

INITIAL STUDY AND MITIGATED NEGATIVE DECLARATION

FOR THE

FLINT TRAIL ACCESS ROAD

JANUARY 2023

Prepared for:

Calaveras County - Planning Department
891 Mountain Ranch Road
San Andreas, CA 95249
(209) 754-6394

Prepared by:

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D e N o v o P l a n n i n g G r o u p

A Land Use Planning, Design, and Environmental Firm



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1.0 INTRODUCTION

1.1 Statutory Authority and Requirements

This Initial Study has been prepared in accordance with the California Environmental Quality Act (CEQA) (California Public Resources Code [PRC] Sections 21000, et seq.) and the State CEQA Guidelines (14 California Code of Regulations Title 14 Sections 15000, et seq.). This Initial Study is an informational document intended to be used as a decision-making tool for the Lead Agency and responsible agencies in considering and acting on the proposed Project.

Pursuant to CEQA Guidelines Section 15063, Calaveras County (County), as Lead Agency, has prepared this Initial Study to determine if the proposed South Flint Trail Secondary Access Road Project (Project) would have a significant effect on the environment. If, as a result of the Initial Study, the Lead Agency finds that there is evidence that mitigation cannot reduce the impact to a less than significant level for any aspect of the proposed Project, then the Lead Agency must prepare an Environmental Impact Report (EIR) to analyze project-related and cumulative environmental impacts. Alternatively, if the Lead Agency finds that there is no evidence that the Project as proposed may cause a significant effect on the environment, the Lead Agency may prepare a Negative Declaration (ND). If the Lead Agency finds that there is evidence of a significant impact, but the impact can be reduced through mitigation, the Lead Agency may prepare a Mitigated Negative Declaration (MND). Such determination can be made only if “there is no substantial evidence in light of the whole record before the Lead Agency” that such significant environmental impacts may occur (PRC Section 21080(c)).

Pursuant to CEQA Guidelines Section 15063(c), the purposes of an Initial Study are to:

1. Provide the Lead Agency with information to use as the basis for deciding whether to prepare an EIR, MND or a ND;
2. Enable an applicant or Lead Agency to modify a project, mitigating adverse impacts before an EIR is prepared, thereby enabling the project to qualify for a ND;
3. Assist in the preparation of an EIR, if one is required, by;
 - a. Focusing the EIR on the effects determined to be significant,
 - b. Identifying the effects determined not to be significant,
 - c. Explaining the reasons for determining that potentially significant effects would not be significant, and
 - d. Identifying whether a program EIR, tiering, or another appropriate process can be used for analysis of the project’s environment effects.
4. Facilitate environmental assessment early in the design of a project;
5. Provide documentation of the factual basis for the finding in a MND or ND that a project will not have a significant effect on the environment;
6. Eliminate unnecessary EIRs; and
7. Determine whether a previously prepared EIR could be used with the project.

The environmental documentation, which is ultimately selected by the County in accordance with CEQA, is intended as an informational document undertaken to provide an environmental basis for subsequent discretionary actions upon the proposed Project. The resulting environmental documentation is not, however, a policy document and its approval and/or certification neither presupposes nor mandates any actions on the part of those agencies from whom permits and other discretionary approvals would be required.

1.2 Summary of Findings

Pursuant to State CEQA Guidelines Section 15367, Calaveras County (County), as the Lead Agency, has the authority for environmental review and adoption of the environmental documentation, in accordance with CEQA. As set forth in State CEQA Guidelines Section 15070, an Initial Study leading to a Negative Declaration (IS/ND) or Mitigated Negative Declaration (IS/MND) can be prepared when:

- The Initial Study shows that there is no substantial evidence, in light of the whole record before the agency, that the project may have a significant effect on the environment (resulting in a Negative Declaration), or
- The Initial Study identifies potentially significant effects, but:
 - Revisions in the project plans or proposals made by, or agreed to by the applicant before a proposed mitigated negative declaration and initial study are released for public review would avoid the effects or mitigate the effects to a point where clearly no significant effects would occur, and
 - There is no substantial evidence, in light of the whole record before the agency, that the project as revised may have a significant effect on the environment (resulting in a Mitigated Negative Declaration).

Based on the Environmental Checklist Form and supporting environmental analysis provided in [Section 4.0, *Environmental Analysis*](#), the proposed Project would have no impact or a less than significant impact concerning all environmental issue areas, except the following, for which the Project would have a less than significant impact with mitigation incorporated:

- Biological Resources;
- Cultural Resources;
- Geology and Soils; and
- Tribal Cultural Resources.

1.3 Incorporation by Reference

Pursuant to State CEQA Guidelines Section 15150, an IS/MND may incorporate by reference all or portions of another document which is a matter of public record or is generally available to the public. Where all or part of another document is incorporated by reference, the incorporated language shall be considered to be set forth in full as part of the MND's text.

The following documents are formally incorporated by reference into this IS/MND:

Calaveras County Draft General Plan Final Environmental Impact Report, SCH No. 2017012043, April 2019. The Calaveras County Draft General Plan Final Environmental Impact Report (General Plan FEIR) analyzed the potential environmental impacts that would result from implementation of the Calaveras County General Plan. The General Plan FEIR forecast 48,567 dwelling units and a resulting population of 117,045 persons at estimated buildout of the General Plan. General Plan buildout was estimated to occur in 2035. The General Plan FEIR concluded significant and unavoidable impacts concerning Aesthetics, Agricultural Resources, Air Quality and Greenhouse Gas Emissions, Biological Resources, Cultural and Tribal Cultural Resources, Hazards and Hazardous Materials, Noise, Population and Housing, Public Services and Utilities, and Transportation.

Saddle Creek Specific Plan. The Saddle Creek (formally Calaveras Country Club) Specific Plan (Specific Plan) was approved on December 6, 1993. The Specific Plan establishes goals, policies, implementation measures, development standards, land uses, and zoning for the approximately 890-acre Saddle Creek master-planned development. The Specific Plan's unique land use designations, goals, policies, and implementation programs are intended to implement the General Plan and provide detailed guidance on the long-term development of the Specific Plan area.

Saddle Creek Specific Plan Final Environmental Impact Report, SCH No. 92042068, September 1993. The Final Environmental Impact Report (FEIR) for the Saddle Creek Specific Plan (formally Calaveras Country Club Specific Plan) was certified by the Calaveras County Board of Supervisors on December 6, 1993. The Saddle Creek FEIR analyzed the potential environmental impacts that would result from implementation of the approximately 890-acre Saddle Creek development project, including the Saddle Creek Specific Plan and subsequent project approvals. The Saddle Creek FEIR concluded significant and unavoidable impacts concerning Air Quality and Noise.

1.4 Report Organization

This document is organized into the following sections:

Section 1.0, Introduction, provides the CEQA Statute and Guidelines applicable to the Initial Study, summarizes the findings of the Initial Study, describes the public review process, and identifies documents incorporated by reference as part of the Initial Study.

Section 2.0, Project Description, provides a detailed description of the proposed Project, including Project location, environmental setting, Project characteristics, construction program and phasing, and requested entitlement, permits and approvals.

Section 3.0, Environmental Checklist Form, provides Project background information and a summary of environmental factors potentially affected by the proposed Project and the Lead Agency Determination based on the analysis and impact determinations provided in Section 4.0. The impact evaluation criteria utilized in Section 4.0 is also provided.

Section 4.0, Environmental Analysis, provides a detailed analysis of the environmental impacts identified in the environmental checklist, and identifies mitigation measures, if necessary.

Section 5.0, References, identifies the information sources utilized in preparation of the Initial Study to support the environmental analysis.

Section 6.0, *Report Preparation Personnel*, identifies personnel involved in preparation of the Initial Study.

2.0 PROJECT DESCRIPTION

2.1 Background

The Golf Club at Copper Valley (formerly Saddle Creek) is a master-planned development and 18-hole golf course located in the community of Copperopolis, in southwestern Calaveras County (County). This development is primarily implemented by the Saddle Creek (formally Calaveras Country Club) Specific Plan (Specific Plan).

In October 1992, an Administrative Draft EIR was submitted to the County of Calaveras for the Specific Plan. The project proposed a master-planned development consisting of residential uses, recreation facilities, a championship-style golf course, and supporting commercial facilities. A revised Administrative Draft EIR was subsequently prepared in 1993. The Calaveras County Board of Supervisors approved the Specific Plan and certified Final EIR on December 6, 1993.

On May 5, 1994, the County Planning Commission signed a Resolution approving a Tentative Subdivision Tract Map (TSTM) to create 1,650 single-family parcels and recommended that the Board of Supervisors adopt an ordinance approving the Saddle Creek Development Agreement (Development Agreement). On June 13, 1994, the Board of Supervisors approved an ordinance adopting the Development Agreement, which specifies the standards and requirement for development of the project as a whole as well as the individual homesites within the Specific Plan. The Development Agreement was approved for a term of 15 years. A 5-year extension of time for the Development Agreement was approved in 2008. A second 5-year extension of time for the Development Agreement was approved in 2014. The Development Agreement expired on June 13, 2019, and the remaining unrecorded portions of the approved tentative subdivision map expired on the same date. All obligations required by the Development Agreement were completed prior to expiration, including: construction of the 18-hole golf course, clubhouse and lodging units; construction of the Little John Road extension to State Route 4; construction of the left turn lane from Copper Cove Drive onto Little John Road; funding for the Copperopolis Fire Department; completion of the Public Works Route Corridor Study; off-site improvements for water and sewer; wetlands mitigation for the entire site; establishment of a Community Services District; and recordation of seven units of the TSTM.

Currently, the Golf Club at Copper Valley is accessed via a single entrance point from Little John Road by way of Saddle Creek Drive. The 1994 entitlements issued for the Golf Club at Copper Valley require the construction of a second access road prior to the recordation of any additional final maps for the development. Two approved second entrances, at Bow Drive and Flint Trail, were depicted on the 1994 approved TSTM. The Tentative Map expired prior to issuance of the building permit, thus the threshold for the required construction of the second access was never accomplished.

In 2019, TSTM 2019-006 was submitted to continue development within the Golf Club at Copper Valley. As this development was located fully within the Saddle Creek Specific Plan, a notice of exemption was filed and no environmental analysis was completed. A condition of approval recommended that a secondary access be connected at Flint Trail with any development in the southern portion of the project. The proposed South Flint Trail secondary access was added and found to be exempt from CEQA; a Notice of Exemption (NOE) was filed with the County on September 11, 2020.

The approved secondary access road, which was contained entirely within the existing Specific Plan area, proved problematic. The road funneled all subdivision traffic through an area proposed for high-density residential development and adversely impacted protected wetland areas. The protected wetland areas are described in the US Army Corps of Engineers Nationwide Permit 26, No. 199100807, June 13, 1998, and are shown on recorded maps of the development. The protected wetland areas are also described and protected in perpetuity by the “Declaration of Restrictions” recorded June 12, 1998, as instrument #1998 7539. Wetland areas are monitored and maintained by the Golf Club at Copper Valley Community Services District (CSD). These wetland areas shall remain protected.

Accordingly, the project applicant has proposed the construction of a revised and improved South Flint Trail Secondary Access Road to the Golf Club at Copper Valley. The proposed South Flint Trail Secondary Access Road is the subject of this environmental analysis, and is described in greater detail below.

2.2 Project Location

The South Flint Trail Secondary Access Road Project (Project) site is located southwest of the intersection of Little John Road and Flint Trail in the community of Copperopolis in southwestern Calaveras County; refer to [Figure 1, Regional Vicinity](#). The Project site is comprised of three parcels (APNs 055-051-059, 055-051-008, and 055-051-068) and covers a disturbed area of approximately 9.6 acres; refer to [Figure 2, Project Site](#). The Project’s Area of Disturbance (AOD) represents the outer boundary of ground disturbance for the Project, which generally consists of the roadway, associated shoulders and right-of-way (ROW), plus drainage areas and drainage infrastructure such as culverts, etc. Local access to the Project site is provided via Saddle Creek Drive from Little John Road. The Project site runs from the intersection of Flint Trail and Little John Road to an unnamed access road approximately 1,800 feet southwest of Oak Creek Drive.

2.3 Existing Setting

On-Site Land Uses

The Project site is currently undeveloped grassland and oak woodland. Two intermittent streams traverse the Project site. A segment of Oak Creek Drive consisting of dirt and gravel bisects the Project site at a location just east of the golf course. The northern terminus of the Project site is Little John Road, a two-lane paved roadway.

General Plan and Zoning

Saddle Ranch Specific Plan Land Use Designation

The northern and southern portions of the Project site (APNs 055-051-059 and 055-051-068) are located within the Saddle Ranch Specific Plan area. Within the Specific Plan area, the Project site is designated as Commercial, Recreation, and Single Family Residential.

Calaveras County General Plan Land Use Designation

A portion of the Project site (APN 055-051-008) is located on a parcel with the Public/Institutional (PI) designation. According to the Calaveras County General Plan (General Plan), the PI land use designation identifies public or quasi-public facilities. Typical uses include public buildings and grounds, schools,

community centers, libraries, airports, cemeteries, fire stations, sewer and water treatment facilities, solid and liquid waste disposal facilities, power substations, and other similar and compatible uses.

Zoning

Title 17 of the Calaveras County Code contains the County's Zoning Ordinance (Zoning Code). The northern and southern portions of the Project site, located within the Specific Plan area, are zoned Specific Plan (SP). The SP zone allows for uses specified in the land use district in the adopted specific plan. The portion of the Project site that is outside of the Specific Plan area is zoned Public Service (PS). The PS zone allows for public uses.

Surrounding Uses

Uses surrounding the Project site include:

- North: Immediately north of the site is Little John Road. North of Little John Road are rural residential uses.
- East: East of the site is undeveloped grassland and oak woodland, rural residential uses, and a maintenance yard.
- South: South of the site is undeveloped grassland and oak woodland.
- West: West of the site are residential uses and the Golf Club at Copper Valley.

2.4 Project Characteristics

Proposed Development

Copper Valley Development Partners (the project applicant) is proposing to construct a revised and improved secondary access road to the Golf Club at Copper Valley. The Project would construct an approximately one-mile-long paved access road across previously undeveloped grassland and oak woodland from the intersection of Flint Trail and Little John Road to an unnamed access road approximately 1,800 feet southwest of Oak Creek Drive. The proposed access road begins and ends on lands within the Specific Plan area; however, a middle portion of the revised road is located in an adjacent parcel outside of the Specific Plan area (APN 055-051-008). The proposed Project, with a portion located on an adjacent parcel outside the Specific Plan area, avoids both the high-density residential area and protected wetlands and allows a greater number of subdivision residents a direct route to the minor collector roadway in the event of an emergency evacuations. The proposed Project would serve the previously entitled and largely constructed residential subdivision; the road is not intended to provide access to new development areas or to otherwise alter traffic patterns in the area, beyond providing a secondary access for an existing entitled development project.

Requested Entitlements and Other Approvals

Potentially significant environmental impacts resulting from the construction and operation of the Golf Club at Copper Valley (formerly Saddle Creek) were analyzed in earlier CEQA documents (State Clearinghouse Number 92042068). The Golf Club at Copper Valley is a fully entitled development. Mitigation measures and Project Conditions of Approval are in place for all land uses and activities within the Specific Plan area. Therefore, all previously analyzed potential environmental impacts unrelated to the relocation of the secondary access road will not be reanalyzed in this document.

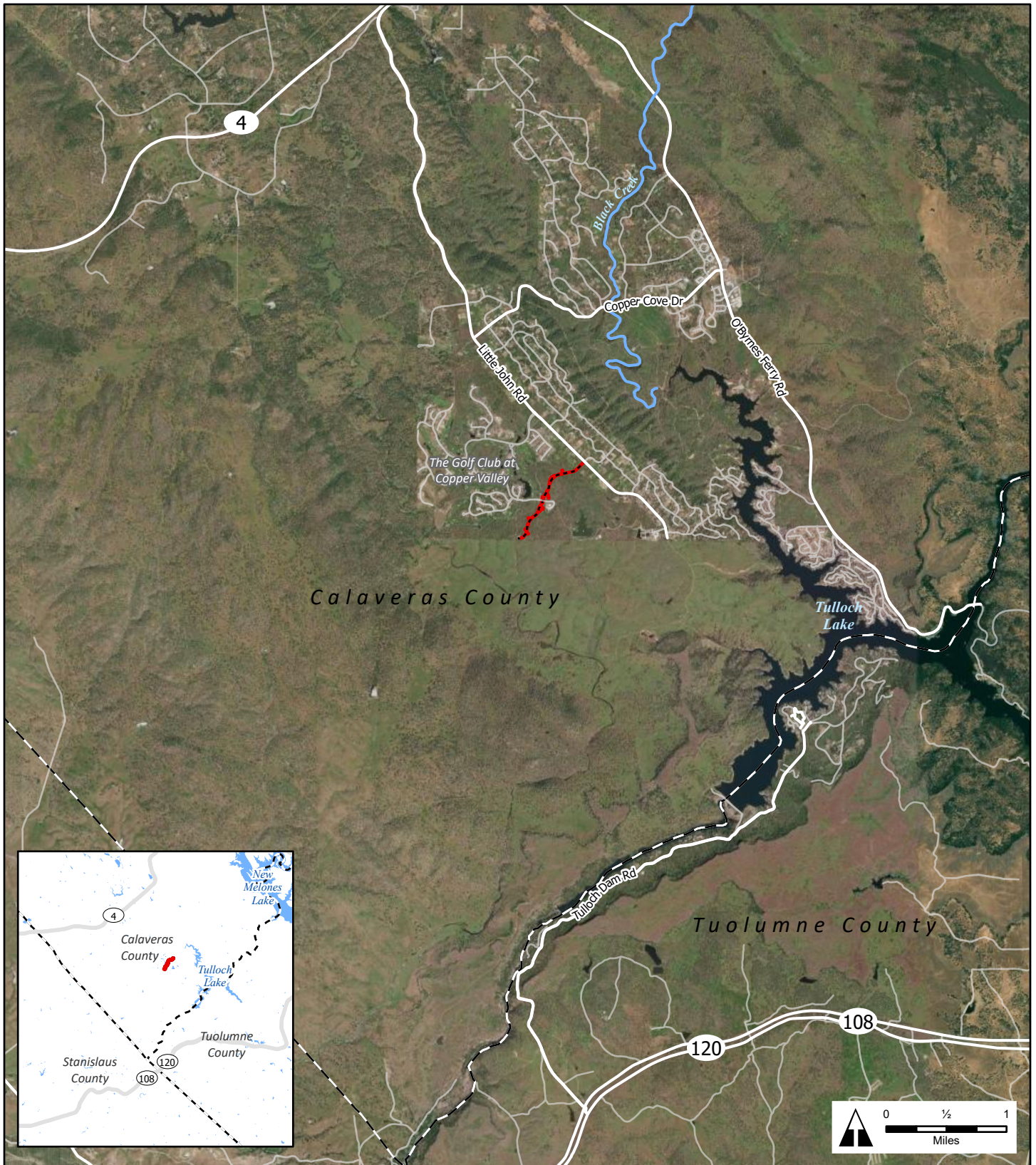
The Project requests approval of the following entitlements:

- Grading Permit

2.5 Permits and Approvals

Calaveras County, as the Lead Agency, has discretionary authority over the proposed Project. To implement the proposed Project, at a minimum, the following discretionary permits/approvals must be granted by the County and others in addition to the approval of the Mitigated Negative Declaration.

- Grading Permit
- U.S. Army Corps of Engineers permits
- Central Valley Regional Water Quality Control Board permits
- California Department of Fish and Wildlife permits



Legend

- Proposed South Flint Trail Secondary Access Road Centerline
- Area of Disturbance (9.64 ac)
- Black Creek
- County Boundary

**FLINT TRAIL ACCESS ROAD - IS/MND
CALAVERAS COUNTY, CALIFORNIA**

Figure 1. Regional Location



Legend

- Area of Disturbance (9.64 ac)
- Proposed South Flint Trail Secondary Access Road Centerline
- Unnamed Ephemeral Stream
- Lake/Pond

**FLINT TRAIL ACCESS ROAD - IS/MND
CALAVERAS COUNTY, CALIFORNIA**

Figure 2. Project Site

3.0 ENVIRONMENTAL CHECKLIST FORM

Background

1. Project Title: South Flint Trail Secondary Access Road Project
2. Lead Agency Name and Address: Calaveras County Planning Department 891 Mountain Ranch Road San Andreas, CA 95249
3. Contact Person and Address: Gabriel Elliott Director of Planning Calaveras County, Planning Department 891 Mountain Ranch Road San Andreas, CA 95249 Email: GElliott@co.calaveras.ca.us
4. Project Location: Southwest of the intersection of Little John Road and Flint Trail in the community of Copperopolis in southwestern Calaveras County (APNs 055-051-059, 055-051-008, and 055-051-068)
5. Project Sponsor's Name and Address: CV Development Partners, LLC 100 Town Square Road Copperopolis, CA 95228
6. General Plan Designation: Specific Plan (SP), Public/Institutional (PI)
7. Zoning: Specific Plan (SP), Public Service (PS)
8. Description of the Proposed Project: See Section 2.4.
9. Surrounding Land Uses and Setting: See Section 2.3.
10. Other public agencies whose approval is required: United States Army Corps of Engineers, California Department of Fish and Wildlife, Central Valley Regional Water Quality Control Board.
11. Have California Native American tribes traditionally and culturally affiliated with the project area requested consultation pursuant to Public Resources Code Section 21080.3.1? If so, is there a plan for consultation that includes, for example, the determination of significance of impacts to tribal cultural resources, procedures regarding confidentiality, etc.? N/A

Environmental Factors Potentially Affected

The environmental factors checked below would be potentially affected by this Project, involving at least one impact that is a “Potentially Significant Impact” or “Less Than Significant Impact With Mitigation Incorporated” as indicated by the checklist on the following pages.

	Aesthetics		Agriculture and Forestry Resources		Air Quality
X	Biological Resources	X	Cultural Resources		Energy
X	Geology and Soils		Greenhouse Gasses		Hazards and Hazardous Materials
	Hydrology and Water Quality		Land Use and Planning		Mineral Resources
	Noise		Population and Housing		Public Services
	Recreation		Transportation	X	Tribal Cultural Resources
	Utilities and Service Systems		Wildfire		Mandatory Findings of Significance

Determination

On the basis of this initial evaluation:

	I find that the proposed Project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.
X	I find that although the proposed Project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the Project have been made by or agreed to by the Project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.
	I find that the proposed Project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.
	I find that the proposed Project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.
	I find that although the proposed Project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed Project, nothing further is required.

CALAVERAS COUNTY

Gabriel Elliott
Director of Planning

Date

Evaluation of Environmental Impacts

The environmental analysis in this section is patterned after CEQA Guidelines Appendix G. An explanation is provided for all responses with the exception of “No Impact” responses, which are supported by the cited information sources. The responses consider the whole action involved, including on- and off-site project level and cumulative, indirect and direct, and short-term construction and long-term operational impacts. The evaluation of potential impacts also identifies the significance criteria or threshold, if any, used to evaluate each impact question. If applicable, mitigation measures are identified to avoid or reduce the impact to less than significant. There are four possible responses to each question:

- Potentially Significant Impact. This response is appropriate when there is substantial evidence that an effect is significant. If there are one or more "Potentially Significant Impact" entries, upon completion of the Initial Study, an EIR is required.
- Less than Significant Impact With Mitigation Incorporated. This response applies when the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less Than Significant Impact". The Lead Agency must describe the mitigation measures and briefly explain how they reduce the effect to a less than significant level.
- Less than Significant Impact. A less than significant impact is one which is deemed to have little or no adverse effect on the environment. Mitigation measures are, therefore, not necessary, although they may be recommended to further reduce a minor impact.
- No Impact. These issues were either identified as having no impact on the environment, or they are not relevant to the project.

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4.0 ENVIRONMENTAL ANALYSIS

4.1 Aesthetics

<i>Except as provided in Public Resources Code Section 21099, would the project:</i>	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Have a substantial adverse effect on a scenic vista?			X	
b. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?				X
c. 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?			X	
d. Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?			X	

Environmental Setting

Calaveras County is a rural county consisting of a number of diverse communities that are rich in scenic and historical value. The proposed Project is located southwest of the intersection of Little John Road and Flint Trail and east of the Golf Club at Copper Valley in the Copperopolis community area. The Project site has a generally rolling topography. Onsite uses include undeveloped grassland, oak woodland, and two intermittent streams. A segment of Oak Creek Drive consisting of dirt and gravel bisects the Project site at a location just east of the golf course. Rural residential uses exist to the north and west of the Project site.

- a) ***Have a substantial adverse effect on a scenic vista?***
- c) ***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?***

Less Than Significant Impact. A scenic vista is an area that is designated, signed, and accessible to the public for the express purposes of viewing and sightseeing. The County General Plan does not specifically

designate any scenic vistas within the County; however, the Conservation and Open Space Element notes that the County's scenic resources are some of its most valued assets and include forests, rolling hills, ranches, agricultural land, historic landscapes, oak woodlands, rock formations and other unique topographical features, river corridors, lakes, and streams.

For analysis purposes, a scenic vista can be discussed in terms of a foreground, middleground, and background viewshed. The middleground and background viewshed is often referred to as the broad viewshed. Examples of scenic vistas can include mountain ranges, valleys, ridgelines, or water bodies from a focal point of the forefront of the broad viewshed, such as visually important trees, rocks, or historic buildings. An impact would generally occur if a project would change the view to the middle ground or background elements of the broad viewshed, or remove the visually important trees, rocks, or historic buildings in the foreground.

The proposed Project would include grading and construction of roadway infrastructure on previously undeveloped land, but would not remove or impact existing trees. The Project site is not designated as a scenic vista by the County General Plan, nor does it contain any unique or distinguishing features that would qualify the site for designation as a scenic vista. However, the Project site does contain scenic resources identified in the County General Plan, including rolling hills, oak woodlands, and streams.

Due to the rolling topography of the Project site and surrounding area, public views of the Project site are limited to transient views from motorists traveling along Little John Road. In addition, these public views of rolling hills, oak woodlands, and streams are characteristic of Calaveras County, and exist throughout the region. Implementation of the proposed Project would change the existing visual character of the site from undeveloped grassland and oak woodland to roadway infrastructure. No structures would be constructed as part of the Project, nor would any features that could obstruct views.

Construction activities related to the Project would be temporary in nature and all construction equipment would ultimately be removed following completion of construction activities. Therefore, changes to local visual character and/or public views associated with construction of future development would be temporary, and impacts would be less than significant.

The proposed Project would result in the conversion of undeveloped land to roadway infrastructure, which would contribute to long-term changes in the regional landscape and visual character of the area. In order to reduce visual impacts, development of the Project site is required to be consistent with the General Plan and the County Code, which includes development standards and design guidelines. Implementation of these standards would ensure development is compatible with the scale and character of existing development and would help to retain the vividness, intactness, and unity of the existing rural landscapes. Further, the proposed Project is consistent with the planned development of the area. The proposed Project provides secondary access to the existing entitled Copper Valley development. Mitigation measures and Project Conditions of Approval are in place for all land uses and activities within the Saddle Ranch Specific Plan area. Therefore, implementation of the proposed Project would have a less than significant impact relative to this topic.

Mitigation Measures: No mitigation measures are required.

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

No Impact. The Project site is not located within view of a state scenic highway. The nearest officially designated State Scenic Highway is the portion of State Route 4 (SR 4) known as Ebbetts Pass National Scenic Byway, located approximately 28 miles northeast of the Project site. The nearest Eligible State Scenic Highway is State Route 108 (SR 108), located approximately eight miles east of the Project site (Caltrans, 2022). As the Project site is not visible from SR 4, SR 108, or any other state scenic highways, no impact would occur to scenic resources within a State Scenic Highway.

Mitigation Measures: No mitigation measures are required.

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

Less Than Significant Impact. Lighting effects are associated with the use of artificial light during the evening and nighttime hours. There are two primary sources of light: light emanating from building interiors passing through windows and light from exterior sources (i.e., street lighting, building illumination, security lighting, parking lot lighting, landscape lighting, and signage). Uses such as residences and hotels are considered light sensitive, since occupants have expectations of privacy during evening hours and may be subject to disturbance by bright light sources. Light spill is typically defined as the presence of unwanted light on properties adjacent to the property being illuminated. With respect to lighting, the degree of illumination may vary widely depending on the amount of light generated, height of the light source, presence of barriers or obstructions, type of light source, and weather conditions.

Glare is primarily a daytime occurrence caused by the reflection of sunlight or artificial light on highly polished surfaces such as window glass or reflective materials and, to a lesser degree, from broad expanses of light-colored surfaces. Daytime glare generation is common in urban areas and is typically associated with buildings with exterior facades largely or entirely comprised of highly reflective glass. Glare can also be produced during evening and nighttime hours by the reflection of artificial light sources such as automobile headlights. Glare generation is typically related to either moving vehicles or sun angles, although glare resulting from reflected sunlight can occur regularly at certain times of the year. Glare-sensitive uses include residences, hotels, transportation corridors, and aircraft landing corridors.

Implementation of the Project would introduce new sources of light and glare into the undeveloped Project site. No structures are proposed as part of the Project. New sources of light would occur primarily from vehicle headlights. New sources of glare would occur primarily from the windshields of vehicles. The Project would serve the previously entitled and largely constructed Copper Valley development; the road is not intended to provide access to new development areas or to otherwise alter traffic patterns in the area, beyond providing a secondary access for an existing entitled development project. Because the proposed Project is not increasing capacity based on existing or anticipated regional travel demands, the Project would not result in an increase in traffic volumes along Little John Road; therefore, an increase in light and glare from additional vehicles traveling through the area is not expected. The Project does not include the installation of any light sources. Therefore, the Project would not result in light and glare

impacts which would adversely affect day or nighttime views in the area. Impacts would be less than significant in this regard.

Mitigation Measures: No mitigation measures are required.

4.2 Agriculture and Forestry Resources

<i>Would the project:</i>	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?				X
b. Conflict with existing zoning for agricultural use, or a Williamson Act contract?				X
c. Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 1222(g)) or timberland (as defined in Public Resources Code section 4526)?				X
d. Result in the loss of forest land or conversion of forest land to non-forest use?				X
e. Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?				X

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

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

No Impact. The Project site does not contain any mapped Prime Farmland, Unique Farmland, or Farmland of Statewide Importance as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program (California Department of Conservation, 2022a). The County General Plan indicates that prime farmland in the County has been identified under the Williamson Act program and the full extent of prime or unique farmlands is unknown. According to the County General Plan EIR, the Project site is not under a Williamson Act contract. The Project site is zoned SP and PS. While the PS zone permits accepted farming practices and conditionally permits commercial agriculture land uses, neither the SP nor PS zone are intended primarily for agricultural uses. Further, the Project site is not located on lands

actively used for agricultural production. Thus, the Project would not involve the conversion of farmland to a non-agricultural use or conflict with existing zoning for agricultural use or a Williamson Act contract.

Mitigation Measures: No mitigation measures are required.

- c) ***Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?***
- d) ***Result in the loss of forest land or conversion of forest land to non-forest use?***

No Impact. According to Section 17.14.010 of the County Code, lands in the Timber Production (TP) zone are commonly known as timber preserves and are intended for the primary and productive use of timber resources. This includes timber and wildlife management. The Project site is zoned SP and PS and does not contain forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined in Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g)). Thus, the proposed Project would not conflict with existing zoning for, or cause rezoning of, forest land, timberland, or timberland zoned Timberland Production, and would not result in the loss of forest land or conversion of forest land to non-forest use.

Mitigation Measures: No mitigation measures are required.

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

No Impact. Refer to Responses 4.2(a) through 4.2(d), above. It is further noted that the project does not have the potential to indirectly induce growth in other locations in Calaveras County that could lead to the conversion of farmland or forest lands. As noted under the Project Description, the proposed Project would provide a secondary access road to a previously entitled development project that has already undergone thorough review under CEQA.

Mitigation Measures: No mitigation measures are required.

4.3 Air Quality

<i>Would the project:</i>	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Conflict with or obstruct implementation of the applicable air quality plan?			X	
b. 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?			X	
c. Expose sensitive receptors to substantial pollutant concentrations?			X	
d. Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?			X	

Environmental Setting

The Project site is located in the Mountain Counties Air Basin and is under the jurisdiction of the Calaveras County Air Pollution Control District (CCAPCD). The County is in nonattainment of the State and federal ozone standard, and the State particulate matter (PM₁₀) standard. Table 4.3-1 presents the federal and State attainment status for monitored pollutants.

**Table 4.3-1
Calaveras County Attainment Status Designations**

Pollutants	State Designation	Federal Designation
Ozone	Nonattainment	Nonattainment
Particulate Matter (PM ₁₀)	Nonattainment	Unclassified
Particulate Matter (PM _{2.5})	Unclassified	Unclassified/Attainment
Carbon Monoxide	Unclassified	Unclassified/Attainment
Nitrogen Dioxide	Attainment	Unclassified/Attainment
Sulfur Dioxide	Attainment	Unclassified/Attainment
Sulfates	Attainment	N/A
Lead	Attainment	Unclassified/Attainment
Hydrogen Sulfide	Unclassified	N/A
Visibility Reducing Particulates	Unclassified	N/A

Source: California Air Resources Board, *Maps of State and Federal Area Designations*, <https://ww2.arb.ca.gov/resources/documents/maps-state-and-federal-area-designations>, accessed December 19, 2022a.

- a) ***Conflict with or obstruct implementation of the applicable air quality plan?***
- b) ***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 Impact. The Project site is located in the Mountain Counties Air Basin and is under the jurisdiction of the CCAPCD. CCAPCD manages the County's air quality through education and enforcement of CCAPCD rules and California Air Resources Board (CARB) measures and regulations.

The County is in nonattainment of the State and federal ozone standard, and the State particulate matter (PM₁₀) standard. The primary source of ozone precursors (i.e., ROG and NOx) is mobile sources, including cars, trucks, buses, construction equipment, and agricultural equipment. Common sources of particulate matter pollution in the County include residential, development, and land management related activities such as woodstoves, windblown dust and/or diesel from construction activities, and forestry management burning. According to the County General Plan EIR, the nonattainment status of the County is predominantly attributable to the overwhelming transport of pollutants from the Central Valley and the Bay Area into the County. Nonetheless, air pollutant emissions resulting from construction and operation of development projects in the County have the potential to represent a significant air quality impact.

The Project proposes the development of roadway infrastructure to an existing entitled development project. The Project would serve the previously entitled and largely constructed Copper Valley development; the road is not intended to provide access to new development areas or to otherwise alter traffic patterns in the area, beyond providing a secondary access for an existing entitled development project. Because the proposed Project is not increasing capacity based on existing or anticipated regional travel demands, the Project would not result in new sources of air pollutant emissions. Therefore, Project operation would not violate applicable air quality standards or substantially contribute to an existing or projected air quality violation.

Construction-generated emissions are temporary and short term but have the potential to represent a significant air quality impact. The construction and development of the Project would result in the temporary generation of emissions. Emissions of airborne particulate matter are largely dependent on the amount of ground disturbance associated with site preparation activities. According to the County GP EIR, CCAPCD requires that any project including soil disturbance in excess of one acre submit a Dust Control Plan to the District for review and approval. The Project would disturb approximately 9.6 acres and would be subject to all applicable CCAPCD requirements, including submittal of a Dust Control Plan. Adherence to standard construction best management practices (BMPs) would further reduce construction-generated emissions. Accordingly, the limited development associated with the Project would not substantially increase construction emissions.

The Project is consistent with the General Plan and Specific Plan land use designation for the site, and would not result in increased impacts associated with air quality. The project would be subject to the applicable CCAPCD rules and regulations in addition to the General Plan policies and actions that aim to improve air quality and minimize pollutant concentrations. Therefore, the Project would have a less than significant impact related to the potential to conflict with or obstruct implementation of the applicable

air quality plan, or to 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.

Mitigation Measures: No mitigation measures are required.

- c) ***Expose sensitive receptors to substantial pollutant concentrations?***
- d) ***Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?***

Less Than Significant Impact. Sensitive receptors are those individuals within the population that have an increased sensitivity to air pollution or environmental contaminants. Sensitive receptors include children, the elderly, and those with pre-existing serious health problems affected by air quality, and sensitive receptor locations include schools, parks and playgrounds, day care centers, nursing homes, hospitals, and residences. The closest sensitive receptors are the residences located on either side of the Project site along Little John Road.

The construction phase of the Project would be temporary and pollution concentrations would be localized within the immediate vicinity. The implementation of all State, federal, and CCAPCD requirements would greatly reduce pollution concentrations generated during construction activities. Therefore, construction-related impacts to sensitive receptors from substantial pollutant concentrations would be a less than significant impact.

The Project would serve the previously entitled and largely constructed Copper Valley development; the road is not intended to provide access to new development areas or to otherwise alter traffic patterns in the area, beyond providing a secondary access for an existing entitled development project. Because the proposed Project is not increasing capacity based on existing or anticipated regional travel demands, the Project would not result in increased emissions. Therefore, operational impacts associated with Project implementation to sensitive receptors from substantial pollutant concentrations would be a less than significant impact.

The proposed Project would not generate objectionable odors that would adversely affect substantial numbers of people. People in the immediate vicinity of construction activities may be subject to temporary odors typically associated with construction activities (diesel exhaust, hot asphalt, etc.). However, any odors generated by construction activities would be minor and would be temporary in duration. Operation of the proposed Project does not involve land uses associated with other emissions such as odor sources. The Project proposes to construct roadway infrastructure to an existing development project, and would not involve activities that would emit objectionable odors affecting substantial numbers of people. Therefore, the proposed Project would not create objectionable odors and impacts would be less than significant.

Mitigation Measures: No mitigation measures are required.

4.4 Biological Resources

<i>Would the project:</i>	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?		X		
b. 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 U.S. Fish and Wildlife Service?			X	
c. 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?		X		
d. Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?		X		
e. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?			X	
f. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?				X

This section is based primarily on the *Biological Resource Evaluation, Flint Trail Access Road Project* (Biological Resource Evaluation), prepared by Colibri Ecological Consulting, dated April 2022; *Aquatic Resource Delineation Report, North Crossing, Flint Trail Access Road Project* (Aquatic Resource Report, North Crossing), prepared by Colibri Ecological Consulting, dated March 2022; *Aquatic Resource*

Delineation Report, South Crossing, Flint Trail Access Road Project (Aquatic Resource Report, South Crossing), prepared by Colibri Ecological Consulting, dated March 2022; and *Special-Status Plan Survey Report* (Plant Survey Report), prepared by Colibri Ecological Consulting, dated July 2022. These documents are included as Appendix A, Biological Resource Evaluation.

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

Less Than Significant Impact with Mitigation Incorporated. The Project site is currently undeveloped grassland and oak woodland. Two intermittent streams traverse the Project site. A segment of Oak Creek Drive consisting of dirt and gravel bisects the Project site at a location just east of the golf course. The northern terminus of the Project site is Little John Road, a two-lane paved roadway.

There are numerous special-status wildlife and plant species known to occur within the region. As part of the Biological Resource Evaluation, a search of the California Department of Fish and Wildlife (CDFW) California Natural Diversity Database (CNDDDB), California Native Plant Society (CNPS) Inventory of Rare and Endangered Plants, and U.S. Fish and Wildlife Service (USFWS) Official Species List was completed. Additionally, field reconnaissance surveys of the Project site were conducted in March, June, and July 2022 to evaluate and document the potential for the area to support State- or federally-protected resources.

Searching the CNDDDB for records of special-status species from the Copperopolis 7.5-minute USGS topographic quad and the eight surrounding quads produced 164 records of 53 species. Of those 53 species, 13 are not given further consideration because they are not CEQA-recognized as special-status species. Of the remaining 40 species, 14 are known from within five miles of the Project site. Of those species, only Chinese Camp brodiaea (*brodiaea pallida*) and beaked clarkia (*Clarkia rostrata*) could occur on or near the Project site due to the existence of potential habitat for these species. In addition, the Project site provides potential habitat for forked hare-leaf (*Lagophylla dichotoma*), Stanislaus monkeyflower (*Erythranthe marmorata*), and veiny monardella (*Monardella venosa*), which were identified in the nine-quad search, and could occur on or near the Project site.

A number of migratory birds protected under the Migratory Bird Treaty Act (MBTA) and California Fish and Game Code (CFGF) could nest on or near the Project site, including, but not limited to, mourning dove (*Zenaida macroura*), oak titmouse (*Baeolophus inornatus*), and western bluebird (*Sialia mexicana*).

Searching the CNPS inventory of rare and endangered plants of California yielded 23 species, two of which have a rank of 2B (meaning plants that are rare, threatened, or endangered in California but are more common elsewhere), and 21 of which have a rank of 1B (meaning plants that are rare, threatened, or endangered in California and elsewhere). Five of those species, which were also identified in the CNDDDB search, could occur on or near the Project site based on the presence of habitat.

The five special-status species that could occur on or near the Project site are discussed further below.

Chinese Camp brodiaea: Chinese Camp brodiaea is an erect, herbaceous, perennial plant in the family Themidaceae. Chinese Camp brodiaea is federally listed as threatened, state listed as endangered, and

has a CRPR of 1B.1 (plants rare, threatened, or endangered in California and elsewhere; seriously threatened in California). It is known from three populations along limited stretches of intermittent streams in the western Sierra Nevada foothills of northern Tuolumne and southern Calaveras counties. Chinese Camp brodiaea grows in overflow channels, seeps, and springs in clays that may be derived from serpentine soils; it flowers May–June.

Four CNDDDB records from 2005–2008 are known from within 5 miles of the Project site. The nearest records of Chinese Camp brodiaea are from approximately 0.7 miles south of the Project site along Littlejohns Creek and approximately 0.7 miles northeast of the Project site along Black Creek. The intermittent drainages on and near the Project site provide potential habitat for Chinese Camp brodiaea. Although this species was not detected during the reconnaissance survey, the survey was not conducted within the blooming period. This species could occur in the survey area. However, the proposed access road will span the intermittent drainages with bridges. Consequently, no impacts to Chinese Camp brodiaea are anticipated.

Beaked clarkia: Beaked clarkia is an annual herb in the family Onagraceae with a CRPR of 1B.3 (i.e., plants rare, threatened, or endangered in California and elsewhere; not very threatened in California). It grows erect stems to 1.6 feet tall with lavender-pink to reddish purple flowers below closed, hanging flower buds. It occurs in grasslands and woodlands of the Sierra Nevada foothills; it flowers April–May.

Two historic CNDDDB records of beaked clarkia are known from within 10 miles of the Project. The nearest record of beaked clarkia is a 1994 CNDDDB occurrence from approximately 3.5 miles west of the Project site. The grassland and foothill woodland in and around the Project site provide potential habitat for beaked clarkia. This species was not detected during the reconnaissance surveys conducted in March, June, or July 2022. Although the surveys were not conducted during the April and May blooming period, pre-blooming individuals would have been detected in March or post-blooming individuals would have been detected in June had they been present. Consequently, no impacts to this species are anticipated.

Forked hare-leaf: Forked hare-leaf is an annual herb in the family Asteraceae with a CRPR of 1B.1 (i.e., plants rare, threatened, or endangered in California and elsewhere; seriously threatened in California). It grows to two feet tall with distally glandless or sparsely stalked-glandular stems, panicle-like inflorescences, and yellow ray flowers. Forked hare-leaf occurs in grassland and woodland in the western Sierra Nevada foothills, eastern San Joaquin Valley, and eastern Coast Range; it flowers April–May.

Two historic CNDDDB records of forked hare-leaf are known from within 10 miles of the Project site. The nearest record of forked hare-leaf involves a vague, non-specific 2000 CNDDDB occurrence overlapping the northern third of the survey area. The grassland and open woodland in and around the Project site provide potential habitat for forked hare-leaf. This species was not detected during the reconnaissance surveys conducted in March, June, or July 2022. Although the surveys were not conducted during the April and May blooming period, pre-blooming individuals would have been detected in March or post-blooming individuals would have been detected in June had they been present. Consequently, no impacts to this species are anticipated.

Stanislaus monkeyflower: Stanislaus monkeyflower is an annual herb in Family Phrymaceae with a CRPR of 1B.1 (i.e., plants rare, threatened, or endangered in California and elsewhere; seriously threatened in California). It grows to 0.9 feet tall with glandular, hairy stems, ovate to elliptical leaves, and yellow

flowers. Stanislaus monkeyflower occurs in seeps and streambanks in the western Sierra Nevada foothills; it flowers March–May.

Two historic CNDDDB records of Stanislaus monkeyflower are known from within 10 miles of the Project site. The nearest record is of a non-specific 1923 CNDDDB occurrence approximately 7 miles southeast of the Project site near Highway 120. The intermittent drainages and associated streambanks and wet meadows on and near the Project site provide potential habitat for Stanislaus monkeyflower. Although this species was not detected during the reconnaissance survey, the survey was conducted early in the blooming period. This species could occur within the survey area, but the proposed access road will span the intermittent drainages with bridges. Consequently, no impacts to Stanislaus monkeyflower are anticipated.

Veiny monardella: *Veiny monardella* is an annual herb in the family Lamiaceae with a CRPR of 1B.1 (i.e., plants rare, threatened, or endangered in California and elsewhere; seriously threatened in California). It grows to 1.3 feet tall with stout stems, linear-oblong to lanceolate leaves, and ovate clusters of hairy, purple flowers. *Veiny monardella* occurs in grasslands in the central and northern Central Valley; it flowers June–July.

One historic CNDDDB record of *veiny monardella* is known from within 10 miles of the Project site. The nearest record of *veiny monardella* is a 1998 CNDDDB occurrence approximately 6.5 miles east of the Project Site. The grassland in and around the Project site provide potential habitat for *veiny monardella*. This species was not detected during the reconnaissance surveys conducted in March, June, or July 2022. Consequently, no impacts to this species are anticipated.

Conclusion

Implementation of the Project would result in temporary and permanent impacts to pasture and oak forest land cover. The Project site provides potential habitat for five species listed as threatened or endangered under the federal or State Endangered Species Act or considered by the CNPS to be rare, threatened, or endangered. Construction activities such as excavating, trenching, or using other heavy equipment that disturbs or harms a special-status species could constitute a significant impact. No candidate, sensitive, or special-status species were detected within a 50-foot buffer of the Project site during the field reconnaissance surveys conducted in March, June, and July 2022 as part of the Biological Resources Evaluation. As such, impacts to these special status plant species is not anticipated, and no mitigation is required.

The Project could impede the use of nursery sites for native birds protected under the MBTA and CFGC. Migratory birds are expected to nest on and near the Project site. Construction disturbance during the breeding season could result in the incidental loss of fertile eggs or nestlings or otherwise lead to nest abandonment. Disturbance that causes nest abandonment or loss of reproductive effort can be considered take under the MBTA and CFGC. Loss of fertile eggs or nesting birds, or any activities resulting in nest abandonment, could constitute a significant effect if the species is particularly rare in the region. Construction activities such as excavating, trenching, and grading that disturb a nesting bird on the Project site or immediately adjacent to the construction zone could constitute a significant impact.

The following mitigation measure would reduce the potential special-status wildlife impacts noted above to a less than significant level.

Mitigation Measures:

BIO-1: To the extent practicable, construction shall be scheduled to avoid the nesting season, which extends from February through August. If it is not possible to schedule construction between September and January, pre-construction surveys for nesting birds shall be conducted by a qualified biologist to ensure that no active nests will be disturbed during the implementation of the Project. A pre-construction survey shall be conducted no more than 14 days prior to the initiation of construction activities. During this survey, the qualified biologist shall inspect all potential nest substrates in and immediately adjacent to the impact areas. If an active nest is found close enough to the construction area to be disturbed by these activities, the qualified biologist shall determine the extent of a construction-free buffer to be established around the nest. If work cannot proceed without disturbing the nesting birds, work may need to be halted or redirected to other areas until nesting and fledging are completed or the nest has otherwise failed for non-construction related reasons.

- b) *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 U.S. Fish and Wildlife Service?***
- c) *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 Impact With Mitigation Incorporated. Riparian habitats are described as the land and vegetation that is situated along the bank of a stream or river. A sensitive natural community is a biological community that is regionally rare, provides important habitat opportunities for wildlife, is structurally complex, or is in other ways of special concern to local, State, or federal agencies. Wetlands are areas where water covers the soil, or is present either at or near the surface of the soil all year or for varying periods of time during the year. Wetlands are ecologically complex habitats that support a variety of both plant and animal life. The federal government defines wetlands as “those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support and under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions” [33 C.F.R. §328.3(b)]. Wetlands require wetland hydrology, hydric soils, and hydrophytic vegetation. Examples of wetlands include freshwater marsh, seasonal wetlands, and vernal pool complexes that have a hydrologic link to waters of the U.S.

The Biological Resources Evaluation found that the Project site is dominated by blue oak woodland and forest with smaller areas of wild oats and annual brome grasslands. Two intermittent streams are present on the Project site, as are sections of gravel road. No rare natural communities were found on the Project site or vicinity.

The Biological Resources Evaluation identified four features determined to be jurisdictional and under the regulatory authority of the United States Army Corps of Engineers (USACE), the CDFW, and the Regional

Water Quality Control Board (RWQCB). All were intermittent streams, including the Ramsey Gulch and two unnamed tributaries to Ramsey Gulch in the central portion of the Project vicinity about 400 feet southwest of Oak Creek Drive, and another unnamed tributary to Ramsey Gulch in the northern portion of the Project vicinity about 0.24 miles southwest of Little John Road. Ramsey Gulch flows into Littlejohns Creek, which flows into the San Joaquin River via French Camp Slough, a traditional navigable water under Section 404 of the Clean Water Act. As water is present in each stream channel most years from December to May or June, the streams meet the criteria of relatively permanent water under Section 404 of the Clean Water Act. Therefore, the streams are likely regulated by the USACE. As the intermittent streams contain surface water and have a defined bed and bank, they are likely regulated by the SWRCB and the CDFW.

According to the Biological Resources Evaluation, no impacts to regulated habitats are expected as a result of Project implementation. Ramsey Gulch and the northern tributary would each be spanned with a bridge, and the other two tributaries are outside the Project footprint. Additionally, protected wetland areas are described in the US Army Corps of Engineers Nationwide Permit 26, No. 199100807, June 13, 1998, and are shown on recorded maps of the development. The protected wetland areas are also described and protected in perpetuity by the "Declaration of Restrictions" recorded June 12, 1998, as instrument #1998 7539. None of these identified protected wetland areas would be impacted by the proposed Project. Wetland areas in the vicinity of the proposed construction activities would be monitored and maintained by the project applicant, as required by Mitigation Measure BIO-2. Compliance with the following mitigation measure would reduce potential impacts to riparian habitat or other sensitive natural communities, or State or federally protected wetlands, to a level that is less than significant.

Mitigation Measures:

BIO-2: Prior to project construction activities, a buffer zone (i.e., protected area) shall be established around the top edge of bank of all wetlands within the Project's Area of Potential Effects (APE). The installation of barrier fencing prior to any ground disturbing activities shall be the responsibility of the project applicant, and the placement and location of the barriers shall be overseen by a qualified biologist. No construction equipment, vehicles, or ground disturbing activities shall be allowed within the protected area, and barrier fencing shall be required to be in place throughout all stages of project construction.

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

Less Than Significant Impact With Mitigation Incorporated. The Biological Resources Evaluation did not reveal any documented wildlife corridors on or adjacent to the Project site. However, as discussed in Response 4.4(a), the Project would result in temporary and permanent impacts to pasture and oak forest land cover and could impede the use of nursery sites for native birds protected under the MBTA and CFGC. Migratory birds are expected to nest on and near the Project site. Construction disturbance during the breeding season could result in the incidental loss of fertile eggs or nestlings or otherwise lead to nest abandonment. Disturbance that causes nest abandonment or loss of reproductive effort can be considered take under the MBTA and CFGC. Loss of fertile eggs or nesting birds, or any activities resulting

in nest abandonment, could constitute a significant effect if the species is particularly rare in the region. Construction activities such as excavating, trenching, and grading that disturb a nesting bird on the Project site or immediately adjacent to the construction zone could constitute a significant impact. Implementation of Mitigation Measure BIO-1 would reduce the above-stated special-status wildlife impacts to a less than significant level.

The Biological Resources Evaluation did not identify suitable habitat for any listed or protected fish species within the Project site. Specifically, the Project site lacked connectivity to the aquatic habitat required for Delta smelt and steelhead trout - Central Valley Distinct Population Segment; the Project site does not contain vernal pools or other potentially suitable aquatic features for vernal pool fairy shrimp and vernal pool tadpole shrimp; and the Project site is outside the known range for Red Hills roach. Therefore, following implementation of Mitigation Measure BIO-1, impacts related to the movement of any resident or migratory wildlife species or with established resident or migratory wildlife corridors, or impeding the use of wildlife nursery sites would be considered less than significant.

Mitigation Measures: Refer to Mitigation Measure BIO-1.

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

Less Than Significant Impact. Implementation of the Project would result in temporary and permanent impacts to pasture and oak forest land cover. Native oak trees are located within the vicinity of the Project, but would not be removed or impacted as part of the Project. The County is currently working on a draft Oak Woodlands Ordinance that would mitigate the loss of Oak Woodlands and/or individual oak trees, but the ordinance is not yet in place. In addition, the County General Plan Conservation and Open Space Element contains goals, policies, and implementation measures related to the protection of biological resources. Specifically, Implementation Measure COS-4d requires that development projects subject to a discretionary entitlement and CEQA review and enlist the services of a qualified professional (i.e., a qualified biologist, botanist, arborist, or Registered Professional Forester) to survey the property in question for oak woodlands and, if a potentially significant impact to oak woodlands is identified, to recommend options for avoidance and/or mitigation consistent with the provisions of Public Resources Code Section 21083.4. As the Project would comply with local regulations and would not remove or impact native oak trees, impacts would be less than significant in this regard.

Mitigation Measures: No mitigation measures are required.

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

No Impact. The Project site is not located within the boundaries of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State habitat conservation plan. Thus, the Project would not conflict with any of these plans and no impact would occur.

Mitigation Measures: No mitigation measures are required.

4.5 Cultural Resources

<i>Would the project:</i>	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Cause a substantial adverse change in the significance of a historical resource pursuant to § 15064.5?			X	
b. Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5?		X		
c. Disturb any human remains, including those interred outside of dedicated cemeteries?		X		

This section is based primarily on the *Cultural Resources Inventory and Evaluation Report, Copper Valley Parcel Acquisition Project* (Cultural Resources Assessment), prepared by Solano Archaeological Services, dated November, 2021 and included in its entirety as Appendix B, Cultural Resources Assessment. The Cultural Resources Assessment established a 41.45-acre Area of Potential Effects (APE) to encompass the maximum limits of potential future ground-disturbing activities that would reasonably be expected from the proposed parcel acquisition and eventual road construction.

a) Cause a substantial adverse change in the significance of a historical resource pursuant to § 15064.5?

Less Than Significant Impact. As part of the Cultural Resources Assessment, a search of the Central California Information Center (CCIC) of the California Historical Resources Information System was performed that includes the Project site APE and a surrounding 0.5-mile area. The CCIC search also included the National Register of Historic Places Historic Properties Directory, California Register of Historic Places Historic Properties Directory, California Historical Landmarks, California Points of Historical Interest, and California Inventory of Historic Resources. The results of the search indicated that no previously documented cultural resources were located within the APE; however, 12 sites and artifacts had been documented in the 0.5-mile search area surrounding the APE, including prehistoric and historic-era resources. Review of historic-era maps, aerial photography, and a pedestrian field survey were also conducted.

The Cultural Resources Assessment did not result in the documentation of any prehistoric or historic-era sites, features, or artifacts within the APE. In addition, due to a lack of Tertiary gravels and quartz occurrences, it does not appear that mining was an important historic pursuit within or adjacent to the APE. As a result, the Cultural Resources Assessment determined it is unlikely that any subsurface or otherwise presently undocumented mining resources are located within the APE. Other historic-period activities such as ranching, or transportation would have left remains on the ground surface but none were noted as a result of the pedestrian field survey.

As no historic or potentially historic built environment resources are located within the site, the Project would not cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5 and impacts would be less than significant.

Mitigation Measures: No mitigation measures are required.

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

Less Than Significant Impact With Mitigation Incorporated. As stated above, results of the records search indicated that no previously documented cultural resources were located within the APE; however, 12 sites and artifacts had been documented in the 0.5-mile search area surrounding the APE, including prehistoric and historic-era resources. Review of historic-era maps, aerial photography, and a pedestrian field survey were also conducted.

The Cultural Resources Assessment did not result in the documentation of any prehistoric or historic-era sites, features, or artifacts within the APE. In addition, due to a lack of significant water sources or concentrations of other resources potentially attractive to native peoples, the APE exhibits a low level of sensitivity for containing prehistoric sites. However, as the proposed Project includes ground-disturbing activities, there is the potential for discovery of a previously unknown archaeological resource. With implementation of Mitigation Measure CUL-1, the Project would not cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5 and impacts would be less than significant.

Mitigation Measures:

CUL-1: Should buried, unforeseen archaeological deposits be encountered during any construction activity, work must cease within a 50-foot radius of the discovery. If a potentially significant discovery is made, it must be treated in accordance with 33 CFR 325, Appendix C which generally states that the lead federal agency (in this case the Corps) must be notified immediately of the find to ensure that mitigation/management recommendations are developed. In the event that human remains, or any associated funerary artifacts are discovered during construction, all work must cease within the immediate vicinity of the discovery. In accordance with the California Health and Safety Code (Section 7050.5), the Calaveras County Sheriff/Coroner must also be contacted immediately. If the remains are deemed to be Native American, the coroner must notify the NAHC, which will in turn appoint and notify a Most Likely Descendent (MLD) to act as a tribal representative. The MLD will work with a qualified archaeologist to determine the proper treatment of the human remains and associated funerary objects. Construction activities will not resume until the human remains are exhumed and official notice to proceed is issued.

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

Less Than Significant Impact With Mitigation Incorporated. There are no dedicated cemeteries within the Project site or surrounding area. Most Native American human remains are found in association with prehistoric archaeological sites. As discussed above, there are no known archaeological resources within the Project site; however, the potential for discovery of previously unknown archaeological resources exists. There is the potential for previously unknown human remains to be discovered/disturbed during

the Project's ground disturbing activities, resulting in a potentially significant impact. Implementation of Mitigation Measure CUL-1 would ensure that in the event human remains are discovered, the remains would be handled in accordance with applicable laws, including California Health and Safety Code §7050.5, Public Resources Code §5097.98 and the California Code of Regulations §15064.5(e). Thus, with implementation of Mitigation Measures CUL-1, impacts associated with the potential disturbance of human remains would be reduced to a less than significant level.

Mitigation Measures: Refer to Mitigation Measure CUL-1.

4.6 Energy

<i>Would the project:</i>	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?			X	
b. Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?			X	

REGULATORY FRAMEWORK

California Building Energy Efficiency Standards (Title 24)

The 2019 California Building Energy Efficiency Standards for Residential and Nonresidential Buildings (California Code of Regulations, Title 24, Part 6), commonly referred to as “Title 24,” became effective on January 1, 2020. In general, Title 24 requires the design of building shells and building components to conserve energy. The standards are updated periodically to allow consideration and possible incorporation of new energy efficiency technologies and methods. The 2019 Title 24 standards require installation of energy efficient windows, insulation, lighting, ventilation systems, rooftop solar panels, and other features that reduce energy consumption in homes and businesses.

California Green Building Standards (CALGreen)

The 2019 California Green Building Standards Code (California Code of Regulations, Title 24, Part 11), commonly referred to as CALGreen, went into effect on January 1, 2020. CALGreen is the first-in-the-nation mandatory green buildings standards code. The California Building Standards Commission developed CALGreen in an effort to meet the State’s landmark initiative Assembly Bill (AB) 32 goals, which established a comprehensive program of cost-effective reductions of greenhouse gas (GHG) emissions to 1990 levels by 2020. CALGreen was developed to (1) reduce GHG emissions from buildings; (2) promote environmentally responsible, cost-effective, and healthier places to live and work; (3) reduce energy and water consumption; and (4) respond to the environmental directives of the administration. CALGreen requires that new buildings employ water efficiency and conservation, increase building system efficiencies (e.g. lighting, heating/ventilation and air conditioning [HVAC], and plumbing fixtures), divert construction waste from landfills, and incorporate electric vehicles charging infrastructure. There is growing recognition among developers and retailers that sustainable construction is not prohibitively expensive, and that there is a significant cost-savings potential in green building practices and materials (U.S. Green Building Council, 2020).

Senate Bill 100

Senate Bill (SB) 100 (Chapter 312, Statutes of 2018) requires that retail sellers and local publicly owned electric utilities procure a minimum quantity of electricity products from eligible renewable energy

resources so that the total kilowatt-hours (kWh) of those products sold to their retail end-use customers achieve 44 percent of retail sales by December 31, 2024; 52 percent by December 31, 2027; 60 percent by December 31, 2030; and 100 percent by December 31, 2045. The bill requires the California Public Utilities Commission (CPUC), California Energy Commission (CEC), State board or the California Air Resources Board's (CARB), and all other State agencies to incorporate the policy into all relevant planning. In addition, SB 100 requires the CPUC, CEC, and CARB to utilize programs authorized under existing statutes to achieve that policy and, as part of a public process, issue a joint report to the Legislature by January 1, 2021, and every four years thereafter, that includes specified information relating to the implementation of SB 100.

a) *Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?*

b) *Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?*

Less Than Significant Impact. The means to achieve the goal of conserving energy include decreasing overall energy consumption, decreasing reliance on natural gas and oil, and increasing reliance on renewable energy sources. In particular, the proposed Project would be considered “wasteful, inefficient, and unnecessary” if it were to violate State and federal energy standards and/or result in significant adverse impacts related to project energy requirements, energy inefficiencies, energy intensiveness of materials, cause significant impacts on local and regional energy supplies or generate requirements for additional capacity, fail to comply with existing energy standards, otherwise result in significant adverse impacts on energy resources, or conflict or create an inconsistency with applicable plan, policy, or regulation.

The Project proposes the development of roadway infrastructure to an existing entitled development project. The Project would serve the previously entitled and largely constructed Copper Valley development; the road is not intended to provide access to new development areas or to otherwise alter traffic patterns in the area, beyond providing a secondary access for an existing entitled development project. Because the proposed Project is not increasing capacity based on existing or anticipated regional travel demands, the Project would not generate new vehicle trips. Therefore, the Project would not result in energy usage during operation.

Energy usage during the construction phase would directly correlate to the energy consumption (including fuel) used by vehicle trips generated during project construction and fuel used by off-road construction vehicles during construction. Construction-related energy usage can vary substantially depending on the level of activity, length of the construction period, specific construction operations, and types of equipment. The Project would only use the amount of energy resources necessary to complete construction. Energy usage during the construction phase of the proposed Project would be typical for a project of this kind, and therefore would not represent a wasteful, inefficient, or unnecessary consumption of energy resources.

Calaveras County has not adopted a local renewable energy or energy efficient plan. All new construction would comply with adopted State regulations. Therefore, the Project would not result in potentially significant environmental impacts due to inefficient, wasteful, or unnecessary use of energy resources

during construction and operation, nor conflict with or obstruct a State or local plan for renewable energy or energy efficiency. This is a less than significant impact.

Mitigation Measures: No mitigation measures are required.

4.7 Geology and Soils

<i>Would the project:</i>	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Directly or indirectly cause 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? Refer to Division of Mines and Geology Special Publication 42.			X	
2) Strong seismic ground shaking?			X	
3) Seismic-related ground failure, including liquefaction?			X	
4) Landslides?			X	
b. Result in substantial soil erosion or the loss of topsoil?			X	
c. Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on-or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?			X	
d. 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?			X	
e. Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?				X
f. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?		X		

This section is based primarily on the *Geotechnical Engineering Study: South Flint Trail Extension Project* (Geotechnical Evaluation), prepared by Condor Earth, dated November 11, 2022 and included in its entirety as Appendix D, *Geotechnical Evaluation*.

- a) ***Directly or indirectly cause 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? Refer to Division of Mines and Geology Special Publication 42.***

Less Than Significant Impact. The Alquist-Priolo Earthquake Fault Zoning Act was passed in 1972 to mitigate the hazard of surface faulting to structures for human occupancy. The Act's main purpose is to prevent the construction of buildings used for human occupancy on the surface trace of active faults. The Act requires the State Geologist to establish regulatory zones, known as "Alquist-Priolo Earthquake Fault Zones," around the surface traces of active faults and to issue appropriate maps. If an active fault is found, a structure for human occupancy cannot be placed over the trace of the fault and must be set back from the fault (typically 50 feet). According to the Geotechnical Evaluation, there are no active or potentially active faults known to cross the Project site and the Project site is not located in a Fault-Rupture Hazard Zone as established by the Alquist-Priolo Earthquake Fault Zoning Act. Therefore, the probability of damage from surface fault rupture is considered to be low and impacts would be less than significant in this regard.

Mitigation Measures: No mitigation measures are required.

- 2) ***Strong seismic ground shaking?***

Less Than Significant Impact. The County Multi-Jurisdictional Hazard Mitigation Plan (MJHMP) identifies potentially active faults within the County, including the Bear Mountains and Melones Fault Zones, part of the Foothills Fault System, which pass through the western County near Valley Springs, Mokelumne Hill and south of Copperopolis (Calaveras County, 2021). A number of faults do not traverse the County, but may cause shaking effects inside the County, including the San Andreas Fault, the Hayward Fault, the Calaveras Fault and the Greenville Fault. Rupture of any of these faults, or of a known or unknown fault in the region, could cause seismic ground shaking. The intensity of ground shaking on the Project site would depend upon the earthquake's magnitude, distance to the epicenter, and geology of the area between the Project site and epicenter. The MJHMP indicates that based on patterns of previous occurrences, the probability of damaging seismic ground shaking in the County as a result of an earthquake is unlikely.

The Geotechnical Evaluation indicates that the Project site is near several moderately active faults within the Foothills Fault System capable of generating strong earthquakes. The Geologic Evaluation concluded that development of the Project, as proposed, is suitable from a geotechnical standpoint for construction provided the recommendations presented in the Geologic Evaluation are incorporated into design and construction of the Project. The Geotechnical Evaluation includes specific recommendations based on the results of the subsurface evaluation and laboratory testing, review of referenced geologic materials, and

geotechnical analysis. Specific recommendations address earthwork and grading, underground utility trenches, surface drainage control, retaining walls, pavements, and ground corrosivity, among other factors. Further, design of the proposed Project in accordance with the current California Building Code is anticipated to adequately mitigate concerns with ground shaking.

Chapter 15.04 of the County Code contains the County building code. Section 15.04.050 adopts and incorporates into the County Code the California Building Standards Code (CBSC), as amended, which includes design requirements to mitigate the effects of potential hazards associated with seismic ground shaking. Compliance with the County's established regulatory framework and standard engineering practices and design criteria would ensure potential impacts associated with strong seismic ground shaking at the Project site would be reduced to a less than significant level.

Mitigation Measures: No mitigation measures are required.

3) Seismic-related ground failure, including liquefaction?

Less Than Significant Impact. Liquefaction is a phenomenon where earthquake-induced ground vibrations increase the pore pressure in saturated, granular soils until it is equal to the confining, overburden pressure. Engineering research of soil liquefaction potential indicates that generally three basic factors must exist concurrently in order for liquefaction to occur. These factors include:

- A source of ground shaking, such as an earthquake, capable of generating soil mass distortions;
- A relatively loose silty and/or sandy soil; and
- A relative shallow groundwater table (within approximately 50 feet below ground surface) or completely saturated soil conditions that will allow positive pore pressure generation.

According to the Geotechnical Evaluation, no potentially liquefiable deposits were identified at the Project site, and groundwater is not anticipated within 50 feet of the ground surface; therefore, the risk from liquefaction is considered non-existent. Additionally, the County General Plan FEIR notes that because the County is not located within a seismic hazard zone, the entire County, including the Project site, would not be considered at risk from seismic-related ground failure hazards, including liquefaction. Therefore, the Project would not expose people or structures to potential substantial adverse effects related to liquefaction and impacts would be less than significant in this regard.

Mitigation Measures: No mitigation measures are required.

4) Landslides?

Less Than Significant Impact. As indicated in the County General Plan FEIR, Calaveras County is not located in a seismic hazard zone; thus, the Project site is not considered to be at risk from seismic-related ground failure hazards, including landslides. The County's MJHMP does not identify the Project area as an area with high landslide susceptibility (Calaveras County, 2021). However, as indicated in the County General Plan FEIR, areas with steep slopes (20 percent grade or higher) have an elevated risk of landslide from erosion. The Geotechnical Report notes that the Project site consists of rolling hills with natural slopes ranging up to 15 percent. As such, the Project site is exposed to little or no risk associated with landslides. Construction activities associated with the Project would be conducted in accordance with Chapter 15.05

of the County Code, which contains the County's grading regulations. Compliance with the County's established regulatory framework and standard construction and engineering practices would ensure potential impacts associated with landslides at the Project site would be reduced to a less than significant level.

Mitigation Measures: No mitigation measures are required.

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

Less Than Significant Impact. Construction activities associated with the Project would involve excavation and other soil disturbing activities that have the potential to temporarily increase erosion and sedimentation rates above existing conditions.

The proposed Project would be subject to the County's Grading and Drainage Ordinance (Chapter 15.05 of the County Code). The Grading and Drainage Ordinance supplements the regulations from the California Building Standards Code (CBSC), which addresses standards for all grading construction. The Ordinance helps to maintain safe grading conditions and erosion control in order to avoid potentially harmful impacts related to property, the public, and environmental health.

Additionally, in accordance with National Pollutant Discharge Elimination System (NPDES) Permit regulations, the State of California requires that any construction activity disturbing one acre or more of soil comply with the Construction General Permit (Order No. 2009-0009-DWQ). The permit requires development and implementation of a Storm Water Pollution Prevention Plan (SWPPP) and monitoring plan, which must include erosion-control and sediment-control Best Management Practices (BMPs) that would meet or exceed measures required by the Construction General Permit to control stormwater quality degradation due to potential construction-related pollutants. The SWPPP would include project specific BMPs that are designed to control drainage and erosion. Such BMPs may include: temporary erosion control measures such as silt fences, staked straw bales/wattles, silt/sediment basins and traps, check dams, geofabric, sandbag dikes, and temporary revegetation or other ground cover. The BMPs and overall SWPPP is reviewed by the Regional Water Quality Control Board as part of the permitting process.

Following compliance with the established regulatory framework, including the County Code and Construction General Permit, potential impacts associated with soil erosion and the loss of topsoil would be less than significant.

Mitigation Measures: No mitigation measures are required.

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

Less Than Significant Impact. Refer to Responses 4.7(a)(3) and 4.7(a)(4) regarding the potential for liquefaction and landslides, respectively. Due to the low potential for liquefaction, the potential for lateral spreading to occur at the Project site is also considered low.

According to the Geotechnical Evaluation, to provide suitable support and reduce the potential for settlement of the proposed improvements, the areas beneath the new pavements would need to be over-

excavated and replaced with engineered fill and compacted. The Geotechnical Evaluation includes specific recommendations based on the results of the subsurface evaluation and laboratory testing, review of referenced geologic materials, and geotechnical analysis. These recommendations address earthwork and grading, underground utility trenches, surface drainage control, retaining walls, pavements, and ground corrosivity, among other factors. The project is required to implement these recommendations during construction.

The Project would be required to comply with all applicable regulations in the most recent CBSC, as amended by the County Code. Compliance with the County's established regulatory framework and standard engineering practices and design criteria would ensure potential impacts associated with a geologic unit or soil that is unstable or would become unstable at the Project site would be reduced to a less than significant impact.

Mitigation Measures: No mitigation measures are required.

d) *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?*

Less Than Significant Impact. Expansive soils are those that shrink or swell with the change in moisture content. The volume of change is influenced by the quantity of moisture, by the kind and amount of clay in the soil, and by the original porosity of the soil. Without proper mitigation measures, shrinking and swelling could result in damage to roads and other structures. The Geotechnical Evaluation identified the site as underlain by phyllite bedrock overlain on hillsides by three to six inches of residual soil and by up to two feet of alluvium in low-lying areas adjacent to ephemeral creek crossings.

According to the Geotechnical Evaluation, to provide suitable support and reduce the potential for settlement of the proposed improvements, the areas beneath the new pavements would need to be over-excavated and replaced with engineered fill and compacted. The Geotechnical Evaluation includes specific recommendations based on the results of the subsurface evaluation and laboratory testing, review of referenced geologic materials, and geotechnical analysis. These recommendations address earthwork and grading, underground utility trenches, surface drainage control, retaining walls, pavements, and ground corrosivity, among other factors. The project is required to implement these recommendations during construction.

The Project would be required to comply with all applicable regulations in the most recent CBSC, as amended by the County Code. Compliance with the County's established regulatory framework and standard engineering practices and design criteria would ensure potential impacts associated with expansive soils at the Project site would be reduced to a less than significant impact.

Mitigation Measures: No mitigation measures are required.

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

No Impact. The proposed Project would not require the use of septic tanks or alternative waste water disposal systems for the disposal of waste water. Implementation of the Project would result in no impact relative to this topic.

Mitigation Measures: No mitigation measures are required.

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

Less Than Significant Impact With Mitigation Incorporated. Significant paleontological resources are determined to be fossils or assemblages of fossils that are unique, unusual, rare, uncommon, or diagnostically important. Significant fossils can include remains of large to very small aquatic and terrestrial vertebrates or remains of plants and animals previously not represented in certain portions of the stratigraphy. Assemblages of fossils that might aid stratigraphic correlation, particularly those offering data for the interpretation of tectonic events, geomorphologic evolution, and paleoclimatology are also critically important.

The County General Plan indicates that Calaveras County has yielded paleontological resources and geologic features and it is likely that such resources will continue to be encountered in the County. Damage to or destruction of a paleontological resource would be considered a potentially significant impact under local, State, or federal criteria.

The Conservation and Open Space Element of the County General Plan includes several goals, policies, and implementation measures related to the preservation of prehistoric, archaeological, cultural, historical, and paleontological resources. In particular, the following policy would apply to the Project site:

COS 7.1: New development shall be designed to avoid significant cultural and paleontological resources to the extent feasible.

While there are no known unique paleontological resources within the project area, there is always the potential for a previously unknown resource to be discovered during ground disturbing activities. Implementation of Mitigation Measure GEO-1 would ensure steps would be taken to reduce impacts to paleontological resources in the event that they are discovered during construction. This would ensure that any potentially significant impacts would be reduced to a less than significant level regarding this topic.

Mitigation Measures:

GEO-1: In the event a paleontological or other geologically sensitive resources (such as fossils or fossil formations) are identified during any phase of project development, all excavations within 100 feet of the find shall be temporarily halted until the find is examined by a qualified paleontologist, in accordance with Society of Vertebrate Paleontology standards. The paleontologist shall notify the appropriate representative at Calaveras County who shall coordinate with the paleontologist as to any necessary investigation of the find. If the find is determined to be significant under CEQA, the County shall implement those measures which may include avoidance, preservation in place, or other appropriate measures, as outlined in Public Resources Code Section 21083.2.

4.8 Greenhouse Gas Emissions

<i>Would the project:</i>	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?			X	
b. Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?			X	

Existing Setting

Various gases in the Earth’s atmosphere, classified as atmospheric greenhouse gases (GHGs), play a critical role in determining the Earth’s surface temperature. Solar radiation enters Earth’s atmosphere from space, and a portion of the radiation is absorbed by the Earth’s surface. The Earth emits this radiation back toward space, but the properties of the radiation change from high-frequency solar radiation to lower-frequency infrared radiation.

Greenhouse gases, which are transparent to solar radiation, are effective in absorbing infrared radiation. As a result, this radiation that otherwise would have escaped back into space is now retained, resulting in a warming of the atmosphere. This phenomenon is known as the greenhouse effect, which leads to global warming as well as an overall global climate change, which includes long-term shifts in temperatures and weather patterns. Among the prominent GHGs contributing to the greenhouse effect are carbon dioxide (CO₂), methane (CH₄), ozone (O₃), water vapor (H₂O), N₂O, and chlorofluorocarbons (CFCs).

Naturally occurring greenhouse gases include water vapor (H₂O), carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), and ozone (O₃). Several classes of halogenated substances that contain fluorine, chlorine, or bromine are also greenhouse gases, but they are, for the most part, solely a product of industrial activities. There are also several gases that do not have a direct global warming effect but indirectly affect terrestrial and/or solar radiation absorption by influencing the formation or destruction of greenhouse gases, including tropospheric and stratospheric ozone. These gases include carbon monoxide (CO), oxides of nitrogen (NO_x), and non-CH₄ volatile organic compounds (NMVOCs). Aerosols, which are extremely small particles or liquid droplets, such as those produced by sulfur dioxide (SO₂) or elemental carbon emissions, can also affect the absorptive characteristics of the atmosphere (U.S. Environmental Protection Agency, 2011).

Emissions of GHGs contributing to global climate change are attributable in large part to human activities associated with the industrial/manufacturing, utility, transportation, residential, and agricultural sectors. Consumption of fossil fuels in the transportation sector was the single largest source of California’s GHG emissions in 2020 accounting for 37 percent of total GHG emissions in the state (CARB, 2022b). This

category was followed by the industrial sector (20 percent), the electricity generation sector (including both in-state and out of-state sources) (16 percent), the residential and commercial sector (11 percent), the agriculture and forestry sector (9 percent), high-Global Warming Potential gases (includes emissions from refrigerants used in vehicles, airplane, train, and ship and boat) (6 percent), and waste (2 percent).

As the name implies, global climate change is a global problem. GHGs are global pollutants, unlike criteria air pollutants and toxic air contaminants, which are pollutants of regional and local concern, respectively. California produced approximately 418.2 million gross metric tons of carbon dioxide equivalents (MMT CO_2e) in 2019, satisfying the annual statewide target set by the California Air Resources Board (CARB), that California emissions be below 431 MMT CO_2e by 2020 (CARB, 2021). To meet CARB's statewide targets, California emissions must further be reduced to below 260 MMT CO_2e by 2030.

Carbon dioxide equivalents are a measurement used to account for the fact that different GHGs have different potential to retain infrared radiation in the atmosphere and contribute to the greenhouse effect. This potential, known as the global warming potential of a GHG, is also dependent on the lifetime, or persistence, of the gas molecule in the atmosphere. Expressing GHG emissions in carbon dioxide equivalents takes the contribution of all GHG emissions to the greenhouse effect and converts them to a single unit equivalent to the effect that would occur if only CO_2 were being emitted.

- a) ***Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?***
- b) ***Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?***

Less Than Significant Impact. Existing science is inadequate to support quantification of impacts that project specific GHG emissions have on global climatic change. This is readily understood when one considers that global climatic change is the result of the sum total of GHG emissions, both man-made and natural that occurred in the past; that is occurring now; and will occur in the future. The effects of project specific GHG emissions are cumulative, and unless reduced or mitigated, their incremental contribution to global climatic change could be considered significant.

The Project proposes the development of roadway infrastructure to an existing entitled development project. The Project would serve the previously entitled and largely constructed Copper Valley development; the road is not intended to provide access to new development areas or to otherwise alter traffic patterns in the area, beyond providing a secondary access for an existing entitled development project. Because the proposed Project is not increasing capacity based on existing or anticipated regional travel demands, the Project would not generate new vehicle trips resulting in an increase of GHG emissions during operation.

The primary source of construction-related GHGs from the proposed Project would result from emissions of CO_2 associated with the construction of the Project, and worker vehicle trips. The Project would involve construction activities such as excavating, trenching, and grading. These emissions would be temporary and would not result in a significant source of GHG.

The Project would result in less than significant GHG emissions during construction and no increased emissions during operation. Therefore, the proposed Project would not generate a significant cumulative

impact to GHGs. Because the Project is not creating a new source of long-term emissions, the Project would not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing GHG emissions. Overall, the Project would not generate GHG emissions that would have a significant impact on the environment or conflict with any applicable plans, policies, or regulations. Therefore, impacts related to greenhouse gases are less than significant.

Mitigation Measures: No mitigation measures are required.

4.9 Hazards and Hazardous Materials

<i>Would the project:</i>	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?			X	
b. 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?			X	
c. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?				X
d. Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?				X
e. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?				X
f. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?			X	
g. Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?			X	

- a) ***Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?***
- b) ***Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?***

Less Than Significant Impact. Generally, the exposure of persons to hazardous materials could occur in the following manners: improper handling or use of hazardous materials or hazardous wastes during construction or operation of future development, particularly by untrained personnel; an accident during transport; environmentally unsound disposal methods; or fire, explosion or other emergencies. The severity of potential effects varies with the activity conducted, the concentration and type of hazardous material or wastes present, and the proximity of sensitive receptors.

Construction activities associated with the proposed Project may involve the routine transport, use, or disposal of hazardous materials, such as petroleum-based fuels or hydraulic fluid used for construction equipment. The level of risk associated with the accidental release of hazardous substances is not considered significant due to the small volume and low concentration of hazardous materials utilized during construction. The construction contractor would be required to use standard construction controls and safety procedures that would avoid and minimize the potential for accidental release of such substances into the environment. Standard construction practices would be observed such that any materials released are appropriately contained and remediated as required by local, State, and federal law.

The Project proposes to construct roadway infrastructure to an existing development project, and would not result in increased routine transport of hazardous materials. Proposed operations as a roadway would not involve the use, storage, or disposal of hazardous materials creating a significant hazard to the public or the environment. Any transport along the proposed roadway would be subject to applicable State and federal laws, minimizing the potential for upset and accident conditions to occur within the Project site. Implementation of the proposed Project would result in a less than significant impact relative to this topic.

Mitigation Measures: No mitigation measures are required.

- c) ***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. There are no existing or proposed schools within 0.25 mile of the Project site. The nearest school to the Project site is Copperopolis Elementary School, located approximately 4.6 miles to the northwest. Therefore, no impact is anticipated.

Mitigation Measures: No mitigation measures are required.

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

No Impact. Government Code Section 65962.5, commonly referred to as the “Cortese List”, requires the Department of Toxic Substances Control (DTSC) and the State Water Resources Control Board (SWRCB) to compile and update a regulatory sites list (pursuant to the criteria of the Section). The California Department of Health Services is also required to compile and update, as appropriate, a list of all public drinking water wells that contain detectable levels of organic contaminants and that are subject to water analysis pursuant to Health and Safety Code Section 116395. Government Code Section 65962.5 requires the local enforcement agency, as designated pursuant to Section 18051 of Title 14 of the California Code of Regulations, to compile, as appropriate, a list of all solid waste disposal facilities from which there is a known migration of hazardous waste. The Project site is not included on any of the data resources identified as meeting the Cortese List requirements (DTSC, 2022). Therefore, the Project site has not been included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and would not create a significant hazard to the public or the environment.

Mitigation Measures: No mitigation measures are required.

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

No Impact. The Project site is not located within an airport land use plan, nor is the Project site located within two miles of a public airport or public use airport. Thus, the Project would not result in a safety hazard or excessive noise for people residing or working in the area. No impact would occur.

Mitigation Measures: No mitigation measures are required.

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

Less Than Significant Impact. The Calaveras County Emergency Operations Plan (EOP) outlines the functions, responsibilities, and regional risk assessments of Calaveras County for large scale emergencies such as wildland fires, hazardous materials incidents, flooding, and dam failure. The EOP addresses the planned response to extraordinary emergency situations and establishes a flexible, all hazards, emergency management organization required to facilitate the response to, and provide for short term recovery activities related to any significant emergency or disaster affecting Calaveras County. The EOP tasks the Calaveras County Sheriff’s Department with authority and responsibility for evacuation and movement of citizens in times of crisis, including the identification of evacuation routes (Calaveras County, 2019).

The Project includes the development of roadway infrastructure to an existing entitled development project. The proposed improvements would enhance emergency response and/or emergency evacuation by providing a secondary access road to the Golf Club at Copper Valley. The access road would be designed and constructed in accordance with Chapter 12.02 of the County Code, which includes standards for the construction and maintenance of roads. In accordance with Chapter 12.08 of the County Code, the Project would also be required to obtain an encroachment permit before doing any work in the County right-of-way. The Safety Element of the County General Plan includes several goals, policies, and implementation measures related to emergency response and evacuation. In particular, the following policy would apply to the Project site:

S 3.4: All new development shall meet any applicable standards for access by emergency vehicles and egress by residents.

During construction activities, there is the potential for temporary traffic disruptions to occur along Little John Road or other nearby roadways. However, this would be temporary and emergency access to the Project site and surrounding area would be required to be maintained at all times. Additionally, all construction staging would occur within the boundaries of the Project site and would not interfere with circulation along Little John Road, or any other nearby roadways. Thus, the Project would not substantially impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan and impacts would be less than significant.

Mitigation Measures: No mitigation measures are required.

g) *Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?*

Less Than Significant Impact. According to the CalFire Hazard Severity Zone Map, the Project site is designated as a High Fire Hazard Severity Zone within a State Responsibility Area (SRA) (CALFIRE, 2022). The Project site is served by the Copperopolis Fire Protection District (FPD).

The Project includes the development of roadway infrastructure to an existing entitled development project. The Project would not result in development of structures or housing which would subject residents, visitors, or workers to long-term wildfire danger. Therefore, impacts from implementation of the Project would be considered less than significant relative to this topic.

Mitigation Measures: No mitigation measures are required.

4.10 Hydrology and Water Quality

<i>Would the project:</i>	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?			X	
b. Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?			X	
c. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:				
1) Result in substantial erosion or siltation on- or off-site?			X	
2) Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite?			X	
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?			X	
4) Impede or redirect flood flows?			X	
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?			X	
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?			X	

a) *Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?*

Less Than Significant Impact.

Short-Term Construction

Short-term construction activities associated with the proposed Project could impact water quality. Sources of potential construction-related storm water pollution include handling, storage, and disposal of construction materials containing pollutants; maintenance and operation of construction equipment; and site preparation activities, such as excavation, grading, and trenching. These sources, if not controlled, can generate soil erosion and on- and off-site transport via storm run-off or mechanical equipment. Poorly maintained vehicles and heavy equipment leaking fuel, oil, antifreeze, or other vehicle-related fluids on the Project site are also common sources of storm water pollution and soil contamination. Generally, standard safety precautions for handling and storing construction materials can adequately reduce the potential pollution of storm water by these materials. Grading activities would displace soils and temporarily increase the potential for soils to be subject to wind and water erosion. Two general strategies are recommended to prevent soil materials from entering local storm drains. First, erosion control procedures should be implemented for those areas that must be exposed, and secondly, the Project site should be secured to control off-site transport of pollutants. In order to reduce the amount of on-site exposed soil, grading would be limited to the extent feasible, and any graded areas would be protected against erosion once they are brought to final grade.

Construction-related erosion effects would be addressed through compliance with the Construction General Permit. Construction activity subject to this General Permit includes any construction or demolition activity, including, but not limited to, clearing, grading, grubbing, or excavation, or any other activity that results in a land disturbance of equal to or greater than one acre. The Project would disturb approximately 9.6 acres and therefore would be subject to the Construction General Permit. To obtain coverage under the Construction General Permit, dischargers are required to file with the State Water Resources Control Board (SWRCB) the Permit Registration Documents (PRDs), which include a Notice of Intent (NOI) and other compliance-related documents. The Construction General Permit requires development and implementation of a Stormwater Pollution Prevention Plan (SWPPP) and monitoring plan, which must include erosion-control and sediment-control Best Management Practices (BMPs) that would meet or exceed measures required by the General Permit to control potential construction-related pollutants. Erosion-control BMPs are designed to prevent erosion, whereas sediment controls are designed to trap sediment once it has been mobilized.

The community of Copperopolis is covered under the statewide NPDES General Permit for Storm Water Discharges from Small MS4s. As a condition of permit coverage, the community of Copperopolis is required to implement the Calaveras County Storm Water Management Plan, which includes BMPs designed to protect water quality and reduce the discharge of pollutants into the County's storm drain systems. The proposed Project would also be subject to the County's Grading and Drainage Ordinance (Chapter 15.05 of the County Code). The Grading and Drainage Ordinance supplements the regulations from the California Building Standards Code (CBSC), which addresses standards for all grading construction. The Ordinance helps to maintain safe grading conditions and erosion control in order to avoid potentially harmful impacts related to property, the public, and environmental health.

Compliance with the NPDES and County Code requirements would ensure the Project's construction-related activities would not violate any water quality standards or otherwise substantially degrade surface or groundwater quality, resulting in a less than significant impact.

Long-Term Operations

Urban runoff is typically associated with impervious surfaces such as rooftops, streets, and other paved areas, where various types of pollutants may build up and eventually be washed into the storm drain system after storm events. Sediment, trash, organic contaminants, nutrients, trace metals, and oil and grease compound are common urban pollutants that can affect receiving water quality if not properly managed.

The Project proposes the development of roadway infrastructure to an existing entitled development project. Under proposed conditions, stormwater runoff from the road would flow into proposed retention basins within six drainage management areas (DMAs).

Development within the Copperopolis community area is subject to regulations specified in the Calaveras County Stormwater Management Plan, including requirements for implementation of both structural and non-structural BMPs. Examples of such structural control measures include storm water retention, porous pavement, infiltration basins, and landscaping features (such as grassy swales, filter strips, and artificial wetlands) designed to remove pollutants from storm water runoff and facilitate percolation. Nonstructural measures include buffer zones, minimization of land disturbance, maximizing open space, and discouraging development in sensitive ecological areas with critical habitat for plant and animal wildlife. As required by the statewide General Storm Water Discharge Permit, new developments within designated Storm Water Discharge Permit areas would also be required to submit annual reports to the County following the completion of construction confirming on-going maintenance of BMPs and evaluating the extent to which required BMPs are effectively controlling discharges into the County storm drain system. The proposed Project would also be subject to Section 15.05.180 of the County Code, which ensures that stormwater drainage systems be constructed in accordance with the Calaveras County Grading, Drainage, and Erosion Control Manual, and states that, for engineered grading projects, the peak off-site storm water discharge from the Project site shall not exceed pre-construction conditions unless the applicant demonstrates that downstream stormwater conveyance systems have sufficient capacity to handle the increased flow rate without exceeding established design standards.

The Copper Valley Community Services District (CSD) is responsible for the maintenance of land and infrastructure within the Copper Valley development, including roads, storm drains, wildlife, and wetlands easements. The Copper Valley CSD would ensure long-term maintenance of BMPs for the proposed roadway infrastructure and retention basins.

Compliance with NPDES and County Code requirements, which include implementation of BMPs, and maintenance of BMPs through the Copper Valley CSD, would ensure that Project operations would not violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality. Impacts would be less than significant in this regard.

Mitigation Measures: No mitigation measures are required.

b) *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 Impact. The Golf Club at Copper Valley is served by the Calaveras County Water District (CCWD) – Copper Cove/Copperopolis Service Area, which receives water supplies from the Stanislaus River Watershed (Sub-Region B) (Woodard & Curran, 2021). Water supplies from CCWD’s Sub-Region B consist of surface water and recycled water (Woodard & Curran, 2021).

As indicated in the County General Plan FEIR, most of the County is underlain by faulted and folded igneous and metamorphic rock. Groundwater recharge currently occurring in the County is generally focused in the northwestern portion of the County, where the bedrock of the Sierra Nevada is overlain by alluvial sediments. The alluvial sediments generally allow for higher rates of recharge than the bedrock.

As the Project involves the development of roadway infrastructure, the Project would not generate new residential or employment uses and would not decrease groundwater supplies via an increase in water demand. Additionally, while the Project would introduce new impervious surfaces to a previously undeveloped area, new impervious surfaces associated with the Project would not significantly affect infiltration rates, given the limited new areas of impervious surfaces that would be created by the new roadway. As such, the Project would not substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the Project may impede sustainable groundwater management of the basin. Impacts would be less than significant.

Mitigation Measures: No mitigation measures are required.

c) *Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:*

- 1) *Result in substantial erosion or 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 offsite?***
- 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?***
- 4) *Impede or redirect flood flows?***

Less Than Significant Impact. Refer to Response 4.10(a) regarding potential impacts involving erosion and water quality. Compliance with NPDES and County Code requirements would ensure the Project would not result in substantial erosion or siltation on- or off-site.

The Project proposes the development of roadway infrastructure to an existing entitled development project. The Project would span two streams, Ramsey Gulch and an unnamed tributary to Ramsey Gulch, with bridges. The Project would not block, reroute, or otherwise impede the two streams occurring within the Project site during construction or operation. Therefore, while streams and water courses are present

within the Project area, they would not be impacted or altered as a result of Project implementation. Under proposed conditions, stormwater runoff from the road would flow into proposed retention basins within six drainage management areas (DMAs).

The Project would create new impervious surface on a previously undeveloped site. As described above, the Project would be subject to regulations specified in the Calaveras County Stormwater Management Plan, including requirements for implementation of both structural and non-structural BMPs. The Project would also be subject to Section 15.05.180 of the County Code, which ensures that stormwater drainage systems be constructed in accordance with the Calaveras County Grading, Drainage, and Erosion Control Manual, and states that, for engineered grading projects, the peak off-site storm water discharge from the Project site shall not exceed pre-construction conditions unless the applicant demonstrates that downstream stormwater conveyance systems have sufficient capacity to handle the increased flow rate without exceeding established design standards. Additionally, the Copper Valley CSD is responsible for the maintenance of land and infrastructure within the Copper Valley development, including roads, storm drains, wildlife, and wetlands easements. The Copper Valley CSD would ensure long-term maintenance of BMPs for the proposed roadway infrastructure and retention basins. Therefore, the Project would not substantially increase the rate or amount of surface runoff in a manner which would result in flooding, create or contribute runoff that would exceed the capacity of the existing drainage system, or impede or redirect flood flows. Impacts would be less than significant.

Mitigation Measures: No mitigation measures are required.

d) *In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?*

Less Than Significant Impact. According to the Federal Emergency Management Agency (FEMA), Flood Insurance Rate Map (FIRM), the majority of the Project site is located within an area of minimal flood hazard (Zone X) (FEMA, 2010). The Project site traverses two streams, which are located within a mapped portion of the 100-year flood zone (Zone A). Tsunamis are sea waves that are generated in response to large-magnitude earthquakes, which can result in coastal flooding. Seiches are the oscillation of large bodies of standing water, such as lakes, that can occur in response to ground shaking. The Project site is located approximately 100 miles east of the Pacific Ocean; therefore, the County is not at risk for inundation by tsunamis. Several lakes and reservoirs exist within Calaveras County; however, the Project site is not located within an existing Dam Breach Inundation Zone (DWR, 2022). Therefore, seiches would not pose a substantial risk to the Project.

As discussed in Response 4.10(a), compliance with NPDES and County Code requirements would reduce potential impacts involving erosion and water quality to a less-than-significant level. Compliance with the County Code would ensure the Project would be designed and engineered to ensure that peak off-site storm water discharge is equal to or less than pre-construction conditions. Therefore, the Project would not risk release of pollutants due to project inundation. Impacts would be less than significant.

Mitigation Measures: No mitigation measures are required.

e) *Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?*

Less Than Significant Impact. Calaveras County is located within the jurisdiction of the Central Valley Regional Water Quality Control Board (CVRWQCB) (Region 5). The CVRWQCB developed a Water Quality Control Plan (Basin Plan) for the Sacramento and San Joaquin River Basins, which includes a summary of beneficial water uses, water quality objectives needed to protect the identified beneficial uses, and implementation measures. The Basin Plan establishes water quality standards for all the ground and surface waters of the region. The RWQCB regulates waste discharges to minimize and control their effects on the quality of the region's ground and surface water. Permits are issued under a number of programs and authorities. The terms and conditions of these discharge permits are enforced through a variety of technical, administrative, and legal means. Water quality problems in the region are listed in the Basin Plan, along with the causes, where known.

As discussed above, impacts related to water quality during Project construction and operation would be less-than-significant with compliance with NPDES and County Code requirements. The proposed Project would create new impervious surfaces in a previously undeveloped area. Long-term operations of the Project would not result in long-term impacts to surface water quality from urban stormwater runoff. Overall, implementation of the proposed Project would have a less than significant impact related to conflicts with the Basin Plan.

Mitigation Measures: No mitigation measures are required.

4.11 Land Use and Planning

<i>Would the project:</i>	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Physically divide an established community?				X
b. 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?			X	

a) Physically divide an established community?

No Impact. The Project site is undeveloped grassland and oak woodland. Immediately north of the site is Little John Road. North of Little John Road are rural residential uses. East of the site is undeveloped grassland and oak woodland, rural residential uses, and a maintenance yard. South of the site is undeveloped grassland and oak woodland. West of the site are residential uses and the Golf Club at Copper Valley.

The Project proposes the development of roadway infrastructure to an existing entitled development project. The Project site is adjacent to primarily undeveloped land. The Project would provide a secondary access point to the existing residential uses west of the Project site. Development of the Project would not result in any physical barriers, such as a wall, or other division, that would divide an existing community, but would serve as an orderly extension of an existing roadway. Thus, no impact would occur in this regard.

Mitigation Measures: No mitigation measures are required.

b) 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?

Less Than Significant Impact. The majority of the Project site is located within the Saddle Ranch Specific Plan area. Within the Specific Plan area, the Project site is designated as Commercial, Recreation, and Single Family Residential. A portion of the Project site is located on a parcel designated Public/Institutional (PI). According to the County General Plan, the PI land use designation identifies public or quasi-public facilities. Typical uses include public buildings and grounds, schools, community centers, libraries, airports, cemeteries, fire stations, sewer and water treatment facilities, solid and liquid waste disposal facilities, power substations, and other similar and compatible uses.

Title 17 of the Calaveras County Code contains the County’s Zoning Ordinance (Zoning Code). The majority of the Project site, located within the Specific Plan area, is zoned Specific Plan (SP). The SP zone allows for uses specified in the land use district in the adopted specific plan. The portion of the Project site that is outside of the Specific Plan area is zoned Public Service (PS). The PS zone allows for public uses.

The Project proposes the development of roadway infrastructure to an existing entitled development project. The Project would be consistent with General Plan land use designations, Saddle Ranch Specific Plan, and Zoning Code. The potential for the Project to result in a significant impact due to a conflict with policies and regulations adopted for the purpose of avoiding or mitigating an environmental effect is addressed throughout this Initial Study, on a topic-by-topic basis. As demonstrated throughout this report, the Project would have a less than significant impact related to conflicting with applicable land use plans, policies, regulations, or surrounding uses.

Mitigation Measures: No mitigation measures are required.

4.12 Mineral Resources

<i>Would the project:</i>	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?			X	
b. Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?			X	

- a) *Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?***
- b) *Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?***

Less Than Significant Impact. The Surface Mining and Reclamation Act of 1975 (SMARA) requires classification of land into mineral resource zones (MRZs) according to the area’s known or inferred mineral potential. The State Division of Mines and Geology has not designated the Project site as a State classified mineral resources deposit area (CGS, 2022). The Project site is not located within the County’s Mineral Resource Overlay, nor is the Project site designated as Resource Production (RP) or Working Lands (WL), which are land use designations for areas within the County known to contain mineral resources. The Project site is not within or adjacent to any active mining operations (California Department of Conservation, 2022b). Thus, the Project would not result in the loss of availability of a known mineral resources of value to the region or result in the loss of a locally-important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan.

Mitigation Measures: No mitigation measures are required.

4.13 Noise

<i>Would the project result in:</i>	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a. 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?			X	
b. Generation of excessive groundborne vibration or groundborne noise levels?			X	
c. 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?				X

Fundamentals of Acoustics

Acoustics is the science of sound. Sound may be thought of as mechanical energy of a vibrating object transmitted by pressure waves through a medium to human (or animal) ears. If the pressure variations occur frequently enough (at least 20 times per second), then they can be heard and are called sound. The number of pressure variations per second is called the frequency of sound, and is expressed as cycles per second or Hertz (Hz). Noise is a subjective reaction to different types of sounds.

Noise is typically defined as (airborne) sound that is loud, unpleasant, unexpected or undesired, and may therefore be classified as a more specific group of sounds. Perceptions of sound and noise are highly subjective from person to person.

Measuring sound directly in terms of pressure would require a very large and awkward range of numbers. To avoid this, the decibel scale was devised. The decibel scale uses the hearing threshold (20 micropascals), as a point of reference, defined as 0 dB. Other sound pressures are then compared to this reference pressure, and the logarithm is taken to keep the numbers in a practical range. The decibel scale allows a million-fold increase in pressure to be expressed as 120 dB, and changes in levels (dB) correspond closely to human perception of relative loudness.

The perceived loudness of sounds is dependent upon many factors, including sound pressure level and frequency content. However, within the usual range of environmental noise levels, perception of loudness is relatively predictable, and can be approximated by A-weighted sound levels. There is a strong correlation between A-weighted sound levels (expressed as dBA) and the way the human ear perceives sound. For this reason, the A weighted sound level has become the standard tool of environmental noise

assessment. All noise levels reported in this section are in terms of A-weighted levels, but are expressed as dB, unless otherwise noted.

The decibel scale is logarithmic, not linear. In other words, two sound levels 10-dB apart differ in acoustic energy by a factor of 10. When the standard logarithmic decibel is A-weighted, an increase of 10-dBA is generally perceived as a doubling in loudness. For example, a 70-dBA sound is half as loud as an 80-dBA sound, and twice as loud as a 60 dBA sound. Community noise is commonly described in terms of the ambient noise level, which is defined as the all-encompassing noise level associated with a given environment. A common statistical tool is the average, or equivalent, sound level (Leq), which corresponds to a steady-state A weighted sound level containing the same total energy as a time varying signal over a given time period (usually one hour). The Leq is the foundation of the composite noise descriptor, Ldn, and shows very good correlation with community response to noise. The day/night average level (Ldn) is based upon the average noise level over a 24-hour day, with a +10- decibel weighting applied to noise occurring during nighttime (10:00 p.m. to 7:00 a.m.) hours. The nighttime penalty is based upon the assumption that people react to nighttime noise exposures as though they were twice as loud as daytime exposures. Because Ldn represents a 24-hour average, it tends to disguise short-term variations in the noise environment.

Effects of Noise on People

The effects of noise on people can be placed in three categories:

- Subjective effects of annoyance, nuisance, and dissatisfaction
- Interference with activities such as speech, sleep, and learning
- Physiological effects such as hearing loss or sudden startling

Environmental noise typically produces effects in the first two categories. Workers in industrial plants can experience noise in the last category. There is no completely satisfactory way to measure the subjective effects of noise or the corresponding reactions of annoyance and dissatisfaction. A wide variation in individual thresholds of annoyance exists and different tolerances to noise tend to develop based on an individual's past experiences with noise. Thus, an important way of predicting a human reaction to a new noise environment is the way it compares to the existing environment to which one has adapted: the so-called ambient noise level. In general, the more a new noise exceeds the previously existing ambient noise level, the less acceptable the new noise will be judged by those hearing it. With regard to increases in A-weighted noise level, the following relationships occur:

- Except in carefully controlled laboratory experiments, a change of 1-dBA cannot be perceived;
- Outside of the laboratory, a 3-dBA change is considered a just-perceivable difference;
- A change in level of at least 5-dBA is required before any noticeable change in human response would be expected; and
- A 10-dBA change is subjectively heard as approximately a doubling in loudness, and can cause an adverse response.

Stationary point sources of noise – including stationary mobile sources such as idling vehicles – attenuate (lessen) at a rate of approximately 6-dB per doubling of distance from the source, depending on environmental conditions (i.e., atmospheric conditions and either vegetative or manufactured noise

barriers, etc.). Widely distributed noises, such as a large industrial facility spread over many acres, or a street with moving vehicles, would typically attenuate at a lower rate.

Sensitive Receptors

Noise exposure standards and guidelines for various types of land uses reflect the varying noise sensitivities associated with each of these uses. Noise sensitive land uses in Calaveras County include residential development, schools, hospitals, convalescent homes, places of worship, and libraries. The sensitive receptor nearest to the Project site consists of a residential use approximately 50 feet to the west of the Project site.

- a) *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 Impact.

Construction Noise

Construction activities associated with the Project would involve the use of heavy equipment and impact tools. The degree of construction noise may vary for different areas of the Project site and also vary depending on the construction activities. Noise levels associated with the construction would vary with the different phases of construction. Most of the building construction would occur at distances of 50 feet or greater from the nearest residences. Construction activities would be temporary in nature and are anticipated to occur during normal daytime working hours.

Noise would also be generated during the construction phase by increased truck traffic on area roadways. A Project-generated noise source would be truck traffic associated with transport of heavy materials and equipment to and from the construction site. This noise increase would be of short duration, and would likely occur primarily during daytime hours.

Chapter 9.02 of the County Code contains the County Noise Ordinance. According to Section 9.02.060(d), noise from construction activities is exempt from the County's noise level standards provided that all construction in or adjacent to residential areas shall be limited to the daytime hours between 7:00 a.m. and 6:00 p.m.

Construction noise is considered a short-term impact and would be considered significant if construction activities occur outside the allowable times as described in the County Code. However, Project construction would occur during the permissible hours in accordance with the County Code. Thus, construction impacts would not be considered significant.

Operational Noise

The Project proposes the development of roadway infrastructure to an existing entitled development project. Noise impacts associated with Project operation would arise from vehicular travel on the newly constructed access road. The Project would serve the previously entitled and largely constructed Copper Valley development; the road is not intended to provide access to new development areas or to otherwise alter traffic patterns in the area, beyond providing a secondary access for an existing entitled development project. Because the proposed Project is not increasing capacity based on existing or anticipated regional

travel demands, the Project would not result in an increase in traffic volumes along Little John Road. Additionally, although the Project would introduce new sources of noise on previously undeveloped land, the Project is a local road that is not anticipated to carry high traffic volumes or exceed acceptable noise levels for nearby sensitive receptors. As such, the Project would have a negligible effect on existing ambient noise levels.

Given that the Project would comply with all noise requirements, Project construction and operation would not generate a substantial temporary or permanent increase in ambient noise levels in the vicinity of the Project in excess of standards established in the County General Plan or Noise Ordinance and impacts would be less than significant.

Mitigation Measures: No mitigation measures are required.

b) *Generation of excessive groundborne vibration or groundborne noise levels?*

Less Than Significant Impact. Vibration is like noise in that it involves a source, a transmission path, and a receiver. While vibration is related to noise, it differs in that noise is generally considered to be pressure waves transmitted through air, whereas vibration usually consists of the excitation of a structure or surface. As with noise, vibration consists of an amplitude and frequency. A person's perception to the vibration will depend on their individual sensitivity to vibration, as well as the amplitude and frequency of the source and the response of the system which is vibrating.

Vibration can be measured in terms of acceleration, velocity, or displacement. A common practice is to monitor vibration measures in terms of peak particle velocities in inches per second. Standards pertaining to perception as well as damage to structures have been developed for vibration levels defined in terms of peak particle velocities.

Human and structural response to different vibration levels is influenced by several factors, including ground type, distance between source and receptor, duration, and the number of perceived vibration events. The threshold for damage to structures ranges from 0.2 to 0.6 peak particle velocity in inches per second (in/sec p.p.v). One-half this minimum threshold or 0.1 in/sec p.p.v. is considered a safe criterion that would protect against architectural or structural damage. The general threshold at which human annoyance could occur is noted as 0.1 in/sec p.p.v.

The primary vibration-generating activities associated with the proposed Project would occur during construction when activities such as grading and roadway construction occur. Sensitive receptors which could be impacted by construction related vibrations, especially vibratory compactors/rollers, are located approximately 50 feet or further from the Project site. At this distance, construction vibrations are not predicted to exceed acceptable levels. Additionally, construction activities would be temporary in nature and would occur during normal daytime working hours. This would ensure Project construction activities with the highest potential to produce perceptible vibration would occur during hours with the least potential to affect nearby residential uses, in order to ensure that perceptible vibration can be kept to a minimum. Therefore, the potential for significant impacts associated with construction vibration is less than significant.

Mitigation Measures: No mitigation measures are required.

- c) *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 site is not located within an airport land use plan, nor is the Project site located within two miles of a private airstrip, public airport or public use airport. The nearest airport, Kistler Ranch Airport, is a private airfield located approximately eight miles southeast of the Project site. Thus, the Project would not expose people residing or working in the area to excessive noise levels. No impact would occur.

Mitigation Measures: No mitigation measures are required.

4.14 Population and Housing

<i>Would the project:</i>	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a. 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)?				X
b. Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?				X

a) *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 proposes the development of roadway infrastructure to an existing entitled development project. As the Project involves the development of roadway infrastructure, the Project would not generate new residential or employment uses and thus would not directly induce population growth. The Project would serve the previously entitled and largely constructed Copper Valley development; the road is not intended to provide access to new development areas or to otherwise alter traffic patterns in the area, beyond providing a secondary access for an existing entitled development project. Because the proposed Project is not increasing capacity based on existing or anticipated regional travel demands, the Project would not indirectly induce population growth. Thus, the Project would not induce substantial unplanned population growth to the area and impacts would be less than significant.

Mitigation Measures: No mitigation measures are required.

b) *Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?*

No Impact. The Project site is currently undeveloped grassland and oak woodland. The site does not contain any housing. Thus, the proposed Project would not displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere.

Mitigation Measures: No mitigation measures are required.

4.15 Public Services

<i>Would the project:</i>	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a. 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:				
1) Fire protection?			X	
2) Police protection?			X	
3) Schools?				X
4) Parks?				X
5) Other public facilities?				X

a) *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:*

1) *Fire protection?*

Less Than Significant Impact. Fire protection services within the Project site are provided by the Copperopolis Fire Protection District (FPD). The Copperopolis FPD operates out of three stations. Station 2, located approximately 1.5 miles northwest of the Project site at 1927 Quiver Street, is the closest station to the Project site.

The Project site is currently undeveloped. The Project proposes to construct a secondary access road at the intersection of Little John Road and Flint Trail. The Project would provide secondary access, including access for emergency vehicles, to the existing Golf Club at Copper Valley.

The proposed Project would not result in the construction of new or physically altered fire facilities. As the Project involves the development of roadway infrastructure, the Project would not generate new residential or employment uses and would not impact fire protection services resulting in the need for new or physically altered facilities. In compliance with County General Plan Implementation Measure S-

3W, Project approval would require review by CalFire and the responsible fire district to determine the ability of the district to provide fire protection service. Further, the Project would enhance emergency vehicle access to the existing Golf Club at Copper Valley. Thus, the Project would not require the need for new or physically altered fire station facilities in order to maintain acceptable service ratios, response times or other performance objectives and impacts would be less than significant.

Mitigation Measures: No mitigation measures are required.

2) Police protection?

Less Than Significant Impact. Police protection services within the Project site are provided by the Calaveras County Sheriff's Department.

The Project site is currently undeveloped. The Project proposes to construct a secondary access road at the intersection of Little John Road and Flint Trail. The Project would provide secondary access to the existing Golf Club at Copper Valley.

The proposed Project would not result in the construction of new or physically altered police facilities. As the Project involves the development of roadway infrastructure, the Project would not generate new residential or employment uses and is not anticipated to increase calls for service or alter response times or other performance objectives that would result in the need for new or substantially altered police protection facilities. Further, the Project would enhance emergency vehicle access to the existing Golf Club at Copper Valley. Thus, the Project would not require the need for new or physically altered police protection facilities in order to maintain acceptable service ratios, response times or other performance objectives and impacts would be less than significant.

Mitigation Measures: No mitigation measures are required.

3) Schools?

4) Parks?

5) Other public facilities?

No Impact. The Project includes the development of roadway infrastructure to an existing entitled development project. The Project does not propose any new structures and would not induce population growth within the County that would potentially result in a significant increase in the use of existing schools, parks, or other public facilities within the area. The Project would not involve the construction of new schools, parks, or other public facilities nor would it result in the need for new or physically altered schools, parks, or other public facilities. Therefore, the Project would not result in substantial adverse physical impacts associated with the provision of new or physically altered schools, parks, or other public facilities.

Mitigation Measures: No mitigation measures are required.

4.16 Recreation

<i>Would the project:</i>	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a. 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?				X
b. Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?				X

a) *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?*

No Impact. Refer to Response to 4.15(a)(4).

Mitigation Measures: No mitigation measures are required.

b) *Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?*

No Impact. Refer to Response to 4.15(a)(4). The Project proposes the development of roadway infrastructure to an existing entitled development project. The development of recreational facilities is not proposed as part of the Project. No impact would occur.

Mitigation Measures: No mitigation measures are required.

4.17 Transportation

<i>Would the project:</i>	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?			X	
b. Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?			X	
c. Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?			X	
d. Result in inadequate emergency access?			X	

a) Conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?

Less Than Significant Impact. The Project includes the development of roadway infrastructure, providing access an existing entitled development project, and would connect to the T-junction (three-way intersection) of Little John Road and Flint Trail. The County General Plan Circulation Element classifies Little John Road as a minor collector and Flint Trail would be considered a local road. Minor collectors move traffic from traffic generators (such as residential areas) to major collectors or arterials. Little John Road provides access to State Route 4 and is a 2-lane facility north of the Project site.

Pedestrian and bicycle facilities do not exist along Little John Road. Public transit in Calaveras County is provided by Calaveras Connect. There are no scheduled bus routes within the Project site or surrounding area; however, the intersection of Little John Road and Flint Trail is within the service area of the County’s Direct Connect Dial-a-ride service, which offers curb-to-curb service by reservation (Calaveras Connect, 2022). The proposed Project would not alter or have any detrimental effects on the existing and planned pedestrian, bicycle, and transit network in Calaveras County, nor would it conflict with any plans or planned improvements to these systems.

The Project does not propose any modifications to Little John Road or Flint Trail. The Project would connect to the southern portion of Little John Road at the T-junction (three-way intersection) of Little John Road and Flint Trail. A stop sign would be constructed at the connection point of the Project roadway and Little John Road, so that vehicle traffic traveling north on the Project roadway would yield to traffic on Little John Road (i.e., a two-way stop intersection). Therefore, impacts related to conflicts with a program plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities, would be less than significant.

Mitigation Measures: No mitigation measures are required.

b) *Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?*

Less Than Significant Impact. Section 15064.3 of the CEQA Guidelines provides specific considerations for evaluating a project's transportation impacts. Per Section 15064.3, analysis of vehicle miles traveled (VMT) attributable to a project is the most appropriate measure of transportation impacts. While changes to driving conditions that increase intersection delay are an important consideration for traffic operations and management, the method of analysis does not fully describe environmental effects associated with fuel consumption, emissions, and public health. Section 15064.3(3) changes the focus of transportation impact analysis in CEQA from measuring impact to drivers to measuring the impact of driving.

The Project proposes the development of roadway infrastructure to an existing entitled development project. The Project would serve the previously entitled and largely constructed Copper Valley development; the road is not intended to provide access to new development areas or to otherwise alter traffic patterns in the area, beyond providing a secondary access for an existing entitled development project. Because the proposed Project is not increasing capacity based on existing or anticipated regional travel demands, the Project would not result in an increase in traffic volumes or VMT. Impacts would be less than significant in this regard.

Mitigation Measures: No mitigation measures are required.

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

Less Than Significant Impact. The Project proposes the development of roadway infrastructure to an existing entitled development project. Thus, the Project would not introduce an incompatible use to the site. Further, the Project would not introduce a geometric design feature such as sharp curves or dangerous intersections. The Project would connect to the southern portion of Little John Road at the T-junction (three-way intersection) of Little John Road and Flint Trail. A stop sign would be constructed at the connection point of the Project roadway and Little John Road, so that vehicle traffic traveling north on the Project roadway would yield to traffic on Little John Road (i.e., a two-way stop intersection). A stop sign currently exists at the connection point of Flint Trail and Little John Road. No site circulation or access issues have been identified that would cause a traffic safety problem or hazard. In addition, the Project would undergo a site plan review by the County prior to development. Therefore, the Project would not increase hazards due to a geometric design feature or incompatible use.

Mitigation Measures: No mitigation measures are required.

d) Result in inadequate emergency access?

Less Than Significant Impact. The Project includes the development of roadway infrastructure to an existing entitled development project. The proposed improvements would enhance emergency access by providing a secondary access road to the Golf Club at Copper Valley. The access road would be designed and constructed in accordance with Chapter 12.02 of the County Code, which includes standards for the construction and maintenance of roads. In accordance with Chapter 12.08 of the County Code, the Project would also be required to obtain an encroachment permit before doing any work in the County right-of-way. The Safety Element of the County General Plan includes several goals, policies, and implementation measures related to emergency response and emergency access. In particular, the following policy would apply to the Project site:

S 3.4: All new development shall meet any applicable standards for access by emergency vehicles and egress by residents.

During construction activities, there is the potential for temporary traffic disruptions to occur along Little John Road or other nearby roadways. However, this would be temporary and emergency access to the Project site and surrounding area would be required to be maintained at all times. Additionally, all construction staging would occur within the boundaries of the Project site and would not interfere with circulation along Little John Road, or any other nearby roadways. Thus, the Project would not result in inadequate emergency access and impacts would be less than significant.

Mitigation Measures: No mitigation measures are required.

4.18 Tribal Cultural Resources

<i>Would the project:</i>	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a. 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:				
1) 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		X		
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 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.		X		

a) *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:*

- 1) *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)?***
- 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 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 Impact With Mitigation Incorporated. As part of the Cultural Resources Assessment, a search of the Sacred Lands File (SLF) was requested from the Native American Heritage Commission (NAHC). The NAHC responded indicating the search was negative for any previously known tribal cultural resources or sacred lands within the Project site APE or immediate vicinity. The NAHC also provided contact information for the following tribal organizations and representatives: Gloria Grimes, Chair - Calaveras Band of Mi-Wuk Indians; California Valley Miwok Tribe; Sheep Rancheria of Me-Wuk Indians of California; Lloyd Mathesen, Chair - Chicken Ranch Rancheria of Me-Wuk Indians; Sara A. Dutschke, Chair - Lone Band of Miwok Indians; Cosme Valdez, Chair - Nashville Enterprise Miwok-Maidu-Nishinam Tribe; Katherine Erolinda Perez, Chair - North Valley Yokuts Tribe; Timothy Perea - North Valley Yokuts Tribe; Neil Peyron, Chair - Tule River Indian Tribe; and Kenneth Woodrow, Chair - Wuksache Indian Tribe/Eshom Valley Band. Contact letters, two phone calls, and an email were sent to each tribal organization and/or representative between November 10 and November 22, 2021; however, no responses were received.

As discussed in Section 4.5, *Cultural Resources*, the Cultural Resources Assessment did not result in the documentation of any prehistoric or historic-era sites, features, or artifacts within the APE. In addition, due to a lack of significant water sources or concentrations of other resources potentially attractive to native peoples, the APE exhibits a low level of sensitivity for containing prehistoric sites.

Assembly Bill (AB) 52 requires that lead agencies evaluate a project's potential impact on "tribal cultural resources", which include "[s]ites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are eligible for inclusion in the California Register of Historical Resources or included in a local register of historical resources." AB 52 also gives lead agencies the discretion to determine, based on substantial evidence, whether a resource qualifies as a "tribal cultural resource." AB 52 applies whenever a lead agency adopts an environmental impact report, mitigated negative declaration, or negative declaration.

In the event that human remains, or any associated funerary artifacts are discovered during construction, all work must cease within the immediate vicinity of the discovery. If the remains are deemed to be Native American, the coroner must notify the NAHC, which will in turn appoint and notify a Most Likely Descendent (MLD) to act as a tribal representative. The MLD will work with a qualified archaeologist to determine the proper treatment of the human remains and associated funerary objects. With implementation of Mitigation Measures CUL-1, the proposed Project would not cause a substantial adverse change in the significant of a tribal cultural resource and impacts would be reduced to a less than significant level.

Mitigation Measures: Refer to Mitigation Measure CUL-1.

4.19 Utilities and Service Systems

<i>Would the project:</i>	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Require or result in the relocation or construction of new or expanded water, or wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?				X
b. Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?				X
c. 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?				X
d. 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?			X	
e. Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?			X	

a) *Require or result in the relocation or construction of new or expanded water, or wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?*

No Impact. The Project includes the development of roadway infrastructure to an existing entitled development project. No new water, wastewater, electrical, natural gas, or telecommunications infrastructure or facilities would be constructed. The Project proposes to construct a new culvert that would attach to an existing culvert under Little John Road, but this improvement would not result in the need for additional storm water facilities. Operation of the proposed Project would not generate demand for utilities requiring the relocation or construction of new or expanded facilities. The potential environmental effects associated with construction and operation of the Project are analyzed within this Initial Study and impacts have been determined to be less than significant with compliance with regulatory

requirements and/or implementation of mitigation measures. Thus, the proposed Project would not require or result in relocation or construction of new or expanded water, or wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects.

Mitigation Measures: No mitigation measures are required.

b) *Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?*

No Impact. The Project includes the development of roadway infrastructure to an existing entitled development project. No new structures or facilities would be constructed requiring the use of potable water. Thus, no impact to water supplies would occur as a result of the proposed Project.

Mitigation Measures: No mitigation measures are required.

c) *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 includes the development of roadway infrastructure to an existing entitled development project. No new structures or facilities would be constructed that would generate wastewater requiring treatment. Thus, no impact to wastewater treatment capacity would occur as a result of the proposed Project.

Mitigation Measures: No mitigation measures are required.

d) *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?*

e) *Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?*

Less Than Significant Impact. Solid waste collection in the County is provided by Calaveras County Integrated Waste Management. The nearest landfill within Calaveras County is Rock Creek Solid Waste Facility, located at 12021 Hunt Road, Milton, California (CalRecycle, 2022a). Rock Creek Solid Waste Facility covers 201 acres of land, with 57 acres permitted for disposal (CalRecycle, 2022b). The site has a maximum permitted throughput of 500 tons of waste per day and is estimated to remain open until 2035. The facility's maximum capacity is 7,651,000 cubic yards and has a remaining capacity of 318,000 cubic yards as of May 2020.

Construction activities associated with the Project would generate a relatively minor amount of solid waste requiring disposal. The Project would be required to comply with all federal, State, and local statutes and regulations related to the collection and disposal of solid waste. Thus, the Project is not anticipated to 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. Impacts would be less than significant.

Mitigation Measures: No mitigation measures are required.

4.20 Wildfire

<i>If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:</i>	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Substantially impair an adopted emergency response plan or emergency evacuation plan?			X	
b. 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?				X
c. 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?			X	
d. 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?				X

Environmental Setting

According to the CalFire Hazard Severity Zone Map, the Project site is designated as a High Fire Hazard Severity Zone within a State Responsibility Area (SRA) (CALFIRE, 2022). The Project site is served by the Copperopolis FPD.

a) *Substantially impair an adopted emergency response plan or emergency evacuation plan?*

Less Than Significant Impact. The Calaveras County Emergency Operations Plan (EOP) outlines the functions, responsibilities, and regional risk assessments of Calaveras County for large scale emergencies such as wildland fires, hazardous materials incidents, flooding, and dam failure. The EOP addresses the planned response to extraordinary emergency situations and establishes a flexible, all hazards, emergency management organization required to facilitate the response to, and provide for short term recovery activities related to any significant emergency or disaster affecting Calaveras County. The EOP tasks the Calaveras County Sheriff’s Department with authority and responsibility for evacuation and movement of citizens in times of crisis, including the identification of evacuation routes (Calaveras County, 2019).

The Project includes the development of roadway infrastructure to an existing entitled development project. The proposed improvements would enhance emergency response and/or emergency evacuation

by providing a secondary access road to the Golf Club at Copper Valley. The access road would be designed and constructed in accordance with Chapter 12.02 of the County Code, which includes standards for the construction and maintenance of roads. In accordance with Chapter 12.08 of the County Code, the Project would also be required to obtain an encroachment permit before doing any work in the County right-of-way. The Safety Element of the County General Plan includes several goals, policies, and implementation measures related to emergency response and evacuation. In particular, the following policy would apply to the Project site:

S 3.4: All new development shall meet any applicable standards for access by emergency vehicles and egress by residents.

During construction activities, there is the potential for temporary traffic disruptions to occur along Little John Road or other nearby roadways. However, this would be temporary and emergency access to the Project site and surrounding area would be required to be maintained at all times. Additionally, all construction staging would occur within the boundaries of the Project site and would not interfere with circulation along Little John Road, or any other nearby roadways. Thus, the Project would not substantially impair an adopted emergency response plan or emergency evacuation plan. Impacts would be less than significant in this regard.

Mitigation Measures: No mitigation measures are required.

b) *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?*

No Impact. The Project would not exacerbate wildfire risks as the project involves the development of roadway infrastructure to an existing entitled development project. No impact would occur in this regard.

Mitigation Measures: No mitigation measures are required.

c) *Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?*

Less Than Significant Impact. The Project includes the development of roadway infrastructure to an existing entitled development project. The Project would not require the installation or maintenance of new infrastructure that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment. Impacts would be less than significant in this regard.

Mitigation Measures: No mitigation measures are required.

d) *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 development of roadway infrastructure to an existing entitled development project. No new structures are proposed. The Project would not expose people or structures

to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes. No impact would occur in this regard.

Mitigation Measures: No mitigation measures are required.

4.21 Mandatory Findings of Significance

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

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

Less Than Significant Impact. Although relatively unlikely, based upon the current land cover types found on-site, special-status species and/or federally- or State-protected birds could be occupying the site. In addition, although unlikely, the possibility exists for subsurface excavation of the site during grading and other construction activities to unearth deposits of cultural significance. However, this IS/MND includes mitigation measures that would reduce any potential impacts to less than significant levels. Therefore, the Project would have less than significant impacts related to degradation of the quality of the environment, reduction of habitat, threatened species, and/or California’s history or prehistory.

Mitigation Measures: No mitigation measures are required.

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

Less Than Significant Impact. The proposed Project, in conjunction with other development within the County, could incrementally contribute to cumulative impacts in the area. However, mitigation measures for all potentially significant project-level impacts identified for the proposed Project in this IS/MND have been included that would reduce impacts to less than-significant levels. As such, the Project’s incremental contribution towards cumulative impacts would not be considered significant. In addition, all future discretionary development projects in the area would be required to undergo the same environmental analysis and mitigate any potential impacts, as necessary. Therefore, the proposed Project would not have any impacts that would be cumulatively considerable, and impacts would be less than significant.

Mitigation Measures: No mitigation measures are required.

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

Less Than Significant Impact. The proposed Project would provide access to existing and planned development and is consistent with the land use designations for the site. Substantial adverse effects on human beings are not anticipated with implementation of the proposed Project. It should be noted that during construction activities, the Project could result in potential impacts related to soil erosion, surface water quality impacts, and noise. However, compliance with the existing regulatory environment and/or mitigation measures would reduce any potential impacts to a less-than-significant level. In addition, the proposed Project would be designed in accordance with all applicable building standards and codes to ensure adequate safety is provided for the Project’s roadway users. Therefore, impacts related to environmental effects that could cause adverse effects on human beings would be less than significant.

Mitigation Measures: No mitigation measures are required.

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Appendix A - Biological Resources Evaluation

BIOLOGICAL RESOURCE EVALUATION

April 2022

FLINT TRAIL ACCESS ROAD PROJECT
CALAVERAS COUNTY, CALIFORNIA



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Executive Summary

The project applicant proposes to construct an approximately 1-mile-long access road between Little John Road and an unnamed road in the southeast portion of the Golf Club at Copper Valley in Copperopolis, Calaveras County, California. The Flint Trail Access Road Project (Project) will link Flint Trail to Oak Creek Drive and the Golf Club at Copper Valley and will serve as a required secondary access for the Copper Valley masterplan community development.

To evaluate whether the Project may affect biological resources under California Environmental Quality Act (CEQA) purview, we (1) obtained lists of special-status species from the United States Fish and Wildlife Service, the California Department of Fish and Wildlife, and the California Native Plant Society; (2) reviewed other relevant background information such as aerial images and topographic maps; and (3) conducted a field reconnaissance survey at the Project site.

This biological resource evaluation summarizes (1) existing biological conditions on the Project site, (2) the potential for special-status species and regulated habitats to occur on or near the Project site, (3) the potential impacts of the proposed Project on biological resources and regulated habitats, and (4) measures to reduce those potential impacts to less-than-significant levels under CEQA.

We concluded the Project could affect five special-status plant species: Chinese camp brodiaea (*Brodiaea pallida*), beaked clarkia (*Clarkia rostrata*), forked hare-leaf (*Lagophylla dichotoma*), Stanislaus monkeyflower (*Erythranthe marmorata*), and veiny monardella (*Monardella venosa*). Nesting migratory birds could also be impacted. Impacts to all species can be reduced to less-than-significant levels with mitigation.

Abbreviations

Abbreviation	Definition
CCR	California Code of Regulations
CDFW	California Department of Fish and Wildlife
CESA	California Endangered Species Act
CEQA	California Environmental Quality Act
CFGC	California Fish and Game Code
CFR	Code of Federal Regulations
CNDDDB	California Natural Diversity Data Base
CNPS	California Native Plant Society
CRPR	California Rare Plant Rank
FE	Federally listed as Endangered
FESA	Federal Endangered Species Act
FT	Federally listed as Threatened
MBTA	Migratory Bird Treaty Act
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Association
NRCS	Natural Resources Conservation Science
RWQCB	Regional Water Quality Control Board
SE	State listed as Endangered
SR	State listed as Rare
SSSC	State Species of Special Concern
ST	State listed as Threatened
SWRCB	State Water Resources Control Board
USACE	United States Army Corps of Engineers
USC	United States Code
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey

1.0 Introduction

1.1 Background

Copper Valley (CV) Development Partners, LLC proposes to build an approximately 1-mile-long access road linking Flint Trail from Little John Road to the southeast boundary of the Golf Club at the Copper Valley (the Project). This access road will provide a required secondary access for the masterplan community development. The area comprising the proposed access road is 41.42 acres. The Project applicant is in the process of acquiring the property, which is currently owned by Calaveras County Water District.

The purpose of this biological resource evaluation is to assess whether the Project will affect protected biological resources pursuant to California Environmental Quality Act (CEQA) guidelines. Such resources include species of plants or animals listed or proposed for listing under the Federal Endangered Species Act (FESA) or the California Endangered Species Act (CESA) as well as those covered under the Migratory Bird Treaty Act (MBTA), the California Native Plant Protection Act, and various other sections of California Fish and Game Code (CFGC). This biological resource evaluation also addresses Project-related impacts to regulated habitats, which are those under the jurisdiction of the United States Army Corps of Engineers (USACE), State Water Resources Control Board (SWRCB), or California Department of Fish and Wildlife (CDFW).

1.2 Project Description

The Project will involve constructing an approximately 1-mile-long paved access road through previously undeveloped grassland and oak woodland. The Project will span two streams, Ramsey Gulch and an unnamed tributary to Ramsey Gulch, with bridges. The Project will also involve constructing five to seven retention basins adjacent to the access road.

1.3 Project Location

The 42.41-acre Project site runs from the intersection of Flint Trail and Little John Road to an unnamed access road approximately 1700 feet south of Oak Creek Drive in Copperopolis, Calaveras County, California (Figure 1 and Figure 2).

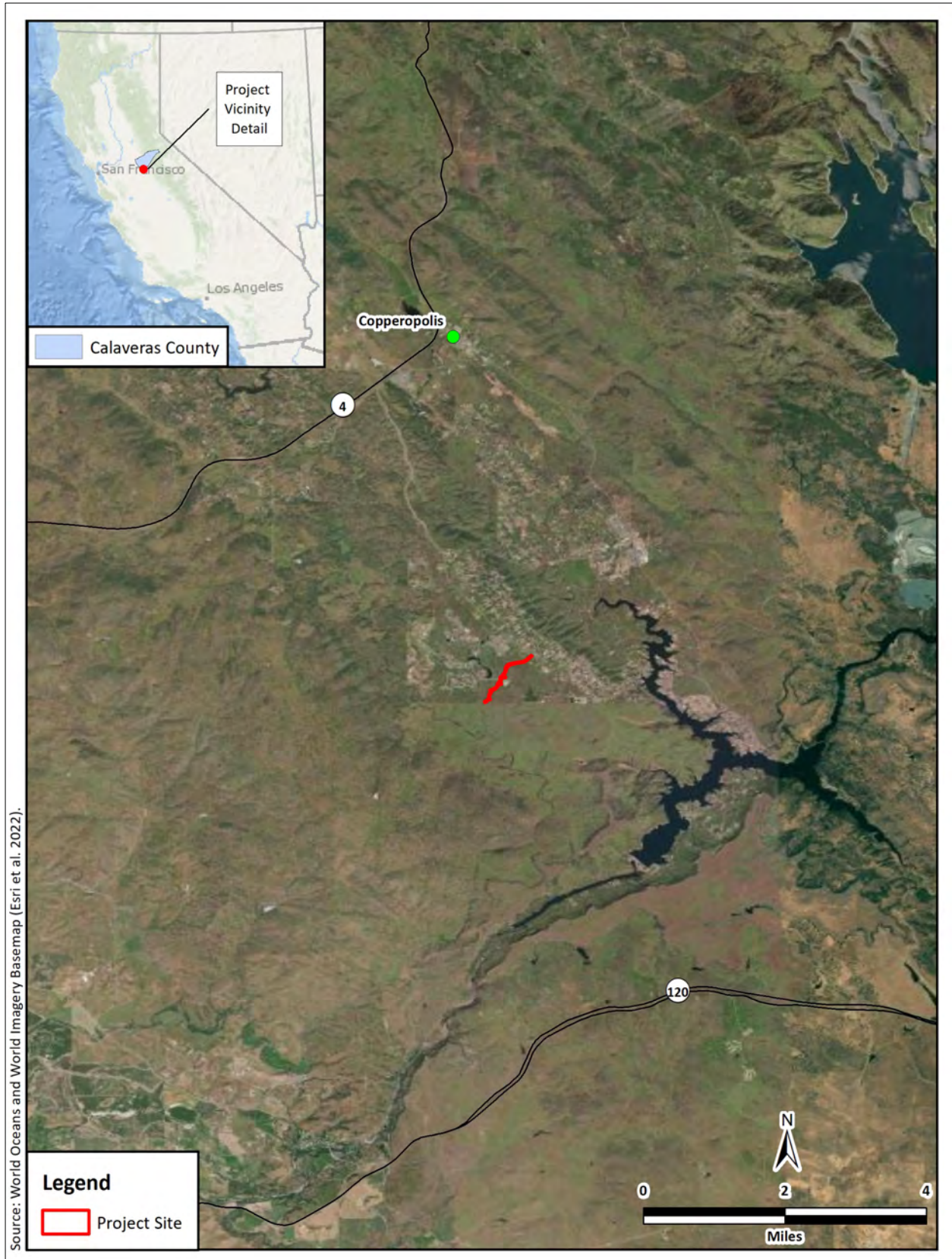


Figure 1. Project site vicinity map.



Figure 2. Project site map.

1.4 Purpose and Need of Proposed Project

The purpose of the Project is to construct an access road and retention basins. The Project is needed to provide required secondary access for the masterplan community development.

1.5 Regulatory Framework

The relevant state and federal regulatory requirements and policies that guide the impact analysis of the Project are summarized below.

1.5.1 State Requirements

California Department of Fish and Wildlife Jurisdiction. The CDFW has regulatory jurisdiction over lakes and streams in California. Activities that divert or obstruct the natural flow of a stream; substantially change its bed, channel, or bank; or use any materials (including vegetation) from the streambed, may require that the project applicant enter into a Lake and Streambed Alteration Agreement with the CDFW in accordance with California Fish and Game Code (CFGC) Section 1602.

California Endangered Species Act. The California Endangered Species Act (CESA) of 1970 (Fish and Game Code § 2050 et seq., and California Code of Regulations (CCR) Title 14, Subsection 670.2, 670.51) prohibits the take of species listed under CESA (14 CCR Subsection 670.2, 670.5). Take is defined as hunt, pursue, catch, capture, or kill or attempt to hunt, pursue, catch, capture, or kill. Under CESA, state agencies are required to consult with the CDFW when preparing CEQA documents. Consultation ensures that proposed projects or actions do not have a negative effect on state listed species. During consultation, CDFW determines whether take would occur and identifies “reasonable and prudent alternatives” for the project and conservation of special-status species. CDFW can authorize take of state listed species under Sections 2080.1 and 2081(b) of the CFGC in those cases where it is demonstrated that the impacts are minimized and mitigated. Take authorized under section 2081(b) must be minimized and fully mitigated. A CESA permit must be obtained if a project will result in take of listed species, either during construction or over the life of the project. Under CESA, CDFW is responsible for maintaining a list of threatened and endangered species designated under state law (Fish and Game Code § 2070). CDFW also maintains lists of species of special concern, which serve as “watch lists.” Pursuant to the requirements of CESA, a state or local agency reviewing a proposed project within its jurisdiction must determine whether the proposed project will have a potentially significant impact upon such species. Project-related impacts to species on the CESA list would be considered significant and would require mitigation. Impacts to species of concern or fully protected species would be considered significant under certain circumstances.

California Environmental Quality Act. The California Environmental Quality Act (CEQA) of 1970 (Subsections 21000–21178) requires that CDFW be consulted during the CEQA review process

regarding impacts of proposed projects on special-status species. Special-status species are defined under CEQA Guidelines subsection 15380(b) and (d) as those listed under FESA and CESA and species that are not currently protected by statute or regulation but would be considered rare, threatened, or endangered under these criteria or by the scientific community. Therefore, species considered rare or endangered are addressed in this biological resource evaluation regardless of whether they are afforded protection through any other statute or regulation. The California Native Plant Society (CNPS) inventories the native flora of California and ranks species according to rarity (CNPS 2022). Plants with Rare Plant Ranks 1A, 1B, 2A, or 2B are considered special-status species under CEQA.

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

California Native Plant Protection Act. The California Native Plant Protection Act of 1977 (CFGC §§ 1900–1913) requires all state agencies to use their authority to carry out programs to conserve endangered and otherwise rare species of native plants. Provisions of the act prohibit the taking of listed plants from the wild and require the project proponent to notify CDFW at least 10 days in advance of any change in land use, which allows CDFW to salvage listed plants that would otherwise be destroyed.

Nesting birds. CFGC Sections 3503, 3503.5, and 3800 prohibit the possession, incidental take, or needless destruction of birds, their nests, and eggs. CFGC Section 3511 lists birds that are “Fully Protected” as those that may not be taken or possessed except under specific permit.

Porter-Cologne Water Quality Control Act. The Porter-Cologne Water Quality Control Act (California Water Code § 13000 et. sec.) was established in 1969 and entrusts the SWRCB and nine Regional Water Quality Control Boards (collectively Water Boards) with the responsibility to preserve and enhance all beneficial uses of California’s diverse waters. The Act grants the Water Boards authority to establish water quality objectives and regulate point- and nonpoint-source pollution discharge to the state’s surface and ground waters. Under the auspices of the United States Environmental Protection Agency, the Water Boards are responsible for certifying, under Section 401 of the federal Clean Water Act, that activities affecting waters of the United States comply California water quality standards. The Porter-Cologne Water Quality Control Act addresses all “waters of the State,” which are more broadly defined than waters of the United States. Waters of the State include any surface water or groundwater, including saline waters, within the boundaries of the state. They include artificial as well as natural water bodies and

federally jurisdictional and federally non-jurisdictional waters. The Water Boards may issue a Waste Discharge Requirement permit for projects that will affect only federally non-jurisdictional waters of the State.

1.5.2 Federal Requirements

Federal Endangered Species Act. The USFWS and the National Oceanographic and Atmospheric Association and National Marine Fisheries Service enforce the provisions stipulated in the FESA of 1973 (FESA, 16 United States Code [USC] § 1531 et seq.). Threatened and endangered species on the federal list (50 Code of Federal Regulations [CFR] 17.11 and 17.12) are protected from take unless a Section 10 permit is granted to an entity other than a federal agency or a Biological Opinion with incidental take provisions is rendered to a federal lead agency via a Section 7 consultation. Take is defined as harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect or attempt to engage in any such conduct. Pursuant to the requirements of the FESA, an agency reviewing a proposed action within its jurisdiction must determine whether any federally listed species may be present in the proposed action area and determine whether the proposed action may affect such species. Under the FESA, habitat loss is considered an effect to a species. In addition, the agency is required to determine whether the proposed action is likely to jeopardize the continued existence of any species that is listed or proposed for listing under the FESA (16 USC § 1536[3], [4]). Therefore, proposed action-related effects to these species or their habitats would be considered significant and would require mitigation.

Migratory Bird Treaty Act. The federal MBTA (16 USC § 703, Supp. I, 1989) prohibits killing, possessing, trading, or other forms of take of migratory birds except in accordance with regulations prescribed by the Secretary of the Interior. “Take” is defined as the pursuing, hunting, shooting, capturing, collecting, or killing of birds, their nests, eggs, or young (16 USC § 703 and § 715n). This act encompasses whole birds, parts of birds, and bird nests and eggs. The MBTA specifically protects migratory bird nests from possession, sale, purchase, barter transport, import, and export, and take. For nests, the definition of take per 50 CFR 10.12 is to collect. The MBTA does not include a definition of an “active nest.” However, the “Migratory Bird Permit Memorandum” issued by the USFWS in 2003 and updated in 2018 clarifies the MBTA in that regard and states that the removal of nests, without eggs or birds, is legal under the MBTA, provided no possession (which is interpreted as holding the nest with the intent of retaining it) occurs during the destruction (USFWS 2018).

United States Army Corps of Engineers Jurisdiction. Areas meeting the regulatory definition of “waters of the United States” (jurisdictional waters) are subject to the jurisdiction of the USACE under provisions of Section 404 of the Clean Water Act (1972) and Section 10 of the Rivers and Harbors Act (1899). These waters may include all waters used, or potentially used, for interstate commerce, including all waters subject to the ebb and flow of the tide, all interstate waters, all other waters (intrastate lakes, rivers, streams, mudflats, sandflats, playa lakes, natural ponds, etc.), all impoundments of waters otherwise defined as waters of the United States, tributaries of waters otherwise defined as waters of the United States, the territorial seas, and wetlands

adjacent to waters of the United States (33 CFR part 328.3). Ditches and drainage canals where water flows intermittently or ephemerally are not regulated as waters of the United States. Wetlands on non-agricultural lands are identified using the *Corps of Engineers Wetlands Delineation Manual* and related Regional Supplement (USACE 1987 and 2008). Construction activities, including direct removal, filling, hydrologic disruption, or other means in jurisdictional waters are regulated by the USACE. The placement of dredged or fill material into such waters must comply with permit requirements of the USACE. No USACE permit will be effective in the absence of state water quality certification pursuant to Section 401 of the Clean Water Act. The SWRCB is the state agency (together with the Regional Water Quality Control Boards) charged with implementing water quality certification in California.

2.0 Methods

2.1 Desktop Review

As a framework for the evaluation and reconnaissance survey, we obtained an official USFWS species list for the Project (USFWS 2022a, Appendix A). In addition, we searched the California Natural Diversity Database (CNDDDB, CDFW 2022, Appendix B) and the CNPS Inventory of Rare and Endangered Plants (CNPS 2022, Appendix C) for records of special-status plant and animal species from the vicinity of the Project site. Regional lists of special-status species were compiled using USFWS, CNDDDB, and CNPS database searches confined to the Copperopolis 7.5-minute United States Geological Survey (USGS) topographic quadrangle, which encompasses the Project site, and the eight surrounding quadrangles (Bachelor Valley, Jenny Lind, Salt Spring Valley, Angeles Camp, New Melones Dam, Keystone, Knights Ferry, and Oakdale). A local list of special-status species was compiled using CNDDDB records from within 5 miles of the Project site. Species that lack a CEQA-recognized special-status designation by state or federal regulatory agencies or public interest groups were omitted from the final list. Species for which the Project site does not provide habitat were eliminated from further consideration. We also reviewed aerial imagery from Google Earth (Google 2022) and other sources, USGS topographic maps, the Web Soil Survey (NRCS 2022), the National Wetlands Inventory (USFWS 2022b), and relevant literature.

2.2 Reconnaissance Survey

Colibri Principal Scientist Jeff Davis and Senior Scientist Ryan Slezak conducted a field reconnaissance survey of the Project site on 7 March 2022. The Project site and a 50-foot buffer surrounding the Project site (Figure 3) were walked and thoroughly inspected to evaluate and document the potential for the area to support state- or federally protected resources. All plants except those under cultivation or planted in residential areas and all vertebrate wildlife species observed within the survey area were identified and documented. The survey area was evaluated for the presence of regulated habitats, including lakes, streams, and other waters using methods described in the *Wetlands Delineation Manual* and regional supplement (USACE 1987, 2008) and as defined by the CDFW (<https://www.wildlife.ca.gov/conservation/lsa>) or under the Porter-Cologne Water quality Control Act.

2.3 Significance Criteria

CEQA defines “significant effect on the environment” as “a substantial, or potentially substantial, adverse change in the environment” (California Public Resource Code § 21068). Under CEQA Guidelines Section 15065, a Project’s effects on biological resources are deemed significant where the Project would do the following:

- a) Substantially reduce the habitat of a fish or wildlife species,
- b) Cause a fish or wildlife population to drop below self-sustaining levels,
- c) Threaten to eliminate a plant or animal community, or
- d) Substantially reduce the number or restrict the range of a rare or endangered plant or animal.

In addition to the Section 15065 criteria, Appendix G within the CEQA Guidelines includes six additional impacts to consider when analyzing the effects of a project. Under Appendix G, a project's effects on biological resources are deemed significant where the project would do any of the following:

- e) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the CDFW or USFWS;
- f) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the CDFW or USFWS;
- g) 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;
- h) 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;
- i) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; or
- j) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

These criteria were used to determine whether the potential effects of the Project on biological resources qualify as significant.



Figure 3. Reconnaissance survey area map.

3.0 Results

3.1 Desktop Review

The USFWS species list for the Project included eight species listed as threatened, endangered, or candidate under the FESA (USFWS 2022a, Table 1, Appendix A). Of those eight species, one could occur on or near the Project site based on the presence of habitat. All others are not expected to occur on or near the Project site due to either (1) the lack of habitat, (2) the Project site being outside the current range of the species, or (3) the presence of development that would otherwise preclude occurrence (Table 1). As identified in the species list, the Project site does not occur in USFWS-designated or proposed critical habitat for any species (USFWS 2022a, Appendix A).

Searching the CNDDDB for records of special-status species from the Copperopolis 7.5-minute USGS topographic quad and the eight surrounding quads produced 164 records of 53 species (Table 1, Appendix B). Of those 53 species, 13 are not given further consideration because they are not CEQA-recognized as special-status species (Appendix B). Of the remaining 40 species, 14 are known from within 5 miles of the Project site (Table 1, Figure 4). Of those species, only Chinese Camp brodiaea (*brodiaea pallida* – FT, SE, CRPR 1B.1) and beaked clarkia (*Clarkia rostrata* – CRPR 1B.3) could occur on or near the Project site (Table 1). In addition, forked hare-leaf (*Lagophylla dichotoma* – CRPR 1B.1), Stanislaus monkeyflower (*Erythranthe marmorata* – CRPR 1B.1), and veiny monardella (*Monardella venosa* – CRPR 1B.1), which were identified in the nine-quad search, could occur on or near the Project site (Table 1).

Searching the CNPS inventory of rare and endangered plants of California yielded 23 species (CNPS 2022, Appendix C), two of which have a rank of 2B and 21 of which have a rank of 1B (Table 1). Five of those species, which were also identified in the CNDDDB search, could occur on or near the Project site based on the presence of habitat (Table 1).

The Project site is underlain by Copperopolis-Whiterock complex 2 to 8 percent slopes, Copperopolis-Whiterock complex 3 to 15 percent slopes, and Urban land-Copperopolis complex, 0 to 15 percent slopes (NCRS 2022). The Project site is at an elevation of 750–830 feet above mean sea level (Google 2022).

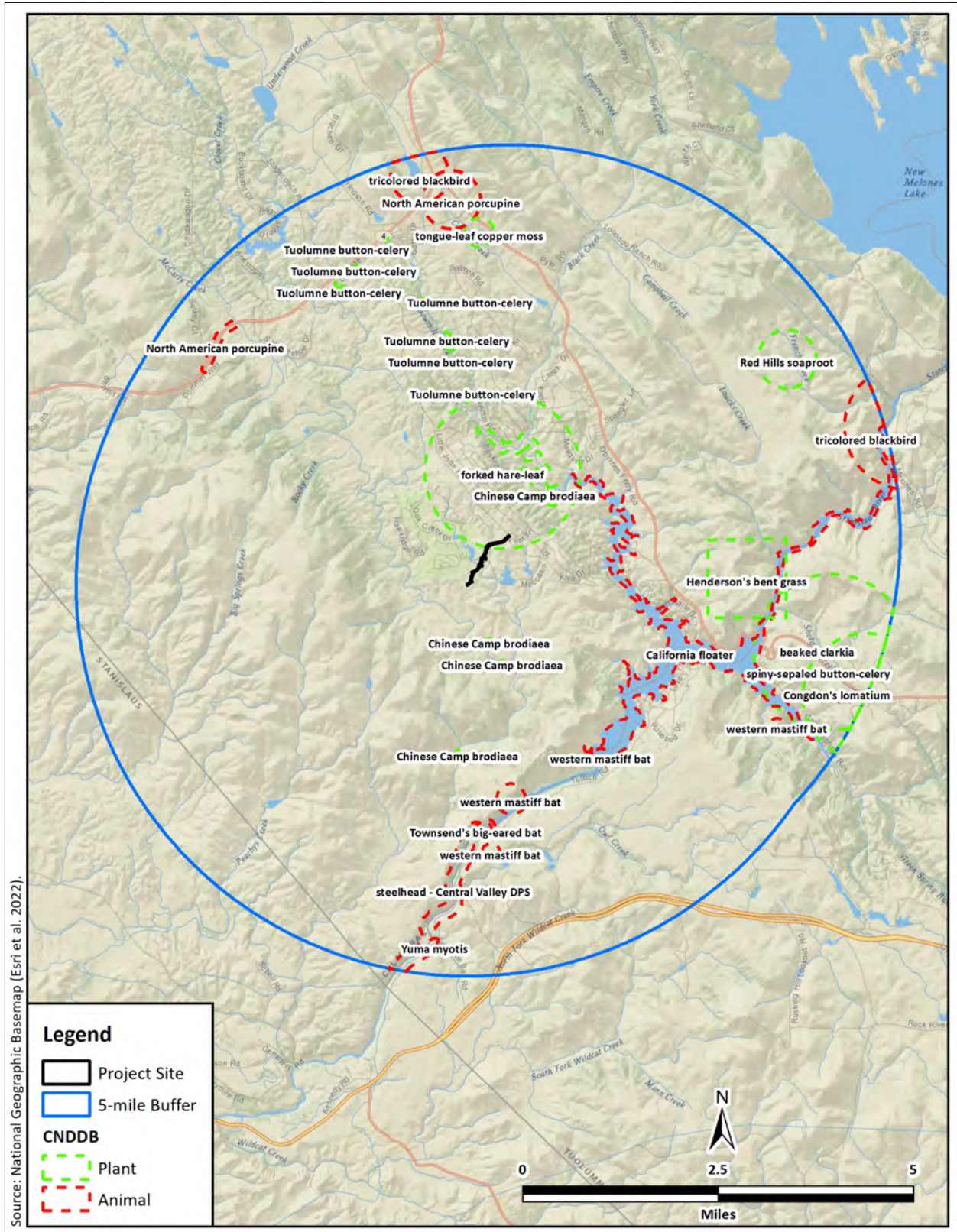


Figure 4. CNDDDB occurrence map.

Table 1. Special-status species, their listing status, habitats, and potential to occur on or near the Project site.

Species	Status ¹	Habitat	Potential to Occur ²
Federally and State-Listed Endangered or Threatened Species			
Chinese Camp brodiaea ³ (<i>Brodiaea pallida</i>)	FT, SE, 1B.1	Intermittent streambeds and vernal swales at 525–1280 feet elevation.	Low. Intermittent streambeds provide potential habitat for this species. A large 2008 CNDDDB occurrence record is known from 1 mile northeast of the Project site. Although no individuals were detected during the 7 March 2022 survey, the survey was conducted outside the May–June flowering period of this species.
Colusa grass (<i>Neostapfia colusana</i>)	FT, SE, 1B.1	Vernal pools and depressions below 410 feet elevation.	None. Habitat lacking; no vernal pools or other potentially suitable aquatic features were found in the survey area.
Delta button-celery (<i>Eryngium racemosum</i>)	SE, 1B.1	Seasonally flooded clay depressions in floodplains at 9–90 feet elevation.	None. Habitat lacking; the Project site lacked seasonally flooded clay depressions.
Hartweg's golden sunburst (<i>Pseudobahia bahiifolia</i>)	FE, SE, 1B.1	Grassland and open woodland in clay soils at 328–656 feet elevation.	None. Habitat lacking; the Project site is above the elevational range of this species.
Red Hills vervain (<i>Verbena californica</i>)	FT, ST, 1B.1	Wet places, seeps, generally serpentine soils in pine/oak woodland at 985–1312 feet elevation.	None. Habitat lacking; no serpentine soils were found in the survey area.
Monarch butterfly (<i>Danaus plexippus</i>)	FCE	Groves of trees within 1.5 miles of the ocean that produce suitable micro-climates for overwintering such as high humidity,	None. Habitat lacking; the Project site is greater than 1.5 miles from the ocean.

		dappled sunlight, access to water and nectar, and protection from wind.	
Valley elderberry longhorn beetle ³ (<i>Desmocerus californicus dimorphus</i>)	FT	Elderberry (<i>Sambucus</i> sp.) plants with stems > 1-inch diameter at ground level.	None. Habitat lacking; no elderberry plants were present in the survey area.
Vernal pool fairy shrimp (<i>Branchinecta lynchi</i>)	FT	Vernal pools; some artificial depressions, stock ponds, vernal swales, ephemeral drainages, and seasonal wetlands.	None. Habitat lacking; no vernal pools or other potentially suitable aquatic features were found in the survey area.
Vernal pool tadpole shrimp (<i>Lepidurus packardii</i>)	FE	Vernal pools, clay flats, alkaline pools, and ephemeral stock tanks.	None. Habitat lacking; no vernal pools or other potentially suitable aquatic features were found in the survey area.
Delta smelt (<i>Hypomesus transpacificus</i>)	FT, SE	River channels and tidally influenced sloughs.	None. Habitat lacking; Project site lacked connectivity to the aquatic habitat this species requires.
Steelhead trout – Central Valley Distinct Population Segment ³ (<i>Oncorhynchus mykiss irideus</i>)	FT	Streams with adequate flows in coastal watersheds from Shasta County south to the San Joaquin-Merced River confluence.	None. Habitat lacking; the Project site lacked connectivity to the aquatic habitat this species requires.
California red-legged frog (<i>Rana draytonii</i>)	FT, SSSC	Creeks, ponds, and marshes for breeding; burrows for upland refuge.	None. The Project site is outside the current known local range of this species.
California tiger salamander (<i>Ambystoma californiense</i>)	FT, ST	Vernal pools or seasonal ponds for breeding; small mammal burrows for upland refugia in natural grasslands.	None. The Project site is outside the current known local range of this species.

Swainson's hawk (<i>Buteo swainsoni</i>)	ST	Large trees for nesting with adjacent grasslands, alfalfa fields, or grain fields for foraging.	None. The Project site is outside the current known local range of this species; the only CNDDB occurrence is from > 10 miles northwest of the Project site on the edge of the San Joaquin Valley.
Tricolored blackbird ³ (<i>Agelaius tricolor</i>)	ST	Freshwater emergent wetlands, agricultural fields, irrigated pastures, grassland, and silage fields near dairies.	None. Habitat lacking; no suitable aquatic resources or agricultural land in the survey area.
State Species of Special Concern			
Hardhead ³ (<i>Mylopharodon conocephalus</i>)	SSSC	Undisturbed areas of larger streams with high water quality.	None. Habitat lacking; the Project site lacked larger streams or rivers.
Red Hills roach (<i>Lavinia symmetricus</i>)	SSSC	Spring-fed intermittent creeks of Six Bit Gulch.	None. The Project site is outside the known range for this species.
Western spadefoot (<i>Spea hammondi</i>)	SSSC	Grasslands with shallow temporary pools, sandy washes, and river floodplains.	None. Habitat lacking; no suitable aquatic resources in the survey area.
Northwestern pond turtle (<i>Actinemys marmorata</i>)	SSSC	Ponds, rivers, marshes, streams, and irrigation ditches, usually with aquatic vegetation and woody debris for basking and adjacent natural upland areas for egg laying.	None. Habitat lacking; aquatic features on the Project site lacked sufficient depth and structure to support this species.
Burrowing owl (<i>Athene cunicularia</i>)	SSSC	Grassland and upland scrub with friable soil; some agricultural or other developed and disturbed areas with ground squirrel burrows.	None. Habitat lacking; no ground squirrel burrows or burrow surrogates were found in the survey area.

Yellow-breasted chat (<i>Icteria virens</i>)	SSSC	Riparian thickets and other dense brushy areas near watercourses.	None. Habitat lacking; no riparian thickets or other dense brushy areas were found in the survey area.
Pallid bat ³ (<i>Antrozous pallidus</i>)	SSSC	Arid or semi-arid locations in rocky areas and sparsely vegetated grassland near water. Rock crevices, caves, mine shafts, bridges, building, and tree hollows for roosting.	None. Habitat lacking; no rocky areas or sparsely vegetated grassland were present in the survey area.
Townsend's big-eared bat ³ (<i>Corynorhinus townsendii</i>)	SSSC	Open buildings, caves, or mines for roosting in a variety of habitats including cismontane woodland and low elevation conifer forest.	None. Habitat lacking; no buildings, caves, or mines were present in the survey area.
Western mastiff bat ³ (<i>Eumops perotis californicus</i>)	SSSC	Roosts in crevices in cliff faces, high buildings, and tunnels in open semi-arid habitats.	None. Habitat lacking; no cliffs, high buildings, or tunnels were present in the survey area.
Western red bat ³ (<i>Lasiurus blossevillii</i>)	SSSC	Heavily shaded areas in riparian woodlands at 1900–7200 feet elevation.	None. Habitat lacking; no riparian woodland was present in the survey area.
California Rare Plants			
Beaked clarkia ³ (<i>Clarkia rostrata</i>)	1B.3	Cismontane woodland and valley and foothill grassland at 195–1640 feet elevation.	Moderate. Suitable land cover within the survey area. No individuals were detected during 7 March 2022 survey. However, the survey was conducted outside the April–May flowering period of this species.
Congdon's lomatium ³ (<i>Lomatium congdonii</i>)	1B.2	Woodlands with serpentine soils at 985–3937 feet elevation.	None. Habitat lacking; no serpentine soils were found in the survey area.

Dwarf downingia (<i>Downingia pusilla</i>)	2B.2	Vernal pools and roadside ditches below 500 feet elevation.	None. Habitat lacking; no vernal pools or other potentially suitable aquatic features were found in the survey area.
Forked hare-leaf ³ (<i>Lagophylla dichotoma</i>)	1B.1	Grassland, openings in woodlands at 164–1312 feet elevation.	Low. Grassland and openings in woodlands within survey area provide potential habitat for this species. The northern third of the survey area overlaps with a vague, non-specific 2000 CNDDDB occurrence. Although no individuals were detected during the 7 March 2022 survey, the survey was conducted outside the April–May flowering period of this species.
Hoover’s calycadenia (<i>Calycadenia hooveri</i>)	1B.3	Rocky, exposed places in grassland and oak savanna at 328–1312 feet elevation.	None. Habitat lacking; no rocky, exposed places were found in the survey area.
Mariposa cryptantha (<i>Cryptantha mariposae</i>)	1B.3	Rocky, semi-barren ridges; dry, serpentine slopes in chaparral at 656–2133 feet elevation.	None. Habitat lacking; no serpentine soils were found in the survey area.
Patterson's navarretia (<i>Navarretia paradoxiclara</i>)	1B.3	Open, seasonally wet areas and meadows with serpentine soils.	None. Habitat lacking; no serpentine soils were found in the survey area.
Rawhide Hill onion (<i>Allium tuolumnense</i>)	1B.2	Serpentine slopes at 984–1969 feet elevation.	None. Habitat lacking; no serpentine soils were found in the survey area.
Red Hills cryptantha (<i>Cryptantha spithamaea</i>)	1B.3	Gravelly, open, serpentine slopes and ephemeral creek beds in chaparral and foothill woodland at 886–2493 feet elevation.	None. Habitat lacking; no serpentine soils were found in the survey area.

Red Hills ragwort (<i>Senecio clelandii</i> var. <i>heterophyllus</i>)	1B.2	Chaparral, woodland along streams in serpentine soils at 853–2953 feet elevation.	None. Habitat lacking; no serpentine soils were found in the survey area.
Red Hills soaproot ³ (<i>Chlorogalum grandiflorum</i>)	1B.2	Serpentine outcrops, open shrubby or wooded hills at 984– 1640 feet elevation.	None. Habitat lacking; no serpentine soils were found in the survey area.
Shaggyhair lupine (<i>Lupinus spectabilis</i>)	1B.2	Serpentine chaparral and foothill woodland at 656–2953 feet elevation.	None. Habitat lacking; no serpentine soils were found in the survey area.
Spiny-sepaed button- celery ³ (<i>Eryngium spinosepalum</i>)	1B.2	Vernal pools and swales in valley and foothill grassland at 330–4200 feet elevation.	None. Habitat lacking; no vernal pools or other potentially suitable aquatic features were found in the survey area.
Stanislaus monkeyflower (<i>Erythranthe marmorata</i>)	1B.1	Seeps and streambanks at 330– 2953 feet elevation.	Low. Streams in the survey area provide potential habitat for this species. However, no individuals were detected during the 7 March 2022 survey.
Tongue-leaf copper moss ³ (<i>Scopelophila cataractae</i>)	2B.2	Rocks or thin soil over rocks in copper-rich environments.	None. Habitat lacking; the survey area lacked rocky areas.
Tuolumne button-celery ³ (<i>Eryngium pinnatisectum</i>)	1B.2	Vernal pools, swales, intermittent streams at 230–3117 feet elevation.	None. Habitat lacking; no vernal pools or other potentially suitable aquatic features were found in the survey area.
Veiny monardella (<i>Monardella venosa</i>)	1B.1	Grassland at 165– 1312 feet elevation.	Low. Grassland in the survey area provides potential habitat for this species. No individuals were detected during the 7 March 2022 survey. However, the survey was conducted outside the June–July flowering period of this species.

Yellow-lip pansy monkeyflower (<i>Diplacus pulchellus</i>)	1B.2	Vernally wet depressions or seepage areas at 1969–6562 feet elevation.	None. Habitat lacking; the Project site is below the elevational range of this species.
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Status ¹	Potential to Occur ²
FE = Federally listed Endangered	None: Species or sign not observed; conditions unsuitable for occurrence.
FT = Federally listed Threatened	Low: Neither species nor sign observed; conditions marginal for occurrence.
SE = State listed Endangered	Moderate: Neither species nor sign observed; conditions suitable for occurrence.
ST = State listed Threatened	High: Neither species nor sign observed; conditions highly suitable for occurrence.
SR = State listed Rare	Present: Species or sign observed; conditions suitable for occurrence.
SSSC = State Species of Special Concern	

CNPS California Rare Plant Rank ¹ :	Threat Ranks ¹ :
1B – plants rare, threatened, or endangered in California and elsewhere.	0.1 – seriously threatened in California (> 80% of occurrences).
2B – plants rare, threatened, or endangered in California but more common elsewhere.	0.2 – moderately threatened in California (20-80% of occurrences).
	0.3 – not very threatened in California (<20% of occurrences).

³Record from within 5 miles of the Project site.

3.2 Reconnaissance Survey

3.2.1 Land Use and Habitats

The survey area supported annual grassland, blue oak (*Quercus douglassii*) woodland, segments of gravel and dirt roads, a wet meadow, and intermittent streams in a landscape with rolling topography (Figures 5–9). The Project site is owned by the Calaveras County Water District and evidently used at least occasionally for cattle grazing.



Figure 5. Photograph of the northern end of the Project site, looking northeast, showing annual grassland and blue oak woodland with rolling topography.



Figure 6. Photograph of the central portion of the Project site, looking north, showing a gravel road (Oak Creek Drive) and grassland at the new access road and a proposed retention basin site.



Figure 7. Photograph of the Project site, looking east, showing an intermittent stream (Ramsey Gulch) that will be spanned with a bridge.



Figure 8. Photograph of the survey area west of the Project site, looking southwest, showing a wet meadow and intermittent tributaries of Ramsey Gulch.



Figure 9. Photograph of the Project site, looking southeast, showing grassland and blue oak woodland at a proposed retention basin site.

3.2.2 Plant and Animal Species Observed

A total of 46 plant species (28 native and 18 nonnative), one fish species, 37 bird species, and two mammal species were observed during the survey (Table 2).

Table 2. Plant and vertebrate wildlife species observed during the reconnaissance survey.

Common Name	Scientific Name	Status
Plants		
Family Agavaceae		
Common soaproot	<i>Chlorogalum pomeridianum</i>	Native
Family Apiaceae		
Bur chervil	<i>Anthriscus caucalis</i>	Nonnative
Hog fennel	<i>Lomatium utriculatum</i>	Native
Family Asteraceae		
Cocklebur	<i>Xanthium strumarium</i>	Native
Italian thistle	<i>Carduus pycnocephalus</i>	Nonnative
Prickly ox-tongue	<i>Helminthotheca echioides</i>	Nonnative
Sow thistle	<i>Sonchus oleraceus</i>	Nonnative
Family Boraginaceae		
Baby blue eyes	<i>Nemophila menziesii</i>	Native
Common fiddleneck	<i>Amsinckia intermedia</i>	Native
Rusty haired popcorn flower	<i>Plagiobothrys nothofulvus</i>	Native
Slender popcorn flower	<i>Plagiobothrys tenellus</i>	Native
Family Brassicaceae		
Common fringe pod	<i>Thysanocarpus curvipes</i>	Native
Family Caprifoliaceae		
Chaparral honeysuckle	<i>Lonicera interrupta</i>	Native
Family Cyperaceae		
Field sedge	<i>Carex praegracilis</i>	Native
Family Fabaceae		
California burclover	<i>Medicago polymorpha</i>	Nonnative
Chilean trefoil	<i>Acmispon wrangelianus</i>	Native
Miniature lupine	<i>Lupinus bicolor</i>	Native
Narrow-leaved vetch	<i>Vicia sativa</i>	Nonnative
Rose clover	<i>Trifolium hirtum</i>	Nonnative
Spider lupine	<i>Lupinus benthamii</i>	Native
Family Fagaceae		
Blue oak	<i>Quercus douglasii</i>	Native
Interior live oak	<i>Quercus wislizini</i>	Native
Family Geraniaceae		
Big heron bill	<i>Erodium botrys</i>	Nonnative

Common Name	Scientific Name	Status
Carolina geranium	<i>Geranium carolinianum</i>	Native
Coastal heron's bill	<i>Erodium cicutarium</i>	Nonnative
Musky stork's bill	<i>Erodium moschatum</i>	Nonnative
White stemmed filaree	<i>Erodium brachycarpum</i>	Nonnative
Family Hydrocharitaceae		
Western waterwort	<i>Elodea nuttallii</i>	Native
Family Juncaceae		
Wire rush	<i>Juncus balticus</i>	Native
Family Lamiaceae		
Pennyroyal	<i>Mentha pulegium</i>	Nonnative
Family Montiaceae		
Miner's lettuce	<i>Claytonia perfoliata</i>	Native
Family Onagraceae		
Willow herb	<i>Epilobium ciliatum</i>	Native
Family Poaceae		
Common velvetgrass	<i>Holcus lanatus</i>	Nonnative
Medusa head	<i>Elymus caput-medusae</i>	Nonnative
Slim oat	<i>Avena barbata</i>	Nonnative
Soft chess	<i>Bromus hordeaceus</i>	Nonnative
Wild oats	<i>Avena fatua</i>	Nonnative
Family Polemonaceae		
True babystars	<i>Leptosiphon bicolor</i>	Native
Whiskerbrush	<i>Leptosiphon ciliatus</i>	Native
Family Polygonaceae		
Curly dock	<i>Rumex crispus</i>	Nonnative
Family Ranunculaceae		
Common buttercup	<i>Ranunculus californicus</i>	Native
Family Rubiaceae		
Common bedstraw	<i>Galium aparine</i>	Native
Family Salicaceae		
Goodding's willow	<i>Salix gooddingii</i>	Native
Family Themidaceae		
Blue dicks	<i>Dipterostemon capitatus</i>	Native
Family Typhaceae		
Narrowleaf cattail	<i>Typha domingensis</i>	Native
Family Viscaceae		
Mistletoe	<i>Phoradendron leucarpum</i>	Native
Fishes		
Family Cyprinidae		
Minnow	unknown	--

Common Name	Scientific Name	Status
Birds		
Family Accipitridae		
Red-tailed hawk	<i>Buteo jamaicensis</i>	MBTA, CFGC
Family Aegithalidae		
Bushtit	<i>Psaltriparus minimus</i>	MBTA, CFGC
Family Anatidae		
Canada goose	<i>Branta canadensis</i>	MBTA, CFGC
Mallard	<i>Anas platyrhynchos</i>	MBTA, CFGC
Family Ardeidae		
Great blue heron	<i>Ardea herodias</i>	MBTA, CFGC
Family Cathartidae		
Turkey vulture	<i>Cathartes aura</i>	MBTA, CFGC
Family Columbidae		
Eurasian collared-dove	<i>Streptopelia decaocto</i>	--
Mourning dove	<i>Zenaida macroura</i>	MBTA, CFGC
Family Corvidae		
California scrub-jay	<i>Aphelocoma californica</i>	MBTA, CFGC
Common raven	<i>Corvus corax</i>	MBTA, CFGC
Family Fringillidae		
American goldfinch	<i>Spinus tristis</i>	MBTA, CFGC
House finch	<i>Haemorhous mexicanus</i>	MBTA, CFGC
Lawrence's goldfinch	<i>Spinus lawrencei</i>	MBTA, CFGC
Lesser goldfinch	<i>Spinus psaltria</i>	MBTA, CFGC
Family Hirundinidae		
Violet-green swallow	<i>Tachycineta thalassina</i>	MBTA, CFGC
Family Icteridae		
Brewer's blackbird	<i>Euphagus cyanocephalus</i>	MBTA, CFGC
Red-winged blackbird	<i>Agelaius phoeniceus</i>	MBTA, CFGC
Family Odontophoridae		
California quail	<i>Callipepla californica</i>	MBTA, CFGC
Family Paridae		
Oak titmouse	<i>Baeolophus inornatus</i>	MBTA, CFGC
Family Parulidae		
Yellow-rumped warbler	<i>Setophaga coronata</i>	MBTA, CFGC
Family Passerellidae		
Dark-eyed junco	<i>Junco hyemalis</i>	MBTA, CFGC
Lark sparrow	<i>Chondestes grammacus</i>	MBTA, CFGC
Savannah sparrow	<i>Passerculus sandwichensis</i>	MBTA, CFGC
White-crowned sparrow	<i>Zonotrichia leucophrys</i>	MBTA, CFGC
Family Picidae		

Common Name	Scientific Name	Status
Acorn woodpecker	<i>Melanerpes formicivorus</i>	MBTA, CFGC
Downy woodpecker	<i>Dryobates pubescens</i>	MBTA, CFGC
Northern flicker	<i>Colaptes auratus</i>	MBTA, CFGC
Nuttall's woodpecker	<i>Dryobates nuttallii</i>	MBTA, CFGC
Family Ptilonotidae		
Phainopepla	<i>Phainopepla nitens</i>	MBTA, CFGC
Family Regulidae		
Ruby-crowned kinglet	<i>Corthylio calendula</i>	MBTA, CFGC
Family Sittidae		
White-breasted nuthatch	<i>Sitta carolinensis</i>	MBTA, CFGC
Family Strigidae		
Great horned owl	<i>Bubo virginianus</i>	MBTA, CFGC
Family Sturnidae		
European starling	<i>Sturnus vulgaris</i>	--
Family Trochilidae		
Anna's hummingbird	<i>Calypte anna</i>	MBTA, CFGC
Family Turdidae		
American robin	<i>Turdus migratorius</i>	MBTA, CFGC
Western bluebird	<i>Sialia mexicana</i>	MBTA, CFGC
Family Tyrannidae		
Black phoebe	<i>Sayornis nigricans</i>	MBTA, CFGC
Mammals		
Family Geomyidae		
Botta's pocket gopher	<i>Thomomys bottae</i>	--
Family Leporidae		
Desert cottontail	<i>Sylvilagus audubonii</i>	--

MBTA = Protected under the Migratory Bird Treaty Act (16 USC § 703 et seq.); CFGC = Protected under the California Fish and Game Code (FGC §§ 3503 and 3513).

3.2.3 Special-Status Species

Two special-status species could occur on or near the Project site based on the presence of habitat and CNDDDB occurrence records from within 5 miles (Table 1). Three other species identified in the 9-quad search could also occur on or near the Project based on the presence on the presence of habitat. These species are described below.

3.2.3.1 Chinese Camp brodiaea

Chinese Camp brodiaea is an erect, herbaceous, perennial plant in the family Themidaceae. Chinese Camp brodiaea is federally listed as threatened, state listed as endangered, and has a CRPR of 1B.1. It is known from three populations along limited stretches of intermittent streams

in the western Sierra Nevada foothills of northern Tuolumne and southern Calaveras counties. Chinese Camp brodiaea grows in overflow channels, seeps, and springs in clays that may be derived from serpentine soils; it flowers May–June (CNPS 2022, USFWS 2012).

Four CNDDDB records from 2005–2008 are known from within 5 miles of the Project site (Figure 4, Appendix B). The nearest records of Chinese Camp brodiaea are from approximately 0.7 miles south of the Project site along Littlejohns Creek and approximately 0.7 miles northeast of the Project site along Black Creek. The intermittent drainages on and near the Project site provide potential habitat for Chinese Camp brodiaea (Figures 7 and 8). Although this species was not detected during the reconnaissance survey, the survey was not conducted within the blooming period. This species could occur in the survey area. However, the proposed access road will span the intermittent drainages with bridges. Consequently, no impacts to Chinese Camp brodiaea are anticipated.

3.2.3.2 Beaked clarkia

Beaked clarkia is an annual herb in the family Onagraceae with a CRPR of 1B.3. It grows erect stems to 1.6 feet tall with lavender-pink to reddish purple flowers below closed, hanging flower buds. It occurs in grasslands and woodlands of the Sierra Nevada foothills; it flowers April–May (CNPS 2022, Lewis 2012).

Two historic CNDDDB records of beaked clarkia are known from within 10 miles of the Project site (Appendix B). The nearest record of beaked clarkia is a 1994 CNDDDB occurrence from approximately 3.5 miles west of the Project site (Figure 4). The grassland and foothill woodland in and around the Project site provide potential habitat for beaked clarkia (Figures 5 and 6). Although this species was not detected during the reconnaissance survey, the survey was not conducted within the blooming period.

3.2.3.3 Forked hare-leaf

Forked hare-leaf is an annual herb in the family Asteraceae with a CRPR of 1B.1. It grows to 2 feet tall with distally glandless or sparsely stalked-glandular stems, panicle-like inflorescences, and yellow ray flowers. Forked hare-leaf occurs in grassland and woodland in the western Sierra Nevada foothills, eastern San Joaquin Valley, and eastern Coast Range; it flowers April–May (Baldwin 2014, CNPS 2022).

Two historic CNDDDB records of forked hare-leaf are known from within 10 miles of the Project site (Appendix B). The nearest record of forked hare-leaf involves a vague, non-specific 2000 CNDDDB occurrence overlapping the northern third of the survey area (Figure 4). The grassland and open woodland in and around the Project site provide potential habitat for forked hare-leaf (Figures 5 and 6). Although this species was not detected during the reconnaissance survey, the survey was not conducted within the blooming period.

3.2.3.4 Stanislaus monkeyflower

Stanislaus monkeyflower is an annual herb in Family Phrymaceae with a CRPR of 1B.1. It grows to 0.9 feet tall with glandular, hairy stems, ovate to elliptical leaves, and yellow flowers. Stanislaus monkeyflower occurs in seeps and streambanks in the western Sierra Nevada foothills; it flowers March–May (CNPS 2022, Fraga 2018).

Two historic CNDDDB records of Stanislaus monkeyflower are known from within 10 miles of the Project site (Appendix B). The nearest record is of a non-specific 1923 CNDDDB occurrence approximately 7 miles southeast of the Project site near Highway 120 (CNDDDB 2022). The intermittent drainages and associated streambanks and wet meadows on and near the Project site provide potential habitat for Stanislaus monkeyflower (Figures 7 and 8). Although this species was not detected during the reconnaissance survey, the survey was conducted early in the blooming period. This species could occur within the survey area, but the proposed access road will span the intermittent drainages with bridges. Consequently, no impacts to Stanislaus monkeyflower are anticipated.

3.2.3.5 Veiny monardella

Veiny monardella is an annual herb in the family Lamiaceae with a CRPR of 1B.1. It grows to 1.3 feet tall with stout stems, linear-oblong to lanceolate leaves, and ovate clusters of hairy, purple flowers. Veiny monardella occurs in grasslands in the central and northern Central Valley; it flowers June–July (CNPS 2022, Sanders et al. 2012).

One historic CNDDDB record of veiny monardella is known from within 10 miles of the Project site (Appendix B). The nearest record of veiny monardella is a 1998 CNDDDB occurrence approximately 6.5 miles east of the Project Site (CNDDDB 2022). The grassland in and around the Project site provide potential habitat for veiny monardella (Figures 5 and 6). Although this species was not detected during the reconnaissance survey, the survey was not conducted within the blooming period.

3.2.4 Nesting Birds and the Migratory Bird Treaty Act

Migratory birds including, but not limited to, mourning dove (*Zenaida macroura*), oak titmouse (*Baeolophus inornatus*), and western bluebird (*Sialia mexicana*) could nest on or near the Project site.

3.2.5 Regulated Habitats

Four potentially jurisdictional features were observed in the survey area. All were intermittent streams. These included Ramsey Gulch (Figure 7) and two unnamed tributaries to Ramsey Gulch (Figure 8) in the central portion of the survey area about 400 feet southwest of Oak Creek Drive and another unnamed tributary to Ramsey Gulch in the northern portion of the survey area about

0.24 miles southwest of Little John Road. Ramsey Gulch flows into Littlejohns Creek, which flows into the San Joaquin River via French Camp Slough, a traditional navigable water under Section 404 of the Clean Water Act. As water is present in each stream channel most years from December to May or June (Google 2022), the streams meet the criteria of relatively permanent water under Section 404 of the Clean Water Act. Therefore, the streams are likely regulated by the USACE. As the intermittent streams contain surface water and have a defined bed and bank, they are likely regulated by the SWRCB and the CDFW.

No impacts to regulated habitats are expected. Ramsey Gulch and the northern tributary will each be spanned with a bridge, and the other two tributaries were outside the Project footprint.

4.0 Environmental Impacts

4.1 Significance Determinations

This Project, which will result in temporary and permanent impacts to pasture and oak forest land cover, will not: (1) substantially reduce the habitat of a fish or wildlife species (criterion a) as no such habitat is present on the Project site; (2) cause a fish or wildlife population to drop below self-sustaining levels (criterion b) as no such potentially vulnerable population is known from the area; (3) threaten to eliminate a plant or animal community (criterion c) as no such potentially vulnerable communities are known from the area; (4) substantially reduce the number or restrict the range of a rare or endangered plant or animal (criterion d) as no such potentially vulnerable species are known from the area; (5) have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the CDFW or USFWS (criterion f) as no riparian habitat or other sensitive natural community was present in the survey area; (6) 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 (criterion g) as no impacts to wetlands will occur; (7) conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance (criterion i) as no trees or biologically sensitive areas will be impacted; or (8) conflict with the provisions of an adopted Habitat Conservation Plan, Natural Communities Conservation Plan, or other approved local, regional, or state habitat conservation plan (criterion j) as no such plan has been adopted. Thus, these significance criteria are not analyzed further.

The remaining statutorily defined criteria provided the framework for Criterion BIO1 and Criterion BIO2 below. These criteria are used to assess the impacts to biological resources stemming from the Project and provide the basis for determinations of significance:

- Criterion BIO1: Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the CDFW or USFWS (significance criterion e).
- Criterion BIO2: 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 (significance criterion h).

4.1.1 Direct and Indirect Impacts

4.1.1.1 Potential Impact: Have a substantial Effect on any Special-Status Species (Criterion BIO1)

The Project could adversely affect three special-status plant species that could occur on or near the Project site. Construction activities such as excavating, trenching, or using other heavy equipment that disturbs or harms a special-status species could constitute a significant impact. We recommend that Mitigation Measures BIO1 and BIO2 (below) be included in the conditions of approval to reduce the potential impacts to a less-than-significant level.

Mitigation Measure BIO1. Protect special-status plants.

1. A qualified biologist shall conduct surveys for special-status plant species at the Project site following the CDFW's 2018 *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities*. The surveys shall be timed to coincide with the blooming periods of the potentially occurring special-status species: May–June for Chinese Camp brodiaea, April–May for beaked clarkia and forked hare-leaf, March–May for Stanislaus monkeyflower, and June–July for veiny monardella.
2. If a special-status plant species is detected, the qualified biologist shall establish an exclusion zone of 50 feet between any population and the area of direct or indirect impacts. If a 50-foot exclusion zone cannot be established, a site-specific plan to minimize the potential for Project activities to affect individual plants shall be developed by the qualified biologist and implemented in consultation with the CDFW. Such a plan could involve conducting work after plant senescence and salvaging and relocating affected plants and associated topsoil.

4.1.1.2 Potential Impact: Interfere Substantially with Native Wildlife Movements, Corridors, or Nursery Sites (Criterion BIO2)

The Project could impede the use of nursery sites for native birds protected under the MBTA and CFGC. Migratory birds are expected to nest on and near the Project site. Construction disturbance during the breeding season could result in the incidental loss of fertile eggs or nestlings or otherwise lead to nest abandonment. Disturbance that causes nest abandonment or loss of reproductive effort can be considered take under the MBTA and CFGC. Loss of fertile eggs or nesting birds, or any activities resulting in nest abandonment, could constitute a significant effect if the species is particularly rare in the region. Construction activities such as excavating, trenching, and grading that disturb a nesting bird on the Project site or immediately adjacent to the construction zone could constitute a significant impact. We recommend that Mitigation Measure BIO3 (below) be included in the conditions of approval to reduce the potential effect to a less-than-significant level.

Mitigation Measure BIO2. Protect nesting birds.

1. To the extent practicable, construction shall be scheduled to avoid the nesting season, which extends from February through August.
2. If it is not possible to schedule construction between September and January, pre-construction surveys for nesting birds shall be conducted by a qualified biologist to ensure that no active nests will be disturbed during the implementation of the Project. A pre-construction survey shall be conducted no more than 14 days prior to the initiation of construction activities. During this survey, the qualified biologist shall inspect all potential nest substrates in and immediately adjacent to the impact areas. If an active nest is found close enough to the construction area to be disturbed by these activities, the qualified biologist shall determine the extent of a construction-free buffer to be established around the nest. If work cannot proceed without disturbing the nesting birds, work may need to be halted or redirected to other areas until nesting and fledging are completed or the nest has otherwise failed for non-construction related reasons.

4.1.2 Cumulative Impacts

The Project will involve constructing a 1-mile-long access road and five to seven retention basins. Potential habitat for five special-status plant species is present on the Project site. Of these five special-status plants, the Project could impact three species: beaked clarkia, forked hare-leaf, and veiny monardella. Nesting habitat for migratory birds is also present on the Project site. However, implementing Mitigation Measures BIO1 and BIO2 would reduce any contribution to cumulative impacts on biological resources to a less-than-significant level.

4.1.3 Unavoidable Significant Adverse Impacts

No unavoidable significant adverse impacts on biological resources would occur from implementing the Project.

5.0 Literature Cited

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Appendix A. USFWS list of threatened and endangered species.



United States Department of the Interior



FISH AND WILDLIFE SERVICE
Sacramento Fish And Wildlife Office
Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846
Phone: (916) 414-6600 Fax: (916) 414-6713

In Reply Refer To:
Project Code: 2022-0024357
Project Name: Flint Trail Access Road

March 25, 2022

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2))

(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

<http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF>

Migratory Birds: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts see <https://www.fws.gov/birds/policies-and-regulations.php>.

The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures see <https://www.fws.gov/birds/bird-enthusiasts/threats-to-birds.php>.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit <https://www.fws.gov/birds/policies-and-regulations/executive-orders/e0-13186.php>.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Code in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Sacramento Fish And Wildlife Office

Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846
(916) 414-6600

Project Summary

Project Code: 2022-0024357

Event Code: None

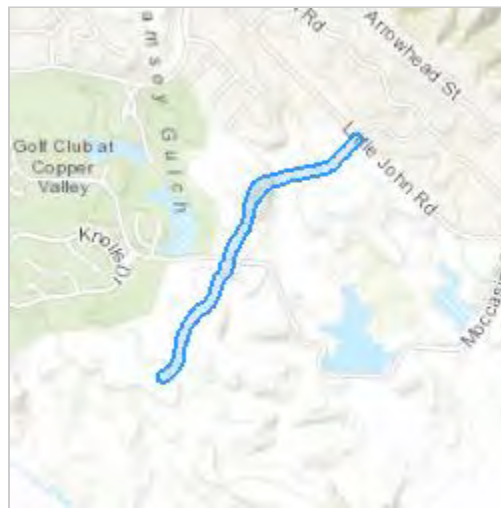
Project Name: Flint Trail Access Road

Project Type: Road/Hwy - New Construction

Project Description: The Project will involve constructing approximately 1 mile of access road linking Flint Trail from Little John Road to the southeast boundary of the Golf Club at the Copper Valley masterplan community to serve as a required secondary access for the development. Flint Trail access road development project (the "Project") is off Little John Road, just south of the entrance to the Golf Club at Copper Valley (formerly Saddle Creek), in Copperopolis, Calaveras County, California.

Project Location:

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@37.91227965,-120.63250035634456,14z>



Counties: Calaveras County, California

Endangered Species Act Species

There is a total of 8 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries¹, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

-
1. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Amphibians

NAME	STATUS
California Red-legged Frog <i>Rana draytonii</i> There is final critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/2891	Threatened
California Tiger Salamander <i>Ambystoma californiense</i> Population: U.S.A. (Central CA DPS) There is final critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/2076	Threatened

Fishes

NAME	STATUS
Delta Smelt <i>Hypomesus transpacificus</i> There is final critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/321	Threatened

Insects

NAME	STATUS
Monarch Butterfly <i>Danaus plexippus</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate
Valley Elderberry Longhorn Beetle <i>Desmocerus californicus dimorphus</i> There is final critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/7850	Threatened

Crustaceans

NAME	STATUS
Vernal Pool Fairy Shrimp <i>Branchinecta lynchi</i> There is final critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/498	Threatened
Vernal Pool Tadpole Shrimp <i>Lepidurus packardii</i> There is final critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/2246	Endangered

Flowering Plants

NAME	STATUS
Chinese Camp Brodiaea <i>Brodiaea pallida</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/8290	Threatened

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

IPaC User Contact Information

Agency: Colibri Ecological Services
Name: Ryan Slezak
Address: 9493 N Ft Washington Rd
City: Fresno
State: CA
Zip: 93730
Email: rslezak@colibri-ecology.com
Phone: 5592426178

Appendix B. CNDDDB occurrence records.



Summary Table Report

California Department of Fish and Wildlife

California Natural Diversity Database



Query Criteria:

Quad= IS (New Melones Dam (3712085) OR (Knights Ferry (3712076) OR (Keystone (3712075) OR (Copperopolis (3712086) OR (Salt Spring Valley (3812016) OR (Angels Camp (3812015) OR (Oakdale (3712077) OR (Bachelor Valley (3712087) OR (Jenny Lind (3812017))

Name (Scientific/Common)	CNDDB Ranks	Listing Status (Fed/State)	Other Lists	Elev. Range (ft.)	Total EO's	Element Occ. Ranks							Population Status		Presence			
						A	B	C	D	X	U	Historic > 20 yr	Recent <= 20 yr	Extant	Poss. Extrap.	Extrap.		
<i>Agelaius tricolor</i> tricolored blackbird	G1G2 S1S2	None Threatened	BLM_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_EN-Endangered NABCI_RWL-Red Watch List USFWS_BCC-Birds of Conservation Concern	170 1,602	955 S:17	0	1	1	0	0	0	0	15	7	10	17	0	0
<i>Agrostis hendersonii</i> Henderson's bent grass	G2Q S2	None None	Rare Plant Rank - 3.2	950 950	26 S:1	0	0	0	0	0	1			1	0	1	0	0
<i>Allium tuolumnense</i> Rawhide Hill onion	G2 S2	None None	Rare Plant Rank - 1B.2 BLM_S-Sensitive	1,035 1,035	25 S:2	0	1	0	0	0	1			0	2	2	0	0
<i>Ambystoma californiense pop. 1</i> California tiger salamander - central California DPS	G2G3 S3	Threatened Threatened	CDFW_WL-Watch List IUCN_VU-Vulnerable	150 260	1265 S:11	0	3	2	2	1	3			9	2	10	0	1
<i>Anodonta californiensis</i> California floater	G3Q S2?	None None	USFS_S-Sensitive	505 505	6 S:1	0	0	0	0	0	1			1	0	1	0	0
<i>Antrozous pallidus</i> pallid bat	G4 S3	None None	BLM_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern USFS_S-Sensitive WBWG_H-High Priority	130 1,440	420 S:5	0	1	0	0	0	4			5	0	5	0	0
<i>Athene cunicularia</i> burrowing owl	G4 S3	None None	BLM_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern USFWS_BCC-Birds of Conservation Concern	230 230	2011 S:1	0	0	1	0	0	0			1	0	1	0	0
<i>Branchinecta lynchi</i> vernal pool fairy shrimp	G3 S3	Threatened None	IUCN_VU-Vulnerable	250 540	795 S:5	0	0	0	0	0	5			0	5	5	0	0



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Name (Scientific/Common)	CNDDB Ranks	Listing Status (Fed/State)	Other Lists	Elev. Range (ft.)	Total EO's	Element Occ. Ranks							Population Status		Presence		
						A	B	C	D	X	U	Historic > 20 yr	Recent <= 20 yr	Extant	Poss. Extirp.	Extirp.	
<i>Brodiaea pallida</i> Chinese Camp brodiaea	G1 S1	Threatened Endangered	Rare Plant Rank - 1B.1 IUCN_EN-Endangered	550 675	5 S:4	1	1	2	0	0	0	0	0	0	4	0	0
<i>Buteo swainsoni</i> Swainson's hawk	G5 S3	None Threatened	BLM_S-Sensitive IUCN_LC-Least Concern USFWS_BCC-Birds of Conservation Concern	205 205	2541 S:1	0	0	0	0	0	1	0	0	0	1	0	0
<i>Calicina breva</i> Stanislaus harvestman	G1 S1	None None		320 320	1 S:1	0	0	0	0	0	1	0	0	0	1	0	0
<i>Calycadenia hooveri</i> Hoover's calycadenia	G2 S2	None None	Rare Plant Rank - 1B.3	350 350	37 S:1	0	1	0	0	0	0	0	0	0	1	0	0
<i>Chlorogalum grandiflorum</i> Red Hills soaproot	G3 S3	None None	Rare Plant Rank - 1B.2 BLM_S-Sensitive	870 1,600	137 S:7	0	0	0	0	0	7	2	5	7	0	0	0
<i>Clarkia rostrata</i> beaked clarkia	G2G3 S2S3	None None	Rare Plant Rank - 1B.3 BLM_S-Sensitive SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden SB_UCBG-UC Botanical Garden at Berkeley	900 900	74 S:2	0	0	0	0	0	0	2	0	2	0	0	0
<i>Corynorhinus townsendii</i> Townsend's big-eared bat	G4 S2	None None	BLM_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern USFS_S-Sensitive WBWG_H-High Priority	180 365	635 S:2	0	1	0	0	0	0	1	2	0	2	0	0
<i>Cryptantha mariposae</i> Mariposa cryptantha	G2G3 S2S3	None None	Rare Plant Rank - 1B.3 BLM_S-Sensitive	1,100 1,600	9 S:3	1	0	0	0	0	0	2	3	0	3	0	0
<i>Cryptantha spithameae</i> Red Hills cryptantha	G2 S2	None None	Rare Plant Rank - 1B.3 BLM_S-Sensitive	900 1,800	6 S:2	0	0	0	0	0	2	2	0	2	0	0	0
<i>Desmocerus californicus dimorphus</i> valley elderberry longhorn beetle	G3T2 S3	Threatened None		150 210	271 S:2	0	0	0	0	0	0	2	0	2	2	0	0



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California Department of Fish and Wildlife

California Natural Diversity Database



Name (Scientific/Common)	CNDDB Ranks	Listing Status (Fed/State)	Other Lists	Elev. Range (ft.)	Total EO's	Element Occ. Ranks							Population Status		Presence		
						A	B	C	D	X	U	Historic > 20 yr	Recent <= 20 yr	Extant	Poss. Extirp.	Extirp.	
<i>Diplazium pulchellus</i> yellow-lip pansy monkeyflower	G2 S2	None None	Rare Plant Rank - 1B.2 BLM_S-Sensitive USFS_S-Sensitive		78 S:1	0	0	0	0	0	0	1	0	0	1	0	0
<i>Downingia pusilla</i> dwarf downingia	GU S2	None None	Rare Plant Rank - 2B.2	490 490	132 S:1	0	0	0	0	0	1	0	0	1	0	0	0
<i>Emys marmorata</i> western pond turtle	G3G4 S3	None None	BLM_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_VU-Vulnerable USFS_S-Sensitive	150 600	1404 S:4	0	1	2	0	0	1	4	0	0	4	0	0
<i>Eremophila alpestris actia</i> California horned lark	G5T4Q S4	None None	CDFW_WL-Watch List IUCN_LC-Least Concern	239 239	94 S:1	0	0	0	0	0	1	0	0	1	0	0	0
<i>Erethizon dorsatum</i> North American porcupine	G5 S3	None None	IUCN_LC-Least Concern	973 998	523 S:2	0	0	0	0	0	2	0	0	2	0	0	0
<i>Eryngium pinnatisectum</i> Tuolumne button-celery	G2 S2	None None	Rare Plant Rank - 1B.2	690 1,440	30 S:12	1	3	1	1	0	6	7	5	12	0	0	0
<i>Eryngium racemosum</i> Delta button-celery	G1 S1	None Endangered	Rare Plant Rank - 1B.1	1,100 1,100	26 S:1	0	0	0	0	0	1	0	0	1	0	0	0
<i>Eryngium spinosepalum</i> spiny-sepal button-celery	G2 S2	None None	Rare Plant Rank - 1B.2 BLM_S-Sensitive	900 900	108 S:1	0	0	0	0	0	1	0	0	1	0	0	0
<i>Erythranthe marmorata</i> Stanislaus monkeyflower	G2? S2?	None None	Rare Plant Rank - 1B.1	1,000 1,000	10 S:2	0	0	0	0	0	2	0	0	2	0	0	0
<i>Eumops perotis californicus</i> western mastiff bat	G4G5T4 S3S4	None None	BLM_S-Sensitive CDFW_SSC-Species of Special Concern WBWG_H-High Priority	164 1,250	296 S:10	0	1	0	0	0	9	10	0	10	0	0	0
<i>Fritillaria agrestis</i> stinkbells	G3 S3	None None	Rare Plant Rank - 4.2	360 360	32 S:1	0	0	0	0	0	1	0	0	1	0	0	0
<i>Hesperoleucus symmetricus serpentinus</i> Red Hills roach	G4T1 S1	None None	AFS_VU-Vulnerable BLM_S-Sensitive CDFW_SSC-Species of Special Concern	800 1,030	8 S:2	0	0	1	1	0	0	2	0	2	0	0	0



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Name (Scientific/Common)	CNDDB Ranks	Listing Status (Fed/State)	Other Lists	Elev. Range (ft.)	Total EO's	Element Occ. Ranks							Population Status		Presence	
						A	B	C	D	X	U	Historic > 20 yr	Recent <= 20 yr	Extant	Poss. Extirp.	Extirp.
<i>Icteria virens</i> yellow-breasted chat	G5 S3	None None	CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern	200 200	100 S:1	0	0	0	0	0	0	1	0	1	0	0
<i>Lagophylla dichotoma</i> forked hare-leaf	G2 S2	None None	Rare Plant Rank - 1B.1		7 S:2	0	0	0	0	0	2	0	0	2	0	0
<i>Lasionycteris noctivagans</i> silver-haired bat	G3G4 S3S4	None None	IUCN_LC-Least Concern WBWG_M-Medium Priority	180 180	139 S:1	0	0	0	0	0	1	0	0	1	0	0
<i>Lasius blossevilli</i> western red bat	G4 S3	None None	CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern WBWG_H-High Priority	108 250	128 S:6	0	0	0	0	0	6	0	0	6	0	0
<i>Lasius cinereus</i> hoary bat	G3G4 S4	None None	IUCN_LC-Least Concern WBWG_M-Medium Priority	120 180	238 S:4	0	0	0	0	0	4	0	0	4	0	0
<i>Lepidurus packardii</i> vernal pool tadpole shrimp	G4 S3S4	Endangered None	IUCN_EN-Endangered	185 460	329 S:5	1	1	0	0	0	3	4	1	5	0	0
<i>Linderyella occidentalis</i> California linderiella	G2G3 S2S3	None None	IUCN_NT-Near Threatened	215 240	508 S:4	0	0	0	0	0	4	2	2	4	0	0
<i>Lomatium congdonii</i> Congdon's lomatium	G2 S2	None None	Rare Plant Rank - 1B.2 BLM_S-Sensitive	1,100 1,600	20 S:3	0	0	0	0	0	3	0	0	3	0	0
<i>Lupinus spectabilis</i> shaggyhair lupine	G2 S2	None None	Rare Plant Rank - 1B.2 BLM_S-Sensitive	1,000 1,000	24 S:1	0	0	0	0	0	1	0	0	1	0	0
<i>Monadenia mormonum buttoni</i> Button's Sierra sideband	G2T1 S1S2	None None		254 1,520	5 S:2	0	0	0	0	0	2	0	0	2	0	0
<i>Monadenia mormonum hirsuta</i> hirsute Sierra sideband	G2T1 S1	None None	BLM_S-Sensitive	1,300 1,400	4 S:2	0	0	1	0	0	1	0	0	2	0	0



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California Department of Fish and Wildlife

California Natural Diversity Database



Name (Scientific/Common)	CNDDB Ranks	Listing Status (Fed/State)	Other Lists	Elev. Range (ft.)	Total EO's	Element Occ. Ranks							Population Status		Presence		
						A	B	C	D	X	U	Historic > 20 yr	Recent <= 20 yr	Extant	Poss. Extrtp.	Extrtp.	
<i>Monardella venosa</i> veiny monardella	G1 S1	None None	Rare Plant Rank - 1B.1 SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden SB_UCBG-JC Botanical Garden at Berkeley	860 860	4 S:1	1	0	0	0	0	0	0	0	0	1	0	0
<i>Myiopharodon conocephalus</i> hardhead	G3 S3	None None	CDFW_SSC-Species of Special Concern USFS_S-Sensitive	104 104	33 S:1	0	0	0	0	0	1	0	0	0	1	0	0
<i>Myotis yumanensis</i> Yuma myotis	G5 S4	None None	BLM_S-Sensitive IUCN_LC-Least Concern WBWG_LM-Low-Medium Priority	108 250	265 S:6	0	0	0	0	0	6	0	0	0	6	0	0
<i>Navarretia paradoxiciara</i> Patterson's navarretia	G2 S2	None None	Rare Plant Rank - 1B.3 BLM_S-Sensitive	1,000 1,420	11 S:4	0	0	0	0	0	4	3	0	0	4	0	0
<i>Neostapfia colusana</i> Colusa grass	G1 S1	Threatened Endangered	Rare Plant Rank - 1B.1	340 375	66 S:4	0	0	3	0	1	0	1	0	0	3	1	0
<i>Northern Hardpan Vernal Pool</i> Northern Hardpan Vernal Pool	G3 S3.1	None None		340 340	126 S:1	0	0	0	0	0	1	1	0	0	1	0	0
<i>Oncorhynchus mykiss irideus pop. 11</i> steelhead - Central Valley DPS	G5T2Q S2	Threatened None	AFS_TH-Threatened	200 200	31 S:2	0	0	0	0	0	2	0	0	0	2	0	0
<i>Pseudobahia bahiifolia</i> Hartweg's golden sunburst	G1 S1	Endangered Endangered	Rare Plant Rank - 1B.1 SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden	200 200	27 S:2	0	0	0	0	1	1	2	0	0	1	1	0
<i>Scopelophila cataractae</i> tongue-leaf copper moss	G3G4 S1	None None	Rare Plant Rank - 2B.2	1,000 1,000	1 S:1	0	0	0	0	0	1	1	0	0	1	0	0
<i>Senecio cleavelandii var. heterophyllus</i> Red Hills ragwort	G4?T2Q S2	None None	Rare Plant Rank - 1B.2 BLM_S-Sensitive	1,060 1,060	12 S:1	0	1	0	0	0	0	0	0	0	1	0	0
<i>Spea hammondi</i> western spadefoot	G2G3 S3	None None	BLM_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_NT-Near Threatened	211 260	1422 S:3	0	1	0	0	0	2	3	0	0	3	0	0



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California Department of Fish and Wildlife

California Natural Diversity Database



Name (Scientific/Common)	CNDDB Ranks	Listing Status (Fed/State)	Other Lists	Elev. Range (ft.)	Total EO's	Element Occ. Ranks						Population Status		Presence			
						A	B	C	D	X	U	Historic > 20 yr	Recent <= 20 yr	Extant	Poss. Extirp.	Extirp.	
<i>Verbena californica</i> Red Hills vervain	G2 S2	Threatened Threatened	Rare Plant Rank - 1B.1 SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden SB_UCBG-UC Botanical Garden at Berkeley	1,100 1,100	12 S:1	1	0	0	0	0	0	0	0	1	1	0	0

Appendix C. CNPS plant list.

CNPS Rare Plant Inventory



Search Results

23 matches found. Click on scientific name for details

Search Criteria: CRPR is one of [1A:1B:2A:2B] , 9-Quad include

[3712085:3712076:3712075:3712086:3812016:3812015:3712077:3712087:3812017]

▲ SCIENTIFIC NAME	COMMON NAME	FAMILY	LIFEFORM	BLOOMING PERIOD	FED LIST	STATE LIST	GLOBAL RANK	STATE RANK	CA RARE PLANT RANK
<i>Allium tuolumnense</i>	Rawhide Hill onion	Alliaceae	perennial bulbiferous herb	Mar-May	None	None	G2	S2	1B.2
<i>Brodiaea pallida</i>	Chinese Camp brodiaea	Themidaceae	perennial bulbiferous herb	May-Jun	FT	CE	G1	S1	1B.1
<i>Calycadenia hooveri</i>	Hoover's calycadenia	Asteraceae	annual herb	Jul-Sep	None	None	G2	S2	1B.3
<i>Chlorogalum grandiflorum</i>	Red Hills soaproot	Agavaceae	perennial bulbiferous herb	May-Jun	None	None	G3	S3	1B.2
<i>Clarkia rostrata</i>	beaked clarkia	Onagraceae	annual herb	Apr-May	None	None	G2G3	S2S3	1B.3
<i>Cryptantha mariposae</i>	Mariposa cryptantha	Boraginaceae	annual herb	Apr-Jun	None	None	G2G3	S2S3	1B.3
<i>Cryptantha spithamaea</i>	Red Hills cryptantha	Boraginaceae	annual herb	Apr-May	None	None	G2	S2	1B.3
<i>Diplacus pulchellus</i>	yellow-lip pansy monkeyflower	Phrymaceae	annual herb	Apr-Jul	None	None	G2	S2	1B.2
<i>Downingia pusilla</i>	dwarf downingia	Campanulaceae	annual herb	Mar-May	None	None	GU	S2	2B.2
<i>Eryngium pinnatisectum</i>	Tuolumne button- celery	Apiaceae	annual/perennial herb	May-Aug	None	None	G2	S2	1B.2
<i>Eryngium racemosum</i>	Delta button-celery	Apiaceae	annual/perennial herb	(May)Jun- Oct	None	CE	G1	S1	1B.1
<i>Eryngium spinosepalum</i>	spiny-sepaled button-celery	Apiaceae	annual/perennial herb	Apr-Jun	None	None	G2	S2	1B.2
<i>Erythranthe marmorata</i>	Stanislaus monkeyflower	Phrymaceae	annual herb	Mar-May	None	None	G2?	S2?	1B.1
<i>Lagophylla dichotoma</i>	forked hare-leaf	Asteraceae	annual herb	Apr-May	None	None	G2	S2	1B.1
<i>Lomatium congdonii</i>	Congdon's lomatium	Apiaceae	perennial herb	Mar-Jun	None	None	G2	S2	1B.2
<i>Lupinus spectabilis</i>	shaggyhair lupine	Fabaceae	annual herb	Apr-May	None	None	G2	S2	1B.2
<i>Monardella venosa</i>	veiny monardella	Lamiaceae	annual herb	May-Jul	None	None	G1	S1	1B.1
<i>Navarretia paradoxiclora</i>	Patterson's navarretia	Polemoniaceae	annual herb	May-Jun(Jul)	None	None	G2	S2	1B.3
<i>Neostapfia colusana</i>	Colusa grass	Poaceae	annual herb	May-Aug	FT	CE	G1	S1	1B.1
<i>Pseudobahia bahiifolia</i>	Hartweg's golden sunburst	Asteraceae	annual herb	Mar-Apr	FE	CE	G1	S1	1B.1

<u>Scopelophila cataractae</u>	tongue-leaf copper moss	Pottiaceae	moss		None	None	G3G4	S1	2B.2
<u>Senecio clevelandii</u> <u>var. heterophyllus</u>	Red Hills ragwort	Asteraceae	perennial herb	May-Jul	None	None	G4?T2Q	S2	1B.2
<u>Verbena californica</u>	Red Hills vervain	Verbenaceae	perennial herb	May-Sep	FT	CT	G2	S2	1B.1

Showing 1 to 23 of 23 entries

Suggested Citation:

California Native Plant Society, Rare Plant Program. 2022. Rare Plant Inventory (online edition, v9-01 1.5). Website <https://www.rareplants.cnps.org> [accessed 25 March 2022].

CONTACT US

Send questions and comments to rareplants@cnps.org.

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Appendix D. Protocols for surveying and evaluating impacts to special status native plant populations and sensitive natural communities.

Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities

STATE OF CALIFORNIA
CALIFORNIA NATURAL RESOURCES AGENCY
DEPARTMENT OF FISH AND WILDLIFE

DATE: March 20, 2018*

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1. INTRODUCTION AND PURPOSE

The conservation of special status native plants and their habitats, as well as sensitive natural communities, is integral to maintaining biological diversity. The purpose of these protocols is to facilitate a consistent and systematic approach to botanical field surveys and assessments of special status plants and sensitive natural communities so that reliable information is produced and the potential for locating special status plants and sensitive natural communities is maximized. These protocols may also help those who prepare and review environmental documents determine when botanical field surveys are needed, how botanical field surveys may be conducted, what information to include in a botanical survey report, and what qualifications to consider for botanical field surveyors. These protocols are meant to help people meet California Environmental Quality Act (CEQA)¹ requirements for adequate disclosure of potential impacts to plants and sensitive natural communities. These protocols may be used in conjunction with protocols formulated by other agencies, for example, those developed by the U.S. Army Corps of Engineers to delineate jurisdictional wetlands² or by the U.S. Fish and Wildlife Service to survey for the presence of special status plants.³

* Minor editorial revisions were made to this document on February 3, 2021

¹ Available at: <https://files.resources.ca.gov/ceqa/>

² Available at: <https://www.usace.army.mil/Missions/Civil-Works/Regulatory-Program-and-Permits/techbio/>

³ U.S. Fish and Wildlife Service Survey Guidelines: <https://www.fws.gov/sacramento/es/Survey-Protocols-Guidelines/>

Department of Fish and Wildlife Trustee and Responsible Agency Mission

The mission of the California Department of Fish and Wildlife (CDFW) is to manage California's diverse wildlife and native plant resources, and the habitats upon which they depend, for their ecological values and for their use and enjoyment by the public. CDFW has jurisdiction over the conservation, protection, and management of wildlife, native plants, and habitat necessary to maintain biologically sustainable populations (Fish & G. Code, § 1802). CDFW, as trustee agency under CEQA Guidelines section 15386, provides expertise in reviewing and commenting on environmental documents and provides protocols regarding potential negative impacts to those resources held in trust for the people of California.

Certain species are in danger of extinction because their habitats have been severely reduced in acreage, are threatened with destruction or adverse modification, or because of a combination of these and other factors. The California Endangered Species Act (CESA) and Native Plant Protection Act (NPPA) provide additional protections for such species, including take prohibitions (Fish & G. Code, § 2050 *et seq.*; Fish & G. Code, § 1908). As a responsible agency, CDFW has the authority to issue permits for the take of species listed under CESA and NPPA if the take is incidental to an otherwise lawful activity; CDFW has determined that the impacts of the take have been minimized and fully mitigated; and the take would not jeopardize the continued existence of the species (Fish & G. Code, § 2081, subd. (b); Cal. Code Regs., tit. 14 § 786.9, subd. (b)). Botanical field surveys are one of the preliminary steps to detect special status plant species and sensitive natural communities that may be impacted by a project.

Definitions

Botanical field surveys provide information used to determine the potential environmental effects of proposed projects on special status plants and sensitive natural communities as required by law (e.g., CEQA, CESA, and federal Endangered Species Act (ESA)).

Special status plants, for the purposes of this document, include all plants that meet one or more of the following criteria:

- Listed or proposed for listing as threatened or endangered under the ESA or candidates for possible future listing as threatened or endangered under the ESA (50 C.F.R., § 17.12).
- Listed or candidates for listing by the State of California as threatened or endangered under CESA (Fish & G. Code, § 2050 *et seq.*).⁴ In CESA, “endangered species” means a native species or subspecies of plant which is in serious danger of becoming extinct throughout all, or a significant portion, of its range due to one or more causes, including loss of habitat, change in habitat, overexploitation, predation, competition, or disease (Fish & G. Code, § 2062). “Threatened species” means a native species or subspecies of plant that,

⁴ Refer to current online published lists available at:
<https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=109390&inline>

although not presently threatened with extinction, is likely to become an endangered species in the foreseeable future in the absence of the special protection and management efforts required by CESA (Fish & G. Code, § 2067). “Candidate species” means a native species or subspecies of plant that the California Fish and Game Commission has formally noticed as being under review by CDFW for addition to either the list of endangered species or the list of threatened species, or a species for which the California Fish and Game Commission has published a notice of proposed regulation to add the species to either list (Fish & G. Code, § 2068).

- Listed as rare under the California Native Plant Protection Act (Fish & G. Code, § 1900 et seq.). A plant is rare when, although not presently threatened with extinction, the species, subspecies, or variety is found in such small numbers throughout its range that it may be endangered if its environment worsens (Fish & G. Code, § 1901).
- Meet the definition of endangered, rare, or threatened species under CEQA Guidelines section 15380, subdivisions (b) and (d), which may include:
 - Plants tracked by the California Natural Diversity Database (CNDDDB) as California Rare Plant Rank (CRPR) 1 or 2;⁵ and
 - Plants that may warrant consideration on the basis of declining trends, recent taxonomic information, or other factors. This includes plants tracked by the CNDDDB as CRPR 3 or 4.⁶
- Considered locally significant plants, that is, plants that are not rare from a statewide perspective but are rare or uncommon in a local context such as within a county or region (CEQA Guidelines, § 15125, subd. (c)), or as designated in local or regional plans, policies, or ordinances (CEQA Guidelines, Appendix G). Examples include plants that are at the outer limits of their known geographic range or plants occurring on an atypical soil type.

Sensitive natural communities are communities that are of limited distribution statewide or within a county or region and are often vulnerable to environmental effects of projects. These communities may or may not contain special status plants or their habitat. CDFW’s *List of California Terrestrial Natural Communities*⁷ is based on the best available information, and indicates which natural communities are considered sensitive at the current stage of the California vegetation classification effort. See the Vegetation

⁵ See CNDDDB’s Special Vascular Plants, Bryophytes, and Lichens List for plant taxa with a CRPR of 1 or 2: <https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=109383&inline>

⁶ CRPR 3 plants (plants about which more information is needed) and CRPR 4 plants (plants of limited distribution) may warrant consideration under CEQA Guidelines section 15380. Impacts to CRPR 3 plants may warrant consideration under CEQA if sufficient information is available to assess potential impacts to such plants. Impacts to CRPR 4 plants may warrant consideration under CEQA if cumulative impacts to such plants are significant enough to affect their overall rarity. Data on CRPR 3 and 4 plants should be submitted to CNDDDB. Such data aids in determining and revising the CRPR of plants. See CNDDDB’s Special Vascular Plants, Bryophytes, and Lichens List for plant taxa with a CRPR of 3 or 4: <https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=109383&inline>

⁷ Available at: https://wildlife.ca.gov/Data/VegCAMP/Natural-Communities#natural_communities_lists

Classification and Mapping Program (VegCAMP) website for additional information on natural communities and vegetation classification.⁸

2. BOTANICAL FIELD SURVEYS

Evaluate the need for botanical field surveys prior to the commencement of any activities that may modify vegetation, such as clearing, mowing, or ground-breaking activities. It is appropriate to conduct a botanical field survey when:

- Natural (or naturalized) vegetation occurs in an area that may be directly or indirectly affected by a project (project area), and it is unknown whether or not special status plants or sensitive natural communities occur in the project area;
- Special status plants or sensitive natural communities have historically been identified in a project area; or
- Special status plants or sensitive natural communities occur in areas with similar physical and biological properties as a project area.

Survey Objectives

Conduct botanical field surveys in a manner which maximizes the likelihood of locating special status plants and sensitive natural communities that may be present. Botanical field surveys should be floristic in nature, meaning that every plant taxon that occurs in the project area is identified to the taxonomic level necessary to determine rarity and listing status. “Focused surveys” that are limited to habitats known to support special status plants or that are restricted to lists of likely potential special status plants are not considered floristic in nature and are not adequate to identify all plants in a project area to the level necessary to determine if they are special status plants.

For each botanical field survey conducted, include a list of all plants and natural communities detected in the project area. More than one field visit is usually necessary to adequately capture the floristic diversity of a project area. An indication of the prevalence (estimated total numbers, percent cover, density, etc.) of the special status plants and sensitive natural communities in the project area is also useful to assess the significance of a particular plant population or natural community.

Survey Preparation

Before botanical field surveys are conducted, the botanical field surveyors should compile relevant botanical information in the general project area to provide a regional context. Consult the CNDDDB⁹ and BIOS¹⁰ for known occurrences of special status plants and sensitive natural communities in the project area prior to botanical field surveys. Generally, identify vegetation and habitat types potentially occurring in the project area based on biological and physical properties (e.g., soils) of the project area

⁸ Available at: <https://www.wildlife.ca.gov/Data/VegCAMP>

⁹ Available at: <https://www.wildlife.ca.gov/Data/CNDDDB>

¹⁰ Available at: <https://www.wildlife.ca.gov/Data/BIOS>

and surrounding ecoregion.¹¹ Then, develop a list of special status plants and sensitive natural communities with the potential to occur within the vegetation and habitat types identified. The list of special status plants with the potential to occur in the project area can be created with the help of the CNDDDB QuickView Tool¹² which allows the user to generate lists of CNDDDB-tracked elements that occur within a particular U.S. Geological Survey 7.5' topographic quad, surrounding quads, and counties within California. Resulting lists should only be used as a tool to facilitate the use of reference sites, with the understanding that special status plants and sensitive natural communities in a project area may not be limited to those on the list. Botanical field surveys and subsequent reporting should be comprehensive and floristic in nature and not restricted to or focused only on a list. Include in the botanical survey report the list of potential special status plants and sensitive natural communities that was created, and the list of references used to compile the background botanical information for the project area.

Survey Extent

Botanical field surveys should be comprehensive over the entire project area, including areas that will be directly or indirectly impacted by the project. Adjoining properties should also be surveyed where direct or indirect project effects could occur, such as those from fuel modification, herbicide application, invasive species, and altered hydrology. Surveys restricted to known locations of special status plants may not identify all special status plants and sensitive natural communities present, and therefore do not provide a sufficient level of information to determine potential impacts.

Field Survey Method

Conduct botanical field surveys using systematic field techniques in all habitats of the project area to ensure thorough coverage. The level of effort required per given area and habitat is dependent upon the vegetation and its overall diversity and structural complexity, which determines the distance at which plants can be identified. Conduct botanical field surveys by traversing the entire project area to ensure thorough coverage, documenting all plant taxa observed. Parallel survey transects may be necessary to ensure thorough survey coverage in some habitats. The level of effort should be sufficient to provide comprehensive reporting. Additional time should be allocated for plant identification in the field.

Timing and Number of Visits

Conduct botanical field surveys in the field at the times of year when plants will be both evident and identifiable. Usually this is during flowering or fruiting. Space botanical field survey visits throughout the growing season to accurately determine what plants exist in the project area. This usually involves multiple visits to the project area (e.g., in early, mid, and late-season) to capture the floristic diversity at a level necessary to determine

¹¹ Ecological Subregions of the United States, available at: <http://www.fs.fed.us/land/pubs/ecoregions/toc.html>

¹² Available at: <https://www.wildlife.ca.gov/Data/CNDDDB/Maps-and-Data>. When creating a list of special status plants with the potential to occur in a project area, special care should be taken to search all quads with similar geology, habitats, and vegetation to those found in the project area.

if special status plants are present.¹³ The timing and number of visits necessary to determine if special status plants are present is determined by geographic location, the natural communities present, and the weather patterns of the year(s) in which botanical field surveys are conducted.

Reference Sites

When special status plants are known to occur in the type(s) of habitat present in a project area, observe reference sites (nearby accessible occurrences of the plants) to determine whether those special status plants are identifiable at the times of year the botanical field surveys take place and to obtain a visual image of the special status plants, associated habitat, and associated natural communities.

Use of Existing Surveys

For some project areas, floristic inventories or botanical survey reports may already exist. Additional botanical field surveys may be necessary for one or more of the following reasons:

- Botanical field surveys are not current;¹⁴
- Botanical field surveys were conducted in natural systems that commonly experience year to year fluctuations such as periods of drought or flooding (e.g., vernal pool habitats or riverine systems);
- Botanical field surveys did not cover the entire project area;
- Botanical field surveys did not occur at the appropriate times of year;
- Botanical field surveys were not conducted for a sufficient number of years to detect plants that are not evident and identifiable every year (e.g., geophytes, annuals, and some short-lived plants);
- Botanical field surveys did not identify all plants in the project area to the taxonomic level necessary to determine rarity and listing status;
- Fire history, land use, or the physical or climatic conditions of the project area have changed since the last botanical field survey was conducted;
- Changes in vegetation or plant distribution have occurred since the last botanical field surveys were conducted, such as those related to habitat alteration, fluctuations in abundance, invasive species, seed bank dynamics, or other factors; or

¹³ U.S. Fish and Wildlife Service Guidelines for Conducting and Reporting Botanical Inventories for Federally Listed, Proposed and Candidate Plants available at: <https://www.fws.gov/sacramento/es/Survey-Protocols-Guidelines/>

¹⁴ Habitats, such as grasslands or desert plant communities that have annual and short-lived perennial plants as major floristic components, may require multiple annual surveys to fully capture baseline conditions. In habitats dominated by long-lived perennial plants, such as forests, surveys that were not conducted within the previous five years may not adequately represent the current baseline conditions and should be re-conducted.

- Recent taxonomic studies, status reviews or other scientific information has resulted in a revised understanding of the special status plants with potential to occur in the project area.

Negative Surveys

Adverse conditions from yearly weather patterns may prevent botanical field surveyors from determining the presence of, or accurately identifying, some special status plants in the project area. Disease, drought, predation, fire, herbivory, or other disturbance may also preclude the presence or identification of special status plants in any given year. Discuss all adverse conditions in the botanical survey report.¹⁵

The failure to locate a known special status plant occurrence during one field season does not constitute evidence that the plant occurrence no longer exists at a location, particularly if adverse conditions are present. For example, botanical field surveys over a number of years may be necessary if the special status plant is an annual or short-lived plant having a persistent, long-lived seed bank and populations of the plant are known to not germinate every year. Visiting the project area in more than one year increases the likelihood of detecting special status plants, particularly if conditions change. To further substantiate negative findings for a known occurrence, a visit to a nearby reference site may help ensure that the timing of botanical field surveys was appropriate.

3. REPORTING AND DATA COLLECTION

Adequate information about special status plants and sensitive natural communities present in a project area will enable reviewing agencies and the public to effectively assess potential impacts to special status plants and sensitive natural communities and will guide the development of avoidance, minimization, and mitigation measures. The information necessary to assess impacts to special status plants and sensitive natural communities is described below. For comprehensive, systematic botanical field surveys where no special status plants or sensitive natural communities were found, reporting and data collection responsibilities for botanical field surveyor remain as described below, excluding specific occurrence information.

Special Status Plant and Sensitive Natural Community Observations

Record the following information for locations of each special status plant and sensitive natural community detected during a botanical field survey of a project area.

- The specific geographic locations where the special status plants and sensitive natural communities were found. Preferably this will be done by use of global positioning system (GPS) and include the datum¹⁶ in which the spatial data was

¹⁵ U.S. Fish and Wildlife Service Guidelines for Conducting and Reporting Botanical Inventories for Federally Listed, Proposed and Candidate Plants available at: <https://www.fws.gov/sacramento/es/Survey-Protocols-Guidelines/>

¹⁶ NAD83, NAD27 or WGS84

collected and any uncertainty or error associated with the data. If GPS is not available, a detailed map (1:24,000 or larger) showing locations and boundaries of each special status plant population and sensitive natural community in relation to the project area is acceptable. Mark occurrences and boundaries as accurately as possible;

- The site-specific characteristics of occurrences, such as associated species, habitat and microhabitat, structure of vegetation, topographic features, soil type, texture, and soil parent material. If a special status plant is associated with a wetland, provide a description of the direction of flow and integrity of surface or subsurface hydrology and adjacent off-site hydrological influences as appropriate;
- The number of individuals in each special status plant population as counted (if population is small) or estimated (if population is large);
- If applicable, information about the percentage of each special status plant in each life stage such as seedling, vegetative, flowering, and fruiting;
- The density of special status plants, identifying areas of relatively high, medium and low density of each special status plant in the project area; and
- Digital images of special status plants and sensitive natural communities in the project area, with diagnostic features.

Special Status Plant and Sensitive Natural Community Documentation

When a special status plant is located, data must be submitted to the CNDDDB. Data may be submitted in a variety of formats depending on the amount and type of data that is collected.¹⁷ The most common way to submit data is the Online CNDDDB Field Survey Form,¹⁸ or equivalent written report, accompanied by geographic locality information (GPS coordinates, GIS shapefiles, KML files, topographic map, etc.). Data submitted in digital form must include the datum¹⁹ in which it was collected.

If a sensitive natural community is found in a project area, document it with a Combined Vegetation Rapid Assessment and Relevé Field Form²⁰ and submit the form to VegCAMP.²¹

Voucher Collection

Voucher specimens provide verifiable documentation of special status plant presence and identification and a scientific record. This information is vital to conservation efforts and valuable for scientific research. Collection of voucher specimens should be

¹⁷ See <https://www.wildlife.ca.gov/Data/CNDDDB/Submitting-Data> for information on acceptable data submission formats.

¹⁸ Available at: <https://www.wildlife.ca.gov/Data/CNDDDB/Submitting-Data>

¹⁹ NAD83, NAD27 or WGS84

²⁰ Available at: <https://www.wildlife.ca.gov/Data/VegCAMP/Natural-Communities/Submit>

²¹ Combined Vegetation Rapid Assessment and Relevé Field Forms can be emailed to VegCAMP staff. Contact information available at: <https://www.wildlife.ca.gov/Data/VegCAMP>

conducted in a manner that is consistent with conservation ethics, and in accordance with applicable state and federal permit requirements (e.g., scientific, educational, or management permits pursuant to Fish & G. Code, § 2081, subd. (a)). Voucher collections of special status plants (or possible special status plants) should only be made when such actions would not jeopardize the continued existence of the population. A plant voucher collecting permit²² is required from CDFW prior to the take or possession of a state-listed plant for voucher collection purposes, and the permittee must comply with all permit conditions.

Voucher specimens should be deposited in herbaria that are members of the Consortium of California Herbaria²³ no later than 120 days after the collections have been made. Digital imagery can be used to supplement plant identification and document habitat. Record all relevant collector names and permit numbers on specimen labels (if applicable).

Botanical Survey Reports

Botanical survey reports provide an important record of botanical field survey results and project area conditions. Botanical survey reports containing the following information should be prepared whenever botanical field surveys take place, and should also be submitted with project environmental documents:

Project and location description

- A description of the proposed project;
- A detailed map of the project area that identifies topographic and landscape features and includes a north arrow and bar scale;
- A vegetation map of the project area using Survey of California Vegetation Classification and Mapping Standards²⁴ at a thematic and spatial scale that allows the display of all sensitive natural communities;
- A soil map of the project area; and
- A written description of the biological setting, including all natural communities; geological and hydrological characteristics; and land use or management history.

Detailed description of survey methodology and results

- Names and qualifications of botanical field surveyor(s);
- Dates of botanical field surveys (indicating the botanical field surveyor(s) that surveyed each area on each survey date), and total person-hours spent;
- A discussion of the survey preparation methodology;
- A list of special status plants and sensitive natural communities with potential to

²² Applications available at: <https://www.wildlife.ca.gov/Conservation/Plants/Permits>

²³ A list of Consortium of California Herbaria participants is available at: <http://ucjeps.berkeley.edu/consortium/participants.html>

²⁴ Available at: <https://www.wildlife.ca.gov/data/vegcamp/publications-and-protocols>

occur in the region;

- Description(s) of reference site(s), if visited, and the phenological development of special status plant(s) at those reference sites;
- A description and map of the area surveyed relative to the project area;
- A list of all plant taxa occurring in the project area, with all taxa identified to the taxonomic level necessary to determine whether or not they are a special status plant;
- Detailed data and maps for all special status plants and sensitive natural communities detected. Information specified above under the headings “Special Status Plant and Sensitive Natural Community Observations,” and “Special Status Plant and Sensitive Natural Community Documentation,” should be provided for the locations of each special status plant and sensitive natural community detected. Copies of all California Native Species Field Survey Forms and Combined Vegetation Rapid Assessment and Relevé Field Forms should be sent to the CNDDDB and VegCAMP, respectively, and included in the project environmental document as an Appendix;²⁵
- A discussion of the potential for a false negative botanical field survey;
- A discussion of how climatic conditions may have affected the botanical field survey results;
- A discussion of how the timing of botanical field surveys may affect the comprehensiveness of botanical field surveys;
- Any use of existing botanical field surveys and a discussion of their applicability to the project;
- The deposition locations of voucher specimens, if collected; and
- A list of references used, including persons contacted and herbaria visited.

Assessment of potential project impacts

- A discussion of the significance of special status plant populations in the project area considering nearby populations and total range and distribution;
- A discussion of the significance of sensitive natural communities in the project area considering nearby occurrences and natural community distribution;
- A discussion of project related direct, indirect, and cumulative impacts to special status plants and sensitive natural communities;
- A discussion of the degree and immediacy of all threats to special status plants and sensitive natural communities, including those from invasive species;
- A discussion of the degree of impact, if any, of the project on unoccupied,

²⁵ It is not necessary to submit entire environmental documents to the CNDDDB.

potential habitat for special status plants; and

- Recommended measures to avoid, minimize, or mitigate impacts to special status plants and sensitive natural communities.

4. BOTANICAL FIELD SURVEYOR QUALIFICATIONS

Botanical field surveyors should possess the following qualifications:

- Knowledge of plant taxonomy and natural community ecology;
- Familiarity with plants of the region, including special status plants;
- Familiarity with natural communities of the region, including sensitive natural communities;
- Experience with the CNDDDB, BIOS, and Survey of California Vegetation Classification and Mapping Standards;
- Experience conducting floristic botanical field surveys as described in this document, or experience conducting such botanical field surveys under the direction of an experienced botanical field surveyor;
- Familiarity with federal, state, and local statutes and regulations related to plants and plant collecting; and
- Experience analyzing the impacts of projects on native plant species and sensitive natural communities.

5. SUGGESTED REFERENCES

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SPECIAL-STATUS PLANT SURVEY REPORT

JULY 2022

FLINT TRAIL ACCESS ROAD PROJECT
CALAVERAS COUNTY, CALIFORNIA



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Abbreviations

Abbreviation	Definition
CCH	Consortium of California Herbaria
CDFG	California Department of Fish and Game
CDFW	California Department of Fish and Wildlife
CESA	California Endangered Species Act
CEQA	California Environmental Quality Act
CNDDDB	California Natural Diversity Data Base
CNPS	California Native Plant Society
CRPR	California Rare Plant Rank
FE	Federally listed as Endangered
FESA	Federal Endangered Species Act
FT	Federally listed as Threatened
GPS	Global Positioning System
NRCS	Natural Resources Conservation Service
SE	State listed as Endangered
SR	State-designated as Rare
ST	State listed as Threatened
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey

1.0 Introduction

CV Development Partners, LLC proposes to construct an approximately 1-mile-long access road between Little John Road and an unnamed road in the southeast portion of the Golf Club at Copper Valley in Copperopolis, Calaveras County, California. The Flint Trail Access Road Project (Project) will link Flint Trail to Oak Creek Drive and the Golf Club at Copper Valley and will serve as a required secondary access for the Copper Valley masterplan community development. To satisfy a mitigation measure called out in the California Environmental Quality Act (CEQA) document for the Project, the Calaveras County Planning Department requires a special-status plant survey.

To assist CV Development Partners, LLC with the special-status plant survey, we conducted field surveys for special-status plants and rare natural communities during March, June, and July 2022. To evaluate whether the Project may affect special-status plants and rare natural communities under CEQA purview, we (1) obtained a list of special-status species and rare natural communities known from the area from the California Department of Fish and Wildlife (CDFW); (2) reviewed other relevant background information such as aerial images, topographic maps, Natural Resources Conservation Service (NRCS) soil survey maps, and literature; (3) established a rare species scoping list; (4) visited nearby reference populations of special-status species; and (5) conducted a floristic survey of the Project site.

1.1 Environmental Setting

The 42.41-acre Project site runs from the intersection of Flint Trail and Little John Road to an unnamed access road approximately 1700 feet south of Oak Creek Drive in Copperopolis, Calaveras County, California (Figure 1 and Figure 2). The survey area supported woodland, grassland, segments of gravel roads, and intermittent streams in a landscape with rolling topography. The Project site is owned by the Calaveras County Water District and used at least occasionally for cattle grazing.

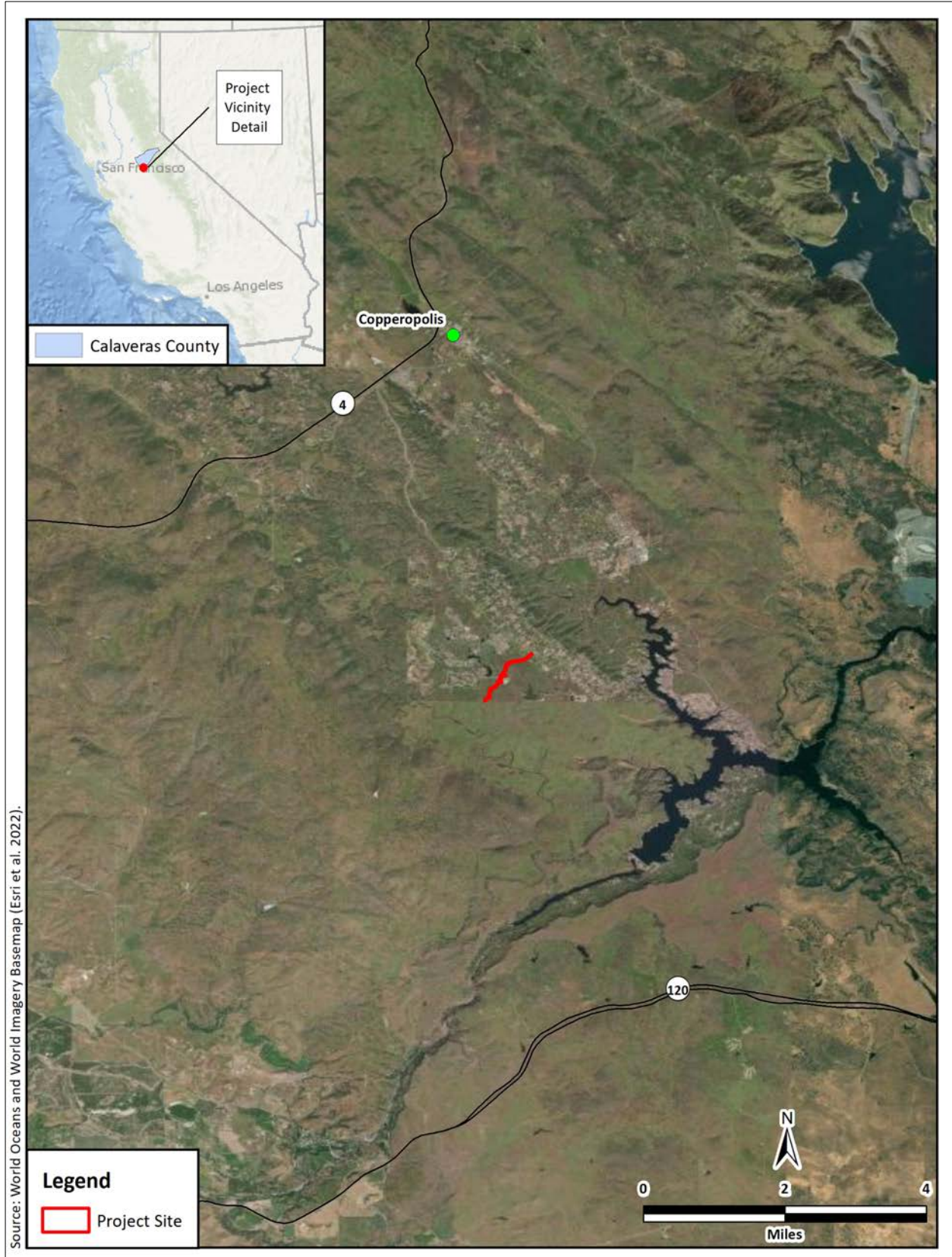


Figure 1. Project site vicinity map.



Figure 2. Survey area map.

1.2 Special-Status Plant and Rare Natural Community Definitions

Special-status plants include taxa that meet one or more of the following criteria (CDFW 2018):

- Plants listed or proposed for listing as threatened or endangered under the Federal Endangered Species Act (FESA) or candidates for future listing as threatened or endangered under the FESA.
- Plants listed or candidates for listing by the state of California as threatened or endangered under the California Endangered Species Act (CESA).
- Plants listed as rare under the California Native Plant Protection Act.
- Plants that meet the definition of rare or endangered under CEQA. These include:
 - Species considered by the CDFW to be rare, threatened, or endangered in California. These include plants designated by the California Native Plant Society (CNPS) with a California Rare Plant Rank (CRPR) of 1A, 1B, 2A, or 2B.
 - Species that may warrant consideration based on local significance or recent biological information.
 - Some species included on the California Natural Diversity Database (CNDDDB) *Special Vascular Plants, Bryophytes and Lichens List* (CDFW 2022a).
- Plants considered locally significant species. These may include plants occurring at the edge or outside of the known range of the species.

Rare natural communities are plant communities with limited distributions that may be vulnerable to environmental impacts. Rare natural communities are identified and described by:

- The CNDDDB (CDFW 2022b), which includes plant communities and their Global (G) and State (S) ranks and is based on the Holland (1986) vegetation classification.
- The list of Vegetation Alliances and Associations (CDFG 2010), which includes vegetation alliances and associations in California and their G and S ranks and is based on the most recent vegetation classification in *A Manual of California Vegetation, 2nd Edition* (Sawyer et al. 2009). Rare natural communities include those with G or S ranks of 2 or lower.

2.0 Methods

2.1 Scoping

As a framework for the survey, we developed a scoping list of special-status plant species with the potential to occur in the Project area. To develop this list, we generated a regional list of special-status species using a CNDDDB and CNPS Inventory of Rare and Endangered Plants of California database (CNPS 2022) search confined to the Copperopolis 7.5-minute United States Geological Survey (USGS) topographic quadrangle, which encompasses the Project site, and the eight surrounding quadrangles (Bachelor Valley, Jenny Lind, Salt Spring Valley, Angeles Camp, New Melones Dam, Keystone, Knights Ferry, and Oakdale). We also reviewed the Consortium of California Herbaria (CCH 2022), Calflora (2022), aerial imagery from Google Earth (Google 2022), USGS topographic maps, NRCS soil survey maps (NRCS 2022), and United States Fish and Wildlife Service Critical Habitat designations (USFWS 2022).

Potential focal species included those returned by the CNDDDB and CNPS database searches within the nine 7.5-minute USGS topographic quadrangles. In addition, the other sources cited above were evaluated to determine if other species should be considered. Each species was evaluated and assigned a potential to occur rating based on the presence of suitable soils, vegetation alliances, and/or documented collections in the region in similar habitats to those on the Project site. A list of focal species was developed and used to determine survey timing and identify which species required reference site visits. In addition, the botanical survey comprehensively documented all plant species on the Project site and was not restricted to or focused only on the list of potentially occurring special-status plant species.

2.2 Botanical Surveys

Timing of the surveys took into consideration documented phenology for the focal species, site phenology of habitats present, reference populations, historical and current weather data, and forecasted weather conditions. Before conducting the surveys, reference populations for selected focal species were visited to confirm whether these species: (1) had emerged (if annuals), (2) showed phenological traits (e.g., fruits, flowers) necessary for identification, and/or (3) were identifiable from previous growing seasons. The criteria used to select focal species for reference checks included accessibility, germination response to drought conditions, rarity (Federal, State, CRPR 1B), and potential to occur on the Project site.

Following verification at these reference populations, pedestrian surveys for special-status plant species were conducted in early spring (7 March), early summer (6 June), and summer (8 July) 2022. Surveys were conducted by qualified botanist Jeff Davis. The botanical survey followed the CDFW *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities* (CDFW 2018) and the *CNPS Botanical Survey*

Guidelines (CNPS 2001). The survey area included the Project site and a surrounding 50-foot buffer. The surveys were conducted by walking meandering transects spaced at 25–50-foot intervals throughout the survey area to ensure thorough coverage. Transect spacing was narrowed where soils and habitats could have a higher potential to support special-status plant species (e.g., rock outcrops and intermittent streams).

2.3 Taxonomy and Vegetation

Plant taxonomy follows Jepson Flora Project (2022), which is the authoritative flora and plant key for California. Common plant names are from CNPS (2022) or Calflora (2022). Vegetation classification follows the system described in *A Manual of California Vegetation*, Second Edition (Sawyer et al. 2009). This vegetation classification system is the preferred system of the CNPS and the CDFW's Vegetation Classification and Mapping Program and allows for direct comparisons with other classification systems (e.g., Holland 1986).

3.0 Results

3.1 Special-Status Species Scoping

Based on literature review and the results of CNDDDB (CDFW 2022b), CNPS (2022), CCH (2022), and Calflora (2022) database searches, 24 special-status plant species were identified and analyzed for their potential to occur on the Project site (Table 2). Of these, it was determined that habitat was present for five species, of which all are listed as threatened or endangered under FESA or CESA or considered by the CNPS to be rare, threatened, or endangered (California Rare Plant Rank 1B or 2B). Table 2 provides listing and ranking status and potential to occur rationale for all 24 special-status plant species identified for analysis during database searches and literature reviews.

The Project site is underlain by Copperopolis-Whiterock complex 2 to 8 percent slopes, Copperopolis-Whiterock complex 3 to 15 percent slopes, and Urban land-Copperopolis complex, 0 to 15 percent slopes (NCRS 2022; Figure 3). The Project site is at an elevation of 750–830 feet above mean sea level (Google 2022).

Table 1. Special-status plant species, their listing status, habitats and blooming periods, and potential to occur on or near the Project site.

Species	Status ¹	Habitat and Blooming Period	Potential to Occur ²
Federally and State-Listed Endangered or Threatened Species			
Chinese Camp brodiaea ³ (<i>Brodiaea pallida</i>)	FT, SE, 1B.1	Intermittent streambeds, vernal swales, serpentine soils (facultative) at 520–1300 feet elevation. Blooming period: May through June.	Low. Intermittent streambeds provide potential habitat for this species. A large 2008 CNDDDB occurrence record is known from 1 mile northeast of the Project site.
Colusa grass (<i>Neostapfia colusana</i>)	FT, SE, 1B.1	Vernal pools and depressions below 410 feet elevation. Blooming period: May through August.	None. Habitat lacking; no vernal pools or other potentially suitable aquatic features were found in the survey area.
Delta button-celery (<i>Eryngium racemosum</i>)	SE, 1B.1	Seasonally flooded clay depressions in floodplains at 9–90 feet elevation.	None. Habitat lacking; the Project site lacked seasonally flooded clay depressions.

		Blooming period: May through October.	
Hartweg's golden sunburst (<i>Pseudobahia bahiifolia</i>)	FE, SE, 1B.1	Acidic clay soils in open woodland and grassland at 320–650 feet elevation. Blooming period: May through August.	None. Habitat lacking; the Project site is above the elevational range of this species.
Red Hills vervain (<i>Verbena californica</i>)	FT, ST, 1B.1	Wet places, seeps, generally serpentine soils, pine/oak woodland at 900–1200 feet elevation. Blooming period: May through September.	None. Habitat lacking; no serpentine soils were found in the survey area.
Beaked clarkia ³ (<i>Clarkia rostrata</i>)	1B.3	Cismontane woodland and valley and foothill grassland at 195–1640 feet elevation. Blooming period: April through May.	Moderate. Suitable land cover within the survey area.
Congdon's lomatium ³ (<i>Lomatium congdonii</i>)	1B.2	Serpentine soils in chaparral and cismontane woodland at 980–6980 feet elevation. Blooming period: March through June.	None. Habitat lacking; no serpentine soils were found in the survey area.
Dwarf downingia (<i>Downingia pusilla</i>)	2B.2	Vernal pools and roadside ditches in valley and foothill grassland at or below 500 feet elevation. Blooming period: March through May.	None. Habitat lacking; no vernal pools or other potentially suitable aquatic features were found in the survey area.
Forked hare-leaf ³ (<i>Lagophylla dichotoma</i>)	1B.1	Grasslands and openings in woodland at 150–1200 feet elevation. Blooming period: April through May.	Low. Grassland and openings in woodlands within survey area provide potential habitat for this species. The northern third of the survey area overlaps

			with a vague, non-specific 2000 CNDDDB occurrence.
Hoover's calycadenia (<i>Calycadenia hooveri</i>)	1B.3	Rocky, exposed soils in cismontane woodland and valley and foothill grassland at 320–1600 feet elevation. Blooming period: July through September. In drought years, this species can begin flowering as early as May.	None. Habitat lacking; no rocky, exposed places were found in the survey area.
Mariposa cryptantha (<i>Cryptantha mariposae</i>)	1B.3	Rocky, serpentine soils in chaparral at 655–2135 feet elevation. Blooming period: April through June.	None. Habitat lacking; no serpentine soils were found in the survey area.
Patterson's navarretia (<i>Navarretia paradoxiclara</i>)	1B.3	Open, seasonally wet areas, meadows, serpentine soils at 500–1500 feet elevation. Blooming period: May through July.	None. Habitat lacking; no serpentine soils were found in the survey area.
Rawhide Hill onion (<i>Allium tuolumnense</i>)	1B.2	Serpentine soils in cismontane woodland at 985–1970 feet elevation. Blooming period: March through May.	None. Habitat lacking; no serpentine soils were found in the survey area.
Red Hills cryptantha (<i>Cryptantha spithamaea</i>)	1B.3	Serpentine soils in chaparral and cismontane woodland at 900–2500 feet elevation. Blooming period: April through May.	None. Habitat lacking; no serpentine soils were found in the survey area.

Red Hills ragwort (<i>Senecio clelandii</i> var. <i>heterophyllus</i>)	1B.2	Serpentine endemic found in mesic areas in cismontane woodland at 855–1265 feet elevation. Blooming period: May through July.	None. Habitat lacking; no serpentine soils were found in the survey area.
Red Hills soaproot ³ (<i>Chlorogalum grandiflorum</i>)	1B.2	Serpentine outcrops, open shrubby or wooded hills at 900–1500 feet elevation. Blooming period: May through July.	None. Habitat lacking; no serpentine soils were found in the survey area.
Shaggyhair lupine (<i>Lupinus spectabilis</i>)	1B.2	Serpentine soils in chaparral and cismontane woodland at 850–2705 feet elevation. Blooming period: April through May.	None. Habitat lacking; no serpentine soils were found in the survey area.
Spiny-sepaled button-celery ³ (<i>Eryngium spinosepalum</i>)	1B.2	Vernal pools and swales in valley and foothill grassland at 330–4200 feet elevation. Blooming period: April through June.	None. Habitat lacking; no vernal pools or other potentially suitable aquatic features were found in the survey area.
Stanislaus monkeyflower (<i>Erythranthe marmorata</i>)	1B.1	Seeps, streambanks at 300–2700 feet elevation. Blooming period: March through May.	Low. Streams in the survey area provide potential habitat for this species.
Stinkbells (<i>Fritillaria agrestis</i>)	4.2	Chaparral, cismontane woodland, pinyon and juniper woodland, and valley and foothill grassland with clay and sometimes serpentine soils at 35–5100 feet elevation. Blooming period: March through June.	None. Habitat lacking; the survey area lacked clay and serpentine soils.

Tongue-leaf copper moss ³ (<i>Scopelophila cataractae</i>)	2B.2	Rocks or thin soil over rocks in copper-rich environments.	None. Habitat lacking; the survey area lacked rocky areas.
Tuolumne button-celery ³ (<i>Eryngium pinnatisectum</i>)	1B.2	Vernal pools and swales; intermittent streams at 230–3,000 feet elevation. Blooming period: May through August.	None. Habitat lacking; no vernal pools or other potentially suitable aquatic features were found in the survey area.
Veiny monardella (<i>Monardella venosa</i>)	1B.1	Valley grasslands at 195–1435 feet elevation, generally with clay soils. Blooming period: May through July.	Low. Although the survey area lacks clay soils, grassland in the survey area provides potential habitat for this species.
Yellow-lip pansy monkeyflower (<i>Diplacus pulchellus</i>)	1B.2	Clay soils and vernal mesic disturbed areas in meadows and seeps and low elevation conifer forest at 1965–6560 feet elevation. Blooming period: April through July.	None. Habitat lacking; the Project site is below the elevational range of this species.

Status ¹	Potential to Occur ²
FE = Federally listed as Endangered	None: Species or sign not observed; conditions unsuitable for occurrence.
FT = Federally listed as Threatened	Low: Neither species nor sign observed; conditions marginal for occurrence.
SE = State listed as Endangered	Moderate: Neither species nor sign observed; conditions suitable for occurrence.
ST = State listed as Threatened	High: Neither species nor sign observed; conditions highly suitable for occurrence.
SR = State-designated as Rare	Present: Species or sign observed; conditions suitable for occurrence.

CNPS California Rare Plant Rank ¹ :	Threat Ranks ¹ :
1B – plants rare, threatened, or endangered in California and elsewhere.	0.1 – seriously threatened in California (> 80% of occurrences).
2B – plants rare, threatened, or endangered in California but more common elsewhere.	0.2 – moderately threatened in California (20–80% of occurrences).

CNPS California Rare Plant Rank¹:

3 – plants about which more information is needed.

4 – plants have limited distribution in California.

Threat Ranks¹:

0.3 – not very threatened in California (<20% of occurrences).

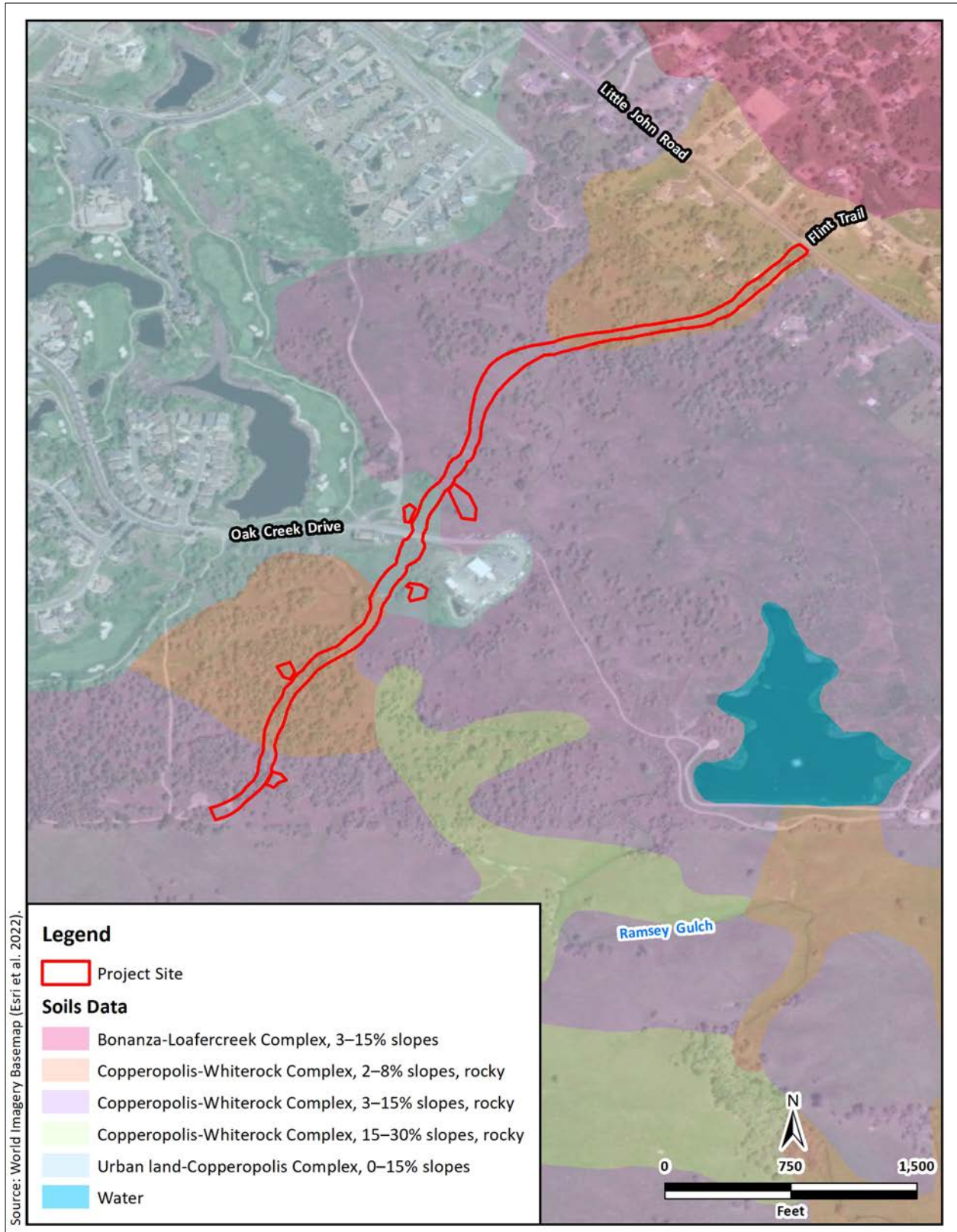


Figure 3. Project site soils map.

3.2 Reference Populations

Reference populations were visited in April, May, and July 2021 (Table 1).

Table 2. Reference population visit summary.

Species	Location	Date(s) Visited	Status
Chinese Camp brodiaea (<i>Brodiaea pallida</i>)	Copperopolis, approximately 0.25 miles west of Project site; CNDDDB Occurrence #3 and #4	June 5	Vegetative brodiaea plants observed.
Beaked clarkia (<i>Clarkia rostrata</i>)	Along west shore of Lake McClure, CNDDDB Occurrence #37	June 5	Senesced individuals observed.

3.3 Special-Status Plant Species

No special-status plants were found on the Project site or in the survey area.

3.4 Other Rare Plants

No other rare plants were found on the Project site or in the survey area.

3.5 Rare Natural Communities

No rare natural communities were found on the Project site or in the survey area.

3.6 Vegetation

The Project site was dominated by blue oak woodland and forest (also known as *Quercus douglasii* Forest and Woodland Alliance) with smaller areas of wild oats and annual brome grasslands. Two intermittent streams were also present on the Project site as were sections of gravel roads.

3.6.1 Blue Oak Woodland and Forest

Blue oak woodland and forest vegetation community is characterized as having a sparse to dense canopy dominated by blue oak (*Quercus douglasii*) with greater than 50% canopy cover (Figure 4). The understory consists largely of nonnative grasses and forbs such as wild oats (*Avena* spp.), brome (*Bromus* spp.), stork's bill (*Erodium* spp.), Italian thistle (*Carduus pycnocephalus*), and native grasses and forbs such as small fescue (*Festuca microstachys*), rusty popcorn flower (*Plagiobothrys nothofulvus*), clover (*Trifolium* spp.), purple clarkia (*Clarkia purpurea* ssp. *quadrivulnera*), and fiddleneck (*Amsinckia* spp.).



Figure 4. Photograph of blue oak woodland and forest vegetation community on the Project site.

3.6.2 Wild Oats and Annual Brome Grassland

The wild oats and annual brome grasslands on the Project site are dominated by nonnative grasses including slender wild oats (*Avena barbata*), wild oats (*Avena fatua*), soft chess (*Bromus hordeaceus*), ripgut brome (*Bromus diandrus*), foxtail brome (*Bromus madritensis* ssp. *madritensis*), Medusa head (*Elymus caput-medusae*), barley (*Hordeum marinum* ssp. *gussoneanum*), and native and nonnative forbs including rusty popcorn flower and filaree (Figure 5). This vegetation community is uncommon on the Project site, where it occurs as openings between wooded areas.



Figure 5. Photograph of wild oats and annual brome grassland vegetation community on the Project site.

3.6.3 Intermittent Stream

Four intermittent streams occur in the survey area (Figure 6). These include Ramsey Gulch and two unnamed tributaries to Ramsey Gulch in the central portion of the survey area about 400 feet southwest of Oak Creek Drive and another unnamed tributary to Ramsey Gulch in the northern portion of the survey area about 0.24 miles southwest of Little John Road. Ramsey Gulch flows into Littlejohns Creek, which flows into the San Joaquin River via French Camp Slough. These streams flow during early spring and cease flowing by summer; however, water may remain in isolated pools late into the season. Vegetation associated with these streams was largely herbaceous and included wire rush (*Juncus balticus*), sedges (*Carex praegracilis* and *Cyperus eragrostis*), seep monkeyflower (*Erythranthe guttata*), pennyroyal (*Mentha pulegium*), curly dock (*Rumex crispus*), narrowleaf cattail (*Typha domingensis*), and northern water plantain (*Alisma triviale*).



Figure 6. Photograph of intermittent stream vegetation community on the Project site.

3.6.4 Developed

Sections of gravel road on the Project site are considered developed (Figure 7). Few plants are associated with these areas and are typically represented by species belonging to surrounding vegetation communities.



Figure 7. Photograph of a developed area on the Project site.

3.7 Plant Species Observed

A total of 89 plant taxa were identified in the survey area (Table 3), of which 48 are native to California and 41 are nonnative.

Table 3. Plant species observed in the survey area.

Common Name	Scientific Name	Status
Family Agavaceae		
Common soaproot	<i>Chlorogalum pomeridianum</i> var. <i>pomeridianum</i>	Native
Family Alismataceae		
Lanceleaf water plantain	<i>Alisma lanceolatum</i>	Nonnative
Family Apiaceae		
Bur chervil	<i>Anthriscus caucalis</i>	Nonnative

Common Name	Scientific Name	Status
Dwarf athysanus	<i>Athysanus pusillus</i>	Native
Wild carrot	<i>Daucus pusillus</i>	Native
Hog fennel	<i>Lomatium utriculatum</i>	Native
Field hedge parsley	<i>Torilis arvensis</i>	Nonnative
Family Apocynaceae		
Narrow leaf milkweed	<i>Asclepias fascicularis</i>	Native
Family Asteraceae		
Blow wives	<i>Achyraea mollis</i>	Native
Italian thistle	<i>Carduus pycnocephalus</i>	Nonnative
Golden yarrow	<i>Eriophyllum confertiflorum</i> var. <i>confertiflorum</i>	Native
Prickly ox-tongue	<i>Helminthotheca echioides</i>	Nonnative
Narrow tarplant	<i>Holocarpha virgata</i> ssp. <i>virgata</i>	Native
Prickly lettuce	<i>Lactuca serriola</i>	Nonnative
Sow thistle	<i>Sonchus oleraceus</i>	Nonnative
Cocklebur	<i>Xanthium strumarium</i>	Native
Family Boraginaceae		
Common fiddleneck	<i>Amsinckia intermedia</i>	Native
Rigid fiddleneck	<i>Amsinckia retrorsa</i>	Native
Baby blue eyes	<i>Nemophila menziesii</i>	Native
Rusty haired popcorn flower	<i>Plagiobothrys nothofulvus</i>	Native
Slender popcorn flower	<i>Plagiobothrys tenellus</i>	Native
Family Brassicaceae		
Watercress	<i>Nasturtium officinale</i>	Native
Hedge mustard	<i>Sisymbrium officinale</i>	Nonnative
Common fringe pod	<i>Thysanocarpus curvipes</i>	Native
Family Caprifoliaceae		
Chaparral honeysuckle	<i>Lonicera interrupta</i>	Native
Family Caryophyllaceae		
Purple sand spurry	<i>Spergularia rubra</i>	Nonnative
Family Cyperaceae		
Field sedge	<i>Carex praegracilis</i>	Native
Tall flatsedge	<i>Cyperus eragrostis</i>	Native
Common spikerush	<i>Eleocharis macrostachya</i>	Native
Family Euphorbiaceae		
Doveweed	<i>Croton setiger</i>	Native

Common Name	Scientific Name	Status
Family Fabaceae		
American bird's foot trefoil	<i>Acmispon americanus</i> var. <i>americanus</i>	Native
Chilean trefoil	<i>Acmispon wrangelianus</i>	Native
Spider lupine	<i>Lupinus benthamii</i>	Native
Miniature lupine	<i>Lupinus bicolor</i>	Native
California burclover	<i>Medicago polymorpha</i>	Nonnative
Tree clover	<i>Trifolium ciliolatum</i>	Native
Rose clover	<i>Trifolium hirtum</i>	Nonnative
Narrow-leaved vetch	<i>Vicia sativa</i> ssp. <i>nigra</i>	Nonnative
Family Fagaceae		
Blue oak	<i>Quercus douglasii</i>	Native
Interior live oak	<i>Quercus wislizini</i> var. <i>wislizini</i>	Native
Family Gentianaceae		
Slender centaury	<i>Centaurium tenuiflorum</i>	Nonnative
Venus' looking glass	<i>Githopsis specularioides</i>	Native
Family Geraniaceae		
Big heron bill	<i>Erodium botrys</i>	Nonnative
White stemmed filaree	<i>Erodium brachycarpum</i>	Nonnative
Coastal heron's bill	<i>Erodium cicutarium</i>	Nonnative
Musky stork's bill	<i>Erodium moschatum</i>	Nonnative
Carolina geranium	<i>Geranium carolinianum</i>	Native
Cut leaved geranium	<i>Geranium dissectum</i>	Nonnative
Family Hydrocharitaceae		
Western waterwort	<i>Elodea nuttallii</i>	Native
Family Juncaceae		
Wire rush	<i>Juncus balticus</i>	Native
Family Lamiaceae		
Pennyroyal	<i>Mentha pulegium</i>	Nonnative
Family Montiaceae		
Miner's lettuce	<i>Claytonia perfoliata</i> ssp. <i>perfoliata</i>	Native
Family Myrsinaceae		
Scarlet pimpernel	<i>Lysimachia arvensis</i>	Nonnative
Family Onagraceae		
Purple clarkia	<i>Clarkia purpurea</i> ssp. <i>quadrivulnera</i>	Native

Common Name	Scientific Name	Status
Willow herb	<i>Epilobium ciliatum</i> ssp. <i>ciliatum</i>	Native
Family Phrymaceae		
Seep monkeyflower	<i>Erythranthe guttata</i>	Native
Family Plantaginaceae		
Water speedwell	<i>Veronica anagallis-aquatica</i>	Nonnative
Family Poaceae		
Silvery hairgrass	<i>Aira caryophyllea</i>	Nonnative
Slim oat	<i>Avena barbata</i>	Nonnative
Wild oats	<i>Avena fatua</i>	Nonnative
Little rattlesnake grass	<i>Briza minor</i>	Nonnative
Ripgut brome	<i>Bromus diandrus</i>	Nonnative
Soft chess	<i>Bromus hordeaceus</i>	Nonnative
Foxtail brome	<i>Bromus madritensis</i> ssp. <i>madritensis</i>	Nonnative
Sterile brome	<i>Bromus sterilis</i>	Nonnative
Bermuda grass	<i>Cynodon dactylon</i>	Nonnative
Dogtail grass	<i>Cynosurus echinatus</i>	Nonnative
Annual hairgrass	<i>Deschampsia danthonioides</i>	Native
Medusa head	<i>Elymus caput-medusae</i>	Nonnative
Small fescue	<i>Festuca microstachys</i>	Native
Rattail sixweeks grass	<i>Festuca myuros</i>	Nonnative
Italian ryegrass	<i>Festuca perennis</i>	Nonnative
Common velvetgrass	<i>Holcus lanatus</i>	Nonnative
Barley	<i>Hordeum marinum</i> ssp. <i>gussoneanum</i>	Nonnative
Sandberg's bluegrass	<i>Poa secunda</i> ssp. <i>secunda</i>	Native
Annual beardgrass	<i>Polypogon monspeliensis</i>	Nonnative
Mexican feathergrass	<i>Stipa tenuissima</i>	Nonnative
Family Polemonaceae		
True babystars	<i>Leptosiphon bicolor</i>	Native
Whiskerbrush	<i>Leptosiphon ciliatus</i>	Native
Family Polygonaceae		
Common smartweed	<i>Persicaria hydropiper</i>	Nonnative
California knotweed	<i>Polygonum californicum</i>	Native
Curly dock	<i>Rumex crispus</i>	Nonnative
Family Ranunculaceae		

Common Name	Scientific Name	Status
Common buttercup	<i>Ranunculus californicus</i>	Native
Family Rubiaceae		
Common bedstraw	<i>Galium aparine</i>	Native
Wall bedstraw	<i>Galium parisiense</i>	Nonnative
Family Salicaceae		
Goodding's willow	<i>Salix gooddingii</i>	Native
Family Themidaceae		
Harvest brodiaea	<i>Brodiaea elegans ssp. elegans</i>	Native
Blue dicks	<i>Dipterostemon ssp. capitatus</i>	Native
Family Typhaceae		
Narrowleaf cattail	<i>Typha domingensis</i>	Native
Family Viscaceae		
Mistletoe	<i>Phoradendron leucarpum ssp. tomentosum</i>	Native

¹Plants are arranged alphabetically by family, then scientific name; scientific names follow Baldwin et al. (2012); common names follow Calflora (2022).

²Native or nonnative status based on Baldwin et al. (2012).

4.0 Discussion

This survey was conducted during an exceptionally dry year. Only 16.1 inches of precipitation were recorded between October 2021 and June 2022 at New Melones Dam (NOAA 2022), which represents 55 percent of the average precipitation recorded between those months during the period 1948 to 2005 (Western Regional Climate Center 2022). Given the low levels of precipitation, the growth of special-status plants, especially annual species, was likely much less than would be expected in an average or above-average year.

The Project site provides potential habitat for five species listed as threatened or endangered under FESA or CESA or considered by the CNPS to be rare, threatened, or endangered. None of those species were detected during our surveys in March, June, or July 2022. Although contracting constraints precluded surveys during the April and May blooming period of beaked clarkia (*Clarkia rostrata*) and forked hare-leaf (*Lagophylla dichotoma*), pre-blooming individuals would have been detected in March or post-blooming individuals would have been detected in June had they been present. For example, post-blooming beaked clarkia individuals were detected at a nearby reference site in June (Table 2). Therefore, all five species are considered absent, and the Project is not expected to impact any special-status plant species. We found no other rare plants or rare natural communities on the Project site.

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Aquatic Resource Delineation Report

March 2022

NORTH CROSSING, FLINT TRAIL ACCESS ROAD PROJECT
CALAVERAS COUNTY, CALIFORNIA



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Executive Summary

To help meet permitting requirements, we performed a preliminary delineation of aquatic resources for the proposed Flint Trail Access Road Project in Copperopolis, Calaveras County, California. The evaluation involved a desktop review of soils, hydrology, topography, and stream geomorphology and a field verification of hydrology, stream geomorphology, sediment texture, and vegetation at the project site. We delineated aquatic resources in accordance with *A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States* (Lichvar and McColley 2008).

One aquatic resource, an unnamed intermittent stream, was determined to be jurisdictional and under the regulatory authority of the United States Army Corps of Engineers (USACE), the California Department of Fish and Wildlife (CDFW), and the Regional Water Quality Control Board (RWQCB). Jurisdictional boundaries were mapped to the OHWM requirements of the USACE and RWQCB and the “top of bank” requirements of the CDFW.

The survey area encompassing the project site was 3.03 acres. Top of bank jurisdictional limits of the aquatic resource in the survey area comprised 0.07 acres. Ordinary high water mark (OHWM) jurisdictional limits of the aquatic resource in the survey area comprised 0.04 acres. The aquatic resource is classified as palustrine, emergent, persistent, and temporarily flooded (Cowardin et al. 1979, USFWS 2022). Upstream hydrology has been modified by a housing development and golf course. Emergent vegetation is present in a well-defined channel with obvious changes in slope, substrate, and vegetation type. The aquatic resource maintains flow through most of the year and is an intermittent tributary to Ramsey Gulch. The aquatic resource is a relatively permanent water under Section 404 of the Clean Water Act. The proposed access road project will span the entire stream with a bridge; no permanent or temporary impacts to the aquatic resource are anticipated.

Abbreviations

Abbreviation	Definition
CDFW	California Department of Fish and Wildlife
CWA	Clean Water Act
FAC	Facultative; plant that occurs in wetlands 33–66% of the time
FACU	Facultative upland; plant that occurs in wetlands 1–33% of the time
FACW	Facultative wetland; plant that occurs in wetlands 67–99% of the time
NRCS	Natural Resources Conservation Service
OBL	Obligate; plant that occurs in wetlands > 99% of the time
OHWM	Ordinary High Water Mark
RWQCB	Regional Water Quality Control Board
SWRCB	State Water Resources Control Board
UPL	Upland; plant that occurs in uplands > 99% of time
USACE	United States Army Corps of Engineers
USFWS	United States Fish and Wildlife Service
USGS	United States Geologic Survey
WIS	Wetland Indicator Status
WoS	Waters of the State

Chapter 1. Introduction

Copper Valley (CV) Development Partners, LLC proposes to build an approximately 1-mile-long access road linking Flint Trail from Little John Road to the southeast boundary of the Golf Club at the Copper Valley (the Project). This access road will provide a required secondary access for the masterplan community development. The proposed access road will cross two streams: Ramsey Gulch and an unnamed tributary to Ramsey Gulch. This report addresses only the access road crossing of the unnamed tributary to Ramsey Gulch (proposed project). The crossing of Ramsey Gulch is addressed in a separate report.

The 3.03-acre survey area for the proposed project encompassed the proposed access road crossing of an unnamed tributary to Ramsey Gulch and a surrounding 50-foot buffer. The purpose of this report is to (1) identify and describe aquatic resources in the survey area, (2) document aquatic resource boundary determinations for review by the regulatory authorities, and (3) provide other background information to help meet permitting requirements.

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This evaluation involved (1) a desktop review of aerial imagery (Google 2022), United States Geological Survey (USGS) topographic maps, Natural Resources Conservation Service (NRCS) soil survey maps (NRCS 2022a), and other relevant information and (2) a field verification of the survey area on 7 March 2022.

Chapter 2. Regulatory Setting

United States Army Corps of Engineers Jurisdiction

Areas meeting the regulatory definition of “waters of the United States” (jurisdictional waters) are subject to the jurisdiction of the United States Army Corps of Engineers (USACE) under provisions of Section 404 of the Clean Water Act (1972) and Section 10 of the Rivers and Harbors Act (1899). These waters may include all waters used, or potentially used, for interstate commerce, including all waters subject to the ebb and flow of the tide, all interstate waters, all other waters (intrastate lakes, rivers, streams, mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, natural ponds, etc.), all impoundments of waters otherwise defined as waters of the United States, tributaries of waters otherwise defined as waters of the United States, the territorial seas, and wetlands adjacent to waters of the United States (33 CFR part 328.3). Under 2006 Supreme Court ruling *Rapanos v. United States*, waters of the United States include non-navigable tributaries of traditional navigable waters that are relatively permanent. Wetlands on non-agricultural lands are identified using the Corps of Engineers Wetlands Delineation Manual and related Regional Supplement (USACE 1987 and 2008). Construction activities, including direct removal, filling, hydrologic disruption, or other means in jurisdictional waters are regulated by the USACE. The placement of dredged or fill material into such waters must comply with permit requirements of the USACE. No USACE permit will be effective in the absence of state water quality certification pursuant to Section 401 of the Clean Water Act (CWA). The State Water Resources Control Board (SWRCB) is the state agency, together with the Regional Water Quality Control Boards (RWQCB), charged with implementing water quality certification in California.

State Water Resources Control Board / Regional Water Quality Control Board Jurisdiction

Section 401 of the Clean Water Act

As stated in Section 401 of the CWA, “any applicant for a Federal permit for activities that involve a discharge to Waters of the United States, shall provide the Federal permitting agency a certification from the State in which the discharge is proposed that states that the discharge will comply with the applicable provisions under the Federal CWA.”

Porter-Cologne Act and Waters of the State

The SWRCB, acting through the RWQCB, regulates “any person discharging waste, or proposing to discharge waste, within any region that could affect the waters of the state (Water Code

13260(a)). “Waters of the State” (WoS) are defined as “any surface water or groundwater, including saline waters, within the boundary of the state” (Water Code 13050(e)). Additionally, pursuant to the definition of WoS in the Porter-Cologne Act, the state maintains jurisdiction of isolated waters. In other words, the RWQCB regulates all activity, including dredging and filling, in WoS that are not regulated by the USACE, including vernal pools and other waters showing lack of connectivity to a Traditional Navigable Water.

California Department of Fish and Wildlife Jurisdiction

Under the California Fish and Game Code Sections 1600–1603, the CDFW regulates any person, state or local government agency, or public utility that proposes to “substantially divert[s] or obstruct[s] the natural flow or substantially change[s] the bed, channel, or bank of any river, stream, or lake designated by the department, or use[s] any material from the streambeds”. This jurisdiction includes ephemeral, intermittent, and perennial streams, dry washes, and lakes characterized by a defined bed and bank and observed relationship to fish or wildlife resources. This jurisdiction extends to adjacent habitats that function as part of the riparian system, regardless of the riparian area’s federal status. When riparian vegetation is present, CDFW jurisdiction reaches to the outer limits of the riparian vegetation dripline. Further, CDFW asserts jurisdiction over vernal pools only when California State threatened and/or endangered species are present.

Chapter 3. Location

The proposed project site and surrounding survey area are approximately 1160 feet southwest of Little John Road and 960 feet southeast of Glen Side Court in Copperopolis, Calaveras County, California (Figures 1 and 2). From Copperopolis, it can be accessed by driving southwest on State Route 4 for 0.8 miles, turning left onto Town Square Road, then turning right onto Little John Road. Continue south on Little John Road for 4.6 miles. Park at the intersection of Little John Road and Flint Trail and walk 1160 feet southwest. The survey area is in Section 26, Township 1 North, Range 12 East of the Copperopolis 7.5-minute topographic quadrangle at latitude 37.915377°N, longitude -120.629979°W (Datum WGS84).

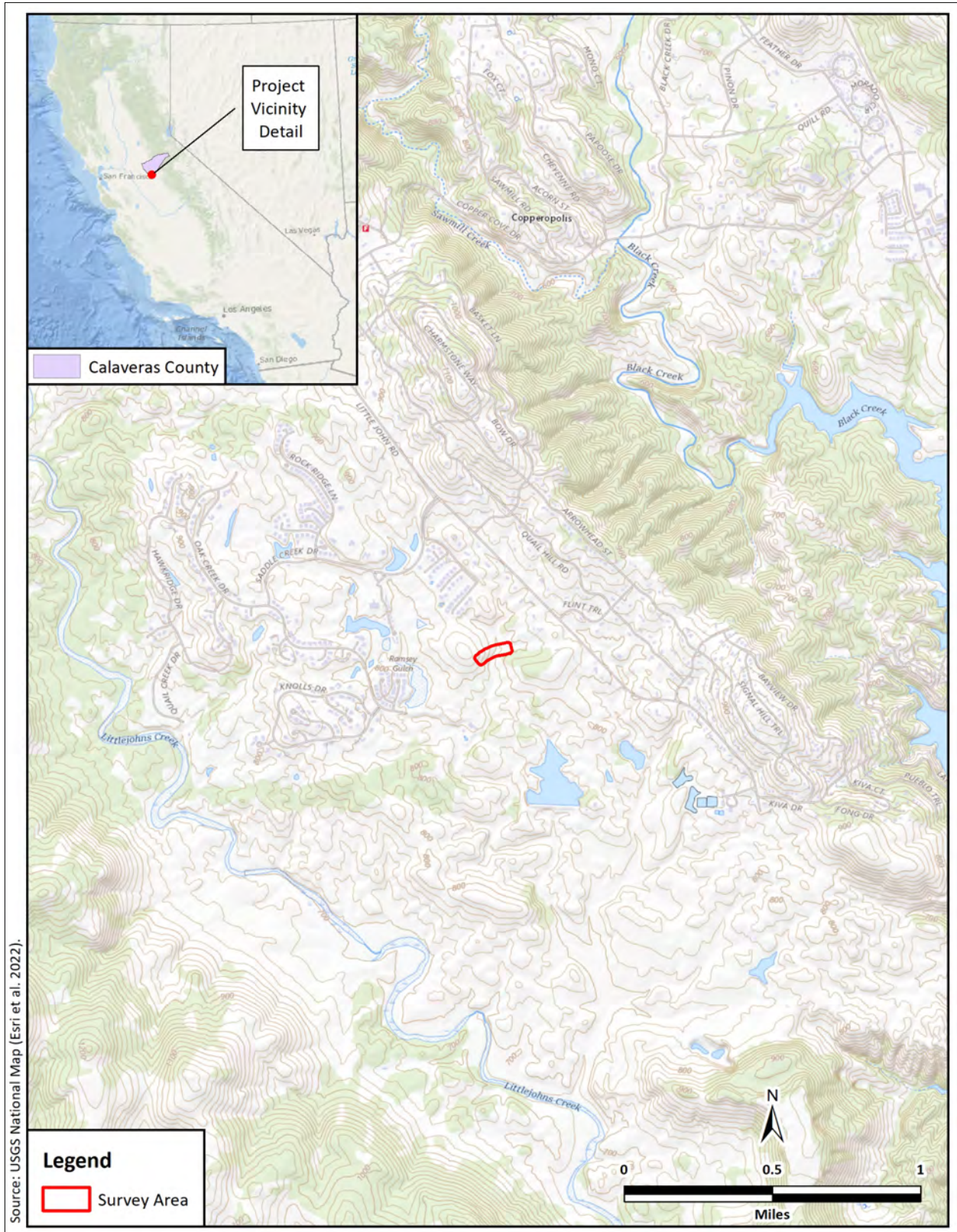
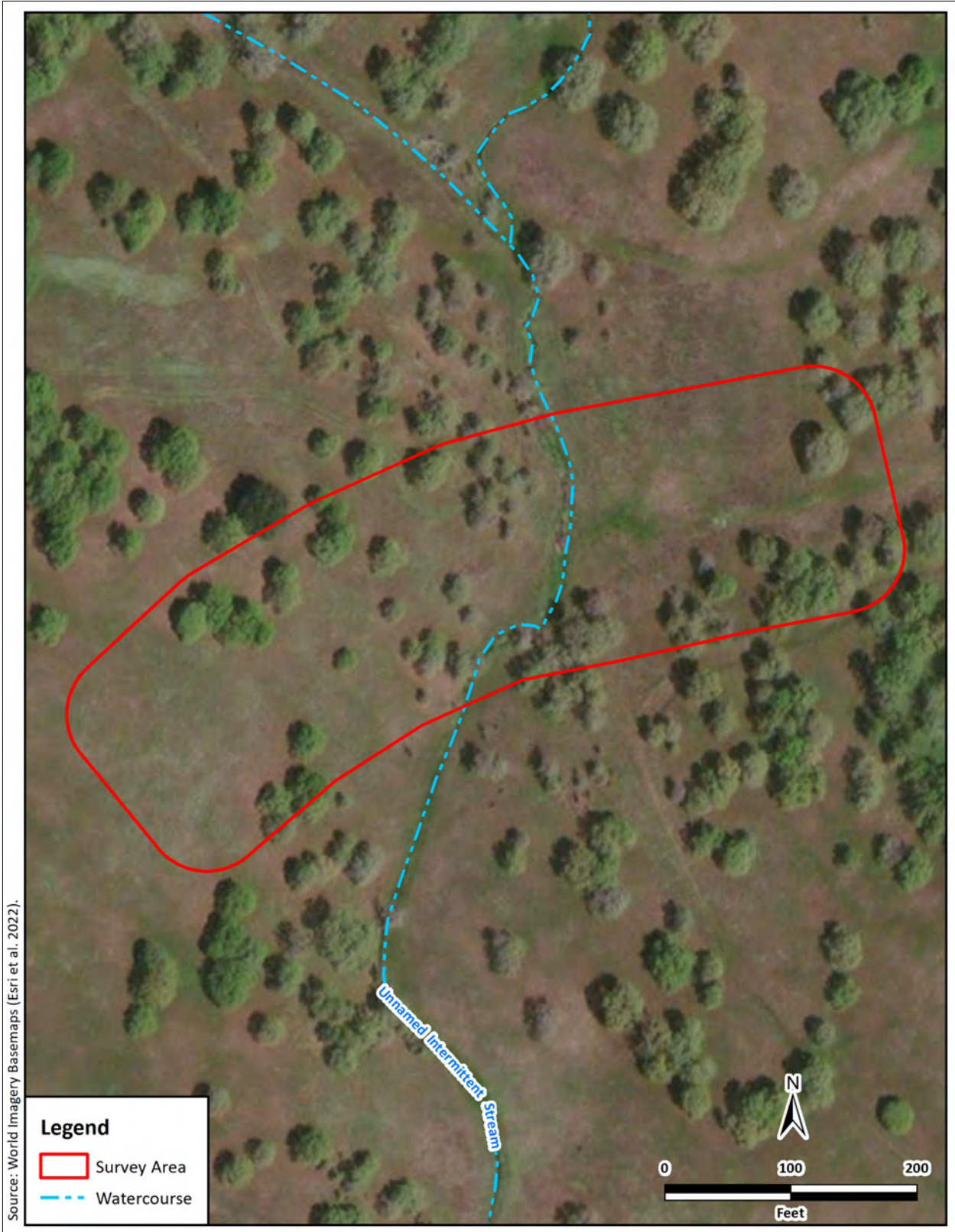


Figure 1. Project site vicinity map.



Source: World Imagery Basemaps (Esri et al. 2022).

Figure 2. Project site map.

Chapter 4. Methods

We identified the lateral limits of non-wetland waters in the survey area using hydrology, stream geomorphology, sediment texture, and vegetation response to the dominant stream discharge in accordance with *A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States* (Lichvar and McColley 2008). We also mapped the “top of bank” as the jurisdictional limits of the CDFW. Those boundaries were delineated in the field using an iPad (©2019 Apple, Inc.) with Bluetooth-enabled external Global Positioning System (GPS) device with sub-meter accuracy (EOS Arrow 100®).

Prior to conducting the field verification, we reviewed the following sources of information:

- Copperopolis 7.5-minute USGS topographic quadrangle map.
- Aerial imagery from Google Earth (Google 2022).
- Soil survey maps and unit descriptions (NRCS 2022a).
- Hydric soil information (NRCS 2022b).
- United States Fish and Wildlife Service National Wetlands Inventory (USFWS 2022).
- The National Wetland Plant List (USACE 2020).

The field verification was performed on 7 March 2022 by Colibri Principal Scientist Jeff Davis and Senior Scientist Ryan Slezak and involved a review of hydrology, stream geomorphology, sediment texture, and vegetation throughout the survey area. The *Updated Datasheet for the identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States* (Curtis and Lichvar 2010) was used to record data along a representative cross section spanning all hydrogeomorphic floodplain units.

Plants observed in the survey area were identified to species using The Jepson Manual (Baldwin et al. 2012) and Calflora (Calflora 2022). The National Wetland Plant List (USACE 2020) was used to determine the status of observed plants as wetland indicator species. Photographs were taken to document the vegetation, slope, and other characteristics of the hydrogeomorphic floodplain units throughout the survey area, and photo points were established for future documentation of the project.

Chapter 5. Existing Conditions

5.1 Landscape Setting

California's Mediterranean climate is distinguished by cool, wet winters under prevailing westerly winds and hot, dry summers. Typically, 75% of the yearly precipitation accumulates December-March. California Department of Water Resources data indicate precipitation was below average for the 2021–2022 water year in the Copperopolis area (California Department of Water Resources 2022). At the time of survey, annual precipitation in the surrounding area was at 62% of average (12.72 inches) at the National Weather Service Station at New Melones Dam (NMDC1). Elevation at the project site is 778 feet above mean sea level. Rolling topography is present throughout the survey area.

The survey area encompassed 3.03 acres surrounding the proposed Flint Trail access road stream crossing (Figure 2). Land cover within the survey area consisted of annual grassland and oak woodland. A golf course and housing development were approximately 960 feet northwest. Aerial imagery suggests the upstream hydrology of the stream has been modified by the golf course and housing development (Google Earth 2022). Signs of grazing (manure, tracks) were present throughout the survey area. The survey area was surrounded by barbed wire fence and is owned by the Calaveras County Water District.

An intermittent stream flows south through the survey area. Flowing water was in the low flow channel and active floodplain during the 7 March 2022 survey. The water level was at or very close to the OHWM at the time of survey. Emergent vegetation was present at and below the OHWM and consisted of early successional native and nonnative plant species. The OHWM width was 1–10 feet. The top of bank width was 5–20 feet. The length of the intermittent stream within the survey area was approximately 272 feet.

5.2 Aquatic Resources

The aquatic resources in the survey area included an unnamed tributary to Ramsey Gulch, which is classified as palustrine, emergent, persistent, and temporarily flooded (Cowardin et al. 1979, USFWS 2021, Table 1, Appendix A). The unnamed tributary is a low gradient stream with narrow runs and relatively wide, shallow pools. Emergent vegetation was present throughout the stream channel up to the OHWM. Stream substrate was primarily gravel and cobble. A 0.25-inch-thick layer of silt was present in the shallow pools.

Table 1. Aquatic resources in the survey area.

Aquatic Resource Name	Cowardin Type	Acreage	Linear Feet	Location
Unnamed	Palustrine, emergent, persistent, and temporarily flooded	0.04	272	37.915377, -120.629979

The predominant soils in the area are Copperopolis-Whiterock complex 2 to 8% slopes and 3 to 15% slopes (NRCS 2022a, NRCS 2022b, Appendix B). Copperopolis soils are shallow, well-drained soils that occur near summits of hills or ridges. Copperopolis soils are channery loams consisting of 10 to 90% rock fragments and 10 to 20% clay. Whiterock soils are very shallow to shallow excessively drained soils that occur on hill slopes. Whiterock soils are loams consisting of 25 to 50% sand, 12 to 25% clay, and 5 to 35% rock fragments. The NRCS lists Copperopolis-Whiterock complex 2 to 8% slopes as a hydric soil in the National List of Hydric Soils (NRCS 2022b).

The OHWM of the stream channel was identified by a defined change of vegetation species, change in sediment texture, and a break in bank slope. The stream channel was densely vegetated with emergent plant species below the OHWM (Appendices C and D). Dominant vegetation in the stream channel below the OHWM included curly dock (*Rumex crispus*, FAC), pennyroyal (*Mentha pulegium*, OBL), and narrowleaf cattail (*Typha domingensis*, OBL). Other species present within the stream channel below the OHWM were wire rush (*Juncus balticus*, FACW) and western waterwort (*Elodea nuttallii*, OBL). Dominant vegetation above the OHWM included a mix of annual grasses and herbaceous vegetation including common velvet grass (*Holcus lanatus*, FAC), medusa head (*Elymus caput-medusae*, UPL), miner's lettuce (*Claytonia perfoliata*), and Carolina geranium (*Geranium carolinianum*, UPL).

Chapter 6. Conclusions

Based on desktop review and field observations, the stream is an intermittent tributary to Ramsey Gulch. Ramsey Gulch flows into Littlejohns Creek, which flows into the San Joaquin River via French Camp Slough, a traditional navigable water under Section 404 of the Clean Water Act. Water is present in the stream channel most years from December to May or June. The stream meets the criteria of a relatively permanent water under Section 404 of the Clean Water Act. Thus, the stream is regulated by the USACE. The intermittent stream contains surface water and has a defined bed and bank. Therefore, the stream is regulated by the RWQCB and the CDFW.

One jurisdictional feature, regulated by the USACE, RWQCB, and the CDFW, was present within the survey area. The proposed road access road project will span the jurisdictional feature with a bridge. No permanent or temporary impacts to jurisdictional areas are anticipated (Table 2).

Table 2. Potential jurisdictional areas in the survey area. All values are in square feet.

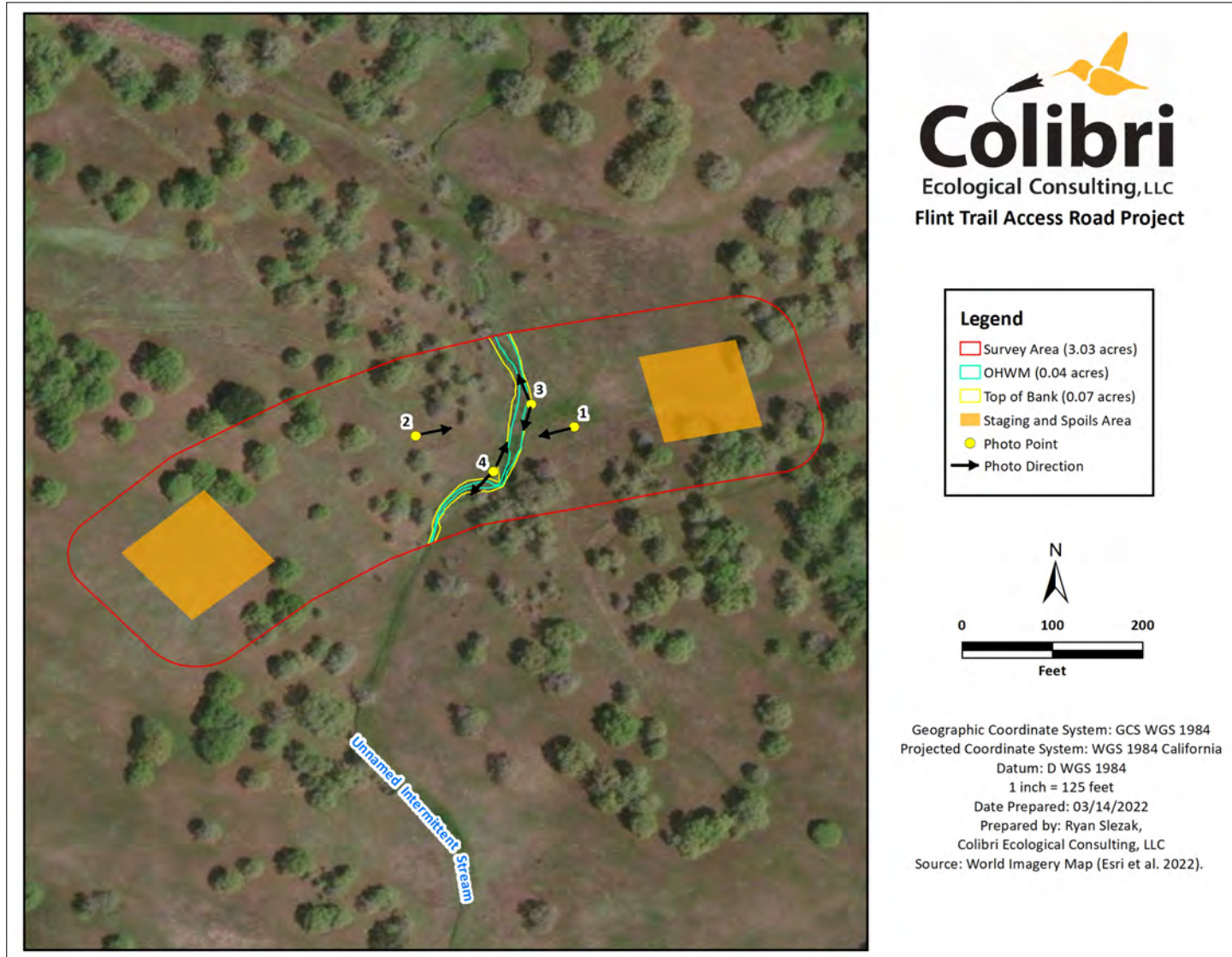
Potential Jurisdictional Areas in the Survey Area	CDFW	USACE	RWQCB
Unnamed stream	3158	1533	1533
Impacts to Jurisdictional Areas			
Temporary	0	0	0
Permanent	0	0	0
Total	0	0	0

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Appendix A. Aquatic resource delineation map.



Appendix B. Soil survey map.



Appendix C. Photographs.

Direction: West
Location: 37.915372, -120.629806



Photo 1. Looking west from Photo Point 1 at the proposed access road stream crossing.

Direction: East
Location: 37.915344, -120.630286



Photo 2. Looking east from Photo Point 2 at the proposed access road stream crossing.

Direction: South
Location: 37.915441, -120.629936



Photo 3. Looking south (downstream) from Photo Point 3 at the proposed access road stream crossing.

Direction: North
Location: 37.915441, -120.629936



Photo 4. Looking north (upstream) from Photo Point 3.

Direction: North
Location: 37.915236, -120.630051



Photo 5. Looking north (upstream) from Photo Point 4 at the proposed access road stream crossing.

Direction: South
Location: 37.915236, -120.630051



Photo 6. Looking south (downstream) from Photo Point 4.

Appendix D. Plant list.

Plant species observed in the survey area and their wetland indicator status.

Genus	Species	Common Name	WIS*
<i>Carex</i>	<i>praegracilis</i>	Field sedge	FACW
<i>Chlorogalum</i>	<i>pomeridianum</i>	Common soaproot	UPL
<i>Claytonia</i>	<i>perfoliata</i>	Miner's lettuce	FAC
<i>Dipterostemon</i>	<i>capitatus</i>	Blue dicks	UPL
<i>Elodea</i>	<i>nuttallii</i>	Western waterwort	OBL
<i>Elymus</i>	<i>caput-medusae</i>	Medusa head	UPL
<i>Epilobium</i>	<i>ciliatum</i>	Willow herb	FACW
<i>Erodium</i>	<i>botrys</i>	Big heron bill	FACU
<i>Erodium</i>	<i>brachycarpum</i>	White stemmed filaree	UPL
<i>Erodium</i>	<i>cicutarium</i>	Coastal heron's bill	UPL
<i>Erodium</i>	<i>moschatum</i>	Musky stork's bill	UPL
<i>Galium</i>	<i>aparine</i>	Common bedstraw	FACU
<i>Geranium</i>	<i>carolinianum</i>	Carolina geranium	UPL
<i>Helminthotheca</i>	<i>echioides</i>	Prickly ox-tongue	FAC
<i>Holcus</i>	<i>lanatus</i>	Common velvetgrass	FAC
<i>Juncus</i>	<i>balticus</i>	Wire rush	FACW
<i>Leptosiphon</i>	<i>bicolor</i>	True babystars	UPL
<i>Lomatium</i>	<i>utriculatum</i>	Hog fennel	UPL
<i>Lonicera</i>	<i>interrupta</i>	Chaparral honeysuckle	UPL
<i>Lupinus</i>	<i>benthamii</i>	Spider lupine	UPL
<i>Lupinus</i>	<i>bicolor</i>	Miniature lupine	UPL
<i>Medicago</i>	<i>polymorpha</i>	California burclover	FACU
<i>Mentha</i>	<i>pulegium</i>	Pennyroyal	OBL
<i>Nemophila</i>	<i>menziesii</i>	Baby blue eyes	UPL
<i>Phoradendron</i>	<i>leucarpum</i>	Mistletoe	UPL
<i>Plagiobothrys</i>	<i>nothofulvus</i>	Rusty haired popcorn flower	FAC
<i>Plagiobothrys</i>	<i>tenellus</i>	Slender popcorn flower	FACU
<i>Quercus</i>	<i>douglasii</i>	Blue oak	UPL
<i>Quercus</i>	<i>wislizini</i>	Interior live oak	UPL

Genus	Species	Common Name	WIS*
<i>Ranunculus</i>	<i>californicus</i>	Common buttercup	FACU
<i>Rumex</i>	<i>crispus</i>	Curly dock	FAC
<i>Sonchus</i>	<i>oleraceus</i>	Sow thistle	UPL
<i>Trifolium</i>	<i>hirtum</i>	Rose clover	UPL
<i>Typha</i>	<i>domingensis</i>	Narrowleaf cattail	OBL
<i>Vicia</i>	<i>sativa</i>	Narrow-leaved vetch	FACU
<i>Xanthium</i>	<i>strumarium</i>	Cocklebur	FAC

*WIS = Wetland Indicator Status (Environmental Laboratory 1987): OBL= occurs in aquatic resources > 99% of time; FACW= occurs in aquatic resources 67–99% of time; FAC= occurs in aquatic resources 34–66% of time; FACU= occurs in aquatic resources 1–33% of time; UPL= occurs in uplands > 99% of time.

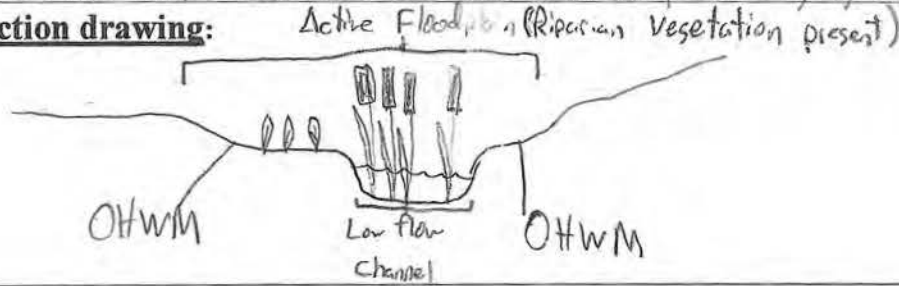
Appendix E. OHWM data sheets.

Arid West Ephemeral and Intermittent Streams OHW M Datasheet

Project: Flint Trail Access Road, North Crossing Project Number: - Stream: Unnamed Investigator(s): R. Slezacek, J. Davis	Date: 3/7/22 Town: Copperopolis Photo begin file#:	Time: 1030 State: CA Photo end file#:
Y <input checked="" type="checkbox"/> / N <input type="checkbox"/> Do normal circumstances exist on the site?	Location Details: Unnamed intermittent tributary of Ramsey Gulch.	
Y <input type="checkbox"/> / N <input checked="" type="checkbox"/> Is the site significantly disturbed?	Projection: Lambert Conic Datum: NAD_83 Coordinates: 37,91536, -120,62996	
Potential anthropogenic influences on the channel system: Grazing, New housing development & golf course ~1000 feet upstream.		
Brief site description: Intermittent stream flowing south through survey area. Riparian vegetation present within channel. Low gradient & flow. Substrate gravel to cobbles; silt layer present in pools. Wider, shallow pools present between runs. Veg. community is pasture surrounded by oak woodland.		
Checklist of resources (if available):		
<input checked="" type="checkbox"/> Aerial photography Dates:	<input type="checkbox"/> Stream gage data Gage number:	
<input checked="" type="checkbox"/> Topographic maps <input type="checkbox"/> Geologic maps <input type="checkbox"/> Vegetation maps <input checked="" type="checkbox"/> Soils maps <input type="checkbox"/> Rainfall/precipitation maps <input type="checkbox"/> Existing delineation(s) for site <input checked="" type="checkbox"/> Global positioning system (GPS) <input type="checkbox"/> Other studies	Period of record: <input type="checkbox"/> History of recent effective discharges <input type="checkbox"/> Results of flood frequency analysis <input type="checkbox"/> Most recent shift-adjusted rating <input type="checkbox"/> Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event	
Hydrogeomorphic Floodplain Units		
Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:		
1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.		
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.		
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.		
a) Record the floodplain unit and GPS position.		
b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.		
c) Identify any indicators present at the location.		
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.		
5. Identify the OHWM and record the indicators. Record the OHWM position via:		
<input type="checkbox"/> Mapping on aerial photograph	<input checked="" type="checkbox"/> GPS	
<input type="checkbox"/> Digitized on computer	<input type="checkbox"/> Other:	

Project ID: Flint Trail Cross section ID: North Crossing Date: 3/7/22 Time: 1030

Cross section drawing:



OHWM

GPS point: 37.91548, -120.62997

Indicators:

- Change in average sediment texture
- Change in vegetation species
- Change in vegetation cover
- Break in bank slope
- Other: _____
- Other: _____

Comments: Water level close to OHWM @ time of survey. Riparian vegetation (Typha, Rumex, Carex, Juncus) abruptly ends @ OHWM. Sediment texture changes from cobble + gravel to medium sand with upland grasses.

Floodplain unit: Low-Flow Channel Active Floodplain Low Terrace

GPS point: 37.91551, -120.62998

Characteristics of the floodplain unit:

Average sediment texture: Medium gravel
Total veg cover: 90 % Tree: % Shrub: % Herb: 90 %

Community successional stage:

- NA
- Early (herbaceous & seedlings)
- Mid (herbaceous, shrubs, saplings)
- Late (herbaceous, shrubs, mature trees)

Indicators:

- Mudcracks
- Ripples
- Drift and/or debris
- Presence of bed and bank
- Benches
- Soil development
- Surface relief
- Other: _____
- Other: _____
- Other: _____

Comments: Floodplain widens to ~8ft, in shallow, wide pools but narrows to ~3-4ft in runs. One well-defined channel throughout survey area.

Appendix F. Aquatic resource Excel sheet.

Waters_Name	State	Cowardin_Code	HGM_Code	Meas_Type	Amount	Units	Waters_Type	Latitude	Longitude	Local_Waterway
Unnamed	California	PEM	RIVERINE	Area	0.04	ACRE	RPW	37.915377	-120.629979	

Aquatic Resource Delineation Report

March 2022

SOUTH CROSSING, FLINT TRAIL ACCESS ROAD PROJECT
CALAVERAS COUNTY, CALIFORNIA



PREPARED FOR:
CV Development Partners, LLC
100 Town Square Road, Second Floor
Copperopolis, CA 95228
ATTN: Thomas Hix

PREPARED BY:
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Executive Summary

To help meet permitting requirements, we performed a preliminary delineation of aquatic resources for the proposed Flint Trail Access Road Project in Copperopolis, Calaveras County, California. The evaluation involved a desktop review of soils, hydrology, topography, and stream geomorphology and a field verification of hydrology, stream geomorphology, sediment texture, and vegetation at the project site. We delineated aquatic resources in accordance with *A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States* (Lichvar and McColley 2008).

Three aquatic resources, Ramsey Gulch and two intermittent tributaries to Ramsey Gulch, were identified within the survey area. All three aquatic resources were determined to be jurisdictional and under the regulatory authority of the United States Army Corps of Engineers (USACE), the California Department of Fish and Wildlife (CDFW), and the Regional Water Quality Control Board (RWQCB). Jurisdictional boundaries were mapped to the OHWM requirements of the USACE and RWQCB and the “top of bank” requirements of the CDFW.

The survey area encompassing the project site was 3.79 acres. Top of bank jurisdictional limits of all aquatic resources in the survey area comprised 0.27 acres. Ordinary high water mark (OHWM) jurisdictional limits of all aquatic resources in the survey area comprised 0.06 acres. The aquatic resources are all classified as palustrine, emergent, persistent, and temporarily flooded (Cowardin et al. 1979, USFWS 2022). Upstream hydrology has been modified by a housing development and golf course. Emergent and riparian vegetation are present in a well-defined channel with obvious changes in slope, substrate, and vegetation type. The aquatic resources maintain flow throughout the growing season and are relatively permanent waters under Section 404 of the Clean Water Act. The proposed access road project will span the entire stream with a bridge; no permanent or temporary impacts to aquatic resources are anticipated.

Abbreviations

Abbreviation	Definition
CDFW	California Department of Fish and Wildlife
CWA	Clean Water Act
FAC	Facultative; plant that occurs in wetlands 33–66% of the time
FACU	Facultative upland; plant that occurs in wetlands 1–33% of the time
FACW	Facultative wetland; plant that occurs in wetlands 67–99% of the time
NRCS	Natural Resources Conservation Service
OBL	Obligate; plant that occurs in wetlands > 99% of the time
OHWM	Ordinary High Water Mark
RWQCB	Regional Water Quality Control Board
SWRCB	State Water Resources Control Board
UPL	Upland; plant that occurs in uplands > 99% of time
USACE	United States Army Corps of Engineers
USFWS	United States Fish and Wildlife Service
USGS	United States Geologic Survey
WIS	Wetland Indicator Status
WoS	Waters of the State

Chapter 1. Introduction

Copper Valley (CV) Development Partners, LLC proposes to build an approximately 1-mile-long access road linking Flint Trail from Little John Road to the southeast boundary of the Golf Club at the Copper Valley (the Project). This access road will provide a required secondary access for the masterplan community development. The proposed access road will cross two streams: Ramsey Gulch and an unnamed tributary to Ramsey Gulch. This report addresses only the access road crossing of Ramsey Gulch (proposed project). The crossing of the unnamed tributary is addressed in a separate report.

The 3.79-acre survey area for the proposed project encompassed the proposed access road crossing of Ramsey Gulch and a 50-foot buffer. The purpose of this report is to (1) identify and describe aquatic resources in the survey area, (2) document aquatic resource boundary determinations for review by the regulatory authorities, and (3) provide other background information to help meet permitting requirements.

The applicant for this proposed project is:

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This evaluation involved (1) a desktop review of aerial imagery (Google 2022), United States Geological Survey (USGS) topographic maps, Natural Resources Conservation Service (NRCS) soil survey maps (NRCS 2022a), and other relevant information and (2) a field verification of the survey area on 7 March 2022.

Chapter 2. Regulatory Setting

United States Army Corps of Engineers Jurisdiction

Areas meeting the regulatory definition of “waters of the United States” (jurisdictional waters) are subject to the jurisdiction of the United States Army Corps of Engineers (USACE) under provisions of Section 404 of the Clean Water Act (1972) and Section 10 of the Rivers and Harbors Act (1899). These waters may include all waters used, or potentially used, for interstate commerce, including all waters subject to the ebb and flow of the tide, all interstate waters, all other waters (intrastate lakes, rivers, streams, mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, natural ponds, etc.), all impoundments of waters otherwise defined as waters of the United States, tributaries of waters otherwise defined as waters of the United States, the territorial seas, and wetlands adjacent to waters of the United States (33 CFR part 328.3). Under 2006 Supreme Court ruling *Rapanos v. United States*, waters of the United States include non-navigable tributaries of traditional navigable waters that are relatively permanent. Wetlands on non-agricultural lands are identified using the Corps of Engineers Wetlands Delineation Manual and related Regional Supplement (USACE 1987 and 2008). Construction activities, including direct removal, filling, hydrologic disruption, or other means in jurisdictional waters are regulated by the USACE. The placement of dredged or fill material into such waters must comply with permit requirements of the USACE. No USACE permit will be effective in the absence of state water quality certification pursuant to Section 401 of the Clean Water Act (CWA). The State Water Resources Control Board (SWRCB) is the state agency, together with the Regional Water Quality Control Boards (RWQCB), charged with implementing water quality certification in California.

State Water Resources Control Board / Regional Water Quality Control Board Jurisdiction

Section 401 of the Clean Water Act

As stated in Section 401 of the CWA, “any applicant for a Federal permit for activities that involve a discharge to Waters of the United States, shall provide the Federal permitting agency a certification from the State in which the discharge is proposed that states that the discharge will comply with the applicable provisions under the Federal CWA.”

Porter-Cologne Act and Waters of the State

The SWRCB, acting through the RWQCB, regulates “any person discharging waste, or proposing to discharge waste, within any region that could affect the waters of the state (Water Code

13260(a)). “Waters of the State” (WoS) are defined as “any surface water or groundwater, including saline waters, within the boundary of the state” (Water Code 13050(e)). Additionally, pursuant to the definition of WoS in the Porter-Cologne Act, the state maintains jurisdiction of isolated waters. In other words, the RWQCB regulates all activity, including dredging and filling, in WoS that are not regulated by the USACE, including vernal pools and other waters showing lack of connectivity to a Traditional Navigable Water.

California Department of Fish and Wildlife Jurisdiction

Under the California Fish and Game Code Sections 1600–1603, the CDFW regulates any person, state or local government agency, or public utility that proposes to “substantially divert[s] or obstruct[s] the natural flow or substantially change[s] the bed, channel, or bank of any river, stream, or lake designated by the department, or use[s] any material from the streambeds”. This jurisdiction includes ephemeral, intermittent, and perennial streams, dry washes, and lakes characterized by a defined bed and bank and observed relationship to fish or wildlife resources. This jurisdiction extends to adjacent habitats that function as part of the riparian system, regardless of the riparian area’s federal status. When riparian vegetation is present, CDFW jurisdiction reaches to the outer limits of the riparian vegetation dripline. Further, CDFW asserts jurisdiction over vernal pools only when California State threatened and/or endangered species are present.

Chapter 3. Location

The proposed project site and surrounding survey area are approximately 390 feet southwest of Oak Creek Drive and 1350 feet east of Knolls Drive in Copperopolis, Calaveras County, California (Figures 1 and 2). From Copperopolis, it can be accessed by driving southwest on State Route 4 for 0.8 miles, turning left onto Town Square Road, then turning right onto Little John Road. Continue south on Little John Road for 4.0 miles, then turn right onto Saddle Creek Drive. Continue southwest on Saddle Creek Drive for 0.9 miles, then turn left onto Oak Creek Drive. Continue for 0.8 miles on Oak Creek Drive Park, then park and walk 390 feet southwest. The survey area is in Sections 26 and 27, Township 1 North, Range 12 East of the Copperopolis 7.5-minute topographic quadrangle at latitude 37.911236°N, longitude -120.633142°W (Datum WGS84).

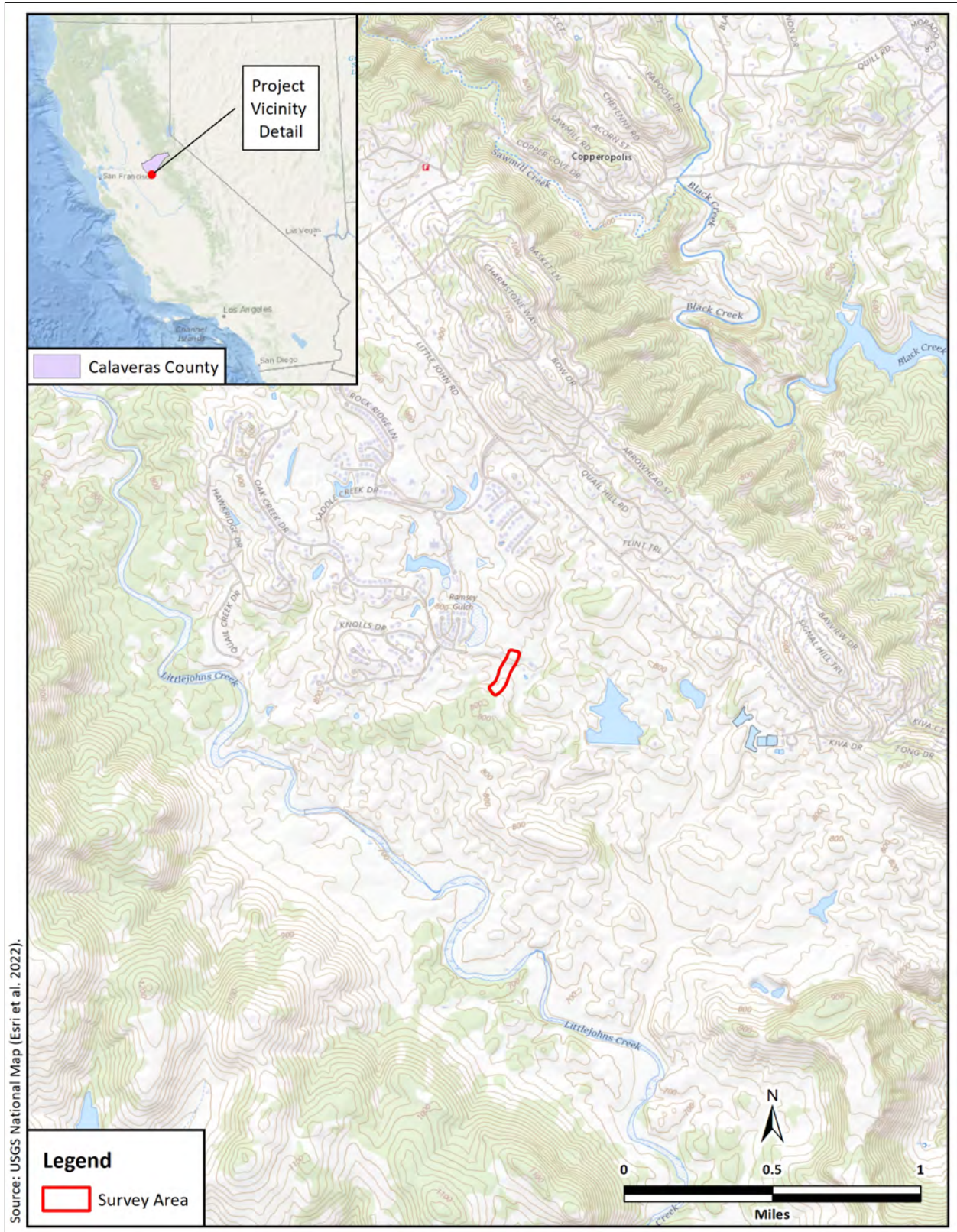
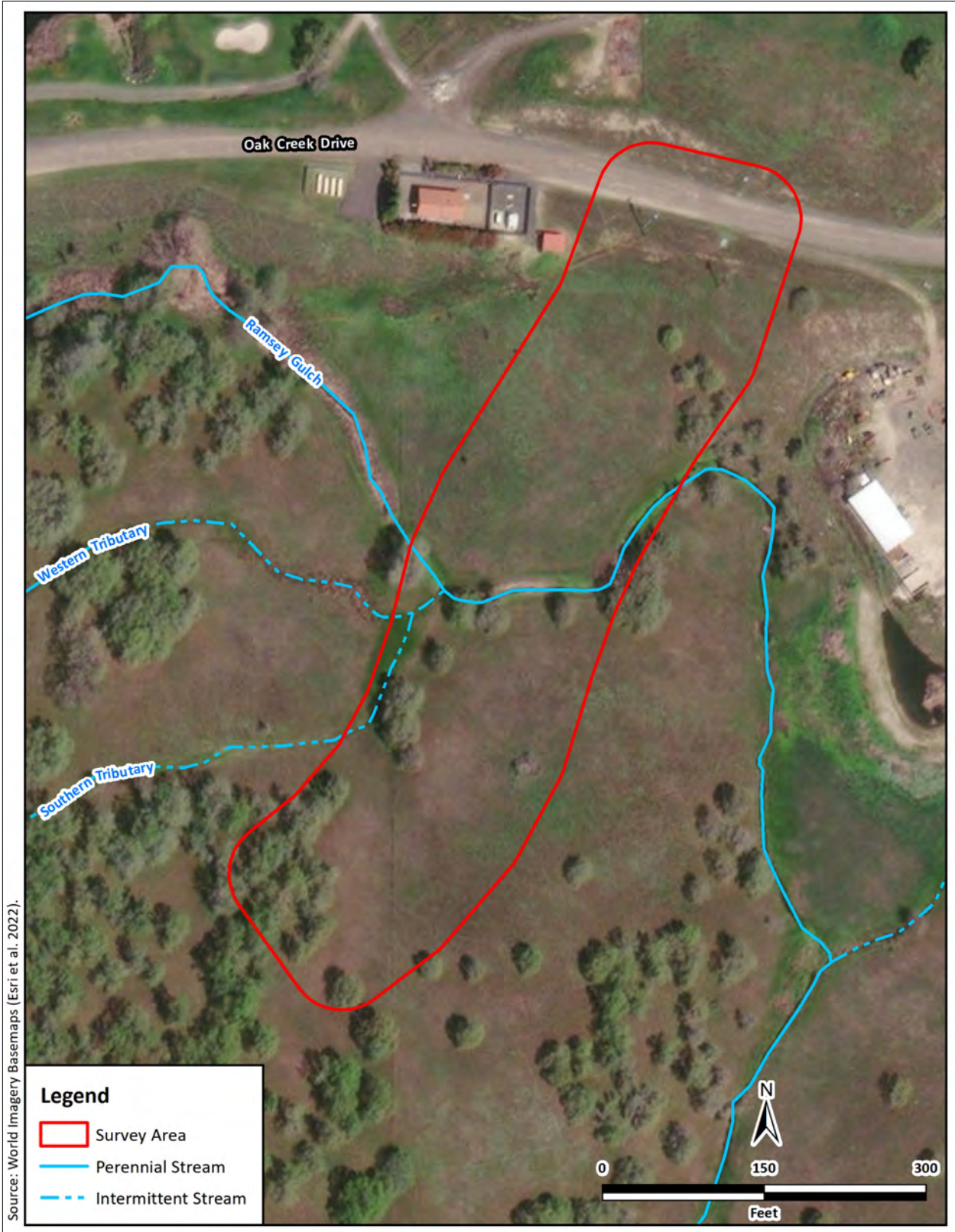


Figure 1. Project site vicinity map.



Source: World Imagery Basemaps (Esri et al. 2022).

Figure 2. Project site map.

Chapter 4. Methods

We identified the lateral limits of non-wetland waters in the survey area using hydrology, stream geomorphology, sediment texture, and vegetation response to the dominant stream discharge in accordance with *A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States* (Lichvar and McColley 2008). We also mapped the “top of bank” as the jurisdictional limits of the CDFW. Those boundaries were delineated in the field using an iPad (©2019 Apple, Inc.) with Bluetooth-enabled external Global Positioning System (GPS) device with sub-meter accuracy (EOS Arrow 100®).

Prior to conducting the field verification, we reviewed the following sources of information:

- Copperopolis 7.5-minute USGS topographic quadrangle map.
- Aerial imagery from Google Earth (Google 2022).
- Soil survey maps and unit descriptions (NRCS 2022a).
- Hydric soil information (NRCS 2022b).
- United States Fish and Wildlife Service National Wetlands Inventory (USFWS 2022).
- The National Wetland Plant List (USACE 2020).

The field verification was performed on 7 March 2022 by Colibri Principal Scientist Jeff Davis and Senior Scientist Ryan Slezak and involved a review of hydrology, stream geomorphology, sediment texture, and vegetation throughout the survey area. The *Updated Datasheet for the identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States* (Curtis and Lichvar 2010) was used to record data along a representative cross section spanning all hydrogeomorphic floodplain units.

Plants observed in the survey area were identified to species using The Jepson Manual (Baldwin et al. 2012) and Calflora (Calflora 2022). The National Wetland Plant List (USACE 2020) was used to determine the status of observed plants as wetland indicator species. Photographs were taken to document the vegetation, slope, and other characteristics of the hydrogeomorphic floodplain units throughout the survey area, and photo points were established for future documentation of the project.

Chapter 5. Existing Conditions

5.1 Landscape Setting

California's Mediterranean climate is distinguished by cool, wet winters under prevailing westerly winds and hot, dry summers. Typically, 75% of the yearly precipitation accumulates December-March. California Department of Water Resources data indicate precipitation was below average for the 2021–2022 water year in the Copperopolis area (California Department of Water Resources 2022). At the time of survey, annual precipitation in the surrounding area was at 62% of average (12.72 inches) at the National Weather Service Station at New Melones Dam (NMDC1). Elevation at the project site is 753 feet above mean sea level. Rolling topography was present throughout the survey area.

The survey area encompassed 3.79 acres surrounding the proposed Flint Trail access road stream crossing (Figure 2). Land cover within the survey area consisted of annual grassland and oak woodland. A golf course and housing development were approximately 1350 feet to the west. Aerial imagery suggests the upstream hydrology of the stream has been modified by the golf course and housing development (Google 2022). Signs of grazing (manure, tracks) were present throughout the survey area. The survey area was surrounded by barbed wire fence and is owned by the Calaveras County Water District.

Three aquatic resources, Ramsey Gulch and two unnamed tributaries to Ramsey Gulch (western tributary and southern tributary), were within the survey area. The western and southern tributaries converged 8 feet from the western survey area boundary. These tributaries entered Ramsey Gulch approximately 50 feet downstream of the convergence. A wet meadow and a mature Gooding's willow (*Salix gooddingii*) were at the convergence of the three streams. Flowing water was in the low flow channel and active floodplain for all three streams during the 7 March 2022 survey. The water level was at or very close to the OHWM at the time of survey. Emergent and riparian vegetation was present above and below the OHWM. Aside from one mature willow, emergent and riparian vegetation comprised early successional native and nonnative plant species.

The ordinary high water mark width of Ramsey Gulch was 1–20 feet. The top of bank width of Ramsey Gulch, measured to the outer edge of riparian vegetation where riparian vegetation was present, was 20–50 feet. The length of Ramsey Gulch within the survey area was approximately 331 feet. The ordinary high water mark width of the western tributary was 3–30 feet. The top of bank width of the western tributary was 5–40 feet. The length of the western tributary within the survey area was 61 feet. The ordinary high water mark width of the southern tributary was 1–5 feet. The top of bank width of the southern tributary was 5–15 feet. The length of the southern tributary within the survey area was 127 feet.

5.2 Aquatic Resources

Aquatic resources in the survey area included Ramsey Gulch and two unnamed tributaries to Ramsey Gulch. All three streams are classified as palustrine, emergent, persistent, and temporarily flooded (Cowardin et al. 1979, USFWS 2021, Table 1, Appendix A). All three streams were meandering with a low gradient. Ramsey Gulch had narrow runs and relatively wide, shallow pools, whereas the southern and western tributaries did not have defined pools. The convergence of the three low gradient streams, in combination with a high water table and gentle topography, formed a wet meadow in the western quarter of the survey area. Emergent vegetation was present throughout the stream channels up to the OHWM of all three streams. The OHWM of the western tributary was lined with wire rush (*Juncus balticus*). The riparian vegetation of Ramsey Gulch extended beyond the OHWM and top of bank in places. Stream substrate was primarily gravel and cobble. A 0.25-inch-thick layer of silt was present in the shallow pools at the time of survey. Minnows were observed swimming in Ramsey Gulch within the survey area.

Table 1. Aquatic resources in the survey area.

Aquatic Resource Name	Cowardin Type	Acreage	Linear Feet	Location
Ramsey Gulch	Palustrine, emergent, persistent, and temporary flooded	0.04	331	37.915377, -120.629979
Western tributary	Palustrine, emergent, persistent, and temporary flooded	0.01	61	37.911156, -120.633537
Southern tributary	Palustrine, emergent, persistent, and temporary flooded	0.01	127	37.911076, -120.633530

The predominant soils in the area are Copperopolis-Whiterock complex 2 to 8% slopes, 3 to 15% slopes, and 15 to 30% slopes (NRCS 2022a, NRCS 2022b, Appendix B). Copperopolis soils are shallow, well-drained soils found near summits of hills or ridges. Copperopolis soils are channery loams consisting of 10 to 90% rock fragments and 10 to 20% clay. Whiterock soils are very shallow to shallow excessively drained soils found on hill slopes. Whiterock soils are loams consisting of 25 to 50% sand, 12 to 25% clay, and 5 to 35% rock fragments. The NRCS lists Copperopolis-Whiterock complex 2 to 8% slopes as a hydric soil in the National List of Hydric Soils (NRCS 2022b).

The OHWM of the stream channels was identified by a defined change in vegetation and sediment texture and a break in bank slope. The stream channels were densely vegetated with emergent plant species below the OHWM (Appendices C and D). Dominant vegetation in the stream channels below the OHWM included curly dock (*Rumex crispus*, FAC), field sedge (*Carex praegracilis*, FACW), wire rush (*Juncus balticus*, FACW), and pennyroyal (*Mentha pulegium*, OBL). Other species present within the stream channel below the OHWM were western waterwort (*Elodea nuttallii*, OBL) and narrowleaf cattail (*Typha domingensis*, OBL). Dominant vegetation above the OHWM consisted of a mix of annual grasses and forbs including common velvet grass (*Holcus lanatus*, FAC), slim oat (*Avena barbata*, UPL), coastal heron's bill (*Erodium cicutarium*, UPL), and California burclover (*Medicago polymorpha*, FACU).

Chapter 6. Conclusions

Based on desktop review and field observations, all three streams flow throughout the growing season. The western and southern tributaries have intermittent flow, while Ramsey Gulch likely flows most of the year. Ramsey Gulch flows into Littlejohns Creek, which via French Camp Slough flows into the San Joaquin River, a traditional navigable water under Section 404 of the Clean Water Act. The streams meet the criteria of relatively permanent waters under Section 404 of the Clean Water Act. Thus, all three streams are regulated by the USACE. All three streams contain surface water and have a defined bed and bank. Therefore, the streams are regulated by the RWQCB and the CDFW.

Three jurisdictional features (regulated by the USACE, RWQCB, and the CDFW) were present within the survey area. The proposed road access road project will span Ramsey Gulch with a bridge. The construction limits for the proposed access road crossing are east of the western and southern tributaries. No permanent or temporary impacts to jurisdictional areas are anticipated (Table 2).

Table 2. Potential jurisdictional areas in the survey area. All values are in square feet.

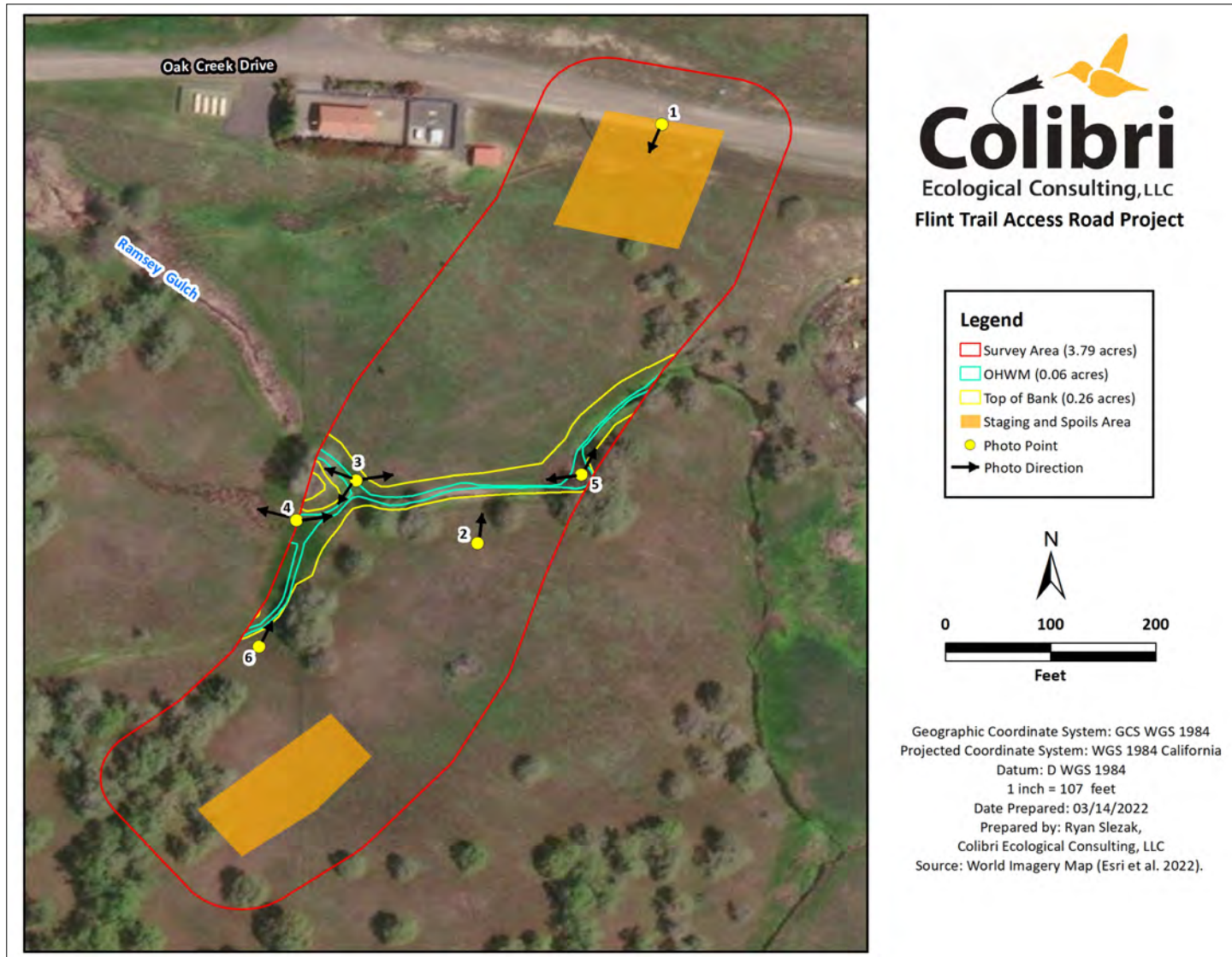
Potential Jurisdictional Areas in the Survey Area	CDFW	USACE	RWQCB
Ramsey Gulch	8179	1712	1712
Western tributary	1647	540	540
Southern tributary	1727	411	411
Total	11,553	2663	2663
Impacts to Jurisdictional Areas			
Temporary	0	0	0
Permanent	0	0	0
Total	0	0	0

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Appendix A. Aquatic resource delineation map.



Appendix B. Soil survey map.



Appendix C. Photographs.

Direction: Southwest
Location: 37.912190, -120.632584



Photo 1. Looking southwest from Photo Point 1 at the proposed access road stream crossing.

Direction: North
Location: 37.911097, -120.633064



Photo 2. Looking north from Photo Point 2 at the proposed access road stream crossing.

Direction: East
Location: 37.911261, -120.633380



Photo 3. Looking east (downstream) from Photo Point 3 at the proposed access road stream crossing.

Direction: Northwest
Location: 37.911261, -120.633380



Photo 4. Looking northwest (upstream) from Photo Point 3 at Ramsey Gulch.

Direction: Southwest
Location: 37.911261, -120.633380



Photo 5. Looking southwest (upstream) from Photo Point 3 at the confluence of the western and southern tributaries.

Direction: Northeast
Location: 37.911158, -120.633536



Photo 6. Looking northeast (downstream) from Photo Point 4 at the confluence of the western tributary and Ramsey Gulch.

Direction: West
Location: 37.911158, -120.633536



Photo 7. Looking west (upstream) from Photo Point 4 at the southern tributary.

Direction: West
Location: 37.911258, -120.632799

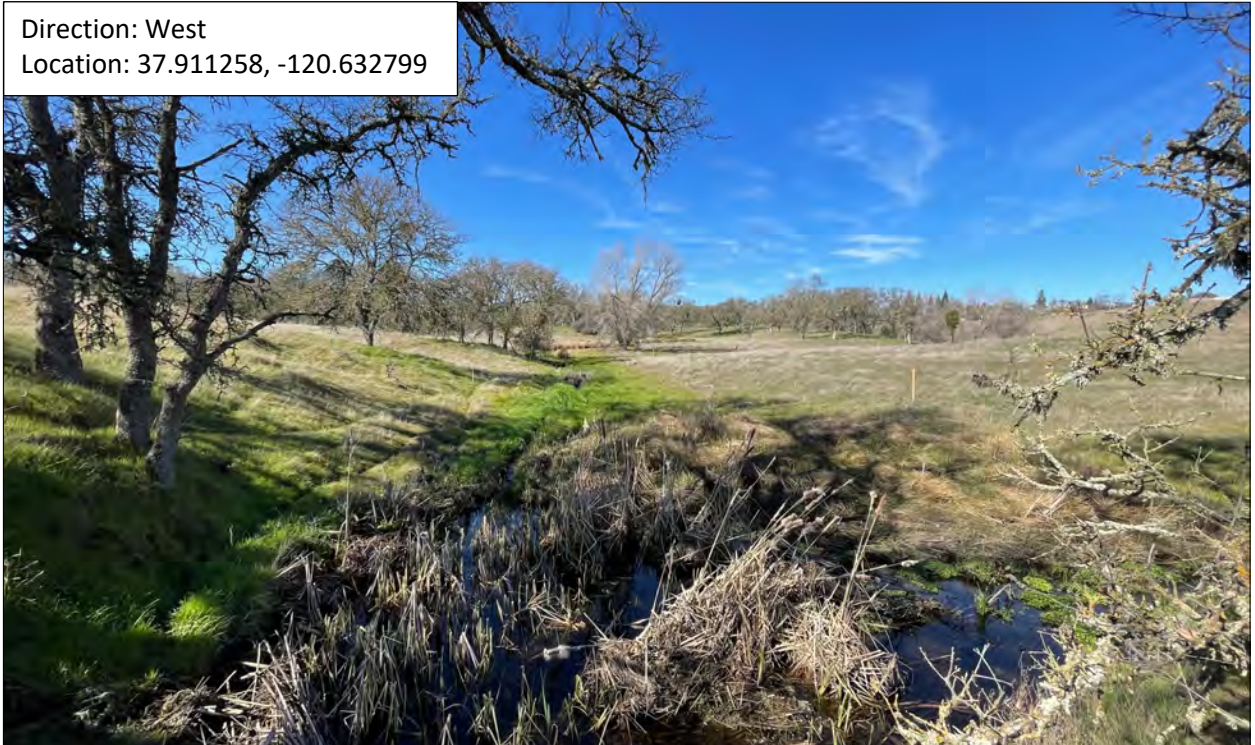


Photo 8. Looking west (upstream) from Photo Point 5 at the proposed access road stream crossing.

Direction: Northeast
Location: 37.911258, -120.632799



Photo 9. Looking northeast (downstream) from Photo Point 5 at Ramsey Gulch.

Direction: North
Location: 37.910827, -120.633634



Photo 10. Looking north (downstream) from Photo Point 6 at the southern tributary.

Appendix D. Plant list.

Plant species observed in the survey area and their wetland indicator status.

Genus	Species	Common Name	WIS*
<i>Agrostis</i>	<i>stolonifera</i>	Redtop	FACW
<i>Avena</i>	<i>barbata</i>	Slim oat	UPL
<i>Bromus</i>	<i>hordeaceus</i>	Soft chess	FACU
<i>Carex</i>	<i>praegracilis</i>	Field sedge	FACW
<i>Chlorogalum</i>	<i>pomeridianum</i>	Common soaproot	UPL
<i>Claytonia</i>	<i>perfoliata</i>	Miner's lettuce	FAC
<i>Dipterostemon</i>	<i>capitatus</i>	Blue dicks	UPL
<i>Elodea</i>	<i>nuttallii</i>	Western waterwort	OBL
<i>Elymus</i>	<i>caput-medusae</i>	Medusa head	UPL
<i>Epilobium</i>	<i>ciliatum</i>	Willow herb	FACW
<i>Erodium</i>	<i>botrys</i>	Big heron bill	FACU
<i>Erodium</i>	<i>cicutarium</i>	Coastal heron's bill	UPL
<i>Galium</i>	<i>aparine</i>	Common bedstraw	FACU
<i>Geranium</i>	<i>carolinianum</i>	Carolina geranium	UPL
<i>Helminthotheca</i>	<i>echioides</i>	Prickly ox-tongue	FAC
<i>Holcus</i>	<i>lanatus</i>	Common velvetgrass	FAC
<i>Juncus</i>	<i>balticus</i>	Wire rush	FACW
<i>Leptosiphon</i>	<i>bicolor</i>	True babystars	UPL
<i>Lomatium</i>	<i>utriculatum</i>	Hog fennel	UPL
<i>Lonicera</i>	<i>interrupta</i>	Chaparral honeysuckle	UPL
<i>Lupinus</i>	<i>benthamii</i>	Spider lupine	UPL
<i>Lupinus</i>	<i>bicolor</i>	Miniature lupine	UPL
<i>Medicago</i>	<i>polymorpha</i>	California burclover	FACU
<i>Mentha</i>	<i>pulegium</i>	Pennyroyal	OBL
<i>Nemophila</i>	<i>menziesii</i>	Baby blue eyes	UPL
<i>Phoradendron</i>	<i>leucarpum</i>	Mistletoe	UPL
<i>Plagiobothrys</i>	<i>nothofulvus</i>	Rusty haired popcorn flower	FAC
<i>Plagiobothrys</i>	<i>tenellus</i>	Slender popcorn flower	FACU
<i>Quercus</i>	<i>douglasii</i>	Blue oak	UPL

Genus	Species	Common Name	WIS*
<i>Quercus</i>	<i>wislizini</i>	Interior live oak	UPL
<i>Ranunculus</i>	<i>californicus</i>	Common buttercup	FACU
<i>Rumex</i>	<i>crispus</i>	Curly dock	FAC
<i>Salix</i>	<i>gooddingii</i>	Gooding's willow	FACW
<i>Sonchus</i>	<i>oleraceus</i>	Sow thistle	UPL
<i>Trifolium</i>	<i>hirtum</i>	Rose clover	UPL
<i>Typha</i>	<i>domingensis</i>	Narrowleaf cattail	OBL
<i>Vicia</i>	<i>sativa</i>	Narrow-leaved vetch	FACU
<i>Xanthium</i>	<i>strumarium</i>	Cocklebur	FAC

*WIS = Wetland Indicator Status (Environmental Laboratory 1987): OBL= occurs in aquatic resources > 99% of time; FACW= occurs in aquatic resources 67–99% of time; FAC= occurs in aquatic resources 34–66% of time; FACU= occurs in aquatic resources 1–33% of time; UPL= occurs in uplands > 99% of time.

Appendix E. OHWM data sheets.

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Flint Trail Access Road - South Crossing Project Number: Stream: Ramsey Gulch Investigator(s): R. Slezek, J. Davis	Date: 3/7/22 Town: Copperopolis Photo begin file#:	Time: 1130 State: CA Photo end file#:
--	---	--

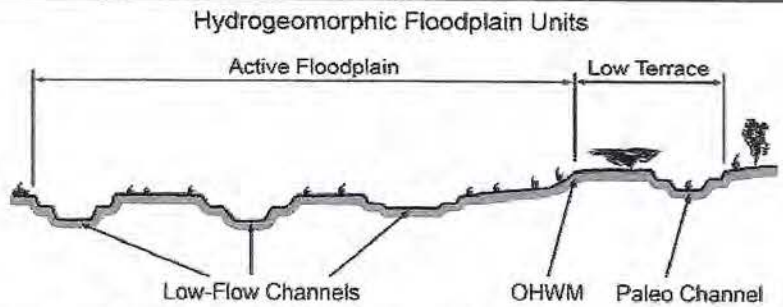
Y <input checked="" type="checkbox"/> / N <input type="checkbox"/> Do normal circumstances exist on the site? Y <input type="checkbox"/> / N <input checked="" type="checkbox"/> Is the site significantly disturbed?	Location Details: Perennial Stream - tributary to Littlejohns Creek Projection: Lambert Conic Datum: NAD 83 Coordinates: 37.91124, -120.63314
--	---

Potential anthropogenic influences on the channel system:
 Grazing, New housing development + golf course ~800ft. upstream. Stream is outlet for artificial golf course ponds.

Brief site description: Perennial stream flowing east through survey area. Riparian vegetation extends beyond channel in places. Low gradient + flow. Two intermittent streams converge, then flow into Ramsey Gulch @ western edge of survey area forming a small meadow. Veg community is oak woodland

Checklist of resources (if available):

<input checked="" type="checkbox"/> Aerial photography Dates: <input checked="" type="checkbox"/> Topographic maps <input type="checkbox"/> Geologic maps <input type="checkbox"/> Vegetation maps <input checked="" type="checkbox"/> Soils maps <input type="checkbox"/> Rainfall/precipitation maps <input type="checkbox"/> Existing delineation(s) for site <input checked="" type="checkbox"/> Global positioning system (GPS) <input type="checkbox"/> Other studies	<input type="checkbox"/> Stream gage data Gage number: Period of record: <input type="checkbox"/> History of recent effective discharges <input type="checkbox"/> Results of flood frequency analysis <input type="checkbox"/> Most recent shift-adjusted rating <input type="checkbox"/> Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event
--	---

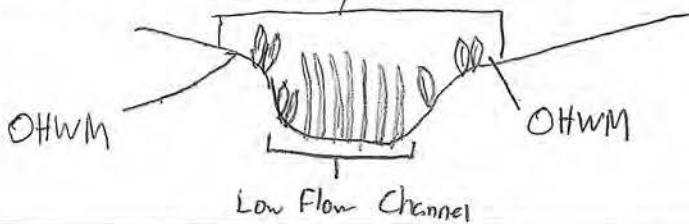


- Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:**
1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
 2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
 3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
 - a) Record the floodplain unit and GPS position.
 - b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
 - c) Identify any indicators present at the location.
 4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
 5. Identify the OHWM and record the indicators. Record the OHWM position via:

<input type="checkbox"/> Mapping on aerial photograph	<input checked="" type="checkbox"/> GPS
<input type="checkbox"/> Digitized on computer	<input type="checkbox"/> Other:

Project ID: Flint Trail Cross section ID: South Crossing Date: 3/7/22 Time: 1130

Cross section drawing: Active Floodplain



OHWM

GPS point: 37.91124, -120.63314

Indicators:

- | | |
|--|---|
| <input checked="" type="checkbox"/> Change in average sediment texture | <input checked="" type="checkbox"/> Break in bank slope |
| <input checked="" type="checkbox"/> Change in vegetation species | <input type="checkbox"/> Other: _____ |
| <input checked="" type="checkbox"/> Change in vegetation cover | <input type="checkbox"/> Other: _____ |

Comments:

Water level close to OHWM @ time of survey. Obvious break in slope, sediment changes from gravel covered w/ silt to medium sand.

Floodplain unit: Low-Flow Channel Active Floodplain Low Terrace

GPS point: 37.91125, -120.63313

Characteristics of the floodplain unit:

Average sediment texture: Medium gravel
Total veg cover: 75 % Tree: 10 % Shrub: _____ % Herb: 65 %

Community successional stage:

- | | |
|---|---|
| <input type="checkbox"/> NA | <input type="checkbox"/> Mid (herbaceous, shrubs, saplings) |
| <input type="checkbox"/> Early (herbaceous & seedlings) | <input checked="" type="checkbox"/> Late (herbaceous, shrubs, mature trees) |

Indicators:

- | | |
|--|--|
| <input type="checkbox"/> Mudcracks | <input type="checkbox"/> Soil development |
| <input type="checkbox"/> Ripples | <input checked="" type="checkbox"/> Surface relief |
| <input type="checkbox"/> Drift and/or debris | <input checked="" type="checkbox"/> Other: <u>Saturated soil</u> |
| <input checked="" type="checkbox"/> Presence of bed and bank | <input type="checkbox"/> Other: _____ |
| <input checked="" type="checkbox"/> Benches | <input type="checkbox"/> Other: _____ |

Comments:

Soft, saturated soil + shallow bench marked edge of floodplain. Floodplain widens to ~50 ft. in meadows near stream convergence on west edge of survey area. Low flow channel is well-defined break in slope.

Appendix F. Aquatic resource Excel sheet.

Waters_Name	State	Cowardin_Code	HGM_Code	Meas_Type	Amount	Units	Waters_Type	Latitude	Longitude	Local_Waterway
Ramsey Gulch	California	PEM	RIVERINE	Area	0.04	ACRE	RPW	37.915377	-120.629979	
Western tributary	California	PEM	RIVERINE	Area	0.01	ACRE	RPW	37.911156	-120.633537	
Southern tributary	California	PEM	RIVERINE	Area	0.01	ACRE	RPW	37.911076	-120.63353	

Appendix B – Cultural Resources Assessment

Cultural Resources Inventory and Evaluation Report Copper Valley Parcel Acquisition Project

Copperopolis, Calaveras County, California



Prepared for:

CV Development Partners, LLC
100 Town Square Road
Copperopolis, CA 95228

November 2021



Solano Archaeological Services, LLC
P.O. Box 367, Elmira, California 95625

Brian Ludwig, Ph.D., R.P.A.
Jason A. Coleman, M.A., R.P.A.
707-718-1416

MANAGEMENT SUMMARY

CV Development Partners, LLC (CV Development Partners), proposes the Copper Valley Project (the Project) on a parcel in Calaveras County, California. The Project's Area of Potential Effects (APE) encompasses approximately 41.45 acres on Assessor's Parcel Number 055-051-008 located about 4.5 miles south of the community of Copperopolis. The Project would consist of the acquisition of the parcel from the Calaveras County Water District for the construction of a roadway to provide secondary access to the nearby Copper Valley Golf Club property.

The proposed Project may require a Clean Water Act Section 404 permit from the U.S. Army Corps of Engineers due to possible impacts on Waters of the U.S. Consequently, the Project may constitute a federal undertaking subject to Section 106 of the National Historic Preservation Act (Section 106). In order to aid in the compliance with Section 106, CV Development Partners contracted with Solano Archaeological Services, LLC (SAS) to identify cultural resources within the APE that could be subject to Project-related adverse effects, and so that any Project planning could include avoidance or mitigation measures as necessary. SAS was tasked with updating information on previously-documented sites and features within the APE, identifying previously undocumented cultural resources, and evaluating potentially affected resources per National Register of Historic Places criteria.

A record search conducted through the Central California Information Center of the California Historical Resources Information System indicated that no cultural resources have been documented within the APE. Outreach to the Native American Heritage Commission, and the Native American community did not result in the identification of any culturally significant properties within or near the APE. An intensive field survey did not identify any prehistoric or early historic-era materials within the APE which retains a low level of archaeological sensitivity. Since no cultural resources were identified and the APE exhibits a low level of sensitivity for containing the remains of prehistoric or historic-era activities, SAS recommends that the proposed Project would have *no effect on historic properties*.

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APPENDICES

Appendix A: Key Project Personnel Resumes
Appendix B: Native American Community Outreach
Appendix C: CCIC Record Search Results

1.0 Introduction

CV Development Partners, LLC (CV Development Partners), proposes the Copper Valley Project (the Project) on a parcel in Calaveras County, California. The Project's Area of Potential Effects (APE) encompasses approximately 41.45 acres (ac.) south of the community of Copperopolis (Figure 1).

The proposed Project may require a future Clean Water Act Section 404 permit from the U.S. Army Corps of Engineers due to potential Project effects on Waters of the U.S. (i.e., a seasonal creek channel). Consequently, the Project may constitute a federal undertaking subject to Section 106 of the National Historic Preservation Act (Section 106). To assist with Section 106 compliance, CV Development Partners contracted with Solano Archaeological Services (SAS) to identify cultural resources within the APE that could be subject to Project-related adverse effects, and so that any Project planning could include avoidance or mitigation measures as necessary. SAS was tasked with updating information on previously-documented sites and features within the APE, identifying previously undocumented cultural resources, and evaluating potentially affected resources per National Register of Historic Places (NRHP) criteria. All aspects of this cultural investigation were directed by SAS Principal Investigator Dr. Brian Ludwig, and SAS Managing Principal, Mr. Jason Coleman, M.A., RPA, (Appendix A).

1.1 Project Location

The APE is situated on the *Copperopolis, California* U.S. Geological Survey (USGS) 7.5-minute topographic quadrangle map (Figure 2). The APE is located in Township 1 North, Range 12 East, sections 26, and 27, about 4.5 mi. south of the community of Copperopolis and approximately 1.5 mi. west of the northwestern arm of Lake Tulloch. The APE is situated on Assessor's Parcel Number 055-051-008 (Figure 3).

1.2 Project Description

No Project ground-disturbing activities are planned at this time. The Project consists of the proposed acquisition of approximately 41.45 ac. of surplus property from the Calaveras County Water District to create a road to serve as a secondary access route for the Copper Valley Golf Club property and to access its existing maintenance facility. No other development will take place and there will be no change to the underlying zoning of public facilities.

1.3 Area of Potential Effects

The APE consists of an irregular parcel partially delineated by property fence lines on a landscape defined by low rolling hills and oak woodlands. The APE includes a small segment of Ramsey Gulch, a natural seasonal drainage, and a maintenance facility for the Copper Valley Golf Club. The APE has been established to encompass the maximum limits of potential future ground-disturbing activities that would reasonably be expected from the proposed parcel acquisition and eventual road construction, including but not limited to, all existing parcels, and future residential construction, potential access routes, and equipment staging and laydown areas.

1.4 Regulatory Context

Section 106 of the National Historic Preservation Act

This cultural resources inventory and evaluation effort was prepared by SAS to comply with Section 106 and its implementing regulations in Title 36 Code of Federal Regulations Part 800 (36 CFR 800). Projects that take place on federal property, or involve federal funding or permitting fall under the jurisdiction of Section 106.

This report addresses the identification of any discovered historic properties (cultural resources listed or recommended for listing on the NRHP) in the APE. As defined by Section 106, historic properties can include historic sites, structures, buildings, districts, and objects older than 50 years that are eligible, or potentially eligible, for listing on the NRHP. The Section 106 process mandates that foreseeable significant impacts to resources eligible for NRHP listing must be mitigated.

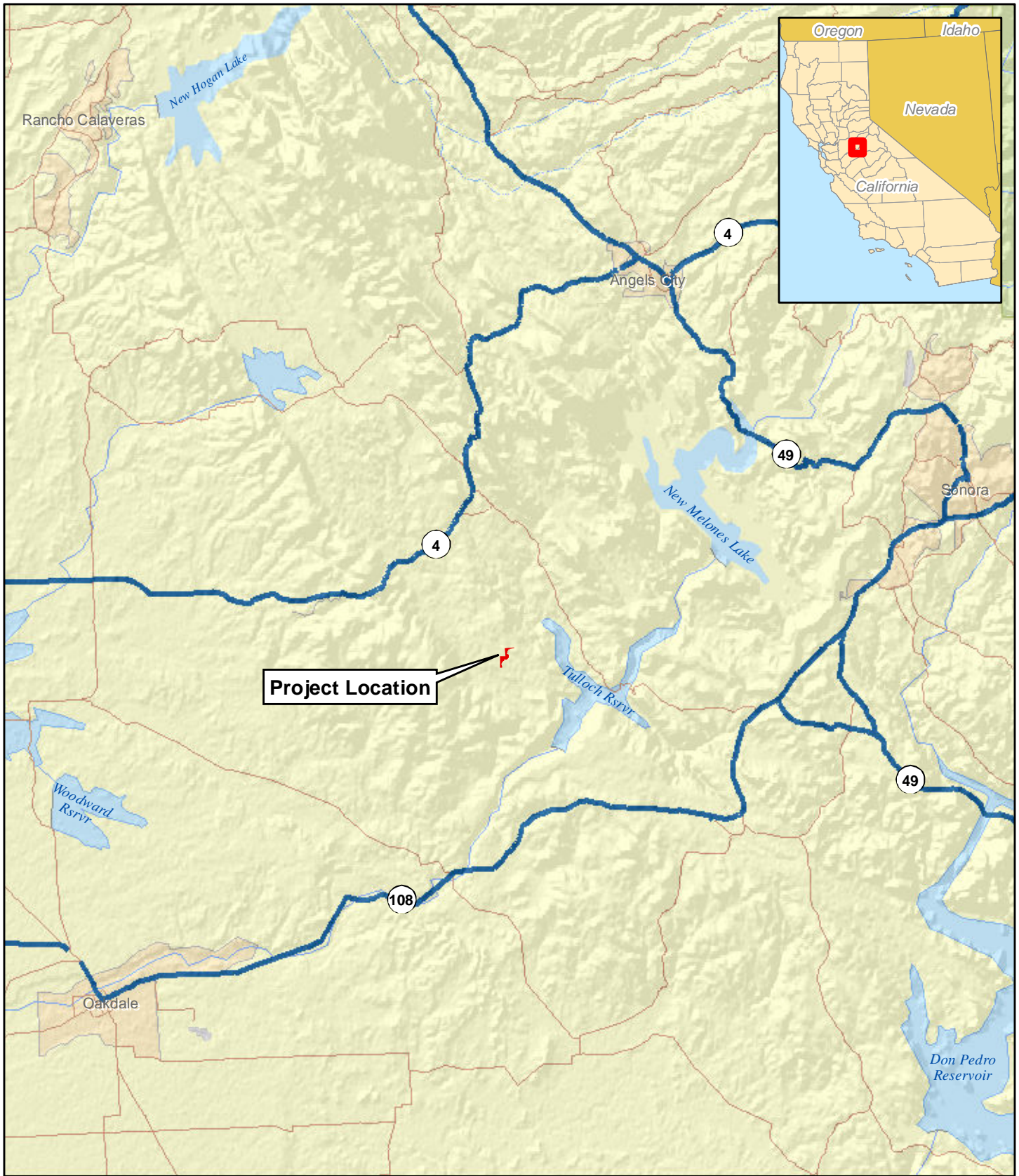



Figure 1. Project Vicinity Map.

 Copper Valley Project Area

Sources: *USA Base Map* [layer], *Data and Maps* [CD]. ESRI, 2006.

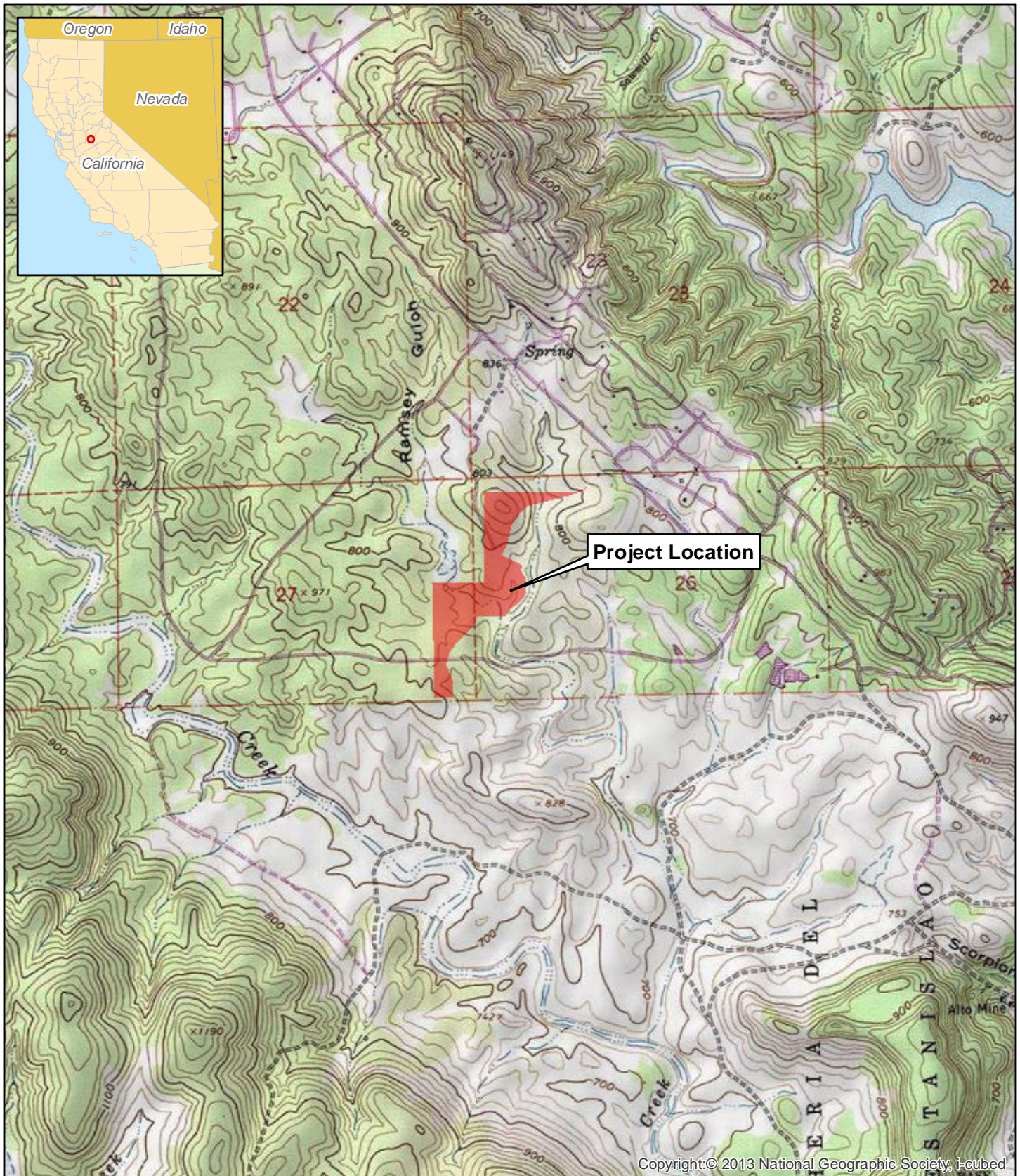
1:250,000

0 3 Miles



0 6 Kilometers



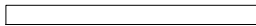
Copyright: © 2013 National Geographic Society, i-cubed

Figure 2. Project Location Map.

1:24,000

 Copper Valley Project Area

0.5

 Miles

1

 Kilometers

T01N, R12E, Sections 26 and 27.
Copperopolis 7.5' Series Quadrangles, USGS, 1963.



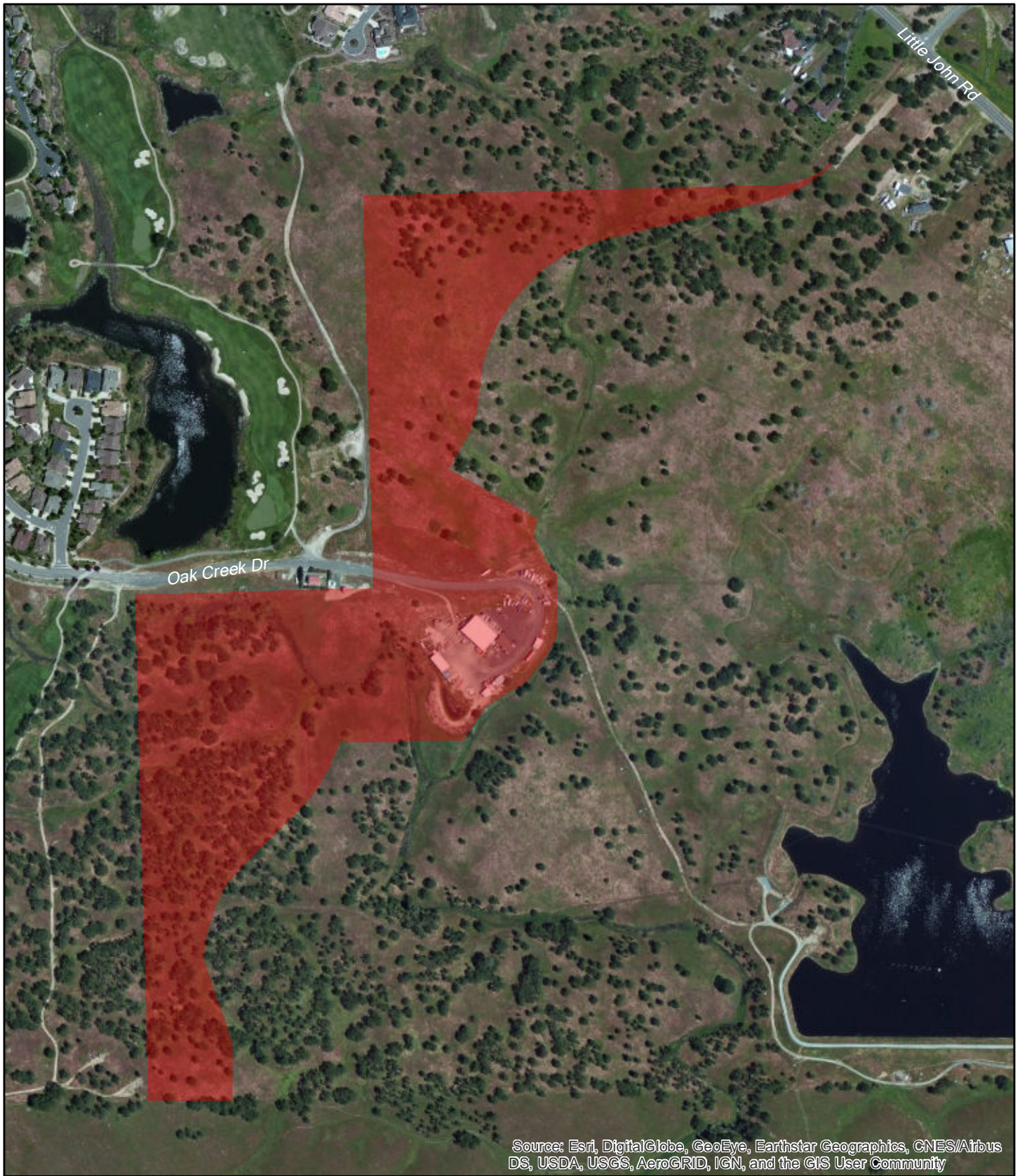


Figure 3. Project Area Map.

 Copper Valley Project Area

Total Acres: 41.45

1:5,400

0 500 Feet

0 250 Meters



The NRHP is a register of historic properties that includes districts, sites, buildings, structures, and objects of significance in American history, architecture, archaeology, engineering, and culture. The regulations provided in 36 CFR Part 60.4 describe the criteria to evaluate cultural resources for inclusion in the NRHP. Historic properties can be significant on the national, state, or local level. Properties may be listed in the NRHP if they possess integrity of location, design, setting, materials, workmanship, feeling, and association, and:

- A) are associated with events that have made a significant contribution to the broad patterns of our history;
- B) are associated with the lives of persons significant in our past;
- C) embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess an artistic value, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
- D) have yielded, or may be likely to yield, information important in prehistory or history.

Most prehistoric archaeological sites are evaluated with regard to Criterion D of the NRHP, which refers to site data potential. Such sites typically lack historical documentation that might otherwise adequately describe their important characteristics. Archaeological methods and techniques are applied to gain an understanding of the types of information that may be recovered from the deposits. Data sought are those recognized to be applicable to scientific research questions or to other cultural values.

2.0 NATURAL AND CULTURAL SETTING

2.1 Natural Environment

The climatic pattern in the APE and surrounding region is characterized as Mediterranean, with cool, wet winters and hot, dry summers. Soil studies suggest that the general climate may have been wetter in the past but periods of persistent drought in California occurred between A.D. 912–1112 and A.D. 1210–1350 (Tanksley 2003). Shorter drought periods have also been documented over the last 2,000 years using dendrochronology, soil core borings, and other methods.

The APE is located in the Sierra Nevada foothills at an elevation of approximately 850 feet (ft.) above mean sea level (amsl). The natural environment is characterized by oak woodlands and annual grasses with a seasonal drainage, tributary to Littlejohn Creek, trending roughly north-south through the APE. Blue Oak dominates the landscape with scattered live and valley oak also present (Kuchler 1977). A wide variety of fauna, including mule deer, western gray squirrel, ground squirrel, and rabbits are found in oak woodlands and would have been exploited by early Native American populations (Storer and Usinger 1963). In addition, nearby Littlejohn, and McCarty creeks would have supported a variety of both faunal and floral species and may have been a focus of early Native American subsistence activities (Baumhoff 1963; Heizer and Elsasser 1980).

2.2 Prehistoric Context

Longstanding assumptions (Fredrickson 1973, 1974, 1993) regarding the basic projectile point sequence of the central Sierra Nevada and accompanying cultural patterns have recently undergone major revision (see Rosenthal et al. 2006). This research has shed new light on some of the least understood time periods of Native American occupation of the region between 6,500 to 3,000 years before the present day (BP) and has led to a reassessment of previously established cultural chronologies. Based on a large-scale analysis of assemblages from the greater Sonora region, Rosenthal et al. (2006) has proposed the following regional chronological sequence (expressed in years BP):

- Recent Prehistoric II 610–100
- Recent Prehistoric I 1100–610
- Late Archaic 3,000–1,100
- Middle Archaic 7,000–3,000
- Early Archaic 11,500–7,000

The major division in the archaeological record in this scheme is between the Archaic and Recent Prehistoric periods. The Archaic represents a long-term, stable period characterized by small, highly-mobile social groups who followed seasonal rounds, moving into the coniferous forest uplands in the summer and returning to base camps in the lower foothill regions for fall and winter. Although acorns were used, gray pine nuts were the most important local plant food during this period and so milling stones and hand stones were the dominant milling tools rather than mortars and pestles. Apart from milling technology, the Archaic phases are differentiated predominately on the basis of shifts in projectile point styles.

The Recent Prehistoric periods reflect an important change in the use of the Sierra foothills. The Recent Prehistoric I period is marked by small, corner-notched, or contracting-stemmed arrow points recovered from widely scattered contexts throughout the foothills. This period has therefore been difficult to isolate in discrete components which would provide a wider range of associated artifacts. Excavations at many Recent Prehistoric II sites, marked by the presence of Desert Side-notched and Cottonwood series arrow points, point to a clear population increase fueled by more intensive use of acorns and a wider range of plant foods, with an accompanying switch from milling slabs and hand stones to mortars and pestles, particularly bedrock mortars. The considerable labor investment in forming bedrock mortars, plus the prevalence of well-developed refuse middens, indicate more permanent occupations and increased territoriality (Rosenthal et al. 2006). It was during the latter phases of the Recent Prehistoric II period that sustained contact with Euro-Americans led to significant changes in the life-ways of the native population.

2.3 Ethnographic Context

The APE and vicinity were traditionally occupied by the Central Sierra Miwok, a Miwokan subgroup of the Penutian language family (Hull 2007). It is estimated that the Miwok entered the Sierra Nevada region sometime within the last 500 to 800 years (Moratto 1984:312). At the time of initial European contact, the Central Sierra Miwok inhabited lands that included the foothill and mountain portions of the Stanislaus and Tuolumne River drainages. It was estimated that the pre-contact population was approximately 4,000 individuals prior to Euro-American contact (Levy 1978). However, with the coming of the Gold Rush and sustained non-native settlement, there was a dramatic decline in population due to disease, forced removal from traditional lands, and violent encounters with miners.

Permanent village sites were typically located near sources of water, such as springs and small creeks (e.g., Littlejohn Creek, McCarty Creek), and were situated below the snowline at about 2,000 to 3,000 ft. amsl. Subsistence focused on hunting, fishing, and the gathering of wild plants, seeds, and nuts. During the summer and fall, groups would travel to higher elevations to obtain seasonal plant and animal foods (Hull 2007; Rosenthal et al. 2006). The primary source of protein was the mule deer, but black bear and grizzly bear were also hunted. Game birds, including valley and mountain quail, were hunted or trapped, as were cottontails and jackrabbits. The staple plant food source was the acorns, which were gathered after ripening and falling off the oak tree. The Sierran Miwok also gathered buckeye, pine nuts, wild oats, and various roots and berries which were available seasonally (Levy 1978). Granite and basalt outcroppings in the region facilitated the processing of these plant resources. Mortars were formed in the bedrock where the seeds, nuts, and small mammals were processed by using a cobble pestle (Hull 2007).

The Central Sierra Miwok's primary residences were conical structures built with bark slabs arranged to form a cone with no internal supports or framework. Cooking hearths were typically located in the center of the

houses, with adjacent earthen ovens. Two types of assembly structures were used for various occasions; a semi-subterranean earth lodge was used as the focal point for social gatherings and rituals, and a smaller, circular brush structure with a pine needle roof and was used for mourning ceremonies held in the summer. (Levy 1978).

The Central Sierra Miwok trade system included various resources that were exchanged with neighboring tribes and was generally characterized by the movement of goods from east to west. For example, obsidian and salt that originated in the Great Basin region were traded west to the Sierra Miwok who then exchanged them with the Plains Miwok in the Central Valley.

2.4 Historic Context

The following historic context information is drawn from the Black Creek Estates development project environmental compliance documents compiled by Judith Marvin of Foothill Resources, Ltd. (Davis-King, and Marvin 1990)

The early history of the lands specifically in the APE is largely unknown but the surrounding vicinity saw a great deal of activity during the Gold Rush with placer mining on the Stanislaus River at Spanish Bar, Six Mile Bar, Two Mile Bar, and others south of the APE. Sections of Littlejohns Creek adjacent to the APE, and Ramsey Gulch, a portion of which extends into the APE, also saw significant early mining activities. During the early years placer mining activities in the area were carried out by numerous individual miners using simple gold pans, bateas, sluice boxes, and rockers. Later, when the free gold had been picked up, miners formed companies who built Long Toms, elaborate wing dams, flutter wheels, and other means to turn the waterways and pluck the nuggets from the gravel beds.

Placer mining continued in the area at least through the early 1870s, as numerous miners, many of them Chinese, were listed by the census enumerator in 1860 and 1870. Local landowners such as the prominent Spicer family who had one of the largest ranches in the area, noted themselves as miners and stock raisers during those years on census records, and in 1880 as miners, suggesting that they were continuing to mine their land, although also carrying on their stock raising activities at the same time. By 1900, the Spicers and other notable landowners all were noted only as farmers or stock raisers, the gold evidently having been played out by the end of the 19th century.

Although gold may have been the initial attraction to the present-day Copperopolis area, in the 1860s a copper boom began with a high-grade ore discovery by H.K. Reed, a penniless miner from the nearby O'Byrnes Ferry community. This find created another rush to the southwestern portion of Calaveras County, and prospectors overran the area once again. A bustling town first called Grasshopper City, and then Telegraph City arose on Shirley Creek on the Stockton Road (State Route 4). The center of activity, however, was soon transferred to the main Union-Keystone copper lode discovered by Thomas McCarty and William Reed. First known as Copper Cañon, the town that sprang up around the mines was soon named Copperopolis, and rapidly developed into the second-most important copper district in the United States. The center of town was destroyed by fire in 1867 and the Union-Keystone mine ceased operations shortly thereafter. Between the fire, closed mines, and the end of large-scale munitions production for the recently concluded Civil War, Copperopolis experienced a significant economic downturn.

Times improved with another modest copper boom in the late 1880s, when the Ames Family of Massachusetts, owners of the Ames Tool Company, purchased the Union-Keystone Mine, dewatered it and constructed a new smelter, operating until 1892. In 1899, a newly formed company, the Union Copper Mining Company, purchased the original claims and most of the properties in town. These operations were curtailed in 1902 and the mine again closed. In 1909, the Calaveras Copper Company purchased the Union interests and most of the town and commenced operations in earnest. The mine was de-watered again, another smelter constructed, and then began a long period of almost continuous operation. By this time Copperopolis was no longer the leading copper producer in California, but it did continue as the second- or third-largest producer

in the state through 1930. During this period copper prices fluctuated, but the company continued to operate on a small scale, providing an important economic base for the local economy. Mining boomed again briefly during World War II, but the Union/Keystone operations shut down in 1945 and have been idle since. Today, the headframes and mill buildings of the mines have disappeared, leaving behind large slag and mine waste piles, and basement depressions to show the locations of the many once booming business establishments.

3.0 Native American Consultation

On October 15th, 2021, SAS emailed a letter to the Native American Heritage Commission (NAHC) requesting a search of the NAHC Sacred Lands File database, and a list of Native American tribal representatives who might have an interest in, or concerns with the proposed Project (Appendix B). On November 8th, 2021, the NAHC replied stating that no culturally significant properties were known to be present within or near the APE. The NAHC also provided contact information for the following tribal organizations and representatives:

- Gloria Grimes, Chair - Calaveras Band of Mi-Wuk Indians
- California Valley Miwok Tribe
- Sheep Rancheria of Me-Wuk Indians of California
- Lloyd Mathesen, Chair - Chicken Ranch Rancheria of Me-Wuk Indians
- Sara A. Dutschke, Chair - Ione Band of Miwok Indians
- Cosme Valdez, Chair - Nashville Enterprise Miwok-Maidu-Nishinam Tribe
- Katherine Erolinda Perez, Chair - North Valley Yokuts Tribe
- Timothy Perea - North Valley Yokuts Tribe
- Neil Peyron, Chair - Tule River Indian Tribe
- Kenneth Woodrow, Chair - Wuksache Indian Tribe/Eshom Valley Band

On November 10th, SAS sent contact letters to each of the individuals and organizations listed above, requesting information on Native American cultural resources or properties located in or near the APE, and inquiring if they had any concerns with the proposed Project. No responses to the letters were received and SAS called each individual or group on the list on November 17th, and 18th, to ensure that the mailed letter was received and if they had any concerns regarding the proposed project. Messages were left for each phone contact, but no responses were forthcoming. A final attempt to contact each individual/group was made on November 22nd via email. As of this report, no responses have been received but if substantive contacts are made in the future, that information will be provided as an addendum to this study.

4.0 RECORD SEARCH AND LITERATURE REVIEW RESULTS

4.1 Summary of Reviewed Sources and Findings

To determine if any previously documented cultural resources were located within the APE or in the vicinity, SAS requested a detailed record search for the APE and a surrounding 0.5-mi. area from the Central California Information Center (CCIC) of the California Historical Resources Information System. This record search also identified previous cultural resources investigations that were conducted within the APE and in the 0.5-mi. search area. The CCIC search also included, but was not necessarily restricted to a review of the following sources:

- *National Register of Historic Places – Historic Properties Directory* (California Office of Historic Preservation 2002 and updates)
- *California Register of Historic Places – Historic Properties Directory* (California Office of Historic Preservation 2002 and updates)
- *California Historical Landmarks* (California Office of Historic Preservation 1996 and updates)

- *California Points of Historical Interest* (California Office of Historic Preservation 1992 and updates)
- *California Inventory of Historic Resources* (California Department of Parks and Recreation 1976 and updates)

The results of the search indicated that no previously documented cultural resources were located within the APE. However, 12 sites and artifacts had been documented in the 0.5-mi. search area including prehistoric and historic-era resources (Appendix C). One of these resources, an isolated flaked stone tool, was documented immediately adjacent to the northernmost boundary of the APE. The CCIC also noted that a total of 12 studies had been conducted within the search area but outside the APE (Appendix C).

4.2 Additional Archival Research

To determine if any previously undocumented cultural resources or archaeologically sensitive landforms might be located within the APE, SAS conducted a review of historic General Land Office (GLO) plat maps showing the APE and vicinity. Starting in the early 1850s, the U.S. General Land Office started conducting widespread mapping of lands within California, as well as throughout the western United States. These “plat” maps of townships, ranges, and sections typically depicted major landforms, waterways, historic-era developments such as ranches, farms, and associated buildings, and occasionally provided assessments of the suitability of land for livestock grazing, agriculture, or timber harvesting. Consequently, GLO maps could provide indications of developments not presently documented in the archaeological and historical record.

The only GLO plat map available dates to 1870 and does not show any developments within the APE. However, the channel of “Ramsey’s Gulch” is depicted along with the *Copperopolis to Knight’s Ferry Road* just to the northeast of the APE. However, further insights into the ownership and potential for developments within or near the APE can be found in land patents administered by the GLO. Apart from surveying government lands, the GLO was also responsible for selling, granting, or otherwise transferring public lands to private, corporate, or institutional recipients. Numerous regulatory frameworks governed and provided for these transfers, some of which pre-dated the establishment of the GLO. Two of the most significant acts that are largely credited with enabling the Euro-American settlement of the American West were the Land Act of 1820, and the Homestead Act of 1862 – both of which were invoked in the transfers of government land to private individuals within and adjacent to the APE.

The Land Act of 1820 ended the ability of private individuals to purchase U.S. public domain lands on a credit or installment system over four years, as established under previous acts. The new act required full payment at the time of purchase and registration but to encourage more sales and make them more affordable, Congress also reduced both the minimum price from \$2.00 to \$1.25 per acre, and the minimum size of a standard tract from 160 to 80 acres (Ohio History Connection 2018). The 1862 Homestead Act provided for the granting of public lands to private individuals (or their heirs or legal representatives) who had not taken up arms against the United States (National Archives 2016). The occupant had to reside on the land for five years, and show evidence of having made improvements and the process had to be complete within seven years. If the terms were not met, the land went back into public ownership and could be granted to another individual.

A review of GLO land patents within and adjacent to the APE shows that several individuals took advantage of both the 1820 Land Act, and the 1862 Homestead Act in obtaining property in the area. In Section 26, Daniel and James Spicer obtained various ¼-sections under these acts in 1875, and 1882. Noted landowners and ranchers, the Spicer family also controlled large swaths of land in the area obtained through federal patents, or in private sales.

In Section 27, three individuals, Nathan M. Flower, Hugh Richmond, and Charles Truckenmiller obtained their properties under the 1820 Land Act. Nathan M. Flower was the husband of Mary Ann Spicer of the Spicer ranch family and his patent essentially added still more acreage to the family’s already significant holdings in the Copperopolis area. Hugh Richmond, born in Ireland in 1837, lived in the town of Emory in

Stanislaus County near Knights Ferry and according to the 1870 U.S. Census, worked as a threshing laborer. Charles Truckenmiller, born in Ohio in 1858 (or in Illinois in 1856), was a resident of Empire in Stanislaus County at the time of the 1880 U.S. Census. Truckenmiller, as were Nathan M. Flower, and Hugh Richmond, were all engaged in agriculture and/or livestock ranching during the 1870s and 1880s as opposed to being employed in the area's other main industry, mining.

5.0 FIELD METHODS

On October 22nd, 2021, SAS archaeologists John Barnes, and Onshel Green conducted an intensive pedestrian survey of the APE walking transects spaced no greater than 20 meters apart. All ground disturbance caused by bioturbation (e.g., rodent burrows) was thoroughly examined, and vegetation was periodically scraped away to inspect the ground surface. Digital photographs and videos were taken of the APE, and observations were recorded in detail.

6.0 SURVEY FINDINGS

The SAS survey indicated that the APE was heavily overgrown with seasonal grasses and in general, ground surface visibility was poor. Prior to the start of the survey and based on the findings of previous studies in the general vicinity of the APE, it was expected that bedrock outcrops and/or boulders within the APE might exhibit prehistoric mortar cups. However, it was noted that the local bedrock appeared to be a friable schist which was typically not suitable for the manufacture of mortars for the processing of acorn or other nut and seed types due to the soft character of the stone. In addition, SAS archaeologists had anticipated encountering traces of mining activities (e.g., placer tailings, ditches, or earthen dams) but no such features were documented within the APE. A review of historic aerial photography and USGS mapping demonstrates that Copper Valley Golf Club maintenance facility at the eastern end of Oak Drive dates no earlier than the late 1980s and was not recorded for this study due to its lack of age.

Archaeological Sensitivity Assessment

Buried archaeological occurrences are the result of geophysical process specific to particular landforms as well as human behavior (Waters 1992). Consequently, landforms play a fundamental role in site preservation and burial, and ultimately the discovery of prehistoric sites and remains. Put simply, landform (and other affiliated characteristics like soils, geologic substrate, and climate) determines to a large degree whether and when an archaeological site is buried. In the nearby Central Valley, erosion and soil accumulation are the primary geological processes that interact with archaeological deposits resulting in younger deposits often burying older formations and archaeological occurrences, and preventing their detection during surface surveys (Rosenthal and Meyer 2004a, b). However, in the adjacent foothills, erosion can play a significant role in affecting sites along drainages, but levels of soil buildup comparable to those seen in the Central Valley, are generally non-existent except in certain contexts along major creek and river drainages. Consequently, with no significant waterways or drainages capable of depositing sediments on their banks or adjacent terraces, it is unlikely that prehistoric sites, features, or artifacts are present in deeply buried contexts within the APE.

In addition, while the APE is situated in a well-watered area, the small segment of drainage (Ramsey Gulch) in the APE consists of an ephemeral waterway comparable to numerous similar channels in the Copperopolis vicinity. More substantial water courses that would have been likely areas of prehistoric activity and settlement are located just to the west (Littlejohn's Creek), and to the east (Black Creek - now part of Lake Tulloch). With little to differentiate the APE from the surrounding landscape in terms of water availability and other resources that might have been attractive to early Native American peoples, it is unlikely that the APE would have been the focus of sustained Native American activities and settlement that could have left significant surface or subsurface archaeological traces.

Regarding historic-era resources, despite the preponderance of mining sites and features in the general area, the lack of evidence for intensive mining in the APE is not surprising. As Clark and Lydon (1962:37) observed, the West Gold Belt lode deposits of the Mother Lode represent sporadic mineralization with gold typically occurring in quartz veins or mineralized country rock. Gold also occurs in the gravels of major watercourses such as the Stanislaus River flowing down slope from the Sierra Nevada Mountains and in Tertiary gravels of the ancestral Stanislaus River now located below Table Mountain south of the APE (Koschmann and Bergendahl 1968:55). Although substantial quantities of placer gold were taken from the Stanislaus River between 1848 and approximately 1860, the richest mines near the APE were the quartz mines of the Hodson Mining District to the north and the Alto Mine, which was largely a drift operation established to exploit the gold values in the Tertiary gravels below Table Mountain (Clark and Lydon 1962:37). Due to a lack of Tertiary gravels and quartz occurrences in the APE, it does not appear that mining was an important historic pursuit within or adjacent to the APE. As a result, it is unlikely that any subsurface or otherwise presently undocumented mining resources are located in the APE.

7.0 CONCLUSIONS AND RECOMMENDATIONS

Archival research, outreach to the Native American community, and an intensive field survey including did not result in the documentation of any prehistoric or historic-era sites, features, or artifacts within the APE. In addition, due to a lack of significant water sources or concentrations of other resources potentially attractive to native peoples, the APE exhibits a low level of sensitivity for containing prehistoric sites. Similarly, the geologic context precludes the existence of valuable mineral deposits in the APE and as a result, it is unlikely that any presently undocumented mining-related sites or features are present in subsurface contexts within the APE. Other historic-period activities such as ranching, or transportation would have left remains on the ground surface but none were noted as a result of intensive SAS survey. Consequently, SAS recommends that the proposed Project will have *no effect on historic properties* per Section 106.

Should buried, unforeseen archaeological deposits be encountered during any construction activity, work must cease within a 50-ft. radius of the discovery. If a potentially significant discovery is made, it must be treated in accordance with 33 CFR 325, Appendix C which generally states that the lead federal agency (in this case the Corps) must be notified immediately of the find to ensure that mitigation/management recommendations are developed. In the event that human remains, or any associated funerary artifacts are discovered during construction, all work must cease within the immediate vicinity of the discovery. In accordance with the California Health and Safety Code (Section 7050.5), the Calaveras County Sheriff/Coroner must also be contacted immediately. If the remains are deemed to be Native American, the coroner must notify the NAHC, which will in turn appoint and notify a Most Likely Descendent (MLD) to act as a tribal representative. The MLD will work with a qualified archaeologist to determine the proper treatment of the human remains and associated funerary objects. Construction activities will not resume until the human remains are exhumed and official notice to proceed is issued.

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APPENDIX A



Key Project Personnel Resumes



Jason A. Coleman, M.A., RPA

Co-Principal Investigator - Project Manager

Summary of Qualifications

Mr. Coleman has nearly 30 years of experience in the cultural resources management field and as the founder of SAS has managed a diverse array of cultural resources management projects throughout California and the western United States. He has conducted and managed investigations in accordance with national, state, and local preservation guidelines such as Section 106 of the National Historic Preservation Act, and the California Environmental Quality Act. Mr. Coleman has extensive experience with the U.S. Forest Service, the Natural Resource Conservation Service, and numerous Resource Conservation Districts, and land and wildlife conservancies. As founder and Co-Principal Investigator for Solano Archaeological Services, Mr. Coleman is responsible for all aspects of SAS management, marketing, client development, human resources, and project and deliverable scheduling and quality control and assurance.

Representative Experience - Fuels Reduction Projects

► 2019 – Sly Park Fuels Reduction Project, Eldorado National Forest, Placerville Ranger District, El Dorado County

The project was part of an all-lands approach to create fire resilient forest ecosystems and fire-adapted communities on Eldorado National Forest (ENF) lands within portions of the South Fork American River (SOFAR) Watershed and the adjacent Cosumnes River Watershed in El Dorado County. Reduction in ladder and surface fuels were proposed on an estimated 3,000 acres of forest lands within the SOFAR and Cosumnes River Watersheds. SAS was contracted by the Mule Deer Foundation to survey an area of potential effect consisting of 2,995 acres to protect heritage resources that may exist in fuels reduction activity areas. A total of 27 cultural resources, including 24 previously recorded and 3 newly identified, were found to be present within the APE. All of the sites were evaluated for NRHP eligibility, and the Standard Protection Measures outlined in Appendix E of the Region 5 Programmatic Agreement (2018) were utilized to make site specific recommendations for mitigation. SAS worked closely with the ENF, the Natural Resources Conservation Service, the Mule Deer Foundation, the Oregon-California Trails Association, and local archaeologists to bring the project to a successful and timely closure. Client: Mule Deer Foundation

► 2019 – Plumas Collaborative Forest Health Projects, Plumas County

The Plumas Corporation, on behalf of the Plumas County Fire Safe Council, proposed to reduce hazardous fuels in three different locations (Genesee Woods/Red Clover Creek/Heart K HFR property, Meadow Valley, and Spanish Ranch) of Plumas County. The goals of the program were to reduce the risk of loss of life, property and natural resources to catastrophic wildfires by reducing hazardous fuels in these three locations. As these projects were funded by CAL FIRE California Climate Investment Forest Health Funds, they were subject to CEQA requirements. SAS conducted three CEQA-level cultural inventories to prepare the properties for the proposed fuels reduction. Covering an expanse of 334.79 acres for all three projects, SAS recorded or updated a total of 32 historic-era sites including can scatters, ditches, wagon roads, trails, tramway towers, railroad grades, water tank remains, single-family homes, and mining sites. None of the sites were recommended eligible for the CRHR Places given their condition and lack of qualities needed to satisfy the four criteria. Client: Plumas Corporation

Length of Service

- 28 years in cultural resources management

Professional Focus

- Agency and tribal consultation
- Project Management
- Prehistoric resources
- Fuels management and environmental restoration

Education

- BA, Anthropology with Honors, U.C. Berkeley (1992)
- MA, Anthropology, CSU Hayward (1996)

Professional Associations and Certifications

- Society for California Archaeology
- Register of Professional Archaeologists
- Statewide BLM Principal



▶ **2018–2019 – Crossroads Project, Shasta–Trinity National Forest (as administered by the Lassen National Forest), Hat Creek Ranger District, Shasta County**

SAS conducted an inventory consisting of a total of 255.71 acres around Lake Britton, the McArthur Burney Memorial State Park, and on both sides of Long Valley and Burney Creek, north of the City of Burney. The project goals were to contribute approximately 400 acres of the 20,000–acre goal identified in the Upper Pit River Watershed Integrated Regional Water Management Plan to reduce the potential for large, uncontrolled fires, and thus subsequent erosion and runoff and property loss by implementing this forest health and small fuels reduction projects. SAS was tasked with updating information on previously–documented sites within the survey area and evaluating the significance of potentially affected resources. Record searches conducted through the California Historical Resources Information System and the Forest Service indicated that 19 previously documented cultural resources were located within the vicinity of the survey area. The SAS survey documented three previously unrecorded historic period resources in the survey area, including two road segments and a 1,080–foot long extension of the historic–era McCloud River Railroad. None of the resources were recommended eligible for NRHP listing. Client: Mule Deer Foundation.

▶ **2017–2018 – Plumas National Forest Hazardous Fuels Projects, Plumas County**

On behalf of the Plumas Corporation (PC) SAS conducted four heritage resource inventories in multiple Plumas National Forest (PNF) ranger districts as part of a hazardous fuels reduction program. Because of the threat of catastrophic wildfires, the Plumas County Fire Safe Council (PCFSC) sought and received a federal Wyden Amendment grant to reduce hazardous fuels in selected residential neighborhoods in or adjacent to the PNF. The grant allowed for the implementation of four hazardous fuels reduction projects (East Shore Lake Almanor, Gold Mountain, C Road/Mohawk Vista, and Dixie Valley), each with varying acreage totaling 368.08 acres. The projects were designed to meet the goals of the PCFSC, the Plumas County Wildfire Protection Plan, and the National Fire Plan. In order to aid in the compliance with Section 106 of the NHPA, PC contracted with SAS to identify cultural resources within the APE that could be subject to project–related adverse effects. In sum, SAS identified 11 new sites and six new isolates, and updated two additional previously recorded sites. All discovered resources were flagged per PNF protocol. As three of the sites were potentially subject to adverse project effects, SAS worked closely with the involved forester and PNF to mitigate the effects through the use of specialized vegetation clearing equipment and methods, which was in keeping with the PNF Standard Resources Protection Measures. The masticator proposed for use in the fuels reduction efforts at the three sites retained a 35–foot–long arm that could extend a grinding head well into the bounds of each site with the tracked machine parked outside the taped site boundaries. Neither the machines tracks, boom, or grinding head would come in contact with the ground surface and recorded archaeological materials. Since the Project would not disturb ground surface or archaeological materials at any of the three sites, adverse effects were avoided. Client: Plumas Corporation

▶ **2011–2012 – USDA Natural Resources Conservation Service Fuel Modification Projects, San Bernardino County**

The Natural Resources Conservation Service (NRCS), through an interagency agreement with the United States Forest Service, proposed to assist San Bernardino County with the treatment and removal of live and dead brush, dead, dying, and diseased trees of all sizes, and selective thinning of smaller diameter trees in order to reduce the threat of wildfires. As the fuel modification projects involved the utilization of federal funds and agencies, compliance with Section 106 of the NHPA was necessary. NRCS procured SAS (over two contracts) to conduct NEPA–level cultural inventories for 13 different properties throughout San Bernardino County. The properties included: Holcomb Valley, Los Rios Rancho, Mormon Rocks, Nuss Ranch, Oak Hills, Wildhorse Canyon, Wright Mountain Road, Baldy Mesa, Oak Hills, San Antonio, Waterman Canyon, Weesha, and West Cajon, and the inventories spanned over 4000 acres in varying landforms and vegetative zones. A total of 36 sites and 13 isolates were identified during the inventory process. SAS worked closely with NRCS to create avoidance measures to keep the sites safe during the fuels reduction process. Client: Natural Resources Conservation Service



Brian Ludwig, Ph.D.

Lead Principal Investigator – Cultural Resources

Summary of Qualifications

Dr. Ludwig has over 35 years of experience in the academic and cultural resources management fields and possesses a broad range of expertise in the implementation and management of technical investigations and programs for both the public and private sectors. He has conducted and overseen studies in accordance with national, state, and local preservation guidelines such as Section 106 of the National Historic Preservation Act, the California Environmental Quality Act, and Tahoe Regional Planning Agency standards. As Lead Principal Investigator for Solano Archaeological Services, Dr. Ludwig is responsible for client and agency outreach and collaboration, proposal development, personnel management, research, project management, and deliverable quality assurance and control.

Representative Experience

► **Bidwell Park Master Management Plan Update - City of Chico, Butte County, California**

Dr. Ludwig conducted cultural resource investigations including extensive documentary research, field reconnaissance, and Native American consultation in support of this substantial update of the City of Chico's Bidwell Park Master Management Plan. The 3,670-acre Bidwell Park is one of the largest municipal parks in the United States and is an important resource for the Chico residents. The park's many recreational opportunities draw visitors from throughout the region; it stretches over 10 miles, from the valley floor into the Sierra Nevada foothills, and serves as an important biological corridor between the mountains to the Sacramento River.

► **Feather and Bear River Levee Setback Project - County, California**

Dr. Ludwig led the cultural resources team in preparing a Land Acquisition and Management Plan (LAMP) addressing options for the treatment of lands within a levee setback area on the Bear River at the confluence with the Feather River and prepared an environmental impact report (EIR) on the levee setback, a key element of the Yuba-Feather Supplemental Flood Control Project. In response to the discovery of prehistoric archaeological remains and artifacts at two sites in the construction footprint, Dr. Ludwig directed archaeological site testing and reporting, including recovery and preservation of burials; coordinated with the pertinent Native American representatives, local authorities, and USACE archaeologists; used a geomorphic model as a predictor of where there is potential for the presence of subsurface archaeological deposits within the footprint of the setback levee; and facilitated discussions of treatment of the discovery sites.

► **U.S. Bureau of Land Management King Range National Conservation Area Resource Management Plan - Humboldt County, California**

Dr. Ludwig helped the BLM revise and update the resource management plan for the KRNCA Area and prepared the associated environmental impact statement (EIS). The area is nationally significant in that it contains one of the two most remote coastal regions in the lower 48 states. The planning effort was comprehensive, evaluating existing management plans and resolving or addressing issues within the KRNCA as

Length of Service

- 38 years in cultural resources management

Professional Focus

- Program development
- Project Management
- Research

Education

- BA, Anthropology, Montclair State University (1986)
- MA, Anthropology, Rutgers University (1992)
- Ph.D., Anthropology, Rutgers University (1999)

Professional Associations

- Society for California Archaeology
- Society of American Military Engineers
- Association of Environmental Professionals

Certifications

- Register of Professional Archaeologists
- Statewide BLM Principal Investigator: California, Nevada, Oregon, Washington
- OSHA 10/30 Safety Outreach Trainer 500/501



identified through agency, interagency, and public scoping efforts. Dr. Ludwig conducted a cultural resources overview of the KRNCA and recommended resource management procedures. Sites included coastal and inland prehistoric and historic locales.

▶ **Pit 1 Hydroelectric Relicensing Project - Shasta County, California**

This project included the inventory of a 7-mile stretch of the Pit River Canyon and several hundred acres near Pit 1 Forebay. Dr. Ludwig managed and directed all aspects of this project including the field survey, coordination with Native American community representatives, and the documentation and analysis of prehistoric and historic-era resources including lithic artifact scatters, prehistoric habitation and resource processing sites, and an early 20th century ranching complex.

▶ **Northern California Fiber Optic Program - Siskiyou and Modoc Counties, California**

Dr. Ludwig Managed the cultural resources component of this telecommunication services project in Siskiyou and Modoc counties. The proposed project would enhance the reliability of the telecommunications network by using high-quality, state of the art fiber optic technology and provide redundancy protection. Dr. Ludwig oversaw the intensive surveys of the over 140-mile project alignment, record searches at the CHRIS and USFS, and coordinated with numerous Native American tribal organizations.

▶ **AT&T Caltrans Right-of-Way Encroachment Geoarchaeological Project - Plumas and Sierra Counties, California**

AT&T proposed to replace aerial and buried telecommunications infrastructure located along a section of State Route (SR) 70 near the city of Portola in Plumas County, and SR 89 in the community of Sierraville in Sierra County, California. The right-of-way for the telecommunications infrastructure is located within California Department of Transportation and county road ROWs. A cultural resources investigation included background research, coordination and consultation with the Native American Heritage Commission and regional tribal organizations, an intensive field survey, and a subsequent geoarchaeological study. Dr. Ludwig directed and conducted all aspects of the project.

▶ **Lassen Volcanic National Park Archaeological Monitoring Projects - Lassen County, California**

Dr. Ludwig managed all aspects of a series of intensive archaeological monitoring efforts for the Lassen Volcanic National Park at the NRHP-listed Park headquarters and nearby facilities. The projects mainly consisted of the replacement and/or repair of water conveyance and storage systems many of which were constructed at the time of the headquarters establishment in the 1920s. Monitoring typically occurred on a short-notice basis according to weather constraints and construction schedules.

APPENDIX B



Native American Community Outreach

P.O. Box 367
Elmira, CA 95625



707-718-1416 ▲ Fax 707-451-4775
www.solanoarchaeology.com

October 15, 2021

Native American Heritage Commission
1550 Harbor Blvd., Suite 100
West Sacramento, CA 95691

Re: Copper Valley Development Project, Calaveras County, California

To Whom It May Concern:

CV Development Partners, Inc., has retained Solano Archaeological Services to conduct a Section 106-level cultural resources inventory of the approximately 41-acre Copper Valley Project parcel subject to residential and transportation infrastructure development (the Project). The project's Area of Potential Effects (APE) lies within the town of Copperopolis in Calaveras County, California, and is depicted on the *Copperopolis, California* topographic 7.5-minute quadrangle in Township 1 North, Range 12 East, sections 26, and 27. Please see the enclosed topographic map illustrating the project area location.

A cultural resources inventory will include archival research, outreach to the Native American community, and a pedestrian survey of the APE. To support this effort, we would like to request a Sacred Lands File (SLF) review for any known cultural properties or locations in or near the APE. We would also like to request a list of Native American individuals/organizations that may have knowledge of cultural resources in the project area, or that might have an interest in or concerns with the proposed Project. Please know that this request and any subsequent outreach with local tribal representatives is for Section 106 planning purposes only, and is not part of any SB-18 or AB-52 review.

Please email the results of the SLF review and a list of tribal contacts to Brian@solanoarchaeology.com. If you have any questions, feel free to contact me at the email provide above or by phone at 530-417-7007.

Sincerely,

A handwritten signature in blue ink that reads "Brian Ludwig".

Brian Ludwig
Principal Investigator

Enc. Project APE location map

NATIVE AMERICAN HERITAGE COMMISSION

November 8, 2021

Brian Ludwig
SAS

Submitted via Electronic Mail
Via Email to: @solanoarchaeology.com

Re: Copper Valley Development Project, Calaveras County.

Dear Mr. Ludwig:

A record search of the Native American Heritage Commission (NAHC) Sacred Lands File (SLF) was completed for the information you have submitted for the above referenced project. The results were negative. However, the absence of specific site information in the SLF does not indicate the absence of cultural resources in any project area. Other sources of cultural resources should also be contacted for information regarding known and recorded sites.

Attached is a list of Native American tribes who may also have knowledge of cultural resources in the project area. This list should provide a starting place in locating areas of potential adverse impact within the proposed project area. I suggest you contact all of those indicated; if they cannot supply information, they might recommend others with specific knowledge. By contacting all those listed, your organization will be better able to respond to claims of failure to consult with the appropriate tribe. If a response has not been received within two weeks of notification, the Commission requests that you follow-up with a telephone call or email to ensure that the project information has been received.

If you receive notification of change of addresses and phone numbers from tribes, please notify me. With your assistance, we can assure that our lists contain current information.

If you have any questions or need additional information, please contact me at my email address: katy.sanchez@nahc.ca.gov.

Sincerely,

Katy Sanchez
Associate Environmental Planner

Attachment



CHAIRPERSON
Laura Miranda
Luiseño

VICE CHAIRPERSON
Reginald Pagaling
Chumash

PARLIAMENTARIAN
Russell Attebery
Karuk

COMMISSIONER
William Mungary
Paiute/White Mountain
Apache

COMMISSIONER
Isaac Bojorquez
Ohlone-Costanoan

COMMISSIONER
Sara Dutschke
Miwok

COMMISSIONER
Buffy McQuillen
Yokayo Pomo, Yuki,
Nomlaki

COMMISSIONER
Wayne Nelson
Luiseño

COMMISSIONER
Stanley Rodriguez
Kumeyaay

EXECUTIVE SECRETARY
Christina Snider
Pomo

NAHC HEADQUARTERS
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nahc@nahc.ca.gov
NAHC.ca.gov

Native American Heritage Commission

Native American Contacts List

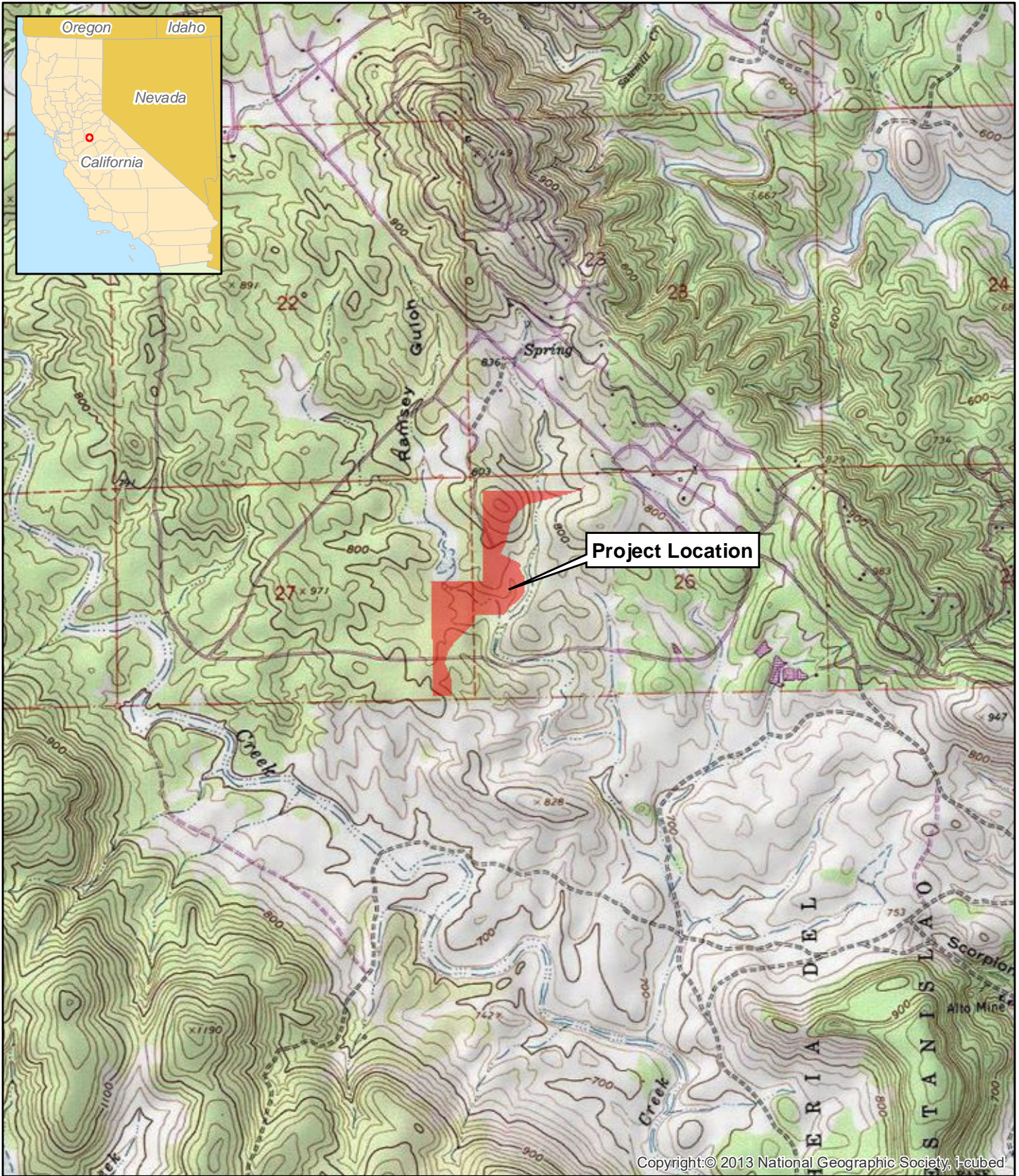
November 8, 2021

Calaveras Band of Mi-Wuk Indians Gloria Grimes, Chairperson P.O. Box 899 West Point CA 95255 Calaverasband.MiwukIndians@gmail.com (209) 419-5675	Mi-Wuk Miwok	Ione Band of Miwok Indians Sara A. Dutschke, Chairperson 9252 Bush Street Plymouth CA 95669 consultation@ionemiwok.net (209) 245-5800 (209) 256-9799	Miwok
Calaveras Band of Mi-Wuk Indians Chairperson 546 Bald Mountain Road West Point CA 95255 (209) 293-2189	Mi-Wuk	Nashville Enterprise Miwok-Maidu-Nishinam Tribe Cosme A. Valdez, Chairperson P.O. Box 580986 Elk Grove CA 95758-001 valdezcome@comcast.net (916) 429-8047 Voice/Fax (916) 396-1173 Cell	Miwok
California Valley Miwok Tribe 14807 Avenida Central La Grange CA 95329 (209) 931-4567 Office (209) 931-4333 Fax	Miwok	North Valley Yokuts Tribe Katherine Erolinda Perez, Chairperson P.O. Box 717 Linden CA 95236 canutes@verizon.net (209) 887-3415	Ohlone/Costanoan Northern Valley Yokuts Bay Miwok
California Valley Miwok Tribe AKA Sheep Rancheria of Me-Wuk Indians of Ca P.O. Box 395 West Point CA 95255 l.ewilson@yahoo.com (209) 293-4179 Office	Miwok	North Valley Yokuts Tribe Timothy Perez P.O. Box 717 Linden CA 95236 huskanam@gmail.com (209) 662-2788	Ohlone/Costanoan Northern Valley Yokuts Bay Miwok
Chicken Ranch Rancheria of Me-Wuk Indians Lloyd Mathiesen, Chairperson P.O. Box 1159 Jamestown CA 95327 lmathiesen@crtribal.com (209) 984-9066 (209) 984-9269	Miwok - Me-wuk	Tule River Indian Tribe Neil Peyron, Chairperson P.O. Box 589 Porterville CA 93258 neil.peyron@tulerivertribe-nsn.gov (559) 781-4271 (559) 781-4610 Fax	Yokuts

**Native American Heritage Commission
Native American Contacts List
November 8, 2021**

Wuksache Indian Tribe/Eshom Valley Band
Kenneth Woodrow, Chairperson
1179 Rock Haven Ct.
Salinas CA 93906
kwood8934@aol.com
(831) 443-9702

Foothill Yokuts
Mono
Wuksache



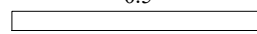
Copyright: © 2013 National Geographic Society, I-cubed

Project Location Map

1:24,000

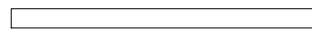
 Copper Valley Project APE

0.5

 Miles

T01N, R12E, Sections 26 and 27.
Copperopolis 7.5' Series Quadrangles, USGS, 1963.

1

 Kilometers





November 10, 2021

Timothy Perez
North Valley Yokuts Tribe
P.O. Box 717
Linden, CA 95236

Re: Copper Valley Development Project, Copperopolis, Calaveras County, California

Dear Mr. Perez:

CV Development Partners, Inc., has retained Solano Archaeological Services to conduct a Section 106-level cultural resources inventory of the approximately 41-acre Copper Valley Project parcel subject to residential and transportation infrastructure development (the Project). The project's Area of Potential Effects (APE) lies within the town of Copperopolis in Calaveras County, California, and is depicted on the *Copperopolis, California* topographic 7.5-minute quadrangle in Township 1 North, Range 12 East, sections 26, and 27. Please see the enclosed topographic map illustrating the Project APE location.

We would like to ask if you could provide any information on presently undocumented Native American cultural properties within or in the vicinity of the APE. Any input or recommendations you could provide for the Project would be greatly appreciated. This request is for Section 106 planning purposes, and is not part of any CEQA, SB-18 or AB-52 review. For your information, the Native American Heritage Commission Sacred Lands File record search indicates that no documented culturally significant properties have been recorded in or near the project area.

If you have any questions or if you require any additional information, please feel free to contact me at your convenience. I can be reached via phone at 530-417-7007 or if you prefer by email at Brian@solanoarchaeology.com

Sincerely,

A handwritten signature in blue ink that reads "Brian Ludwig".

Brian Ludwig, Ph.D.
Principal Investigator

Enc. Project location map



November 10, 2021

California Valley Miwok Tribe
Sheep Ranch Rancheria of Me-Wuk Indians of California
P.O. Box 395
West Point, CA 95255

Re: Copper Valley Development Project, Copperopolis, Calaveras County, California

To Whom it May Concern:

CV Development Partners, Inc., has retained Solano Archaeological Services to conduct a Section 106-level cultural resources inventory of the approximately 41-acre Copper Valley Project parcel subject to residential and transportation infrastructure development (the Project). The project's Area of Potential Effects (APE) lies within the town of Copperopolis in Calaveras County, California, and is depicted on the *Copperopolis, California* topographic 7.5-minute quadrangle in Township 1 North, Range 12 East, sections 26, and 27. Please see the enclosed topographic map illustrating the Project APE location.

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Sincerely,

Brian Ludwig, Ph.D.
Principal Investigator

Enc. Project location map



November 10, 2021

Sara Dutschke
Ione Band of Miwok Indians
9252 Bush St.
Plymouth, CA 95669

Re: Copper Valley Development Project, Copperopolis, Calaveras County, California

Dear Ms. Dutschke:

CV Development Partners, Inc., has retained Solano Archaeological Services to conduct a Section 106-level cultural resources inventory of the approximately 41-acre Copper Valley Project parcel subject to residential and transportation infrastructure development (the Project). The project's Area of Potential Effects (APE) lies within the town of Copperopolis in Calaveras County, California, and is depicted on the *Copperopolis, California* topographic 7.5-minute quadrangle in Township 1 North, Range 12 East, sections 26, and 27. Please see the enclosed topographic map illustrating the Project APE location.

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Sincerely,

Brian Ludwig, Ph.D.
Principal Investigator

Enc. Project location map



November 10, 2021

Neil Peyron
Tule River Indian Tribe
P.O. Box 589
Porterville, CA 93258

Re: Copper Valley Development Project, Copperopolis, Calaveras County, California

Dear Mr. Peyron:

CV Development Partners, Inc., has retained Solano Archaeological Services to conduct a Section 106-level cultural resources inventory of the approximately 41-acre Copper Valley Project parcel subject to residential and transportation infrastructure development (the Project). The project's Area of Potential Effects (APE) lies within the town of Copperopolis in Calaveras County, California, and is depicted on the *Copperopolis, California* topographic 7.5-minute quadrangle in Township 1 North, Range 12 East, sections 26, and 27. Please see the enclosed topographic map illustrating the Project APE location.

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Sincerely,

A handwritten signature in blue ink that reads "Brian Ludwig".

Brian Ludwig, Ph.D.
Principal Investigator

Enc. Project location map



November 10, 2021

Lloyd Mathiesen
Chicken Ranch Rancheria of Me-Wuk Indians
P.O. Box 1159
Jamestown, CA 95327

Re: Copper Valley Development Project, Copperopolis, Calaveras County, California

Dear Mr. Mathiesen:

CV Development Partners, Inc., has retained Solano Archaeological Services to conduct a Section 106-level cultural resources inventory of the approximately 41-acre Copper Valley Project parcel subject to residential and transportation infrastructure development (the Project). The project's Area of Potential Effects (APE) lies within the town of Copperopolis in Calaveras County, California, and is depicted on the *Copperopolis, California* topographic 7.5-minute quadrangle in Township 1 North, Range 12 East, sections 26, and 27. Please see the enclosed topographic map illustrating the Project APE location.

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Sincerely,

A handwritten signature in blue ink that reads "Brian Ludwig".

Brian Ludwig, Ph.D.
Principal Investigator

Enc. Project location map



November 10, 2021

Kenneth Woodrow
Wuksache Indian Tribe/Eshom Valley Band
1179 Rock Haven Ct.
Salinas, CA 93906

Re: Copper Valley Development Project, Copperopolis, Calaveras County, California

Dear Mr. Woodrow:

CV Development Partners, Inc., has retained Solano Archaeological Services to conduct a Section 106-level cultural resources inventory of the approximately 41-acre Copper Valley Project parcel subject to residential and transportation infrastructure development (the Project). The project's Area of Potential Effects (APE) lies within the town of Copperopolis in Calaveras County, California, and is depicted on the *Copperopolis, California* topographic 7.5-minute quadrangle in Township 1 North, Range 12 East, sections 26, and 27. Please see the enclosed topographic map illustrating the Project APE location.

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Sincerely,

A handwritten signature in blue ink that reads "Brian Ludwig".

Brian Ludwig, Ph.D.
Principal Investigator

Enc. Project location map



November 10, 2021

Katherine Perez
North Valley Yokuts Tribe
P.O. Box 717
Linden, CA 95236

Re: Copper Valley Development Project, Copperopolis, Calaveras County, California

Dear Ms. Perez:

CV Development Partners, Inc., has retained Solano Archaeological Services to conduct a Section 106-level cultural resources inventory of the approximately 41-acre Copper Valley Project parcel subject to residential and transportation infrastructure development (the Project). The project's Area of Potential Effects (APE) lies within the town of Copperopolis in Calaveras County, California, and is depicted on the *Copperopolis, California* topographic 7.5-minute quadrangle in Township 1 North, Range 12 East, sections 26, and 27. Please see the enclosed topographic map illustrating the Project APE location.

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Sincerely,

A handwritten signature in blue ink that reads "Brian Ludwig".

Brian Ludwig, Ph.D.
Principal Investigator

Enc. Project location map



November 10, 2021

Gloria Grimes
California Band of Mi-Wuk Indians
P.O. Box 899
West Point, CA 95255

Re: Copper Valley Development Project, Copperopolis, Calaveras County, California

Dear Ms. Grimes:

CV Development Partners, Inc., has retained Solano Archaeological Services to conduct a Section 106-level cultural resources inventory of the approximately 41-acre Copper Valley Project parcel subject to residential and transportation infrastructure development (the Project). The project's Area of Potential Effects (APE) lies within the town of Copperopolis in Calaveras County, California, and is depicted on the *Copperopolis, California* topographic 7.5-minute quadrangle in Township 1 North, Range 12 East, sections 26, and 27. Please see the enclosed topographic map illustrating the Project APE location.

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Sincerely,

Brian Ludwig, Ph.D.
Principal Investigator

Enc. Project location map



November 10, 2021

Cosme Valdez
Nashville Enterprise Miwok-Maidu-Nishinam Tribe
P.O. Box 580986
Elk Grove, CA 95758

Re: Copper Valley Development Project, Copperopolis, Calaveras County, California

Dear Mr. Valdez:

CV Development Partners, Inc., has retained Solano Archaeological Services to conduct a Section 106-level cultural resources inventory of the approximately 41-acre Copper Valley Project parcel subject to residential and transportation infrastructure development (the Project). The project's Area of Potential Effects (APE) lies within the town of Copperopolis in Calaveras County, California, and is depicted on the *Copperopolis, California* topographic 7.5-minute quadrangle in Township 1 North, Range 12 East, sections 26, and 27. Please see the enclosed topographic map illustrating the Project APE location.

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Sincerely,

A handwritten signature in blue ink that reads "Brian Ludwig".

Brian Ludwig, Ph.D.
Principal Investigator

Enc. Project location map



November 10, 2021

Calaveras Band of Mi-Wuk Indians
546 Bald Mountain Road
West Point, CA 95255

Re: Copper Valley Development Project, Copperopolis, Calaveras County, California

To Whom it May Concern:

CV Development Partners, Inc., has retained Solano Archaeological Services to conduct a Section 106-level cultural resources inventory of the approximately 41-acre Copper Valley Project parcel subject to residential and transportation infrastructure development (the Project). The project's Area of Potential Effects (APE) lies within the town of Copperopolis in Calaveras County, California, and is depicted on the *Copperopolis, California* topographic 7.5-minute quadrangle in Township 1 North, Range 12 East, sections 26, and 27. Please see the enclosed topographic map illustrating the Project APE location.

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Sincerely,

Brian Ludwig, Ph.D.
Principal Investigator

Enc. Project location map



November 10, 2021

California Valley Miwok Tribe
14807 Avenida Centra
La Grange, CA 95329

Re: Copper Valley Development Project, Copperopolis, Calaveras County, California

To Whom it May Concern:

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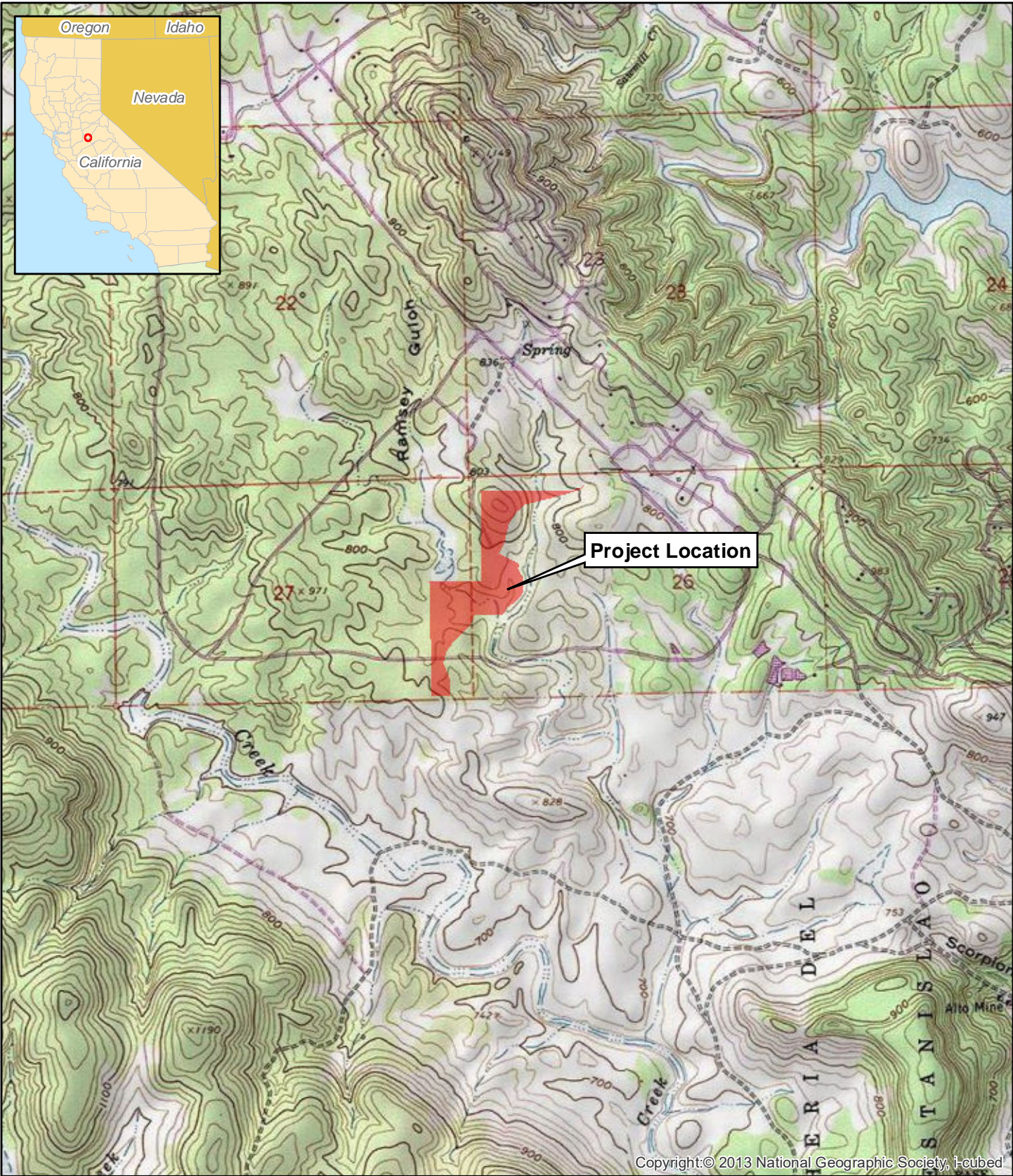
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Sincerely,

Brian Ludwig, Ph.D.
Principal Investigator

Enc. Project location map

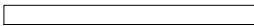


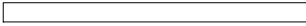
Project APE Location Map.

 **Copper Valley Project APE**

T01N, R12E, Sections 26 and 27.
Copperopolis 7.5' Series Quadrangles, USGS, 1963.

1:24,000

0.5  Miles

1  Kilometers



**NATIVE AMERICAN CONSULTATION LOG FOR
COPPER VALLEY DEVELOPMENT PROJECT,
CALAVERAS COUNTY, CALIFORNIA**

SAS Contact: Brian Ludwig, Ph.D.

Native American Consultant	Date of Correspondence	Responses
Calaveras Band of Mi-Wuk Indians Gloria Grimes, Chair	11-10-2021	SAS mailed out project introduction letters and maps depicting the APE.
	11-17-2021	Follow-up phone call - left message
	11-22-2021	Email Follow-up.
Calaveras Band of Mi-Wuk Indians	11-10-2021	SAS mailed out project introduction letters and maps depicting the APE.
	11-17-2021	Follow-up phone call - left message
	11-22-2021	Email Follow-up.
California Valley Miwok Tribe	11-10-2021	SAS mailed out project introduction letters and maps depicting the APE.
	11-17-2021	Follow-up phone call - left message
	11-22-2021	Email Follow-up.
California Valley Miwok Tribe - Sheep Rancheria of Me-Wuk Indians of California	11-10-2021	SAS mailed out project introduction letters and maps depicting the APE.
	11-17-2021	Follow-up phone call - left message
	11-22-2021	Email Follow-up.
Chicken Ranch Rancheria of Me-Wuk Indians Lloyd Mathiesen, Chair	11-10-2021	SAS mailed out project introduction letters and maps depicting the APE.
	11-18-2021	Follow-up phone call - no answer
	11-22-2021	Email Follow-up.
Ione Band of Miwok Indians Sara A. Dutschke, Chair	11-10-2021	SAS mailed out project introduction letters and maps depicting the APE.
	11-18-2021	Follow-up phone call - left message
	11-22-2021	Email Follow-up.
Nashville Enterprise Miwok-Maidu-Nishinam Tribe, Cosme A. Valdez, Chair	11-10-2021	SAS mailed out project introduction letters and maps depicting the APE.
	11-18-2021	Follow-up phone call - left message
	11-22-2021	Email Follow-up.
North Valley Yokuts Tribe Katherine Perez, Chair	11-10-2021	SAS mailed out project introduction letters and maps depicting the APE.
	11-18-2021	Follow-up phone call - left message

**NATIVE AMERICAN CONSULTATION LOG FOR
COPPER VALLEY DEVELOPMENT PROJECT,
CALAVERAS COUNTY, CALIFORNIA**

SAS Contact: Brian Ludwig, Ph.D.

	11-22-2021	Email Follow-up.
North Valley Yokuts Tribe Timothy Perez	11-10-2021	SAS mailed out project introduction letters and maps depicting the APE.
	11-18-2021	Follow-up phone call - left message
	11-22-2021	Email Follow-up.
Tule River Indian Tribe Neil Peyron, Chair	11-10-2021	SAS mailed out project introduction letters and maps depicting the APE.
	11-18-2021	Follow-up phone call - left message
	11-22-2021	Email Follow-up.
Wuksache Indian Tribe/Eshom Valley Band, Kenneth Woodrow, Chair	11-10-2021	SAS mailed out project introduction letters and maps depicting the APE.
	11-18-2021	Follow-up phone call - left message
	11-22-2021	Email Follow-up.

APPENDIX C



CCIC Record Search Results



CENTRAL CALIFORNIA INFORMATION CENTER

California Historical Resources Information System
Department of Anthropology – California State University, Stanislaus
One University Circle, Turlock, California 95382
(209) 667-3307

Alpine, Calaveras, Mariposa, Merced, San Joaquin, Stanislaus & Tuolumne Counties

Date: 10/18/2021

Records Search File No.: 11949J

Project: Copper Valley Project

Brian Ludwig

Solano Archaeological Services LLC

P.O. Box 367

Elmira, CA 95625 brian@solanoarchaeology.com

530-417-7007

Billing email/phone:

jason@solanoarchaeology.com

707-718-1416

Dear Dr. Ludwig:

The Central California Information Center received your record search request for the project area referenced above, located on the Copperopolis 7.5' quadrangle in Calaveras County. The following reflects the results of the records search for the project study area and radius:

As per data currently available at the CCalC, the locations of resources/reports are provided in the following format: custom GIS maps GIS Data/shape files hand-drawn maps

Summary Data:

Resources within the project area:	None formally reported to the Information Center.
Resources within the 1/2-mile radius:	12: P-05-000081, 82, 922, 1670, 1671, 1672, 2358, 2360, 2361, 3358, 3359, 3371
Reports within the project area:	None formally reported to the Information Center.
Reports within the 1/2-mile radius:	12: CA-00117, 121, 383, 446, 2521, 2861, 3568, 4206, 5974, 5592, 6678, 7476

Resource Database Printout (list):

enclosed not requested nothing listed

Resource Database Printout (details):

enclosed not requested nothing listed

Resource Digital Database Records:

enclosed not requested nothing listed

Report Database Printout (list):

enclosed not requested nothing listed

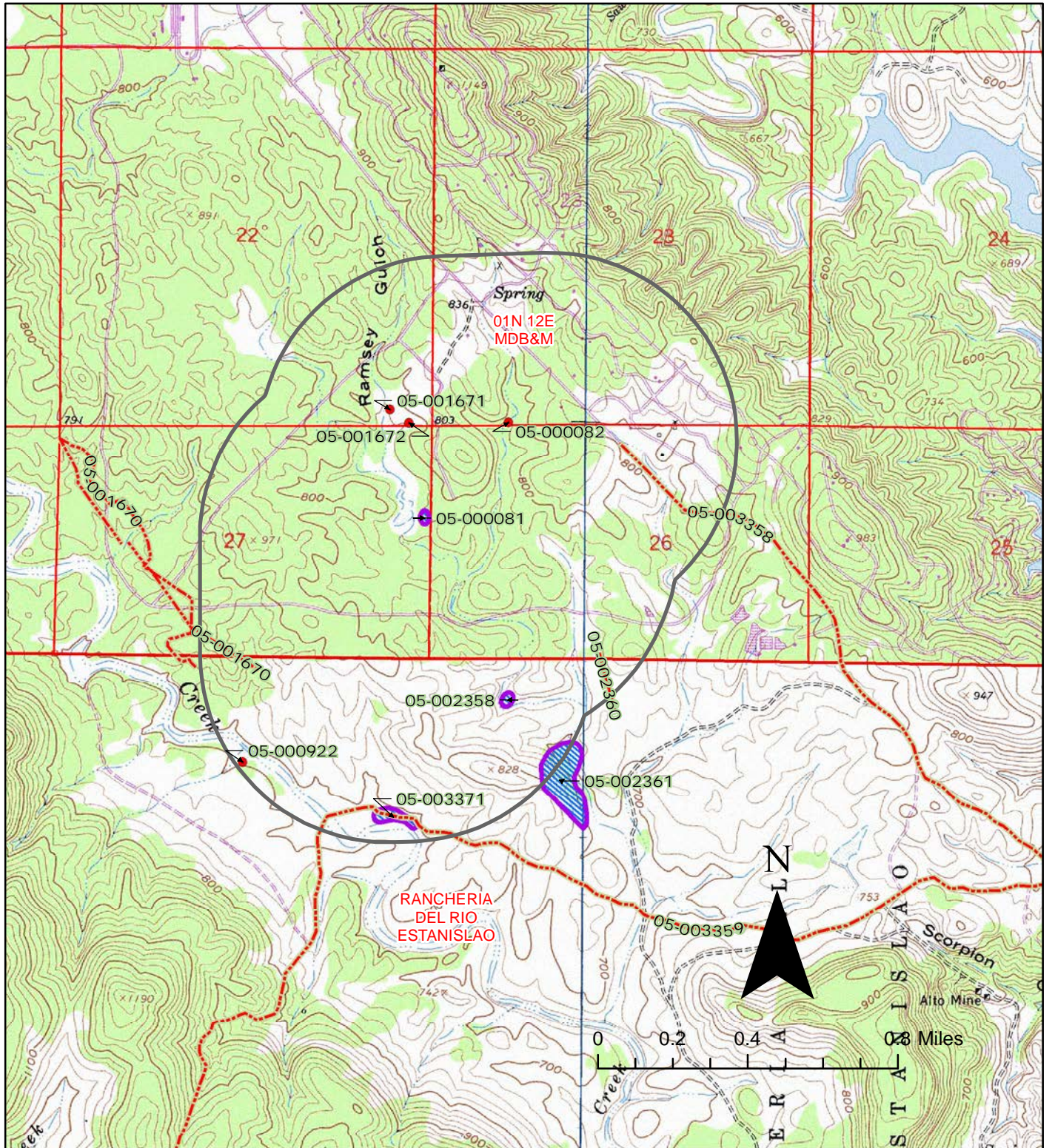
Report Database Printout (details):

enclosed not requested nothing listed

Report Digital Database Records:

enclosed not requested nothing listed

CCaIC 11949J Copper Valley Project Resources 1/2-mile radius 1:24,000-scale Copperopolis 7.5' Quadrangle



Resource Detail: P-05-000081

Identifying information

Primary No.: P-05-000081

Trinomial:

Name: Iso-2

Other IDs:	Type	Name
	Resource Name	Iso-2
	Other	CAL-I-56

Cross-refs:

Attributes

Resource type: Other

Age: Historic

Information base: Survey

Attribute codes: AH16 (Other) - Isolates (suggestive hammer use)

Disclosure:

Collections:

Accession no(s):

Facility:

General notes

Recording events

Date	Recorder(s)	Affiliation	Notes
9/4/1991	Suzanne Stewart	Archaeological Services, Inc.	

Associated reports

Report No.	Year	Title	Affiliation
CA-01446	1991	A Cultural Resources Study for the Bank of San Francisco Copperopolis Project, Calaveras County, California.	Archaeological Services, Inc.

Location information

County: Calaveras

USGS quad(s): Copperopolis

Address:

PLSS: T1N R12E NE¼ of NE¼ of Sec. 27 MDBM

UTMs: Zone 10 708070mE 4198610mN NAD27

Management status

Database record metadata

Date	User
------	------

Entered: 9/30/2013

Last modified: 3/2/2015 Anthro

IC actions:	Date	User	Action taken
-------------	------	------	--------------

	9/30/2013	jay	Added placeholder records to fill in primary number sequence.
--	-----------	-----	---

	3/2/2015	Anthro	I.R
--	----------	--------	-----

Record status:

Resource Detail: P-05-000082

Identifying information

Primary No.: P-05-000082

Trinomial:

Name: Iso-3

Other IDs:	Type	Name
	Resource Name	Iso-3
	Other	CAL-I-57

Cross-refs:

Attributes

Resource type: Other

Age: Historic

Information base: Survey

Attribute codes: AH16 (Other) - flake tool

Disclosure:

Collections:

Accession no(s):

Facility:

General notes

Recording events

Date	Recorder(s)	Affiliation	Notes
9/1/1991	Suzanne Stewart and Mark Byars	Archaeological Services, Inc.	

Associated reports

Report No.	Year	Title	Affiliation
CA-01446	1991	A Cultural Resources Study for the Bank of San Francisco Copperopolis Project, Calaveras County, California.	Archaeological Services, Inc.

Location information

County: Calaveras

USGS quad(s): Copperopolis

Address:

PLSS: T1N R12E SW¼ of SW¼ of Sec. 23 MDBM

UTMs: Zone 10 708500mE 4199000mN NAD27

Management status

Database record metadata

Date	User	Action taken
Entered: 9/30/2013		
Last modified: 3/2/2015	Anthro	
IC actions: Date	User	Action taken
9/30/2013	jay	Added placeholder records to fill in primary number sequence.
3/2/2015	Anthro	I.R

Record status:

Resource Detail: P-05-000922

Identifying information

Primary No.: P-05-000922

Trinomial: CA-CAL-000603

Name: CA-CAL-0603

Other IDs:	Type	Name
	Other	TEMP #20
	Resource Name	CA-CAL-0603

Cross-refs:

Attributes

Resource type: Site

Age: Prehistoric

Information base: Survey

Attribute codes: AP04 (Bedrock milling feature) - Bedrock milling feature

Disclosure:

Collections:

Accession no(s):

Facility:

General notes

Recording events

Date	Recorder(s)	Affiliation	Notes
3/1/1977	Dennis Candini		

Associated reports

Location information

County: Calaveras

USGS quad(s): Copperopolis

Address:

PLSS: T1N R12E Sec. 0 MDBM

UTMs: Zone 10 707350mE 4197525mN NAD27

Management status

Database record metadata

Date	User	Action taken
Entered: 5/9/2011	jay	
Last modified: 3/2/2015	Anthro	
IC actions: Date	User	Action taken
5/9/2011	jay	Appended records from old OHP database.
3/2/2015	Anthro	I.R

Record status:

Resource Detail: P-05-001670

Identifying information

Primary No.: P-05-001670

Trinomial: CA-CAL-001359H

Name: RMS-15 Truitt's Segment

Other IDs: Type	Name
Resource Name	RMS-15 Truitt's Segment
Other	CA-CAL-1359H
Other	Pipeline and Truett's Ditch
Other	CS26H
Other	Field Site

Cross-refs: See also 05-003135

Attributes

Resource type: Site

Age: Historic

Information base: Survey

Attribute codes: AH06 (Water conveyance system) - Water conveyance system; AH16 (Other)

Disclosure: Not for publication

Collections:

Accession no(s):

Facility:

General notes

Recording events

Date	Recorder(s)	Affiliation	Notes
9/5/1991	STEWART, MORAN	Archaeological Services, Inc.	
10/12/2006	L. Thorpe, J. Marvin	Foothill Resources, Ltd.	
1/28/1999	M.Meyer	Anthropological Studies Center Sonoma State University	
1/26/2001	J. W. Dougherty, J. Barton		

Associated reports

Report No.	Year	Title	Affiliation
CA-01446	1991	A Cultural Resources Study for the Bank of San Francisco Copperopolis Project, Calaveras County, California.	Archaeological Services, Inc.
CA-02521	1992	A Cultural Resources Study of The Proposed Calaveras County Country Club Project Near Copperopolis, Calaveras County, California, For Haas and Hanie Corporation	ASI
CA-02861	1995	Cultural Resources Study, Calaveras Country Club Specific Plan, County of Calaveras, California, National Register Assessments.	ASI Archaeology and Cultural Resource Management
CA-03770	1999	Archaeological Survey Report for Proposed Road Rehabilitation on California State Highway 4, From East of Farmington to West of Altaville, San Joaquin, Stanislaus, and Calaveras Counties, California: SJ/STA/CAL-4, KP 59.4/30.8, PM 36.9/19.	Anthropological Studies Center, Sonoma State University; for Caltrans District 10
CA-06678	2008	Cultural Resource Survey and Evaluation for the Tuscany Hills Project, Lake Tulloch, Calaveras County	Far Western Anthropological Group, Inc./ Foothill Resources
CA-07476	2008	Draft: Historic Properties Treatment Plan for the Tuscany Hills Project, Lake Tulloch, Calaveras County	Foothill Resources Ltd. And Far Western Anthropological Res.
SJ-03770	1999	Archaeological Survey Report for Proposed Road Rehabilitation on California State Highway 4, From East of Farmington to West	Anthropological Studies Center, Sonoma State University.

Resource Detail: P-05-001670

of Altaville, San Joaquin, Stanislaus, and Calaveras Counties, California. SJ/STA/CAL-4, KP 59.4/30.8, PM 36.9/19

ST-03770 1999 Archaeological Survey Report for Proposed Road Rehabilitation on California State Highway 4, from East of Farmington to West of Altaville, San Joaquin, Stanislaus, and Calaveras Counties, California. SJ/STA/CAL-4, KP 59.4/30.8 (PM 36.9/19.1) Sonoma State University Academic Foundation, Inc. for Caltrans

Location information

County: Calaveras

USGS quad(s): Copperopolis

Address:

PLSS: T1N R12E NE of SW of Sec. 27 MDBM
T1N R12E SE¼ of SE¼ of Sec. 5 MDBM

UTMs: Zone 10 706500mE 4198890mN NAD27
Zone 10 706585mE 4198920mN NAD27
Zone 10 707080mE 4197910mN NAD27
Zone 10 707350mE 4197960mN NAD27
Zone 10 704520mE 4203780mN NAD27
Zone 10 710089mE 4197041mN NAD27
Zone 10 710164mE 4196980mN NAD27

Management status

Database record metadata

<i>Date</i>	<i>User</i>	
<i>Entered:</i> 5/9/2011	jay	
<i>Last modified:</i> 4/23/2015	Anthro	
<i>IC actions:</i> <i>Date</i>	<i>User</i>	<i>Action taken</i>
5/9/2011	jay	Appended records from old OHP database.
3/2/2015	Anthro	I.R

Record status:

Resource Detail: P-05-001671

Identifying information

Primary No.: P-05-001671

Trinomial: CA-CAL-001360

Name: Field Site 6 Ramsey Milling Station

Other IDs: Type Name

Resource Name Field Site 6 Ramsey Milling Station

Cross-refs:

Attributes

Resource type: Site

Age: Prehistoric

Information base: Survey

Attribute codes: AP04 (Bedrock milling feature) - Bedrock milling feature

Disclosure:

Collections:

Accession no(s):

Facility:

General notes

Recording events

Date	Recorder(s)	Affiliation	Notes
8/14/1991	S. Stewart, S. Moran	Archaeological Services, Inc.	

Associated reports

Report No.	Year	Title	Affiliation
CA-01446	1991	A Cultural Resources Study for the Bank of San Francisco Copperopolis Project, Calaveras County, California.	Archaeological Services, Inc.
CA-02521	1992	A Cultural Resources Study of The Proposed Calaveras County Country Club Project Near Copperopolis, Calaveras County, California, For Haas and Hanie Corporation	ASI
CA-02861	1995	Cultural Resources Study, Calaveras Country Club Specific Plan, County of Calaveras, California, National Register Assessments.	ASI Archaeology and Cultural Resource Management

Location information

County: Calaveras

USGS quad(s): Copperopolis

Address:

PLSS: T1N R12E SE of SE of Sec. 22 MDBM

UTMs: Zone 10 707940mE 4199025mN NAD27

Management status

Database record metadata

Date	User	Action taken
Entered: 5/9/2011	jay	
Last modified: 3/2/2015	Anthro	
IC actions: Date	User	Action taken
5/9/2011	jay	Appended records from old OHP database.
3/2/2015	Anthro	I.R

Record status:

Resource Detail: P-05-001672

Identifying information

Primary No.: P-05-001672

Trinomial: CA-CAL-001361H

Name: Field Site #7: Little Oaks Oven

Other IDs: Type Name

Resource Name Field Site #7: Little Oaks Oven

Cross-refs:

Attributes

Resource type: Site, Other

Age: Historic

Information base: Survey

Attribute codes: AH16 (Other) - shovel head

Disclosure:

Collections:

Accession no(s):

Facility:

General notes

Recording events

Date	Recorder(s)	Affiliation	Notes
9/4/1991	S. Stewart, S. Moran	Archaeological Services, Inc.	

Associated reports

Report No.	Year	Title	Affiliation
CA-01446	1991	A Cultural Resources Study for the Bank of San Francisco Copperopolis Project, Calaveras County, California.	Archaeological Services, Inc.
CA-02521	1992	A Cultural Resources Study of The Proposed Calaveras County Country Club Project Near Copperopolis, Calaveras County, California, For Haas and Hanie Corporation	ASI
CA-02861	1995	Cultural Resources Study, Calaveras Country Club Specific Plan, County of Calaveras, California, National Register Assessments.	ASI Archaeology and Cultural Resource Management

Location information

County: Calaveras

USGS quad(s): Copperopolis

Address:

PLSS: T1N R12E SE of SE of Sec. 22 MDBM

UTMs: Zone 10 708040mE 4190000mN NAD27

Management status

Database record metadata

Date	User	Action taken
Entered: 5/9/2011	jay	
Last modified: 3/2/2015	Anthro	
IC actions: Date	User	Action taken
5/9/2011	jay	Appended records from old OHP database.
3/2/2015	Anthro	I.R

Record status:

Resource Detail: P-05-002358

Identifying information

Primary No.: P-05-002358

Trinomial: CA-CAL-001866

Name: RMS-12

Other IDs: Type	Name
Other	MULTI-CONSTITUENT OCCUPATION SITE
Resource Name	RMS-12

Cross-refs:

Attributes

Resource type: Site

Age: Prehistoric

Information base: Survey

Attribute codes: AH04 (Privies/dumps/trash scatters) - midden; AP02 (Lithic scatter) - Lithic scatter; AP04 (Bedrock milling feature) - Bedrock milling features

Disclosure: Not for publication

Collections: No

Accession no(s):

Facility:

General notes

Recording events

Date	Recorder(s)	Affiliation	Notes
5/3/2007	Far Western Anthropological Research Group	Far Western Anthropological Research Group	
1/25/2001	J. Dougherty, J. Barton, T. Bakic, M. McIvers	PAR Environmental Services	

Associated reports

Report No.	Year	Title	Affiliation
CA-04206	2001	Cultural Resource Inventory of the Proposed Red Mountain Development, Calaveras County, California, Final Report	PAR Environmental Services, Inc.
CA-06678	2008	Cultural Resource Survey and Evaluation for the Tuscany Hills Project, Lake Tulloch, Calaveras County	Far Western Anthropological Group, Inc./ Foothill Resources
CA-07476	2008	Draft: Historic Properties Treatment Plan for the Tuscany Hills Project, Lake Tulloch, Calaveras County	Foothill Resources Ltd. And Far Western Anthropological Res.
CA-09089	2019	2017 Mokelumne Ethnographic Study and Re-Evaluation, Amador and Calaveras Counties, California; Mokelumne River Canyon Archaeological District Item 2, Subitem 6: Final Report; USDA Contract Number AG-9JGP-C-17-0063, Stanislaus	Far Western Anthropological Research Group, Inc. for Eldorado National Forest, Amador Ranger District

Location information

County: Calaveras

USGS quad(s): Copperopolis

Address:

PLSS: T1N R12E Sec. MDBM

UTMs: Zone 10 708488mE 4197842mN NAD83

Management status

Resource Detail: P-05-002358

Database record metadata

<i>Date</i>	<i>User</i>	
<i>Entered:</i> 5/9/2011	jay	
<i>Last modified:</i> 3/3/2015	Anthro	
<i>IC actions:</i> <i>Date</i>	<i>User</i>	<i>Action taken</i>
5/9/2011	jay	Appended records from old OHP database.
3/3/2015	Anthro	I.R

Record status:

Resource Detail: P-05-002360

Identifying information

Primary No.: P-05-002360

Trinomial: CA-CAL-001868H

Name: RMS-14 Old O'Byrnes Ferry Road Segment

Other IDs: Type Name

Resource Name RMS-14 Old O'Byrnes Ferry Road Segment

Cross-refs:

Attributes

Resource type: Site

Age: Historic

Information base: Survey

Attribute codes: AH07 (Roads/trails/railroad grades) - Roads/trails/railroad grades

Disclosure: Not for publication

Collections:

Accession no(s):

Facility:

General notes

Recording events

Date	Recorder(s)	Affiliation	Notes
10/12/2006	L. Thorpe, J. Costello, J. Marvin	Foothill Resources, Ltd.	
1/26/2001	J. Dougherty, J. Barton, T. Bakic, K. Mclvers	PAR Environmental Services	

Associated reports

Report No.	Year	Title	Affiliation
CA-04206	2001	Cultural Resource Inventory of the Proposed Red Mountain Development, Calaveras County, California, Final Report	PAR Environmental Services, Inc.
CA-06678	2008	Cultural Resource Survey and Evaluation for the Tuscany Hills Project, Lake Tulloch, Calaveras County	Far Western Anthropological Group, Inc./ Foothill Resources
CA-07476	2008	Draft: Historic Properties Treatment Plan for the Tuscany Hills Project, Lake Tulloch, Calaveras County	Foothill Resources Ltd. And Far Western Anthropological Res.

Location information

County: Calaveras

USGS quad(s): Melones Dam

Address:

PLSS: T1N R12E Sec. MDBM

UTMs: Zone 10 708860mE 4198005mN NAD27

Zone 10 708942mE 4197800mN NAD27

Management status

Database record metadata

Date	User	Action taken
Entered: 5/9/2011	jay	
Last modified: 4/29/2015	Anthro	
IC actions: Date	User	Action taken
5/9/2011	jay	Appended records from old OHP database.
10/2/2013	jay	Fixed error in county per CCIC (was entered as Alpine)
4/29/2015	Anthro	IR

Resource Detail: P-05-002360

Record status:

Resource Detail: P-05-002361

Identifying information

Primary No.: P-05-002361

Trinomial:

Name: RMS-16 Ramsey Gulch Placer Mining

Other IDs: Type	Name
Other	RAMSEY GULCH PLACER MINING
Resource Name	RMS-16 Ramsey Gulch Placer Mining
Other	RMS-16

Cross-refs:

Attributes

Resource type: Site

Age: Historic

Information base: Survey

Attribute codes: AH06 (Water conveyance system) - Water conveyance system; AH09 (Mines/quarries/tailings) - Mines/quarries/tailings

Disclosure: Not for publication

Collections:

Accession no(s):

Facility:

General notes

Recording events

Date	Recorder(s)	Affiliation	Notes
10/12/2006	L. Thorpe, J. Costello, J. Marvin	Foothill Resources, Ltd.	

Associated reports

Report No.	Year	Title	Affiliation
CA-04206	2001	Cultural Resource Inventory of the Proposed Red Mountain Development, Calaveras County, California, Final Report	PAR Environmental Services, Inc.
CA-06678	2008	Cultural Resource Survey and Evaluation for the Tuscany Hills Project, Lake Tulloch, Calaveras County	Far Western Anthropological Group, Inc./ Foothill Resources

Location information

County: Calaveras

USGS quad(s): Copperopolis

Address:

PLSS: T1N R12E Sec. MDBM

UTMs: Zone 10 709125mE 4197240mN NAD27 (A)
Zone 10 708790mE 4197560mN NAD27 (B)
Zone 10 708630mE 4197525mN NAD27
Zone 10 708640mE 4197400mN NAD27
Zone 10 708860mE 4197260mN NAD27
Zone 10 708940mE 4197940mN NAD27 (C)
Zone 10 709100mE 4197480mN NAD27 (D)
Zone 10 709580mE 4197210mN NAD27 (E)
Zone 10 709710mE 4197425mN NAD27 (F)
Zone 10 709100mE 4197480mN NAD27

Management status

Resource Detail: P-05-002361

Database record metadata

<i>Date</i>	<i>User</i>	
<i>Entered:</i> 5/9/2011	jay	
<i>Last modified:</i> 3/3/2015	Anthro	
<i>IC actions:</i> <i>Date</i>	<i>User</i>	<i>Action taken</i>
5/9/2011	jay	Appended records from old OHP database.
3/3/2015	Anthro	I.R

Record status:

Resource Detail: P-05-003358

Identifying information

Primary No.: P-05-003358

Trinomial: CA-CAL-002047H

Name: UPPER ROAD TO O'BYRNES FERRY; TH-2

Other IDs:	Type	Name
	Resource Name	UPPER ROAD TO O'BYRNES FERRY
	Resource Name	TH-2

Cross-refs:

Attributes

Resource type: Site

Age: Historic

Information base: Survey

Attribute codes: AH07 (Roads/trails/railroad grades) - Road

Disclosure: Unrestricted

Collections:

Accession no(s):

Facility:

General notes

Recording events

Date	Recorder(s)	Affiliation	Notes
10/12/2006	Judith Marvin	Foothill Resources, Ltd.	

Associated reports

Report No.	Year	Title	Affiliation
CA-06678	2008	Cultural Resource Survey and Evaluation for the Tuscany Hills Project, Lake Tulloch, Calaveras County	Far Western Anthropological Group, Inc./ Foothill Resources
CA-07476	2008	Draft: Historic Properties Treatment Plan for the Tuscany Hills Project, Lake Tulloch, Calaveras County	Foothill Resources Ltd. And Far Western Anthropological Res.
CA-09179	2019	Letter Report: Lift Station 12 & 13, Force Main Bypass and Lift Station 6, 8, 15, & 18, Renovations (District CIP #151076 / #15080) [Copper Cover Lift Stations]	Patrick GIS Group, Inc. for Augustine Planning Associates

Location information

County: Calaveras

USGS quad(s): Melones Dam

Address:

PLSS: T1N R12E Sec. MDBM

UTMs: Zone 10 709902mE 4198024mN NAD27 (Point C (North end))

Zone 10 711937mE 4196702mN NAD27 (Point D (South end))

Management status

Database record metadata

Date	User	Action taken
Entered: 5/9/2011	jay	
Last modified: 7/8/2020	egreathouse	
IC actions: Date	User	Action taken
5/9/2011	jay	Appended records from old OHP database.
10/2/2013	jay	Fixed error in county per CCIC (was entered as Alpine)
5/1/2015	Anthro	IR
7/8/2020	egreathouse	eg

Resource Detail: P-05-003358

Record status:

Resource Detail: P-05-003359

Identifying information

Primary No.: P-05-003359

Trinomial: CA-CAL-002048H

Name: TH-3

Other IDs: Type	Name
Other	SMITH FLAT OF O'BYRNES FERRY ROAD
Resource Name	TH-3

Cross-refs:

Attributes

Resource type: Site

Age: Historic

Information base: Survey

Attribute codes: AH07 (Roads/trails/railroad grades) - Road

Disclosure: Unrestricted

Collections:

Accession no(s):

Facility:

General notes

Recording events

Date	Recorder(s)	Affiliation	Notes
10/12/2006	Judith Marvin	Foothill Resources, Ltd.	

Associated reports

Report No.	Year	Title	Affiliation
CA-06678	2008	Cultural Resource Survey and Evaluation for the Tuscany Hills Project, Lake Tulloch, Calaveras County	Far Western Anthropological Group, Inc./ Foothill Resources
CA-07476	2008	Draft: Historic Properties Treatment Plan for the Tuscany Hills Project, Lake Tulloch, Calaveras County	Foothill Resources Ltd. And Far Western Anthropological Res.

Location information

County: Calaveras

USGS quad(s): Copperopolis, Melones Dam

Address:

PLSS: T1N R12E Sec. MDBM

UTMs: Zone 10 710884mE 4197138mN NAD27 (Point A)

Zone 10 709673mE 4196734mN NAD27 (Point D)

Management status

Database record metadata

Date	User	Action taken
Entered: 5/9/2011	jay	
Last modified: 5/1/2015	Anthro	
IC actions: Date	User	Action taken
5/9/2011	jay	Appended records from old OHP database.
10/2/2013	jay	Fixed error in county per CCIC (was entered as Alpine)
5/1/2015	Anthro	IR

Record status:

Resource Detail: P-05-003371

Identifying information

Primary No.: P-05-003371

Trinomial: CA-CAL-002058

Name: Littlejohn Site

Other IDs:	Type	Name
	Other	LITHIC SCATTER
	Resource Name	Littlejohn Site

Cross-refs:

Attributes

Resource type: Site

Age: Prehistoric

Information base: Survey

Attribute codes: AP11 (Hearths/pits) - Hearths/pits

Disclosure: Not for publication

Collections: Yes

Accession no(s):

Facility:

General notes

Recording events

Date	Recorder(s)	Affiliation	Notes
3/11/2007	Jack Meyer	Far Western	

Associated reports

Report No.	Year	Title	Affiliation
CA-06678	2008	Cultural Resource Survey and Evaluation for the Tuscany Hills Project, Lake Tulloch, Calaveras County	Far Western Anthropological Group, Inc./ Foothill Resources
CA-07476	2008	Draft: Historic Properties Treatment Plan for the Tuscany Hills Project, Lake Tulloch, Calaveras County	Foothill Resources Ltd. And Far Western Anthropological Res.

Location information

County: Calaveras

USGS quad(s): Copperopolis

Address:

PLSS:

UTMs: Zone 10 707934mE 4197315mN NAD27

Management status

Database record metadata

Date	User	Action taken
Entered: 5/9/2011	jay	
Last modified: 3/9/2015	Anthro	
IC actions: Date	User	Action taken
5/9/2011	jay	Appended records from old OHP database.
3/9/2015	Anthro	I.R

Record status:

Report List

Report No.	Other IDs	Year	Author(s)	Title	Affiliation	Resources
CA-00117	NADB-R - 1360164	1988	Davis-King, S.	Cultural Resource Survey for the Copper Cove Effluent Disposal Pond	Foothill Resource Associates	
CA-00121	NADB-R - 1360168	1990	Davis-King, S. and J. Cunningham	Black Creek Estates and Golf Resort, Cultural Resources Reconnaissance.	Foothill Resource Associates	
CA-00383	NADB-R - 1360797	1988	Werner, R.	A Cultural Resources Investigation of the Proposed Alto Mining Project, Copperopolis, Calaveras County, California.	Archaeological Services, Inc.	
CA-01446	NADB-R - 1360770	1991	Stewart, S. B.	A Cultural Resources Study for the Bank of San Francisco Copperopolis Project, Calaveras County, California.	Archaeological Services, Inc.	05-000079, 05-000080, 05-000081, 05-000082, 05-000924, 05-001666, 05-001667, 05-001668, 05-001669, 05-001670, 05-001671, 05-001672
CA-02521	NADB-R - 1362143	1992	Werner, Roger H.	A Cultural Resources Study of The Proposed Calaveras County Country Club Project Near Copperopolis, Calaveras County, California, For Haas and Hanie Corporation	ASI	05-001666, 05-001667, 05-001668, 05-001669, 05-001670, 05-001671, 05-001672
CA-02861	NADB-R - 1362228	1995	Dougherty, J. W., R. H. Werner, and J. Marvin	Cultural Resources Study, Calaveras Country Club Specific Plan, County of Calaveras, California, National Register Assessments.	ASI Archaeology and Cultural Resource Management	05-001666, 05-001667, 05-001668, 05-001669, 05-001670, 05-001671, 05-001672
CA-03568	NADB-R - 1363251	1999	Costello, Julia G.	Archaeological Survey of Copper Cove Wastewater Reclamation Plant Site, Calaveras County Water District.	Foothill Resources, Limited	
CA-04206	NADB-R - 1364094	2001	PAR Environmental Services, Inc.	Cultural Resource Inventory of the Proposed Red Mountain Development, Calaveras County, California, Final Report	PAR Environmental Services, Inc.	02-002359, 05-002347, 05-002348, 05-002349, 05-002350, 05-002351, 05-002352, 05-002353, 05-002354, 05-002355, 05-002356, 05-002357, 05-002358, 05-002360, 05-002361, 05-002362
CA-05974	NADB-R - 1365943	2005	Werner, R., R. P. Hampson, and J. M. Flaherty	A Cultural Resources Investigation of the Proposed Black Creek Ranch Subdivision, Near Copper Cover, Calaveras County, CA	ASI	05-003248, 05-003249, 05-003250, 05-003251, 05-003252, 05-003253, 05-003254, 05-003255, 05-003256, 05-003257, 05-003258, 05-003259, 05-003260, 05-003261, 05-003262, 05-003263, 05-003264, 05-003265, 05-003266, 05-003267, 05-003268, 05-003269, 05-003270, 05-003271, 05-003272, 05-003273, 05-003274
CA-06592	NADB-R - 1366782	2004	Werner, R.	ASI Archaeology & Cultural Resources Management Re: Sanguinetti Property, Copperopolis-Cultural Resources	ASI	05-001154, 05-002379, 05-002384, 05-002385, 05-002387, 05-002391, 05-002405, 05-002406

Report List

Report No.	Other IDs	Year	Author(s)	Title	Affiliation	Resources
CA-06678	NADB-R - 1366927	2008	Rosenthal, J., J. Meyer, J. Costello, and J. Marvin	Cultural Resource Survey and Evaluation for the Tuscany Hills Project, Lake Tulloch, Calaveras County	Far Western Anthropological Group, Inc./ Foothill Resources	02-002359, 05-001670, 05-002347, 05-002348, 05-002349, 05-002350, 05-002351, 05-002352, 05-002353, 05-002354, 05-002355, 05-002356, 05-002357, 05-002358, 05-002360, 05-002361, 05-002362, 05-002375, 05-002376, 05-002377, 05-002383, 05-002389, 05-002390, 05-002407, 05-002408, 05-003357, 05-003358, 05-003359, 05-003369, 05-003370, 05-003371
CA-07476	NADB-R - 1367865	2008	Costello, J., P. Mikkelsen, J. Rosenthal, and S. Waechter	Draft: Historic Properties Treatment Plan for the Tuscany Hills Project, Lake Tulloch, Calaveras County	Foothill Resources Ltd. And Far Western Anthropological Res.	02-002359, 05-001670, 05-002347, 05-002348, 05-002349, 05-002350, 05-002351, 05-002352, 05-002353, 05-002354, 05-002355, 05-002356, 05-002357, 05-002358, 05-002360, 05-002362, 05-002375, 05-002376, 05-002377, 05-002383, 05-002389, 05-002390, 05-002407, 05-002408, 05-003357, 05-003358, 05-003359, 05-003369, 05-003370, 05-003371

Resource Record Copies: enclosed not requested nothing listed

Report Copies: enclosed not requested nothing listed

OHP Historic Properties Directory: New Excel File: Built Environment Resource Directory (BERD) Dated 12/17/2019 enclosed not requested nothing listed

Archaeological Determinations of Eligibility: enclosed not requested nothing listed

CA Inventory of Historic Resources (1976): enclosed not requested nothing listed

Caltrans Bridge Survey: enclosed not requested nothing listed

Ethnographic Information: enclosed not requested nothing listed

Historical Literature: enclosed not requested nothing listed

Historical Maps: enclosed not requested nothing listed

Local Inventories: enclosed not requested nothing listed

GLO and/or Rancho Plat Maps: enclosed not requested nothing listed

Shipwreck Inventory: not available at CCIC; please go to
http://shipwrecks.slc.ca.gov/ShipwrecksDatabase/Shipwrecks_Database.asp

Soil Survey Maps: not available at CCIC; please go to
<http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx>

Please forward a copy of any resulting reports from this project to the office as soon as possible. Due to the sensitive nature of archaeological site location data, we ask that you do not include resource location maps and resource location descriptions in your report if the report is for public distribution. If you have any questions regarding the results presented herein, please contact the office at the phone number listed above.

The provision of CHRIS Data via this records search response does not in any way constitute public disclosure of records otherwise exempt from disclosure under the California Public Records Act or any other law, including, but not limited to, records related to archeological site information maintained by or on behalf of, or in the possession of, the State of California, Department of Parks and Recreation, State Historic Preservation Officer, Office of Historic Preservation, or the State Historical Resources Commission.

Due to processing delays and other factors, not all of the historical resource reports and resource records that have been submitted to the Office of Historic Preservation are available via this records search. Additional information may be available through the federal, state, and local agencies that produced or paid for historical resource management work in the search area. Additionally, Native American tribes have historical resource information not in the CHRIS Inventory, and you should contact the California Native American Heritage Commission for information on local/regional tribal contacts.

Should you require any additional information for the above referenced project, reference the record search number listed above when making inquiries. Requests made after initial invoicing will result in the preparation of a separate invoice.

Thank you for using the California Historical Resources Information System (CHRIS).

Note: Billing will be transmitted separately via email by our Financial Services office *(\$303.00), payable within 60 days of receipt of the invoice.

If you wish to include payment by Credit Card, you must wait to receive the official invoice from Financial Services so that you can reference the CMP # (Invoice Number), and then contact the link below:

<https://commerce.cashnet.com/ANTHROPOLOGY>

Sincerely,

E. A. Greathouse

E. A. Greathouse, Coordinator
Central California Information Center
California Historical Resources Information System

* Invoice Request sent to: ARBilling@csustan.edu, CSU Stanislaus Financial Services

Appendix C – Tribal Consultation Communications

Appendix D – Geotechnical Evaluation

**GEOTECHNICAL ENGINEERING STUDY
SOUTH FLINT TRAIL EXTENSION PROJECT
COPPEROPOLIS, CALAVERAS COUNTY, CALIFORNIA**

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November 11, 2022
Condor Project No. 7975J

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1.0 INTRODUCTION

1.1 GENERAL

This report includes the results of a Geotechnical Engineering Study (GES) for the proposed South Flint Trail Extension located in Copperopolis, Calaveras County, California. The general location of the site is shown on Figure 1 – Vicinity Map, and Figure 2 – Site Map with Test Pit Locations, Appendix A. The project Site is designated by Calaveras County Assessor’s Parcel Numbers (APNs) 055-051-059, and 055-051-008. This GES is intended to meet the requirements of 2019 California Building Code (CBC) and Caltrans Pavement Design Methodology.

1.2 PROJECT DESCRIPTION

Condor understands the South Flint Trail Extension roadway is planned south from the intersection of Flint Trail and Little John Road through undeveloped areas and an ephemeral creek crossing east of Copper Valley Golf Course. It intersects Oak Creek Drive at a location just east of the golf course, then continues southward approximately ½ mile again through undeveloped areas and an ephemeral creek crossing. Based on project drawings by Triad Homes Associates dated February 14, 2022, the planned right-of-way is 64-feet and roadway cuts range up to 16 feet and fills up to 12 feet. Excavations for underground utilities are not anticipated to exceed 3 to 5 feet below final roadway subgrade. Appurtenant construction will include driveways, culvert crossings, concrete headwalls, and underground utilities.

2.0 PURPOSE AND SCOPE

This GES was performed to 1) characterize geotechnical conditions at the Site; 2) identify geotechnical or geologic conditions that might impact design or construction of the Site; 3) provide geotechnical recommendations to mitigate geotechnical constraints to the Site; and 4) provide geotechnical criteria for design of project excavation and grading, foundations, retaining walls, and pavement recommendations. Condor completed the following work for this GES:

1. Reviewed available maps and documents relevant to the site geology, seismic setting, and geotechnical conditions.
2. Explored subsurface conditions by means of nine (9) test pits performed to depths ranging from approximately 3 feet to 16 feet below the existing ground surface. The test pit locations are shown on Figure 2 – Site Map with Test Pit Locations, Appendix A. The test pit logs are in Appendix B.
3. Selected samples recovered from the subsurface exploration were tested in our laboratory to measure their pertinent engineering and index properties. The tests included grain size analysis and resistance “R” value tests (R-Value). What about corrosion? Laboratory test results are in Appendix C.
4. Analyzed the findings from the exploration and limited laboratory testing to develop geotechnical recommendations for:
 - a) General earthwork, including site stripping, subgrade preparation, temporary excavations, permanent slopes, trench backfill, import fill, compaction criteria, and site surface drainage;
 - b) Retaining wall foundation design and construction feasibility, including foundation type, and allowable bearing capacities, lateral resistance, settlement, and foundation depth;



- c) 2019 California Building Code (CBC) seismic design criteria;
 - d) Potential geologic and seismic hazards and recommendations for mitigation;
 - e) Concrete slabs and exterior flatwork;
 - f) Lateral earth pressures and retaining wall design criteria; and
 - g) Design and construction of asphalt pavement areas
5. Prepared this written report summarizing our findings, conclusions, and geotechnical recommendations.

3.0 SITE DESCRIPTION

The project occurs at the base of the Sierra Nevada Mountains in the Sierra Nevada Geologic Province at elevations ranging from 700 to 800 feet above mean sea level. Oak-woodland vegetation of native grasses and live oak trees cover rolling hills with natural slopes ranging up to 15 percent (<9 degrees). Two ephemeral stream crossings of Waters of US are planned; from north to south, the first is unnamed and the second is Ramsey Gulch.

4.0 GEOLOGIC AND SEISMIC SETTING

4.1 REGIONAL GEOLOGY

The project site lies within the Sierra Nevada Geomorphic Province of California. The basement rock in much of Calaveras County consists of steeply dipping metamorphic rock of Paleozoic and Mesozoic age that has been intruded by the Mesozoic granitic plutons of the Sierra Nevada Batholith. Locally, the basement rock is nonconformably overlain by the eroded remnants of younger Tertiary age continental volcanic and sedimentary rock. Tectonic uplift and westward tilting of the Sierra Nevada range began during the late Cenozoic in response to a change in regional plate-boundary motions. Much of the Tertiary rock overlying the basement rock was eroded as uplift of the range progressed. The Sierra Nevada range was further eroded during the last two million years by several episodes of glaciation that exposed the basement rock throughout the higher elevations and generated extensive sedimentary deposits in the Great Central Valley to the west. The geologic processes of tectonic uplift and erosion continue to act on the Sierra Nevada Mountains.

4.2 SITE GEOLOGY

The regional geologic map, *San Francisco-San Jose Quadrangle, California*, (Wagner, et. al., 1991) indicates that the site is underlain by Jurassic age Salt Springs Slate and Merced Falls Slate characterized by slate, metagraywacke and conglomerate. Our investigation encountered phyllite rock throughout the planned alignment. Phyllite is a low-grade metasedimentary rock similar to slate that has experienced a greater degree of metamorphism. The geologic distribution in the vicinity of the site is shown on Figure 3 – Geologic Map, Appendix A.

4.3 FAULTING AND REGIONAL SEISMICITY

The site is not located in a Fault-Rupture Hazard Zone as established by the Alquist-Priolo Earthquake Fault Zoning Act (Hart, 1994), therefore, ground rupture from faulting is not considered a significant hazard. Nevertheless, the site is near several moderately active faults within the Foothills fault system capable of generating strong earthquakes as shown on Figure 4 - Regional Fault Map, Appendix A.

4.4 NATURALLY OCCURRING ASBESTOS

Ultramafic rocks are mapped in the vicinity of the project site are shown on Figure 5 - Ultramafic Rock Map, Appendix A, and the site is in an area of known ultramafic rock that may contain naturally occurring



asbestos. However, no ultramafic rocks were observed in outcrops or test pits at the site and Condor concludes that the risk of hazards from naturally occurring asbestos for the project is very low. No additional evaluation or mitigation for naturally occurring asbestos is required.

5.0 SUBSURFACE CONDITIONS

5.1 TEST PIT EXPLORATION

On August 20th, 2022, Condor explored subsurface conditions at the site by means of nine (9) exploratory test pits (TP-1 through TP-9) at locations shown on Figure 2. The test pits were excavated by DRM Construction using a Doosan DX255LC excavator with 4-foot-wide bucket and 3-foot-long ripper attached to the bucket. Locations were selected based on areas of maximum fill and/ or cut shown on project drawings by Triad Homes Assoc., dated February 14, 2022 (Job No. 01.2683.2). Field locations were selected as near to the road centerline as feasible based on existing field stationing. Excavation depths ranged from 3 to 16 feet below existing surface grade.

The subsurface materials were classified according to the ASTM-International D 2488, Unified Soil Classification System, and applicable rock classification system. The contacts shown on the test pit logs are approximated based on field observations and measurements. The actual boundaries between different materials may be gradual and soil conditions may vary between the test pit locations. Representative samples were tested for sieve analysis and R-Value. The test pits were backfilled with excavated material and loosely compacted with the excavation equipment, and the ground surface graded to near original conditions. The test pit logs are in Appendix B. Laboratory test reports are in Appendix C.

5.2 EARTH MATERIALS

The subsurface investigations revealed competent native bedrock along the entire alignment at depths ranging from 3 to 4 inches to 2 feet below natural grade. The depth to bedrock was shallowest on hillsides and greatest near low-lying areas adjacent to Waters of the US. No excavation refusal was encountered in any of the test pits; however, a 3-foot ripper was typically used to extend excavations below 6 feet. Based on our review of available grading plans and our estimated test pit locations, test pits TP-4 and TP-5 were excavated to the planned roadway finish grade depth of 16 and 15 feet, respectively.

Our investigation revealed the bedrock is overlain on hillsides by 3 to 6 inches of residual soil (sandy lean clay, CL) and by alluvium in low-lying areas near Waters of the US. No artificial fill was encountered in any test pit but should be expected where the alignment intersects Little John Road and crosses Oak Creek Drive. The materials encountered in the subsurface are discussed as they occur from depth to the ground surface.

The bedrock is phyllite that exhibits a blocky structure with well-developed planar fractures generally about 1 to 6 inches apart that are tight to moderately open and oriented northwest and dipping near vertical. The rock is very weak with low to moderate hardness and weathering ranges from slightly to high. Alluvial soils up to 2 feet thick are present adjacent to ephemeral creek crossings. We field classified the alluvium as dry, dense, clayey sand with gravel (SC) in TP-2 and TP-3 excavated adjacent to the unnamed ephemeral stream near the north end of the project. In TP-6 and TP-7, dry, hard, sandy lean clay with gravel (CL) was present in the excavations adjacent to Ramsey Gulch.

5.3 LOCAL GROUNDWATER CONDITIONS

At the time of our field investigation, groundwater was not encountered. Moisture did increase at and immediately below the soil/bedrock contact; however, the increased moisture is likely from lower permeable bedrock causing vadose water to 'perch' at and immediately below the soil/ bedrock contact.



Perched water in the subsurface may be encountered after periods of precipitation and along ephemeral stream alignments.

6.0 SEISMIC CONSIDERATIONS

6.1 GROUND SHAKING

Based on review of geologic maps of the area, and our interpretation of relatively thin soil veneer over native bedrock, we recommend classifying the Site as CBC Site Class C for very dense soil and soft rock. The results for the general seismic analysis are summarized below and provided in Appendix D. We recommend the following values for structural design according to the 2019 CBC. These values are based on $S_s=0.392$; $S_1=0.196$; $F_a = 1.3$; and $F_v = 1.5$.

Site Modified Spectral Acceleration Values

S_{MS} 0.51

S_{M1} 0.294

Design Spectral Acceleration

S_{DS} 0.34

S_{D1} 0.196

6.2 LIQUEFACTION POTENTIAL

No potentially liquefiable deposits were identified, and groundwater is not anticipated within 50 feet of the ground surface; therefore, the risk from liquefaction is considered non-existent.

7.0 CONCLUSIONS AND RECOMMENDATIONS

7.1 GENERAL

Based on our findings, it is our professional opinion that development of the project Site should be suitable from a geotechnical standpoint for construction provided the recommendations contained herein are incorporated into the project design. Given the site conditions encountered, we conclude that conventional grading for roadway construction, construction utilities and culverts, and ancillary improvements that may include spread footings and slab-on-grade foundations supported on engineered fill or cut exposing native soils and/or bedrock should provide adequate support for the anticipated structural loading. Some minor surficial grading and removal of loose surface soils near waters of the US will be required prior to construction of engineered fill for roadway construction. The primary geotechnical considerations from a development standpoint are as follows:

- The potential for encountering resistant bedrock during mass grading in deep roadway cuts (greater than 5 feet). We anticipate the need for heaving equipment designed to rip the anticipated bedrock.
- The potential of encountering resistant bedrock during trench excavations in bedrock for placement of deep culverts in cut ground.
- Stripping the existing soils near waters of the US during wet periods, winter, or early spring.

Specific conclusions and recommendations addressing these geotechnical considerations, as well as general recommendations regarding the geotechnical aspects of design and construction, are in the following sections.



7.2 GRADING AND EARTHWORK RECOMMENDATIONS

All grading and site work should be performed in accordance with applicable sections of the 2019 CBC, Title 24, Chapter 33 (Safeguards During Construction Construction), Appendix J (Grading), Chapter 17 (Special Inspections and Tests), and Chapter 18 (Soils and Foundations), and with the recommendations of the Geotechnical Engineer of Record during construction. In addition, the agency of record will typically have internal grading requirements and standard details for many of the anticipated improvements. These may include Calaveras County Water District, Calaveras County Public Works Department, and Copper Valley Community Services District. Most public districts will default to Caltrans Standard Specifications for grading, paving, and materials. Where the recommendations of this report and the applicable agency standards are in conflict, the client should request clarification from the Geotechnical Engineer of Record. The recommendations of this report should not be waived without the consent of the Geotechnical Engineer of Record for the project. Recommendations for additional work and construction monitoring are contained in later sections of this report.

7.2.1 Clearing and Grubbing

At the time of our field investigation, the majority of the proposed roadway alignment was covered with vegetation consisting of grass along with scattered, and some clustered, oak trees. Based on that observation, removal of the existing organic grass and plant material will be minimal to moderate to prepare the site for the proposed site improvements, except in areas that require full tree removal. Areas with trees should have all root systems removed.

Areas proposed to receive engineered fill, pavements, buildings, and other permanent structural improvements should commence with the removal of root systems, vegetation and the stripping of organic soil where present. Removal of vegetation should extend a minimum of 5 feet beyond the limits of the proposed improvements (including buildings, hardscapes, and paving). Removal of any organic matter to a depth of at least 1 to 12 inches may be required. Any organic-laden material free from debris may be stockpiled for later use in non-structural areas where approved by the owner, but such material should not be used for engineered fill.

Non-engineered fill that may be present within the limits of grading should be identified and excavated to expose firm natural ground. This includes backfill in Condor test pits located within areas to be graded and covered with engineered fill.

Although not anticipated, it is possible that buried objects may exist onsite in areas not explored or in the existing fill areas. Because buried objects are not anticipated, Condor should be notified immediately for additional consultation if encountered. All excavations resulting from removal activities should be cleaned of loose or disturbed material and dish-shaped with sides sloped 3H:IV or flatter, to permit access of compaction equipment. These excavations should be backfilled with engineered fill.

7.2.2 Subgrade Preparation

After overexcavation has been achieved in all areas to support engineered fill, structures and pavements, the exposed subgrade should be scarified to a depth of 6 inches, uniformly moisture conditioned, and compacted to achieve a minimum relative compaction of 90 percent of the ASTM D1557 maximum dry density. Native subgrade soils composed of loose soil or native highly weathered bedrock should be uniformly moisture conditioned to between 2 and 4 percentage points above the optimum moisture content. Field density tests should be taken to verify compaction of the prepared subgrade in these areas. Where subgrades beneath improvements consist of hard rock, subgrade preparation should consist of removing loose debris from the ground surface. Soft or wet soils should be removed where encountered to expose firm, unyielding subgrade.



7.2.3 Engineered Fill Materials

Engineered fill used for the project should be either 1) select import engineered fill, or 2) general on-site soils with less than 3 percent organic content.

Select import engineered fill should be inorganic, have an R-value of at least 40, a liquid limit less than 30, and a plastic index less than 7. In addition, select import engineered fill should meet the following particle-size gradation:

Sieve Opening	Percent Passing, by Dry Weight
6-inch square	100
4-inch square	90
3/4-inch square	70 minimum
U.S. No. 4	60 minimum
U.S. No. 200	50 maximum

Fill material that does not meet the above criteria should be tested under the direction of the Geotechnical Engineer of Record to determine if it has engineering properties equivalent to, or better than, the existing site materials. Samples of any proposed imported fill material should be submitted to the Laboratory of Record for testing and approved by the Geotechnical Engineer of Record prior to being brought to the site.

General on-site engineered fill should be inorganic, contain no rocks greater than 4-inches in dimension, and be free of deleterious materials. Soils containing more than 3 percent by weight of organic material should be considered organic. Our subsurface data and laboratory test data indicate that the near-surface native soil encountered in the test pits generally meets the criteria for import engineered fill.

Based on the results of our test pits, we anticipate that excavated bedrock will generally meet the requirements of engineered fill except where the excavated bedrock requires processing to meet the requirements particle size gradation requirements.

7.2.4 Engineered Fill Placement

Engineered fill should be placed in a series of horizontal layers not exceeding 8 inches in loose thickness, uniformly moisture-conditioned, and compacted to achieve a minimum relative compaction of 90 percent of the ASTM D1557 maximum dry density, or Caltrans Method 216. Fill soils composed of excavated bedrock, sands, silty sands, and non-plastic silts should be uniformly moisture conditioned to between 1 and 3 percentage points above the optimum moisture content. Additional fill lifts should not be placed if the previous lift did not meet the required relative compaction or if soil conditions are not stable. The upper 24 inches of pavement subgrades should be compacted to at least 95 percent relative compaction by the CAL 216 test procedure.

7.2.5 Excavations

Excavations will typically encounter existing native soils and native weathered bedrock. These materials can be excavated with conventional earthmoving equipment in most cases. Areas consisting of existing cuts 2 to 3 feet below pre-graded ground may be difficult to excavate with a conventional backhoe and may require specialty equipment. We anticipate that temporary excavations less than 5 feet deep and a minimum of 3 feet above groundwater or seeps may be cut as steep as 1/2H:1V (horizontal to vertical). Deeper cuts should be considered on a case-by-case basis due to variable conditions. All open cuts should be in compliance with applicable Occupational Safety Health Administration (OSHA) regulations (California



Construction Safety Orders, Title 8) and should be monitored for evidence of incipient instability. The final inclination of both permanent cut and permanent fill slopes should be made no steeper than 2H:1V.

7.3 UNDERGROUND UTILITY TRENCHES

Unless concrete bedding is required around utilities, pipe bedding should consist of sand with a sand equivalent of at least 30 or the pipe manufacturer's requirements, or permitting agency standards, whichever is more restrictive. The pipe bedding should extend from 6 inches below the invert of the pipe to 1 foot above the crown of the pipe. The pipe bedding material should be compacted to a minimum of 90 percent relative compaction or the manufacturer's recommendations if more stringent.

Trench backfills above the pipe bedding zone should be placed in the same manner as required in Section 11.2, Grading and Earthwork Recommendations. On-site fill soils and "non-organic" native soils may be used as backfill in trenches above the pipe bedding. Utility trench backfill should be placed in layers not exceeding a loose lift thickness of 8 inches, uniformly moisture conditioned, and compacted to a minimum of 90 percent relative compaction.

Compaction criteria for trench backfill above the bedding zone may be decreased to 85 percent relative compaction in landscape areas that are at least 5 feet beyond structural improvements, except in areas overlain by pavements, sidewalks, or other hardscapes. In landscape areas overlain by pavements, sidewalks, or other hardscapes, we recommend that the trench backfill be compacted to a minimum of 90 percent relative compaction.

7.4 SURFACE DRAINAGE CONTROL

Surface drainage should be planned to prevent ponding and to enable water to drain away from building foundations, slabs, edges of pavements, and retaining walls toward suitable collection or discharge facilities. A positive surface drainage of at least 5 percent should be provided within 10 feet of all building foundations. Elsewhere, positive surface drainage of at least 2 percent is recommended to allow for rapid removal of surface water. Pavements should also be designed with minimum gradients of about 2 percent in their principal direction of drainage, unless drainage reaches are short. Roof drainage systems should be planned to direct rainwater away from building foundations. A detailed drainage plan is outside the scope of this report but should be included in the preparation of the grading plans for the project.

8.0 RETAINING WALLS

8.1 GENERAL FOUNDATION RECOMMENDATIONS FOR RETAINING WALLS

All foundation improvements should be designed and constructed in accordance with the 2019 CBC, Title 24, Chapter 17 (Structural Tests and Special Inspections), Chapter 18 (Soil and Foundations), and all other sections applicable to the proposed structural improvements. Further evaluation of the project site should be conducted to provide specific foundation recommendations not addressed in this report.

8.2 SPREAD FOOTING FOUNDATIONS

The proposed construction may include retaining walls for head walls or other site improvements, and minor structures with relatively light loading. These structures may be supported on shallow, reinforced concrete spread footings founded on undisturbed, native weathered bedrock or engineered fill. Continuous and isolated spread footings should have minimum widths of 12 and 24 inches, respectively. Footings should be embedded at least 18 inches below the lowest final adjacent subgrade. Should highly resistant bedrock be encountered across the entire building footprint, the minimum embedment depth may be reduced to 6 inches following approval of the Geotechnical Engineer. Footings



supported on engineered fill and highly weathered bedrock may be designed using a net allowable bearing pressure of 3,000 pounds per square foot (psf) for dead plus sustained live loading. The net allowable bearing pressure may be increased to 4,000 psf (dead-plus-live) if footings are supported on moderately- or slightly weathered bedrock upon approval of the Geotechnical Engineer on a case-by-case basis. A one-third increase in the allowable bearing pressures may be applied when considering short-term loading due to wind or seismic forces.

Total settlement of an individual foundation will vary depending on the plan dimensions of the foundation and the actual load supported. Based on the assumed foundation dimensions and loads, we estimate maximum total and differential foundation settlements should be on the order of 1 inch and ½ inch or less, respectively.

Prior to placing steel or concrete, footing excavations should be cleaned of all debris, loose or soft soil, and water. All footing excavations should be observed by the project Geotechnical Engineer just prior to placing steel or concrete to confirm the recommendations contained herein are implemented during construction.

8.3 LATERAL RESISTANCE OF SPREAD FOOTING FOUNDATIONS

Resistance to lateral loads (including those due to wind or seismic forces) may be determined using the friction between the bottom of concrete foundations and the underlying soil and the passive soil pressure acting against the vertical face of the footings. These two modes of resistance can be combined.

For planning purposes only, we anticipate that sliding resistance to lateral forces may be calculated using a coefficient of friction of 0.35. We anticipate that passive resistance pressure available in the engineered fill or native soil/rock may be calculated using an allowable equivalent fluid weight of 400 pounds per cubic foot (pcf), assuming that the ground adjacent the foundation is level. This allowable value includes a reduction factor of 1.5 to limit the foundation movement required to mobilize the ultimate passive resistance.

Passive resistance contributed by soils within 1 foot of the ground surface should be neglected unless the ground is covered and confined by a slab-on-grade or pavement. To mobilize passive pressure, gaps between the footing and adjacent ground should be completely backfilled using engineered fill, concrete, or lean cement sand slurry with a 28-day unconfined compressive strength of at least 500 psi.

8.4 LATERAL EARTH PRESSURES

Active earth pressures may be used for design of unrestrained retaining walls where the top of the wall is free to translate or rotate. To develop active earth pressures, the walls should be capable of deflecting by at least 0.004H (where H is the height of the wall). At-rest earth pressures should be used for design of retaining walls where the wall top is restrained such that the deflections required for development of active soil pressures cannot occur or are undesirable. Cantilever walls retaining engineered fill may be designed for active or at-rest lateral earth pressures for various backfill slopes using the following equivalent fluid unit weights. The lateral earth pressures in the table below assume that the unit weight of the soil is 100 pcf, the soils internal angle of friction is 30 degrees, based upon laboratory testing of the soil samples, and that the wall backfill is drained (no hydrostatic forces acting on the wall), and no traffic or other surcharge loads are applied within a distance of one-half the wall height.



Equivalent Fluid Unit Weight (pcf)

Backfill Slope	Active Conditions	At-Rest Conditions
Level	35	60
3H:1V	45	75
2H:1V	55	90

The lateral earth pressures should be applied to a plane extending vertically upward from the base of the heel of the retaining wall to the ground surface. Lateral pressures for backfill slopes other than those given above can be estimated by interpolation.

Where the wall backfill will be subject to traffic loading within a distance of H/2 (where H is the wall height) from the top of the wall, the wall should be designed to resist an additional uniform lateral pressure of 65 psf applied to the back of yielding walls (active conditions), or 110 psf applied to the back of non-yielding walls (at-rest conditions). The surcharge load should extend from the top of the wall down to 10-feet below the top of wall. Surcharge loads imposed by greater loads or unusual loads within a distance of H of the back of the wall should be considered on a case-by-case basis.

Retaining walls that should be designed to resist additional seismic earth pressures due to earthquake loading for walls that exceed 10 feet. In addition to the active or at-rest lateral soil pressures, retaining walls should be designed to resist additional dynamic earth pressures during earthquake loading. The additional dynamic pressure increment may be calculated using an additional equivalent fluid pressure of 10 pcf for back slopes up to 3H:1V. The dynamic pressure increment should be applied to the wall as a triangular distribution so the resultant force acts at a distance of 0.33H above the base of the wall (where H is the height of the wall). Under the combined effects of static and dynamic loading, a safety factor of 1.1 against sliding or overturning is acceptable. The dynamic component of the lateral earth pressure was calculated using the Mononabe-Okabe equation and, therefore, assumes that sufficient deformation of the wall will occur during seismic loading to develop active soil conditions.

8.5 WALL DRAINAGE

The above lateral earth pressures are based on fully drained conditions. For these conditions, we recommend that the retaining wall backfill be free-draining and provisions are made to collect and dispose of excess water away from the wall. Wall drainage may be provided by either a minimum 1-foot-wide layer of clean drain rock/gravel enclosed by geosynthetic filter fabric or by prefabricated drainage panels (such as Miradrain, Enkadrain, or an equivalent substitute) installed per the manufacturer’s recommendations. In either case, drainage should be collected by perforated pipes and directed to a sump, storm drain, weep holes, or other suitable location for disposal. The drain rock should conform to Class One, Type B permeable material as specified in Section 68 of the California Department of Transportation (Caltrans) Standard Specifications, current edition. A typical 1-inch x No. 4 concrete coarse aggregate mix approximates this specification. A clean pea-gravel is also acceptable. The geosynthetic filter fabric should conform to the requirement in Section 88, “Engineering Fabrics” of the Caltrans Standard Specifications, current edition. A 4-inch diameter perforated pipe at least Schedule 40 PVC, or similar, should be placed “holes down” near the bottom of the section of permeable material and directed to discharge by gravity to a suitable outlet. The upper 18 inches of engineered backfill above the wall drainage should consist of native material, concrete, asphaltic concrete, or similar backfill to reduce surface drainage into the wall drainage system.



9.0 PAVEMENTS

The near-surface soils across the site are generally weathered bedrock and clayey gravel, clayey sands and sandy clays that have a high to moderate traffic support capacity when recompacted and used as pavement subgrade. Preliminary pavement sections¹ are presented below based on a laboratory R-value of 38 and 50, current Caltrans design procedures, and traffic indices ranging from 4.5 to 6.0. The traffic index (TI) is a measure of traffic wheel loading frequency and intensity of anticipated traffic. For comparison, TI's of between 4 and 5 are often suitable for design of automobile parking areas, whereas TI's of between 5 and 6 are commonly used for design of fire truck access lanes and areas subject to channelized flow with light delivery trucks. Traffic indices assumed above should be reviewed by the project Owner, Architect, and/or Civil Engineer to evaluate their suitability for this project. Pavement sections for other traffic loading should be designed on a case-by-case basis. The use of rigid concrete pavement is favored where trash pick-up or truck traffic necessitates short radius maneuvering and/or heavy metal bin movement on rollers.

RECOMMENDED PAVEMENT SECTIONS – BEDROCK CUT OR FILL FROM BEDROCK

R-Value	Traffic Index	Asphalt Concrete (inches)	Class 2 Aggregate Base (feet)	MINIMUM R-Value 50 Subgrade Thickness (feet)
R = 50	4.5	0.2	0.35	1.0
	5.0	0.25	0.35	1.5
	6.0	0.35	0.40	2.0
	7.0	0.30	0.35	2.0

RECOMMENDED PAVEMENT SECTIONS ON COMPACTED NATIVE SOIL

R-Value	Traffic Index	Asphalt Concrete (feet)	Class 2 Aggregate Base (feet)
R = 38	4.5	0.2	0.35
	5.0	0.25	0.35
	6.0	0.30	0.50
	7.0	0.35	0.6

The pavement sections provided above are contingent on the following recommendations being implemented during and following construction.

¹ Caltrans design procedures for asphalt concrete pavements provide sections in units of inches, rounded up to the nearest 1/2-inch. Sections provided above include no Gravel Equivalent Safety Factor (per County Engineers Association and the League of California Cities criteria). If a Gravel Equivalent Safety Factor is required, the pavement sections should be reevaluated.



- The pavement subgrade soils in the upper 12 inches below the finished subgrade elevation, should be compacted as engineered fill to achieve a minimum relative compaction of 95 percent of the CAL 216 maximum wet density.
- All trench backfill for culverts, utilities and pipes underlying paved areas should be properly placed and compacted to at least 90 percent relative compaction (ASTM D1557) within 1 foot of finished subgrade elevation. The upper 12 inches of trench backfill should be compacted to at least 95 percent relative compaction (CAL 216).
- The subgrade soils should be in a stable, non-pumping condition at the time the aggregate base material is placed and compacted.
- Aggregate base materials should meet current Caltrans specifications for Class 2 aggregate and be compacted as engineered fill to at least 95 percent relative compaction.
- Asphalt paving materials and placement methods should meet current Caltrans specifications for asphalt concrete.
- Adequate drainage (both surface and subsurface) should be provided such that the subgrade soils and aggregate base materials are not allowed to become continuously wet.
- All concrete curbs separating pavement and landscaped areas should extend at least 2 inches into the subgrade and below the bottom of the adjacent aggregate base to provide a barrier against lateral migration of landscape water or runoff into the pavement section. For better performance, we recommend that subdrains be considered along edges of roads where there are slopes and especially swales that descend towards pavement.
- Periodic maintenance should be performed to repair degraded areas and seal cracks with appropriate filler.

The regulatory jurisdiction may have additional minimum standards in addition to those provided above. Portland Cement Concrete pavements may be constructed directly on engineered fill. All Portland Cement Concrete pavements should have a minimum compressive strength of 3,000 pounds per square inch (psi) and should contain entrained air to resist freeze damage. The thickness of the pavement should equal the combined thickness of the AC and AB listed in the above table.

10.0 GROUND CORROSIVITY

A chemical test was performed on a sample of near surface soil anticipated to be in contact with the site improvements. The test result yielded a pH of 6.21, chloride ion concentration reflects none detected, sulfate ion concentrations reflects non detected, and soil redox potentials are 340-mV.

Resistivity test results of 14,000 ohms-centimeter indicate that the soil is mildly corrosive. A commonly accepted correlation between soil resistivity and corrosivity towards ferrous metals is provided in the following table developed by the National Association of Corrosion engineers (NACE).

Soil Resistivity	Corrosivity
Less than 500 ohm-cm	Very corrosive
500 to 1,000 ohm-cm	Corrosive
1,000 to 2,000 ohm-cm	Moderately corrosive
2,000 to 10,000 ohm-cm	Mildly corrosive
Over 10,000 ohm-cm	Progressively less corrosive



Appendix C contains the results of the corrosivity tests performed, as well as a brief evaluation letter by our laboratory subcontractor. The brief evaluation provides general recommendations regarding protecting buried metals. If warranted, a corrosion expert should be consulted to develop specific recommendations.

11.0 ADDITIONAL SERVICES

The geotechnical recommendations and design criteria in this report are sensitive to the location, design details, and any special requirements of the new construction. Condor should review the geotechnical elements of project grading, foundation plans and specifications prior to construction bidding to check that the intent of our recommendations have been incorporated into these project documents. If Condor does not review the geotechnical elements of the plans and specifications, the reviewing geotechnical engineer or qualified professional civil engineer should thoroughly review this report and concur with its conclusions and recommendations or provide alternative recommendations.

Because surface conditions vary across the site, geotechnical recommendations used as a basis for construction contracting are sensitive to the possible need for adjustment in the field. The adjustments are dependent upon conditions revealed during construction that could previously only be assumed based upon site exploration. Since the intent of the recommendations given in this report are best understood by a Condor representative, we recommend that field observations and testing during earthwork and construction be performed by Condor. If Condor does not provide the field observations and testing, the Geotechnical Engineer of Record should thoroughly review this report and concur with its conclusions and recommendations or provide alternative recommendations.

A representative of the Geotechnical Engineer of Record or a qualified professional civil engineer should be on-site to observe and advise during site preparation, grading and earthwork, paving, and construction of foundations and slabs-on-grade. These observations should be supplemented with periodic density and compaction testing of subgrade and engineered fills to evaluate conformance with the recommendations contained in this report. It is important that foundation excavations be checked after cleaning and immediately prior to concrete placement to verify their suitability.

12.0 LIMITATIONS

The geotechnical conclusions and recommendations in this report are intended for planning of the Saddle Creek Subdivision Development as described in this report. These conclusions and recommendations may be invalid if:

- the land use assumptions change;
- the report is used for another site or project;
- the encountered soil or groundwater conditions are different than those anticipated in this report;
- the recommendations contained in this report are not followed; or
- any other change is implemented that materially alters the project.

This report was prepared in accordance with the generally accepted standards of geotechnical engineering practice existing in Calaveras County at the time it was written. No other warranty, expressed or implied, is made. It is the owner's responsibility to see that all parties to the project, including the designer, contractors, subcontractors, etc., are made aware of this report in its entirety.

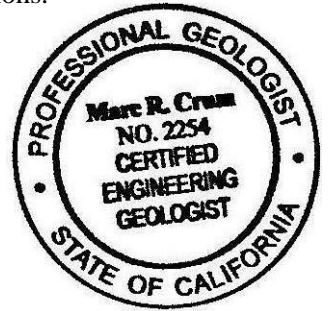



The analyses and geotechnical recommendations submitted herein are based upon the data obtained from the nine (9) test pits, located as shown on Figure 2 – Site Map with Test Pit Locations, Appendix A, and on general field observations made during site exploration. Subsurface exploration of any site is necessarily confined to selected locations and conditions may, and often do, vary between and around these locations.

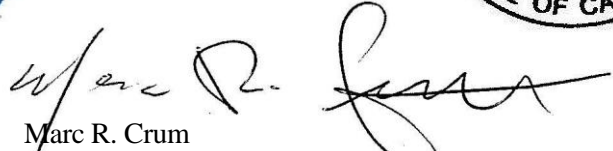
It should be noted that changes in the standards of practice in the field of geotechnical engineering, changes in site conditions (such as new excavations or fills), new agency regulations, or modifications to the proposed project are grounds for this report to be professionally reviewed. In light of this, there is a practical limit to the usefulness of this report without critical professional review. It is suggested that two years be considered a reasonable time for the usefulness of this report.

We trust this report provides the information required at this time. Please call with any questions.

Respectfully submitted,
CONDOR EARTH




Ronald L. Skaggs
Geotechnical Engineer (CA #2295)
Vice President, Engineering Services


Marc R. Crum
Certified Engineering Geologist (CA #2254)



REFERENCES

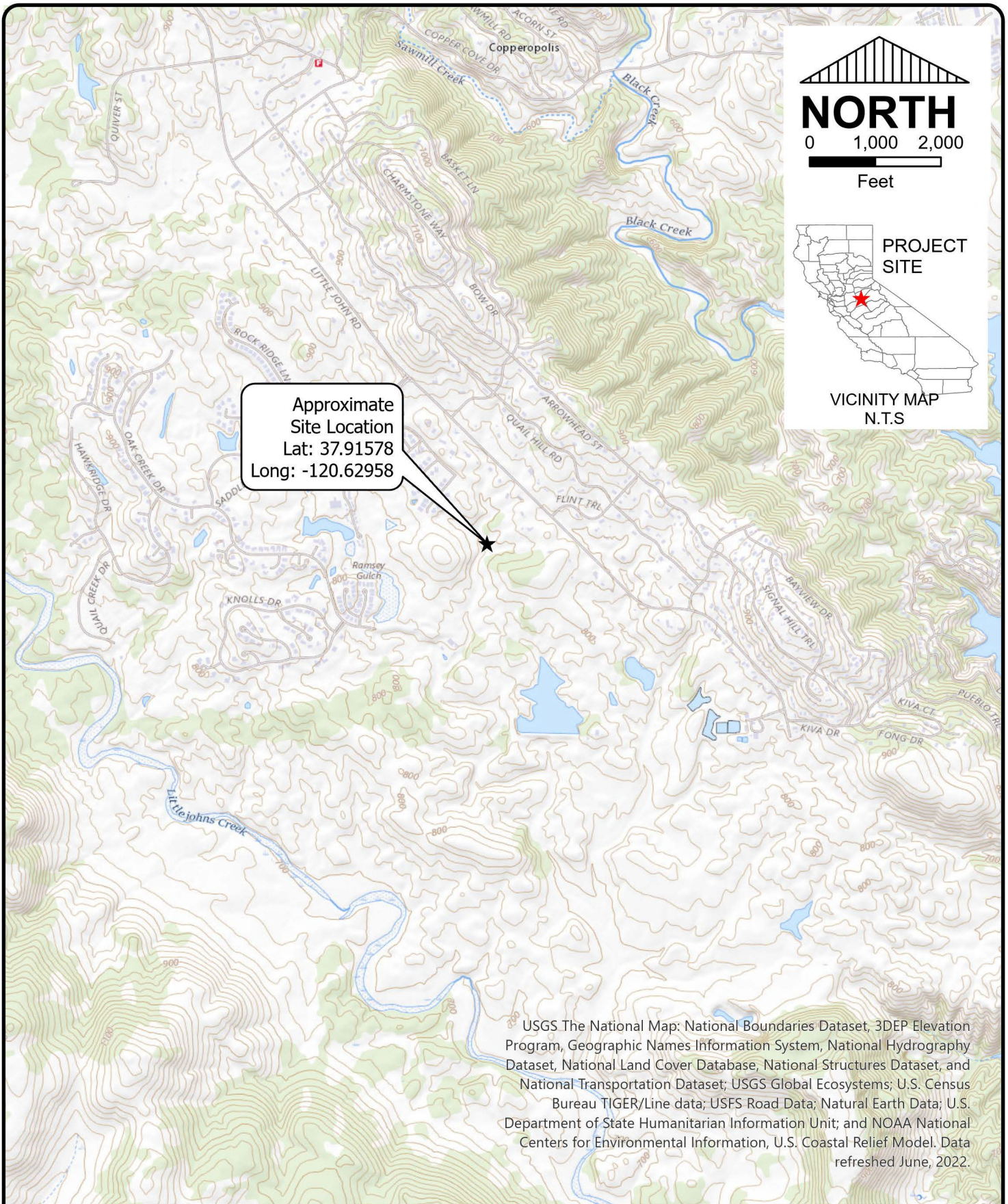
California Building Code, 2019, California Building Standards Commission, and International Conference of Building Officials, 2012.

California Department of Conservation, Division of Mines and Geology, 1997, Guidelines for Evaluating and Mitigating Seismic Hazards in California, CDMG Special Publication 117.

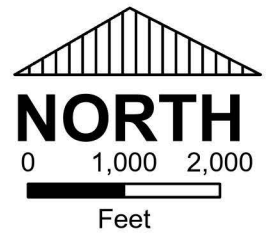
Hart, E., 1994 (revised), Fault-Rupture Hazard Zones in California, Alquist-Priolo Earthquake Fault Zoning Act with Index to Earthquake Fault Zones Maps, California Division of Mines and Geology Special Publication 42, 34 pp.




APPENDIX A
Figures

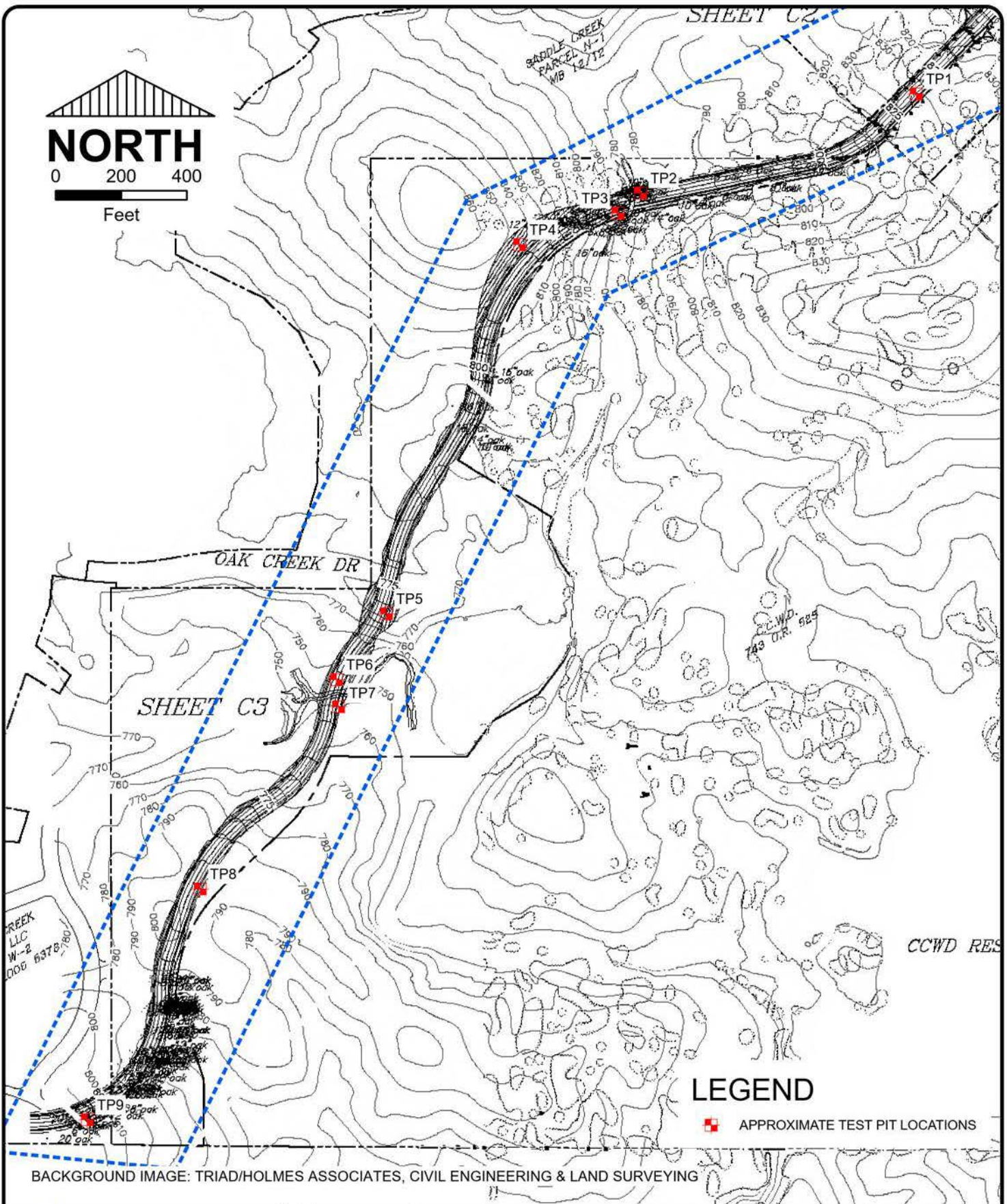



Approximate Site Location
 Lat: 37.91578
 Long: -120.62958

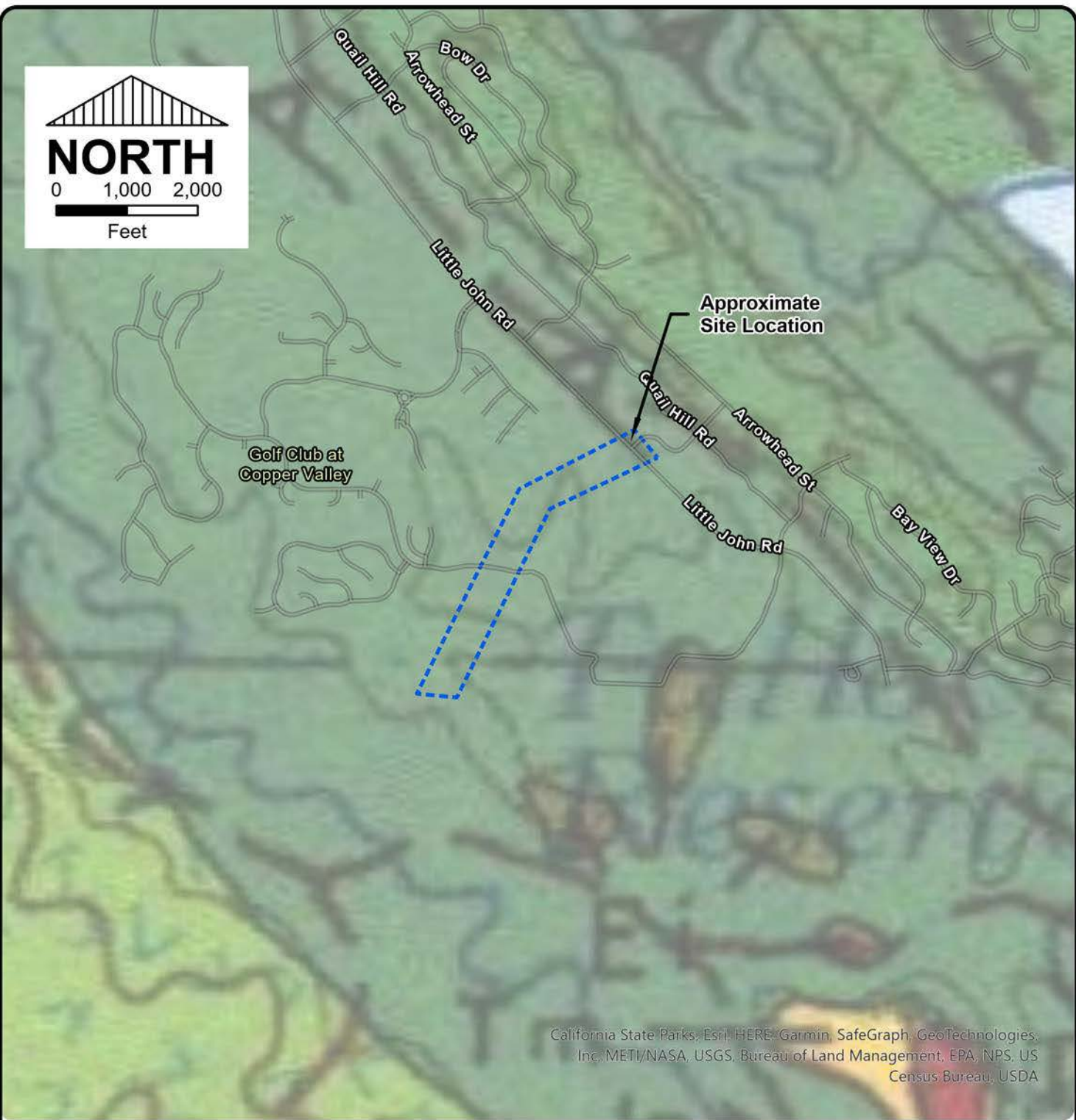
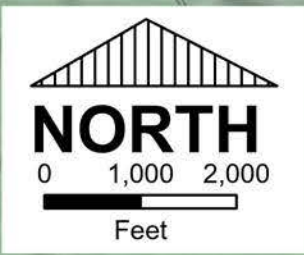


USGS The National Map: National Boundaries Dataset, 3DEP Elevation Program, Geographic Names Information System, National Hydrography Dataset, National Land Cover Database, National Structures Dataset, and National Transportation Dataset; USGS Global Ecosystems; U.S. Census Bureau TIGER/Line data; USFS Road Data; Natural Earth Data; U.S. Department of State Humanitarian Information Unit; and NOAA National Centers for Environmental Information, U.S. Coastal Relief Model. Data refreshed June, 2022.

	CONDOR EARTH 21663 Brian Lane P.O. Box 3905 Sonora, CA 95370 (209) 532-0361 fax (209) 532-0773 www.condorearth.com	Job No. 7975J Date 07 Oct 2022 Scale AS SHOWN	VICINITY MAP GEOTECHNICAL ENGINEERING STUDY SOUTH FLINT TRAIL EXTENSION PROJECT COPPEROPOLIS, CALIFORNIA	FIGURE 1
	Drawn JW Chk'd LA	7975J_SouthFlint.aprx		



 <p>CONDOR EARTH 21663 Brian Lane P.O. Box 3905 Sonora, CA 95370 (209) 532-0361 fax (209) 532-0773 www.condorearth.com</p>	Job No. 7975J	<p>SITE MAP WITH TEST PIT LOCATIONS GEOTECHNICAL ENGINEERING STUDY SOUTH FLINT TRAIL EXTENSION PROJECT COPPEROPOLIS, CALIFORNIA</p>	<p>FIGURE 2</p> <p>7975J_SouthFlint.aprx</p>
	Date 05 Oct 2022		
	Scale AS SHOWN		
	Drawn JW		



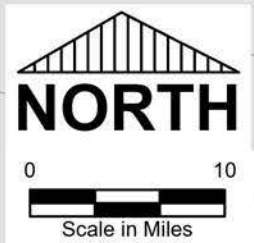
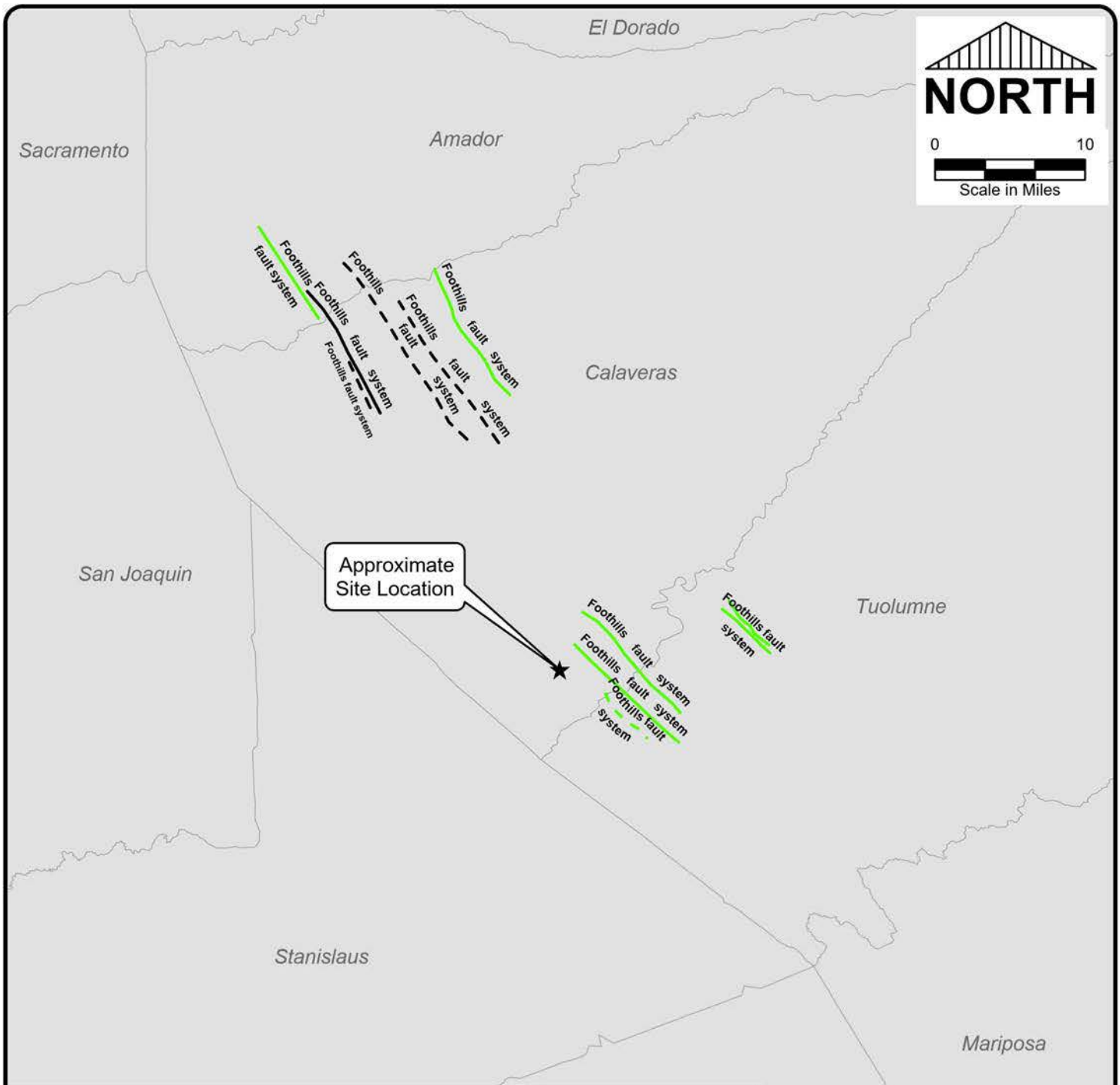
California State Parks, Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc., METI/NASA, USGS, Bureau of Land Management, EPA, NPS, US Census Bureau, USDA

LEGEND

- APPROXIMATE SITE BOUNDARY
- Copper Hill Volcanics
- Salt Springs and Merced Falls Slates

Source:
California Geological Survey, C.W. Jennings, Carlos Gutierrez,
William Bryant, George Saucedo, Chris Wills, 1977

 CONDOR	CONDOR EARTH	Job No. 7975J	GEOLOGIC MAP GEOTECHNICAL ENGINEERING STUDY SOUTH FLINT TRAIL EXTENSION PROJECT COPPEROPOLIS, CALIFORNIA	FIGURE 3
	21663 Brian Lane P.O. Box 3905 Sonora, CA 95370 (209) 532-0361 fax (209) 532-0773 www.condorearth.com	Date 05 Oct 2022		
		Scale AS SHOWN		
		Drawn JW		
			7975J_SouthFlint.aprx	



Legend	
Fault Classification	
	"Historical" (evidence of movement over the last 150 years)
	"Latest Quaternary" (evidence of movement over the last 150 to 15,000 years)
	"Late Quaternary" (evidence of movement over the last approximately 15,000 to 130,000 years)
	"Middle and Late Quaternary" (evidence of movement over the last approximately 130,000 to 750,000 years)
	"Undifferentiated Quaternary" (evidence of movement over the last 750,000 to 1.6 million years)
	Unspecified age
	Class B (various age)

US GEOLOGICAL SURVEY
QUATERNARY FAULTS OF CALIFORNIA, 2017

<p>CONDOR EARTH 21663 Brian Lane P.O. Box 3905 Sonora, CA 95370 (209) 532-0361 fax (209) 532-0773 www.condorearth.com</p>	Job No. 7975J	REGIONAL FAULT MAP GEOTECHNICAL ENGINEERING STUDY SOUTH FLINT TRAIL EXTENSION PROJECT COPPEROPOLIS, CALIFORNIA	FIGURE 4
	Date 05 Oct 2022		
	Scale AS SHOWN		
	Drawn JW		
<p>P:\GIS\Current Project\7975J_SouthFlint\7975J_SouthFlint.aprx</p>		<p>7975J_SouthFlint.aprx</p>	

APPENDIX B
Test Pit Logs



CONDOR EARTH

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 (209) 388-9601 FAX (209) 388-1778

- **Engineering**
- **Geotechnical**
- **Environmental**
- **Mapping**

TEST PIT LOG

Project No: 7975J – South Flint Trail Extension Project
Client: CV Development Partners, LLC
Project Location: Copperopolis, California
Test Pit Location: ST 4+75
Equipment: Doosan DX255LC excavator with 4’ bucket and 3’ ripper

Test Pit No: TP – 1
Total Depth: 8.0 feet
Date Excavated: 8/20/22
Elevation: 830’, topo
Logged by: M. Crum



DEPTH	USCS	DESCRIPTION
0’-0.25’		RESIDUAL SOIL: Grades to:
0.25’-8’		JURASSIC SALT SPRINGS SLATE AND MERCED FALLS SLATE: phyllite, very weak, low to moderate hardness, planar fractures, tight to moderately open, west-northwest (290°), near vertical, spacing 1”-6”, blocky structure 0’-3’: highly weathered, oxidized red brown, trace roots, 3’-8’: slightly weathered, moderate yellow brown,

Notes: Planned 4-6’ cut, full ripper penetration with one pass at 4’ and 8’, no refusal encountered, no groundwater encountered. Bulk sample from 1-4’. Test pit backfilled with loosely compacted excavated material.



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- **Engineering**
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- **Environmental**
- **Mapping**

TEST PIT LOG

Project No: 7975J – South Flint Trail Extension Project
Client: CV Development Partners, LLC
Project Location: Copperopolis, California
Test Pit Location: ST 13+50
Equipment: Doosan DX255LC excavator with 4’ bucket and 3’ripper

Test Pit No: TP – 2
Total Depth: 6.0 feet
Date Excavated: 8/20/22
Elevation: 774’, topo
Logged by: M. Crum



DEPTH	USCS	DESCRIPTION
0’ - 1’ to 2’	SC	ALLUVIUM: Clayey Sand with Gravel, dry, dense Sharp contact with:
1’ to 2’ - 6’		JURASSIC SALT SPRINGS SLATE AND MERCED FALLS SLATE: phyllite, grayish green (10GY 5/2), slightly weathered, weak, moderate hardness, planar fractures, tight to moderately open, northwest (325°), near vertical, spacing 0.25-2”, blocky structure

Notes: Planned 10-12 fill area, no refusal encountered, no groundwater encountered. Bulk sample from 1-4’. Test pit backfilled with loosely compacted excavated material.



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- **Engineering**
- **Geotechnical**
- **Environmental**
- **Mapping**

TEST PIT LOG

Project No: 7975J – South Flint Trail Extension Project
Client: CV Development Partners, LLC
Project Location: Copperopolis, California
Test Pit Location: ST 14+40
Equipment: Doosan DX255LC excavator with 4’ bucket and 3’ ripper

Test Pit No: TP – 3
Total Depth: 5.0 feet
Date Excavated: 8/20/22
Elevation: 774’, topo
Logged by: M. Crum



DEPTH	USCS	DESCRIPTION
0’ - 2’	SC	ALLUVIUM: Clayey Sand with Gravel, dry, dense, trace rounded quartz cobbles at sharp contact with:
2’ - 5’		JURASSIC SALT SPRINGS SLATE AND MERCED FALLS SLATE: phyllite, grayish green (10GY 5/2), slightly weathered, weak, moderate hardness, planar fractures, tight to moderately open, northwest (325°), near vertical, spacing 0.25-2”, blocky structure

Notes: Planned 10-12 fill area, no refusal encountered, no groundwater encountered. Bulk sample from 1-4’. Test pit backfilled with loosely compacted excavated material.



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- **Engineering**
- **Geotechnical**
- **Environmental**
- **Mapping**
-

TEST PIT LOG

Project No: 7975J – South Flint Trail Extension Project
Client: CV Development Partners, LLC
Project Location: Copperopolis, California
Test Pit Location: ST 17+50
Equipment: Doosan DX255LC excavator with 4’ bucket and 3’ ripper

Test Pit No: TP – 4
Total Depth: 16 feet
Date Excavated: 8/20/22
Elevation: 828’, topo
Logged by: M. Crum



DEPTH	USCS	DESCRIPTION
0’-0.5’	CL	RESIDUAL SOIL: Sandy Lean Clay, moderate yellow brown Grades to:
0.5’-16’		JURASSIC SALT SPRINGS SLATE AND MERCED FALLS SLATE: phyllite, very weak, low to moderate hardness, planar fractures, very tight to moderately open, west-northwest (290°), near vertical, spacing 1-6”, blocky structure 0.5’-9’: highly weathered 9’-16’: moderately weathered

Notes: Planned 14’ cut, full ripper penetration with one pass at 6’, two passes at 16’, no refusal encountered, no groundwater encountered. Bulk sample from 1-4’. Test pit backfilled with loosely compacted excavated material.



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- **Engineering**
- **Geotechnical**
- **Environmental**
- **Mapping**

TEST PIT LOG

Project No: 7975J – South Flint Trail Extension Project
Client: CV Development Partners, LLC
Project Location: Copperopolis, California
Test Pit Location: ST 29+20
Equipment: Doosan DX255LC excavator with 4’ bucket and 3’ ripper

Test Pit No: TP – 5
Total Depth: 15 feet
Date Excavated: 8/20/22
Elevation: 784’, topo
Logged by: M. Crum



DEPTH	USCS	DESCRIPTION
0'-0.25'	CL	RESIDUAL SOIL: Sandy Lean Clay, moderate yellow brown Grades to:
0.25'-15'		JURASSIC SALT SPRINGS SLATE AND MERCED FALLS SLATE: phyllite, yellowish gray (5Y 7/2), slightly weathered, very weak, low to moderate hardness, planar fractures, very tight to moderately open, northwest (335°), near vertical, spacing 0.5"-2", blocky structure

Notes: Planned 16’ cut, full ripper penetrate with one pass at 4’ below grade, two passes at 8’ and 15’ below grade, ripper required to continue excavation at 11’, no refusal encountered, no groundwater encountered. Bulk sample from 1-4’. Test pit 30’ long, oriented northeast (65°), and backfilled with loosely compacted excavated material.



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- **Engineering**
- **Geotechnical**
- **Environmental**
- **Mapping**

TEST PIT LOG

Project No: 7975J – South Flint Trail Extension Project
Client: CV Development Partners, LLC
Project Location: Copperopolis, California
Test Pit Location: ST 32+05
Equipment: Doosan DX255LC excavator with 4’ bucket and 3’ ripper

Test Pit No: TP – 6
Total Depth: 3.5 feet
Date Excavated: 8/20/22
Elevation: 746’, topo
Logged by: M. Crum



DEPTH	USCS	DESCRIPTION
0’ - 2’	CL	ALLUVIUM: Sandy Lean Clay with Gravel, dry, hard, rounded gravel and cobble generally at sharp contact with:
2’ – 3.5’		JURASSIC SALT SPRINGS SLATE AND MERCED FALLS SLATE: phyllite, slightly weathered, weak, moderate hardness, planar fractures, tight to moderately open, northwest (325°), near vertical, spacing 0.25-2”, blocky structure

Notes: Planned 8’ fill area, no refusal encountered, no groundwater encountered. Bulk sample from 1-4’. Test pit 8’ long, oriented north-south, and backfilled with loosely compacted excavated material.



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- **Engineering**
- **Geotechnical**
- **Environmental**
- **Mapping**

TEST PIT LOG

Project No: 7975J – South Flint Trail Extension Project

Client: CV Development Partners, LLC

Project Location: Copperopolis, California

Test Pit Location: ST 32+35

Equipment: Doosan DX255LC excavator with 4' bucket and 3' ripper

Test Pit No: TP – 7

Total Depth: 3.0 feet

Date Excavated: 8/20/22

Elevation: 746', topo

Logged by: M. Crum



DEPTH	USCS	DESCRIPTION
0' – 0.25'	CL	ALLUVIUM: Sandy Lean Clay with Gravel, dry, hard, rounded gravel and cobble generally at sharp contact with:
0.25' – 3'		JURASSIC SALT SPRINGS SLATE AND MERCED FALLS SLATE: phyllite, pale yellow brown (10YR 6/2), slightly weathered, weak, moderate hardness, planar fractures, near vertical, spacing 0.5-2", blocky structure

Notes: Planned 8' fill area, no refusal encountered, no groundwater encountered. Bulk sample from 1-4'. Test pit 8' long, oriented north-south, and backfilled with loosely compacted excavated material.



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• **Engineering** • **Geotechnical** • **Environmental** • **Mapping** •

TEST PIT LOG

Project No: 7975J – South Flint Trail Extension Project

Client: CV Development Partners, LLC

Project Location: Copperopolis, California

Test Pit Location: ST 41+80

Equipment: Doosan DX255LC excavator with 4' bucket and 3' ripper

Test Pit No: TP – 8

Total Depth: 8.0 feet

Date Excavated: 8/20/22

Elevation: 800', topo

Logged by: M. Crum

DEPTH	USCS	DESCRIPTION
0'-0.25'		RESIDUAL SOIL: Grades to:
0.25'-8'		JURASSIC SALT SPRINGS SLATE AND MERCED FALLS SLATE: phyllite, very weak, low to moderate hardness, planar fractures, tight to moderately open, near vertical, spacing 4"-6", blocky structure

Notes: Planned 6' cut, full ripper penetration with three passes at 3', no refusal encountered, no groundwater encountered. Bulk sample from 1-4'. Test pit backfilled with loosely compacted excavated material. 1'-1.5' high rock outcrop at ground surface.



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- **Engineering**
- **Geotechnical**
- **Environmental**
- **Mapping**

TEST PIT LOG

Project No: 7975J – South Flint Trail Extension Project
Client: CV Development Partners, LLC
Project Location: Copperopolis, California
Test Pit Location: ST 49+32
Equipment: Doosan DX255LC excavator with 4’ bucket and 3’ ripper

Test Pit No: TP – 9
Total Depth: 8.0 feet
Date Excavated: 8/20/22
Elevation: 830’, topo
Logged by: M. Crum



DEPTH	USCS	DESCRIPTION
0’-0.5’		RESIDUAL SOIL: Grades to:
0.5’-8’		JURASSIC SALT SPRINGS SLATE AND MERCED FALLS SLATE: phyllite, very weak, low to moderate hardness, planar fractures, tight to moderately open, near vertical, blocky structure 0’-3’: slightly weathered, moderate yellow brown 3’-6’: highly weathered, oxidized red brown 6’-8’: slightly highly weathered, moderate yellow brown

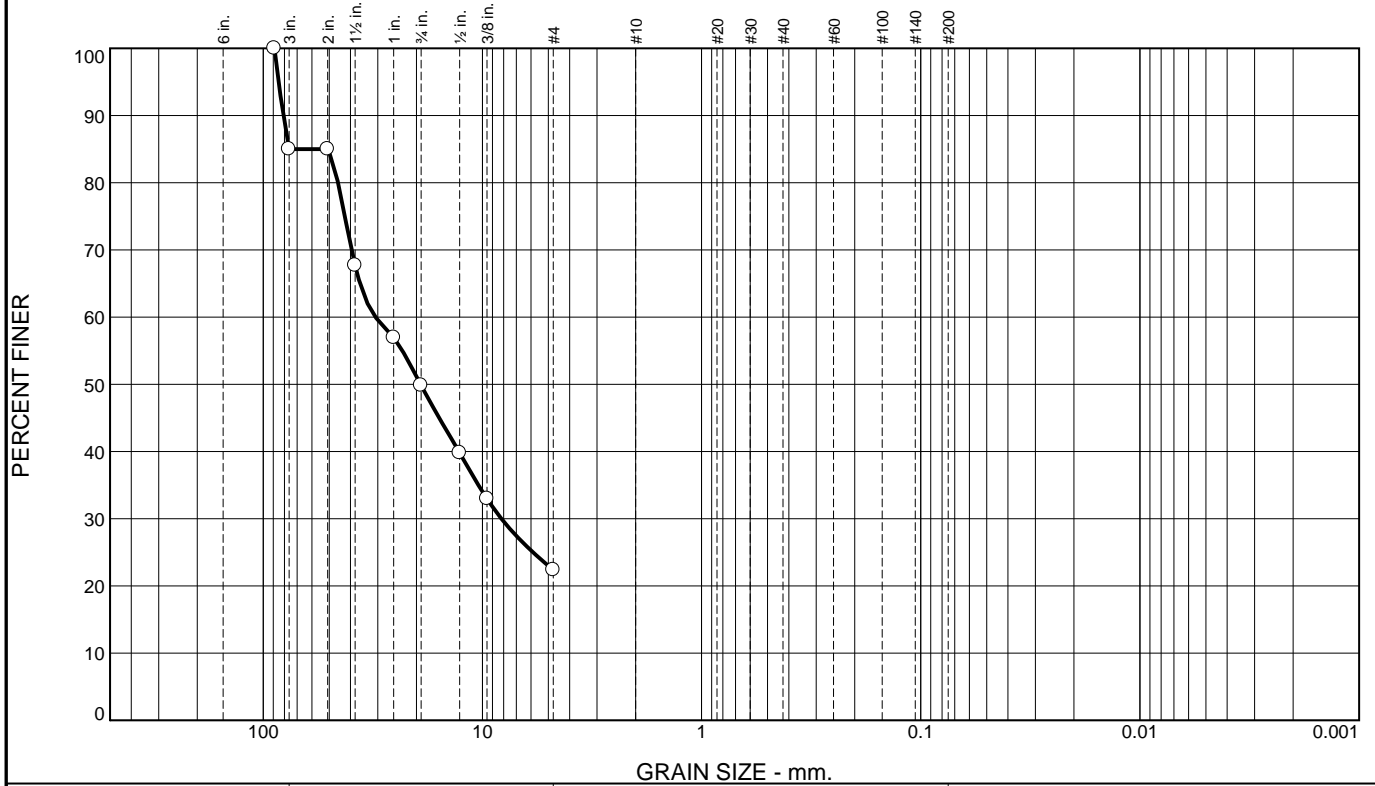
Notes: Planned 6’ cut, full ripper penetration with three passes at 3’, no refusal encountered, no groundwater encountered. Bulk sample from 1-4’. Test pit backfilled with loosely compacted excavated material.



APPENDIX C
Results of Laboratory Tests



Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
15.0	35.2	27.4				22.4	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3.5"	100.0		
3.0"	85.0		
2.0"	85.0		
1.5"	67.7		
1.0"	56.9		
.750	49.8		
.500	39.8		
.375	33.0		
.187	22.4		

Material Description

Reddish Brown Clayey Gravel

Atterberg Limits

PL= LL= PI=

Coefficients

D₉₀= 81.1182 D₈₅= 76.2032 D₆₀= 30.7373

D₅₀= 19.1581 D₃₀= 8.1903 D₁₅=

D₁₀= C_u= C_c=

Classification

USCS= AASHTO=

Remarks

F.M.=2.42

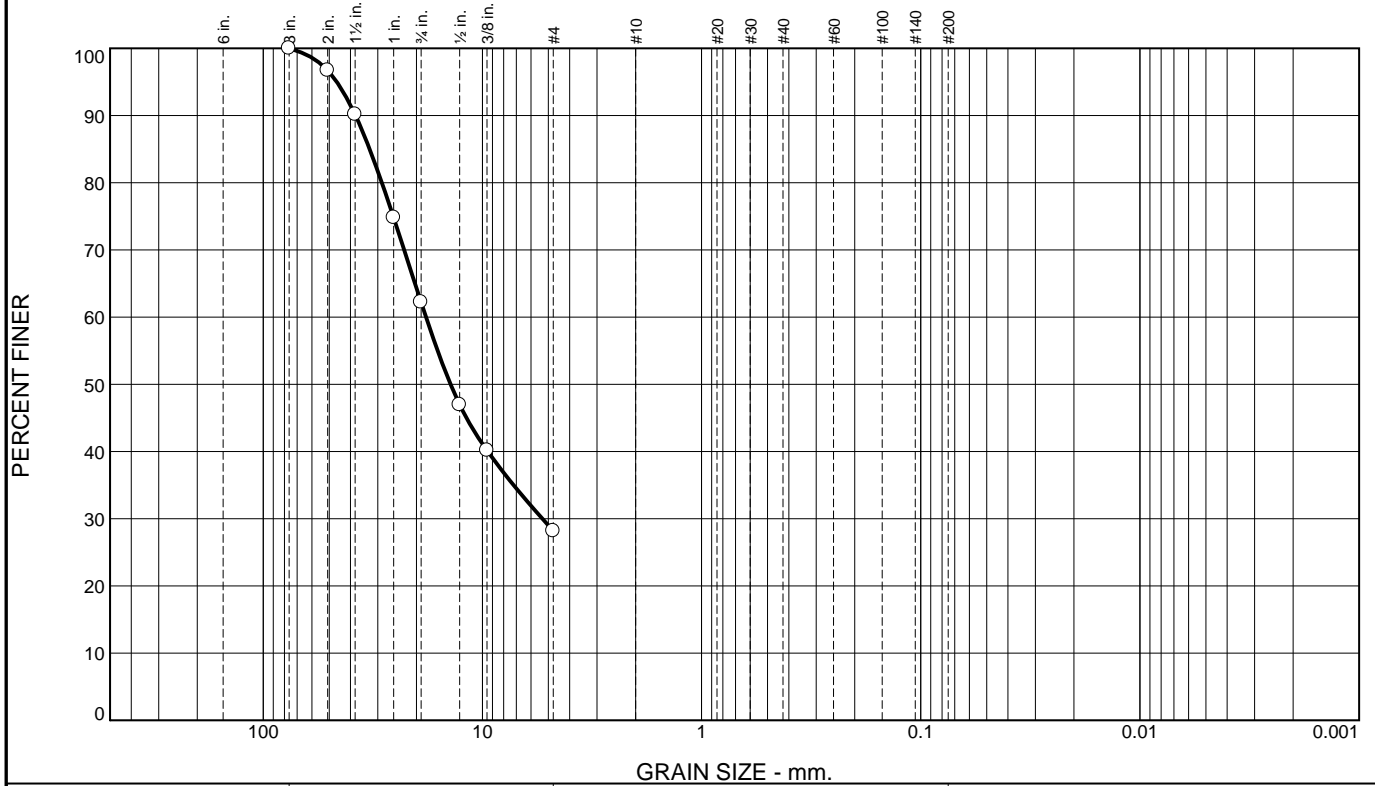
* (no specification provided)

Location: TP-1 Sample Number: SA-1 (RV-1) Depth: 2'-4' Date: 9/21/2022

CONDOR EARTH TECHNOLOGIES, INC. Stockton, California	Client: Copper Valley Development Partners, LLC Project: South Flint Trail Extension Project Project No: 7975J Figure
---	---

Tested By: E. Carrasco Checked By: R. Skaggs

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	37.8	34.0				28.2	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3.0"	100.0		
2.0"	96.7		
1.5"	90.1		
1.0"	74.8		
.750	62.2		
.500	46.9		
.375	40.2		
.187	28.2		

Material Description

Olive Brown Silty Gravel

Atterberg Limits
 PL= LL= PI=

Coefficients
 D₉₀= 37.9271 D₈₅= 32.7008 D₆₀= 18.0879
 D₅₀= 13.9795 D₃₀= 5.3259 D₁₅=
 D₁₀= C_u= C_c=

Classification
 USCS= AASHTO=

Remarks
 F.M.=1.79

* (no specification provided)

Location: TP-7 Sample Number: SA-2 (RV-2) Depth: 0-2 Date: 9/17/2022

CONDOR EARTH TECHNOLOGIES, INC. Stockton, California	Client: Copper Valley Development Partners, LLC Project: South Flint Trail Extension Project Project No: 7975J Figure
---	---

Tested By: E. Carrasco Checked By: R. Skaggs



CONDOR EARTH TECHNOLOGIES, INC.

21663 Brian Lane, P.O. Box 3905, Sonora, CA 95370 (209) 532-0361/0773(f)
 188 Frank West Circle Suite I, Stockton, CA 95206 (209) 234-0518/0538(f)
 17857 High School Road, Jamestown, CA 95327 (209) 984-4593/4596(f)

www.condorearth.com

Resistance "R" Value Test Report (California Test 301)

CET Job: 7975J

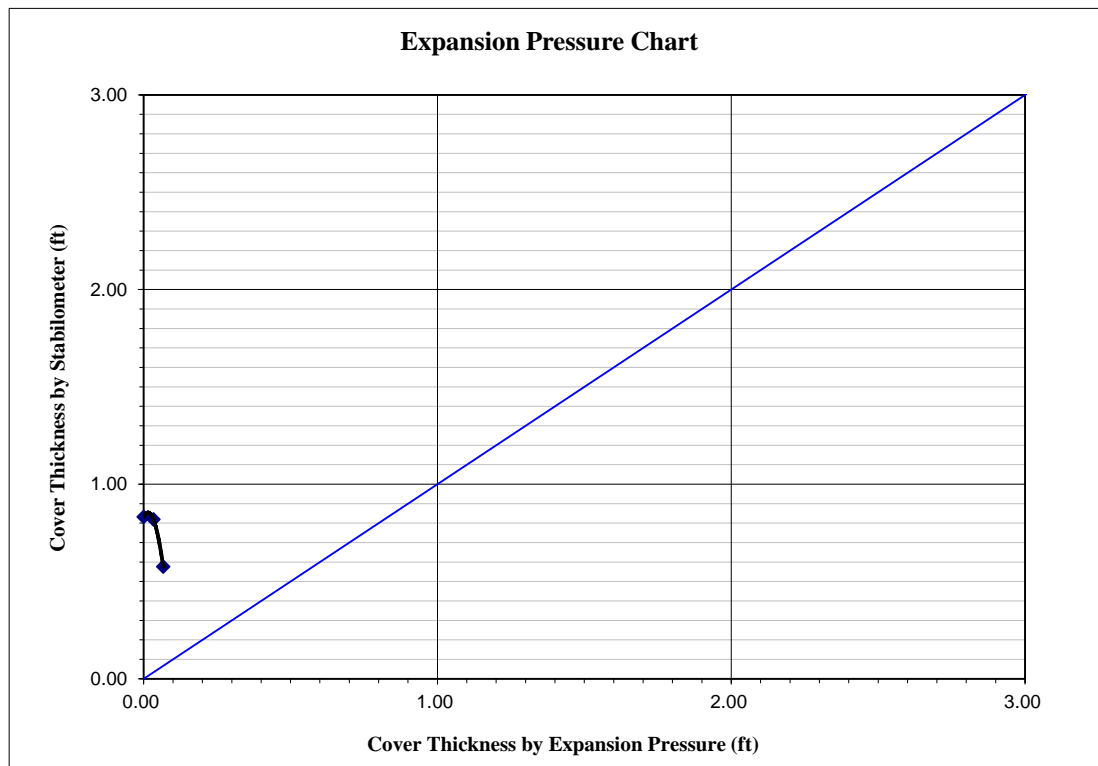
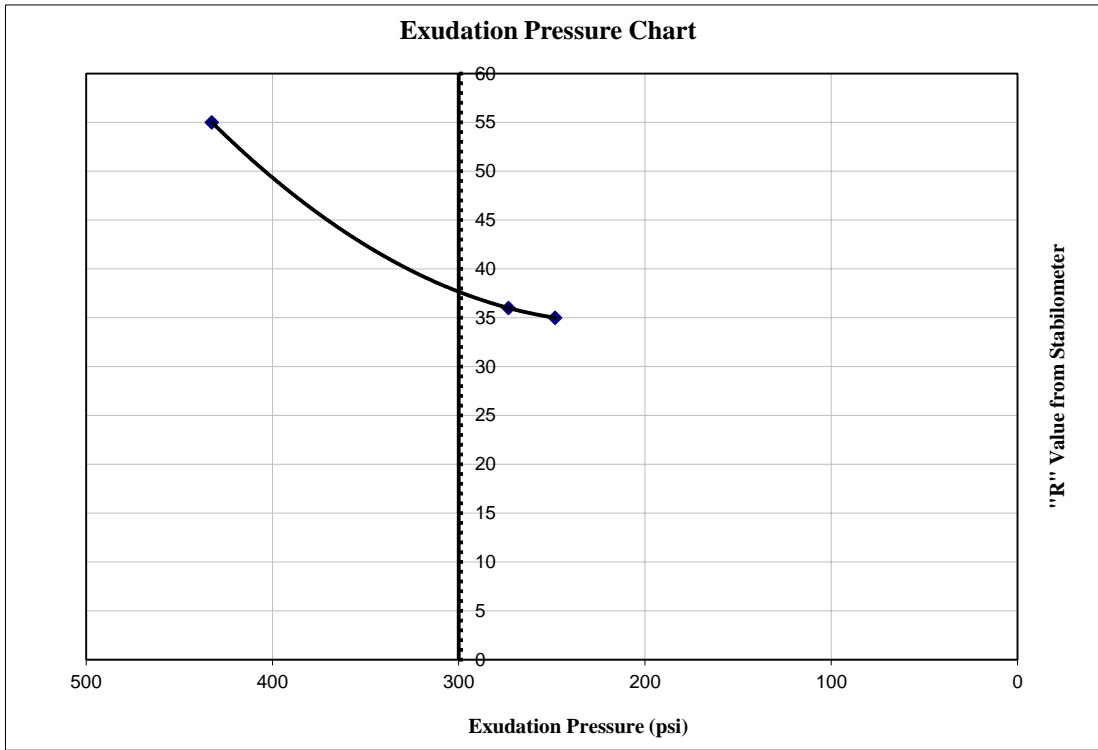
Client: **Copper Valley Development Partners, LLC**
 Project: **South Flint Trail Extension Project**

Sample ID : **RV-1 (SA-1)**
 Soil Description: **Reddish Brown Clayey Gravel**
 Date Received: **9/17/2022**
 Tested by: **E. Carrasco**
 Sample Source: **TP-1**
 Depth of Sample: **2'-4'**

Specimen Number	1	2	3	4
Exudation Pressure (psi)	273.2	432.5	248.2	-
Expansion Pressure (psf)	4.3	8.7	0.0	0.0
Resistance Value, "R"	36.0	55.0	35.0	-
Moisture Content at Test (%)	18.7	17.3	20.7	-
Dry Density at Test (pcf)	107.7	109.4	104.0	-
Initial Moisture Content (%)	6.6			
R-Value by Exudation Pressure =	38.0			
R-Value by Expansion Pressure =	100.0	Assumed/Given TI = 4.0		
R-Value Design =	38.0			

CET Job: 7975J

RV-1 (SA-1)





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Resistance "R" Value Test Report (California Test 301)

CET Job: 7975J

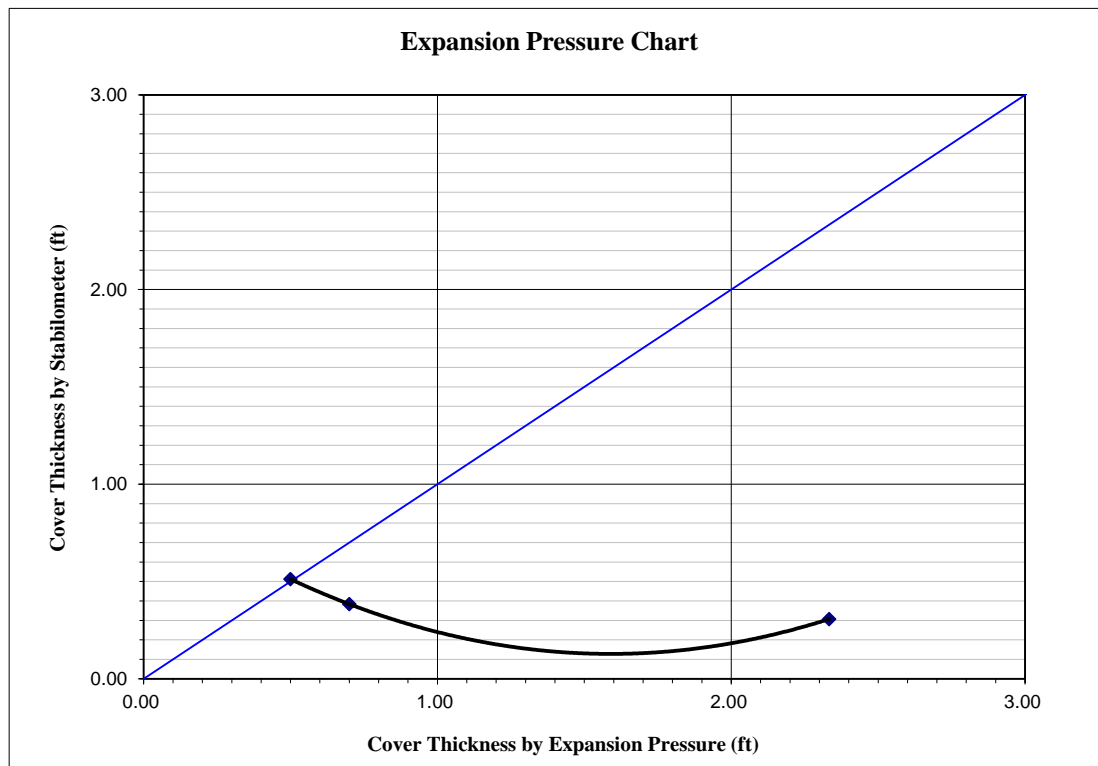
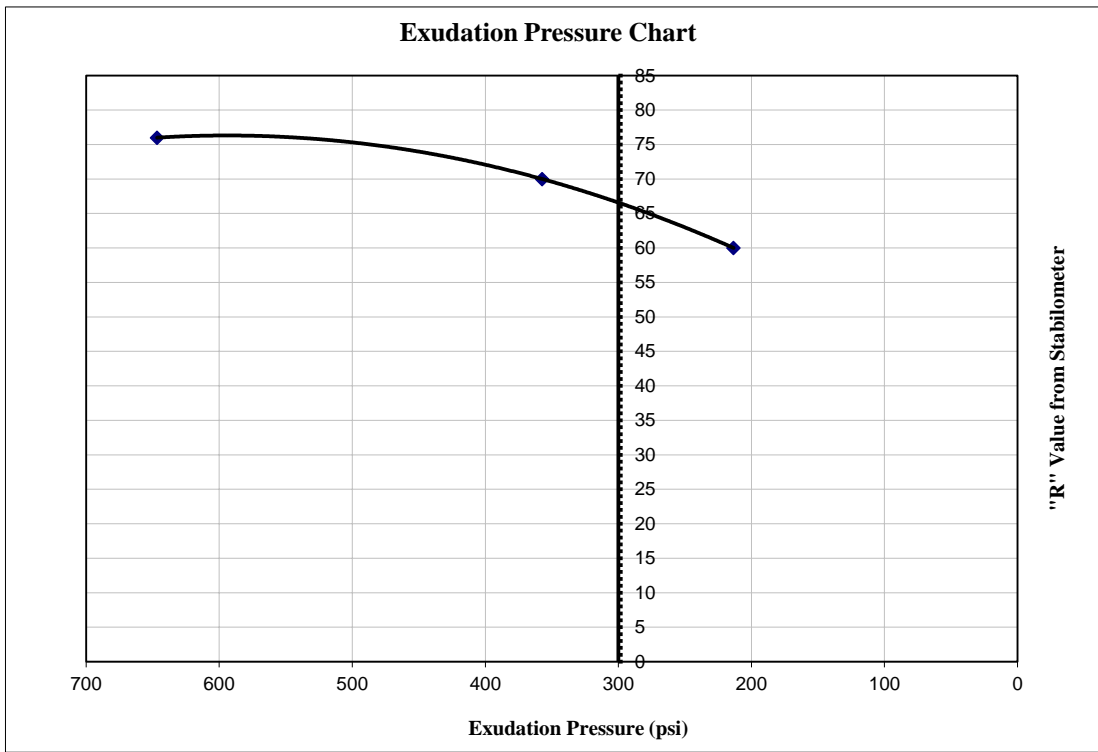
Client: **Copper Valley Development Partners, LLC**
 Project: **South Flint Trail Extension Project**

Sample ID : **RV-2 (SA-2)**
 Soil Description: **Olive Gray Silty Gravel**
 Date Received: **9/17/2022**
 Tested by: **E. Carrasco**
 Sample Source: **TP-7**
 Depth of Sample: **0-2'**

Specimen Number	1	2	3	4
Exudation Pressure (psi)	213.4	357.3	646.7	-
Expansion Pressure (psf)	65.0	90.9	303.1	0.0
Resistance Value, "R"	60.0	70.0	76.0	-
Moisture Content at Test (%)	12.2	10.4	9.4	-
Dry Density at Test (pcf)	127.3	127.8	125.6	-
Initial Moisture Content (%)	2.9			
R-Value by Exudation Pressure =	66.0			
R-Value by Expansion Pressure =	60.9	Assumed/Given TI = 4.0		
R-Value Design =	61.0			

CET Job: 7975J

RV-2 (SA-2)





1100 Willow Pass Court, Suite A
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925 462 2771 Fax. 925 462 2775
www.cercoanalytical.com

25 October, 2022

Job No. 2210019
Cust. No. 12257

Ms. Laura Arista
Condor Earth Technologies, Inc.
188 Frank West Circle, Suite I
Stockton, CA 95206

Subject: Project No.: 7975J
Project Name: CV Development So. Flint Trail Expansion
Corrosivity Analysis – ASTM Test Methods

Dear Ms. Arista:

Pursuant to your request, CERCO Analytical has analyzed the soil sample submitted on October 11, 2022. Based on the analytical results, this brief corrosivity evaluation is enclosed for your consideration.

Based upon the resistivity measurement, this sample is classified as “mildly corrosive”. All buried iron, steel, cast iron, ductile iron, galvanized steel and dielectric coated steel or iron should be properly protected against corrosion depending upon the critical nature of the structure. All buried metallic pressure piping such as ductile iron firewater pipelines should be protected against corrosion.

The chloride ion concentration reflects none detected with a reporting limit of 15 mg/kg.

The sulfate ion concentration reflects none detected with a reporting limit of 15 mg/kg.

The pH of the soil is 6.21, which does not present corrosion problems for buried iron, steel, mortar-coated steel and reinforced concrete structures.

The redox potential is 340-mV and is indicative of potentially “slightly corrosive” soils resulting from anaerobic soil conditions.

This corrosivity evaluation is based on general corrosion engineering standards and is non-specific in nature. For specific long-term corrosion control design recommendations or consultation, please call *JDH Corrosion Consultants, Inc. at (925) 927-6630.*

We appreciate the opportunity of working with you on this project. If you have any questions, or if you require further information, please do not hesitate to contact us.

Very truly yours,
CERCO ANALYTICAL, INC.

for *Shrew Moore*
J. Darby Howard, Jr., P.E.
President

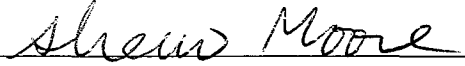
JDH/jdl
Enclosure

Client: Condor Earth Technologies, Inc.
 Client's Project No.: 7975J
 Client's Project Name: CV Development So. Flint Trail Expansion
 Date Sampled: 20-Aug-22
 Date Received: 11-Oct-22
 Matrix: Soil
 Authorization: Signed Chain of Custody

Date of Report: 25-Oct-2022

Job/Sample No.	Sample I.D.	Redox (mV)	pH	Conductivity (umhos/cm)*	Resistivity (100% Saturation) (ohms-cm)	Sulfide (mg/kg)*	Chloride (mg/kg)*	Sulfate (mg/kg)*
2210019-001	TP-5 @ 2'-4'	340	6.21	-	14,000	-	N.D.	N.D.

Method:	ASTM D1498	ASTM D4972	ASTM D1125M	ASTM G57	ASTM D4658M	ASTM D4327	ASTM D4327
Reporting Limit:	-	-	10	-	50	15	15
Date Analyzed:	24-Oct-2022	24-Oct-2022	-	24-Oct-2022	-	22-Oct-2022	22-Oct-2022


 Sherri Moore
 Chemist

* Results Reported on "As Received" Basis
 N.D. - None Detected

Chain of Custody

2210019

Page of

1100 Willow Pass Court
Concord, CA 94520-1006
925 462 2771
Fax: 925 462 2775



Package Job No.		CU# 17257	Schedule Analyte		Date Sampled 08/20/22	Date Due
-----------------	--	-----------	------------------	--	--------------------------	----------

Full Name: Laura Arista, Project Coordinator
 Fax: Phone 209.938.1049

Company: Condor Earth

Sample Source: CV Development So. Flint Trail Expansion, CET #7975J

Lab No.	Sample I.D.	Date	Time	Matrix	Contain.	Size	Preserv.	Qty.
	TP-5 @ 2'-4'	08/20/22	am	S	Bag	7x10	None	1

ANALYSIS									
Redox Potential	pH	Sulfate	Chloride	Resistivity - 100% Saturated				Brief Evaluation	
X	X	X	X	X				X	

NOTES:

SAMPLE RECEIPT

Temp. at Lab -°C

Total No. of Containers

Rec'd Good Cond/Cold

Conforms to Record

Sampler CT

MATRIX

DW - Drinking Water
 GW - Ground Water
 SW - Surface Water
 WW - Waste Water
 Water
 SL - Sludge
 S - Soil

ABBREVIATIONS

HB - Hosebib
 PV - Petcock Valve
 PT - Pressure Tank
 PH - Pump House
 RR - Restroom
 GL - Glass
 PL - Plastic
 ST - Sterile

Site Mgr. [] Site Mgr.Tel# [] Cell# []
 Site Access []

Send results via email to: larista@condorearth.com

Emer. Name 5 *See file EDT []
 Agency [] Agency # [] Fax# []

Relinquished By: [Signature] Date 10/06/22 Time 9am
 Received By: [Signature] Date 10/11/22 Time 1300
 Relinquished By: [] Date [] Time []
 Received By: [] Date [] Time []
 Relinquished By: [] Date [] Time []
 Received By: [] Date [] Time []

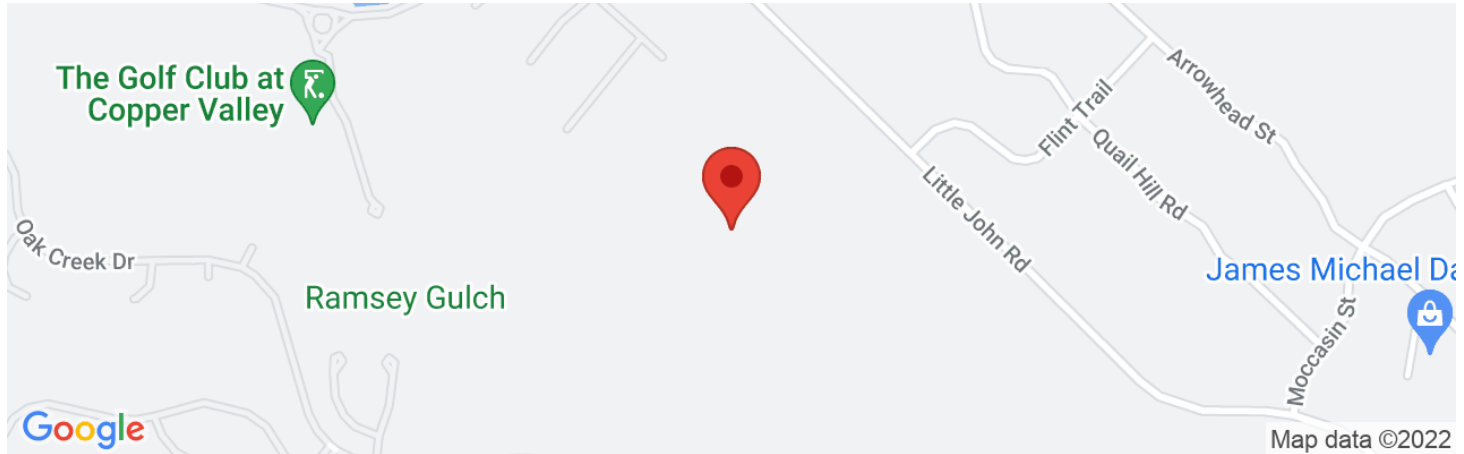
APPENDIX D
U.S. Seismic Design Maps





South Flint Trail extension

Latitude, Longitude: 37.91578067, -120.62958448



Date	9/27/2022, 7:19:25 PM
Design Code Reference Document	ASCE7-16
Risk Category	II
Site Class	C - Very Dense Soil and Soft Rock

Type	Value	Description
S_S	0.392	MCE_R ground motion. (for 0.2 second period)
S_1	0.196	MCE_R ground motion. (for 1.0s period)
S_{MS}	0.51	Site-modified spectral acceleration value
S_{M1}	0.294	Site-modified spectral acceleration value
S_{DS}	0.34	Numeric seismic design value at 0.2 second SA
S_{D1}	0.196	Numeric seismic design value at 1.0 second SA

Type	Value	Description
SDC	C	Seismic design category
F_a	1.3	Site amplification factor at 0.2 second
F_v	1.5	Site amplification factor at 1.0 second
PGA	0.166	MCE_G peak ground acceleration
F_{PGA}	1.234	Site amplification factor at PGA
PGA_M	0.205	Site modified peak ground acceleration
T_L	12	Long-period transition period in seconds
$SsRT$	0.392	Probabilistic risk-targeted ground motion. (0.2 second)
$SsUH$	0.406	Factored uniform-hazard (2% probability of exceedance in 50 years) spectral acceleration
SsD	1.5	Factored deterministic acceleration value. (0.2 second)
$S1RT$	0.196	Probabilistic risk-targeted ground motion. (1.0 second)
$S1UH$	0.204	Factored uniform-hazard (2% probability of exceedance in 50 years) spectral acceleration.
$S1D$	0.6	Factored deterministic acceleration value. (1.0 second)
$PGAd$	0.5	Factored deterministic acceleration value. (Peak Ground Acceleration)
PGA_{UH}	0.166	Uniform-hazard (2% probability of exceedance in 50 years) Peak Ground Acceleration
C_{RS}	0.967	Mapped value of the risk coefficient at short periods

Type	Value	Description
C_{R1}	0.959	Mapped value of the risk coefficient at a period of 1 s
C_V	0.862	Vertical coefficient

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APPENDIX E
Construction Standards





Designation: E1643 – 18a

Standard Practice for Selection, Design, Installation, and Inspection of Water Vapor Retarders Used in Contact with Earth or Granular Fill Under Concrete Slabs¹

This standard is issued under the fixed designation E1643; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ϵ) indicates an editorial change since the last revision or reapproval.

1. Scope

1.1 This practice covers procedures for selecting, designing, installing, and inspecting flexible, prefabricated sheet membranes in contact with earth or granular fill used as vapor retarders under concrete slabs.

1.2 Conditions subject to frost and either heave or hydrostatic pressure, or both, are beyond the scope of this practice. Vapor retarders are not intended to provide a waterproofing function.

1.3 The values stated in inch-pound units are to be regarded as standard. The values given in parentheses are mathematical conversions to SI units that are provided for information only and are not considered standard.

1.4 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety, health, and environmental practices and determine the applicability of regulatory limitations prior to use.*

1.5 *This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.*

2. Referenced Documents

2.1 *ASTM Standards:*²

E1745 Specification for Plastic Water Vapor Retarders Used in Contact with Soil or Granular Fill under Concrete Slabs
E1993/E1993M Specification for Bituminous Water Vapor

¹ This practice is under the jurisdiction of ASTM Committee E06 on Performance of Buildings and is the direct responsibility of Subcommittee E06.21 on Serviceability.

Current edition approved Feb. 15, 2018. Published February 2018. Originally approved in 1994. Last previous edition approved in 2018 as E1643-18. DOI: 10.1520/E1643-18A.

² For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

Retarders Used in Contact with Soil or Granular Fill Under Concrete Slabs

F710 Practice for Preparing Concrete Floors to Receive Resilient Flooring

2.2 *Other Standard:*³

ACI 302.2R-06 Guide for Concrete Slabs that Receive Moisture-Sensitive Flooring Materials

3. Significance and Use

3.1 Vapor retarders provide a method of limiting water vapor transmission and capillary transport of water upward through concrete slabs on grade, which can adversely affect floor finishes and interior humidity levels.

3.2 Adverse impacts include adhesion loss, warping, peeling, and unacceptable appearance of resilient flooring; deterioration of adhesives, ripping or separation of seams, and air bubbles or efflorescence beneath seamed, continuous flooring; damage to flat electrical cable systems, buckling of carpet and carpet tiles, offensive odors, growth of fungi, and undesired increases to interior humidity levels.

4. Manufacturer's Recommendations

4.1 Where inconsistencies occur between this practice and the manufacturer's instructions, conform to the manufacturer's instructions for installation of vapor retarder.

5. Material, Design, and Construction

5.1 See ACI 302.2R-06 for material, design, and construction recommendations.

5.2 See Specifications E1745 and E1993/E1993M for vapor retarder specifications.

5.3 *Vapor Retarder Material Selection*—The following criteria should be considered when selecting a vapor retarder material.

5.3.1 Local building code and regulatory requirements.

5.3.1.1 Comply with local building code and regulatory requirements as a minimum consideration.

³ Available from American Concrete Institute (ACI), 38800 Country Club Dr., Farmington Hills, MI 48331-3439, <http://www.concrete.org>.

5.3.2 The water-vapor permeance of the vapor retarder material.

5.3.2.1 The water vapor permeance of the vapor retarder material shall be at such a rate so that adverse impacts to floor finishes and coatings do not occur

5.3.2.2 Refer to **X1.6** for discussion on water vapor transmission rate of vapor retarder.

5.3.2.3 The perm rating determined under these criteria shall supersede that in references **5.2** should this value be less than required under references in **5.2**.

5.3.3 The types and amounts of deleterious compounds in the soil on the building site.

5.3.3.1 Review building site soil analyses for deleterious materials and compounds and select a vapor retarder material that will withstand exposure to such deleterious materials or compounds.

5.3.4 The tensile strength and puncture resistance of the vapor retarder material.

5.3.4.1 Select a vapor retarder material capable of withstanding potential construction site damage.

5.3.5 The type of base material on which the vapor retarder is to be installed.

5.3.5.1 Select vapor retarder material capable of withstanding tear or puncture damage due to the type, gradation, and texture of the base material to be installed below the material. Prepare base material to minimize risk of puncture, for example, by rolling or compacting.

5.3.6 The expected exposure of the vapor retarder to ultra-violet rays.

5.3.6.1 Assess expected exposure of the vapor retarder material to ultra violet rays and select a material capable of withstanding such exposure and maintain its capability to perform its intended function.

6. Placement

6.1 Level and compact base material.

6.2 Install vapor retarder material with the longest dimension parallel with the direction of concrete pour.

6.3 Face laps away from the expected direction of the concrete pour whenever possible.

6.4 Extend vapor retarder over footings and seal to foundation wall, grade beam, or slab at an elevation consistent with the top of the slab or terminate at impediments such as water stops or dowels. Seal around penetrations such as utilities and columns in order to create a monolithic membrane between the surface of the slab and moisture sources below the slab as well as at the slab perimeter.

6.5 Lap joints minimum 6 in. (150 mm), or as instructed by the manufacturer, and seal laps in accordance with the manufacturer's recommendations.

6.6 Extend vapor retarder over the tops of pile caps and grade beams to a distance acceptable to the structural engineer and terminate as recommended by the manufacturer.

7. Protection

7.1 Take precautions to protect vapor retarder from damage during installation of reinforcing steel, utilities and concrete.

7.2 Use reinforcing bar supports with base sections that minimize the potential for puncture of the vapor retarder.

7.3 Avoid use of stakes driven through the vapor retarder.

7.4 Refer to ACI 302.2R–06 for discussion of aggregate for protection of vapor retarder, including the risks of installing aggregate fill above a vapor retarder that can act as a reservoir for water.

8. Inspection and Repair

8.1 Inspect and mark all areas of damage and insufficient installation of the vapor retarder sufficiently in advance of concrete placement such that deficiencies may be corrected before concrete is placed.

8.2 Repair damaged areas prior to concrete placement with vapor retarder material lapped and sealed minimum of 6 in. (150 mm) beyond damaged area or as instructed by manufacturer.

9. Keywords

9.1 concrete slabs; vapor; vapor retarder

APPENDIX

(Nonmandatory Information)

X1. PRE-DESIGN CONSIDERATIONS

X1.1 *Planning and Organization of Construction*—To avoid ambiguities, redundancies, conflicts, and omissions, plan the organization and coordination of drawings and specifications so that graphic, dimensional, and descriptive information on subgrade, granular base, vapor retarder, and protection course, if any, appears in only one place. Since the relationship of the subgrade (pad) elevation (usually shown on grading plans) to the rest of the building finish floor elevations and finished site grades is a function of the depth of the granular

base and protection course, these dimensions should be shown in only one place. For graphic depictions and dimensions of the granular base and the protection course, the architectural drawings are preferred, but structural drawings are sometimes used. Specifications for sub-base conditions should be in the grading section. Specifications for base, vapor retarder, and protection course should be in the section on concrete, but there are advocates of a separate section in Division 7 for the vapor retarder system. Examination and testing of surface

conditions should be in appropriate finish sections.

X1.2 Scheduling—Determine if slab drying will be on the critical path for schedule occupancy. If so, plan measures to reduce drying times, mitigate moisture, or select floor finish materials not subject to damage by moisture.

X1.3 Geotechnical—Ensure that the geotechnical survey includes comprehensive and reliable information on subsurface water table levels and the hydrology of geological strata as well as historical data on surface flooding and hydrology. The survey should also include a list of compounds and concentration levels that are deleterious to plastic materials. The geotechnical study should consider not only the past but also the projected change from ongoing or anticipated development patterns. Soils with comparably higher clay contents are particularly troublesome because the relatively high capillary action within the clay allows moisture to rise under the slab.

X1.4 Civil—Ensure that site topographic surveys and grading plans accurately and comprehensively establish surface drainage characteristics for the site and surrounding areas.

X1.5 Landscape and Irrigation—Most traditional geotechnical studies do not take into account the post-construction change in ground moisture conditions due to introduced planting and irrigation which is a major problem. For example, in California coastal areas, the average annual rainfall is about 18 in. (457 mm). Turf irrigation amounting to 1.3 in. (33 mm) of water per week over the normal seven-month dry season will increase this to nearly 60 in. (1524 mm) with almost no runoff. It is not enough to assume that irrigation will simply duplicate natural conditions encountered during the wet season. The landscape architect, geotechnical engineer, and civil engineer should closely coordinate design recommendations to avoid moisture problems introduced or exacerbated by landscape planting and irrigation. Once a project is completed, effective irrigation management is instrumental not only in water conservation but also in avoiding potential building-related moisture problems.

X1.6 Water Vapor Permeance of Vapor Retarder—In order to prevent moisture damage to the slab on grade, floor covering systems and floor coating systems the water vapor permeance of the vapor retarder material shall be such that accumulation of moisture in the slab through the vapor retarder material does not occur. The vapor pressures of the below grade environment and the interior environment shall be calculated and analyzed. For humidity sensitive interior environments, calculate the

effect of vapor diffusion through the vapor retarder, slab on grade and, if applicable, the floor covering or coating on the interior humidity levels. Select a vapor retarder material with a water vapor permeance rating that will maintain interior humidity levels within specified tolerances. The water vapor permeance of flooring material or coating shall be obtained, if available. Calculate the amount of moisture entering the slab through the vapor retarder material. Calculate the amount of moisture that can diffuse through the flooring material. Insure that the water vapor permeance of the vapor retarder material does not allow accumulation of moisture within the slab due to water vapor permeance of the flooring material. Analyze soil temperatures with regard to heat flux through the slab on grade as well as interior temperature and RH levels. Determine if conditions exist for a dew point within the slab. If such conditions can potentially exist, analyze the amount of moisture accumulation within the slab versus the drying potential of the slab through its top surface, and if applicable, through the floor covering system to determine if prolonged and detrimental wetting of the slab will occur. If so, incorporate measures to eliminate conditions for a dew point to occur. One such measure is installing an insulation layer directly below the slab and vapor retarder.

X1.7 Moisture Entrapment Due to Rainfall or Ground Water Intrusion—Moisture entrapment can occur beneath slabs when the vapor retarder is placed below a fill course or vapor retarder protection layer, and the fill material takes on water from rainfall, saw-cutting, curing, cleaning or other sources. If a fill course or vapor retarder protection layer is used, the extent of moisture entrapment can be reduced by scheduling concrete placements before rainfall and by sealing any entry points for water in the completed slab. If a fill course or vapor retarder protection layer is used, the vapor retarder must be turned up at the perimeter of the slab to protect the fill course from lateral entrance of moisture.

X1.8 Ensure there is no water accumulation on top of the vapor retarder prior to placing of concrete.

X1.9 Moisture Conditions of Slab—Following placement of the concrete and acclimatization of the building, comply with Practice **F710** and floor covering manufacturer's recommendations for any specified tests for moisture emissions from or moisture content of the slab on grade. Review written report(s) on test results prior to the installation of the floor covering or coating installation. Obtain written approval of acceptable slab conditions from the floor covering manufacturer and project design professional. See also ACI 302.2R-06.

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Designation: E1745 – 17

Standard Specification for Plastic Water Vapor Retarders Used in Contact with Soil or Granular Fill under Concrete Slabs¹

This standard is issued under the fixed designation E1745; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ϵ) indicates an editorial change since the last revision or reapproval.

1. Scope

1.1 This specification covers flexible, preformed sheet membrane materials to be used as vapor retarders in contact with soil or granular fill under concrete slabs.

1.1.1 This specification does not cover bituminous vapor retarders. See Specification E1993/E1993M for information on bituminous vapor retarders.

1.2 The specified tests are conducted on new materials and materials that have been conditioned or exposed to simulate potential service conditions.

1.3 The values stated in inch-pound units are to be regarded as standard. The values given in parentheses are mathematical conversions to SI units that are provided for information only and are not considered standard.

1.4 *This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.*

2. Referenced Documents

2.1 ASTM Standards:²

C168 Terminology Relating to Thermal Insulation

D828 Test Method for Tensile Properties of Paper and Paperboard Using Constant-Rate-of-Elongation Apparatus

D882 Test Method for Tensile Properties of Thin Plastic Sheeting

D1709 Test Methods for Impact Resistance of Plastic Film by the Free-Falling Dart Method

E96/E96M Test Methods for Water Vapor Transmission of Materials

¹ This specification is under the jurisdiction of ASTM Committee E06 on Performance of Buildings and is the direct responsibility of Subcommittee E06.21 on Serviceability.

Current edition approved May 1, 2017. Published May 2017. Originally approved in 1996. Last previous edition approved in 2011 as E1745-11. DOI: 10.1520/E1745-17.

² For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

E154/E154M Test Methods for Water Vapor Retarders Used in Contact with Earth Under Concrete Slabs, on Walls, or as Ground Cover

E631 Terminology of Building Constructions

E1643 Practice for Selection, Design, Installation, and Inspection of Water Vapor Retarders Used in Contact with Earth or Granular Fill Under Concrete Slabs

E1993/E1993M Specification for Bituminous Water Vapor Retarders Used in Contact with Soil or Granular Fill Under Concrete Slabs

F1249 Test Method for Water Vapor Transmission Rate Through Plastic Film and Sheeting Using a Modulated Infrared Sensor

3. Terminology

3.1 *Definitions*—For definitions of terms used in this specification, see Terminologies C168 and E631.

3.2 *Definitions of Terms Specific to This Standard:*

3.2.1 *perm, n*—the time rate of water vapor migration through a material or a construction of one grain per hour, square foot, inch of mercury pressure difference.

3.2.1.1 *Discussion*—If a specification states that a one perm limit is required, the same flow rate will be obtained from the following relationships:

$$\begin{aligned} 1 \text{ perm} &= 1 \text{ grain/h} \cdot \text{ft}^2 \text{ in.} \cdot \text{Hg (inch-pound)} \\ &= 57.2 \cdot 10^{-12} \text{ kg}/(\text{Pa} \cdot \text{s} \cdot \text{m}^2) \text{ (SI fundamental units)} \\ &= 57.2 \text{ ng}/(\text{Pa} \cdot \text{s} \cdot \text{m}^2) \text{ (SI frequently used)} \\ &= 0.66 \text{ g}/24 \text{ h} \cdot \text{m}^2 \cdot \text{mm Hg (SI has been used but is now obsolete)} \end{aligned}$$

3.2.2 *vapor retarder, n*—(formerly vapor barrier) a material or construction that impedes the transmission of water vapor under specified conditions.

3.2.3 *water vapor permeability, n*—a property of material which is water vapor permeance through unit thickness. Since materials that provide resistance to vapor flow are never used in unit thickness, the preferred evaluation of both materials and constructions is the permeance.

3.2.4 *water-vapor permeance, n*—the time rate of water vapor flow through unit area of the known thickness of a flat material or a construction normal to two specific parallel surfaces induced by unit vapor pressure difference between the two surfaces under specific temperature and humidity conditions. See *perm*.

4. Classification

4.1 Materials shall be specified to conform to one of these three classes: A, B, or C, or specific requirements shall be specified in one or more of the properties listed in **Table 1**.

5. Specifying Information

5.1 Specifications for materials shall include the following:

5.1.1 This specification number.

5.1.2 Class A, B, or C, or alternatively, specific performance requirements for each of the properties listed in **Table 1**.

5.1.3 Performance requirements, if any, for special conditions (see **7.4**).

5.1.4 Execution or installation requirements with reference to Practice **E1643**.

6. Lap Sealing

6.1 The producer shall provide instructions for lap sealing, including minimum width of lap, method of sealing, and either supply or specify suitable products for lap sealing.

7. Properties

7.1 *Permeance*—Material shall conform to the requirements listed in **Table 1** under the following conditions: when tested in accordance with Test Methods **E154/E154M**, Section 7 (based on Test Methods **E96/E96M**), or Test Method **F1249**, test temperature shall be 73.4 °F (23 °C) and test humidity shall be 50 ± 2 %.

7.1.1 *Permeance of New Material*—No conditioning.

7.1.2 *Permeance after Wetting, Drying, and Soaking*—Refer to Test Methods **E154/E154M**, Section 8.

7.1.3 *Permeance after Heat Conditioning*—Refer to Test Methods **E154/E154M**, Section 11.

7.1.4 *Permeance after Low Temperature Conditioning*—Refer to Test Methods **E154/E154M**, Section 12.

7.1.5 *Permeance after Soil Organism Exposure*—Refer to Test Methods **E154/E154M**, Section 13.

7.2 *Tensile Strength of New Material*—Refer to Test Methods **E154/E154M**, Section 9. (The apparatus shall be that described in either Test Methods **D828** or **D882**.)

7.3 *Resistance to Puncture of New Material*—Refer to Test Methods **D1709**, Test Method B.

7.4 *Special Conditions*—When specifically required by the buyer, due to special conditions which dictate properties of fire resistivity, prolonged exposure to sunlight, or resistance to deterioration from hydrocarbons, the material shall conform to the following:

7.4.1 *Flame Spread*³—Refer to Test Methods **E154/E154M**, Section 16, as follows:

Class A	0–25
Class B	26–75
Class C	76–200

7.4.2 *Permeance after Soil Poison Petroleum Vehicle Exposure*—Refer to Test Methods **E154/E154M**, Section 14 (based on Test Methods **E96/E96M**), or Test Method **F1249**. Conform to permeance requirements in **Table 1**.

7.4.3 *Permeance after Exposure to Ultraviolet Light*—Refer to Test Methods **E154/E154M**, Section 15. Conform to permeance requirements in **Table 1**.

8. Sampling

8.1 For each complete set of tests, obtain all samples from a single production roll of material. Samples shall be representative of the material being sold to the end user.

9. Certification

9.1 When specified in the purchase order or contract, the purchaser shall be furnished with certification that samples representing each lot have been either tested or inspected as directed in this specification and that requirements have been met.

9.2 Upon the request of the purchaser in the contract or order, the certification of an independent third party (testing laboratory) indicating conformance to the requirements of this specification may be considered.

³ The classes and values shown are distinct from the performance classes listed in **Table 1**.

TABLE 1 Properties for Specified Performance Classes^A

	Class A		Class B		Class C	
	IP Units	SI Units	IP Units	SI Units	IP Units	SI Units
Water vapor permeance (Test Methods E154/E154M , Section 7, or Test Method F1249), max	0.1 perms (0.1 gr/[h·ft ² ·in.·Hg])	(6 ng/[s·m ² ·Pa])	0.1 perms (0.1 gr/[h·ft ² ·in.·Hg])	(6 ng/[s·m ² ·Pa])	0.1 perms (0.1 gr/[h·ft ² ·in.·Hg])	(6 ng/[s·m ² ·Pa])
Tensile strength (Test Methods E154/E154M , Section 9), ^B min	45.0 lbf/in.	7.9 kN/m	30.0 lbf/in.	5.3 kN/m	13.6 lbf/in.	2.4 kN/m
Puncture resistance (Test Methods D1709 , Test Method B), min	no inch-pound equivalent used	2200 g	no inch-pound equivalent used	1700 g	no inch-pound equivalent used	475 g

^A Refer to Practice **E1643** for assessing suitability of use based on reported perm rating of material.

^B Tensile strength per unit width for the total sample thickness is used instead of tensile strength per unit area because vapor retarder materials are never used in unit thickness.

9.3 When specified in the purchase order or contract, the producer or supplier shall furnish a summary of the test procedures listed in **Table 1**, providing for each test the laboratory that performed or witnessed the test, the date of the most recent test, and the test results.

9.4 When specified in the purchase order or contract, the producer or supplier shall furnish copies of the laboratory reports for each of the tests listed in **Table 1**.

10. Keywords

10.1 concrete; concrete slab; floor; plastic; vapor retarder

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