites, cemeteries, and recreation areas are also considered sensitive to increases in exterior noise levels. School classrooms, places of assembly, hotels, libraries, and other places where low interior noise levels are essential are also considered noise-sensitive land uses.

County General Plan Tables 6-3, 6-4, and 6-5 outline noise standards for nontransportation noise sources which apply to construction noise in community regions/ adopted plan areas, rural centers, and rural regions. Table 3-26 below summarizes County General Plan Tables 6-3, 6-4, and 6-5. The Project is located in a rural center south of the South Fork American River and a rural region north of the South Fork American River. The construction noise standards for rural regions and centers are included in Table 3-26. **Note:** Transportation noise sources are defined as traffic on public roadways, railroad line operations and aircraft in flight.

Table 3-26. Maximum Allowable Noise Exposure for Construction Noise in Rural Centers and Rural Regions

Land Use Designation	Time Period	Noise Level (dB)			
		Rural Center		Rural Region	
		L_{eq}	L_{max}	L_{eq}	L_{max}
All Residential	7 a.m.–7 p.m.	55	75	50	60
	7 p.m.–10 p.m.	50	65	45	55
	10 p.m.–7 a.m.	40	55	40	50
Commercial, Recreation, and Public Facilities	7 a.m.–7 p.m.	65	75	65	75
	7 p.m.–7 a.m.	60	70	60	70
Industrial	Any time	70	80	--	--
Open Space	7 a.m.–7 p.m.	55	75	--	--
	7 p.m.–7 a.m.	50	65	--	--
Rural Land, Natural Resources, Open Space, and Agricultural Lands	7 a.m.–7 p.m.	--	--	65	75
	7 p.m.–7 a.m.	--	--	60	70
Source: El Dorado County 2004, Table 6-4 and 6-5.					

Per General Policy 6.5.1.11 the standards outlined in Tables 6-3, 6-4, and 6-5 do not apply to those activities associated with actual construction of a project as long as such construction occurs between the hours of 7 a.m. and 7 p.m., Monday through Friday, and 8 a.m. and 5 p.m. on weekends,

and on federally recognized holidays. Further, the standards outlined in Tables 6-3, 6-4, and 6-5 do not apply to public projects to alleviate traffic congestion and safety hazards. Because the proposed Project replaces a structurally deficient bridge, this exception would apply.

Table 3-27 below presents the applicable maximum allowable operational noise standards from County General Plan Table 6-1 for transportation noise sources that would apply to the Project.

Table 3-27. Maximum Allowable Noise Exposure for Transportation Noise Sources

Land Use	Outdoor Activity Areas[a] L_{dn}/CNEL, dB	Interior Spaces L_{dn}/CNEL, dB	Interior Spaces L_{eq}, dB[b]
Residential	60[c]	45	–
Transient lodging	60[c]	45	–
Hospitals, nursing homes	60[c]	45	–
Theaters, auditoriums, music halls	–	–	35
Churches, meeting halls, schools	60[c]	–	40
Office buildings	–	–	45
Libraries, museums	–	–	45
Playgrounds, neighborhood parks	70	–	–

Source: El Dorado County 2004, Table 6-1

dB = decibel.
CNEL = community noise equivalent level.
Ldn = day-night level.
Leq = equivalent sound level.

[a] In Communities and Rural Centers, where the location of outdoor activity areas is not clearly defined, the exterior noise level standard shall be applied to the property line of the receiving land use. For residential uses with front yards facing the identified noise source, an exterior noise level criterion of 65 dB Ldn shall be applied at the building facade, in addition to a 60 dB Ldn criterion at the outdoor activity area. In Rural Regions, an exterior noise level criterion of 60 dB Ldn shall be applied at a 100-foot radius from the residence unless it is within Platted Lands where the underlying land use designation is consistent with Community Region densities in which case the 65 dB Ldn may apply. The 100-foot radius applies to properties that are 5 acres and larger; the balance will fall under the property line requirement.

[b] As determined for a typical worst-case hour during periods of use.

[c] Where it is not possible to reduce noise in outdoor activity areas to 60 dB Ldn/CNEL or less using a practical application of the best-available noise reduction measures, an exterior noise level of up to 65 dB Ldn/CNEL may be allowed provided that available exterior noise level reduction measures have been implemented and interior noise levels are in compliance with this table.

El Dorado County Ordinance Code

Chapter 9.16, Noise, of the El Dorado County Ordinance Code, defines and prohibits "loud and raucous noise." Pursuant to the code, the production of loud and raucous noise that unreasonably interferes with the peace and quiet of private property is prohibited.

3.14.2.2 Environmental Setting

Noise-sensitive land uses within 500 ft of the construction footprint were evaluated in the Project Noise Technical Study (CH2M 2018). Noise-sensitive land uses within 500 ft of the construction footprint include the MGDSHP facilities, Coloma Resort facilities (camping areas, picnic areas, trails and recreation areas), Coloma Outdoor Discovery School, and Gold Discovery Museum and Visitor Center located southwest of SR 49 (Figure 3.13).

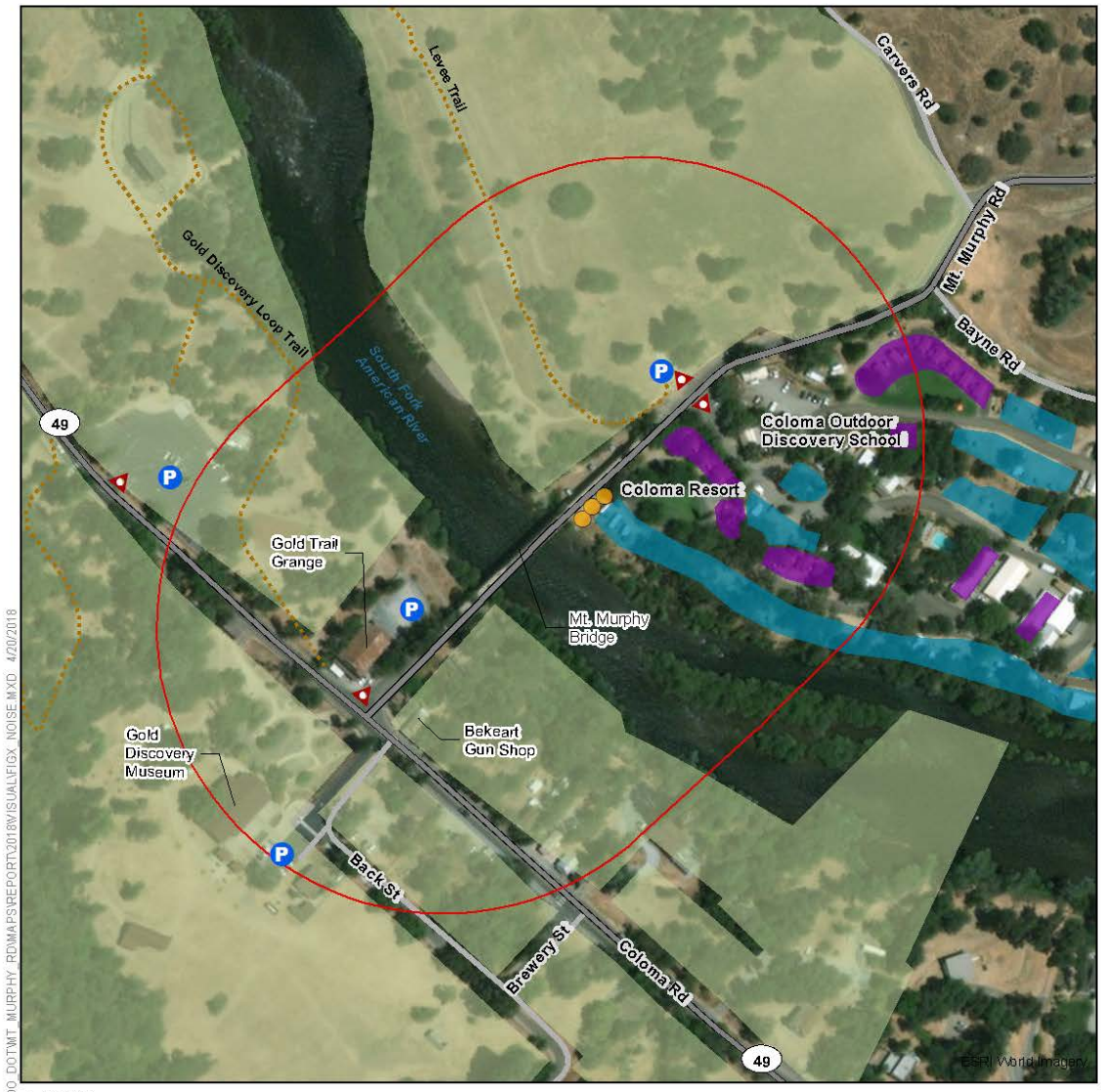


FIGURE 3-13.1
Noise-Sensitive Locations
Observation Points
Mt Murphy Road Bridge Project
El Dorado County, California

The Coloma Resort is located on a parcel at the northeast corner of the bridge. The resort includes RV and tent camping, as well as cabins. There are three group sites and several cabins that can sleep up to 10 persons adjacent to the bridge. The Coloma Outdoor Discovery School is held at the Coloma Resort, northeast of the Coloma Resort RV and tent camping. Staff and attendees of the Coloma Outdoor Discovery School sleep at the Coloma Resort's campground and cabins. The Grange, which serves as community and event center, is a noise-sensitive receiver adjacent to the bridge, northwest of the project. The Gold Discovery Museum and Visitor Center are located in the Marshall Gold Discovery State Historic Park. The museum, hiking trails, and picnic areas are all noise-sensitive uses inside the Marshall Gold Discovery State Historic Park and within the Study Area

3.14.3 Environmental Impacts

This section describes the impact analysis related to noise for the Project. It describes the methods used to determine the impacts of the Project and lists the thresholds used to conclude whether an impact would be significant. Impacts are determined to be less than significant, less than significant with mitigation, or significant and unavoidable; there can also be no impact. Measures to mitigate (i.e., avoid, minimize, rectify, reduce, eliminate, or compensate for) significant impacts accompany each impact discussion, as needed.

3.14.3.1 Methods of Analysis

The analysis focused on issues related to construction and operational noise levels. The key construction-related impacts were identified and evaluated qualitatively based on the physical characteristics of the Project site and the magnitude, intensity, location, and duration of activities.

3.14.3.2 Thresholds of Significance

In accordance with Appendix G of the CEQA Guidelines, the Project would be considered to have a significant effect if it would result in any of the conditions listed below.

- 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?
- Generation of excessive ground-borne vibration or ground-borne noise levels?
- 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?

3.14.3.3 Impacts and Mitigation Measures

Impact NOI-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? (less than significant)

Construction Noise: Construction activities could increase noise levels temporarily in the vicinity of the Project. Actual noise levels would depend on the type of construction equipment involved, distance to the source of the noise, time of day, and similar factors. These increases would be temporary. Daytime construction would comply with noise standards for construction activities outlined in General Plan Policy 6.5.1.11, and any nighttime work would be allowed if nighttime construction activities would alleviate traffic congestion and safety hazards.

Project construction includes activities such as operation of heavy equipment which would result in the increased generation temporary periodic noise. Below are the distances from the existing bridge to the noise sensitive land uses:

- The closest mobile home parking is approximately 30 feet southeast of the bridge.
- Tent camping is approximately 15 feet southeast the bridge.
- The trail is approximately 35 feet north of the bridge.
- The Grange is approximately 50 feet northwest of the bridge.

Noise levels from operating heavy machinery would be temporarily increased at the noise-sensitive land uses, listed above, compared to the baseline environmental condition. Noise impacts would be likely highest while auguring piers and dismantling the existing bridge. Elevated noise levels from construction activities would be temporary. Events at the Grange typically occur in the evenings and on weekends when construction noise is expected to be minimal. If nighttime work is allowed (i.e., if nighttime construction activities would alleviate traffic congestion and safety hazards) the work can be coordinated with the Grange manager. Given that the Project contractor would adhere to applicable County construction-related noise standards, this impact is considered less than significant.

Operational Noise: The project would replace the structurally deficient single lane bridge with a two-lane bridge. The bridge would be replaced on the same alignment as the existing bridge. There would be no change to the roadway's vertical alignment. The Project would not increase the capacity of Mt. Murphy Road. The change in horizontal alignment would be to widen the bridge from one-lane to two lanes including an 8-foot sidewalk for safety purposes, not for added capacity.

The replacement structure will be approximately 22.5 to 25.5 ft wider than the existing structure. The majority of the width increase will occur on the downstream side of the structure. The new bridge structure would move noise sources approximately 22-25 ft closer to MGDSHP facilities including the Gold Discovery Loop Trail and the Sutter's Mill Replica and Monument. This will not result in a significant increase in perceived noise levels at the Gold Discovery Loop Trail and the Sutter's Mill Replica and Monument. Currently traffic has to stop at either end of the single lane bridge to check for or allow on-coming vehicles to pass. The proposed Project will provide a two-lane structure and will eliminate the engine idling, acceleration, and brake noise associated with

vehicle starts and stops that exist under current conditions. The post project noise levels in the Project vicinity will be substantially unchanged from the pre-project condition.

Impact NOI-2: Generation of excessive ground-borne vibration or ground-borne noise levels? (less than significant with mitigation)

Operations: The Project would not expand the roadway or change the way in which it is used, ground-borne vibration associated with operations of the road would not change substantially from the current condition.

Construction: Land uses in which groundborne vibration could potentially interfere with operations or equipment, such as research, manufacturing, hospitals, and university research operations are considered "vibration-sensitive" (Federal Transit Administration 2006). The degree of sensitivity depends on the specific equipment that would be affected by the groundborne vibration. No vibration-sensitive land uses are located within 200 feet of the Project area. Because no vibration-sensitive land uses are located within 200 feet of the Project area, construction vibration would not affect vibration-sensitive land uses. However, excessive levels of groundborne vibration of either a regular or an intermittent nature can result in annoyance to residential uses. The Project is located within the MGDSHP and no residential uses occur within or immediately adjacent to the Project.

Of the non-impact/ non-vibratory equipment proposed for use during Project construction, large earth-moving equipment (e.g., large bulldozer) would be the most likely to result in perceptible vibration levels. A large bulldozer would result in a vibration level of approximately 0.032 PPV at a distance of 50 feet. This is below the "distinctly perceptible" level of 0.04 PPV. Because all non-impact equipment associated with Project construction would generate less than "distinctly perceptible" vibration levels at surrounding locations, non-impact equipment used for Project construction would not result in the exposure of persons to excessive groundborne vibration. Vibration impacts from non-impact construction equipment would be less than significant.

The Project occurs almost entirely within the MGDSHP which is listed as a National Historic Landmark (NHL) and listed on the National Register of Historic Places (NRHP). A number of historic buildings associated with the Coloma Historic District occur in close proximity to the Project footprint (Table 3-28).

Table 3-28. Distance to Historic Structures form South Abutment of Mt. Murphy Bridge.

Structure Name	Approximate Distance from Southern Bridge Abutment (ft)
Gold Trail Grange	28
Bekeart's Gun Shop	108
Sutter's Mill Replica	236
Sutter's Mill Timbers	161
Gold Discovery Museum	359
Vah Hop Store and Man Lee Exhibit	283

The manner in which a building will respond to strong ground vibration depends on many factors, among which are the soil on which the building is founded, the building's foundation, the building's mass, and the stiffness of the building's main structural elements. Since the majority of the buildings in the park area were erected before consideration of liquefaction potential or soil movement, it can be assumed that construction improvements would have consisted of leveling with minimal compaction effort. The structures themselves were constructed "on grade" or on mine tailing with native building materials such as wood, bricks, and stones. Wooden structures, as in the case of the Gold Trail Grange Building, have weathered over the years and the structure itself has become susceptible to movement. Brick and stone structures were built without much lateral reinforcements, and tacked together with brittle mortars and concrete. Based on the age and weathering of these wood, stone, and brick structures, damage can potentially be caused from construction type vibrations.

Appendix E of the Preliminary Foundation Report includes a vibration study titled "Vibration Impact on Historical Structures" for the Project (CH2M Hill 2019). The study assumed soil conditions with well graded gravel with sands, and cobbles and boulders without cementation, and without liquefaction potential. The geotechnical field investigation conducted in 2017 confirmed these assumptions for the upper 6.5 to 15 feet of the soil profile. Using a maximum peak particle velocity threshold of 0.12 inches per second at the receiving structure, the vibration study concluded that the use of vibratory or impact construction equipment (e.g., impact pile driver and vibratory roller) has the potential to damage nearby historic structures.

The study also concludes that potential vibration impacts can be minimized or avoided by use of spread footings and cast-n-drilled-hole (CIDH) piles. While the final design is not complete the preliminary design for the new bridge abutments incorporates the use of concrete seat type abutments supported on CIDH piles. Piers for the replacement bridge would consist of reinforced concrete columns on CIDH piles.

It is anticipated that the selected contractor may want to use driven piles for the temporary work trestle and/or falsework. Based on the screening process used in the County prepared vibration study operation of pile driving equipment within approximately 140 ft or less of the existing historic buildings would result in PPV values equal to or greater than the 0.12 inches per second PPV transient sources threshold. Operation of pile driving equipment within approximately 180 ft or less of the existing historic buildings would result in PPV values equal to or greater than the 0.08 inches per second PPV continuous/frequent intermittent sources threshold. Implementation of mitigation measure NOI-1 will reduce potential impacts to less than significant.

Mitigation Measure NOI-1 (Vibration)

- *The construction contract will specify a maximum peak particle velocity (PPV) threshold (anticipated to be approximately 0.12 inches per second for transient sources and 0.08 inches per second for continuous/frequent intermittent sources at the historic buildings (the receiving structure) within the MGDSHP during active construction of the Project).*
- *If the contactor proposes use of impact type equipment (i.e., impact pile driver, vibratory, rollers) the construction contractor will prepare a plan, for review and approval by the County, to minimize construction vibration damage using all reasonable and feasible means available. At a minimum the plan will include:*

- *A procedure for establishing threshold and limiting vibration values for potentially affected structures based on an assessment of each structure's ability to withstand the loads and displacements due to construction vibrations.*
- *A vibration compliance monitoring plan to be implemented during construction.*

Impact NOI-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? (no impact)

The Project is not located within an airport land use plan area or within two miles of a public or public use airport. The only airport within two miles of the Project is the Bacchi Valley Industries Airport (Restricted use/ non-public airport). The Bacchi Valley Industries Airport is approximately 1.9 miles northwest of the Project. Noise-sensitive land uses are typically not affected when they are beyond 500 feet from the noise source. The project does not include housing or other residential land uses, and noise from the airstrip will not affect people working in the Project area.

3.14.4 References

CH2M. 20 July 2018. *Mt. Murphy Road Bridge Project Noise Technical Study*. Prepared for: El Dorado County Department of Transportation

CH2M Hill. June 2019. Preliminary Foundation Report, Mt. Murphy Road Bridge Replacement Project Bridge (25C0004). Prepared for El Dorado County Department of Transportation

California Department of Transportation. September 2013 (2013a). *Transportation and Construction Vibration Guidance Manual.* http://www.dot.ca.gov/hq/env/noise/pub/TCVGM_Sep13_FINAL.pdf

California Department of Transportation. 2013 (2013b). *Technical Noise Supplement to the Traffic Noise Analysis Protocol*. http://www.dot.ca.gov/hq/env/noise/pub/TeNS_Sept_2013A.pdf

El Dorado County. Adopted 19 July 2004. El Dorado County general plan, a plan for managed growth and open roads; a plan for quality neighborhoods and traffic relief. El Dorado County Planning Department, Placerville, CA. http://www.edcgov.us/Government/Planning/Adopted_General_Plan.aspx

El Dorado County. 30 September 2016. Appendix H, Vibration Study Documentation, from the Alternatives Feasibility Study, Mt. Murphy Road Bridge Replacement, Project 5925 (090) 25C0004.

Federal Highway Administration (FHWA). January 2006. *Roadway Construction Noise Model User's Guide*. FHWA-HEP-05-054, DOT-VNTSC-FHWA-05-01. https://www.fhwa.dot.gov/Environment/noise/construction_noise/rcnm/rcnm.pdf

Federal Transit Administration (FTA). May 2006. *Transit Noise and Vibration Impact Assessment.* FTA-VA-90-1003-06. Office of Planning and Environment. http://www.fta.dot.gov/documents/FTA_Noise_and_Vibration_Manual.pdf.

3.15 Public Services, Utilities, and Service Systems

This section describes the existing conditions for public services, utilities, and service systems and analyzes potential impacts that could result from implementation of the proposed Project.

3.15.1 Existing Conditions

3.15.1.1 Regulatory Setting

Federal

There are no federal requirements for public services.

State

California Environmental Quality Act Guidelines—Appendix F, Energy Conservation

CEQA requires EIRs to include a discussion of potential energy impacts and energy conservation measures. Appendix F, *Energy Conservation*, of the State CEQA Guidelines outlines energy impact possibilities and potential conservation measures designed to assist in the evaluation of potential energy impacts of proposed projects. Appendix F places "particular emphasis on avoiding or reducing inefficient, wasteful, and unnecessary consumption of energy" and further indicates this may result in an unavoidable adverse effect on energy conservation. Moreover, the State CEQA Guidelines state that significant energy impacts should be "considered in an EIR to the extent relevant and applicable to the project."

State Water Resources Control Board and Central Valley Regional Water Quality Control Board Permitting Authority and Basin Plan

The State Water Board has issued statewide general NPDES stormwater permits for designated types of construction and industrial activities, and has adopted a statewide permit applicable to all small municipalities, including communities in the unincorporated areas of the west slope of El Dorado County.

Local

El Dorado County General Plan

Public Health, Safety, and Noise Element

The Public Health, Safety, and Noise Element of the County General Plan (El Dorado County 2004) has a goal and implementing policies to ensure the provision of adequate and comprehensive

emergency services, including fire protection, law enforcement, and emergency medical services in the county and is relevant to the proposed Project (Goal 5.7, Emergency Services).

Public Services and Utilities Element

The Public Services and Utilities Element of the County General Plan (El Dorado County 2004) includes goals and policies to ensure provision of adequate public services and utilities in the county. Goals relevant to the proposed Project are those that address stormwater runoff management including protection of soils from erosion and minimizing impacts on existing drainage structures (Goal 5.4, Storm Drainage) and ensure the effective and efficient collection and processing of solid waste, including from construction and demolition activities (Goal 5.5, Solid Waste).

El Dorado County Design and Improvement Standards Manual

The *El Dorado County Design and Improvement Standards Manual* was adopted in 1990 and provides required erosion and sediment control measures applicable to subdivisions, roadways, and other development.

3.15.1.2 Environmental Setting

Overhead PG&E utilities lines occur within the Project limits on the downstream side of the bridge will be relocated prior to construction. Utility relocations will be coordinated with the responsible utility providers to ensure no extended disruption of services to utility customers. Relocation of overhead utility lines may require the County, utility provider, or their contractors to trim or remove trees prior to construction.

A water line is located under the bridge on the upstream side. The existing water line would be relocated from the existing structure to the inside of the first stage of the replacement bridge at the end of construction stage one.

Public activities adjacent to and under the Mt. Murphy bridge will be impacted during construction. The Project site is partially within the Marshall Gold Discovery State Historic Park. A State Park Levee Trail and an Americans with Disabilities Act parking lot occurs northwest of the bridge. The Gold Trail Grange Hall, a privately-owned facility, provides a variety of community events southwest of the bridge. Southeast of the bridge several State Park facilities occur; the most immediate being Bekeart's Gun Shop. The privately owned Coloma Resort is located northeast of the bridge and provides recreational activities including the Coloma Outdoor Discovery School.

3.15.2 Environmental Impacts

3.15.2.1 Methods of Analysis

The analysis of public services and utilities is based on identification of public services and utilities in the Project study area and an assessment of how the proposed Project would affect provision of those services. The environmental baseline for the analysis consists of the public services and utilities that are currently provided in the Project area.

3.15.2.2 Thresholds of Significance

In accordance with Appendix G of the State CEQA Guidelines, the proposed Project would be considered to have a significant effect on public services or utilities/ service systems if it would result in any of the conditions listed below.

Public Services:

- Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:
  - Fire protection?
  - Police protection?
  - Schools?
  - Parks?
  - Other public facilities?

Utilities/ Service Systems:

- Require or result in the relocation or construction of new water or expanded wastewater treatment or stormwater drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?
- Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years?
- 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?
- 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?
- Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?

3.15.2.3 Impacts and Mitigation Measures

Impact PSU-1: Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or

other performance objectives for any of the public services: fire protection, police protection, schools, parks, and other public facilities (less than significant)

The proposed Project would not result in a population increase that would require provisioning of new government facilities or lead to the physical alteration of existing facilities, including fire and police protection, schools, parks, or other public facilities.

The proposed Project requires the acquisition of approximately 0.21 ac of the ROW from the MGDSHP. ROW areas that need to be acquired are immediately adjacent to the existing Mt. Murphy Road and do not contain MGDSHP facilities/ structures. Potential impacts on the MGDSHP lands during construction include a temporary use of a portion of the Bekeart's Gun Shop parcel (APN 006-191-01). Project activities on this parcel may result in temporary relocation of some mobile picnic tables and shelters where recreational gold panning activities take place. Following completion of construction, the picnic tables and gold panning shelters can be put back to their pre-project locations.

The two-stage construction approach allows the existing bridge to remain in service during the first stage of construction until traffic can be shifted to the first stage structure. This will provide vehicular access across the SFAR during construction of the Project. The County contract special provisions will require the contractor to prepare a Traffic Management Plan (see Chapter 2, *Project Description*). Traffic controls would be implemented throughout all phases of construction to facilitate local traffic circulation and through-traffic requirements. Emergency service providers, including the police and fire departments, would be notified and consulted with as early as possible in order to plan for any possible short-term lane closures (i.e., during parts of a work shift, including, roadway conforms, existing bridge removal periods, etc.) and other potential delays related to construction activity.

Impact PSU-2: Require or result in the relocation or construction of new water or expanded wastewater treatment or stormwater drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects? (less than significant impact)

The proposed Project is the replacement of a bridge and would not increase the demand on existing water or wastewater treatment facilities. The Project may involve minor reconfiguration of the roadside drainage system within the project area but would not cause significant environmental effects.

Relocation of overhead utility lines will require the County, utility provider, or their contractors to trim or remove trees prior to construction. Any utility poles impacted will be relocated and coordinated with the responsible utility providers to ensure no disruption of services to utility customers. An El Dorado County Irrigation District water line carried beneath the existing bridge will need to be relocated. The water line will be relocated from the existing structure to the inside of the first stage of the replacement bridge at the end of the first stage of construction.

The existing power and telephone lines adjacent to the downstream side of the bridge will need to be temporarily relocated to avoid construction conflicts. Temporary power and phone service lines will be installed from an existing service box in the Grange Parking lot (APN 006-164-02) to a new temporary utility pole approximately 90 ft south of the existing bridge. The new temporary utility pole would be installed at the western edge of the Grange parking area. The temporary power and

phone service would span the SFAR and connect to an existing utility pole on the north side of the SFAR west of the existing bridge in Gallagher field.

Once the new bridge is complete the temporary service will be removed. Permanent power and phone service lines will be carried inside the new bridge structure. Portions of the overhead service lines on APN 006-162-07 will be converted to underground lines as part of the Project.

Impact PSU-3: Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years (less than significant)

Operation and maintenance of the replacement bridge following construction would not be expected use additional water supplies. Future routine maintenance may include pressure washing and other minor water uses.

Impact PSU-4: 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? (no impact)

The Project does not require wastewater service.

Impact PSU-5: 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)

Solid waste generated by the Project would be limited to construction debris, including asphalt and concrete, generated by the excavation of existing roadway and construction of the proposed improvements. Solid waste disposal would occur in accordance with federal, state, and local regulations. Disposal would occur at permitted landfills.

Impact PSU-6: Comply with federal, state, and local management and reduction statutes and regulations related to solid waste? (no impact)

The Project would conform to all applicable state and federal solid waste regulations.

3.15.3 References

El Dorado County. Adopted 19 July 2004. El Dorado County general plan, a plan for managed growth and open roads; a plan for quality neighborhoods and traffic relief. El Dorado County Planning Department, Placerville, CA.

3.16 Recreation

This section describes existing conditions for recreation facilities in the study area and impacts on recreation facilities that would result from implementation of the proposed Project.

3.16.1 Existing Conditions

3.16.1.1 Regulatory Setting

El Dorado County General Plan

The Parks and Recreation Element of the County General Plan guides the establishment and maintenance of parks, recreation facilities, and trails within unincorporated El Dorado County (El Dorado County 2004). The Parks and Recreation Element policy section addresses conservation and promotion of waterways for recreation and other purposes, and contains goals, objectives, and policies applicable to recreation resources within and near the Project site.

Goal 9.1, Parks *and Recreation Facilities*, addresses provision of adequate recreation opportunities and facilities for the residents and visitors of El Dorado County, and Objective 9.1.4, *Rivers and Waterways*, aims to "conserve and promote the waterways of El Dorado County, particularly the South Fork American River, as recreational and economic assets."

Goal 9.3, *Recreation and Tourism, seeks* "greater opportunities to capitalize on the recreational resources of the county through tourism and recreational based businesses and industries," and Objective 9.3.1, *Recreational and Tourist Uses,* is to "protect and maintain existing recreational and tourist based assets such as Apple Hill, State historic parks, the Lake Tahoe Basin, wineries, South Fork of the American River, and other water sport areas and resorts and encourage the development of additional recreation/tourism business and industries."

El Dorado County River Management Plan

The El Dorado County River Management Plan (RMP) focuses on whitewater recreation on the 20.7-mile segment of the South Fork of the American River between the Chili Bar Dam, near State Highway 193, and the confluence of the Folsom Lake State Recreation Area (El Dorado County 2018). Since 2002 the County has continued implementation of the RMP without changes. While the annual reports and 5-year summary reports of 2002-2006 and 2007-2011 did not result in significant modifications of the RMP, the County decided to conduct a more comprehensive review and update of the RMP to address changes to the content and context of the river management program over the past 33 years.

The RMP update is based on the County's understanding of what management actions have been found to be logical, supportive of safe river use, effective in minimizing conflicts between river users and consistent with the County's environmental protection commitments. The following management plan addresses these current conditions by recognizing that some past RMP tasks and monitoring elements are now unnecessary, unresponsive to the County's stated river management

goals or duplicative of work being done by other County departments, governmental agencies or private organizations.

The RMP embodies the County's intent to manage and support whitewater recreation while protecting the natural and social resources of the South Fork of the American River. Past and current river management goals and objectives form the guiding principles of these management actions, as described below. The RMP goals and objectives include:

- **Objective 1:** To promote on-going community and user participation in river management.
- **Objective 2:** To provide adequate facilities and suitable services to support river related activities, where there is a documented need to support such activities; protect the natural, cultural and human resource values of the river; and preserve the quality of life in the area and experience.
- **Objective 3:** To preserve and enhance the unique range of experiences and historic character of the river.
- **Objective 4:** To employ equity as a guiding principle when defining rights, responsibilities and obligations of ALL river users.
- **Objective 5:** To achieve a balance between County- wide economic benefits, costs and impacts associated with river recreation. (Requires more detailed economic information to identify the costs and impact versus economic benefits associated with river recreation.)
- **Objective 6:** To preserve and protect environmental and cultural resources.
- **Objective 7:** To enhance educational programs on river safety and etiquette, respect for private and public lands, natural and historical resources, and river rules and regulations.
- **Objective 8:** To establish the County's primary role in facilitating coordinated river management, in cooperation with the Bureau of Land Management and other resource agencies and groups.
- **Objective 9:** To enhance safety through education, enforcement, facilities, and coordinated rescue response.
- **Objective 10:** To promote adequate law and (rational) code enforcement to protect public health, safety, and welfare; property; and natural resources.

Marshall Gold Discovery State Historic Park General Plan

The *Marshall Gold Discovery State Historic Park General Plan*, adopted by the California Department of Parks and Recreation in 1979, established policies for the management and protection of park resources. It identifies visitor activities and land uses that are compatible with the purpose of the park. The general plan's goals include recreating the early historic setting by moving the reconstructed Sutter's Mill to its original location; reconstructing the 1847-1848 mining camp scene, including a Gold Discovery Interpretation area; supporting the realignment of SR 49; and restoring of Coloma townsite. The spirit of the general plan is to restore cultural and historical sites and to improve facilities for public enjoyment (California Department of Parks and Recreation 1979).

3.16.1.2 Environmental Setting

There are six recreational destinations in or adjacent to the Project area: the MGDSHP, Coloma Resort, Henningsen Lotus Park, Ponderosa RV Resort, American River Resort, and the SFAR. The SFAR is not managed by any one entity.

MGDSHP: The MGDSHP is publicly owned and managed and open to the public. The MGDSHP is the primary regional tourist attraction in the Project area. The Park is owned and operated by the California Department of Parks and Recreation, and it is subject to the Park Preservation Act. The MGDSHP attraction is for its historical importance. In 1848, James W. Marshall discovered gold on the SFAR, igniting a national exodus to California (California Department of Parks and Recreation 2017). Today, the park is a popular attraction for school-age children on academic fieldtrips and for families to learn about the history of mining gold in California. The Park is also attractive because of its other recreational opportunities, including hiking, fishing, using the beach area and picnic areas, visiting the museum, and boating. The Park includes interpretive exhibits and a visitor center.

The MGDSHP touches the bridge on the southwest corner and northeast corner of the bridge. The MGDSHP has many passive recreational opportunities. Rafting and canoeing put-in sites are upstream from the MGDSHP. Within park boundaries, there is a picnic area downstream of the Mt. Murphy Road Bridge where rafts and canoes stop for breaks and lunch; however, due to lack of adequate parking, this location is not typically used for river put-in. Other activities within the MGDSHP are educational and nature trails, picnic sites, gold panning at Bekeart's Gun Shop, and general exploration of the historic architecture and artifacts that remain from when Native Americans inhabited this area and from the Gold Rush era. Bekeart's Gun Shop, along with the gold panning activities, are located on the east side of Mt. Murphy Road at the intersection of Mt. Murphy Road and SR 49. On the north side of the SFAR, on the west side of Mt. Murphy Road, the State Park has an Americans with Disabilities Act compliant, small parking area and a trail head for the Levee Trail.

Coloma Resort: The Coloma Resort is a privately-owned recreational facility that has been in operation since 1989. The Coloma Resort offers tent and cabin camping and the Coloma Outdoor Discovery School for children; it is a venue for events (e.g., weddings) (Coloma Resort 2017a). The resort is located east of Mt. Murphy between the SFAR and Bayne Road; its guests have direct access to a recreational trail on park grounds.

There are numerous activities for persons attending this resort, including educational programs that take advantage of the State Park across the river from the resort. These educational programs last between 1 and 5 days and are for school groups of 30 or more. The resort can accept up to five school groups at a time between August and May. The summer months are open to persons renting cabins, RV sites, or tent sites. Nearest the bridge, outdoor activities range from a river rafting put-in site, cook sites, group eating sites, and a cabin, RV and tent site within the project area. Other portions of the resort have areas for groups to gather, open playing fields, and areas where lecturing and weddings can be held. When groups have not reserved the areas along the river shores, some limited fishing areas are available.

American River Resort: The American River Resort is a privately-owned recreational facility, located about 0.5-mile east of the project area. It has been in operation since the 1970s (American River Resort 2015a). The resort offers opportunities to enjoy the SFAR and has tent camp sites,

cabins, and RV camping, as well as river beach access (American River Resort 2015b). The American River Resort is walking distance to the MGDSHP trails and museum.

Henningsen Lotus Park: The Henningsen Lotus Park is publicly owned and managed and offers active and passive recreational opportunities, such as boat launching, beach area, soccer field, and a lighted softball field. The 51-acre park has a pavilion that is a venue for events (El Dorado County 2017c). This park is located approximately 1.5 miles east of Mt. Murphy Road.

Ponderosa RV Resort: The Ponderosa RV Resort is a privately-owned facility that offers RV camping. Recreational opportunities at the Resort include horseshoes, hiking trails, swimming pool, fishing, and a beach area along the SFAR. The park is located approximately 1-mile northwest of Mt. Murphy Road.

SFAR: The SAFR is a recreational resource that crosses under the bridge and through the study area. Adjacent establishments take advantage of access to this river for their visitors to fish, raft, wade, and enjoy the scenic habitat value. However, whitewater rafters do not necessarily stop at any of the destinations listed above.

3.16.2 Environmental Impacts

3.16.2.1 Methods of Analysis

The analysis of the Project's impacts on recreational resources is contained in the Project Community Impact Assessment Report (CH2MHill 2019) was conducted through a review of the County General Plan Parks and Recreation Element and evaluating the potential for changes to existing recreation resources based on anticipated Project construction and operation.

3.16.2.2 Thresholds of Significance

In accordance with Appendix G of the State CEQA Guidelines, the proposed Project would be considered to have a significant effect if it would result in any of the conditions listed below.

- Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated.
- Does the project include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment.

3.16.2.3 Impacts and Mitigation Measures

Impact REC-1: Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated (no impact)

The Project is the replacement of an existing bridge. The Project would not increase the use of existing parks in the area and does not include the construction of any recreational facilities.

Impact REC-2: Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment (less than significant)

The project does not include the construction or expansion of recreational facilities. Impacts to recreational uses are not environmental impacts covered by CEQA. As CEQA Appendix G, "Environmental Checklist Form," illustrates, CEQA considers whether a project (1) would "increase the use of existing . . . recreational facilities" and thus cause or accelerate "physical deterioration of the facility"; or (2) would "require the construction or expansion of recreational facilities" that might have an "adverse physical effect on the environment." CEQA considers the impacts to the physical environment from recreation, not the social effects from a project's impacts to recreation.

While the project does not expand recreational facilities, the project area includes existing recreational uses. Although the Project's potential impact on these existing recreational uses is not an environmental impact under CEQA, these existing recreational uses were considered in developing the project and are discussed here for informational purposes only.

MGDSHP: The proposed bridge will change the visual character of the roadway and some views from the MGDSHP. The visual quality would not be lower, but the historic character would be less characteristic of the early 20th century in which the current bridge was built. The visual quality will be improved by relocating overhead utilities. The Project would define the Mt. Murphy Road right-of-way which will require re-surveying and developing updated property boundaries in collaboration with the State Parks.

Project improvements to the Mt. Murphy Road and SR 49 intersection would include conforming the new approach roadway segment with SR 49 and MGDSHP pedestrian sidewalk/pathways facilities. These improvements and associated landscaping would be developed consistent with State Park oversight and approval. The use of these MGDSHP lands would result in an incremental benefit to the MGDSHP, which include safe pedestrian access with a vista point/ plaza on the bridge or on the bridge approaches where small groups could gather safely for interpretative programs with improved visual access to the SFAR.

During construction, the project would include a temporary and permanent use of a portion of APN 006-191-01 where Bekeart's Gun Shop is located. The permanent acquisition would be approximately 0.02 ac of the parcel for the installation of a vista point/ plaza. The vista point would provide a place to take in the view while also providing a unique opportunity for the State Park to incorporate stops on the bridge as part of their interpretive programs. The vista point would be located within the existing road approach, using a retaining wall to stay within the existing road fill prism.

During project construction, access and installation of the temporary work trestle could limit the public's ability to use certain areas on the upstream side of the existing bridge, which is not an impact on the environment. These activities may result in temporary relocation of some mobile picnic tables and shelters where gold panning activities take place. The tents, tables, and panning supplies are moveable and can be relocated away from Mt. Murphy Road during construction.

Construction staging, including parking for construction personnel, and access may occur on MGDSHP property on the northeast side of the existing bridge. This would temporarily relocate the Levee Trail trailhead and a portion of the trail leading to the SFAR during construction, as well as a small, five-stall parking lot at the trailhead. There may be some indirect deterrents for visitors using

the Gold Discovery Loop trailhead in front of the Grange (not a MGDSHP property). Construction activities may discourage users from using the trail, since the trailhead is adjacent to the Grange, where construction staging would be located behind the building. These temporary limits to the recreational use of the area are not impacts to the environment and, further, would not adversely affect trail use overall since there are many other locations to intercept this trail near the Sutter's Mill Replica parking area.

Coloma Resort. The temporary construction footprint and access would affect the use of the Coloma Resort, including areas of the Mt. Murphy Road right-of-way under the bridge. The rafting and canoeing beach put-in location from the north bank of the SFAR directly under the bridge, would temporarily be closed for safety purposes. While all recreational uses within the right-of-way would cease during construction, these are not impacts to the environment from the project.

The temporary construction footprint and access would require a construction easement from the Coloma Resort property for access to the bridge, piers, and abutment as well as for the materials and equipment needed to build the bridge, piers, and abutment on the north side of the bridge. These construction activities would temporarily relocate picnic tables, several RV/tent sites, and potentially two cabins.

Construction may also result in changes to visitation and overnight stays at the Coloma Resort, which are not impacts to the environment. The construction equipment, vegetation removal, and noise would likely temporally negatively affect enjoyment of the rural, outdoor experience. The construction periods would overlap with the summer tourist season. However, the duration of noise is expected to be limited to predominantly day-time hours and, depending on the phase of construction, may last up to 3 months; therefore, the impacts would be short-term and would not result in lasting changes to resort attendance.

South Fork American River. Construction would include installation of a protected channel corridor through which rafters and canoers who put-in upstream of the resort and State Park could safely pass under the bridge and trestle.

Although not impacts to the environment, the project will affect recreational uses during construction, including short term delays in traffic, noise, dust, and some visual distractions from the historic setting of the park. Although, access/crossing the bridge would be maintained throughout construction, there may be some periods where local events and construction equipment and the commute of construction workers may overlap. Per the State Park Ranger, State Park staff arrive close to 8 a.m. and visitor arrivals are closer to 9 and 10 a.m., whereas construction workers most frequently arrive between 6 and 7 a.m. The afternoon commute would be similarly staggered. Infrequent traffic congestion may occur when new construction equipment is arriving or departing; however, construction equipment will arrive or depart infrequently.

These distractions may influence attendance at both the State Park and the Coloma Resort for up to 3 years. In-water work would be restricted to the period from April to October. Falsework would be designed to be left in place over winter if possible. Some of these indirect effects may also concern the American River Resort and Henningsen Lotus Park. Traffic delays may affect some of the visitors passing through to these facilities. However, the distance to these resources from the site makes these short-term effects negligible in intensity and magnitude.

While the Project's effect on recreational uses are not environmental impacts subject to mitigation under CEQA, the County understands the significant recreational use of the area and the importance

of that use to the recreational users. Thus, while not required by CEQA, the recreational uses have been discussed here and the County has incorporated the following voluntary minimization measures into the Project to further minimize the project's conflict with the recreational uses.

Minimization Measure REC-1: Relocate Existing Park Uses and Protect Subsurface Artifacts in Staging Areas as needed.

- *Prior to commencing construction, the construction limits and detailed plans for relocating existing recreational activities will be coordinated through MGDSHP and Coloma Resort staff. The plans will require that construction limits be fenced or clearly delineated and that the relocation of uses, such as the Levee Trail, gold panning stations, and resort activities will include accessibility and recreational value throughout construction.*

Minimization Measure REC-2: Protective Channel for Whitewater Boaters.

- *During final design, the protected channel corridor will be designed in consultation with the MGDSHP and the State Lands Commission as applicable. The design will provide for safe passage horizontally and vertically and include floating fender barriers approximately 50 feet upstream to help direct boats through the channel, as well as adequate netting under construction area to prevent debris from reaching the SFAR.*

Minimization Measure REC-3: Maintain Park Character at SR 49 Intersection with Mt. Murphy Road.

- *During final design, the improvements to SR 49 and Mt. Murphy Road, affecting MGDSHP property, will be designed in consultation with the MGDSHP. Materials, plantings, and landscape features will be consistent with the State Park's historic theme of design and safe accessibility standards, as well as Caltrans requirements for rural roadways.*

Minimization Measure REC-4: Advance Coordination on Traffic Delays and Bridge Closures.

- *Construction activities during peak tourism periods will be restricted to 7 a.m. through 8 p.m. (although these hours may be adjusted as appropriate with advance notification and coordination with the MGDSHP). The Project Traffic Management Plan (TMP) will require the contractor to provide a minimum of 2-week advanced notice to MGDSHP and local property owners located within 2 miles about any change in the work hours. Signage regarding any change in the work hours will be posted at least 72-hours prior to the work.*

3.16.3 References

CH2M Hill, Inc. 2019. Mt. Murphy Road Bridge Project, Community Impact Assessment.

El Dorado County. Adopted 19 July 2004. El Dorado County general plan, a plan for managed growth and open roads; a plan for quality neighborhoods and traffic relief. El Dorado County Planning Department, Placerville, CA.

El Dorado County. Adopted 13 February 2018. El Dorado County River Management Plan. Prepared by El Dorado County Chief Administrative Office, Parks and Trails Division.

California Department of Parks and Recreation. April 1979. Final Marshall Gold Discovery State Historic Park General Plan.

3.17 Transportation

This section describes the existing conditions related to transportation/ traffic and discusses impacts associated with implementation of the proposed Project.

3.17.1 Existing Conditions

3.17.1.1 Regulatory Setting

State

Transportation Impacts (SB 743)

Per the December 2018 *Technical Advisory on Evaluating Transportation Impacts in CEQA*, released by OPR: Senate Bill 743, which was codified in Public Resources Code section 21099, required changes to the guidelines implementing CEQA (CEQA Guidelines) (Cal. Code Regs., Title 14, Div. 6, Ch. 3, § 15000 et seq.) regarding the analysis of transportation impacts. As one appellate court recently explained: "During the last 10 years, the Legislature has charted a course of long-term sustainability based on denser infill development, reduced reliance on individual vehicles and improved mass transit, all with the goal of reducing greenhouse gas emissions. Section 21099 is part of that strategy..." (Covina Residents for Responsible Development v. City of Covina (2018) 21 Cal.App.5th 712, 729.) Pursuant to Section 21099, the criteria for determining the significance of transportation impacts must "promote the reduction of greenhouse gas emissions, the development of multimodal transportation networks, and a diversity of land uses." (Id., subd. (b)(1); see generally, adopted CEQA Guidelines, § 15064.3, subd. (b) [Criteria for Analyzing Transportation Impacts].) To that end, in developing the criteria, OPR has proposed, and the California Natural Resources Agency (Agency) has certified and adopted, changes to the CEQA Guidelines that identify vehicle miles traveled (VMT) as the most appropriate metric to evaluate a project's transportation impacts. With the California Natural Resources Agency's certification and adoption of the changes to the CEQA Guidelines, automobile delay, as measured by "level of service" and other similar metrics, no longer constitutes a significant environmental effect under CEQA. (Pub. Resources Code, § 21099, subd. (b)(3).)

Regional

Sacramento Area Council of Governments (SACOG)

SACOG is an association of local governments in the six-county Sacramento region including Sacramento, El Dorado, Placer, Sutter, Yolo, and Yuba counties as well as 22 cities. SACOG provides transportation planning and funding for the region and serves as a forum for the study and resolution of regional issues. In addition to preparing the region's long-range transportation plan, SACOG assists with planning related to transit, bicycle networks, clean air, and airport land uses.

The Metropolitan Transportation Plan/Sustainable Communities Strategy (MTP/SCS) (Sacramento Area Council of Governments 2019a) is a federally mandated long-range, fiscally constrained transportation plan for the six-county area. To receive federal funding, transportation projects nominated by cities, counties, and agencies must be consistent with the MTP/SCS. The Metropolitan Transportation Improvement Program (MTIP) is a list of transportation projects and programs to be funded and implemented over the next 3 years (Sacramento Area Council of Governments 2019b). SACOG submits the MTIP to Caltrans and amends the program on a quarterly basis. Only projects listed in the MTP/SCS may be included in the MTIP.

Local

El Dorado County Transportation Commission (EDCTC)

The EDCTC was designated as the Regional Transportation Planning Agency (RTPA) for El Dorado County on July 23, 1975. As the RTPA, the EDCTC serves as the planning and programming authority for transportation projects on the western slope of El Dorado County, excluding those areas within the Tahoe Regional Planning Agency boundaries. The EDCTC is responsible for coordinating regional transportation planning for the western slope of El Dorado County. Being the State-mandated Regional Transportation Planning Agency, EDCTC prepares the Regional Transportation Plan (RTP) for the Western Slope. This Plan is updated every five years. The RTP is designed to be a blueprint for the systematic development of a balanced, comprehensive, multimodal transportation system (EDCTC 2015). The EDCTC submits the RTP to SACOG for inclusion in the MTP/SCS process.

El Dorado County

The Transportation and Circulation Element of the County General Plan establishes standards that guide development of the transportation system, including access to the road and highway system required by new development. Level of Service (LOS) is a general measure of traffic operating conditions whereby a letter grade, from A (the best) to F (the worst), is assigned. These grades represent the perspective of drivers and are an indication of the comfort and convenience associated with driving. Per General Plan Policy TC-Xd, LOS for County-maintained roads and state highways within the unincorporated areas of the county shall not be worse than LOS E in the Community Regions or LOS D in the Rural Centers and Rural Regions. The Project is located in a designated Rural Center. While LOS is no longer an impact on the environment under CEQA, it remains relevant under the County's General Plan and is discussed herein for informational purposes only.

3.17.1.2 Environmental Setting

Mt. Murphy Road is classified as a local road in the community of Coloma in El Dorado County (Caltrans 2019). State Route 49 (SR 49) is part of the State Highway System and is classified as a minor arterial road per the California Road System Maps, approved by FHWA (Caltrans 2019). The existing bridge is located approximately 250 feet north of the intersection of SR 49 and Mt. Murphy Road. The existing bridge carries Mt. Murphy Road over the South Fork American River (SFAR) and connects Coloma/ SR 49 with Marshall Road approximately 3 air miles north of the Project site.

Mt. Murphy Road Bridge is a one lane structure with no shoulders or sidewalks that crosses the SFAR. The narrow, one-lane bridge provides the only direct access across the SFAR in Coloma. Local residents living north of the SFAR use the existing bridge daily to commute to work, school, shopping, or elsewhere. The closest alternate route is Mt. Murphy Road to Marshall Road – an approximate 9-mile detour.

The existing bridge was constructed in 1915 with a steel truss span over the SFAR and wooden approach spans. The approach spans were reconstructed in the 1930s using reinforced concrete through-girders. The steel truss span over the main SFAR channel is approximately 165 feet in length and is narrower than the approach spans. It has a clear width of 10 feet between curbs. The two southern approach spans, starting from the abutment, measure 70 and 59 feet, respectively, and have a clear width of 13 feet 4 inches between curbs. The northern approach consists of three 65-foot-6-inch spans with 13 feet 4 inches between curbs. The piers located in the river are founded on spread footings and are considered vulnerable to scour from high velocity river flows during storm events.

The north approach runs along the west boundary of the Coloma Resort, which is an active recreation, camping and cabin resort that is open all year long. A large field known as the Gallagher field, the Levee trail, and parking lot are in a portion of the Marshall Gold Discovery State Historic Park (MGDSHP) located opposite the Coloma Resort. The south abutment and approach occur in close proximity to various park features including Bekeart's Gun Shop, Sutter's Mill timber display, and the Gold Discovery Loop Trail. The Project is being designed to avoid features in the MGDSHP and potentially enhance user experience with pedestrian improvements including a dedicated sidewalk on the new bridge structure.

The bridge has a sufficiency rating of 2 (out of a possible 100) and is structurally deficient (Caltrans 2017). The low score reflects the structural and functional deficiencies that need to be corrected, including load-carrying capacity limits. On September 25, 1980, the County reduced the vehicle load capacity on the bridge. The steel truss was posted for reduced load capacity with 14 tons for a two-axle vehicle, 21 tons for a three-axle vehicle, and 27 tons for a four-axle vehicle. Bridge closure has been imposed at times for the Mt. Murphy Road Bridge, for example the bridge was closed in 2007 for emergency repairs. In September 2021, a pickup truck crash on the bridge caused another emergency closure. In October 2021, the bridge was reopened with further reduced posted weight limits. Two-axle vehicles which exceed 12 tons and three-axle vehicles which exceed 19 tons are prohibited from using the bridge. The weight limits are a further reduction from the previously posted limits of 14 tons and 21 tons for two- and three-axle vehicles, respectively. The four-axle truck (originally posted at 27 tons) has been removed from the posting.

The existing structure is eligible for listing on the National Register of Historic Places (NRHP). The Mt. Murphy Road Bridge is located in the boundary of the Marshall Gold Discovery State Historic Park (MGDSHP). The 1969 National Register of Historic Places, Inventory-Nomination Form for MGDSHP makes the following statement:

> *…"This area (referring to Coloma), because of its outstanding significance to California and the world at large, has been named a national historic landmark, and is so registered by the N.P.S. (National Park Service)"*

El Dorado County DOT collects traffic counts annually on many roads throughout the County. The traffic counts are used to prepare Average Daily Traffic (ADT) counts. ADT provides a daily average count over the course of the sampling period. A 'peak hours' measurement is intended to capture

the 'rush hour' traffic, typically at a morning and evening during the work week, although not necessarily the highest traffic experienced. Per the Project Advanced Planning Study Report (CH2M Hill 2019) the current ADT is 387 and forecasted to have an ADT of 510 vehicles per day in 2040.

Although LOS is no longer relevant under CEQA, it is discussed herein for informational purposes only. In 2018, the El Dorado County Community Development Services Long Range Planning Group completed a traffic study for the intersection of SR 49 and Mt. Murphy Road (EDCCDS 2018). The 2018 traffic study results indicate the intersection would operate at Level of Service (LOS) B or better during the weekday, non-holiday weekend and holiday weekend peak hours. The intersection will continue to operate acceptably through the Design Year 2040. Table 3-29 below shows the results of the analysis.

Table 3-29. Traffic Operations Results - SR 49/ Mount Murphy Road

Scenario	Typical Weekday		Non-Holiday Weekend		Holiday Weekend	
	Delay	LOS	Delay	LOS	Delay	LOS
Existing Conditions	8.7	A	8.7	A	10.3	B
Construction Year	8.9	A	8.8	A	10.5	B
Design year	9.3	A	10.3	B	12	B

Notes: Analysis is based on the methodology and procedures in the HCM6 (Transportation Research Board, 2016). Average delay is reported in seconds per vehicle. For side-street stop-controlled intersections, the LOS is based on the average control delay for the movement with the highest delay.

The Project is located within the MGDSHP which provides a variety of attractions and learning opportunities. In 2016, the MGDSHP served approximately 160,000-170,000 visitors over the course of the year (MGDSHP 2017). Most visitors come during the spring and summer months. There are several campgrounds within walking distance and many campers walk into the Park for lunch, hiking, or to visit the museum. The Park also provides Interpretive Programs for local school groups. The Interpretive Programs served approximately 29,760 school children in 2016 (MGDSHP 2017). These programs often involve school children walking across the Mt. Murphy Road Bridge between the Park and the Coloma Resort and crossing SR 49 at the study intersection. These crossings are typically facilitated by chaperones and Park staff.

The bridge is frequently used by recreational vehicles to access the Coloma Resort located on the north side of the SFAR. Tour group and school busses park on the north side of the Mt. Murphy Road Bridge and the passengers walk over the bridge to the MGDSHP.

Local State Park staff indicated that about 800-1,500 people visit the park each day during the peak season (El Dorado County 2018). Similarly, it was estimated that 90% of the visitors to the Park cross SR 49 at or near the study intersection and 75% of visitors cross Mt. Murphy Road at the intersection. El Dorado Transit dial-a-ride service area includes the Project area. Due to the large volumes of pedestrian traffic the study recommends crosswalks across Mt. Murphy Road and SR 49 and a sidewalk from SR 49 to the Coloma Resort (EDCCDS 2018).

The *El Dorado County Bicycle Transportation Plan* (updated in 2010) by the El Dorado County Transportation Commission indicates a Proposed Class II bicycle facility along SR 49 beginning in Coloma and traveling north towards Pilot Hill. No proposed bicycle facilities are indicated along Mt. Murphy Road in the bicycle plan. (EDCTC 2010).

The 2017 Active Transportation Connections Study – Bicycle and Pedestrian Count Data memorandum, collected bike and pedestrian data for the segment of SR 49 between Marshall Road and Lotus Road (EDCCDS 2018). While this is outside the current study area is does give an idea of the overall level of bicyclist use in the area. The 2017 memorandum states that recorded of for this near the study intersection count data for the only one bicyclist was observed during the six-hour weekday count period and seven bicyclists observed during the four-hour weekend count period. No bike lanes were proposed by the study (EDCCDS 2018).

3.17.2 Environmental Impacts

3.17.2.1 Methods of Analysis

The impact analysis for traffic and circulation was conducted by evaluating the potential changes to the existing bridge, roadway approaches, and other transportation conditions based on the anticipated Project construction activities and proposed Project design. Relevant policies and plans related to transportation and circulation issues were also reviewed.

3.17.2.2 Thresholds of Significance

In accordance with Appendix G of the State CEQA Guidelines, the proposed Project would be considered to have a potentially significant impact on transportation and circulation if it would result in any of the conditions listed below.

- Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities?
- Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?
- Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?
- Result in inadequate emergency access?
- Result in inadequate parking capacity?

3.17.2.3 Impacts and Mitigation Measures

Impact TRA-1: Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities? (no impact)

The Project is identified in the El Dorado County Adopted Capital Improvement Program (CIP) as CIP # 77129 (EDCCDS 2019). The CIP is coordinated with the Five-Year major review of the General Plan (including the Transportation and Circulation Element) and is also included in the annual

General Plan review. The Transportation and Circulation Element address alternative transportation systems.

There are no public transportation services, except for dial-a-ride, offered in the study area and there are no known plans for new routes that would extend into the Project area. The Project area experiences heavy pedestrian traffic during the MGDSHP peak visitor season. The addition of crosswalks and sidewalks in the Project area will improve pedestrian safety.

The El Dorado County Bicycle Transportation Plan (updated in 2010) by the El Dorado County Transportation Commission indicates a Proposed Class II bicycle facility along SR 49 beginning in Coloma and traveling north towards Pilot Hill (EDCTC 2010). No proposed bicycle facilities are indicated along Mt. Murphy Road in the bicycle plan. The Project will not conflict with the proposed bicycle facility along SR 49.

Replacement of the existing one lane bridge would not change the amount of traffic on Mt. Murphy Road because it is not a new development or growth inducing project. The Project will not require a detour because the bridge will remain open during construction. Project construction activities would be coordinated with local law enforcement and emergency services providers as applicable.

Impact TRA-2: Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)? (less than significant)

Replacement of the existing one lane bridge would not change the amount of traffic on Mt. Murphy Road because it is not a new development or growth inducing project. The Project does not increase the capacity of Mt. Murphy Road and is not anticipated to increase operational related vehicle miles travels (VMT). A temporary minor increase in VMT could occur during Project construction as the result of worker trips to the site, materials delivery, and material hauling. Any minor increase in VMT would be temporary. The completed Project would not increase VMT. Per CEQA guidelines section 15064.3, subdivision (b) "Transportation projects that reduce, or have no impact on, vehicle miles traveled should be presumed to cause a less than significant transportation impact." Project impacts are considered less than significant.

Impact TRA-3 Substantially increase hazards because of a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment) (no impact)

The Project will not increase vehicular or pedestrian hazards because of design features. The Mt. Murphy Road Bridge is a one-lane bridge, with no shoulders, bicycle facilities or pedestrian walkways. The bridge is frequently used by recreational vehicles to access the Coloma Resort located on the north side of the SFAR. Tour group and school busses park on the north side of the Mt. Murphy Road Bridge and the passengers walk over the bridge to the MGDSHP. Pedestrians are frequently seen stepping onto a 1-foot curb adjacent to the concrete barrier walls of the bridge as large RVs pass through the narrow single-lane bridge.

The purpose of the Project is to replace a fracture critical bridge to improve safety and movement for vehicles, pedestrians, and bicyclists across the SFAR in the community of Coloma. The Project will improve emergency access by providing a two-lane modern bridge design. The Project will also improve site distance at the roadway approaches and at the SR 49 Mt. Murphy Road intersection. The Project objectives include improving roadway safety and compliance with the American Association of Highway and Transportation Officials (AASHTO) design guidelines and El Dorado County standards.

Impact TRA-4: Result in inadequate emergency access (less than significant)

Mt. Murphy Road will remain open during construction and motorists will make use of the existing bridge during construction. The Project will not require a detour. Construction contract special provisions will require that a Traffic Management Plan (TMP) be prepared. The TMP will include construction staging and traffic control measures to be implemented during construction to maintain and minimize impacts to traffic during construction. The TMP will address the coordination issues with local law enforcement and emergency services providers.

Impact TRA-5: Result in inadequate parking capacity? (less than significant)

The completed Project is not expected to affect nearby parking capacity. Project construction may result in temporary parking restrictions. Construction contract special provisions will require that a TMP be prepared. The TMP will include construction staging and traffic control measures to be implemented during construction to maintain and minimize impacts to traffic during construction. The TMP will address parking as applicable.

3.17.3 References

California Department of Parks and Recreation, Marshall Gold Discovery State Historic Park. 2017. Marshall Gold Discovery State Historic Park (MGDSHP), (Annual Visitation 2011 – 2016), visitation totals.

California Department of Transportation (Caltrans). 25 September 2017. Mt. Murphy 2017 Bridge Inspection Report.

California Department of Transportation (Caltrans). Accessed March 2019. California Road System (CRS) Maps. http://www.dot.ca.gov/hq/tsip/hseb/crs_maps/index.php

CH2MHill. March 2015. Alternatives Analysis Report, Mt. Murphy Road Bridge Project. Prepared for: El Dorado County Department of Transportation.

CH2MHill. May 2019. Structure Advanced Planning Study, Mt. Murphy Road Bridge Project. Prepared for: El Dorado County Department of Transportation.

El Dorado County, Community Development Services (EDCCDS). 15 August 2018. Traffic Operations Analysis for the Mount Murphy Bridge Project. Technical Memorandum from Katie Jackson, P.E., T.E. and Natalie Porter, P.E., T.E. to Jon Balzer, P.E. and Jeff Nettleton, P.E.

El Dorado County, Community Development Services (EDCCDS). 26 June 2018 (Accessed: March 2019). Adopted 2018 Capital Improvement Programs for: West Slope Road/Bridge; Tahoe Environmental Improvement Program; Airport Program; Transportation Facilities Improvement Program; Capital Overlay and Rehabilitation; Road Maintenance Program, National Pollutant Discharge Elimination System. Available: https://www.edcgov.us/Government/longrangeplanning/Documents/B%20-%202018%20CIP%20Book%20as%20amended%206-26-18.pdf

El Dorado County Transportation Commission (EDCTC). 3 September 2015. Final El Dorado County Regional Transportation Plan 2015-2035.

El Dorado County Transportation Commission (EDCTC). November 2010. 2010 El Dorado County Bicycle Transportation Plan. Approved by the El Dorado County Transportation Commission December 2, 2010

Sacramento Area Council of Governments (SACOG). Accessed: March 2019 (2019a). Final Plan Released 18 February 2016. 2016 Metropolitan Transportation Plan/Sustainable Communities Strategy. https://www.sacog.org/2016-mtpscs

Sacramento Area Council of Governments (SACOG). Accessed: March 2019 (2019b). Adopted 15 September 2016. Final 2017-20 Metropolitan Transportation Improvement Program (MTIP). https://www.sacog.org/overview/2017-20-mtip-adoption

3.18 Wildfire

This section addresses potential wildfire hazards impacts that may result from construction and/or operation of the proposed Project. The following discussion addresses existing wildfire hazard conditions of the project area and surroundings, considers applicable goals and policies, identifies and analyzes environmental impacts, and recommends measures to reduce or avoid adverse impacts anticipated from project implementation, as applicable.

3.18.1 Existing Conditions

3.18.1.1 Regulatory Setting

Federal

There are no federal regulations that apply to the proposed project with regards to wildfire hazards.

State

California Department of Forestry and Fire Protection (CAL FIRE**):** CAL FIRE protects the people of California from fires, responds to emergencies, and protects and enhances forest, range, and watershed values providing social, economic, and environmental benefits to rural and urban citizens. CAL FIRE responds to nearly 6,000 wildland fires that burn on average over 260,000 acres each year. Through cooperative agreements, mutual aid, and the State's emergency plan, CAL FIRE personnel respond to more than 450,000 incidents annually, including structure fires, automobile accidents, medical emergencies, swift water rescues, civil disturbances, search and rescues, hazardous material spills, train wrecks, floods, and earthquakes (CAL FIRE 2019).

The Office of the State Fire Marshal supports CAL FIRE's mission by focusing on fire prevention. It provides support through a wide variety of fire safety responsibilities including by regulating buildings in which people live, congregate, or are confined; by controlling substances and products which may, in and of themselves, or by their misuse, cause injuries, death, and destruction by fire; by providing statewide direction for fire prevention in wildland areas; by regulating hazardous liquid pipelines; by reviewing regulations and building standards; and by providing training and education in fire protection methods and responsibilities.

State Fire Regulations: Fire regulations for California are established in Division 12, Sections 13000 et seq. of the California Health and Services Code and include regulations for structural standards (similar to those identified in the California Building Code); fire protection and public notification systems; fire protection devices such as extinguishers and smoke alarms; standards for high-rise structures and childcare facilities; and fire suppression training. The State Fire Marshal is responsible for enforcement of these established regulations and building standards for all state-owned buildings, state-occupied buildings, and state institutions within California.

California Fire Plan: The Fire Plan is a cooperative effort between the State Board of Forestry and Fire Protection and the California Department of Forestry and Fire Protection. By placing the emphasis on what needs to be done long before a fire starts, the Fire Plan looks to reduce firefighting costs and property losses, increase firefighter safety, and to contribute to ecosystem health. The current plan was finalized and approved by the state in January 2019 (CAL FIRE 2019).

California Fire Code: The 2019 California Fire Code (Title 24, Part 9 of the California Code of Regulations, also known as the California Building Standards Code) establishes regulations to safeguard against the hazards of fire, explosion, or dangerous conditions in new and existing buildings, structures, and premises. The Fire Code also establishes requirements intended to provide safety for and assistance to firefighters and emergency responders during emergency operations. The provisions of the Fire Code apply to the construction, alteration, movement, enlargement, replacement, repair, equipment, use and occupancy, location, maintenance, removal, and demolition of every building or structure throughout California. The Fire Code includes regulations regarding fire-resistance-rated construction, fire protection systems such as alarm and sprinkler systems, fire services features such as fire apparatus access roads, means of egress, fire safety during construction and demolition, and wildland-urban interface areas.

Senate Bill 1241: In 2012, Senate Bill 1241 added Section 66474.02 to Title 7 Division 2 of the California Government Code, commonly known as the Subdivision Map Act. The statute prohibits subdivision of parcels designated very high fire hazard, or that are in a State Responsibility Area, unless certain findings are made prior to approval of the tentative map. The statute requires that a city or county planning commission make three new findings regarding fire hazard safety before approving a subdivision proposal. The three findings are, in brief: (1) the design and location of the subdivision and its lots are consistent with defensible space regulations found in PRC Section 4290-91, (2) structural fire protection services will be available for the subdivision through a publicly funded entity, and (3) ingress and egress road standards for fire equipment are met per any applicable local ordinance and PRC Section 4290.

Local

El Dorado County General Plan: To ensure provision of adequate public human health and safety services in the county, the Public Services and Utilities Element and Public Health, Safety and Noise Element of the County General Plan (County of El Dorado 2015) includes the following goals and policies.

Goal 5.7, Emergency Services, addresses provision of adequate and comprehensive emergency services, including fire protection, law enforcement, and emergency medical services, and includes implementing Policy 5.7.1.1.

- Goal 6.2, *Fire Hazards*, minimizes fire hazards and risks in both wildland and developed areas by implementing Policies 6.2.1.1, 6.2.1.2, 6.2.2.1, 6.2.2.2, 6.2.3.1, 6.2.3.2, 6.2.3.3. 6.2.3.4, 6.2.4.1, 6.2.4.2, and 6.2.5.1.

Fire Safe Regulations: El Dorado County has adopted the basic wildland fire protection standards of the California Board of Forestry. These standards are contained in Title 14 Natural Resources, Division 1.5 -Department of Forestry, Chapter 7 -Fire Protection Subchapter 2 SRA Fire Safe Regulations Articles 1-5 of the County code. These regulations have been prepared and adopted for the purpose of establishing minimum wildfire protection standards in conjunction with building,

construction and development in State Responsibility Area (SRA). A local jurisdiction may petition the Board for certification pursuant to Section 1270.03. The design and construction of structures, subdivisions and developments in SRA will provide for basic emergency access and perimeter wildfire protection measures as specified in the following articles. These measures provide for emergency access; signing and building numbering; private water supply reserves for emergency fire use; and vegetation modification.

Vegetation Management and Defensible Space: Ordinance 5101, added Chapter 8.09 (Vegetation Management and Defensible Space) to Title 8 (Public Health and Safety) of the El Dorado County Code. The purpose of the ordinance is to provide for the removal of hazardous vegetation and combustible materials 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.

Western El Dorado County Community Wildfire Protection Plan (CWPP): The 2017 El Dorado County Wildfire Protection Plan provides an overview of local fire history, fire risks, hazards, and past strategies. The Plan identifies specific fire protection problems and issues, lists plan goals and strategic action plan recommendations, identifies and lists communities for fire safe planning, provides for formation of local community fire safe councils, adopts a standard outline for Community Wildfire Protection Plans (CWPP), identifies the El Dorado County Fire Safe Council (EDCFSC) as a focal point for bringing citizens and protection agencies together to plan and accomplish fire safe measures, and establishes a public education role for the EDCFSC. The Coloma-Lotus Fire Safe Council prepared the 2016 Coloma-Lotus sub-section of the County wide Community Wildfire Protection Plan (Coloma-Lotus Fire Safe Council 2016).

3.18.1.2 Environmental Setting

A wildfire is a nonstructural fire that occurs in vegetative fuels, excluding prescribed fire. Wildfires can occur in undeveloped areas and spread to urban areas where the landscape and structures are not designed and maintained to be ignition resistant. A wildland-urban interface is an area where urban development is located in proximity to open space or “wildland” areas. The potential for wildland fires represents a hazard where development is adjacent to open space or within close proximity to wildland fuels or designated fire severity zones. Steep hillsides and varied topography within in the County also contribute to the risk of wildland fires. Fires that occur in wildland-urban interface areas may affect natural resources as well as life and property.

CAL FIRE has mapped areas of significant fire hazards in the state through its Fire and Resources Assessment Program (FRAP). These maps place areas of the state into different fire hazard severity zones (FHSZ) based on a hazard scoring system using subjective criteria for fuels, fire history, terrain influences, housing density, and occurrence of severe fire weather where urban conflagration could result in catastrophic losses. As part of this mapping system, land where CAL FIRE is responsible for wildland fire protection and generally located in unincorporated areas is classified as a State Responsibility Area (SRA). Where local fire protection agencies are responsible for wildfire protection, the land is classified as a Local Responsibility Area (LRA). In addition to establishing local or state responsibility for wildfire protection in a specific area, CAL FIRE designates areas as very high, high and moderate fire hazard severity (VHFHS) zones. The Project location is mapped as occurring in both a moderate and high fire hazard severity zone in SRA (CAL FIRE 2020).

CAL FIRE is divided into two regions and 21 operational units, and the Amador-El Dorado Unit (AEU) includes the counties of Amador, El Dorado, Alpine, Sacramento and portions of San Joaquin County. The entire AEU encompasses over 2.6 million acres, of which 1.05 million acres are classified SRA by the legislature. Under a Cooperative Fire Protection Agreement between CAL FIRE and USFS, the AEU has responsibility for 903,860 acres of Direct Protection Area (DPA) in all five counties. CAL FIRE's AEU DPA ranges from the low-lying areas of Sacramento and San Joaquin counties to well above the 4,500-foot elevation in Amador and El Dorado Counties; the approximate resident population in this area is 2.3 million people (CAL FIRE 2014)

Within El Dorado County, approximately 565,087 acres have an SRA designation. As noted earlier, the designation is important because the agency having jurisdiction for wildland fires is fiscally and operationally responsible for fires on its lands. Although the bulk of El Dorado County is either SRA or FRA, all fire agencies in El Dorado County work cooperatively together to suppress wildland fires. Reciprocal assistance provided by CAL FIRE would be to respond to non-wildland emergencies such as auto accidents, medical emergencies, rescues, hazardous materials emergencies and structure fires (El Dorado LAFCO 2011).

The Amador-El Dorado Unit manages eight fire stations, the Cameron Park Fire Department, two conservation camps, two lookouts and three Amador Plan stations (during winter months) for the Amador County Fire Protection District. During the peak fire season, CAL FIRE staffs 13 State funded fire engines, two Cameron Park Advanced Life Support (ALS) fire engines with one ALS Medic Unit, two fire-dozers, which require specially trained operators, and nine fire crews. The closest CAL FIRE station is the El Dorado Station 43 located at 5660 Mother Lode Drive, Placerville, approximately 9.3 air miles northwest of the Project area.

The Project area is located within the service boundaries of both the El Dorado County Fire Protection District and District. The El Dorado County Fire Protection District (ECF) was formed on March 1, 1991. The ECF serves the City of Placerville and the communities of Cool, Pilot Hill, Lotus, Coloma, Gold Hill, Shingle Springs, Sierra Springs, Camino, Pleasant Valley, Oak Hill, Pollock Pines, Pacific House, Kyburz, and Strawberry. All communities in ECF are major risk areas for wildland/urban interface and have an SRA designation, with the exception of Placerville. ECF currently operates 15 fire stations; eight "staffed" and seven "unstaffed." "Staffed" stations are staffed 24 hours a day, seven days a week by paid personnel, with volunteers and off-duty personnel staffing additional apparatus at these stations when there is need for extra response. "Unstaffed" stations house additional apparatus and are only in use when there is a call for service. When a call comes in, volunteer and off-duty personnel go to the station and respond with the apparatus housed at the station. ECF owns and operates 30 engines, five water tenders, five rescue vehicles, 25 utility vehicles and four medic vehicles. Elevations within the district range from the lower foothills near Salmon Falls at an altitude of 500 feet to the Sierras at Twin Bridges at an elevation of nearly 6,000 feet. The topography is characterized in various areas by grassy hills, brushy valleys, heavy timber, canyons, and from gently rolling to extremely steep terrain (El Dorado LAFCO 2011). The closest ECF station is the Station 74 located at 5122 Firehouse Rd. Lotus, approximately one air mile west of the Project area.

Per the 2016 Coloma-Lotus Fire Safe Council Community Wildfire Protection Plan, the following fires have occurred in the Coloma-Lotus Valley area since 2007 (Coloma-Lotus Fire Safe Council 2016):

- Bayne Fire (July 1, 2007)–80 acres along Bayne Road, Mount Murphy area of Coloma.
- Salmon Fire (August 15, 2012)–108 acres along Salmon Falls Road, south of Pilot Hill.

- Camp Lotus Fire (July 6, 2014)–Extent uncertain.
- Adventure Fire (July 16, 2015)–Over 100 acres along SR 49, by the Adventure Connections Campground (west) and Bacchi Ranch (east).
- Storksbill Fire (July 22, 2016)–50 acres off Storksbill Road in Pilot Hill.

3.18.2 Environmental Impacts

3.18.2.1 Methods of Analysis

The impact analysis for wildfire was conducted by evaluating the potential changes to the existing bridge, roadway approaches, and other transportation conditions based on the anticipated Project construction activities and proposed Project design.

3.18.2.2 Thresholds of Significance

In accordance with Appendix G of the State CEQA Guidelines, the proposed Project would be considered to have a potentially significant impact on wildfire if it would result in any of the conditions listed below.

If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:

- Substantially impair an adopted emergency response plan or emergency evacuation plan?
- 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?
- 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?
- 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?

3.18.2.3 Impacts and Mitigation Measures

Impact WILD-1: Substantially impair an adopted emergency response plan or emergency evacuation plan? (less than significant).

Mt. Murphy Road will remain open to traffic during construction. The Project will not require a long-duration road closure or an off-site detour. The two-stage construction approach allows the existing bridge to remain in service during the first stage of construction until traffic can be shifted to the first stage structure. A traffic management plan (TMP will be prepared to alleviate and minimize construction related traffic delays and provide direction on how to minimize effects on access, including emergency service responders. Traffic controls would be implemented throughout all phases of construction to facilitate local traffic circulation and through-traffic requirements. Emergency service providers, including the police and fire departments, would be notified and

consulted with as early as possible in order to plan for any possible short-term lane closures (i.e. during parts of a work shift, including, roadway conforms, existing bridge removal periods, etc.) and other potential delays related to construction activity.

Impact WILD-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? (less than significant with mitigation)

The completed Project will not expose people or structures to a new or increased significant risk of loss, injury or death involving wildland fires. County Resolution 171-2019 created a UUD on several of the parcels involved with the proposed bridge replacement Project (APN 006-164-02, 006-191-01, 006-162-07, and 006-163-02). Undergrounding utilities along Mt. Murphy Rd in the Project area would reduce potential ignition sources by placing utilities underground.

Several factors contribute to susceptibility to wildfire danger in El Dorado County, including climate, winds, steep terrain, and vegetation. CAL FIRE has designated all of the Project area as a High Fire Hazard Severity Zone in a SRA. Human activities are the primary reason wildfires start. Project construction would involve the use of heavy equipment, welding, and other activities that have potential to ignite fires. A wildland fire caused by Project construction activities could result in a significant impact. Implementation of Mitigation Measure WILD-1 would reduce this potential impact to less-than-significant.

Mitigation Measure WILD-1: Prepare and Implement a Fire Protection Plan

The County will require its contractors to prepare a Fire Protection Plan before construction begins in areas with moderate to high fire hazards. The Fire Protection Plan will include the following measures.

- *Internal combustion engines, stationary and mobile, will be equipped with spark arresters. Spark arresters shall be in good working order.*
- *Contractor will keep all construction sites and staging areas free of grass, brush, and other flammable materials.*
- *Personnel will be trained in the practices of the fire safety plan relevant to their duties. Construction and maintenance personnel shall be trained and equipped to extinguish small fires.*
- *Work crews shall have fire-extinguishing equipment on hand, as well as emergency numbers and cell phone or other means of contacting the Fire Department.*
- *Smoking will be prohibited while operating equipment and shall be limited to paved or graveled areas or areas cleared of all vegetation. Smoking will be prohibited within 30 feet of any combustible material storage area (including fuels, gases, and solvents). Smoking will be prohibited in any location during a Red Flag Warning issued by the National Weather Service for the project area (Red-Flag Warning" is a term used by fire-weather forecasters to call attention to limited weather conditions of particular importance that may result in extreme burning conditions.*

Impact WILD-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? (no impact)

The Project includes the replacement of an existing bridge and associated approach road work. The completed Project would not include components that would exacerbate fire risk.

Impact WILD-4: 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? (no impact)

The Project includes the replacement of an existing bridge and associated approach road work. The Project improves safety and movement for vehicles, pedestrians, and bicyclists across the SFAR in Coloma by replacing the existing structurally and functionally deficient bridge.

3.18.3 References

California Department of Forestry and Fire Protection. 21 April 2014. 2014 Unit Strategic Fire Plan Amador-El Dorado Unit.

California Public Utilities Commission (CPUC). Accessed March 2020. CPUC FireMap, California Fire Perimeters (1878-2015). https://ia.cpuc.ca.gov/firemap/#fire-perimeters

El Dorado County Local Agency Formation Commission (LAFCO). August 2011. Countywide Fire Suppression and Emergency Services Municipal Service Review.

Coloma–Lotus Fire Safe Council. November 2016 (accessed 15 May 2020). Community Wildfire Protection Plan. Prepared for inclusion in the El Dorado County Fire Safe Council Community Wildfire Protection Plan. http://www.edcfiresafe.org/about-the-council/satellite-councils/lotus-coloma-fsc/community-wildfire-protection-plan/#_Toc468286414