CEQA INITIAL STUDY
MITIGATED NEGATIVE DECLARATION

PUBLIC REVIEW DRAFT

SILVERADO CANYON ROAD BRIDGE (BRIDGE NUMBER 55C-0174) REPLACEMENT OVER SILVERADO CREEK PROJECT

INITIAL STUDY No. IP 21-0205

Prepared for:

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Orange County (OC) Public Works
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List of Acronyms

AB	Assembly Bill
ACM	Asbestos containing materials
ADL	Aerially deposited lead
amsl	Above mean sea level
APE	Area of potential effects
AQMP	Air Quality Management Plan
BMP	Best management practices
Br. No.	Bridge Number
BSA	Biological Study Area
CAAQS	California Ambient Air Quality Standards
Caltrans	California Department of Transportation
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CNPS	California Native Plant Society
CNDDB	California Natural Diversity Database
County	County of Orange Public Works
FESA	Federal Endangered Species Act
FHWA	Federal Highway Administration
General Plan	County of Orange General Plan
GHG	Greenhouse gas
HCP	Habitat Conservation Plan
IS/MND	Initial Study / Mitigated Negative Declaration
ISA	Initial Site Assessment
LCP	Lead-containing paint
LST	Localized significance threshold
MLD	Most Likely Descendent
NAHC	Native American Heritage Commission
NAAQS	National Ambient Air Quality Standards
NCCP	Natural Communities Conservation Planning
NES	Natural Environment Survey
NPDES	National Pollution Discharge Elimination System
NRCS	Natural Resources Conservation Service

OC	Orange County
PM 2.5	Particulate Matter 2.5
PM 10	Particulate Matter 10
PRC	Public Resources Code
ROW	Right-of-way
RWQCB	Regional Water Quality Control Board
SCAG	Southern California Association of Governments
SCAQMD	South Coast Air Quality Management District
SLF	Sacred Lands File
Specific Plan	Silverado-Modjeska Specific Plan
SSP	Standard Special Provisions
SWPPP	Stormwater Pollution Prevention Plan
TCE	Temporary Construction Easement
TMDL	Total daily maximum load
USEPA	United States Environmental Protection Agency
USACE	United States Army Corps of Engineers
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
VMT	Vehicle miles traveled
WQMP	Water Quality Management Plan

Chapter 1: Introduction

The purpose of this Initial Study is to evaluate the potentially significant environmental impacts associated with implementing the Silverado Canyon Road Bridge (Bridge Number [Br. No.] 55C-0174) Replacement Over Silverado Creek Project (Project). The Initial Study is organized into the following chapters:

- Chapter 1: Introduction
- Chapter 2: Environmental Determination
- Chapter 3: Project Description
- Chapter 4: Environmental Evaluation
- Chapter 5: Summary of Mitigation, Avoidance, and Minimization Measures
- Chapter 6: References

1.1 Project Title

Silverado Canyon Road Bridge (Bridge No. 55C-0174) Replacement over Silverado Creek Project

1.2 Lead Agency Name | Address

County of Orange
OC Public Works
OC Infrastructure Programs Project Management
601 North Ross Street
Santa Ana, CA 92701

1.3 Lead Agency Contact Person | Telephone Number | Email

Adam Ramos, P.E.
Civil Engineer
OC Public Works
OC Infrastructure Programs | Project Management
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Email: Adam.Ramos@ocpw.ocgov.com

1.4 Project Location

The project area is in Silverado, an unincorporated community in the County of Orange (see **Figure 1**, Regional Location and **Figure 2,** Project Location). The community of Silverado is located in the Santa Ana Mountains. The Project would include the replacement of Silverado Canyon Road Bridge, the sole point of access to approximately 270 homes in Silverado, as well as to the local Silverado Fire Station, library, and post office.

1.5 Project Sponsor's Name | Address

County of Orange
OC Public Works
OC Infrastructure Programs Project Management
601 North Ross Street
Santa Ana, CA 92701

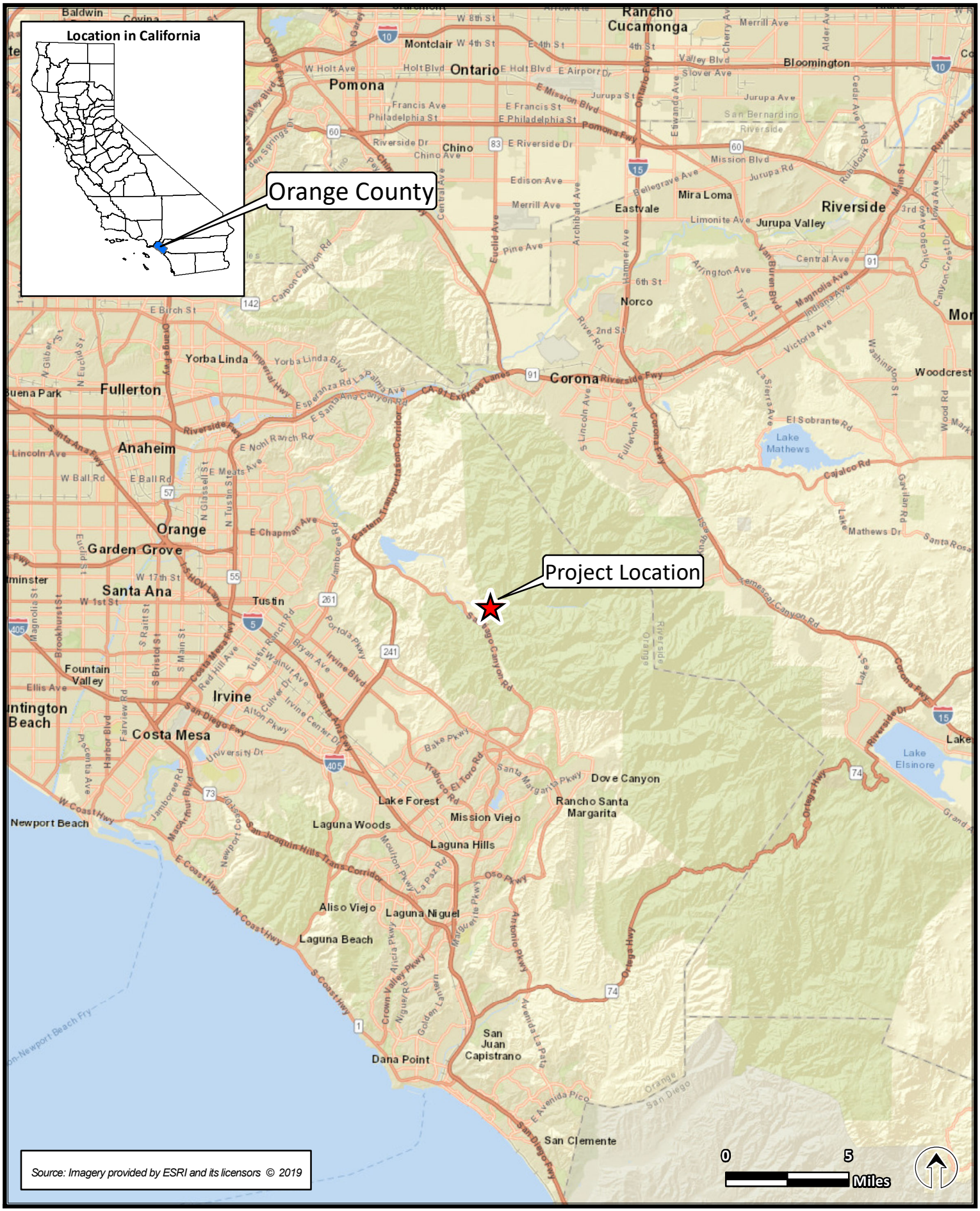

FIGURE 1. REGIONAL LOCATION
Silverado Bridge Replacement Project

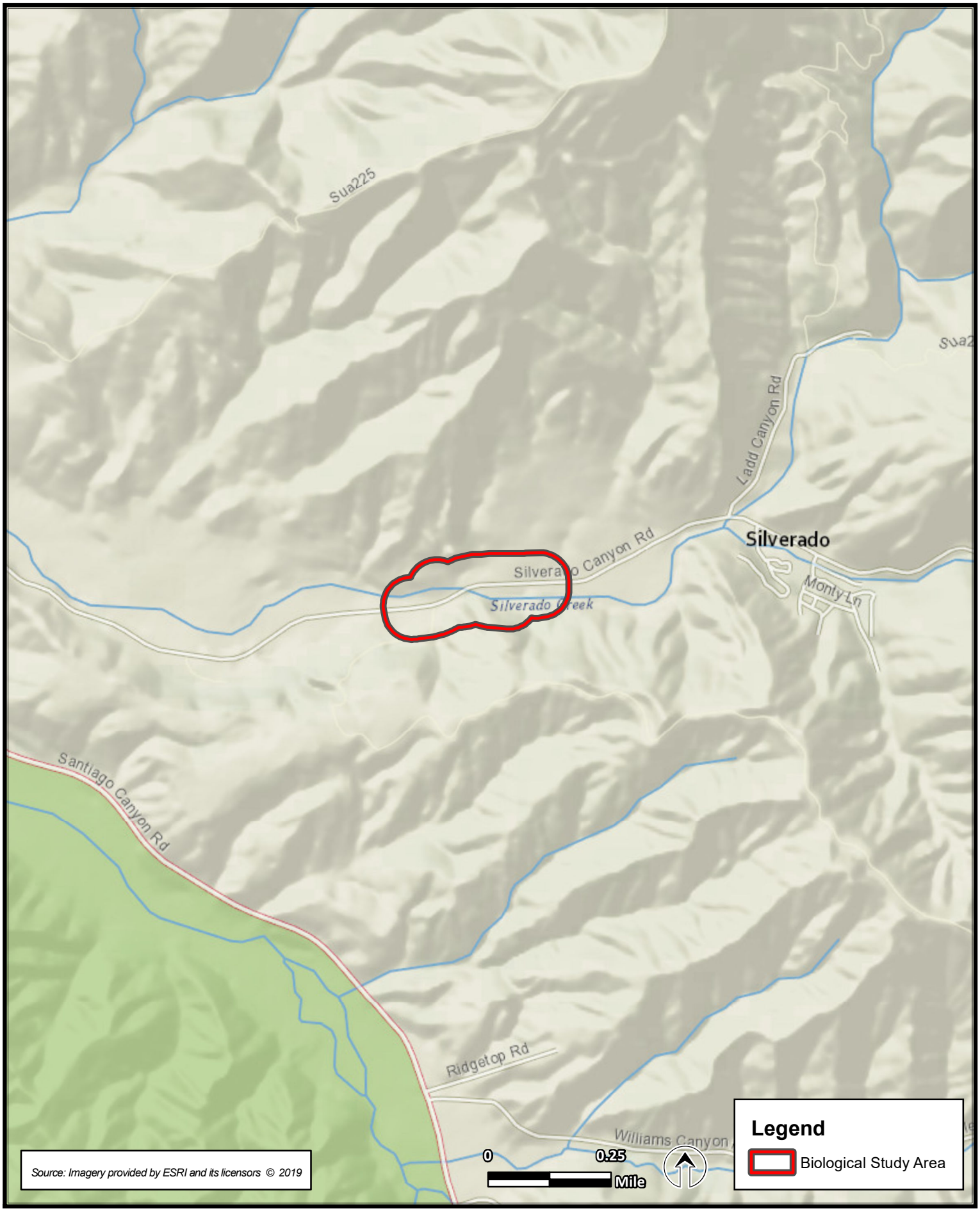

FIGURE 2. PROJECT LOCATION
Silverado Bridge Replacement Project

1.6 General Plan | Specific Plan Designation(s)

Land uses surrounding the project area include Single Family Residential and Other Open Space and Recreation as identified by the Southern California Association of Governments (SCAG) (see **Figure 3,** Land Use). The project area is included as Rural Residential (1A) and Suburban Residential (1B) in the County of Orange Land Use Map (County of Orange, 2020b). In addition, the project area is within federal ownership because it is situated in the Cleveland National Forest (United States Department of Agriculture, n.d; Orange County Board of Supervisors, 1977) The nearest residential property is located approximately 350 feet to the northwest of the project area. The project area is also included in the Silverado-Modjeska Specific Plan (Specific Plan). The Specific Plan identifies the project area as within the Silverado Creek 100-year floodplain (Orange County Board of Supervisors, 1977).

1.7 Zoning District(s)

The project area is within a Residential Hillside Estates (RHE-4000) zoning district and General Agriculture (A-1) zoning district. Zoning districts adjacent to the project area include General Agriculture and General Agriculture with a Sign Restriction (SR) overlay (County of Orange Public Works, 2021).

1.8 Description of the Project

The County of Orange Public Works (County), in cooperation with the California Department of Transportation (Caltrans) and the Federal Highway Administration (FHWA), intends to replace the Silverado Canyon Road Bridge over Silverado Creek (Br. No. 55C-0174) (see **Figure 1** Regional Location and **Figure 2** Project Location).

The existing structure was built in 1935 and is a single-span riveted steel through plate girder bridge with concrete deck on reinforced concrete abutments all supported on concrete spread footings. The bridge is 58 feet long and 32 feet wide and carries two lanes of traffic over the Silverado Creek. The bridge cross section consists of two 2-foot-wide combined curb and railing, a 4-foot-wide walkway (north side), as well as two 12-foot-wide traffic lanes. The tops of the steel girders are rusty and have been damaged by multiple vehicles impacts on both ends of the bridge. Refer to Chapter 3 for a complete project description.

1.10 Other Public Agencies Whose Approval is Required

Under the California Environmental Quality Act (CEQA), the public agency with the principal responsibility for carrying out or approving a project is designated as the “Lead Agency.” The Lead Agency under CEQA for this Project is the County. The County is responsible for preparing this Initial Study/Mitigated Negative Declaration (IS/MND) and approving and implementing the Project.

Table 1 below provides a list of required and anticipated public agency approvals that are associated with the Project.

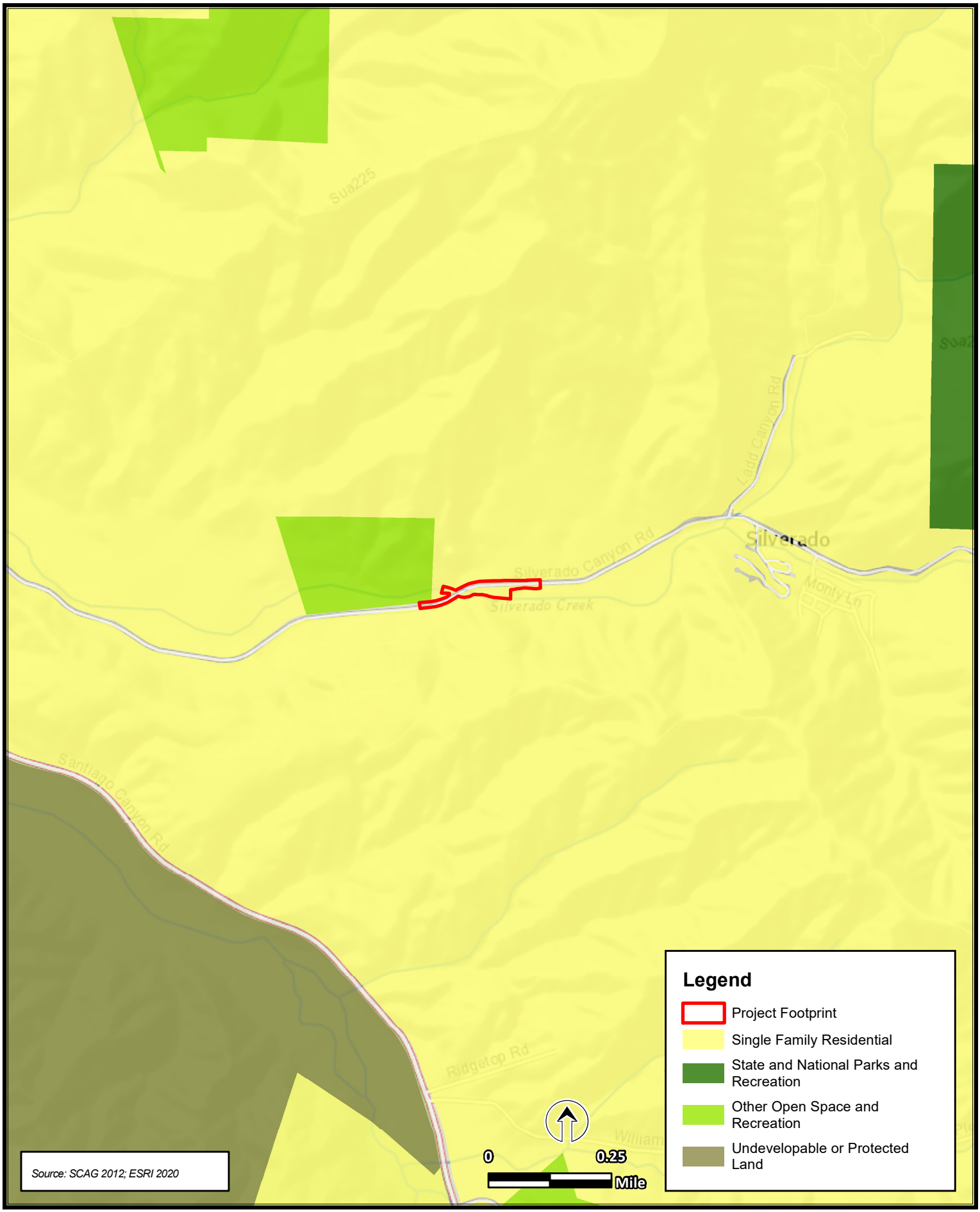

FIGURE 3. LAND USE
Silverado Bridge Replacement Project

Table 1 Public Agency Approvals and Permits Needed

Body	Action
United States Army Corps of Engineers (USACE)	Section 404 Nationwide Permit
Regional Water Quality Control Board (RWQCB)	Section 401 Water Quality Certification
California Department of Fish and Wildlife	Section 1602 Streambed Alteration Agreement
California Department of Transportation (Caltrans)	Encroachment Permits, Traffic Control Plan
California State Office of Historic Preservation	National Historic Preservation Act, Section 106 Consultation
County of Orange, Board of Supervisors	Approval of Project
Orange County Fire Authority	Construction Fire Prevention Plan
Orange County Public Works	Infrastructure Programs, Project Management, Wildfire Emergency Evacuation Plan
Orange County Sheriff's Department	Wildfire Emergency Evacuation Plan

1.11 California Native American Consultation

Assembly Bill (AB) 52 consultation is being conducted by the County and Native American consultation under National Historic Preservation Act Section 106 is being conducted by Caltrans. A search of the Sacred Lands File (SLF) was requested from the Native American Heritage Commission (NAHC) in January 2018. The NAHC reported the search of the SLF revealed negative results for the relevant United States Geological Survey (USGS) quadrangles. The NAHC provided a list of Native American individuals to contact for Section 106 of the National Historic Preservation Act.

On March 19, 2020, the following Native American groups/individuals were contacted

- Ralph Goff (Campo Band of Mission Indians)
- Andrew Salas (Gabrieleño Band of Mission Indians – Kizh Nation)
- Matias Belardes (Juaneño Band of Mission Indians Acjachemen Nation – Belardes)
- Gwendolyn Parada (La Posta Band of Mission Indians)
- Temet Aguilar (Pauma Band of Luiseño Indians -Pauma & Yuima Reservation)
- Julie Hagen (Viejas Band of Kumeyaay Indians)
- Michael Garcia (Ewiiaapaayp Tribal Office)

No tribes responded, so a follow-up email was sent on April 6, 2021. The consultation period ended, and no response was received from any of the Native American groups or individuals to date.

Pursuant to Public Resources Code section 21080.3.1, the County of Orange initiated consultation per AB 52 on July 20, 2021, with the following California Native American tribes: Juaneno Band of Mission Indians, San Gabriel Band of Mission Indians, Soboba Band of Luiseño Indians, and Gabrieleño Band of Mission Indians - Kizh Nation. No response was received from any of the Native American tribes.

Chapter 2: Environmental Determination

Based on the analysis conducted in this IS/MND, County Public Works, as the Lead Agency, has made the following determination:

I find that the proposed project COULD NOT have a significant effect on the environment, and a **NEGATIVE DECLARATION** will be prepared.	☐
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 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.	☐
I find that the proposed project has previously been analyzed as part of an earlier CEQA document (which either mitigated the project or adopted impacts pursuant to findings) adopted/certified pursuant to the State CEQA Guidelines and the County's adopted Local CEQA Guidelines. The proposed project is a component of the whole action analyzed in the previously adopted/certified CEQA document.	☐
I find that the proposed project has previously been analyzed as part of an earlier CEQA document (which either mitigated the project or adopted impacts pursuant to findings) adopted/certified pursuant to State and County CEQA Guidelines. Minor additions and/or clarifications are needed to make the previous documentation adequate to cover the project which are documented in this addendum to the earlier CEQA document (CEQA §15164).	☐
I find that the proposed project Has previously been analyzed as part of an earlier CEQA document (which either mitigated the project or adopted impacts pursuant to findings) adopted/certified pursuant to State and County CEQA Guidelines. However, there is important new information and/or substantial changes have occurred requiring the preparation of an additional CEQA document (ND or EIR) pursuant to CEQA Guidelines Sections 15162 through 15163.	☐

Adam Ramos _____ 2/22/2022

Signature Date

Adam Ramos

Printed Name

Chapter 3: Project Description

3.1 Introduction

The County, in cooperation with the Caltrans and the FHWA, intends to replace the Silverado Canyon Road Bridge over Silverado Creek (Br. No. 55C-0174). The existing structure was built in 1935 and is a single-span riveted steel through plate girder bridge with concrete deck on reinforced concrete abutments all supported on concrete spread footings. The bridge is 58 feet long and 32 feet wide and carries two lanes of traffic over the Silverado Creek. The bridge cross section consists of two 2-foot-wide combined curb and railing, a 4-foot-wide walkway (north side), as well as two 12-foot-wide traffic lanes. The tops of the steel girders are rusty and have been damaged by multiple vehicles impacts on both ends of the bridge.

3.2 Project Purpose and Need

The Silverado Canyon Road Bridge was constructed in 1935 and provides access to approximately 270 homes in the unincorporated community of Silverado, as well as to the local Silverado Fire Station, library, and post office. The bridge's function is critical to the surrounding community, and avoidance of potential failure or deficiencies is essential. The community is susceptible to risk of seasonal floods and wildfires that occur in the Santa Ana Mountains. Silverado Canyon Road Bridge serves as emergency access to and from the Canyon in the event of a community evacuation. In 2007, the Santiago Fire forced evacuation of Silverado Canyon residents, primarily using the Silverado Canyon Road Bridge. The fire burned for 31 days, and the bridge provided access to firefighting vehicles and personnel during the official state of emergency.

The Silverado Canyon Road Bridge received a low Sufficiency Rating of 46.5 (out of 100) on the most recent Caltrans bridge inspection report (Caltrans, 2012). In addition to its advanced age and noticeable signs of deterioration, the bridge is also classified as functionally obsolete, which means that the bridge deck is too narrow for current and future traffic needs.

3.3 Environmental Setting and Surrounding Land Uses

The adjacent land uses are described in the following **Table 2.**

Table 2 Surrounding Land Uses

Direction	Land Use(s)
North	Rural Residential (1A), Suburban Residential (1B)
East	Rural Residential (1A)
West	Open Space Reserve (OS)
South	Rural Residential (1A), Suburban Residential (1B)

Sources: (County of Orange Public Works, 2021; County of Orange, 2015)

Environmental Setting

The project area is in Silverado, an unincorporated community in the County of Orange (see **Figure 1**, Regional Location and **Figure 2** Project Location). The community of Silverado is located in the Santa Ana Mountains and is therefore susceptible to risk of seasonal floods and wildfires that occur in the Santa Ana Mountains. Silverado Canyon Road Bridge serves as emergency access to and from the Canyon in the event of a community evacuation. The project area contains assessor's parcel numbers (APN) 105-051-86, APN 105-05-87, and APN 105-51-83. The project area is located on the United States Geological

Survey, 7.5-Minute Series, Topographic Map, Lake Forest Quadrangle, California. The project area is relatively flat but is adjacent to steep slopes. The elevation of the site ranges from 1,132 feet above mean sea level (amsl) at the eastern end to 1,111 feet amsl.

The Project includes the replacement of Silverado Canyon Road Bridge, the sole point of access to approximately 270 homes in the unincorporated community of Silverado, as well as to the local Silverado Fire Station (29402 Silverado Canyon Rd, Silverado, CA 92676), library (7531 E Santiago Canyon Rd, Silverado, CA 92676), and post office (28251 Silverado Canyon Rd, Silverado, CA 92676).

3.4 Construction Activities

The Project would include removal and replacement of the existing Silverado Canyon Road Bridge over Silverado Creek. The proposed replacement bridge would be a concrete bridge approximately 58 feet long and 44 feet wide. The bridge would support two 12-foot-wide traffic lanes, two 5-foot shoulders, two traffic barriers, and a 5-foot sidewalk with railing (north side). There are four pole mounted electrical transformers within the project area. There is also a water line mounted to south side of the Silverado Canyon Road Bridge. The Project would require the permanent relocation of the existing waterline and coordination with the adjacent power pole owner to protect in place the poles and overhead electrical and communication lines.

The proposed construction activities include removal of the existing steel bridge (in two separate stages); full or partial removal of the existing wingwalls; modification of the existing abutments; construction of a wider concrete bridge, abutments, wingwalls, and retaining walls; replacement of the existing metal beam guardrails; widening of the roadway at both ends of the bridge approaches; regrading of the existing creek banks at the bridge; construction of a temporary construction access ramp into the creek; and construction of scour countermeasures at the bridge foundations. Existing abutments would be modified to minimize construction activity in the creek. New abutments would be supported on concrete spread footings, similar to the existing foundations. In addition, 42 micropiles would be drilled up to 80 feet in length with a diameter of 12 inches, to further support the bridge. Grading in the Silverado Creek channel would be required during construction. There would be an approximate 270 cubic yards of cut and 57 cubic yards of fill. In addition, there would be approximately 213 cubic yards of export. Debris from demolition activities would be collected and removed from the site to prevent materials from entering the Silverado Creek channel. Drainage on the bridge would be treated prior to offsite discharge during construction. Construction of the Project would have 0.007 acres of permanent impacts to oak/sycamore woodland. In addition, tree removal may be needed if access is restrained within the temporary impact zone shown in **Figure 4**, Project Impact Area; eight trees are within this zone.

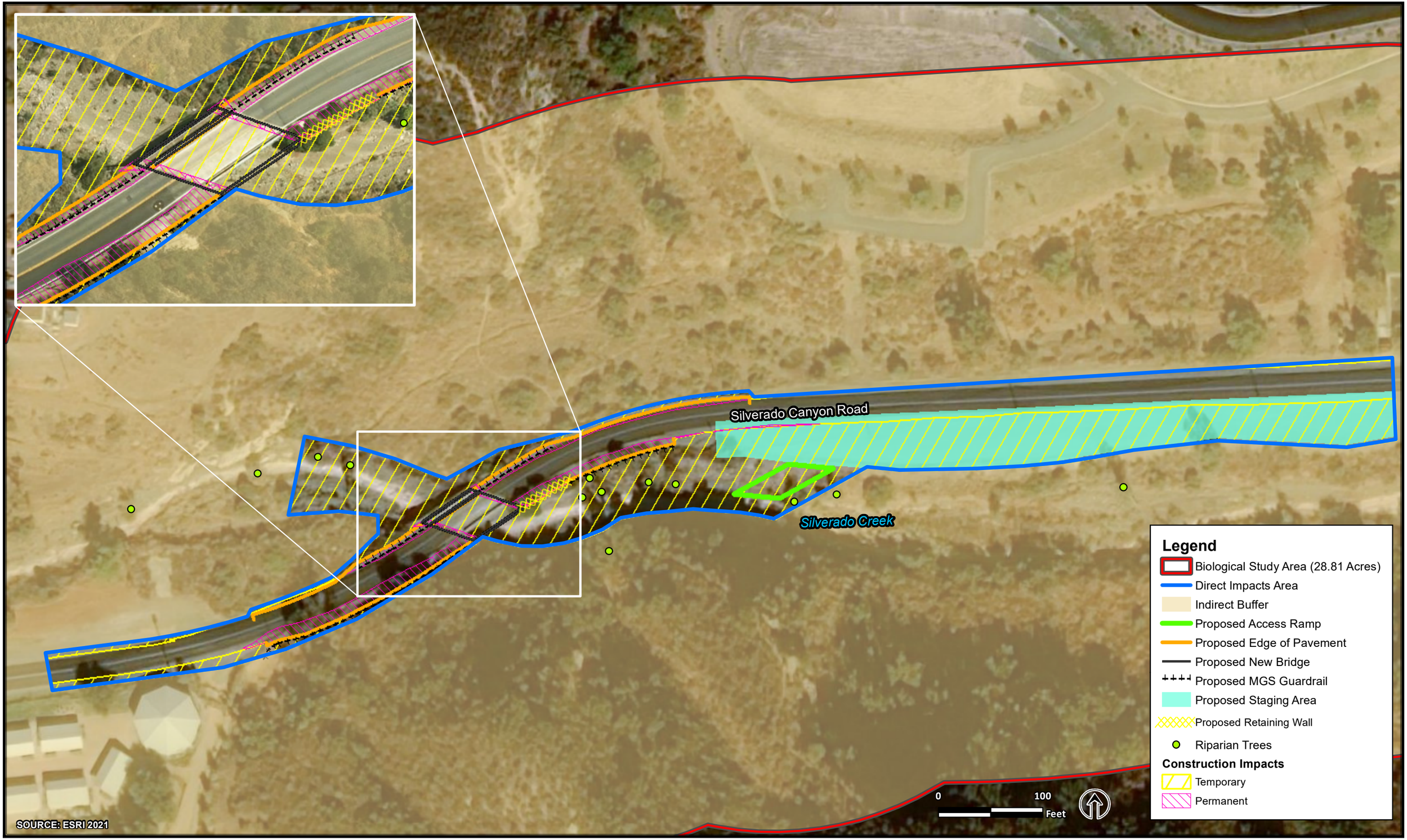

FIGURE 4. PROJECT IMPACT AREA
Silverado Canyon Road Bridge Replacement Project (Bridge No. 55C-0174) Over Silverado Creek

The existing bridge serves as the only access into and out of Silverado Canyon for rural residents, volunteer fire station, community center, branch library, and post office. It is important that access, for both residential and emergency vehicles, is maintained during construction. There is no detour available for the Silverado Canyon Road Bridge. Therefore, the Project would require staged construction that always maintains one lane of traffic open during construction. Additional staging area would be provided on a vacant lot approximately 150 feet east of the bridge along the existing shoulder. Half of the existing steel bridge would be removed during the first construction phase while the remaining half would be supported on temporary falsework in order to maintain one lane of traffic open during construction. The falsework supports would be supported on spread footings within the creek. The Project would be completed within existing right-of-way; however, a temporary construction easement (TCE) would be required.

3.5 Offsite Improvements

The Project would not include any temporary or permanent offsite improvements.

3.6 Project Schedule and Phases

Project construction is anticipated to start in 2023 and construction would last approximately 12 months. It is anticipated that the contractor would be able to do most of the work with a small base crew of five to 10 workers. Additional transitory personnel may be used to deliver and remove materials and equipment. Specialty subcontractors would be needed for micropile construction and potentially for construction of temporary falsework supports. Each of these specialized crews would likely consist of an additional three to five workers. The phases of construction for the Project are described in **Table 3** below.

Table 3 Phases of Construction

Stage	Activity	Duration
Prior to Stage 1	Access ramp installation, tree removal, general construction prep work on both sides of the bridge and within the creek.	1-2 months
Stage 1	Northern half of bridge will be removed (i.e., current westbound traffic) and reconstructed. One lane signalized traffic will be on the southern half of the bridge.	3-5 months
Stage 2	Southern half of the bridge will be removed (i.e., current eastbound traffic) and reconstructed. One lane signalized traffic will be shifted to the newly constructed bridge.	2-4 months
After Stage 2	Guardrail installation, roadway paving, general construction closeout/cleanup on both sides of the bridge and within the creek.	1-2 months

Equipment used would be at the contractor's discretion and may deviate from the following list. Equipment likely to be used, based on similar transportation projects: loader, backhoe, track mounted drill rig, pickup truck, truck mounted crane, dump truck, semi-trailer, circular saw, jackhammer, welding equipment, concrete mixer truck, concrete pump, cutting torch, sandblaster, compactor, paver, guardrail post driver.

Equipment anticipated to be used during each stage, based on the construction activities involved in each stage, is described in **Table 4** below.

Table 4 Construction Equipment

Stage	Equipment
Prior to Stage 1	Loader, backhoe, pickup truck (multiple), semi-trailer, track mounted drill rig
Stage 1 Bridge Removal	Loader, backhoe, pickup truck (multiple), truck mounted crane, dump truck, semi-trailer, circular saw (multiple), jackhammer (multiple), welding equipment, cutting torch (multiple)
Stage 1 Bridge Construction	Loader, backhoe, pickup truck (multiple), truck mounted crane, track mounted drill rig, semi-trailer, welding equipment, concrete mixer truck, concrete pump, cutting torch, sandblaster
Stage 2 Bridge Removal	Loader, backhoe, pickup truck (multiple), truck mounted crane, dump truck, semi-trailer, circular saw (multiple), jackhammer (multiple), cutting torch (multiple)
Stage 2 Bridge Construction	Loader, backhoe, pickup truck (multiple), truck mounted crane, track mounted drill rig, semi-trailer, welding equipment, concrete mixer truck, concrete pump, cutting torch (multiple), sandblaster.
After Stage 2 Bridge Construction	Loader, backhoe, pickup truck (multiple), dump truck, semi-trailer, jackhammer (multiple), compactor, paver, guardrail post driver.

3.7 Change in Land Use Controls

There would be no permanent right-of-way (ROW) acquisition, therefore there would be no change in land use controls.

Chapter 4: Environmental Impacts

4.1 Organization of Environmental Analysis

A discussion of the Project's potential environmental impacts is provided in sections 4.2.1 through 4.2.21. The evaluation of impacts will follow CEQA Appendix G checklist questions.

4.2 Evaluation of Environmental Impacts

Analysis Methodology

Potential environmental effects of the Project are classified and described within the CEQA Appendix G Environmental Checklist under the following general headings:

"No Impact" applies where the impact simply does not exist for projects like the one being studied and evaluated. For example, if the project area is not located in a fault rupture zone, then the item asking whether the project would result in or expose people to potential impacts involving fault rupture should be marked as "No Impact."

"Less Than Significant Impact" applies where the impact would occur, but the magnitude of the impact is considered insignificant or negligible. For example, a development which would only slightly increase the amount of surface water runoff generated at a project area as compared to the existing conditions without the project would be considered to have a less than significant impact on surface water runoff.

"Less than Significant Impact with Mitigation" applies where the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less Than Significant Impact." Incorporated mitigation measures should be outlined within the checklist and a discussion should be provided which explains how the measures reduce the impact to a less than significant level. This designation is appropriate for a Mitigated Negative Declaration, where all potentially significant issues have been analyzed and mitigation measures have been recommended that reduce all impacts to levels that are less than significant.

"Potentially Significant Impact" applies where the project has the potential to cause a significant and unmitigable environmental impact. If there are one or more items marked as "Potentially Significant Impact," an EIR is required.

Analysis of potentially significant impacts of each of the environmental factors identified in **Table 5** below is based on the project area's environmental setting, project description, and the sample questions/thresholds of significance. The analysis considers the whole of the action and includes onsite impacts, offsite impacts, short-term construction impacts, long term operational impacts, direct impacts, indirect impacts, and cumulative impacts.

Environmental Factors Potentially Affected

This document incorporates the Environmental Checklist Form from Appendix G of the CEQA Guidelines as referenced in Section 3.3 of the Orange County 2020 Local CEQA Procedures Manual.

Table 5 below lists the environmental factors that are evaluated in this document. Environmental factors that are checked contain at least one impact has been determined to be a "Potentially Significant Impact." Environmental factors unchecked indicate that impacts were determined to have resulted in no impacts, less than significant impacts, or less than significant impacts with mitigation measures or County Standard Conditions of Approval incorporated into the Project.

Table 5 Environmental Factors Potentially Affected

☐	Aesthetics (4.2.1)	☐	Mineral Resources (4.2.12)
☐	Agriculture & Forestry Resources (4.2.2)	☐	Noise (4.2.137)
☐	Air Quality (4.2.3)	☐	Population & Housing (4.2.14
☐	Biological Resources (4.2.4)	☐	Public Services (4.2.15)
☐	Cultural Resources (4.2.5)	☐	Recreation (4.2.16)
☐	Energy (4.2.6)	☐	Transportation (4.2.17)
☐	Geology and Soils (4.2.7)	☐	Tribal Cultural Resources (4.2.18)
☐	Greenhouse Gas Emissions (4.2.8)	☐	Utilities & Service Systems (4.2.19)
☐	Hazards & Hazardous Materials (4.2.9)	☐	Wildfire (4.2.20)
☐	Hydrology & Water Quality (4.2.10)	☐	Mandatory Findings (4.2.21)
☐	Land Use & Planning (4.2.11)		

Thresholds of Significance

Thresholds of significance are identifiable quantitative, qualitative, or performance level standards for a particular environmental effect, non-compliance with which means the effect will normally be determined to be significant by a Lead Agency and compliance with which means the effect will normally be determined to be less than significant (California Code of Regulations, Title 14 ["CEQA Guidelines"], §15064.7(a)).

With the exception of Vehicle Miles Travelled (VMT), the County has not adopted specific thresholds of significance and instead relies upon the specific questions relating to the topical environmental factors listed in Appendix G of the CEQA Guidelines to assist in the determination of whether an impact is potentially significant. The County of Orange Board of Supervisors adopted County VMT guidelines at its November 17, 2020, meeting pursuant to Senate Bill (SB) 743. The implementation of SB743 requires CEQA documents to include VMT analysis methodology and thresholds for land use projects. For transportation projects, because they are not "land use projects," the lead agency has discretion to select the methodology used to evaluate VMT impacts.

The County may, depending on the circumstances of a particular project, use specific thresholds of significance that it has adopted on a case-by-case basis as provided by CEQA Guidelines Section 15064.7(b).

Environmental Baseline

To adequately determine the significance of a potential environmental impact from a project, the environmental baseline must be established in order to measure the project's impacts against. Guidelines Section 15125(a) states in pertinent part that the physical environmental conditions in the vicinity of the project at the time the environmental analysis is commenced will normally constitute the baseline physical conditions that will assist the lead agency in a determining if an impact is significant. Therefore, the environmental baseline for this Project constitutes the existing physical environmental conditions as they existed at the time that the environmental process commenced in June 2020.

4.2.1 Aesthetics

Except as provided in Public Resources Code Section 21099, would the project:	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?	☐	☐	☐	☒
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	☒
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?	☐	☐	☒	☐
d) Create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area?	☐	☐	☐	☒

Response to Question a):

No Impact. According to the Specific Plan, "the purpose of planned developments in the Silverado-Modjeska area would be to reduce development problems in hillside areas and to preserve areas of natural scenic beauty through the encouragement of integrated planning, imaginative design and unified development control." In addition, the Conservation Element of the Specific Plan identifies streams and tree preservation as important conservation elements (Orange County Board of Supervisors, 1977). A scenic vista is defined as a viewpoint that provides expansive views of a highly valued landscape for the benefit of the general public. The County has identified scenic areas, scenic viewpoints, and highways in the County of Orange General Plan (General Plan). Transportation Element, Land Use Element, and Scenic Highway Plan Map (County of Orange, 2015; County of Orange, 2012b; County of Orange, 2005)

The Specific Plan does not identify any scenic vistas within the project area (Orange County Board of Supervisors, 1977). The closest scenic resource is Saddleback (also known as Old Saddleback or Saddleback Mountain), a cluster of two mountain peaks in the Santa Ana Mountains approximately six miles to the southeast of the project area; this is not visible from the project area. In addition, the project area is not within or adjacent to a scenic viewpoint; the closest viewpoint is approximately 1.5 miles west on Santiago Canyon Road. Silverado Canyon Road provides access to and views of the mountains directly to the east; however, the project area does not provide the general public the opportunity to stop and view the surrounding landscape. The Project would include removing the existing bridge and replacing it with a slightly larger concrete bridge. The proposed design would not obstruct or impact existing views from the bridge. Therefore, the Project would result in no impact to a scenic vista.

Response to Question b):

No Impact. The project area is not part of the State Highway System and is not designated as a state scenic highway. The closest officially designated state scenic highway is State Route 55 (Santa Ana) approximately 18 miles west of the project area (California Department of Transportation). Therefore, the Project would result in no impact to a state scenic highway.

Response to Question c):

Less Than Significant Impact. The project area is visible from nearby rural residential properties. Views of the project area include a transportation facility (a 2-lane roadway and bridge). The Project would include removing the existing steel bridge and replacing it with a slightly larger concrete bridge. The new bridge would match the character of the surrounding rural community, and remain the same length, material, and alignment. Views of the proposed bridge would be comparable in character and quality to existing views. Disturbed vegetation would be replaced following project completion. Views from the proposed bridge of surrounding landscape would be comparable in character and quality to existing views. See discussion in response (a) above. Therefore, the Project would result in less than significant impacts to visual character and quality in the project area.

Response to Question d):

No Impact. The portion of Silverado Canyon Road where the project area resides is unlit but has minimal sources of light and glare from surrounding residential properties. The Project would not include the addition of lighting or modification of existing light sources. Additionally, the Project would not include a change in the materials, alignment, or capacity of the bridge in a way that would result in increased glare at surrounding land uses. Therefore, the Project would result in no impact to light and glare.

4.2.2 Agriculture and Forestry Resources

In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:	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?	☐	☐	☐	☒
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code 12220 (g)), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51004g)?	☐	☐	☐	☒
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒

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 forest land to non-forest use?	☐	☐	☐	☒

Response to Question a):

No Impact. The Farmland Mapping and Monitoring Program of the California Resources Agency designates the project area as urban and built-up land and other land; land classified as 'other land' is defined as not being included in any other mapping category (i.e., not farmland of any kind) (California Resources Agency, 2018; California Department of Conservation, 2016). The project area is not located on or adjacent to any parcels identified as Prime Farmland, Unique Farmland, or Farmland of State Importance (collectively "Important Farmland"). Therefore, the Project would result in no impact to Prime Farmland, Unique Farmland, or Farmland of Statewide Importance.

Response to Question b):

No Impact. The General Plan designates the project area as General Agriculture (A1) zoning with a small area of Residential Hillside Estate (RHE) to the west of the project area (County of Orange, 2016). The Project would include the removal and replacement of a bridge completely within County ROW. In addition, the project area is not within or adjacent to land contracted under the Williamson Act (California Department of Conservation, State of California Williamson Act Contract Land, 2017). Therefore, the Project would result in no impact to existing zoning for agricultural use, or a Williamson Act contract.

Response to Question c):

No Impact. The project area is zoned as RHE and A1, as discussed above, and is not zoned as timberland, forest land, or for timberland production. Therefore, the Project would result in no impact to zoning of forest land, timberland, or timberland zoned timberland production.

Response to Question d):

No Impact. As previously discussed, the project area is zoned as RHE and A1; therefore, the project area is not zoned for, nor does it include forest land. Specifically, the Project does not involve forest land and would solely replace an already existing and developed bridge. Therefore, the Project would result in no impact to conversion of forest land.

Response to Question e):

No Impact. The Project would include the removal and replacement of a bridge completely within County ROW. According to the Department of Conservation Important Farmland Finder Map, the portion of County ROW in the project area is not identified as Important Farmland (California Department of Conservation, 2016). In addition, the project area does not contain forest land. Thus, there would not be the conversion of farmland to non-agriculture use or forestland to non-forestland use. Therefore, the Project would result in no impact to the conversion of farmland to non-agricultural use or forest land to non-forest use.

4.2.3 Air Quality

Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determinations. Would the project:	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?	☐	☐	☒	☐
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?	☐	☐	☒	☐
c) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☒	☐
d) Result in other emissions (such as those leading to odors) affecting a substantial number of people?	☐	☐	☒	☐

The project area is in the San Gabriel Valley of the South Coast Air Basin (SCAB). The South Coast Air Quality Management District (SCAQMD) oversees the local air quality of the project area. The California Air Resources Board (CARB) and the United States Environmental Protection Agency (USEPA) are responsible for determining state and federal air quality standards, which are set forth in the California Ambient Air Quality Standards (CAAQS) and National Ambient Air Quality Standards (NAAQS), respectively.

The SCAB is in nonattainment with NAAQS, meaning that it fails to meet the standards set forth in the NAAQs, for Ozone, Particulate Matter ($PM_{2.5}$ - particulate matter that is less than 2.5 micrometers in diameter), and Lead and is in nonattainment with CAAQS, meaning that it fails to meet the standards set forth in the CAAQS, for Ozone, Particulate Matter (PM_{10} – particulate matter that is between 2.5 and 10 micrometers in diameter), and Particulate Matter ($PM_{2.5}$) (see **Table 6**). Because the SCAB currently exceeds these state and federal ambient air quality standards, the SCAQMD is required to develop and implement a strategy to reduce pollutant levels below applicable thresholds.

In response to exceeding state and federal ambient air quality standards, the SCAQMD, in partnership with the SCAG, CARB, and the USEPA prepared the 2016 Air Quality Management Plan (AQMP). The 2016 AQMP was developed to achieve multiple goals in partnership with other entities promoting reductions in criteria pollutant emissions and concentrations, greenhouse gases (GHGs), and toxic risk, as well as increasing efficiencies in energy use, transportation, and goods movement. The 2016 AQMP includes transportation control measures from SCAG's 2016 Regional Transportation Plan/Sustainable Communities Strategy, as well as other integrated strategies and measures needed to meet the NAAQS for criteria pollutants for which the SCAB is currently in nonattainment status.

Table 6 Federal and State Attainment Status for South Coast Air Basin

Pollutant	Federal Designation	State Designation
Ozone (O_3)	Non-Attainment (Extreme)	Non-Attainment (Extreme)
Carbon Monoxide (CO)	Attainment (Maintenance)	Attainment
Nitrogen Dioxide (NO_2)	Attainment (Maintenance)	Attainment
Sulfur Dioxide (SO_2)	Attainment	*
Particulate Matter (PM_{10})	Attainment	Non-Attainment
Particulate Matter ($PM_{2.5}$)	Non-Attainment (Serious)	Non-Attainment
Lead (Pb)	Non-Attainment (Partial)	*
Hydrogen Sulfide (H_2S)	*	Unclassified
Sulfates	*	Attainment
Vinyl Chloride	*	Attainment

Source: South Coast Air Quality Management District, 2018
Notes: (*) = Not applicable/ No Federal Standards

The Project would be subject to the general SCAQMD Regulation IV – Prohibitions:

- Rule 401 – Visible Emissions
- Rule 402 – Nuisance
- Rule 403 – Fugitive Dust

For projects less than or equal to five acres in size, localized significance thresholds (LST) are used to consider various transportation-related air quality pollutants that result from construction and operation of transportation projects (see **Table 7**). LSTs represent the maximum emissions from a project that can occur without expecting to cause or contribute to an exceedance of the most stringent applicable federal or state ambient air quality standard and are developed based on the ambient concentrations of that pollutant for each source receptor area and distance to the nearest sensitive receptor (e.g., children, the elderly, asthmatics, and others at a heightened risk of negative health outcomes due to exposure to air pollution). PM_{10} LSTs were derived based on requirements in SCAQMD Rule 403 – Fugitive Dust. The SCAQMD LSTs are voluntary and to be implemented at the discretion of local public agencies when acting as a lead agency under CEQA.

Table 7 SCAQMD Air Quality Significance Thresholds (Mass Daily Thresholds)

Regional Thresholds (lbs/day)	**VOC**	**NO_x**	**SO_x**	**CO**	**PM_{10}**	**$PM_{2.5}$**	**Lead (Pb)**
Construction	75	100	150	550	150	55	3
Operation	55	55	150	550	150	55	3
Localized Thresholds (lbs/day) [a]	**VOC**	**NO_x**	**SO_x**	**CO**	**PM_{10}**	**$PM_{2.5}$**	**Lead (Pb)**
Construction	n/a	197	n/a	1,804	12	8	n/a
Operation	n/a	197	n/a	1,804	3	2	n/a

[a] *Localized significance thresholds are from the SCAQMD lookup tables for Source Area 19 assuming a five-acre project area and a distance to the nearest sensitive receptor of 25 meters.*
Source: (South Coast Air Quality Management District, 2019; South Coast Air Quality Management District, 2009)

Response to Question a):

Less Than Significant Impact. Construction activities would include site preparation, cut-and-fill activities, grading, trench/excavation, removing or improving existing roadway surfaces, and paving roadway surfaces. According to the Air Quality and Greenhouse Gas Technical Memorandum prepared for this Project (See **Appendix A**), during construction short-term degradation of air quality is expected from the release of particulate emissions (airborne dust) generated by earthmoving activities. The use of off-road equipment and on-road vehicles may also result in short-term mobile-source emissions. These emissions would be temporary, due to the limited timeframe of construction activities, and predominantly limited to the immediate area surrounding the project area based on the proposed improvements (AMBIENT Air Quality and Noise Consulting, 2021a).

Construction emissions were estimated using the latest Sacramento Metropolitan Air Quality Management District's Road Construction Emissions Model (RCEM) (Version 9.0.0). While the model was developed for Sacramento conditions in terms of fleet emission factors, silt loading, and other model assumptions, it provides a conservative measure for a given project's estimated air quality impacts during construction of transportation projects and is considered appropriate for estimating road construction emissions by the SCAQMD (in its CEQA guidance). Estimated construction-generated emissions of criteria air pollutants, including reactive organic gases (ROG), NO_x, CO, PM_{10}, and $PM_{2.5}$ are summarized in **Table 8**. As depicted, the Project would generate maximum daily emissions of approximately 3.3 lbs/day of PM_{10}, 3.0 lbs/day of $PM_{2.5}$, 64.8 lbs/day of CO, 79.5 lbs/day of NO_X, and 7.7 lbs/day of ROG. Annual emissions would total approximately 0.3 tons/year of PM_{10}, 0.3 tons/year of $PM_{2.5}$, 6.1 tons/year of CO, 7.2 tons/year of NO_X, and 0.7 tons/year of ROG (AMBIENT Air Quality and Noise Consulting, Air Quality and Greenhouse Gas Technical Memorandum, 2021a). Therefore, the Project would not exceed SCAQMD Air Quality Significance Thresholds shown in **Table 7**.

Table 8 Construction Emission Estimates

Construction Phase	PM_{10} (lbs/day)	$PM_{2.5}$ (lbs/day)	CO (lbs/day)	NO_x (lbs/day)	ROG (lbs/day)
Grubbing/Land Clearing	0.40	0.37	9.59	9.14	0.91
Grading/Excavation	3.28	2.98	64.76	79.45	7.71
Drainage/Utilities/Sub-Grade	2.26	2.09	46.71	55.18	5.42
Paving	0.46	0.40	12.83	8.87	0.92
Maximum (pounds/day)	3.3	3.0	64.8	79.5	7.7
Total (tons/construction project)	0.3	0.3	6.1	7.2	0.7

Emissions estimated using the Sacramento Metropolitan Air Quality Management District RCEM, version 9.0.0.

A traffic management plan would be developed and implemented as required by the 2018 Caltrans Standard Specifications and must comply with the California Manual on Uniform Traffic Control Devices, Part 6, "Temporary Traffic Control," which will reduce and control construction-related air quality-related emissions. Also, implementation of the measure **AQ-1** through **AQ-5**, some of which may also be implemented for other purposes such as stormwater pollution control, would reduce air quality-related emissions resulting from construction activities. Implementation of these measures would be expected to reduce construction-related fugitive dust emissions by approximately 50 percent or more (AMBIENT Air Quality and Noise Consulting, Air Quality and Greenhouse Gas Technical Memorandum, 2021a).

The Project would not result in changes to existing land use, increased transportation capacity, or growth in the region. The Project would not result in an increase of operational emissions beyond existing baseline conditions because the volume of traffic served by the bridge would remain the same with or without the Project. In addition, the Project would comply with SCAQMD rules applicable to the Project, inherently reducing overall emissions (see Standard Condition of Approval, **AQ-5**). Because the Project would be consistent with the 2016 AQMP, the Project would result in less than significant impacts to implementation of an applicable air quality plan.

Response to Question b):

Less Than Significant Impact. The County is in nonattainment with NAAQS for Ozone, Particulate Matter ($PM_{2.5}$), and Lead (Pb) and is in nonattainment with CAAQS for Ozone, Particulate Matter (PM_{10}), and Particulate Matter ($PM_{2.5}$) (see **Table 7**). As shown in **Table 8**, the Project's construction-related emissions would fall below the thresholds set in **Table 7.** Project construction would result in temporary construction emissions; however, the Project would not contribute additional long-term operational emissions, as the volume of traffic is expected to remain the same either with or without the Project. Therefore, the Project would result in a less than significant impact to the increase of any criteria pollutant for which the Project region is non-attainment under an applicable federal or state ambient air quality standard.

Response to Question c):

Less Than Significant Impact. Project construction would result in the temporary emission of air quality pollutants that are typically associated with construction activity, such as fugitive dust. Sources of fugitive dust include disturbed soils at the construction site and trucks carrying uncovered loads of soils. Unless properly controlled, vehicles leaving the site may deposit mud on local streets, which could be an additional source of airborne dust once the mud dries. Dust emissions may vary from day to day, depending on the nature and magnitude of construction activity occurring and local weather conditions. Dust emissions would depend on soil moisture, silt content of soil, wind speed, type of equipment being used, and the amount of equipment operating. Larger dust particles would settle near the source, while fine particles would be dispersed over greater distances from the construction site (AMBIENT Air Quality and Noise Consulting, Air Quality and Greenhouse Gas Technical Memorandum, 2021a). This is because larger dust particles are heavier and cannot be carried as far by the air before falling back to the ground, while fine dust particles can be carried further through the air before they fall back to the ground. The nearest sensitive receptors are the Silverado Community Center, directly to the east of the project area, and a residential property approximately 395 feet to the northwest of the project area. Project operation would not result in long-term emission of additional air quality pollutants, as traffic volumes will be similar with or without the Project.

With regard to potential localized air quality impacts to nearby sensitive receptors, emissions of NO_x, PM_{10}, and $PM_{2.5}$ are of particular concern. As depicted in **Table 8**, the project would generate maximum daily emissions of approximately 3.3 lbs/day of PM_{10}, 3.0 lbs/day of $PM_{2.5}$, and 79.5 lbs/day of NO_x. Construction-generated emissions would not exceed SCAQMD's localized significance thresholds of 12 lbs/day of PM_{10}, 8.0 lbs/day of $PM_{2.5}$, or 197 lbs/day of NO_x. It is also important to note that the project would be required to comply with standard avoidance and minimization measures (see **AQ-1 through AQ-5**) during project construction to minimize the emission of air quality pollutants as a result of construction activity. Due to the limited duration of construction, the limited increased emissions during construction, the distance of sensitive receptors from the construction site, and the fact that project operation is not expected to increase the emission of air quality pollutants, the Project would result in a less than significant impact to the exposure of sensitive receptors to substantial pollutant concentrations.

Response to Question d):

Less Than Significant Impact. Minor sources of odors would be present during construction. The predominant source of power for construction equipment is diesel engines. Exhaust odors from diesel engines, as well as emissions associated with asphalt paving, may be considered offensive to some individuals. However, because odors would be temporary and would disperse rapidly with distance from the source, construction-generated odors would not be anticipated to result in the frequent exposure of receptors to objectionable odorous emissions. Project operation would not result in long-term emission of additional air quality pollutants. Standard Condition of Approval **AQ-5** would be applied during project construction to minimize air quality pollutants as a result of construction activity. Therefore, the Project would result in a less than significant impact to other emissions (such as odors) affecting a large number of people.

Avoidance and Minimization Measures

AQ-1 The construction contractor must comply with the Caltrans' standard Specifications in Section 14-9 (2018). Section 14-9-02 specifically requires compliance by the contractor with all applicable laws and regulations related to air quality, including air pollution control district and air quality management district regulations and local ordinances.

AQ-2 Construction equipment and vehicles will be properly tuned and maintained. All construction equipment will use low sulfur fuel as required by the California Code of Regulations Title 17, Section 93114.

AQ-3 Environmentally sensitive areas will be established near sensitive air receptors. Within these areas, construction activities involving the extended idling of diesel equipment or vehicles would be prohibited, to the extent feasible.

AQ-4 To the extent feasible, construction traffic will be scheduled and routed to reduce congestion and related air quality impacts caused by idling vehicles along local roads during peak travel times.

Standard Condition of Approval

AQ-5 SCAQMD rules, including Rule 401 – Visible Emissions, Rule 402 – Nuisance, and Rule 403 – Fugitive Dust will be applied during project construction to minimize emissions of air quality pollutants as a result of construction activity. Fugitive dust control measures include, but are not limited to the following:

- Water, or a dust palliative will be applied to the site and equipment as often as necessary to control fugitive dust emissions.
- Soil binder will be spread on any unpaved roads used for construction purposes, and on all project construction parking areas.
- Trucks will be washed as they leave the ROW as necessary to control fugitive dust emissions.
- A dust control plan will be developed documenting sprinkling, temporary paving, speed limits, and timely re-vegetation of disturbed slopes as needed to minimize construction impacts to existing communities.
- Equipment and materials storage sites will be located as far away from residential and outdoor activity areas as practicable. Construction areas will be kept clean and orderly.
- Track-out reduction measures, such as gravel pads at project access points to minimize dust and

mud deposits on roads affected by construction traffic, will be used.

- All transported loads of soils and wet materials will be covered before transport, or adequate freeboard (space from the top of the material to the top of the truck) will be provided to minimize the emission of dust during transportation.
- Dust and mud that are deposited on paved, public roads due to construction activity and traffic will be promptly and regularly removed to reduce PM emissions.
- Mulch will be installed, or vegetation planted as soon as practicable after grading to reduce windblown PM in the area.

4.2.4 Biological Resources

Would the project:	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 Wildlife, U.S. Fish and Wildlife Service, or NOAA Fisheries?	☐	☒	☐	☐
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 Wildlife 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?	☐	☐	☐	☒
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?	☐	☒	☐	☐
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☒	☐
f) Conflict with provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☒

The following discussion includes findings from the Natural Environment Survey (NES) completed for the Project (see **Appendix B**) (GPA Consulting, 2021b).

The biological study area (BSA) encompasses approximately 28 acres and includes Silverado Canyon Road and an approximately 300-foot buffer around the limits of construction (see **Figure 4**, Project Impact Area). The limits of the BSA were determined by reviewing project plans and aerial imagery. The BSA includes areas that could be directly and indirectly impacted by the Project, either temporarily or permanently.

Available literature was reviewed to identify any special-status plants, wildlife, and/or sensitive habitats previously recorded within or near the Biological Study Area (BSA). Sources used to identify special-status species and/or habitats with potential to be in or near the BSA include the following:

- California Native Plant Society (CNPS) Inventory of Rare and Endangered Plants (CNPS, 2020);
- California Department of Fish and Wildlife (CDFW) California Natural Diversity Database (CNDDB) for the El Toro, Orange, Black Star Canyon, Corona South, Tustin, Santiago Peak, Laguna Beach, San Juan Capistrano, and Canada Gobernadora USGS 7.5-minute series topographic quadrangles (CDFW, 2021);
- National Marine Fisheries Service California Species List Tool: El Toro quadrangle (NMFS, 2021);
- United States Department of Agriculture Natural Resources Conservation Service (NRCS) Web Soils Survey for Los Angeles County, California, Southeastern Part (USDA NRCS, 2019);
- United States Fish and Wildlife Service (USFWS) Information for Planning and Consultation Database (USFWS, 2021); and
- USFWS National Wetlands Inventory Mapper (USFWS, 2019b).

After reviewing the above literature, a reconnaissance survey of the BSA was conducted by biologists Katherine Warner and Joseph Vu on November 11, 2019. Weather conditions during the November 11, 2019, survey were partly cloudy skies with an average temperature of 58 degrees Fahrenheit (°F). A focused special-status botanical survey was conducted by biologists Adelina Muñoz and Mr. Vu on May 15, 2020. Focused protocol surveys for arroyo toad (*Anaxyrus californicus*) were conducted by biologists Ryan Winkleman and Phillip Richards on April 22, May 6, 20, 27, and June 3 and 17, 2019 to identify the presence/absence of this species within the BSA (ICF, 2019). A jurisdictional delineation was conducted by biologist David Hughes on June 25, 2019, for the Project to identify areas potentially subject to state and federal jurisdiction (Psomas, 2019). A summary of identified special status natural communities, plans and wildlife that may occur in the BSA is provided below in **Table 9** and **Table 11**.

Table 9 Special-Status Plants and Wildlife with Potential to be in the BSA

Common and Scientific Names	Status			General Habitat Requirements	Habitat Present (HP) / Absent	Rationale for Natural Community/Species Presence/Absence
	Federal USFWS	State CDFW	CRPR			
Plants						
Calandrinia breweri Brewer's calandrinia	--	S4	4.2	The Brewer's calandrinia is an annual herb found in chaparral and coastal scrub. This species is found in disturbed sites on sandy or loamy soils, on open, north-facing slopes. Typical blooming period: March to June Typical elevation range: Zero to 4,003 feet	HP	**Not expected to occur.** There is chaparral on north facing slopes in the BSA. However, this species was not observed during the focused special-status botanical survey, which was conducted during the typical blooming period for this species. Therefore, this species is not expected to occur in the BSA.
Lepidium virginicum var. *robinsonii* Robinson's pepper-grass	--	S3	4.3	The Robinson's pepper-grass is an annual herb found in chaparral and coastal scrub. This species is found on dry soils. Typical blooming period: January to July Typical elevation range: Three to 2,904 feet	HP	**Not expected to occur.** There is chaparral and coastal scrub within the BSA. However, this species was not observed during the focused special-status botanical survey, which was conducted during the typical blooming period for this species. Therefore, this species is not expected to occur in the BSA.
Phacelia hubbyi Hubby's phacelia	--	S4	4.2	The Hubby's phacelia is an annual herb found in chaparral, coastal scrub, and valley and foothill grassland in gravelly or rocky slopes, and talus slopes, mostly away from the immediate coast. Typical blooming period: April to July Typical elevation range: Zero to 3,281 feet	HP	**Not expected to occur.** There is chaparral and coastal scrub within the BSA. However, this species was not observed during the focused special-status botanical survey, which was conducted during the typical blooming period for this species. Therefore, this species is not expected to occur in the BSA.

Common and Scientific Names	Status			General Habitat Requirements	Habitat Present (HP) / Absent	Rationale for Natural Community/Species Presence/Absence
	Federal USFWS	State CDFW	CRPR			
Romneya coulteri Coulter's matilija poppy	--	S4	4.2	The Coulter's matilija poppy is a perennial rhizomatous herb found in chaparral and coastal scrub habitats in dry washes and canyons, in burned areas. This species is found generally away from the coast in the mountain foothills and Santa Ana Mountains. Typical blooming period: March to July Typical elevation range: 65 to 3,937 feet	HP/P	**Present in the BSA.** This species was observed within the BSA.
Amphibians						
Anaxyrus californicus Arroyo toad	FE	SSC	--	The arroyo toad is found in semi-arid regions near washes or intermittent streams, including valley-foothill and desert riparian, desert wash, etc. This species is found near rivers with sandy banks, willows, cottonwoods, and sycamores, and in loose, gravelly areas of streams in drier parts of the range. There is critical habitat designated for this species in the BSA.	HP	**Not expected to occur.** There is a creek with sandy banks, willows, and gravelly areas in the BSA. However, focused protocol surveys for arroyo toad were conducted in 2019 and the species was not observed. Therefore, this species is not expected to occur in the BSA.
Reptiles						
Arizona elegans occidentalis California glossy snake	--	SSC	--	The California glossy snake is found in arid scrub, rocky washes, grasslands, and chaparral habitat, often in loose or sandy soils. This species is patchily distributed from the eastern portion of San Francisco Bay, southern San Joaquin Valley, and the Coast, Transverse, and Peninsular Ranges, south to Baja California	HP	**Moderate potential to occur.** There is chaparral in the BSA; therefore, there is a moderate potential for this species to occur in the BSA.
Aspidoscelis hyperythra	--	WL	--	The orange-throated whiptail is found in low-elevation coastal scrub, chaparral, and valley-foothill hardwood habitats. This species prefers washes and other sandy areas with	HP	**Moderate potential to occur.** There is chaparral in the BSA; therefore, there is a moderate potential for

Common and Scientific Names	Status			General Habitat Requirements	Habitat Present (HP) / Absent	Rationale for Natural Community/Species Presence/Absence
	Federal USFWS	State CDFW	CRPR			
Orange-throated whiptail				patches of brush and rocks. The primary food source for this species is termites.		this species to occur in the BSA.
Aspidoscelis tigris stejnegeri Coastal whiptail	--	SSC	--	The coastal whiptail is found primarily in hot and dry open areas with sparse foliage, including chaparral, woodland, and riparian areas. This species is also found in woodland and riparian areas where the ground may be firm soil, sandy, or rocky.	HP	**Moderate potential to occur.** There is chaparral in the BSA; therefore, there is a moderate potential for this species to occur in the BSA.
Phrynosoma blainvillii Coast horned lizard	--	SSC	--	The coast horned lizard is found in open areas of sandy soil and low vegetation in valleys, foothills, and semiarid mountains. This species is also found in grasslands, coniferous forests, woodlands, and chaparral, with open areas and patches of loose soil. Preferred plant species are either chaparral or a chaparral/coastal sage scrub mix with bare ground coverage averaging 20 to 40 percent.	HP	**Moderate potential to occur.** There is chaparral and coastal scrub within the BSA; therefore, there is a moderate potential for this species to occur in the BSA.
Birds						
Accipiter cooperii Cooper's hawk	--	WL	--	The Cooper's hawk is found in cismontane woodland, riparian forest, riparian woodland, and upper montane coniferous forest, in wooded habitats from deep forests to leafy subdivisions and backyards. This species nests mainly in riparian growths of deciduous trees, often in canyon bottoms on river floodplains, and will also nest in live oaks.	HP (Nesting) HP (Foraging)	**Moderate potential to occur.** There are coast live oaks within the BSA that could provide suitable nesting and foraging habitat for this species. Therefore, there is a moderate potential for this species to nest and forage in the BSA.
Asio otus Long-eared owl	--	SSC	--	The long-eared owl is found in riparian habitats with willows, cottonwoods, and live oaks along stream courses. This species requires adjacent open land with mice for foraging, and old crow, hawk, or magpie nests	HP (Nesting) HP	**Moderate potential to occur.** There are cottonwoods and oaks within the BSA that could provide suitable nesting and foraging habitat. Therefore, there is a moderate

Common and Scientific Names	Status			General Habitat Requirements	Habitat Present (HP) / Absent	Rationale for Natural Community/Species Presence/Absence
	Federal USFWS	State CDFW	CRPR			
				for breeding. This species forages primarily at night by flying low over open ground, including grasslands, meadows, active or fallow agricultural lands, sagebrush scrub, and desert scrub.	(Foraging)	potential for this species to nest and forage in the BSA.
Baeolophus inornatus Oak titmouse	--	S4	--	The oak titmouse is found in oak woodland, pinyon-juniper habitat, montane and valley foothill riparian habitats in cismontane California. Sometimes this species ventures into residential areas. This species nests in natural tree cavities or woodpecker holes. This species eats seeds, berries, caterpillars, beetles, ants, flies, and spiders.	HP (Nesting) HP (Foraging)	**Moderate potential to occur.** There are coast live oak woodlands within the BSA that could provide suitable nesting and foraging habitat. Therefore, there is a moderate potential for this species to nest and forage in the BSA.
Calypte costae Costa's hummingbird	--	S4	--	The Costa's hummingbird is found in desert washes, and sage scrub habitat, mostly in dry and open areas such as washes and streamsides in the Sonoran Desert and lower parts of dry canyons. In California, this species may also use various chaparral and riparian areas. This species nests in sparsely leaved shrubs or small trees, and sometimes in yucca or cactus.	HP (Nesting) HP (Foraging)	**Moderate potential to occur.** There are shrubs within the BSA that could provide suitable nesting and foraging habitat. Therefore, there is a moderate potential for this species to nest and forage in the BSA.
Lanius ludovicianus Loggerhead shrike	--	SSC	--	The loggerhead shrike is found in grasslands, orchards, and semi-open country with lookout posts, such as wires, trees, and scrub. This species builds nests in densely foliaged shrubs or trees, and thorny vegetation in semi-open terrain, from large clearings in wooded regions to open grassland or desert with a few scattered trees or large shrubs.	HP (Nesting) HP (Foraging)	**Moderate potential to occur.** There are shrubs within the BSA that could provide suitable nesting and foraging habitat. Therefore, there is a moderate potential for this species to nest and forage in the BSA.
Polioptila californica	FT	SSC	--	The coastal California gnatcatcher is found in	HP	**Moderate potential to occur.** There

Common and Scientific Names	Status			General Habitat Requirements	Habitat Present (HP) / Absent	Rationale for Natural Community/Species Presence/Absence
	Federal USFWS	State CDFW	CRPR			
californica Coastal California gnatcatcher				chaparral, grassland, and riparian areas near sage scrub. An obligate, permanent resident of coastal sage scrub below 2,500 feet in Southern California, this species requires variable amounts of semi-open sage scrub dominated by California sagebrush on shallow slope gradients.	(Nesting) HP (Foraging)	are sage scrub and chaparral areas within the BSA that could provide suitable nesting and foraging habitat. Therefore, there is a moderate potential for this species to nest and forage in the BSA. The presence of this species in the BSA has been inferred from the presence of potentially suitable habitat.
Mammals						
Antrozous pallidus Pallid bat	--	SSC	--	The pallid bat is found year-round in a variety of low-elevation habitats in most parts of California, including grasslands, shrub lands, woodlands, and forests. This species is thought to prefer open, dry habitats with rocky areas for roosting. This species roosts in caves, crevices, mines, hollow trees, buildings, and bridges, and night roosts in more open sites, such as porches, open buildings, and bridges. Roosts must protect bats from high temperatures, and this species will move deeper into cover if temperatures rise.	HP	**Moderate potential to occur.** There are buildings, trees, and a bridge within the BSA which could provide suitable roosting habitat. Therefore, there is a moderate potential for this species to occur in the BSA.
Eumops perotis californicus Western mastiff bat	--	SSC	--	The western mastiff bat is found in many open, semi-arid and arid habitats, including conifer and deciduous woodlands, coastal scrub, annual and perennial grasslands, palm oases, chaparral, desert scrub, and urban areas. This species has been recorded throughout Central and Southern California, with a concentration in Southern California. This species roosts in crevices on high vertical	HP	**Moderate potential to occur.** There are buildings, trees, and a bridge within the BSA which could provide suitable roosting habitat. Therefore, there is a moderate potential for this species to occur in the BSA.

Common and Scientific Names	Status			General Habitat Requirements	Habitat Present (HP) / Absent	Rationale for Natural Community/Species Presence/Absence
	Federal USFWS	State CDFW	CRPR			
				cliffs or surfaces (including buildings), trees, or tunnels. Because of their large size, they typically require a larger drop distance from roosting sites.		
Lasiurus cinereus Hoary bat	--	S4	--	The hoary bat is found in a wide variety of habitats and elevations in California. This species generally roosts in dense foliage of medium to large trees, and prefers open habitats or habitat mosaics, with access to trees for cover and open areas or habitat edges for feeding.	HP	**Moderate potential to occur.** There are trees within the BSA, which could provide suitable roosting habitat. Therefore, there is a moderate potential for this species to occur in the BSA.
Lasiurus xanthinus Western yellow bat	--	SSC	--	The western yellow bat is uncommon in California, and is found in valley foothill riparian, desert riparian, desert wash, and palm oasis habitats. This species roosts in trees, particularly palms, and forages over water and among trees.	HP	**Moderate potential to occur.** There are trees within the BSA, including palm trees, which could provide suitable roosting habitat. Therefore, there is a moderate potential for this species to occur in the BSA.
Lepus californicus bennettii San Diego black-tailed jackrabbit	--	SSC	--	The San Diego black-tailed jackrabbit is generally found in grasslands, agricultural fields, or areas of sparse coastal scrub. This species is not typically found in high grass or dense brush. This species uses shallow depressions under bushes or shrubs and does not construct burrows or dens.	HP	**Moderate potential to occur.** There is coastal scrub within the BSA. Therefore, there is a moderate potential for this species to occur in the BSA.
Myotis ciliolabrum Western small-footed myotis	--	S3	--	The western small-footed myotis is found in a wide range of habitats but is generally found in arid woodlands and brushy upland areas near water. This species prefers open stands in forests and woodlands and seeks cover in caves, buildings, mines, and crevices.	HP	**Moderate potential to occur.** There are buildings and a bridge within the BSA which could provide suitable roosting habitat. Therefore, there is a moderate potential for this species to occur in

Common and Scientific Names	Status			General Habitat Requirements	Habitat Present (HP) / Absent	Rationale for Natural Community/Species Presence/Absence
	Federal USFWS	State CDFW	CRPR			
						the BSA.
Myotis yumanensis Yuma myotis	--	S4	--	The Yuma myotis is found in open forests and woodlands with sources of water over which to feed but has been documented in many urban areas. This species roosts in buildings, mines, caves, or crevices. The species also has been seen roosting in abandoned swallow nests and under bridges.	HP	**Moderate potential to occur.** There are buildings, swallow nests, and a bridge within the BSA which could provide suitable roosting habitat. Therefore, there is a moderate potential for this species to occur in the BSA.

Table Key:

- *Absent [A] – The plant/wildlife species/vegetation community or habitat requirements were not observed in the BSA during the biological survey.*
- *Habitat Present [HP] – There is habitat present within the BSA.*
- *Federal Endangered (FE)*
- *Federal Threatened (FT)*
- *Watch List (WL)*
- *State Species of Special Concern (SSC)*
- *State Rare (SR); S3 = Vulnerable- restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors making it vulnerable to extirpation; S4 = Apparently Secure – uncommon but not rare; some cause for long-term concern due to declines or other factors.*
- *California Rare Plant Rank (CRPR), etc. 4 = Plants of limited distribution; 0.2 = moderately threatened in California; and 0.3 = Not very threatened in California.*

Information for the habitat requirements was obtained from the following sources: (CDFW, 2021a)*,* (CaliforniaHerps, 2019)*,* (Sibley, 2014)*,* (Cal Fish, 2019)*,* (Bleich, V, 1977)*,* (Cornell University, 2019)*,* (CDFW, 2019b)*,* (Holland, 1986)*,* (Sawyer, 2012)*,* (CNPS, 2021)*, and* (Jepson Herbarium, 2017)*.*

Response to Question a):

Less Than Significant with Mitigation Incorporated. Based on habitat requirements and the results of the biological surveys, there is potential for four special-status plant species and 18 special-status wildlife species to be present within the BSA (see **Table 9**).

Plants

There is suitable habitat present in the BSA for four special-status plant species, including Brewer's calandrinia (*Calandrinia breweri)*, Robinson's pepper-grass (*Lepidium virginicum* var. *robinsonii*), Hubby's phacelia (*Phacelia hubbyi*), and Coulter's matilija poppy (*Romneya coulteri*).

There is suitable habitat within the BSA for the federally threatened Santa Monica dudleya (*Dudleya* ssp. *Ovatifolia*). However, this species was not observed during the focused special-status botanical surveys conducted for the Project; therefore, this species is not expected to occur in the BSA. Therefore, the Project would have no effect on this species. The Project has the potential to impact other special status species with suitable habitat present in the BSA. **BIO-1** and **BIO-2** require buffers to be marked and provided for special-status plant species found in the project area. In addition, a species-specific mitigation plan would be prepared if special-species plants could not be avoided. Measures **BIO-1** and **BIO-2** will be implemented to avoid, minimize, and mitigate impacts to special-status plant species. With those mitigation measures incorporated, impacts to special-status plant species would be less than significant.

Amphibians

There is suitable habitat within the BSA for the federally endangered arroyo toad (*Anaxyrus californicus*). However, this species was not observed during the focused protocol surveys conducted for the Project. Therefore, this species is not expected to occur in the BSA, and the Project would therefore have no effect on this species. The Project could result in temporary impacts to designated arroyo toad critical habitat (Silverado Creek). However, impacts to arroyo toad designated critical habitat would be short in duration and temporarily impacted areas would be restored to their pre-project conditions as part of the Project, and any re-vegetation would be completed using native species appropriate to the area. Therefore, temporary impacts to arroyo toad designated critical habitat from the construction of the Project are not expected to result in destruction or adverse modification of arroyo toad critical habitat. Because the BSA is within designated critical habitat for arroyo toad, informal consultation would be initiated with the U.S. Fish and Wildlife Service (USFWS) under Section7 of the Federal Endangered Species Act (FESA) to obtain USFWS concurrence regarding the determination that construction activities in the creek are not likely to adversely affect designated critical habitat for the toad.

There is suitable habitat in the BSA for four other special-status amphibian and reptile species, including California glossy snake (*Arizona elegans occidentalis*), orange-throated whiptail (*Aspidoscelis hyperythra*), coast horned lizard (*Phrynosoma blainvillii*), and coastal whiptail (*Aspidoscelis tigris stejnegeri*), and each species is expected to have a moderate potential to occur in the BSA and therefore a potential to be impacted by the Project. Measure **BIO-3** will be implemented to avoid and minimize potential impacts to special-status amphibian and reptile species by requiring pre-construction surveys and avoidance and minimization measures. With **BIO-3** incorporated, the expected impacts to special-status amphibian and reptile species would be less than significant.

Birds

There is suitable foraging and nesting habitat within the BSA for the federally threatened coastal California gnatcatcher (*Polioptila californica californica*). In addition, the presence of the coastal California

gnatcatcher in the BSA has been inferred from the presence of suitable habitat. The Project would require the temporary removal of approximately 0.044 acres of buckwheat scrub and permanent removal of approximately 0.014 acres of buckwheat scrub which would result in habitat loss for the coastal California gnatcatcher. Construction activities that completely remove habitat could reduce availability of breeding, feeding, and territory sites for gnatcatchers in these areas. However, the permanent removal of 0.014 acres of buckwheat scrub would not reduce the quality and quantity of remaining suitable habitat in the general area. Informal consultation with the USFWS under Section 7 of the FESA would be required to obtain concurrence from USFWS regarding the determination that the Project is not likely to adversely affect this species.

There is suitable nesting and foraging habitat in the BSA for five other special-status avian species, including Cooper's hawk (*Accipiter cooperii*), long-eared owl (*Asio otus*), oak titmouse (*Baeolophus inornatus*), Costa's hummingbird (*Calypte costae*), and loggerhead shrike (*Lanius ludovicianus*). Due to the presence of suitable habitat, all of these species have the potential to occur in the BSA and therefore the potential to be impacted by the Project. Measures **BIO-4**, **BIO-6**, and **BIO-7** will be implemented to avoid, and if necessary, mitigate potential impacts to the coastal California gnatcatcher, migratory birds, as well as other protected avian species. Measure **BIO-7** will replace California gnatcatcher habitat with a minimum ratio of 1:1; however, the final ratio would be established through consultation and coordination with the applicable regulatory agencies (including through the Section 7 consultation with USFWS). With implementation of **BIO-7**, temporarily impacted locations within the project area would need to be revegetated with native species and monitored and maintained for 24 months. With the inclusion of **BIO-4, BIO-6,** and **BIO-7,** impacts to special-status avian species would be less than significant.

Mammals

There is suitable habitat for several protected bat species in the BSA (including the pallid bat [*Antrozous pallidus*], western mastiff bat [*Eumops perotis*], hoary bat [*Lasiurus cinereus*], and the western yellow bat [*Lasiurus xanthinus*]) as well as suitable habitat for the San Diego black tailed jackrabbit (*Lepus californicus bennettii*). There are bridges, buildings, and trees in the BSA which could provide suitable roosting locations for bats. Bats could be directly impacted if they were to be roosting in trees trimmed during construction. Direct impacts to the San Diego black-tailed jackrabbit could include trampling by construction equipment, resulting in injury or mortality. Indirect impacts to bats include increased noise, vibration, and human activity from construction which could lead to roost abandonment. Indirect impacts to the San Diego black-tailed jackrabbit could include habitat disruption due to construction-related impacts such as increased noise, dust, and vibration that could lead to reduction of health or reproductive output. With implementation of **BIO-8**, pre-construction surveys would take place no more than 48 hours prior to construction to determine the presence or absence of the San Diego black tailed jackrabbit. If any are identified in the BSA, the San Diego black-tailed jackrabbits would be allowed to move away from the site prior to any construction activities to avoid impacts. With implementation of **BIO-9**, a qualified bat biologist will conduct a habitat assessment, visual and acoustic surveys. A qualified biologist will be onsite during tree removal/trimming or disturbance of any potential roosting habitat to assess disturbance and provide monitoring support. Measures **BIO-8** and **BIO-9** will avoid and minimize impacts to protected bat species and the San Diego black tailed jackrabbit, as well as other protected mammal species that have the potential to be in the BSA.

Fish

There is no mapped essential fish habitat in the BSA. In addition, the creek has only intermittent flows and is not suitable fish habitat. Since there is no mapped or suitable fish habitat in the BSA, the Project would have no impact to fish.

Avoidance, Minimization, and/or Mitigation Measures

The Project could result in direct or indirect impacts to the special-status species listed in **Table 9** Special-Status Plants and Wildlife with Potential to Occur in the BSA; however, with implementation of the avoidance, minimization, and mitigation measures identified below, as well as those identified during consultation with the USFWS and any necessary follow-up actions, the Project's impacts would be less than significant.

Response to Question b):

Less Than Significant with Mitigation Incorporated. The creek is expected to fall under jurisdiction of the United States Army Corps of Engineers (USACE) and RWQCB. The BSA was evaluated to identify waters under jurisdiction of the USACE and RWQCB, respectively, by delineating the ordinary high water mark (OHWM) of the creek. Approximately 0.49 acres of waters under jurisdiction of the USACE and 0.49 acres under jurisdiction of the RWQCB were delineated in the direct impact area (see **Table 10,** Jurisdictional Features in the Direct Impact Area). The creek has a defined bed and bank and supports riparian vegetation. Therefore, the creek is expected to fall under jurisdiction of the CDFW. The BSA was evaluated for waters under jurisdiction of the CDFW by delineating areas from bank top to bank top within the creek. Approximately 0.63 acre under jurisdiction of the CDFW was delineated in the direct impact area.

Abutment modifications would result in permanent impacts to approximately 0.01 acres of waters under CDFW jurisdiction (see **Figure 5,** Impacts to California Department of Fish and Wildlife Jurisdiction). Construction of a temporary construction access ramp and bridge falsework within the creek and demolition of the existing bridge and construction of the new bridge would result in temporary impacts to approximately 0.49 acre (497 linear feet) of waters under jurisdiction of the USACE and RWQCB, respectively, and approximately 0.63 acre (497 linear feet) of waters under CDFW jurisdiction (see **Figure 6,** Impacts to United States Army Corps Of Engineers and Regional Water Quality Control Board Jurisdiction). In addition, there is some potential for construction debris and materials to fall into the creek which could impact water quality. However, with implementation of the proposed avoidance and minimization measure **BIO-10**, the Project will not result in adverse impacts to special-jurisdictional features because appropriate BMPs will be implemented to reduce the potential for chemical spills and to minimize dust, dirt, and construction debris.

Table 10 Jurisdictional Features in the Direct Impact Area

Regulatory Agency	Jurisdictional Wetlands		Jurisdictional Non-Wetland Waters		Total Jurisdiction within Direct Impact Area	
	Acres	Linear Feet	Acres	Linear Feet	Acres	Linear Feet
United States Army Corps of Engineers	--	--	0.49	497	0.49	497
Regional Water Quality Control Board	--	--	0.49	497	0.49	497
California Department of Fish and Wildlife	--	--	--	--	0.63	497

Based on the results of research and the biological surveys, there is potential for one special-status natural community to occur in the BSA, Arroyo Willow Thickets (see **Table 11**). This community was mapped within the BSA during the jurisdictional delineation survey and its presence was verified during the reconnaissance survey. All construction activities, including the construction of a temporary construction access ramp into the creek, would be outside of the Arroyo Willow Thickets natural community in the BSA. Direct impacts to this special-status natural community are not expected. Indirect impacts could include an increase in dust from construction activities, which could impact the health of the plants and reduce the quality of the habitat for wildlife. However, the Project will be constructed in compliance with dust control regulations, and with implementation of the proposed avoidance measure **BIO-10**, the Project would result in a less than significant impact to special-status natural communities because appropriate BMPs will be implemented to reduce the potential for dust

Table 11 Special-Status Natural Communities with Potential to be in the BSA

Common and Scientific Names	Status		General Habitat Requirements	Habitat Present/ Absent	Rationale for Natural Community/Species Presence/Absence
	Federal USFWS	State CDFW			
Southern Riparian Scrub	--	S3.2	The Southern Riparian Scrub community consists of streamside thickets dominated by one or more willows and mulefat, as well as by other fast-growing shrubs and vines. This community is found along intermittent stream channels and requires flooding. Most plants recolonize following flood disturbance.	HP/P	There are Arroyo Willow Thickets in the BSA, which are equivalent to Holland's classification for Southern Riparian Scrub; therefore, this community is present in the BSA.

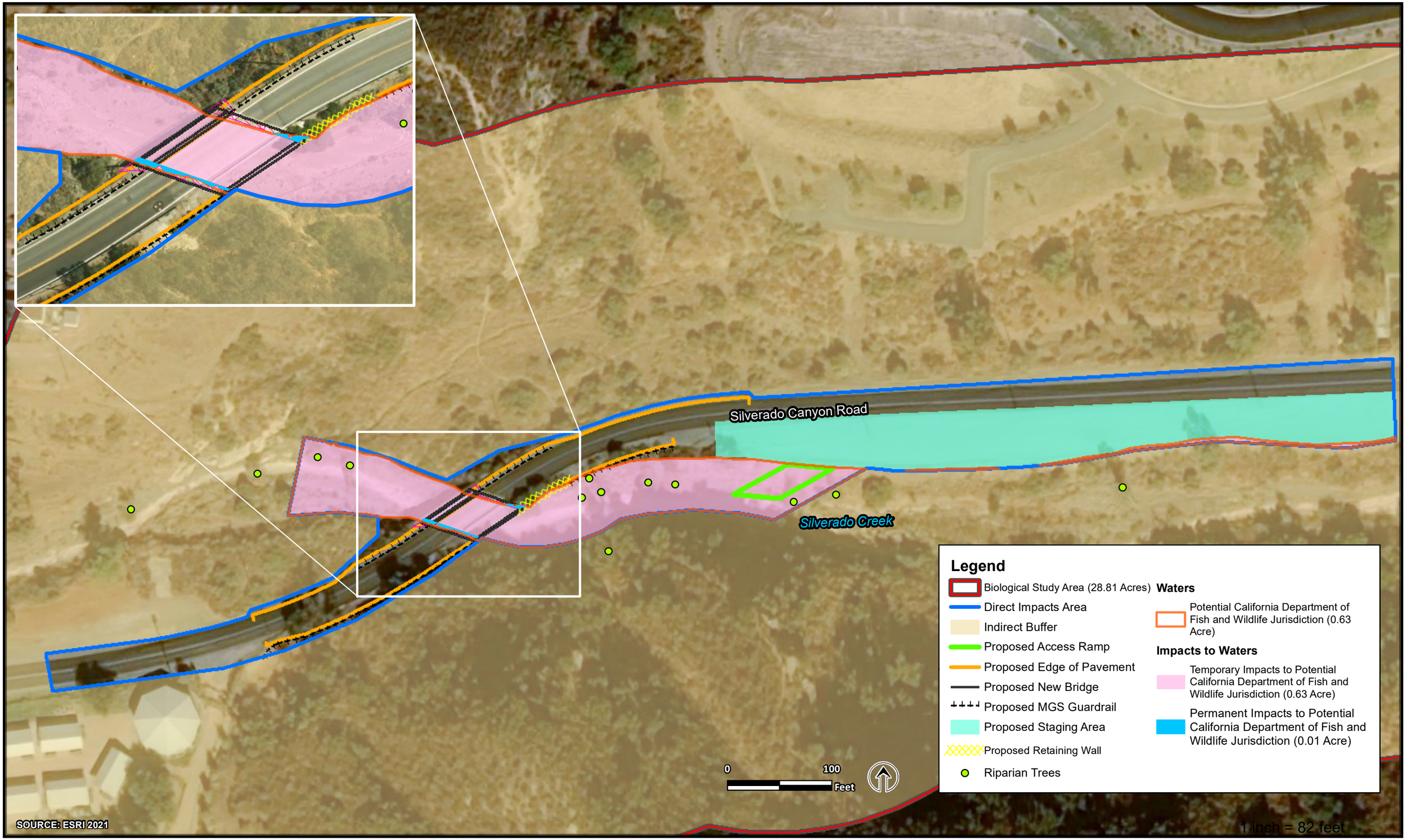

FIGURE 5. IMPACTS TO CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE JURISDICTION
Silverado Canyon Road Bridge Replacement Project (Bridge No. 55C-0174) Over Silverado Creek

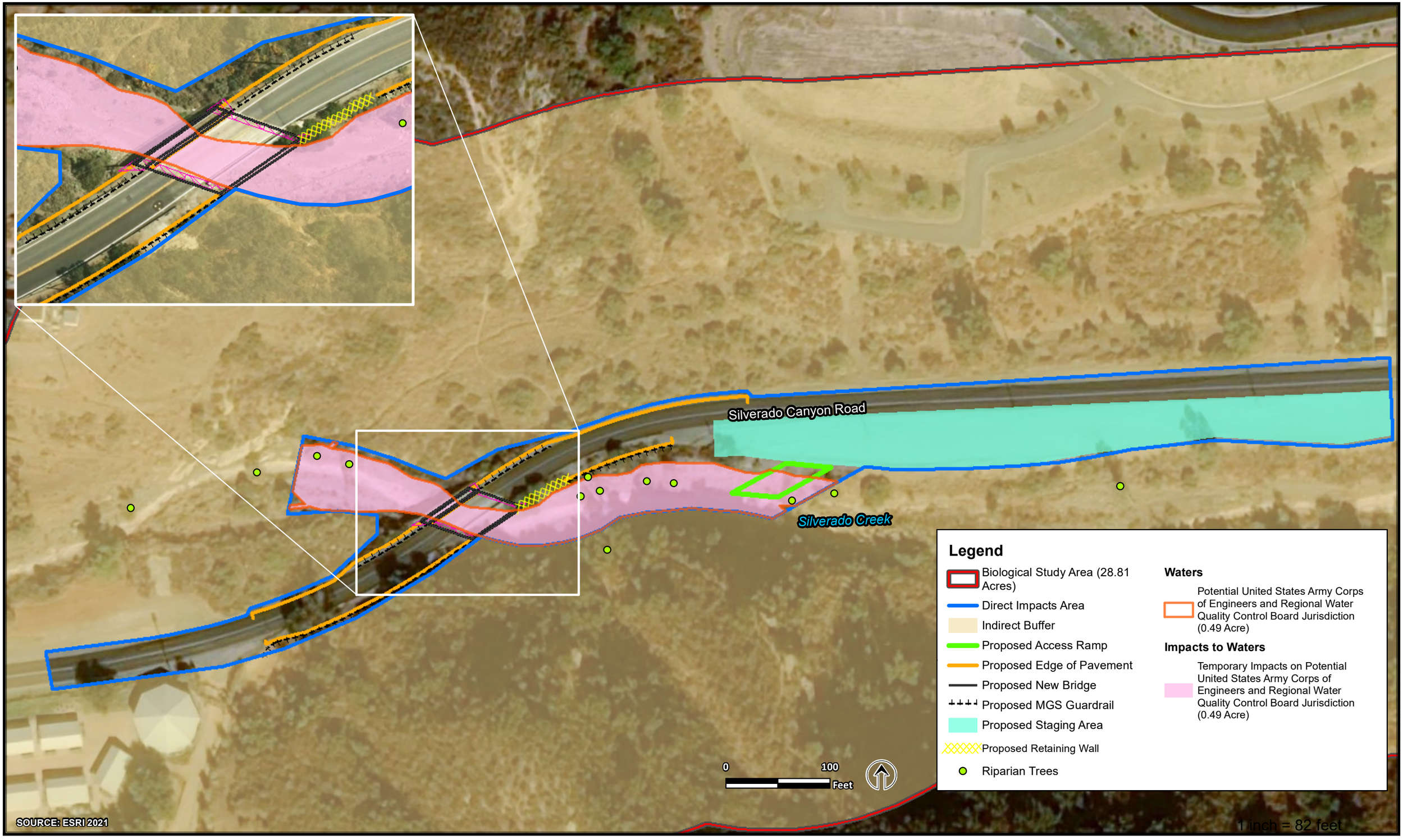

FIGURE 6. IMPACTS TO UNITED STATES ARMY CORPS OF ENGINEERS AND REGIONAL WATER QUALITY CONTROL BOARD JURISDICTION
Silverado Canyon Road Bridge Replacement Project (Bridge No. 55C-0174) Over Silverado Creek

Response to Question c):

No Impact. There are no wetlands in the BSA (see **Table 10**). Therefore, the Project would not result in impacts to state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.

Response to Question d):

Less Than Significant Impact with Mitigation Incorporated. Wildlife corridors are typically adjacent to urban areas. A functional wildlife corridor allows for ease of movement between habitat patches and is important in preventing habitat fragmentation. Habitat fragmentation is typically caused by human development and can lead to a decrease in biodiversity and ecosystem functionality. The land surrounding the BSA includes both residential and open space uses.

Silverado Canyon is situated in the Santa Ana Mountains and is largely undeveloped with the exception of the community of Silverado, a few residential and recreation parcels, and Silverado Canyon Road. The BSA is located adjacent to extensive native open space habitats. In addition, downstream of the BSA, the creek opens into a wide floodplain. Silverado Canyon and the creek allow for unrestricted travel by wildlife. The habitat surrounding the BSA is not fragmented and does not connect two or more patches of habitat that would otherwise be isolated from each other. In addition, the Project would include replacement of an existing bridge, which would not result in the construction of any additional barriers that could cause fragmentation of existing habitat.

There is potential for migratory birds to nest and forage in the BSA and construction area during construction. During the biological surveys bird species were observed foraging in or flying over the BSA, including but not limited to house finch (*Haemorhous mexicanus*), mourning dove (*Zenaida macroura*), American crow (*Corvus brachyrhynchos*), and northern mockingbird (*Mimus polyglottos).* There is the potential for migratory birds to nest within the Silverado Canyon Road Bridge, vegetation, and trees adjacent to the BSA during construction. Nesting birds could be directly impacted by construction activities if they were to nest in vegetation and on the Silverado Canyon Road Bridge in the construction area. In addition, these species could be indirectly impacted by loss of habitat resulting from vegetation removal and tree trimming. There is also suitable habitat for several protected bat species in the BSA (including the pallid bat [*Antrozous pallidus*], western mastiff bat [*Eumops perotis*], hoary bat [*Lasiurus cinereus*], and the western yellow bat [*Lasiurus xanthinus*]). There are bridges, buildings, and trees in the BSA which could provide suitable roosting locations for these bat species. Bats could be directly impacted if they were to roost in trees that are trimmed during construction. With implementation of measures **BIO-1** through **BIO-4** and **BIO-6** through **BIO-9** which include pre-construction surveys and biological monitoring, the Project would be in compliance with the Migratory Bird Treaty Act and California Fish and Game Code.

Therefore, while the BSA may be used for local foraging, nesting, and movement by local wildlife species from the surrounding areas, it is not considered a wildlife corridor. Accordingly, there would be a less than significant impact with mitigation incorporated to 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 as the result of the Project.

Response to Question e):

Less Than Significant Impact. The Project could require the removal of several trees in the project area, which are covered under the Specific Plan Tree Preservation policy. Eight trees are within the temporary impact zone. These trees are unlikely to be removed unless they are inhibiting access to the project area; if removed, a 1:1 ratio of trees removed to trees replaced will be used. There is the potential for 19 native

plants and 18 wildlife species to occur within the BSA, including bird species covered under the General Plan Resources Element. The Project has been designed to minimize and prevent impacts to native wildlife and vegetation. Any impacts to native wildlife and vegetation would be avoided, minimized, and or mitigated with the implementation of measures **BIO-1** through **BIO-10** (see responses (a)-(c)). With the implementation of measures **BIO-1** through **BIO-10**, the Project would result in no impact relating to the implementation of local ordinances pertaining to biological resources, including tree preservation ordinances.

Response to Question f):

No Impact. The Orange County Central Coastal Natural Communities Conservation Plan (NCCP)/Habitat Conservation Plan (HCP) (the "Orange County NCCP/HCP") is a comprehensive natural resources management conservation plan completed and approved by the County of Orange in 1996. The Orange County NCCP/HCP includes a Reserve System, an area identified in the Orange County NCCP/HCP as a permanent reserve of coastal sage scrub and other associated habitat types. The BSA is located within the Orange County NCCP/HCP Planning Area, but outside of the Reserve System. The BSA is located specifically in land designated as Non-Reserve Open Space in the Orange County NCCP/HCP. According to Section 4.4.3.1 of the Orange County NCCP/HCP Parts I-II-Plan document, since the Project is located outside of the Reserve System, conversion of coastal sage scrub or "take" of covered species is not authorized by the Orange County NCCP/HCP and therefore not covered under the plan (County of Orange, 1996). Because the Project is not covered under the Orange County NCCP/HCP because the BSA is outside of the Reserve System and the Project would not conflict with the Orange County NCCP/HCP. Therefore, the Project would result in no impact to an HCP, NCCP, or other approved local, regional, or state habitat conservation plan.

Mitigation, Avoidance, and Minimization Measures

BIO-1 To avoid potential impacts to special-status plants and special-status natural communities, the following measures will be implemented:

- In the year prior to construction, a qualified biologist will conduct a pre-construction plant survey within the construction area. Surveys will be conducted during the appropriate blooming period for species with potential to occur in the construction area, to the extent feasible.
- Prior to the start of construction activities, Silverado Creek, Arroyo Willow thickets, coastal sage scrub, and any special-status plant species found within the project limits during the pre-construction survey, will be marked with high visibility fencing or staking demarcate the Environmentally Sensitive Area (ESA) to ensure construction will not encroach into the ESAs. The fencing will be installed under the supervision of a qualified biologist. The ESA protective fencing buffer will be species specific, with a minimum buffer radius based on the guidance from a qualified biologist. All excluded areas with ESA protective fencing will be monitored to determine whether exclusion measures were successful and to identify any outstanding concerns, including but not limited to the need to adjust the size of a buffer radius. Exclusionary measures will be monitored throughout construction to ensure they are functioning correctly and will be removed following construction.

BIO-2 To mitigate for impacts to special-status plants, the following measure will be implemented:

- If special-status plants cannot be avoided, a species-specific mitigation plan will be developed by a qualified biologist. The plan may include one or more of the following, as appropriate in

the judgment of the qualified biologist: plant relocation, seed collection and dispersal, on- or off-site restoration, or payment into a regulatory agency-approved mitigation bank. The plan will be implemented prior to the initiation of work that will disturb.

BIO-3 To avoid impacts to special-status amphibian and reptile species, the following measures will be implemented:

- A qualified biologist will complete pre-construction surveys no more than 48 hours prior to the commencement of construction activities to determine the presence or absence of special-status amphibian and reptile species in the project construction area. Surveys will be repeated if construction activities are suspended for five days or more. If special-status amphibian or reptile species are identified onsite, appropriate measures will be developed and implemented to avoid impacts to these wildlife species by the qualified biologist, in consultation with appropriate resource agencies, if applicable. Appropriate measures may include relocation, limiting construction to avoid special-status amphibian or reptile species, or creating a species-specific mitigation plan.
- To prevent inadvertent entrapment of the special-status wildlife species or other animals during construction, a qualified Biologist and/or Contractor will ensure all excavated, steep-walled holes or trenches more than six inches deep are provided with one or more escape ramps constructed of earthen fill or wooden planks. Before such holes or trenches are filled, they will be thoroughly inspected for trapped animals by a qualified Biologist and/or Contractor. If animals are found, they will be allowed to leave on their own or relocated into suitable habitat by a qualified biologist outside of the construction area.

BIO-4 To avoid potential impacts to special-status bird species, including the coastal California gnatcatcher, the following measures will be implemented:

- Vegetation removal will occur outside the nesting bird breeding season (February 15 – September 15). In the event that vegetation removal and tree trimming must be conducted during the nesting season, nesting bird surveys will be completed within 300 feet of the construction area by a qualified biologist no more than 48 hours prior to trimming or clearing activities to determine if nesting birds are within the affected vegetation. Nesting bird surveys will be repeated if trimming or removal activities are suspended for five days or more.

  If nesting birds are found within 300 feet of the construction area, appropriate buffers consisting of orange flagging/fencing or similar (typically 300 feet for birds and 500 feet for raptors) will be installed and maintained until the qualified biologist determines that nesting activity has ended. A reduced buffer can be established if determined appropriate by the qualified biologist and approved by the relevant wildlife agencies.
- To the maximum extent feasible, no grading and/or removal of coastal sage scrub or coastal California gnatcatcher habitat, including approximately 0.06-acre buckwheat scrub, will be performed during the coastal California gnatcatcher breeding season (February 15 through July 15). If grading and/or removal of coastal sage scrub outside of the coastal California gnatcatcher breeding season is not feasible, then prior to the commencement of grading operations or other activities involving vegetation trimming or soil disturbance, a minimum of three pre-construction nesting bird surveys will be conducted by a Permitted Biologist for the coastal California gnatcatcher, spaced one week a part, with the last survey no more than 72 hours prior to the first day of disturbance. A biological monitor acceptable to the USFWS will be on site during any clearing of coastal sage scrub. The County will notify the USFWS at

least seven calendar days (and preferably 14 calendar days) prior to the clearing of any habitat occupied by coastal California gnatcatcher. If an active coastal California gnatcatcher nest is located, the USFWS Carlsbad Fish and Wildlife Office will be contacted to determine if it is necessary to reinitiate FESA Section 7 consultation to address potential direct and/or indirect effects to this species beyond those addressed in this document or during the initial FESA Section 7 consultation.

BIO-5 Prior to the commencement of grading operations or other activities involving vegetation trimming or soil disturbance, areas of coastal sage scrub habitat to be avoided will be identified with temporary fencing or other markers clearly visible to construction personnel. The fencing or other markers will be installed by or under the supervision of a qualified biologist.

BIO-6 In the event that any bird species is observed foraging within the construction area, it will be allowed to move away from the site prior to initiating any construction activities that could result in direct injury of the individual bird.

BIO-7 Compensatory Habitat Mitigation:

- Impacts to coastal California gnatcatcher habitat, 0.06-acre buckwheat scrub, will be offset through on-site restoration or restoration within the Santa Ana Watershed, or through in-lieu fees or the purchase of mitigation bank credits within the Santa Ana Watershed at a Caltrans and USFWS approved location. Mitigation will be at a minimum ratio of 1:1; however, the final ratio will be established through consultation and coordination with the appropriate regulatory agencies.
- Following the completion of project construction, temporarily impacted areas will be restored to their pre-project conditions, and any re-vegetation will be completed using native species appropriate to the area. Onsite re-vegetated areas will be monitored and maintained for 24 months to ensure adequate establishment and sustainability of the plantings/seedlings.

BIO-8 To avoid impacts to the San Diego black-tailed jackrabbit, the following measures will be implemented:

- A qualified biologist will complete pre-construction surveys no more than 48 hours prior to the commencement of construction activities to determine the presence or absence of San Diego black-tailed jackrabbit in the project construction area. Surveys will be repeated if construction activities are suspended for five days or more.
- If any San Diego black-tailed jackrabbit are identified in the BSA, those individuals will be allowed to move away from the site prior to initiating any construction activities that could result in direct injury of the individual member of the species.

BIO-9 To avoid and/or minimize impacts to special-status bat species, the following measures will be implemented:

- No fewer than 30 days prior to construction, and during the summer months (June to August) where feasible, a qualified bat biologist will conduct a habitat assessment within the project area. Any trees that are determined to provide potentially suitable habitat will be marked “habitat trees” by the qualified biologist. The contractor must contact the County prior to any planned removal of trees marked “habitat trees”.
- Tree removal and trimming will be conducted outside of the recognized bat maternity season (approximately April 1–September 15), and non-active season (November 1 – February 28)

for bats. If the bat maternity season cannot be avoided, during the summer months (June to August) prior to construction, visual and acoustic surveys will be conducted for at least two nights at all identified roosting habitat to assess the presence of roosting bats. If presence of a roost is detected, a count and species analysis will be completed to help assess the type of colony and usage.

- No less than two weeks prior to construction, and outside of the recognized bat maternity season (April 1–August 31), bats will be safely evicted from roosts impacted by the Project under the direction of a qualified biologist. Exclusionary devices will be installed to prevent bats from returning and roosting in these areas. Roosts that will not be impacted by the Project will be left undisturbed.

- After completion of the bat roosting habitat assessment, and prior to tree removal, all trees with potential day roosting habitat, will be removed using a 2-step process. The tree removal will be conducted over two consecutive days under the supervision of a qualified biologist. A qualified biologist will be onsite during tree removal/trimming or disturbance of the potential roosting habitat. If the biologist determines that bats are being disturbed during this work, work will be suspended until bats have left the vicinity on their own or can be safely excluded under direction of the biologist. Work will resume only once all bats have left the site and/or approval to resume work is given by a qualified biologist.

- In the event that a maternal colony of bats is found, no work will be conducted within 100 feet of the maternal roosting site until the maternal season is finished or the bats have left the site, or as otherwise directed by a qualified biologist. The site will be designated as a sensitive area and protected until the bats have left the site. No activities will occur adjacent to the roosting site. Combustion equipment, such as generators, pumps, and vehicles, will not to be parked or operated under or adjacent to the roosting site. Construction personnel will not be authorized to enter areas beneath the colony, especially during the evening exodus (typically between 15 minutes prior to sunset and one hour following sunset).

BIO-10 In order to reduce impacts to jurisdictional resources, the following measures will be implemented:

- Work areas will be reduced to the maximum extent feasible, and staging areas will be along the Silverado Canyon Road and outside of the creek.

- Contract specifications will include the following best management practices (BMPs) where applicable during construction:

    - BMPs, such as silt fencing, fiber rolls, straw bales, or other measures will be implemented during construction to minimize and prevent to the extent feasible dust, dirt, and construction debris from leaving the project area.

    - Water, chemical stabilizers/suppressants, tarps or other suitable covers, or vegetative ground cover composed of native plant species will be used to control dust on all disturbed areas, including storage piles that are not being actively utilized for construction purposes.

    - Water or chemical stabilizers/suppressants will be used to control dust on all unpaved access roads.

- To conform to water quality requirements, appropriate temporary BMPs will be implemented to reduce the potential for chemical spills or contaminant releases into the creek, including any non-stormwater discharge. These include but are not limited to:
    - All equipment refueling and maintenance will be conducted in the upland staging area away from the creek per standard specifications and regulatory permits. In addition, vehicles and equipment will be checked daily for fluid and fuel leaks, and drip pans will be placed under all equipment that is parked and not in operation.
- Vegetation removed from the BSA will be treated and disposed of in a manner following the recommendations of the California Invasive Plant Council to prevent the spread of invasive species on- or off-site. BMPs may include, but are not limited to, identification of existing invasive species, avoidance of invasive species in erosion control, staff training, equipment cleaning when entering and exiting the project area, and biological monitoring.

4.2.5 Cultural Resources

Would the project:	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?	☐	☐	☒	☐
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	☐	☐	☒	☐
c) Disturb any human remains, including those interred outside of dedicated cemeteries?	☐	☐	☒	☐

Response to Question a):

Less than Significant Impact. A Historic Properties Survey Report (HPSR) and Archeology Survey Report (ASR) were prepared to evaluate potential resources within or adjacent to the project area (see **Appendix C**). In the HPSR, records searches were conducted at the South-Central Coastal Information Center (SCCIC). The records searches included a review of all recorded archaeological and historical resources within a 0.25-mile radius of the area of potential effects (APE), as well as a review of cultural resource reports on file. The California Historical Resources Information System (CHRIS) records search identified five previously recorded resources within the 0.25-mile records search radius, none of which overlap the APE. Additionally, Br. No. 55C 0174 is listed as a category five (ineligible) structure in the Caltrans Statewide Historic Bridge Inventory Update database. The five previously recorded resources include two prehistoric sites, one multi-component site, one historic-age ranch complex, and one historic-age trail. The two prehistoric sites, the multi-component site, and the historic-age trail are outside the APE. The boundary of the historic age ranch complex overlaps with the APE. The complex includes 17 historic-age buildings; however, none of the buildings are within the APE, as the resource boundary was derived from the parcel boundary rather than concentration of features. Since none of the five recorded resources are within the APE, evaluation of the resources' eligibility for listing was not necessary. However, two resources were previously evaluated and had been determined ineligible for the National Register of Historic Places (NRHP) (GPA Consulting, 2021a). The remaining three previously recorded historical resources are not within the project area and would not be impacted by the Project. No other historical resources were identified within the APE, but there remains the possibility that previously unidentified historical resources could be uncovered during project construction. Avoidance and minimization measure **CUL-1** will be implemented as part of the Project to address any previously unidentified historical resources that are uncovered during project construction. Because there are no identified historical resources that would be impacted by the Project, the Project would result in a less than significant impact to historical resources.

Response to Question b):

Less than Significant Impact. An archaeological survey was performed for the Project to identify all

archaeological resources in the APE that could be affected by the Project. The total length of the APE is 865 feet, and the total area of the APE is 3.8 acres. Although the intent was to survey the entire APE, approximately 50 percent of the APE could not be surveyed for archaeological resources because it is paved roadway. A records search and archaeological field survey of the APE were conducted in support of the Project. The records search identified 28 previous investigations conducted within one mile of the project area, several of which overlap the APE (GPA Consulting, 2021a).

Within a mile of the APE, five previously recorded archeological resources were found, however none of these resources were within the APE. A search of the Sacred Lands File (SLF) with the Native American Heritage Commission (NAHC) did not return any results within the APE. In addition, no archaeological resources were identified within the APE as a result of the field survey. The APE has been heavily disturbed due to the construction of Silverado Canyon Road, as well as the existing Silverado Creek Bridge; therefore, past disturbances have likely removed and/or heavily impacted resources, if any were present, near the road alignment or existing bridge. In addition, based on the archaeological sensitivity analysis, the project alignment likely has a low sensitivity for buried archaeological resources. With implementation of the proposed avoidance measure **CUL-1,** which provides measures to address any previously unidentified archaeological resources uncovered during project construction, the Project would result in a less than significant impact to archeological resources.

Response to Question c):

Less than Significant Impact. The project area is in a rural portion of the county that is not within or a formal cemetery and the land within and surrounding the project area has already been disturbed and developed. However, construction of the Project would include ground-disturbing activities that could unearth previously undiscovered human remains interred outside of a formal cemetery. Should they be unearthed in the project area, Measure **CUL-2** will be implemented. With implementation of Measure **CUL-2**, the Project would result in a less than significant impact to human remains.

Avoidance and Minimization Measures

CUL-1 If previously unidentified cultural materials are encountered or unearthed during construction, work will be halted in that area until a qualified archaeologist can assess the nature and significance of the find. Additional surveys will be required if the project limits change to include areas not previously surveyed.

CUL-2 In the event of the accidental discovery or recognition of any human remains in any location other than a dedicated cemetery, steps will be taken in compliance with the California Code of Regulations, title 14 (14 CCR), Section 15064.5. All construction activities will cease, and the County Coroner will be contacted if any human remains are discovered, in accordance with 14 CCR Section 15064.5(e). If the coroner determines that the human remains are of Native American origin, the NAHC will be notified to determine the most likely descendent (MLD) for the area. The MLD will make recommendations for the arrangements for the human remains per Public Resources Code (PRC) Section 5097.98.

4.2.6 Energy

Would the project:	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?	☐	☐	☒	☐
b) Conflict or obstruct a state or local plan for renewable energy or energy efficiency?	☐	☐	☐	☒

Response to Impact Question a):

Less than Significant Impact. Gas in the project area is provided by the Southern California Gas Company and electricity is provided by Southern California Edison (SCE). Electricity from SCE would be needed for the temporary operation of construction site lighting, computer equipment, and construction trailers. During construction, the Project would require energy for haul trips, equipment use, and worker commute trips. Equipment and vehicles would primarily be powered by diesel fuel and would likely require minimal electricity. Construction of the proposed Project would generate a total of approximately 1,285.2 metric tons of carbon dioxide equivalent ($MTCO_2e$) (see *Section 4.2.8* for a more depth discussion) during the 12-month construction period.

Existing energy consumption in the project area includes fuel for vehicle operation and electricity for roadway lighting. Following construction, energy consumption would be consistent with existing activities in the project area. The Project would not add or expand services that could increase energy consumption in the project area. Therefore, the Project would result in a less than significant impact to energy resources during project construction or operation.

Response to Impact Question b):

No Impact. Implementation of the proposed project would not result in long-term changes in vehicle trips or miles traveled. As a result, long-term changes in energy use (i.e., fuel consumption) are anticipated to be negligible. It is also important to note that the proposed project includes measures that would help to minimize fuel use associated with project construction (Refer to **AQ-1** through **AQ-4**). As discussed in response (a) above, fuel consumption from construction vehicles and equipment for the Project would be temporary and would represent a negligible increase in regional energy consumption. In addition, the Project includes various air quality and GHG BMPs that would reduce energy consumption associated with the use of construction equipment. Once operational, the energy requirements for the Project would be similar to existing energy usage. The Project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency. Therefore, the Project would result in no impact local plans for renewable energy or energy efficiency.

4.2.7 Geology and Soils

Would the project:	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: i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☐	☒
ii) Strong seismic ground shaking?	☐	☐	☐	☒
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☒	☐
iv) Landslides?	☐	☐	☒	☐
b) Result in substantial soil erosion or the loss of topsoil?	☐	☒	☐	☐
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 onsite or offsite landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	☒	☐
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?	☐	☐	☐	☒
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal system where sewers are not available for the disposal of waste water?	☐	☐	☐	☒

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

Response to Impact Question a-*i*):

No Impact. According to the most recent Alquist-Priolo Earthquake Fault Zoning Map the project area is not located within an earthquake fault zone (California Department of Conservation, 2001). In addition, according to the California Department of Conservation Earthquake Zones of Required Investigation Hazard map, the project area is not in an earthquake zone. The nearest fault zone is the Corona South Fault Zone, approximately 6.5 miles to the northeast of the project area (California Department of Conservation, 2019; California Department of Conservation, 2015). Since the project area is well over 50 feet away from the nearest fault zone, the project area is not susceptible to risk of fault rupture in an Alquist-Priolo Earthquake Fault Zone. Therefore, the Project would result in no impact related to a known earthquake fault.

Response to Impact Question a-*ii*):

No Impact. The project area is in a seismically active region and 6.5 miles away from the South Corona Fault Zone. The fault could result in strong ground shaking in the project area during project construction and operation. However, the Project would be designed to enhance safety. The temporary falsework that would be present during construction would also be designed to conform to modern seismic safety requirements. The proposed bridge would be designed to meet current seismic criteria and enhance safety. Therefore, the Project would result in no impact related to strong seismic ground shaking.

Response to Impact Question a-*iii and a-iv*):

Less Than Significant Impact. The site soil profile consists of alluvial material overlying bedrock. The project area is on a parcel that is classified as a liquefaction and landslide hazard zone according to the California Department of Conservation Earthquake Zones of Required Investigation Hazard maps (Department of Conservation, 2020). The Project would be designed to accommodate anticipated levels of ground shaking experienced in the region, as well as risk of landslide and liquefaction. The Project design includes abutments converted into diaphragm type abutments, with a thickened abutment stem to ensure seismic behavior in compliance with the Caltrans Seismic Design Criteria (SDC). The Project would enhance safety of the bridge through design, consistent with modern seismic safety standards and criteria. Therefore, the Project would result in a less than significant impact as relates to liquefaction and landslides.

Response to Impact Question b):

Less Than Significant Impact With Mitigation Incorporated. Erosion is the movement of rocks and soil from the Earth's surface by wind, rain, or running water. Several factors influence erosion, such as the size of soil particles (larger particles are more prone to erosion), and vegetation cover, which prevents erosion. The project area includes an existing bridge and approach area over a creek that is predominately rocky hillside covered with bushes, grasses, small trees, and other weedy vegetation.

The potential for soil erosion can be described using a soil erodibility factor, also known as the K factor, which represents both the susceptibility of soil to erosion and the rate of runoff. Values for the K factor in the project area are estimated to be approximately 0.32, indicating a moderate susceptibility to soil erosion by water. Because soils in the project area have a moderate potential for erosion, the Project will include implementation of avoidance and minimization measures to reduce risk of erosion (see Biological Resources). With implementation of avoidance, minimization, and/or mitigation measures **BIO-1** and **BIO-**

7, the Project would not result in substantial erosion or loss of topsoil. Therefore, the Project would result in a less than significant impact with mitigation incorporated on soil erosion or loss of topsoil.

Response to Impact Question c):

Less Than Significant Impact. See discussion in responses (a-iii) and (a-iv). As discussed above, the Project would result in a less than significant impact as relates to the location of the Project within an unstable geologic unit.

Response to Impact Question d):

No Impact. Expansive soils are prone to large volume changes (swelling and shrinking) from changes in water content, with higher moisture levels causing soils to swell, and lower moisture levels causing soils to shrink. According to the USGS Swelling Clays Map of the Conterminous United States, the project area is in an area with little or no swelling clay (United States Geological Survey, 1989). Linear extensibility is used to determine the potential of soil to shrink and swell. According to the National Soil Survey Handbook, a linear extensibility value less than three percent indicates the soil has a low shrink-swell potential, a moderate shrink-swell potential ranges from three percent to six percent, a high shrink swell potential ranges six percent to nine percent, and a very high shrink-swell potential would be a linear extensibility greater than nine percent (Natural Resources Conservation Service, 2017). Much of the county is covered by expansive soil that can cause lifting and cracking in concrete foundations (County of Orange, 2012a). However, soils in the project area have linear extensibility that ranges from 1.5 percent to 2.8 percent, indicating a low shrink-swell potential (National Resources Conservation Service, 2020). The Project would be designed and constructed in accordance with the Bridge Design Specifications established by Caltrans and would be designed in accordance with all applicable design provisions, which dictate specifications to ensure structural integrity in various kinds of soils, including expansive soils. The project area is not located on expansive soil; therefore, the Project would not result in an impact related to expansive soils.

Response to Impact Question e):

No Impact. The Project would not require the use of septic tanks or alternative wastewater disposal systems. The Project would include replacement of an existing bridge and would not require the construction or use of a septic tank. Therefore, the Project would not result in an impact to soils pertaining to the ability to support the use of septic tanks.

Response to Impact Question f):

Less than Significant Impact. Paleontological resources include fossils, which are the preserved remains or traces of animals, plants, and other organisms from prehistoric time (i.e., the period before written records). According to the Resources Element of the General Plan, the project area is within an area of general paleontological sensitivity (Orange County, 2001). Fossils and traces of fossils are preserved in sedimentary rock units (formed by the deposition of material at the Earth's surface) and are more likely to be preserved subsurface, where they have not been damaged or destroyed by previous ground disturbance or natural causes, such as erosion by wind or water. The project area is located on Young Alluvial Valley Deposits, which are geologically too young to contain fossils, thus have a low paleontological sensitivity (California Department of Conservation, n.d.). The project area has been previously disturbed; therefore, it is unlikely a unique paleontological or geologic feature would be destroyed by implementation of the Project. Therefore, the Project would result in a less than significant impact to a unique paleontological resource or site or unique geologic feature.

4.2.8 Greenhouse Gas Emissions

Would the project:	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 effect on the environment?	☐	☐	☒	☐
b) Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☐	☒

Response to Impact Question a):

Less than Significant Impact. Construction GHG emissions would result from material processing, onsite construction equipment, and traffic delays due to construction. These emissions would be produced at different levels throughout the construction phase; their frequency and occurrence can be reduced through innovations in plans and specifications and by implementing better traffic management during construction phases. In addition, with innovations such as longer pavement lives, improved traffic management plans, and changes in materials, the GHG emissions produced during construction can be offset to some degree by longer intervals between construction maintenance and rehabilitation activities. The RCEM (9.0.0) was used to estimate carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O) emissions from construction activities. **Table 12** provides a summary of construction generated GHG emissions. Construction of the proposed Project would generate a total of approximately 1,285.2 metric tons of carbon dioxide equivalent ($MTCO_2e$) (AMBIENT Air Quality and Noise Consulting, Air Quality and Greenhouse Gas Technical Memorandum, 2021a).

Table 12 Construction Greenhouse Gas Emission Estimates

Construction Phase	CO_2 (tons/phase)	CH_4 (tons/phase)	N_2O (tons/phase)	Total ($MTCO_2e$)
Grubbing/Land Clearing	29.23	0.01	0.00	26.91
Grading/Excavation	915.56	0.28	0.01	839.71
Drainage/Utilities/Sub-Grade	414.42	0.11	0.00	379.71
Paving	42.24	0.01	0.00	38.82
			Total:	*1,285.2*

Source: (AMBIENT Air Quality and Noise Consulting, Air Quality and Greenhouse Gas Technical Memorandum, 2021a)

GHG emissions would be reduced using cleaner more efficient equipment and by implementing traffic management during construction phases to minimize associated vehicle delays on area roadways (see **GHG-1**). The implementation of avoidance and minimization measures **AQ-1** through **AQ-5**, Standard Condition of Approval **AQ-5**, and **GHG-2** will decrease emissions of GHGs during construction. Traffic volumes during project operation are not expected to differ significantly from those that currently exist,

and the Project is therefore not expected to result in an increase in GHG emissions. Therefore, the Project would result in a less than significant impact to GHG emissions.

Response to Impact Question b):

No Impact. AB 32, known as the Global Warming Solutions Act of 2006, is a bill requiring California to reduce its GHG emissions to 1990 levels by the year 2020. Under AB 32, CARB was required to adopt regulations to achieve the maximum technologically feasible and cost-effective GHG emission reductions. Senate Bill (SB) 32 was passed on September 8, 2016, requiring CARB to ensure that statewide GHG emissions are reduced to 40 percent below the 1990 level by the year 2030. This directive was codified into the California Health and Safety Code. The California 2017 Climate Change Scoping Plan includes strategies for achieving California's current 2039 GHG-reduction target, in accordance with SB 32 requirements.

Implementation of the proposed Project would not result in long-term increases in vehicle trips or vehicle miles traveled. As a result, long-term increases in fuel use and associated GHG emissions would be negligible. The Project would not result in the introduction of stationary sources of GHG emissions. It is also important to note that project construction will include measures to help minimize fuel use and associated GHG emissions during project construction (refer to measures **AQ-1** through **AQ-4**). For these reasons, the project would not conflict with applicable GHG-reduction plans, including the Climate Change Scoping Plan. The Project will only involve a temporary (approximately 12-month) increase in GHG emissions during project construction, and the operation of the Project is not expected to result in any increase in GHG emissions either from stationary or mobile sources above existing levels. Therefore, the Project would result in no impacts to applicable plans, policies, and regulations adopted for the purpose of reducing the emissions of GHG.

Avoidance and Minimization Measures

The following measure will be implemented to minimize GHG emissions:

GHG-1 Project construction will comply with Caltrans' Standard Specifications (2015) including, but not limited to, Section 14-9, which specifically require compliance by the contractor with all applicable laws and regulations related to air quality, including air pollution control district and air quality management district regulations and local ordinances.

GHG-2 A traffic management plan will be developed and implemented in accordance with the 2018 Caltrans Standard Specifications and will comply with the California Manual on Uniform Traffic Control Devices, Part 6, "Temporary Traffic Control."

4.2.9 Hazards and Hazardous Materials

Would the project:	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?	☐	☐	☒	☐
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?	☐	☐	☒	☐
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☒
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?	☐	☐	☐	☒
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?	☐	☐	☐	☒
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☒	☐	☐
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?	☐	☒	☐	☐

Response to Impact Question a):

Less Than Significant Impact. Materials stored or disposed of during project construction and operation could present a hazard to construction workers, the public, or the environment. During construction,

vehicles and equipment would contain or require the temporary use of potentially hazardous substances, such as fuels, lubricating oils, and hydraulic fluid. The project would be required to comply with the environmental regulations established by the Department of Toxic Substances Control, Certified Union Program Agency and the Orange County Fire Authority. Additionally, project construction will be required to comply with any applicable rules and regulations pertaining to the state of California Code of Regulations (CCR) Title 23 Health and Safety Regulations. Because any use of hazardous materials during project construction is inherently required to comply with a variety of regulations that govern the transport, use, and disposal of hazardous materials, the Project would result in a less than significant impact to the routine transport, use, or disposal of hazardous materials.

Response to Impact Question b):

Less than Significant Impact. Geocon West, Inc. performed an Initial Site Assessment (ISA) for the project area (Geocon West, Inc, 2021). The ISA included site reconnaissance and review of historical topographic maps, aerial photographs, regulatory databases, and other site-related sources for indications of Recognized Environmental Conditions that might be encountered during construction (see **Appendix D**). The site reconnaissance and database records review did not indicate any specific hazardous waste concerns caused by the current use of the project area that would have the potential to impact project construction or completion.

Historical records reviewed for the ISA indicate that the project area has been a thoroughfare in the region since at least the early 1900s, which includes use during periods when lead was an ingredient in gasoline. Aerially deposited lead (ADL), therefore, is potentially present in soil within the project limits. Construction of the Project would require demolition of the existing bridge, and there is a potential for asbestos containing materials (ACM) and lead-containing paint (LCP) to be present within or on the existing bridge structure. Yellow and white thermoplastic striping paint observed within the project area generally has the potential to contain lead or chromium. Pole-mounted and pad-mounted transformers have the potential to contain fluid that includes polychlorinated biphenyls (PCB). Removal of electrical equipment may also generate hazardous waste. Utility owners are responsible for transformers and other electrical equipment that may contain hazardous substances. In addition, relocation or replacement of guard rails, power poles, and roadside signs on wooden posts may generate treated wood waste if the wooden posts are unable to be reused (Geocon West, Inc., 2021). The potential presence of these materials could create a hazard for the public or environment. However, with the implementation of avoidance and minimization measures **HAZ-1** through **HAZ-3** those impacts would be minimized or avoided, by requiring any hazardous materials on site to be identified prior to construction commences (i.e., before any such materials would be disturbed), and to be disposed of in accordance with applicable laws and regulations. Therefore, the Project would result in a less than significant impact on the release of hazardous materials into the environment.

Response to Impact Question c):

No Impact. Transporting small quantities of fuels, oils, and lubricants would be required for project construction and maintenance. No schools are located within one mile of the project area, so there would be no potential of handling hazardous materials, such as fuels, oils, and lubricants needed for construction, within a quarter mile of a school. The nearest school is Silverado's Children Center (7525 E Santiago Canyon Rd, Silverado, CA 92676) - A Nature Preschool, approximately 2.5 miles from the project area. Because there is no school located within a quarter mile of the project area, the Project would inherently have no hazardous material impact to a school. Moreover, because any transportation of hazardous materials required for project construction or maintenance would comply with applicable federal, state and County regulations, the risk of a hazardous materials impact to a school is even further

reduced. Therefore, the Project would result in no impact to hazardous emissions or handling hazardous materials.

Response to Impact Question d):

No Impact. According to the Department of Toxic Substance Control database, EnviroStor, and the State Water Resources Control Board's GeoTracker, there are no hazardous waste clean-up sites within a half mile radius of the project area (State Water Resources Control Board, 2015; Department of Toxic Substance Control, 2019; Geocon West, Inc., 2021). Therefore, the Project would result in no impact related to a hazardous waste site.

Response to Impact Question e):

No Impact. The closest airports to the project area are the John Wayne Airport (18601 Airport Way Santa Ana, CA 92707), approximately 18 miles southwest of the project area, and the Corona Municipal Airport (1900 Aviation Dr, Corona, CA 92880), approximately 22 miles southwest of the project area. There are no airports within two miles of the project area; therefore, the Project would result in no impact to safety or noise within an airport land use planning area.

Response to Impact Question f):

Less than Significant Impact With Mitigation Incorporated. Construction of the Project would require staged construction (keeping one traffic lane open at all times). The existing bridge provides the only access into and out of Silverado and currently serves the rural residents, the volunteer fire station, the community center, branch library, and the post office of Silverado. It is important that access, for both residential and emergency vehicles, is either maintained during construction or an alternative detour provided. No detour is currently available for this bridge, meaning that access must be maintained over the bridge for the duration of project construction. Measures **HAZ-4** and **HAZ-5,** which require coordination with emergency services and for any lane closures to occur outside of the wildfire season, would be implemented to minimize impacts to emergency response. In the event of a wildfire evacuation, emergency response and evacuation would be impacted since traffic would be limited to one lane which would slow traffic flow. The implementation of measures **HAZ-6** through **HAZ-10** will implement fire safety measures during construction activities, set an evacuation plan, and provide measures to prevent fire hazards. Therefore, with these mitigation measures incorporated, the Project would result in a less than significant impact as pertains to interference with an adopted emergency response plan or emergency evacuation plan.

Response to Impact Question g):

Less Than Significant Impact With Mitigation Incorporated. According to the Very High Fire Hazard Severity Zone Map in Unincorporated Local Responsibility Area, the project area is classified as a High Fire Hazard Severity Zone (Cal Fire, 2011). Because Silverado Canyon Road is a main road that grants access to the community, there is a potential that the Project will expose people, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires by restricting the access route across the bridge. However, measures **HAZ-6** through **HAZ-10** will be implemented prior to and during construction to mitigate the potential for fire hazards in the project area, and measures **HAZ-4** and **HAZ-5** to minimize the impacts of the Project on emergency response access and access to and from the project area. Therefore, the Project will result in a less than significant impact with mitigation on wildland fires.

Mitigation, Avoidance, and Minimization Measures

HAZ-1 An ACM and LCP survey of the existing bridge structure will be required prior to the demolition

work in order to obtain permits from South Coast Air Quality Management District (SCAQMD). If present, removal and disposal of ACM and LCP should be performed prior to the start of the demolition/renovation.

HAZ-2 Traffic striping and treated wood waste generated for this Project will be managed during construction under project Caltrans 2018 Standard Special Provisions (SSP).

HAZ-3 Prior to construction, an ADL survey will be conducted to evaluate the potential presence of lead in surface and shallow soil within the project areas where soil disturbance is anticipated.

HAZ-4 Construction activity will be coordinated with community emergency services to inform them of when lane closures will be occurring.

HAZ-5 Lane closure will be conducted outside of the wildfire season (between July and November) when emergency wildfire evacuation is least likely.

HAZ-6 The contractor will prepare a Construction Fire Prevention Plan approved by the Interim Deputy Director of OC Development Services/Planning or designee and the Deputy Director and Division Manager of OC Infrastructure Project Management Division or designee. In accordance with the Construction Fire Prevention Plan, the County will implement fire safety measures during construction activities in compliance with applicable subsections of Chapter 33 of the 2019 California Fire Code, the National Fire Protection Association Standard 51B, and the Section 4442 of the California PRC. The Construction Fire Prevention Plan will also include details for coordinating with the Orange County Fire Authority and Orange County Sheriff's Department through their Incident Command System should a wildfire evacuation be necessary.

HAZ-7 Hot work will cease during Red Flag Warning periods declared by the National Weather Service.

HAZ-8 In the event of a fire in the project area, all construction activities will immediately stop, the construction crew will immediately use the onsite fire extinguishers and the water truck to extinguish the fire, and will contact emergency services.

HAZ-9 Two weeks prior to initiation of construction activities, the Contractor will post on the community bulletin board adjacent to the Silverado Canyon Market located at 28192 Silverado Canyon Road, the Silverado Community Center located at 27641 Silverado Canyon Road and utilize the U.S. Postal Service's Every Door Direct Mail service to send each Post Office (P.O). Box in Silverado Canyon the following:

- Information on Orange County Fire Authority's Ready!, Set!, Go! safety program.
- An emergency evacuation route map.
- The phone number of emergency services - 911.

HAZ-10 The contractor will comply with the fire protection provisions contained in Caltrans Standard Specifications No. 7-1.02(m).

4.2.10 Hydrology and Water Quality

Would the project:	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?	☐	☐	☒	☐
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	☐	☐	☒	☐
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:	☐	☐	☒	☐
i) result in substantial erosion or siltation on- or offsite?	☐	☐	☒	☐
ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite?	☐	☐	☒	☐
iii) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial sources of polluted runoff?	☐	☐	☒	☐
(iv) impede or redirect flood flows?	☐	☐	☒	☐
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	☐	☐	☒	☐
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	☐	☐	☐	☒

Response to Question a):

Less Than Significant Impact. The project area is in the Santa Ana River Watershed. The Santa Ana River Watershed encompasses approximately 1,695 square miles in the Counties of Los Angeles, Orange, Riverside, and San Bernardino. The Santa Ana River Watershed is surrounded by the San Gabriel Mountains to the north, the Los Angeles River to the west, and the Pacific Ocean to the south (USGS, 2019). The project area falls under the local jurisdiction of the Santa Ana RWQCB.

Silverado Creek is the only water feature in the project area. The creek is an intermittent USGS blue line stream and flows east to west beneath the Silverado Canyon Road Bridge. The creek bottom consists of sandy soil with numerous rocks and boulders and is vegetated by a combination of chaparral shrubs and riparian trees. The creek flows into Santiago Creek approximately two miles downstream of the bridge, and Santiago Creek flows into Irvine Lake. Just north of the project area, an unnamed ephemeral drainage flows into the creek. Water was not present during the biological survey conducted on November 11, 2019 but was present during the focused special-status botanical survey on May 15, 2020, the arroyo toad protocol surveys on March 26, 27, 28, and April 1, 2019, and jurisdictional delineation survey on June 25, 2019 (GPA Consulting, 2021b).

Silverado Creek is currently impaired for Salinity/Total Dissolved Solids /Chlorides and Toxicity (California Regional Water Control Board, 2009). When a body of water is listed on the federal list of impaired water bodies (the "303(d) list"), typically, a total daily maximum load (TMDL) is prescribed for the specific pollutants exceeding water quality thresholds. A TMDL still needs to be approved for Salinity/Total Dissolved Solids /Chlorides and Toxicity for the Santa Ana River Watershed. The Santa Ana RWQCB Basin Plan, updated June 2019, lists the beneficial uses of Silverado Creek as Municipal and Domestic Supply, Groundwater Recharge, Water Contact Recreation, Non-contact Water Recreation, Warm Freshwater Habitat, Wildlife Habitat, and Rare, Threatened, or Endangered Species (Santa Ana Regional Water Quality Control Board, 2019). The Santa Ana RWQCB Basin Plan also establishes the following water quality objectives for Silverado Creek:

- Total Dissolved Solids (650 milligrams per liter [mg/L])
- Hardness (450mg/L)
- Sodium (30mg/L)
- Chloride (20 mg/L)
- Total Inorganic Nitrogen (1 mg/L)
- Sulfate (275 mg/L).

Construction projects must comply with the Federal National Pollution Discharge Elimination System (NPDES). The USEPA delegated NPDES authority within California to the State Water Resources Control Board (SWRCB). While the SWRCB has issued some NPDES permits, the RWQCBs issue the vast majority of NPDES permits in the state. As the "Principal Permittee" on the Santa Ana region NPDES, the County must obtain and implement local NPDES permits from the Santa Ana RWQCB. The County's NPDES Program enforces state mandated water quality regulations that apply to construction projects in the unincorporated areas of the County. These regulations are intended to minimize pollutants and runoff from both construction areas and completed project areas. These regulations require, among other things, the development of a Water Quality Management Plan (WQMP) for non-exempt projects. A WQMP describes the permanent, post-construction BMPs that would be constructed or utilized on the site and maintained during the life of the Project to avoid, minimize, and mitigate the Project's impacts to water quality.

Project construction would require access to the creek to allow work on the Silverado Canyon Road Bridge. There is potential that exposed soils, construction debris, and other pollutants from construction activity and associated equipment could directly fall into the creek from the bridge and adjacent staging areas, or get carried into the creek through stormwater runoff, degrading water quality of the creek. Measures would be implemented in compliance with required permits for construction of the Project to minimize and avoid to the extent possible the impacts from such runoff, including measures identified in the Stormwater Pollution Prevention Plan (SWPPP) required as part of the Construction General NPDES Permit. Measures included in the SWPPP and additional supporting permit measures, would avoid and minimize the discharge of dust and other pollutants from the project area into local drainages. Specific site measures would be developed during Project permitting prior to the beginning of construction to further avoid and minimize any potential water quality impacts from project site runoff.

The proposed replacement bridge would be a concrete bridge, 58 feet long and 44 feet wide, 12 feet wider than the existing bridge. Increases in the impervious surface area could result in additional stormwater runoff volume and runoff rates, potentially disturbing existing creek hydrology and thereby increasing pollutant loads to receiving waterbodies. However, the resulting net impervious surface increase would be less than 2,500 square feet. The impervious surface area increase would not be considered substantial by the RWQCB or other jurisdictional entities because the increase would amount to less than 5,000 square feet of total impervious surfaces (California Regional Water Control Board, 2009). Under the criteria for determining whether or not a WQMP is required, the Project is not identified as a "Priority Project" and a WQMP would therefore not be required. The increase to net impervious surface area as a result of the Project would be minor (less than 2,500 square feet total). Drainage would remain similar to existing drainage patterns and flow. Because the Project would not significantly increase net impervious surface area, would retain drainage patterns and flow, and would incorporate measures to minimize and avoid water quality impacts during project construction and operation, the Project would result in less than significant impacts to water quality standards or waste discharge requirements of Silverado Creek or downstream waterbodies.

Response to Question b):

Less Than Significant Impact. The project area is in the South Coast Hydrologic Region. Per Bulletin 118, the state's official publication on the occurrence and nature of groundwater in California, the project area does not overlie a specific groundwater basin (California Department of Water Resources, 2016). However, a listed beneficial use of Silverado Creek is Groundwater Recharge.

Groundwater was not encountered during geotechnical exploration down to an elevation of 1,088 feet. However, the site is adjacent to Silverado Creek and groundwater elevation can vary depending on the level of surface water inside of the creek. During project construction, surface water within the creek would be temporarily diverted via stream diversion system (i.e. steel pipe). The diversion would be removed once project construction is complete. Groundwater dewatering is not anticipated to be required for construction.

As noted in response (a) above, the Project would result in a minor increase in impervious surface area, which could slightly increase the rate or amount of stormwater runoff in the project area and decrease groundwater recharge during project operations. However, the impacts of increased impervious surface area would be minor and have negligible impacts to groundwater recharge rates for Silverado Creek. Because the Project would not use groundwater resources, does not overlie a groundwater basin, and is not expected to substantially alter impervious surface area in a way that would significantly impact groundwater recharge in the project area, the Project would result in less than significant impacts to groundwater recharge.

Response to Question c):

i. Less Than Significant Impact. As noted in response (a) above, the Project would result in soil-disturbing construction activity in and adjacent to Silverado Creek. Temporary impacts during project construction would be required to comply with the terms and conditions several permits and would require the development of a SWPPP, consistent with the Construction General NPDES Permit. Permit requirements and SWPPP BMPs would avoid and minimize potential soil erosion and siltation. Because permit requirements and SWPPP BMPs would avoid or minimize all potential impacts related to soil erosion caused by project construction, the Project would result in a less than significant impact to soil erosion.

ii - iv. Less Than Significant Impact. As noted in response (a) above, the Project would result in a minor increase in impervious surface area, which could slightly increase the rate or amount of stormwater runoff in the project area. However, the impervious surface area increase would not be considered substantial by the RWQCB or other jurisdictional entities because the increase would amount to less than 5,000 square feet of total impervious surfaces (California Regional Water Control Board, 2009). Existing drainages would adequately accommodate the minor changes in stormwater runoff caused by the minor increase in net impervious surfaces. Because existing drainages would be able to accommodate the anticipated minor increase in stormwater runoff, and because that increase is expected to be negligible, consistent with the negligible increase in impervious surface area, the Project would result in a less than significant impact as pertains to an increase in the rate of surface runoff, impeding flood flows, and creating runoff water that would exceed the capacity of existing or planned stormwater drainage systems.

Response to Question d):

Less Than Significant Impact. A seiche is a temporary disturbance or oscillation in the water level of a lake or partially enclosed body of water. A tsunami is a long, high ocean wave caused by an earthquake, submarine landslide, or other disturbance. The project area is not near a lake or ocean and therefore is not susceptible to seiche or tsunami hazards. The replacement of the existing bridge would enhance access through the floodplain. The addition of abutments may have a localized impact to the flow characteristics of the project area; however, it would not increase flow restriction, and the area would continue to have sufficient drainage to accommodate flood events. Therefore, the Project would result in less than significant impacts to flood hazards, tsunamis, or seiche zones.

Response to Question e):

No Impact. Project design requires incorporation of BMPs listed in the Construction Runoff Guidance Manual Orange County Stormwater Program during project construction (Orange County Flood Control District, 2012) Collection and removal debris from demolition activities to prevent materials from entering the Silverado Creek channel is a part of project design. The drainage of runoff from the bridge would be treated prior to offsite discharge during construction, consistent with BMPs that would be implemented as part of the Project. Therefore, the Project would result in no impact to water quality control or sustainable groundwater management plans.

4.2.11 Land Use and Planning

Would the project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
a) Physically divide an established community?	☐	☐	☐	☒
b) Cause a significant environmental impact due to a conflict with any applicable land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☐	☒

Response to Question a):
No Impact. The Project would include replacement of an existing bridge with a new slightly larger bridge. The bridge would support two 12-foot-wide traffic lanes, two 5-foot shoulders, two traffic barriers, and a 5-foot sidewalk with railing (north side). The Project would include staged construction which would keep one traffic lane open at all times. The new bridge would be slightly larger to enhance access; however, the Project would not result in the construction of any new barriers that could potentially divide an established community. The bridge would have continuous access throughout construction and have the full access during operation. Therefore, the Project would result in no impact to physically dividing an established community.

Response to Question b):
No Impact. The project area is surrounded by Single Family Residential and Other Open Space and Recreation (see **Figure 3,** Land Use). The proposed Project does not involve change in land use designation nor require an amendment to the Specific Plan. In addition, the Specific Plan identifies rural road character as roads that shall not allow curbs, gutters, sidewalks, and streetlights unless necessary for safety purposes (Orange County Board of Supervisors, 1977). The Project would not include these features. The Project would not cause a significant environmental impact due to conflicts with applicable land use plans, policies, and regulations and impacts would be result in no impacts. The Project would not conflict with local land use plans or policies. The Project would be consistent with the designated land use and local policies. Therefore, the Project would result in no impact to any applicable land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect.

4.2.12 Mineral Resources

Would the project:	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?	☐	☐	☐	☒
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?	☐	☐	☐	☒

Response to Question a):

No Impact. According to the General Plan, the California Department of Conservation, Division of Mines and Geology, identified significant sand and gravel resources within the County region (County of Orange, n.d.). Also, according to the Resources Element of the General Plan, the project area has not been identified as a "Mineral Resources Area" (Orange County, 2001). Therefore, the Project would result in no impact to any known mineral resource of value.

Response to Question b):

No Impact. As stated previously, the project area is not within or adjacent to a designated "Mineral Resource Area." No mineral extraction activities occur on or adjacent to the project site, and no known mineral resources are present on site. Therefore, the Project would result in no impact to the availability of a locally important mineral resource.

4.2.13 Noise

Would the project result in:	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?	☐	☐	☒	☐
b) Generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☒	☐
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?	☐	☐	☐	☒

Response to Question a):

Less Than Significant Impact. Noise can be a nuisance when the noise level conflicts with surrounding land uses. The Orange County Codified Ordinances identify noise standards under Title 4, Division 6, Article 1. The County's noise standards are developed and enforced to "control unnecessary, excessive and annoying sounds emanating from unincorporated areas of the county." Section 4-6-7 of the Orange County Codified Ordinances lists noise special provisions, which includes noise generated from construction activity. Orange County Codified Ordinances Section 4-6-2 describes ambient noise level as "the all-encompassing noise level associated with a given environment, being a composite of sounds from all sources, excluding the alleged offensive noise, at the location and approximate time at which a comparison with the alleged offensive noise is to be made." Noise-generating activities could be disruptive, and even harmful, if surrounding land uses support populations of sensitive receptors. Sensitive receptors generally describe persons that may be more heavily exposed to impacts, or more sensitive to impacts, than the general population of a given community or area.

The County's noise control ordinance includes exterior and interior noise standards for non-transportation noise sources. Accordingly, average-hourly exterior noise levels (L_{eq}) at residential properties are limited to 55 A-weighted decibels (dBA) L_{50}/L_{eq} during the daytime hours (7:00 a.m. to 10:00 p.m.) and 50 dBA L_{50}/L_{eq} during the nighttime hours (10:00 p.m. to 7:00 a.m.) Interior noise level are limited to 55 dBA L_{50}/L_{eq} during the daytime hours (7:00 a.m. to 10:00 p.m.) and 45 dBA L_{50}/L_{eq} during the nighttime hours (10:00 p.m. to 7:00 a.m.). Construction activities are exempt from these standards provided that activities do not take place between the hours of 8:00 p.m. and 7:00 a.m. on weekdays, including Saturday, or at any time on Sunday or federal holidays.

A Noise Technical Memorandum was prepared by Ambient Air Quality and Noise Consulting for the Project (see **Appendix E**). According to the technical memorandum, during construction of the Project, noise from construction activities may intermittently dominate the noise environment in the immediate area of construction. **Table 13** summarizes noise levels produced by construction equipment commonly used on roadway and bridge construction projects (AMBIENT Air Quality and Noise Consulting, Noise Technical Memorandum , 2021b). Based on the levels depicted in **Table 13,** individual pieces of construction equipment can be expected to generate intermittent noise levels ranging from approximately 76 to 90 dBA Maximum Sound Level (L_{max}) at a 50-foot distance from the construction equipment. Average-hourly noise levels associated with the operation of individual pieces of construction equipment can range from approximately 72 to 82 dBA Equivalent Sound Level (L_{eq}) at the same 50-foot distance. Predicted exterior construction noise levels at nearby land uses are summarized in **Table 14** (AMBIENT Air Quality and Noise Consulting, 2021b)**.**

Table 13 Typical Construction Equipment Noise Levels

Equipment	Noise Level (dBA at 50 feet)	
	L_{max}	L_{eq}
Backhoes	78	74
Bulldozers	82	78
Compressors	78	74
Cranes	81	73
Concrete Pump Truck	81	74
Drill Rigs	79	72
Dump Trucks	77	73
Hydraulic Break Rams	90	80
Front End Loaders	79	75
Pneumatic Tools	85	82
Pumps	81	78
Rollers	80	73
Scrapers	84	80

Based on measured instantaneous noise levels (L_{max}), average equipment usage rates, and calculated average-hourly (L_{eq}) noise levels derived from the FHWA Road Construction Noise Model (Federal Highway Administration, 2008; AMBIENT Air Quality and Noise Consulting, Noise Technical Memorandum , 2021b)

Table 14 Predicted Construction Noise Levels at Nearby Residences & Outdoor Activity Areas

Activity	Typical Equipment	Distance to Structure (Feet)	Noise Level (dBA)	
			L_{eq}	L_{max}
Pile (CIDH) Install	Drill Rig, Concrete Pump, Concrete Truck			
Residence Northwest of Bridge		395	63	58
Residence Southwest of Bridge		440	62	57
Silverado Community Center Outdoor Activity Area Northeast of Bridge		860	56	51
Horse Arena Southwest of Bridge		295	66	61
Horse Stables Southwest of Bridge		375	63	58
Bridge Excavation/Construction	Excavator, Dump Truck, Pumps			
Residence Northwest of Bridge		395	63	60
Residence Southwest of Bridge		440	62	59
Silverado Community Center Outdoor Activity Area Northeast of Bridge		860	56	53
Horse Arena Southwest of Bridge		295	66	63
Horse Stables Southwest of Bridge		375	63	60
Bridge Demolition	Excavator, Hydraulic Breaker, Pumps			
Residence Northwest of Bridge		395	72	64
Residence Southwest of Bridge		440	71	63
Silverado Community Center Outdoor Activity Area Northeast of Bridge		860	65	57
Horse Arena Southwest of Bridge		295	75	67
Horse Stables Southwest of Bridge		375	72	64
Road Construction/Paving	Grader, Roller, Paver			
Silverado Community Center Outdoor Activity Area/Horse Stables/Arena		50	80	77

Key: dBA- A-weighted decibel, L_{max}=instantaneous noise level; L_{eq} = average-hourly noise level

Noise produced by construction equipment decreases at a rate of about six dB per doubling of distance from the source. Based on this attenuation rate, the distances to the nearest dwellings, the equipment noise levels identified in **Table 13**, and assuming multiple pieces of equipment would be operating simultaneously, the highest predicted exterior average-hourly noise levels at the nearest residential dwellings (approximately 350 feet northwest of the project area) would range from approximately 58 to 77 dBA L_{eq}. Predicted exterior average-hourly noise levels at the outdoor activity areas located at the Silverado Community Center would range from approximately 51 to 77 dBA L_{eq}. Predicted exterior average-hourly noise levels at the nearby horse stables and outdoor arena located southwest of the project site would range from approximately 63 to 80 dBA L_{eq}. Predicted exterior average-hourly noise levels would be short term (over the course of the 12-month total construction period, and with each individual piece of construction equipment anticipated to be used for only a subset of that period), with the highest predicted noise levels occurring when off-road construction equipment is located nearest residential and community center land uses. The Project would be constructed in compliance with the County's noise standards and Caltrans Standard Specifications Section 14-8.02, which would inherently minimize the impact of the Project's noise generation during construction.

With regard to residential land uses, noise occurring during the more noise-sensitive nighttime hours are of particular concern. Construction-related activities occurring during the nighttime hours may result in increases in interior noise levels which can result in sleep disruption and increased levels of annoyance. Implementation of minimization measures **NOI-1** through **NOI-6** and Standard Conditions of Approval **NOI-7** will reduce equipment noise levels by as much as approximately 10 dBA. Measure **NOI-7** will limit activities to the less noise-sensitive daytime hours. Following project completion, noise levels would resume to levels equivalent to existing conditions. Therefore, because the construction related noise levels will comply with measures **NOI-1** through **NOI-6** and Standard Conditions of Approval **NOI-7** and, and because there is no anticipated increase in operational noise levels, the Project would result in a less than significant impact to noise levels with mitigation included.

Response to Question b):

Less Than Significant Impact. There are no federal, state, or local regulatory standards for groundborne vibration. However, Caltrans has developed vibration criteria based on potential structural damage risks and human annoyance. Caltrans-recommended criteria for the evaluation of groundborne vibration levels, with regard to structural damage and human annoyance, are summarized in **Table 15** (see **Appendix E**). (California Department of Transporation , 2020).

As shown in **Table 15**, the threshold for architectural damage commonly applied to construction activities is a peak particle velocity (ppv) of 0.3 inches per second (in/sec) for fragile structures and 0.5 in/sec ppv for newer structures. Levels above 0.2 in/sec ppv may result in increased levels of annoyance for people in buildings.

Table 15 Summary of Groundborne Vibration Levels and Potential Effects

Vibration Level (in/sec ppv)	Human Reaction	Effect on Buildings
0.006-0.019	Threshold of perception; possibility of intrusion.	Vibrations unlikely to cause damage of any type.
0.08	Vibrations readily perceptible	Recommended upper level of the vibration to which ruins and ancient monuments should be subjected.

0.10	Level at which continuous vibrations begin to annoy people.	Virtually no risk of "architectural" damage to normal buildings.
0.20	Vibrations annoying to people in buildings (this agrees with the levels established for people standing on bridges and subjected to relative short periods of vibrations).	Threshold at which there is a risk of "architectural" damage to fragile buildings.
0.4-0.6	Vibrations considered unpleasant by people subjected to continuous vibrations and unacceptable to some people walking on bridges.	Potential risk of "architectural" damage may occur at levels above 0.3 in/sec ppv for older residential structures and above 0.5 in/sec ppv for newer structures.

Source: (AMBIENT Air Quality and Noise Consulting, Noise Technical Memorandum , 2021b)

Construction related groundborne vibration levels associated with the Project would be largely associated with the operation of off-road equipment (e.g., vibratory rollers, hoe rams, bulldozers, trucks, and jackhammers). The use of pile drivers (a large source of groundborne vibration) is not anticipated to be required for this Project. Groundborne vibration levels commonly associated with off-road equipment used on roadway and bridge construction projects are summarized in **Table 16**. As indicated, groundborne vibration levels associated with those sorts of construction equipment generally range from approximately 0.003 to 0.210 in/sec ppv at a 25-foot distance from the source of the vibrations.

Table 16 Representative Vibration Levels for Construction Equipment

Equipment	**Peak Particle Velocity at 25 Feet (in/sec)**
Vibratory Roller	0.210
Hoe Ram	0.089
Large Bulldozers	0.089
Caisson Drilling	0.089
Loaded Trucks	0.076
Jackhammer	0.035
Small Bulldozers	0.003

Source: (California Department of Transporation , 2020)

Predicted groundborne vibration levels at the nearest residential structure to the project construction site were quantified based on the reference noise levels identified in **Table 17**. Predicted groundborne vibration levels for the Project are summarized in **Table 17**.

Table 17 Predicted Construction Vibration Levels at the Nearest Structure

Activity	Peak Particle Velocity (in/sec)
Bridge Demolition	0.004
Bridge Excavation/Construction	0.004
Pile (CIDH) Drilling	0.002
Road Construction & Paving	0.098

Groundborne vibration levels were calculated based on representative equipment levels noted in Table 16. Based on distances of 91 feet from the bridge to the nearest residence for bridge demolition, bridge construction, and pile drilling activities, and 42 feet from road construction and paving activities.

As depicted in **Table 17** groundborne vibration levels at the nearest residence would range from approximately 0.002 in/sec ppv to 0.098 in/sec ppv. Groundborne vibration levels at the nearest residence would not exceed the commonly applied criteria for structural damage of 0.5 in/sec ppv or the commonly applied threshold for human annoyance of 0.2 in/sec ppv. The vibration levels predicted in **Table 17** would be readily perceptible according to the perception levels identified in **Table 15**. Measures **NOI-1** through **NOI-6** and Standard Conditions of Approval **NOI-7** will restrict times of equipment use, equipment location, and allow the use of barriers when necessary to minimize groundbourne vibration (as well as noise) impact during construction. With implementation of measures **NOI-1** through **NOI-6** and Standard Conditions of Approval **NOI-7** and given that construction activities would be short-term, the Project would result in a less than significant impact to groundborne vibration with mitigation included.

Response to Question c):

No Impact. The closest airports to the project area are the John Wayne Airport (18601 Airport Way Santa Ana, CA 92707), approximately 18 miles southwest of the project area, and the Corona Municipal Airport (1900 Aviation Dr, Corona, CA 92880), approximately 22 miles southwest of the project area. The Project is not located within an airport land use plan area or compatibility zone. Therefore, the Project would result in no impact to creating excessive noise for people residing or working within an airport land use plan.

Avoidance and Minimization Measures

To minimize and avoid potential impacts to temporary construction noise, the following measures will be implemented:

NOI-1 Construction activities will conform to the provisions in Section 14-8.02, "Noise Control," of the Caltrans Standard Specifications.

NOI-2 Per Caltrans Standard Specifications Section 14-8.02 Noise Control, do not exceed 86 dBA L_{max} at 50 feet from the job site activities between the hours of 9 p.m. to 6 a.m.

NOI-3 Internal combustion engines will be equipped with a muffler of a type recommended by the manufacturer.

NOI-4 Portable/stationary equipment (e.g., generators, compressors) will be located at the furthest distance from the nearest residential dwelling.

NOI-5 Construction equipment and vehicles will not idle for more than five minutes when not in use.

NOI-6 As directed by the County resident engineer, the contractor will implement appropriate additional noise abatement measures including, but not limited to, siting the location of stationary construction equipment away from sensitive noise receptors to the greatest extent feasible, use of temporary barriers, and rescheduling construction activity to avoid noise-sensitive days or times.

Standard Conditions of Approval

NOI-7 *Orange County Codified Ordinances Section 4-6-7 Special Provisions.* Noise sources associated with construction, repair, remodeling, or grading of any real property, provided said activities do not take place between the hours of 8:00 p.m. and 7:00 a.m. on weekdays, including Saturday, or at any time on Sunday or a Federal holiday.

4.2.14 Population and Housing

Would the project:	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)?	☐	☐	☐	☒
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

Response to Question a):

No Impact. The Project would not include the construction of new homes or businesses. Construction workers would likely be hired from the local area and commute to the job site on a daily basis, rather than relocate from more distant areas. Construction workers would also be present for a temporary period of time and are not expected to contribute to population growth in the project area.

Construction activities for the proposed Project would be limited to the construction site of an existing transportation facility and would not result in the extension of roads or other infrastructure to undeveloped areas. Instead, the Project serves the existing Silverado community and replaces an existing bridge on an existing road. The Project would not include constructing new homes, businesses, or creating new infrastructure in underdeveloped areas. Therefore, the Project would result in no impact to population growth.

Response to Question b):

No Impact. There are no existing residential structures in the project area. The Project would include only the replacement of an existing bridge and would not result in the demolition of existing housing or displacement of any residential populations. Therefore, the Project would result in no impact to housing in the area.

4.2.15 Public Services

Would the project:	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:				
a-i) Fire protection	☐	☒	☐	☐
a-ii) Police protection	☐	☐	☐	☒
a-iii) Schools	☐	☐	☐	☒
a-iv) Parks	☐	☐	☐	☒
a-v) Other public facilities	☐	☐	☐	☒

Response to Question a-i):

Less Than Significant With Mitigation Incorporated. Construction of the Project would require staged construction (keeping one traffic lane open at all times). The existing bridge provides the only access into and out of Silverado and currently serves the rural residents, the volunteer fire station, the community center, branch library, and the post office of Silverado. It is important that access, for both residential and emergency vehicles, is either maintained during construction or an alternative detour provided. No detour is currently available for this bridge, necessitating that access be maintained during construction. Measures **HAZ-4** through **HAZ-10** will be implemented to minimize impacts to response times for fire protection. Therefore, with implementation of mitigation measures **HAZ-4** through **HAZ-10** the Project would have a less than significant impact to fire protection response times.

Response to Question a-ii):

No Impact. The Project would include replacement of the Silverado Canyon Bridge for safety purposes. The Project would not be capacity-increasing or result in regional or community growth beyond what is anticipated to occur with or without the Project. The Project would not result in the need for new or physically altered governmental facilities and services that could lead to additional environmental impacts in the project region. The Project would improve safety and ensure continuation of access to service areas for existing public services in the community of Silverado. Service ratios for fire protection, police protection, schools, parks, and other community services would maintain at existing ratios and performance levels. Therefore, the Project would result in no impact to government facilities, service ratios, or public service response times.

Response to Question a-iii):

No Impact. No schools are located within one mile of the project area. The Project would not result in the need for new or physically altered governmental facilities and services that could lead to additional environmental impacts in the project region. Therefore, the Project would result in no impact to schools.

Response to Question a-iv):

No Impact. Limestone Canyon Regional Park is located west of the project area and Cleveland National Forest is located east of the project area. The proposed project would not impact the use of and access to Limestone Canyon Regional Park and/or Cleveland National Forest. The Project would not result in the need for new or physically altered governmental facilities and services that could lead to additional environmental impacts in the project region. Therefore, the Project would result in no impact to parks or public recreational facilities.

Response to Question a-v):

No Impact. See discussion in response a-ii).

4.2.16 Recreation

Would the project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
a) 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?	☐	☐	☐	☒
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?	☐	☐	☐	☒

Response to Question a):

No Impact. The nearest recreational facility to the project area is Limestone Canyon Regional Park approximately 2.5 miles to the southwest. The Project would not include the construction of housing. Further, temporary construction of the proposed Project would not result in population growth that would increase the number of visitors to existing parks or recreational facilities in the vicinity of the project area, such that substantial deterioration of an existing park or recreational facility would occur or be accelerated. Therefore, the Project would result in no impact to regional and neighborhood parks.

Response to Question b):

No Impact. The Project would include replacing an existing bridge. The Project would not facilitate population growth in the area, and therefore would not create a need for new or expanded recreational facilities, nor does the Project involve the construction or expansion of recreational facilities. Therefore, the Project would result in no impact to the expansion of recreational facilities.

4.2.17 Transportation

Would the project:	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?	☐	☐	☒	☐
b) Would the project conflict or be inconsistent with CEQA section 15064.3, subdivision (b)?	☐	☐	☐	☒
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	☒
d) Result in inadequate emergency access?	☐	☐	☒	☐

Response to Impact Question a):

Less Than Significant Impact. Under the Specific Plan Circulation Element, the Project would be designed to comply with the Rural Street Standards. In addition, the Project would be designed to comply with adopted policies, plans, or programs concerning public transit, bicycle, or pedestrian facilities.

According to the General Plan Circulation Map, Silverado Canyon Road is not designated as an arterial highway and is located within the County's ROW. This meaning that changes to land use designations can be made based on land use needs; however, the bridge replacement would not require a change in designation. Thus, the Project would not conflict with the General Plan Circulation Map.

The Project would not conflict with an existing program plan. The County General Plan Growth Management Element provides that an "LOS 'C' shall also be maintained on Santiago Canyon Road links until such time as uninterrupted segments of the roadway (i.e., no major intersections) are reduced to less than three miles" (County of Orange, 2020c)This provision applies to the Project since Silverado Canyon Road, on which the Project is located, is linked to Santiago Canyon Road, and is located approximately 1.5 miles east of Santiago Canyon Road. Project construction would temporarily impact traffic on Silverado Canyon Road Bridge. However, the Project would implement staged construction that maintains one lane of traffic open at all times during construction.

Coordination would be conducted with local service providers, including emergency responders, to minimize potential impacts to emergency response times. However, project improvements would ultimately support the goals and objectives of the County by replacing the functionally obsolete bridge and providing a safe, convenient, and efficient roadway access to and from Silverado. Therefore, the Project would result in a less than significant impact to program plans, ordinances, or policies addressing the circulation system.

Response to Impact Question b):

No Impact. Section 15064.3(b) of the CEQA Guidelines states that projects considered transportation projects that reduce, or have no impact on, vehicle miles traveled (VMT) should be presumed to cause a less-than-significant transportation impact. The Office of Planning and Research (OPR) Technical Advisory on Evaluating Transportation Impacts in CEQA states, "Transit and active transportation projects generally reduce VMT and therefore are presumed to cause a less-than-significant impact on transportation" (OPR 2018, p. 23). Transportation projects include rehabilitation, maintenance, replacement, safety, and repair projects designed to improve the condition of existing transportation assets (e.g., highways, roadways, bridges, culverts) and would not add additional motor vehicle capacity. This is also consistent with the County of Orange Guidelines for Evaluating Vehicle Miles Traveled Under CEQA adopted by the Board of Supervisors on November 17, 2020, (County of Orange, 2020d). Therefore, implementation of the proposed Project would not conflict or be inconsistent with the provisions of CEQA Guidelines Section 15064.3 because it would replace an existing bridge and is designed to improve the condition of an existing transportation asset (bridge) and would not add additional motor vehicle capacity. (County of Orange, 2020d). Therefore, the Project would result in no impact to CEQA section 15064.3, subdivision (b).

Response to Impact Question c):

No Impact. The Project would include replacing the Silverado Canyon Bridge with a new bridge that meets current safety and geometric standards. The Project would reduce geometric hazards as compared to the existing bridge; therefore, the Project would result in no impact to geometric hazards.

Response to Impact Question d):

Less Than Significant Impact. During project construction, access across the bridge would be limited; one lane of traffic open at all times during construction. The existing bridge provides the only access into and out of Silverado and currently serves the rural residents, the volunteer fire station, the community center, branch library, and post office of Silverado. It is important that access, for both residential and emergency vehicles, is either maintained during construction or an alternative detour provided. No detour is currently available for this bridge, necessitating that one lane of travel remain open for the duration of project construction. Measures **HAZ-4** and **HAZ-5** will be implemented to minimize and avoid impacts to adequate emergency access during construction. Replacement of the bridge would provide a safe, convenient, and efficient roadway access to and from Silverado. Therefore, the Project would result in a less than significant impact to emergency access.

4.2.18 Tribal Cultural Resources

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:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
a) 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).	☐	☐	☒	☐
b) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	☐	☐	☒	☐

Response to Question a):

Less than Significant Impact. A pedestrian archeological survey of the area of APE was conducted, and no archeological or cultural resources were identified (GPA Consulting, 2021a). In addition, a records search was conducted at the South Central Coastal Information Center at California State University, Fullerton, and no resources within the APE were found to be eligible for the California Register of Historical Resources (see **Appendix C**). The project area has been previously disturbed (due to the existing roadway and bridge); therefore, it is unlikely a tribal or historical resource would be destroyed with the implementation of the Project. However, construction of the Project would include ground disturbing activities that could unearth tribal cultural resources should they be present in the project limits. Tribal cultural resources could include, but are not limited to, Native American human remains, funerary objects, items or artifacts, sites, features, places, landscapes, or objects with cultural values to a Native American tribe. With the implementation of the avoidance and minimization measure **CUL-2**, the impact would be less than significant because any previously unidentified cultural materials will be dealt accordingly with the County coroner.

Response to Question b):

Less than Significant Impact. The County of Orange initiated consultation per Assembly Bill 52 on July 20, 2021, with the following California Native American tribes: Juaneño Band of Mission Indians, San Gabriel Band of Mission Indians, Soboba Band of Luiseño Indians, and Gabrieleño Band of Mission Indians - Kizh Nation. No response was received from any of the Native American tribes. Construction of the Project

would include ground disturbing activities that could unearth previously undiscovered tribal cultural resources should they be present in the project limits. With the implementation of the avoidance and minimization measure **CUL-2**, the impact would be less than significant because any previously unidentified cultural materials will be dealt accordingly with the County coroner.

4.2.19 Utilities and Service Systems

Would the project:	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, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	☐	☐	☒	☐
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years?	☐	☐	☒	☐
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?	☐	☐	☐	☒
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?	☐	☐	☐	☒

Response to Question a):

Less Than Significant Impact. The project area currently contains overhead and buried utility lines. The Project would require temporary relocation of an existing waterline and protection of existing utility poles, overhead lines, and electrical and communication lines. The waterline would be placed back in its existing location following construction, mounted on the south underside of the proposed bridge. One power pole would be impacted by the proposed bridge and would be relocated permanently. Coordination would be conducted with affected service providers to avoid or minimize service disruptions as a result of the utility relocations, both temporary and permanent. Utility line relocations would occur within the existing project area. The environmental impacts as a result of utility relocation would be minimal and would not result in additional impacts beyond what is anticipated to result from project construction. The Project would include replacement of a failing bridge and would not necessitate new or expanded utilities. Therefore, the Project would result in a less than significant impact to utilities.

Response to Question b):

Less Than Significant Impact. Project construction could temporarily require the use of water resources for dust control. However, water usage would be negligible with respect to long term water supply. Water would not be required for project operation; project operation would not include any landscaping. Therefore, the Project would result in a less than significant impact to the sufficiency of water supplies available to serve the Project and reasonably foreseeable future water needs.

Response to Question c):

No Impact. The Project would not require wastewater treatment, nor would it generate a new or expanded use that would need wastewater treatment. Therefore, the Project would result in no impact to wastewater treatment capacity.

Response to Question d):

Less Than Significant Impact. Waste would be generated during construction activities, which include the removal of existing pavement, clearing of vegetation, and relocation of utilities. Project construction would be short-term, and the disposal of solid waste would be minimized through the recycling and reuse of materials, to the extent feasible. The remaining waste would be taken to a transfer station and would eventually end up at a landfill. The nearest landfill available is the Frank R. Bowerman Landfill, approximately five miles to the southwest. The landfill accepts commercial waste only and has enough projected capacity to serve residents and businesses until approximately 2053 (County of Orange, n.d.). Project operation would not generate substantial waste. A small amount of waste may be generated from routine maintenance of the transportation facility (e.g., pavement resurfacing, cleanup, and litter removal); however, this waste would be accommodated by existing landfill capacity. Measure **UTL-1** would require a Construction and Demolition Diversion Compliance Work Plan Form to be filled out, which requires certain projects to divert at least 65 percent of nonhazardous materials from landfills (County of Orange, 2019). With the implementation of **UTL-1**, the Project would result in a less than significant impact to solid waste generation and local infrastructure capacity.

Response to Question e):

No Impact. As discussed above, waste would be generated during construction activities, which include the removal of existing pavement, clearing of vegetation, and relocation of utilities. Project construction would require minimal, short-term solid waste disposal, which would be conducted in compliance with federal, state, and local statutes and regulations. Specifically, the Project would comply with the Solid Waste Management Plan in alignment with the General Plan Public Services and Facilities Element goals.

Project operation would not generate substantial waste. A small amount of waste may be generated from routine maintenance of the transportation facility (e.g., pavement resurfacing, cleanup and litter removal, and landscaping); however, this waste would be disposed in compliance with federal, state, and local statutes and regulations. Therefore, the Project would result in no impact to management and regulations related to solid waste.

Avoidance and Minimization Measure

To minimize and avoid potential impacts to Utilities and Service Systems, the following measures will be implemented:

UTL-1 Prior to operation of the Project, a Construction & Demolition Diversion Compliance Work Plan Form will be completed and submitted to the County of Orange Waste & Recycling for approval. The project must recycle, reuse and/or salvage for reuse a minimum of 65 percent of the

nonhazardous construction and demolition waste and 100 percent of trees, stumps, rocks, vegetation, and soil resulting from primarily from land clearing.

4.2.20 Wildfire

If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:	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?	☐	☒	☐	☐
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?	☐	☐	☒	☐
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?	☐	☐	☒	☐
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?	☐	☐	☒	☐

Response to Question a):

Less Than Significant Impact With Mitigation Incorporated. At least one lane of travel would be open across the bridge during construction; however, in the event of a wildfire evacuation, emergency response and evacuation would be impacted since traffic would be limited to one lane which would slow traffic flow. The implementation of measures **HAZ-6** through **HAZ-10,** identified in *Section 4.2.9 Hazards and Hazardous Materials* would implement fire safety measures during construction activities, set an evacuation plan, and provide measures to prevent fire hazards. Therefore, with implementation of mitigation measures **HAZ-6** through **HAZ-10**, the Project would result in less than significant impact with mitigation on an adopted emergency plan or emergency evacuation plan.

Response to Question b):

Less Than Significant Impact. The project area is in a Very High Fire Hazard Severity Zone (VHFSZ) of state or federal responsibility (California Department of Forestry and Fire Protection, 2011). Additionally, there are vegetated steep slopes surrounding the project area that could exacerbate wildfire risks. Wildfire could cause direct or indirect injury to persons in the vicinity of the Project altered through environmental conditions, including downslope or downstream flooding or landslides as a result of runoff, post-fire slope instability, or drainage changes. The presence of construction equipment and fuel sources (e.g., welding, cutting torch) could temporarily exacerbate fire risk in the project area. Measures **HAZ-4** through **HAZ-9**, identified in *Section 4.2.9 Hazards and Hazardous Materials*, would be implemented to avoid and

minimize the risk of wildfire by establishing fire safety measures during construction activities, setting an evacuation plan, and providing measures to prevent fire hazards. Project operation would not result in increased wildfire hazard risk beyond existing conditions and would enhance overall safety conditions in the project area by enhancing the safety and durability of the bridge structure. Therefore, the Project would result in less than significant impacts to wildfire pollutant exposure.

Response to Question c):

Less Than Significant Impact. As mentioned in response (b) above, the Project is located in a VHFSZ. The project area is also susceptible to flooding and wildfires. During project construction there would be continuous access to and from Silverado facilitated by maintaining one lane of travel across the bridge during construction. The presence of construction equipment and fuel sources (e.g., welding, cutting torch) could temporarily exacerbate fire risk in the project area. However, project construction would include measures (**HAZ-4** through **HAZ-10**) to avoid and minimize the risk of fire by established fire safety measures during construction activities, setting an evacuation plan, and providing measures to prevent fire hazards. Project improvements are essential to the enhancement of safety of and emergency access to and from Silverado across the bridge. Therefore, the Project would result in a less than significant impact to post-fire exposure to flooding or landslides.

Response to Question d):

Less Than Significant Impact. See response (b) above.

4.2.21 Mandatory Findings of Significance

Would the project:	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?	☐	☒	☐	☐
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)?	☐	☒	☐	☐
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☒	☐

Response to Question a):

Less Than Significant with Mitigation Incorporated. As described in *Section 4.2.4 Biological Resources*, implementation of measures **BIO-1** through **BIO-10** would reduce anticipated impacts to biological resources to a level that is less than significant. *Section 4.2.5 Cultural Resources* describes measures **CUL-1** and **CUL-2** which would avoid and minimize impacts to cultural and tribal resources.. *Section 4.2.8 Hazards and Hazardous Materials* describes measures **HAZ-1** through **HAZ-10** which would avoid, minimize, and mitigate impacts related to hazards and hazardous materials. With the inclusion of those mitigation measures, the Project would result in a less than significant impact to the quality of the environment, fish or wildlife species habitat, fish or wildlife population, plant or animal communities, the number or restricting the range of a rare or endangered plant or animal, or important examples of the major periods of California history or prehistory.

Response to Question b):

Less Than Significant with Mitigation Incorporated. According to 14 CCR § 15355, "Cumulative impacts" refers to two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts. The cumulative impact from several projects is the change in the environment which results from the incremental impact when added to other closely related past, present, and reasonably foreseeable future projects. **Table 18** provides a summary of related projects within the region, which is used in the cumulative impact analysis. The Project would not result in any significant impacts with the implementation of measures mentioned in *Section 4.2.4 Biological Resources.* Implementation of those measures would reduce anticipated impacts to a less than significant level. Therefore, with implementation of measures **BIO-1** through **BIO-10**, the Project's contribution to cumulative impacts would be less than cumulatively considerable. With implementation of avoidance, minimization, and/or mitigation measures addressed for the remaining environmental issue areas, any potential impacts would be reduced to less than significant. Because the Project's impacts would be less than significant, the Project would not contribute considerably to cumulative impacts. Therefore, cumulative impacts would be less than significant.

Table 18 Related Projects

Project Name	Project Limits	Project Description	Project Location in Relation to Project Area	Status
Modjeska Canyon Road Bridge (Br. No. 55C-0172)	The bridge is located in the unincorporated community of Modjeska Canyon along Modjeska Canyon Road approximately 0.40-mile (0.80 road mile) east of Santiago Canyon Road.	The project will replace the existing substandard steel bridge with a 65' long single span prestressed, precast concrete girder bridge.	Modjeska Canyon Road Bridge is approximately 5.7 road miles south of the project area.	Anticipated construction year: 2023/2024
Silverado Canyon Road Bridge (Br. No. 55C-0177)	The bridge is located in the unincorporated community of Silverado along Silverado Canyon Road approximately 3.65 miles (4.25 road miles) east of Santiago Canyon Road.	The project will replace the existing bridge with a single span prestressed, precast concrete voided slab girder bridge, with 12-foot wide lanes and a 4-foot shoulder on the north side and 6-foot shoulder on the south side.	Silverado Canyon Bridge over Santiago Creek is approximately 2.75 road miles east away from the project area.	Anticipated construction year: 2023/2024
Ladd Creek Bridge (Br. No. 55C-0175)	The bridge is located in the unincorporated community of Silverado, Orange	The project will replace the existing bridge with a single span prestressed, precast concrete voided slab	Ladd Creek Bridge is approximately 0.6 road miles east away from the project area.	Anticipated construction year: 2022

	County, California approximately 2.2 miles east of Santiago Road.	bridge, with 2-12 foot wide lanes and 6 foot shoulders		

Source: (OC Public Works, 2021).

Response to Question c):

Less Than Significant with Mitigation Incorporated. The Initial Study analysis shows that the Project would not have environmental effects causing substantial adverse effects on human beings, directly or indirectly. Impacts associated with air quality, biological resources, cultural resources, geology and soils, GHGs, hazards and hazardous materials, transportation, and utilities would all be reduced to a less than significant level with implementation of avoidance, minimization, and/or mitigation measures **AQ 1** through **14; BIO 1** through **10; CUL 1** and **2; GEO 1; GHG 1** and **2, HAZ 1** through **10;** and **NOI 1** through **8**. Therefore, with implementation of these measures, the Project would result in less than significant impacts to human beings, either directly or indirectly.

Chapter 5: Summary of Mitigation, Avoidance, and/or Minimization Measures

Mitigation, Avoidance, and/or Minimization Measures	Lead Agency Department	Timing of Compliance	Action Taken	Verified	Date	Further Action
Air Quality						
AQ-1: The construction contractor must comply with the California Department of Transportation's (Caltrans) standard Specifications in Section 14-9 (2018). Section 14-9-02 specifically requires compliance by the contractor with all applicable laws and regulations related to air quality, including air pollution control district and air quality management district regulations and local ordinances.	OC Public Works	During Construction				
AQ-2: Construction equipment and vehicles will be properly tuned and maintained. All construction equipment will use low sulfur fuel as required by the CA Code of Regulations Title 17, Section 93114.	OC Public Works	During Construction				
AQ-3: Environmentally sensitive areas will be established near sensitive air receptors. Within these areas, construction activities involving the extended idling of diesel equipment or vehicles will be prohibited, to the extent feasible.	OC Public Works	During Construction				
AQ-4: To the extent feasible, construction traffic will be scheduled and routed to reduce congestion and related air quality impacts caused by idling vehicles along local roads during peak travel times.	OC Public Works	During Construction				

Mitigation, Avoidance, and/or Minimization Measures	Lead Agency Department	Timing of Compliance	Action Taken	Verified	Date	Further Action
Standard Condition of Approval **AQ-5**: South Coast Air Quality Management District (SCAQMD) rules, including Rule 401 – Visible Emissions, Rule 402 – Nuisance, and Rule 403 – Fugitive Dust would be applied during project construction to minimize air quality pollutants as a result of construction activity. Fugitive dust control measures include, but are not limited to, the following: • Water, or a dust palliative will be applied to the site and equipment as often as necessary to control fugitive dust emissions. • Soil binder will be spread on any unpaved roads used for construction purposes, and on all project construction parking areas. • Trucks will be washed as they leave the ROW as necessary to control fugitive dust emissions. • A dust control plan will be developed documenting sprinkling, temporary paving, speed limits, and timely re-vegetation of disturbed slopes as needed to minimize construction impacts to existing communities. • Equipment and materials storage sites will be located as far away from residential and outdoor	OC Public Works	During Construction				

Mitigation, Avoidance, and/or Minimization Measures	Lead Agency Department	Timing of Compliance	Action Taken	Verified	Date	Further Action
activity areas as practicable. Construction areas will be kept clean and orderly. • Track-out reduction measures, such as gravel pads at project access points to minimize dust and mud deposits on roads affected by construction traffic, will be used. • All transported loads of soils and wet materials will be covered before transport, or adequate freeboard (space from the top of the material to the top of the truck) will be provided to minimize the emission of dust during transportation. • Dust and mud that are deposited on paved, public roads due to construction activity and traffic will be promptly and regularly removed to reduce PM emissions. • Mulch will be installed, or vegetation planted as soon as practicable after grading to reduce windblown PM in the area.						
Biological Resources						
BIO-1: To avoid potential impacts to special-status plants and special-status natural communities, the following measures will be implemented:	OC Public Works	Pre-construction				

Mitigation, Avoidance, and/or Minimization Measures	Lead Agency Department	Timing of Compliance	Action Taken	Verified	Date	Further Action
In the year prior to construction, a qualified biologist will conduct a pre-construction plant survey within the construction area. Surveys will be conducted during the appropriate blooming period for species with potential to occur in the construction area, to the extent feasible. Prior to the start of construction activities, Silverado Creek, Arroyo Willow thickets, coastal sage scrub, and any special-status plant species found within the project limits during the pre-construction survey, will be marked with high visibility fencing or staking demarcate the Environmentally Sensitive Area (ESA) to ensure construction will not encroach into the ESAs. The fencing will be installed under the supervision of a qualified biologist. The ESA protective fencing buffer will be species specific, with a minimum buffer radius based on the guidance from a qualified biologist. All excluded areas with ESA protective fencing will be monitored to determine whether exclusion measures were successful and to identify any outstanding concerns, including but not limited to the need to adjust the size of a buffer radius. Exclusionary measures will be monitored throughout construction to ensure they are functioning correctly and will be removed following construction.						
Mitigation Measure BIO-2: To mitigate for impacts to special-status plants, the	OC Public Works	During Construction				

Mitigation, Avoidance, and/or Minimization Measures	Lead Agency Department	Timing of Compliance	Action Taken	Verified	Date	Further Action
following measure will be implemented: If special-status plants cannot be avoided, a species-specific mitigation plan will be developed by a qualified biologist. The plan may include one or more of the following, as appropriate in the judgment of the qualified biologist: plant relocation, seed collection and dispersal, on- or off-site restoration, or payment into a regulatory agency-approved mitigation bank. The plan will be implemented prior to the initiation of work that will disturb.						
BIO-3: To avoid impacts to special-status amphibian and reptile species, the following measures will be implemented: A qualified biologist will complete pre-construction surveys no more than 48 hours prior to the commencement of construction activities to determine the presence or absence of special-status amphibian and reptile species in the project construction area. Surveys will be repeated if construction activities are suspended for five days or more. If special-status amphibian or reptile species are identified onsite, appropriate measures will be developed and implemented to avoid impacts to these wildlife species by the qualified biologist, in consultation with appropriate resource agencies, if applicable. Appropriate measures may include relocation, limiting construction to avoid special-status	OC Public Works	Pre-construction				

Mitigation, Avoidance, and/or Minimization Measures	Lead Agency Department	Timing of Compliance	Action Taken	Verified	Date	Further Action
amphibian or reptile species, or creating a species-specific mitigation plan. To prevent inadvertent entrapment of the special-status wildlife species or other animals during construction, a qualified Biologist and/or Contractor will ensure all excavated, steep-walled holes or trenches more than six inches deep are provided with one or more escape ramps constructed of earthen fill or wooden planks. Before such holes or trenches are filled, they will be thoroughly inspected for trapped animals by a qualified Biologist and/or Contractor. If animals are found, they will be allowed to leave on their own or relocated into suitable habitat by a qualified biologist outside of the construction area.						
BIO-4: To avoid potential impacts to special-status bird species, including the coastal California gnatcatcher, the following measures will be implemented: Vegetation removal will occur outside the nesting bird breeding season (February 15 – September 15). In the event that vegetation removal and tree trimming must be conducted during the nesting season, nesting bird surveys will be completed within 300 feet of the construction area by a qualified biologist no more than 48 hours prior to trimming or clearing activities to determine if nesting birds are within the affected vegetation. Nesting bird surveys will	OC Public Works	During Construction				

Mitigation, Avoidance, and/or Minimization Measures	Lead Agency Department	Timing of Compliance	Action Taken	Verified	Date	Further Action
be repeated if trimming or removal activities are suspended for five days or more. If nesting birds are found within 300 feet of the construction area, appropriate buffers consisting of orange flagging/fencing or similar (typically 300 feet for birds and 500 feet for raptors) will be installed and maintained until the qualified biologist determines that nesting activity has ended. A reduced buffer can be established if determined appropriate by the qualified biologist and approved by the relevant wildlife agencies. To the maximum extent feasible, no grading and/or removal of coastal sage scrub or coastal California gnatcatcher habitat, including approximately 0.06-acre buckwheat scrub, will be performed during the coastal California gnatcatcher breeding season (February 15 through July 15). If grading and/or removal of coastal sage scrub outside of the coastal California gnatcatcher breeding season is not feasible, then prior to the commencement of grading operations or other activities involving vegetation trimming or soil disturbance, a minimum of three pre-construction nesting bird surveys will be conducted by a Permitted Biologist for the coastal California gnatcatcher, spaced one week a part, with the last survey no more than 72 hours prior to the first day of disturbance. A biological monitor acceptable						

Mitigation, Avoidance, and/or Minimization Measures	Lead Agency Department	Timing of Compliance	Action Taken	Verified	Date	Further Action
to the USFWS will be on site during any clearing of coastal sage scrub. The County will notify the USFWS at least seven calendar days (and preferably 14 calendar days) prior to the clearing of any habitat occupied by coastal California gnatcatcher. If an active coastal California gnatcatcher nest is located, the USFWS Carlsbad Fish and Wildlife Office will be contacted to determine if it is necessary to reinitiate FESA Section 7 consultation to address potential direct and/or indirect effects to this species beyond those addressed in this document or during the initial FESA Section 7 consultation.						
BIO-5: Prior to the commencement of grading operations or other activities involving vegetation trimming or soil disturbance, areas of coastal sage scrub habitat to be avoided will be identified with temporary fencing or other markers clearly visible to construction personnel. The fencing or other markers will be installed by or under the supervision of a qualified biologist.	OC Public Works	Pre-construction				
BIO-6: In the event that any bird species is observed foraging within the construction area, it will be allowed to move away from the site prior to initiating any construction activities that could result in direct injury of the individual bird.	OC Public Works	Pre-construction				

Mitigation, Avoidance, and/or Minimization Measures	Lead Agency Department	Timing of Compliance	Action Taken	Verified	Date	Further Action
Mitigation Measure BIO-7: Compensatory Habitat Mitigation: Impacts to coastal California gnatcatcher habitat, 0.06-acre buckwheat scrub, will be offset through on-site restoration or restoration within the Santa Ana Watershed, or through in-lieu fees or the purchase of mitigation bank credits within the Santa Ana Watershed at a Caltrans and USFWS approved location. Mitigation will be at a minimum ratio of 1:1; however, the final ratio will be established through consultation and coordination with the appropriate regulatory agencies. Following the completion of project construction, temporarily impacted areas will be restored to their pre-project conditions, and any re-vegetation will be completed using native species appropriate to the area. Onsite re-vegetated areas will be monitored and maintained for 24 months to ensure adequate establishment and sustainability of the plantings/seedlings.	OC Public Works	Post-construction				
BIO-8: To avoid impacts to the San Diego black-tailed jackrabbit, the following measures will be implemented: A qualified biologist will complete pre-construction surveys no more than 48 hours prior to the commencement of construction activities to determine the presence or absence of San Diego black-tailed jackrabbit	OC Public Works	Pre-construction				

Mitigation, Avoidance, and/or Minimization Measures	Lead Agency Department	Timing of Compliance	Action Taken	Verified	Date	Further Action
in the project construction area. Surveys will be repeated if construction activities are suspended for five days or more. If any San Diego black-tailed jackrabbit are identified in the BSA, those individuals will be allowed to move away from the site prior to initiating any construction activities that could result in direct injury of the individual member of the species.						
BIO-9: To avoid and/or minimize impacts to special-status bat species, the following measures will be implemented: No fewer than 30 days prior to construction, and during the summer months (June to August) where feasible, a qualified bat biologist will conduct a habitat assessment within the project area. Any trees that are determined to provide potentially suitable habitat will be marked “habitat trees” by the qualified biologist. The contractor must contact the County prior to any planned removal of trees marked “habitat trees”. Tree removal and trimming will be conducted outside of the recognized bat maternity season (approximately April 1–September 15), and non-active season (November 1 – February 28) for bats. If the bat maternity season cannot be avoided, during the summer months (June to August) prior to construction, visual and acoustic surveys will be conducted for at least two	OC Public Works	Pre-construction				

Mitigation, Avoidance, and/or Minimization Measures	Lead Agency Department	Timing of Compliance	Action Taken	Verified	Date	Further Action
nights at all identified roosting habitat to assess the presence of roosting bats. If presence of a roost is detected, a count and species analysis will be completed to help assess the type of colony and usage. No less than two weeks prior to construction, and outside of the recognized bat maternity season (April 1–August 31), bats will be safely evicted from roosts impacted by the Project under the direction of a qualified biologist. Exclusionary devices will be installed to prevent bats from returning and roosting in these areas. Roosts that will not be impacted by the Project will be left undisturbed. After completion of the bat roosting habitat assessment, and prior to tree removal, all trees with potential day roosting habitat, will be removed using a 2-step process. The tree removal will be conducted over two consecutive days under the supervision of a qualified biologist. A qualified biologist will be onsite during tree removal/trimming or disturbance of the potential roosting habitat. If the biologist determines that bats are being disturbed during this work, work will be suspended until bats have left the vicinity on their own or can be safely excluded under direction of the biologist. Work will resume only once all bats have left the site and/or approval to resume work is given by a qualified biologist.						

Mitigation, Avoidance, and/or Minimization Measures	Lead Agency Department	Timing of Compliance	Action Taken	Verified	Date	Further Action
In the event that a maternal colony of bats is found, no work will be conducted within 100 feet of the maternal roosting site until the maternal season is finished or the bats have left the site, or as otherwise directed by a qualified biologist. The site will be designated as a sensitive area and protected until the bats have left the site. No activities will occur adjacent to the roosting site. Combustion equipment, such as generators, pumps, and vehicles, will not to be parked or operated under or adjacent to the roosting site. Construction personnel will not be authorized to enter areas beneath the colony, especially during the evening exodus (typically between 15 minutes prior to sunset and one hour following sunset).						
BIO-10: In order to reduce impacts to jurisdictional resources, the following measures will be implemented: Work areas will be reduced to the maximum extent feasible, and staging areas will be along the Silverado Canyon Road and outside of the creek. Contract specifications will include the following best management practices (BMPs) where applicable during construction: BMPs, such as silt fencing, fiber rolls, straw bales, or other measures will be	OC Public Works	During Construction				

Mitigation, Avoidance, and/or Minimization Measures	Lead Agency Department	Timing of Compliance	Action Taken	Verified	Date	Further Action
implemented during construction to minimize and prevent to the extent feasible dust, dirt, and construction debris from leaving the project area. Water, chemical stabilizers/suppressants, tarps or other suitable covers, or vegetative ground cover composed of native plant species will be used to control dust on all disturbed areas, including storage piles that are not being actively utilized for construction purposes. Water or chemical stabilizers/suppressants will be used to control dust on all unpaved access roads. To conform to water quality requirements, appropriate temporary BMPs will be implemented to reduce the potential for chemical spills or contaminant releases into the creek, including any non-stormwater discharge. These include but are not limited to: All equipment refueling and maintenance will be conducted in the upland staging area away from the creek per standard specifications and regulatory permits. In addition, vehicles and equipment will be checked daily for fluid and fuel leaks, and drip pans will be placed under all equipment that is parked and not in operation. Vegetation removed from the BSA will be treated and disposed of in a manner						

Mitigation, Avoidance, and/or Minimization Measures	Lead Agency Department	Timing of Compliance	Action Taken	Verified	Date	Further Action
following the recommendations of the California Invasive Plant Council to prevent the spread of invasive species on- or off-site. BMPs may include, but are not limited to, identification of existing invasive species, avoidance of invasive species in erosion control, staff training, equipment cleaning when entering and exiting the project area, and biological monitoring.						
Cultural Resources						
CUL-1: If previously unidentified cultural materials are encountered or unearthed during construction, work will be halted in that area until a qualified archaeologist can assess the nature and significance of the find. Additional surveys will be required if the project limits change to include areas not previously surveyed.	OC Public Works	During Construction				
CUL-2: In the event of the accidental discovery or recognition of any human remains in any location other than a dedicated cemetery, steps will be taken in compliance with the California Code of Regulations (CCR) Section 15064.5. All construction activities will cease, and the County Coroner will be contacted if any human remains are discovered, in accordance with 14 CCR Section 15064.5(e). If the coroner determines that the human remains are of Native American origin, the Native American Heritage Commission (NAHC) will be notified to determine the	OC Public Works	During Construction				

Mitigation, Avoidance, and/or Minimization Measures	Lead Agency Department	Timing of Compliance	Action Taken	Verified	Date	Further Action
Most Likely Descendent (MLD) for the area. The MLD will make recommendations for the arrangements for the human remains per Public Resources Code PRC Section 5097.98.						
Greenhouse Gases						
GHG-1: Project construction will comply with Caltrans' Standard Specifications (2015) including, but not limited to, Section 14-9, which specifically require compliance by the contractor with all applicable laws and regulations related to air quality, including air pollution control district and air quality management district regulations and local ordinances.	OC Public Works	During Construction				
GHG-2: A traffic management plan will be developed and implemented in accordance with the 2018 Caltrans Standard Specifications and must comply with the California Manual on Uniform Traffic Control Devices, Part 6, "Temporary Traffic Control."	OC Public Works	Pre-construction				
Hazards and Hazardous Materials						
HAZ-1: An Asbestos containing materials (ACM) and Lead Compliance Plan (LCP) survey of the existing bridge structure will be required prior to the demolition work in order to obtain permits from South Coast Air Quality Management District (SCAQMD). If present, removal and disposal of ACM and LCP should be performed prior to the start of the demolition/renovation.	OC Public Works	Pre-construction				

Mitigation, Avoidance, and/or Minimization Measures	Lead Agency Department	Timing of Compliance	Action Taken	Verified	Date	Further Action
HAZ-2: Traffic striping and treated wood waste generated for this Project will be managed during construction under project Caltrans 2018 Standard Special Provisions (SSP).	OC Public Works	During construction				
HAZ-3: Prior to construction, an aerially deposited lead (ADL) survey will be conducted to evaluate the potential presence of lead in surface and shallow soil within the project areas where soil disturbance is anticipated.	OC Public Works	Pre-construction				
HAZ-4: Construction activity will be coordinated with community emergency services to inform them of when lane closures will be occurring.	OC Public Works	During Construction				
HAZ-5: Lane closure will be conducted outside of the wildfire season (between July and November) when emergency wildfire evacuation is least likely.	OC Public Works	During Construction				
Mitigation Measure HAZ-6: The contractor will prepare a Construction Fire Prevention Plan approved by the Interim Deputy Director of Orange County (OC) Development Services/Planning or designee and the Deputy Director and Division Manager of OC Infrastructure Project Management Division or designee. In accordance with the Construction Fire Prevention Plan, the County will implement fire safety measures during construction activities in compliance with applicable	OC Public Works	Pre-construction				

Mitigation, Avoidance, and/or Minimization Measures	Lead Agency Department	Timing of Compliance	Action Taken	Verified	Date	Further Action
subsections of Chapter 33 of the 2019 California Fire Code, the National Fire Protection Association Standard 51B, and the Section 4442 of the California Public Resource Code (PRC). The Construction Fire Prevention Plan will also include details for coordinating with the Orange County Fire Authority and Orange County Sheriff's Department through their Incident Command System should a wildfire evacuation be necessary.						
Mitigation Measure HAZ-7: Hot work will cease during Red Flag Warning periods declared by the National Weather Service.	OC Public Works	During Construction				
Mitigation Measure HAZ-8-: In the event of a fire on the project area, all construction activities will immediately stop, the construction crew will immediately use the onsite fire extinguishers and the water truck to extinguish the fire, dial 911.	OC Public Works	During Construction				
Mitigation Measure HAZ-9: Two weeks prior to initiation of construction activities, the Contractor will post on the community bulletin board adjacent to the Silverado Canyon Market located at 28192 Silverado Canyon Road, the Silverado Community Center located at 27641 Silverado Canyon Road and utilize the U.S. Postal Service's Every Door Direct Mail service to send each Post Office (P.O). Box in Silverado Canyon the following:	OC Public Works	Pre-construction				

Mitigation, Avoidance, and/or Minimization Measures	Lead Agency Department	Timing of Compliance	Action Taken	Verified	Date	Further Action
Information on Orange County Fire Authority's Ready!, Set!, Go! safety program. An emergency evacuation route map. The phone number of emergency services, 911.						
Mitigation Measure HAZ-10: The contractor will comply with the fire protection provisions contained in Caltrans Standard Specifications No. 7-1.02(m).	OC Public Works	During Construction				
Noise						
NOI-1: Construction activities will conform to the provisions in Section 14-8.02, "Noise Control," of the Caltrans Standard Specifications. Caltrans Standard Specifications Section 14-8.02 requires the following mandatory noise abatement measures:	OC Public Works	During Construction				
NOI-2: Per Section 14-8.02 Noise Control, do not exceed 86 dBA L_{max} at 50 feet from the job site activities from 9 p.m. to 6 a.m.	OC Public Works	During Construction				
NOI-3: Internal combustion engines will be equipped with a muffler of a type recommended by the manufacturer.	OC Public Works	During Construction				
NOI-4: Portable/stationary equipment (e.g., generators, compressors) will be located at the furthest distance from the nearest residential dwelling.	OC Public Works	During Construction				

Mitigation, Avoidance, and/or Minimization Measures	Lead Agency Department	Timing of Compliance	Action Taken	Verified	Date	Further Action
NOI-5: Construction equipment and vehicles will not idle for more than five minutes when not in use.	OC Public Works	During Construction				
NOI-6: As directed by the County resident engineer, the contractor will implement appropriate additional noise abatement measures including, but not limited to, siting the location of stationary construction equipment away from sensitive noise receptors to the greatest extent feasible, use of temporary barriers, and rescheduling construction activity to avoid noise-sensitive days or times.	OC Public Works	During Construction				
Standard Condition of Approval **NOI-7:** Orange County Codified Ordinances Section 4-6-7 Special Provisions Noise sources associated with construction, repair, remodeling, or grading of any real property, provided said activities do not take place between the hours of 8:00 p.m. and 7:00 a.m. on weekdays, including Saturday, or at any time on Sunday or a Federal holiday.	OC Public Works	During Construction				

References

AMBIENT Air Quality and Noise Consulting. (2021a, August). Air Quality and Greenhouse Gas Technical Memorandum. California, United States.

AMBIENT Air Quality and Noise Consulting. (2021b, August). Noise Technical Memorandum . California, United States.

Bleich, V. (1977). *Mammalian Species - Dipodomys stephensi.* The American Society of Mammalogists.

Cal Fire. (2011, October). Very High Fire Hazard Severity Zone Map In Unincorporated LRA . Orange County, United States. Retrieved from https://www.ocgov.com/civicax/filebank/blobdload.aspx?BlobID=8756

Cal Fish. (2019, November). *https://www.calfish.org/*. Retrieved from https://www.calfish.org/

California Department of Conservation. (2001, January). Lake Forest 7.5-minute Quadrangle Seismic Hazard Zones. California, United States. Retrieved from http://gmw.conservation.ca.gov/SHP/EZRIM/Maps/LAKE_FOREST_EZRIM.pdf

California Department of Conservation. (2015). Fault Activity Map of California. California, United States. Retrieved from https://maps.conservation.ca.gov/cgs/fam/

California Department of Conservation. (2016). California Important Farmland Finder. California, United States. Retrieved from https://maps.conservation.ca.gov/DLRP/CIFF/

California Department of Conservation. (2016). Compilation of Quaternary Surficial Deposits. California, United States. Retrieved from https://maps.conservation.ca.gov/cgs/QSD/

California Department of Conservation. (2017). State of California Williamson Act Contract Land. California, United States. Retrieved from https://planning.lacity.org/eir/HollywoodCenter/Deir/ELDP/(E)%20Initial%20Study/Initial%20Study/Attachment%20B%20References/California%20Department%20of%20Conservation%20Williamson%20Map%202016.pdf

California Department of Conservation. (2019). *Alquist-Priolo Earthquake Fault Zones*. Retrieved from https://www.conservation.ca.gov/cgs/alquist-priolo

California Department of Conservation. (n.d.). Compilation of Quaternary Surficial Deposits. Retrieved from https://maps.conservation.ca.gov/cgs/QSD/

California Department of Forestry and Fire Protection. (2011, October). *CAL FIRE Fire Hazard Severity Zones.* Retrieved from https://gis.data.ca.gov/datasets/789d5286736248f69c4515c04f58f414

California Department of Transporation . (2020). Transportation and Construction Vibration Guidance Manual. California, United States. Retrieved from https://dot.ca.gov/-/media/dot-media/programs/ environmental-analysis/documents/env/tcvgm-apr2020-a11y.pdf

California Department of Transportation. (n.d.). California State Scenic HIghway System. Retrieved from https://caltrans.maps.arcgis.com/apps/webappviewer/index.html?id=465dfd3d807c46cc8e8057116f1aacaa

California Department of Water Resources. (2016, December 22). *Bulletin 118, Interim Update 2016, California's Groundwater.* Retrieved from https://water.ca.gov/-/media/DWR-Website/Web-

Pages/Programs/Groundwater-Management/Bulletin-118/Files/B118-Interim-Update-2016_ay_19.pdf

California Regional Water Control Board. (2009). Waste Discharge Requirements for The County of Orange, Orange County Flood Control District, and The Incorporated Cities of Orange County within the Santa Ana Region Areawide Urban Storm Water Runoff Orange COunty. California, Orange County. Retrieved from https://www.waterboards.ca.gov/rwqcb8/board_decisions/adopted_orders/orders/2009/09_030_OC_MS4_as_amended_by_10_062.pdf

California Resources Agency. (2018, September). *Orange County Important Farmland Map 2016.* Retrieved from Farmland Mapping and Monitoring Program: ftp://ftp.consrv.ca.gov/pub/dlrp/FMMP/pdf/2016/

CaliforniaHerps. (2019, June 25). Retrieved from californiaherps.com: http://www.californiaherps.com/frogs/pages/r.draytonii.html

Caltrans. (2012). *Bridge Inspection Report.* Caltrans.

CDFW. (2019b, November). *California Species Account*. Retrieved from https://www.wildlife.ca.gov/Data/CWHR/Life-History-and-Range

CDFW. (2021, April 26). *Database Record Search for Special-Status Species: El Toro, Orange, Black Star Canyon, Corona South, Tustin, Santiago Peak, Laguna Beach, San Juan Capistrano, and Canada Gobernadora*. Retrieved from California Department of Fish and Wildlife: https://www.wildlife.ca.gov/Data/CNDDB/Maps-and-Data

CDFW. (2021a, April 26). *Database Record Search for Special-Status Species: El Toro, Orange, Black Star Canyon, Corona South, Tustin, Santiago Peak, Laguna Beach, San Juan Capistrano, and Canada Gobernadora*. Retrieved from California Department of Fish and Wildlife: https://www.wildlife.ca.gov/Data/CNDDB/Maps-and-Data

CNPS. (2020, May 12). *Inventory of Rare and Endangered Plants*. Retrieved from California Native Plant Society: http://www.rareplants.cnps.org/simple.html

CNPS. (2021, April 26). *Inventory of Rare and Endangered Plants*. Retrieved from California Native Plant Society: http://www.rareplants.cnps.org/simple.html

Cornell University. (2019, November). *All About Birds*. Retrieved from https://www.allaboutbirds.org/

County of Orange. (1984, September 18). Land Use/Noise Compatibility Manual. Retrieved from https://ocds.ocpublicworks.com/sites/ocpwocds/files/import/data/files/8855.pdf

County of Orange. (1996). *Central and Coastal Subregion Natural Community Conservation Plan/Habitat Conservation Plan Parts I & II.* County of Orange.

County of Orange. (2005). Scenic Highways Plan Map. California. Retrieved from https://ocds.ocpublicworks.com/sites/ocpwocds/files/import/data/files/8588.pdf

County of Orange. (2012a). Safety Element. California, United States. Retrieved from https://ocds.ocpublicworks.com/sites/ocpwocds/files/import/data/files/40234.pdf

County of Orange. (2012b). *Transportation Element.* Retrieved from General Plan: http://www.ocpublicworks.com/gov/pw/cd/planning/generalplan2005.asp

County of Orange. (2015). *General Plan Land Use Element Map.* Retrieved May 5, 2020, from County of Orange General Plan: https://ocds.ocpublicworks.com/sites/ocpwocds/files/import/data/files/58442.pdf

County of Orange. (2019, October 21). Construction and Demolition Diversion Compliance Work Plan. Retrieved from https://oclandfills.com/sites/ocwr/files/import/data/files/104201.pdf

County of Orange. (2020a). Circulation Plan Map. California, United States. Retrieved from https://ocds.ocpublicworks.com/sites/ocpwocds/files/import/data/files/115331.pdf

County of Orange. (2020b, November). General Plan Land Use Element. Orange, California, United States. Retrieved from https://ocds.ocpublicworks.com/sites/ocpwocds/files/2020-12/Chapter%20III-Land%20Use%202020.pdf

County of Orange. (2020c, November). Growth Managment Element. California, United States. Retrieved from https://ocds.ocpublicworks.com/sites/ocpwocds/files/2020-12/Chapter%20XI%20-Growth%20Management%202020.pdf

County of Orange. (2020d). 2020 Transportation Implementation Manual. California, United States. Retrieved from https://ocds.ocpublicworks.com/sites/ocpwocds/files/2020-12/Transportation%20Implementation%20Manual%20-%202020.pdf

County of Orange. (n.d.). *County of Orange General Plan Public Services and Facilities Element.* Retrieved from https://www.ocpublicworks.com/civicax/filebank/blobdload.aspx?blobid=8639

County of Orange. (n.d.). *Frank R. Bowerman Landfill*. Retrieved from County of Orange Waste and Recylcling: https://www.oclandfills.com/landfills/active-landfills/frank-r-bowerman-landfill

County of Orange. (n.d.). General Plan - Resources Element. Retrieved from https://ocds.ocpublicworks.com/sites/ocpwocds/files/import/data/files/40235.pdf

County of Orange Public Works. (2021). OCPW Maps. County of Orange, California, United States. Retrieved from https://www.ocgis.com/ocpw/landrecords/

Department of Conservation. (2020). *Earthquake Zones of Required Investigation*. Retrieved from https://maps.conservation.ca.gov/cgs/EQZApp/app/

Department of Toxic Substance Control. (2019). *EnviroStor.* Retrieved from https://www.envirostor.dtsc.ca.gov/public/map/?myaddress=Napa+County

Federal Highway Administration. (2008). *Roadway COnstruction Noise Model, Version 1.1.*

Geocon West, Inc. (2021, May 20). Initial Site Assesment. Silverado, California, United States.

GPA Consulting. (2021a). Historic Property Survey Report / Archeology Survey Report. California, United States.

GPA Consulting. (2021b). *Silverado Bridge C0174 Replacement Project (Bridge No. 55C-0174) Over Silverado Canyon Creek NES.* El Segundo.

Holland, R. (1986). *Preliminary Descriptions of the Terrestrial Natural Communities of California.*

ICF. (2019). *Memorandum on the Availability of Suitable Arroyo Toad Habitat in Four Orange County.* ICF.

Jepson Herbarium. (2017). *Jepson Flora Project*. Retrieved from Jepson eFlora: http://ucjeps.berkeley.edu/IJM.html.

National Resources Conservation Service. (2020). *Web Soil Survey*. Retrieved September 6, 2017, from https://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm

Natural Resources Conservation Service. (2017, November). National Soil Survey Handbook. United States. Retrieved from https://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/ref/?cid=nrcs142p2_054240

NMFS. (2021, April 26). *California Species List Tool*. Retrieved from National Marine Fisheries Service - West Coast Region: http://www.westcoast.fisheries.noaa.gov/maps_data/california_species_list_tools.html

OC Public Works. (2021). Silverado Canyon Road over Ladd Creek Bridge Replacment Project. California, United States. Retrieved from https://ocds.ocpublicworks.com/service-areas/oc-development-services/planning-development/current-projects/3rd-district/silverado

Orange County. (2001). Resources Element. California. Retrieved from https://ocds.ocpublicworks.com/sites/ocpwocds/files/import/data/files/40235.pdf

Orange County Board of Supervisors. (1977, August 31). Silverado-Modjeska Specific Plan. California, United States. Retrieved from https://www.intercanyonleague.org/uploads/2/4/0/0/24004182/silmod_specific_plan_final.pdf

Orange County Flood Control District. (2012, December). Construction Runoff Guidance Manual Orange County Stormwater Program. California, Orange County. Retrieved from https://ocerws.ocpublicworks.com/sites/ocpwocerws/files/2021-05/OC%20Construction%20Runoff%20Guidance%20Manual_Dec2012.pdf

Orange County Public Works. (n.d.). County of Orange Maps. California, United States. Retrieved from https://www.ocgis.com/ocpw/landrecords/

Orange County Water District. (2015, June 17). *Groundwater Management Plan, 2015 Update.* Retrieved from https://www.ocwd.com/media/3622/groundwatermanagementplan2015update_20150624.pdf

Psomas. (2019). *Jurisdictional Delineation.*

Santa Ana Regional Water Quality Control Board. (2019, June). *Santa Ana River Basin Plan.* Retrieved from https://www.waterboards.ca.gov/santaana/water_issues/programs/basin_plan/docs/2019/New/Chapter_3_June_2019.pdf

Sawyer, J. O.-W. (2012). *A Manual of California Vegetation, Second Edition. .* Sacramento, CA.: California Native Plant Society Press.

Sibley, D. (2014). *The Sibley Guide to Birds – Second Edition.*

South Coast Air Quality Management District. (2009, October 21). Appendix C, 2006 – 2008 Thresholds for Construction and Operation with Gradual Conversion of NOX and NO2. California, United States. Retrieved from http://www.aqmd.gov/docs/default-source/ceqa/handbook/localized-significance-thresholds/appendix-c-mass-rate-lst-look-up-tables.pdf?sfvrsn=2

South Coast Air Quality Management District. (2019, November). South Coast AQMD Air Quality Significance Thresholds. California, United States. Retrieved from https://www.aqmd.gov/docs/default-source/ceqa/handbook/scaqmd-air-quality-significance-thresholds.pdf?sfvrsn=2

State Water Resources Control Board. (2015). *GeoTracker.* Retrieved from https://geotracker.waterboards.ca.gov/map/?CMD=runreport&myaddress=napa

United States Department of Agriculture. (n.d). Interactive Visitor Map: Cleveland National Forest. California, United States. Retrieved from https://www.fs.usda.gov/detailfull/cleveland/maps-pubs/?cid=fseprd533680&width=full

United States Geological Survey. (1989). *Swelling clays map of the conterminous United State*. Retrieved August 29, 2017, from https://ngmdb.usgs.gov/Prodesc/proddesc_10014.htm

USDA NRCS. (2019, November 12). *Web Soil Survey*. Retrieved from United States Department of Agriculture Natural Resources Conservation Service: https://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm

USFWS. (2019b, September 30). *National Wetlands Inventory*. Retrieved from United States Fish and Wildlife Service: https://www.fws.gov/wetlands/data/mapper.html

USFWS. (2021, April 26). *Information for Planning and Consultation*. Retrieved from United States Fish and Wildlife Service: https://ecos.fws.gov/ipac/

USGS. (2019, March 26). *The National Map Viewer*. Retrieved from https://viewer.nationalmap.gov/advanced-viewer/

Appendices

Appendix A Air Quality and Greenhouse Gas Technical Memorandum

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AIR QUALITY & GREENHOUSE GAS TECHNICAL MEMORANDUM

Date:	August 13, 2021
To:	Noeli Topete, Environmental Planner GPA Consulting, Inc.
From:	Kurt Legleiter, Principal, AMBIENT Air Quality & Noise Consulting
Subject:	**CONSTRUCTION AIR QUALITY AND GREENHOUSE GAS IMPACT ANALYSIS FOR THE SILVERADO CANYON BRIDGE REPLACEMENT PROJECT, ORANGE COUNTY, CA**

Introduction

The County of Orange Public Works (County), in cooperation with the California Department of Transportation (Caltrans) and the Federal Highway Administration (FHWA), intends to replace the Silverado Canyon Road Bridge over Silverado Creek (Bridge Number [Br. No.] 55C-0174). The proposed project's location is depicted in Figure 1 and Figure 2. The proposed project's footprint is depicted in Figure 3. This memorandum provides a summary of short-term air quality and greenhouse gas (GHG) impacts associated with the proposed project.

Existing Structure

The existing structure was built in 1935 and is a single-span riveted steel through plate girder bridge with concrete deck on reinforced concrete abutments all supported on concrete spread footings. The bridge is 58 feet long and 32 feet wide and carries two lanes of traffic over the Silverado Creek. The bridge cross section consists of two 2-foot-wide combined curb and railing, a 4-foot-wide walkway (north side), as well as two 12-foot-wide traffic lanes. The tops of the steel girders are rusty and have been damaged by multiple vehicles impacts on both ends of the bridge.

Purpose and Need

The Silverado Canyon Road Bridge was constructed in 1935 and provides access to approximately 270 homes in the unincorporated community of Silverado, as well as to the local Silverado Fire Station, library, and post office. The bridge's function is critical to the surrounding community, and avoidance of potential failure or deficiencies is essential. The community is susceptible to risk of seasonal floods and wildfires that occur in the Santa Ana Mountains. Silverado Canyon Road Bridge serves as emergency access to and from the Canyon in the event of a community evacuation. In 2007, the Santiago Fire forced evacuation of



FIGURE 1. REGIONAL LOCATION
Silverado Bridge Replacement Project

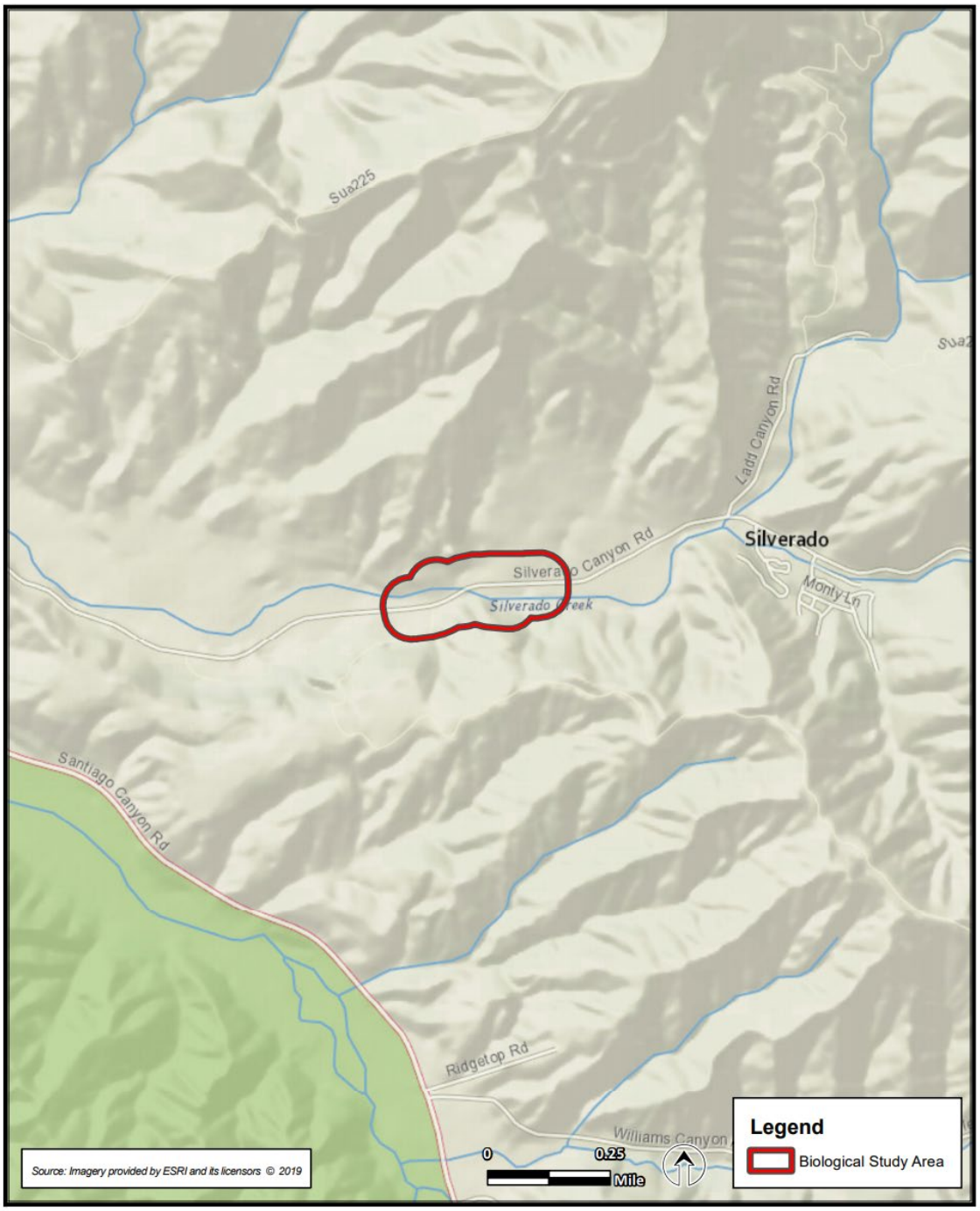

FIGURE 2. PROJECT LOCATION
Silverado Bridge Replacement Project

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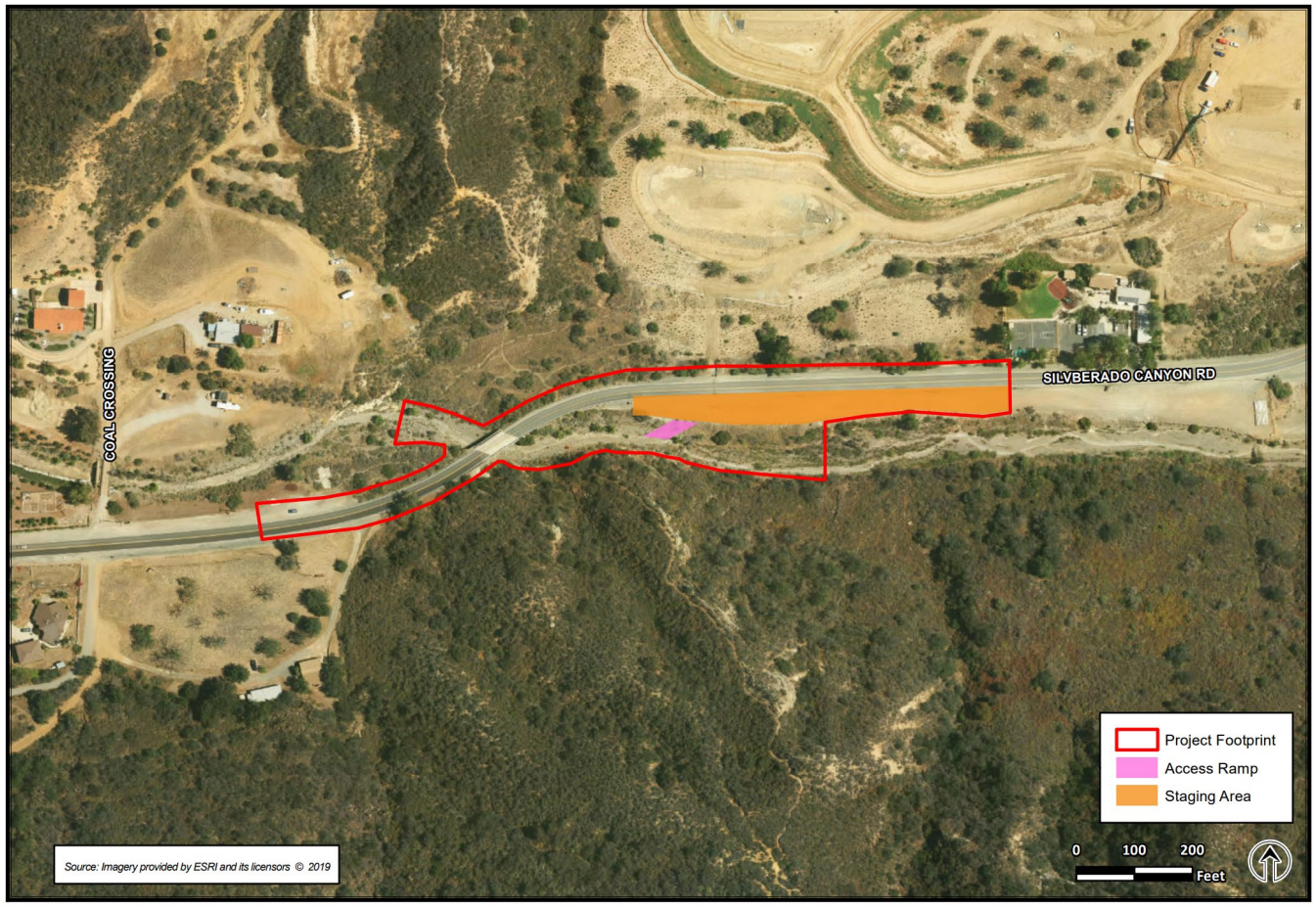

FIGURE 3. PROJECT FOOTPRINT
Silverado Bridge Replacement Project

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Silverado Canyon residents, primarily using the Silverado Canyon Road Bridge. The fire burned for 31 days and the bridge provided access to firefighting vehicles and personnel during the official state of emergency.

The Silverado Canyon Road Bridge received a low Sufficiency Rating of 46.5 (out of 100) on the most recent Caltrans bridge inspection report. In addition to its advanced age and noticeable signs of deterioration, the bridge is also classified as functionally obsolete, which means that the bridge deck is too narrow for current and future traffic needs.

Project Description

The project would include removal and replacement of the existing Silverado Canyon Road Bridge over Silverado Creek. The proposed replacement bridge would be a concrete bridge approximately 58 feet long and 44 feet wide. The bridge would support two 12-foot-wide traffic lanes, two 5-foot shoulders, two traffic barriers, and a 5-foot sidewalk with railing (north side). The project would require relocation of the existing waterline and coordination with the adjacent power pole owner to protect in place the poles and overhead lines electrical and communication lines.

The proposed construction activities include removal of the existing steel bridge (in two separate stages); full or partial removal of the existing wingwalls; modification of the existing abutments; construction of a wider concrete bridge, abutments, wingwalls, and retaining walls; replacement of the existing metal beam guardrails; widening of the roadway at both ends of the bridge approaches; regrading of the existing creek banks at the bridge; construction of a temporary construction access ramp into the creek; and construction of scour countermeasures at the bridge foundations. Existing abutments would be modified to minimize construction activity in the creek. New abutments would be supported on concrete spread footings, similar to the existing foundations. In addition, 42 micropiles would be drilled up to 80 feet in length with a diameter of 12 inches, to further support the bridge. Grading in the Silverado Creek channel would be required during construction. There would be an approximate 270 cubic yards of cut and 57 cubic yards of fill. In addition, there would be approximately 213 cubic yards of export. Debris from demolition activities would be collected and removed from the site to prevent materials from entering the Silverado Creek channel. Drainage on the bridge would be treated prior to offsite discharge during construction. Tree removal would be required along the roadway at the southeast quadrant for sight distance requirements.

The existing bridge serves as the only access into and out of Silverado Canyon for rural residents, volunteer fire station, community center, branch library, and post office. It is important that access, for both residential and emergency vehicles, is maintained during construction. There is no detour available for the Silverado Canyon Road Bridge. Therefore, the project would require staged construction that always maintains one lane of traffic open during construction. Additional staging area would be provided on a vacant lot approximately 150 feet east of the bridge along the existing shoulder. Half of the existing steel bridge would be removed during the first construction phase while the remaining half would be supported

on temporary falsework in order to maintain one lane of traffic open during construction. The falsework supports would be supported on spread footings within the creek. The project would be completed within existing right-of-way; however, a temporary construction easement (TCE) would be required. New abutments would be supported on concrete spread footings, similar to the existing foundations.

Impact Analysis

Short-term Emissions of Criteria Air Pollutants

The proposed construction activities will require site preparation, cut-and-fill activities, grading, trench/excavation, removing or improving existing roadway surfaces, and paving roadway surfaces. During construction, short-term degradation of air quality is expected from the release of particulate emissions (airborne dust) generated by earthmoving activities. The use of off-road equipment and on-road vehicles may also result in short-term mobile-source emissions. These emissions would be temporary and predominantly limited to the immediate area surrounding the construction site.

Under the transportation conformity regulations (40 CFR 93.123(c)(5)), construction-related activities that cause temporary increases in emissions are not required in a hot-spot analysis. These temporary increases in emissions are those that occur only during the construction phase and last five years or less at any individual site. They typically fall into two main categories:

- *Fugitive Dust:* A major emission from construction due to ground disturbance. All air districts and the California Health and Safety Code (Sections 41700-41701) prohibit "visible emissions" exceeding three minutes in one hour – this applies not only to dust but also to engine exhaust. In general, this is interpreted as visible emissions crossing the right-of-way line. In addition, the South Coast Air Quality Management District (SCAQMD) recommends all construction projects implement best management practices to reduce construction-related fugitive dust.
- *Construction equipment emissions*: Diesel exhaust particulate matter is a California-identified toxic air contaminant, and localized issues may exist if diesel-powered construction equipment is operated near sensitive receptors.

Sources of fugitive dust include disturbed soils at the construction site and trucks carrying uncovered loads of soils. Unless properly controlled, vehicles leaving the site may deposit mud on local streets, which could be an additional source of airborne dust after it dries. Dust emissions may vary from day to day, depending on the nature and magnitude of construction activity and local weather conditions. Dust emissions depend on soil moisture, silt content of soil, wind speed, and the amount of equipment operating. Larger dust particles will settle near the source, while fine particles will be dispersed over greater distances from the construction site. Construction emissions were estimated using the latest Sacramento Metropolitan Air Quality Management District's Road Construction Emissions Model (RCEM) (Version 9.0.0). While the model was developed for Sacramento conditions in terms of fleet emission factors, silt loading, and other model assumptions, it is considered adequate for estimating road construction emissions by the SCAQMD (in its CEQA guidance) and is used for that purpose in this project analysis.

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Estimated construction-generated emissions of criteria air pollutants, including reactive organic gases (ROG), nitrogen oxides (NO_x), carbon monoxide (CO), particulate matter 10 microns, or less (PM_{10}), particulate matter 2.5 microns, or less ($PM_{2.5}$) are summarized in Table 1. As depicted, the proposed project would generate maximum daily emissions of approximately 3.3 lbs/day of PM_{10}, 3.0 lbs/day of $PM_{2.5}$, 64.8 lbs/day of CO, 79.5 lbs/day of NO_X, and 7.7 lbs/day of ROG. Annual emissions would total approximately 0.3 tons/year of PM_{10}, 0.3 tons/year of $PM_{2.5}$, 6.1 tons/year of CO, 7.2 tons/year of NO_X, and 0.7 tons/year of ROG.

Table 1. Construction Emissions Estimates

Construction Phase	PM_{10} (lbs/day)	$PM_{2.5}$ (lbs/day)	CO (lbs/day)	NO_x (lbs/day)	ROG (lbs/day)
Grubbing/Land Clearing	0.40	0.37	9.59	9.14	0.91
Grading/Excavation	3.28	2.98	64.76	79.45	7.71
Drainage/Utilities/Sub-Grade	2.26	2.09	46.71	55.18	5.42
Paving	0.46	0.40	12.83	8.87	0.92
Maximum (pounds/day)	3.3	3.0	64.8	79.5	7.7
Total (tons/construction project)	0.3	0.3	6.1	7.2	0.7

Emissions estimated using the Sacramento Metropolitan Air Quality Management District RCEM, version 9.0.0.

A traffic management plan would be developed and implemented per the 2018 Caltrans Standard Specifications and must comply with the California Manual on Uniform Traffic Control Devices, Part 6, "Temporary Traffic Control." Also, implementation of the following measures, some of which may also be required for other purposes such as stormwater pollution control, will reduce air quality emissions resulting from construction activities. Implementation of these measures would be anticipated to reduce construction-related fugitive dust emissions by approximately 50 percent, or more.

- The construction contractor must comply with the Caltrans' standard Specifications in Section 14-9 (2018). Section 14-9-02 specifically requires compliance by the contractor with all applicable laws and regulations related to air quality, including air pollution control district and air quality management district regulations and local ordinances.
- Water or a dust palliative will be applied to the site and equipment as often as necessary to control fugitive dust emissions.
- Soil binder will be spread on any unpaved roads used for construction purposes, and on all project construction parking areas.
- Trucks will be washed as they leave the right-of-way as necessary to control fugitive dust emissions.
- Construction equipment and vehicles will be properly tuned and maintained. All construction equipment will use low sulfur fuel as required by the CA Code of Regulations Title 17, Section 93114.
- A dust control plan will be developed documenting sprinkling, temporary paving, speed limits, and timely re-vegetation of disturbed slopes as needed to minimize construction impacts to existing communities.

- Equipment and materials storage sites will be located as far away from residential and outdoor activity areas as practicable. Construction areas will be kept clean and orderly.
- Environmentally sensitive areas will be established near sensitive air receptors. Within these areas, construction activities involving the extended idling of diesel equipment or vehicles will be prohibited, to the extent feasible.
- Track-out reduction measures, such as gravel pads at project access points to minimize dust and mud deposits on roads affected by construction traffic, will be used.
- All transported loads of soils and wet materials will be covered before transport, or adequate freeboard (space from the top of the material to the top of the truck) will be provided to minimize the emission of dust during transportation.
- Dust and mud that are deposited on paved, public roads due to construction activity and traffic will be promptly and regularly removed to reduce PM emissions.
- To the extent feasible, construction traffic will be scheduled and routed to reduce congestion and related air quality impacts caused by idling vehicles along local roads during peak travel times.
- Mulch will be installed, or vegetation planted as soon as practicable after grading to reduce windblown PM in the area.

SCAQMD Rules and Regulations

As noted above, Caltrans Standard Specifications, Section 14-9, specifically requires compliance with all applicable laws and regulations related to air quality, which would include applicable SCAQMD rules and regulations. Applicable rules and regulations may include, but are not limited to, the following:

Rule 403 – Fugitive Dust. The purpose of this Rule is to reduce the amount of particulate matter in the ambient air resulting from anthropogenic fugitive dust sources by requiring projects to prevent, reduce, or mitigate fugitive dust emissions. Accordingly, construction activity sources are required to implement best available control measures for the control of fugitive dust.

Asbestos

Asbestos was used in many materials prior to 1978 and may have been used up until the early 1980s. Asbestos-containing materials (ACMs) include fireproofing, acoustic ceiling material, transite pipe, roofing materials, thermal insulation, support piers, expansion joint material in bridges, asphalt, concrete, and other building materials. It is of primary concern when it is friable (i.e., material that can be easily crumbled). ACM may be encountered with bridges, undercrossings, or underground utilities.

The proposed project is not located in an area known to contain serpentine or ultramafic rock. Therefore, the impact of naturally occurring asbestos during project construction would be minimal to none.

It is important to note that existing structures constructed prior to the early 1980s, such as bridges, may contain ACM. If not properly identified and mitigated, asbestos fibers could become airborne during the construction of the project, particularly during demolition and site preparation activities. Prior to demolition or disturbance, structures must be sampled and analyzed for ACM. ACM sampling and analysis must conform with the EPA National Emission Standards for Hazardous Air Pollutants (NESHAP) CFR regulation, SCAQMD Rule 1403, and Caltrans SSP 14-11.16.

Lead

Lead is normally not an air quality issue for transportation projects unless the project involves disturbance of soils containing high levels of aerially deposited lead or painting or modification of structures with lead-based coatings. Excavated soil hauled off-site for disposal (if any) will be tested for the accumulation of lead. It is unknown whether lead-based paint was used previously for striping along project roadways. If encountered, disturbance of lead paint or soil must meet U.S. Environmental Protection Agency and air district rules, pursuant to Caltrans Standard Specifications 14-9.02.

Odors

Minor sources of odors would be present during construction. The predominant source of power for construction equipment is diesel engines. Exhaust odors from diesel engines, as well as emissions associated with asphalt paving, may be considered offensive to some individuals. However, because odors would be temporary and would disperse rapidly with distance from the source, construction-generated odors would not be anticipated to result in the frequent exposure of receptors to objectionable odorous emissions.

Short-term Greenhouse Gas Emissions

Construction GHG emissions will result from material processing, onsite construction equipment, and traffic delays due to construction. These emissions will be produced at different levels throughout the construction phase; their frequency and occurrence can be reduced through innovations in plans and specifications and by implementing better traffic management during construction phases.

In addition, with innovations such as longer pavement lives, improved traffic management plans, and changes in materials, the GHG emissions produced during construction can be offset to some degree by longer intervals between maintenance and rehabilitation activities.

The RCEM (9.0.0) was used to estimate carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O) emissions from construction activities. Table 2 provides a summary of construction-generated GHG emissions. As depicted, construction of the proposed project would generate a total of approximately 1,285.2 metric tons of carbon dioxide equivalent ($MTCO_2e$).

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Table 2. Construction GHG Emissions Estimates

Construction Phase	CO_2 (tons/phase)	CH_4 (tons/phase)	N_2O (tons/phase)	Total ($MTCO_2e$)
Grubbing/Land Clearing	29.23	0.01	0.00	26.91
Grading/Excavation	915.56	0.28	0.01	839.71
Drainage/Utilities/Sub-Grade	414.42	0.11	0.00	379.71
Paving	42.24	0.01	0.00	38.82
			Total:	1,285.2

Emissions estimated using the Sacramento Metropolitan Air Quality Management District RCEM, version 9.0.0.

A traffic management plan would be developed and implemented in accordance with the 2018 Caltrans Standard Specifications and must comply with the California Manual on Uniform Traffic Control Devices, Part 6, "Temporary Traffic Control." In addition, implementation of the construction measures described above for air quality would reduce short-term GHG emissions associated with construction activities.

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References

California Department of Transportation (Caltrans). 2018 Caltrans Standard Specifications. Website URL: https://dot.ca.gov/programs/design/ccs-standard-plans-and-standard-specifications.

Sacramento Metropolitan Air Quality Management District (SMAQMD). *Road Construction Emissions Model*, version 9.0.0. Website URL: http://www.aqmd.gov/home/rules-compliance/ceqa/air-quality-modeling.

U.S. Geological Survey and California Geological Survey. 2011. *Reported Historic Asbestos Mines, Historic Asbestos Prospects, and Other Natural Occurrences of Asbestos in California – Map*. Website URL: http://pubs.usgs.gov/of/2011/1188/pdf/Plate.pdf.

South Coast Air Quality Management District (SCAQMD). Adopted October 6, 1989 (Amended October 5, 2007). Rule 1403. Asbestos Emissions from Demolition/Renovation Activities. Website URL: http://www.aqmd.gov/docs/default-source/rule-book/reg-xiv/rule-1403.pdf

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APPENDIX A
Emissions Modeling

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Road Construction Emissions Model
Data Entry Worksheet

Version 9.0.0

Note: Required data input sections have a yellow background.
Optional data input sections have a blue background. Only areas with a yellow or blue background can be modified. Program defaults have a white background.
The user is required to enter information in cells D10 through D24, E28 through G35, and D38 through D41 for all project types.
Please use "Clear Data Input & User Overrides" button first before changing the Project Type or begin a new project.

To begin a new project, click this button to clear data previously entered. This button will only work if you opted not to disable macros when loading this spreadsheet.

SACRAMENTO METROPOLITAN AIR QUALITY MANAGEMENT DISTRICT

Input Type

Project Name	Silverado Canyon Bridge	
Construction Start Year	2023	Enter a Year between 2014 and 2040 (inclusive)
Project Type	3	1) New Road Construction : Project to build a roadway from bare ground, which generally requires more site preparation than widening an existing roadway 2) Road Widening : Project to add a new lane to an existing roadway 3) Bridge/Overpass Construction : Project to build an elevated roadway, which generally requires some different equipment than a new roadway, such as a crane 4) Other Linear Project Type: Non-roadway project such as a pipeline, transmission line, or levee construction
Project Construction Time	12.00	months
Working Days per Month	22.00	days (assume 22 if unknown)
Predominant Soil/Site Type: Enter 1, 2, or 3 (for project within "Sacramento County", follow soil type selection instructions in cells E18 to E20 otherwise see instructions provided in cells J18 to J22)	2	1) Sand Gravel : Use for quaternary deposits (Delta/West County) 2) Weathered Rock-Earth : Use for Laguna formation (Jackson Highway area) or the Ione formation (Scott Road, Rancho Murieta) 3) Blasted Rock : Use for Salt Springs Slate or Copper Hill Volcanics (Folsom South of Highway 50, Rancho Murieta)
Project Length	0.20	miles
Total Project Area	2.90	acres
Maximum Area Disturbed/Day	0.01	acres
Water Trucks Used?	1	1. Yes 2. No

Please note that the soil type instructions provided in cells E18 to E20 are specific to Sacramento County. Maps available from the California Geologic Survey (see weblink below) can be used to determine soil type outside Sacramento County.

http://www.conservation.ca.gov/cgs/information/geologic_mapping/Pages/googlemaps.aspx#regionalseries

Material Hauling Quantity Input

Material Type	Phase	Haul Truck Capacity (yd^3) (assume 20 if unknown)	Import Volume (yd^3/day)	Export Volume (yd^3/day)
Soil	Grubbing/Land Clearing	20.00	0.00	8.40
	Grading/Excavation	20.00	0.00	0.00
	Drainage/Utilities/Sub-Grade	20.00	0.00	0.00
	Paving	20.00	0.00	0.00
Asphalt	Grubbing/Land Clearing	20.00		
	Grading/Excavation	20.00		
	Drainage/Utilities/Sub-Grade	20.00		
	Paving	20.00		

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Road Construction Emissions Model, Version 9.0.0

Daily Emission Estimates for -> Silverado Canyon Bridge Project Phases (Pounds)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	Total PM10 (lbs/day)	Exhaust PM10 (lbs/day)	Fugitive Dust PM10 (lbs/day)	Total PM2.5 (lbs/day)	Exhaust PM2.5 (lbs/day)	Fugitive Dust PM2.5 (lbs/day)	SOx (lbs/day)	CO2 (lbs/day)	CH4 (lbs/day)	N2O (lbs/day)	CO2e (lbs/day)
Grubbing/Land Clearing	0.91	9.59	9.14	0.50	0.40	0.10	0.37	0.35	0.02	0.02	2,214.03	0.58	0.06	2,246.78
Grading/Excavation	7.71	64.76	79.45	3.38	3.28	0.10	2.98	2.96	0.02	0.16	15,413.52	4.69	0.17	15,582.68
Drainage/Utilities/Sub-Grade	5.42	46.71	55.18	2.36	2.26	0.10	2.09	2.07	0.02	0.11	10,465.20	2.72	0.12	10,569.67
Paving	0.92	12.83	8.87	0.46	0.46	0.00	0.40	0.40	0.00	0.02	2,133.54	0.56	0.05	2,161.08
Maximum (pounds/day)	7.71	64.76	79.45	3.38	3.28	0.10	2.98	2.96	0.02	0.16	15,413.52	4.69	0.17	15,582.68
Total (tons/construction project)	0.70	6.08	7.20	0.31	0.30	0.01	0.27	0.27	0.00	0.01	1,401.45	0.40	0.02	1,416.62

Notes:

Project Start Year ->	2023
Project Length (months) ->	12
Total Project Area (acres) ->	3
Maximum Area Disturbed/Day (acres) ->	0
Water Truck Used? ->	Yes

	Total Material Imported/Exported Volume (yd^3/day)		Daily VMT (miles/day)			
Phase	Soil	Asphalt	Soil Hauling	Asphalt Hauling	Worker Commute	Water Truck
Grubbing/Land Clearing	8	0	30	0	200	40
Grading/Excavation	0	0	0	0	1,120	40
Drainage/Utilities/Sub-Grade	0	0	0	0	720	40
Paving	0	0	0	0	320	40

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1 , 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

Total Emission Estimates by Phase for -> Silverado Canyon Bridge Project Phases (Tons for all except CO2e. Metric tonnes for CO2e)	ROG (tons/phase)	CO (tons/phase)	NOx (tons/phase)	Total PM10 (tons/phase)	Exhaust PM10 (tons/phase)	Fugitive Dust PM10 (tons/phase)	Total PM2.5 (tons/phase)	Exhaust PM2.5 (tons/phase)	Fugitive Dust PM2.5 (tons/phase)	SOx (tons/phase)	CO2 (tons/phase)	CH4 (tons/phase)	N2O (tons/phase)	CO2e (MT/phase)
Grubbing/Land Clearing	0.01	0.13	0.12	0.01	0.01	0.00	0.00	0.00	0.00	0.00	29.23	0.01	0.00	26.91
Grading/Excavation	0.46	3.85	4.72	0.20	0.20	0.01	0.18	0.18	0.00	0.01	915.56	0.28	0.01	839.71
Drainage/Utilities/Sub-Grade	0.21	1.85	2.19	0.09	0.09	0.00	0.08	0.08	0.00	0.00	414.42	0.11	0.00	379.71
Paving	0.02	0.25	0.18	0.01	0.01	0.00	0.01	0.01	0.00	0.00	42.24	0.01	0.00	38.82
Maximum (tons/phase)	0.46	3.85	4.72	0.20	0.20	0.01	0.18	0.18	0.00	0.01	915.56	0.28	0.01	839.71
Total (tons/construction project)	0.70	6.08	7.20	0.31	0.30	0.01	0.27	0.27	0.00	0.01	1401.45	0.40	0.02	1,285.15

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1 , 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

The CO2e emissions are reported as metric tons per phase.

Appendix B Natural Environment Study

Silverado Canyon Road Bridge Replacement Project (Bridge No. 55C-0174) Over Silverado Creek NES



Natural Environment Study

County of Orange Public Works

Orange County, California

12-ORA-Silverado Canyon Road

Project EA: 32330

BRLO-5955 (095)

July 2021

Caltrans
CALIFORNIA DEPARTMENT OF TRANSPORTATION

Natural Environment Study

Orange County, California
12-ORA-Silverado Canyon Road
Project EA: 32330
BRLO-5955 (095)
July 2021

STATE OF CALIFORNIA
Department of Transportation
County of Orange Public Works

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List of Abbreviated Terms

BMP	Best Management Practices
BSA	Biological Study Area
Caltrans	California Department of Transportation
CDFW	California Department of Fish and Wildlife
CESA	California Endangered Species Act
CFR	Code of Federal Regulations
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CRPR	California Rare Plant Rank
CWA	Clean Water Act
EFH	Essential Fish Habitat
ESA	Environmentally Sensitive Areas
F	Fahrenheit
FESA	Federal Endangered Species Act
FHWA	Federal Highway Administration
HCP	Habitat Conservation Plan
MBTA	Migratory Bird Treaty Act
NEPA	National Environmental Policy Act
NMFS	National Marine Fisheries Service
NRCS	Natural Resources Conservation Service
NWP	Nationwide Permit
OHWM	Ordinary High Water Mark
RWQCB	Regional Water Quality Control Board
U.S.	United States
USGS	United States Geological Survey
USACE	United States Army Corps of Engineers
USFWS	United States Fish and Wildlife Service

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Summary

The County of Orange Public Works (County), in cooperation with the California Department of Transportation (Caltrans) and the Federal Highway Administration (FHWA), is proposing to replace the Silverado Canyon Road Bridge over Silverado Creek (Br. No. 55C-0174). The project would include the removal of the existing steel bridge (in two separate stages); full or partial removal of the existing abutments and wingwalls; the construction of a wider concrete bridge, abutments, wingwalls, and retaining walls; replacement of the existing metal beam guardrails; widening of the roadway at both ends of the bridge approaches; regrading of the existing creek banks at the bridge; construction of a temporary construction access ramp and bridge falsework within the creek; and construction of scour countermeasures at the bridge foundations. The new bridge width would be approximately 58 feet long and 44 feet wide consisting of two 12-foot traffic lanes, two 5-foot shoulders, two traffic barriers, and a 5-foot sidewalk with railing (north side). The project would also require relocation of the existing waterline and the relocation and/or protection of existing overhead electrical and communication lines.

The biological study area (BSA) encompasses approximately 28 acres and includes Silverado Canyon Road and an approximately 300-foot buffer around the limits of construction. The limits of the BSA were determined by reviewing project plans and aerial imagery. The BSA includes areas that could be directly and indirectly impacted by the project, either temporarily or permanently.

Based on habitat requirements and the results of the biological survey, there is potential for one (1) special-status natural community, four (4) special-status plant species, and eighteen (18) special-status wildlife species to be within the BSA. The project could result in direct and indirect impacts on special-status natural communities, plants, and wildlife listed above if they were to be in the construction area. Noise, dust, and vibration associated with construction activities could also indirectly impact special-status natural communities, plants, and wildlife. However, with implementation of proposed avoidance, minimization, and mitigation measures, adverse impacts on special-status natural communities, plants, and wildlife, including take, are not anticipated.

There is suitable habitat within the BSA for the federally threatened Santa Monica dudleya (*Dudleya cymosa* ssp. *ovatifolia*). However, this species was not observed during the focused special-status botanical surveys conducted for the project; therefore, this species is not expected to be in the BSA and there would be no impacts. Therefore, the project would have no effect on the federally threatened Santa Monica dudleya.

There is suitable habitat for the arroyo toad (*Anaxyrus californicus*) and coastal California gnatcatcher (*Polioptila californica californica*) in the BSA. In addition, there is designated critical habitat for arroyo toad in the BSA. Focused protocol surveys for arroyo toad, conducted in 2019, were negative (ICF, 2019); therefore, this species is not expected to be in the BSA and the project would have no effect on this species. However, because the BSA is within designated critical habitat for arroyo toad, informal consultation with the United States Fish and Wildlife Service (USFWS) will be required under Section 7 of the Federal Endangered Species Act (FESA) to confirm the project would not adversely affect designated critical habitat. The presence of the coastal California gnatcatcher in the BSA has been inferred. The project would require the removal of 0.06 acre of buckwheat scrub. Informal consultation with the USFWS under Section 7

of the FESA will be required to confirm that impacts on the coastal California gnatcatcher may affect, but would not likely adversely affect, this species.

There is no mapped Essential Fish Habitat (EFH) in the BSA. Therefore, the project would have no effect on EFH and consultation with National Marine Fisheries Service (NMFS) is not required.

There are no state threatened, endangered, or candidate species with potential to be in the BSA; therefore, the project would have no take of state threatened, endangered, or candidate species and consultation with the California Department of Fish and Wildlife (CDFW) under the California Endangered Species Act (CESA) is not required.

Work in waters under jurisdiction of the United States Army Corps of Engineers (USACE), Regional Water Quality Control Board (RWQCB), and CDFW would be required to access the Silverado Canyon Road Bridge. The project would result in temporary impacts on approximately 0.49 acre of waters under jurisdiction of the USACE and RWQCB, and temporary impacts on approximately 0.63 acre of waters under CDFW jurisdiction. Therefore, a Clean Water Act (CWA) Section 404 Nationwide Permit (NWP) Verification from the USACE, CWA Section 401 Water Quality Certification from the RWQCB, and Section 1602 Streambed Alteration Agreement from the CDFW are anticipated for the project.

There are several invasive plant species in the BSA; however, most of the areas that would be impacted by the project have been previously disturbed. In addition, following project construction, disturbed areas would be restored to their pre-project conditions and any re-vegetation or erosion control implemented would be completed using non-invasive plant species. Therefore, the project is not expected to result in the introduction of any new invasive plant species in the BSA and would not be expected to result in the spread of invasive plant species.

Chapter 1 Introduction

The County, in cooperation with the California Department of Transportation (Caltrans) and the Federal Highway Administration (FHWA), proposes to replace the existing Silverado Canyon Road Bridge on Silverado Canyon Road located approximately 1,000 feet east of the Silverado Community Center. The project is located east of the unincorporated community of Silverado, Orange County, California (see **Figure 1 – Project Location** and **Figure 2 – Project Impact Area**).

1.1 Project History

The Silverado Canyon Road Bridge was built in 1935 and is a single span riveted steel through plate girder bridge with concrete deck on reinforced concrete abutments all supported on concrete spread footings. The bridge is 58 feet long and 32 feet wide and carries two lanes of traffic over the Silverado Creek (creek). The bridge cross section consists of two 2-foot wide curb and railing combination structure, a 4-foot wide walkway (north side), and two 12-foot wide traffic lanes. The tops of the steel girders are rusty and have been damaged by multiple vehicle impacts on both ends of the bridge.

1.1.1 PURPOSE AND NEED

The existing bridge provides the only access into and out of Silverado Canyon and currently serves the rural residents, the volunteer fire station, the community center, branch library, and post office of Silverado. It is important that access, for both residential and emergency vehicles, is either maintained during construction or an alternative detour provided. No detour is available for this bridge. The project would therefore require staged construction (keeping one traffic lane open at all times).

The existing bridge received a low Sufficiency Rating of 46.5 (out of 100) on the most recent Caltrans bridge inspection report. In addition to its advanced age and noticeable signs of deterioration, the bridge is also classified as functionally obsolete, which means that the bridge deck is too narrow for the current and anticipated traffic needs.

1.2 Project Description

The proposed construction activities include the removal of the existing steel bridge (in two separate stages); the full or partial removal of the existing abutments and wingwalls; the construction of a wider concrete bridge, abutments, wingwalls, and retaining walls; the replacement of the existing metal beam guardrails; the widening of the roadway at both ends of the bridge approaches; regrading of the existing creek banks at the bridge; construction of a temporary construction access ramp and bridge falsework within the creek; and the construction of scour countermeasures at the bridge foundations. The proposed bridge width would be approximately 58 feet long and 44 feet wide consisting of two 12-foot wide traffic lanes, two 5-foot shoulders, two traffic barriers, and a 5-foot sidewalk with railing (north side). The project would also require relocation of the existing waterline and the relocation and/or protection of existing overhead electrical and communication lines. Project construction is anticipated to begin in January 2023 and take approximately 12 months.

In order to minimize construction activities within the creek, the design team is considering reusing portions of the existing abutments and then widening both sides in order to support the new wider bridge. The new abutments are expected to be supported on concrete spread footings, similar to the existing foundations.

Half of the existing steel bridge would be removed during the first construction phase while the remaining half is expected to be supported on temporary falsework in order to maintain one lane of traffic open during construction. The falsework supports are anticipated to be supported on spread footings within the creek.



FIGURE 1. PROJECT LOCATION MAP
Silverado Canyon Road Bridge Replacement Project (Bridge No. 55C-0174) Over Silverado Creek

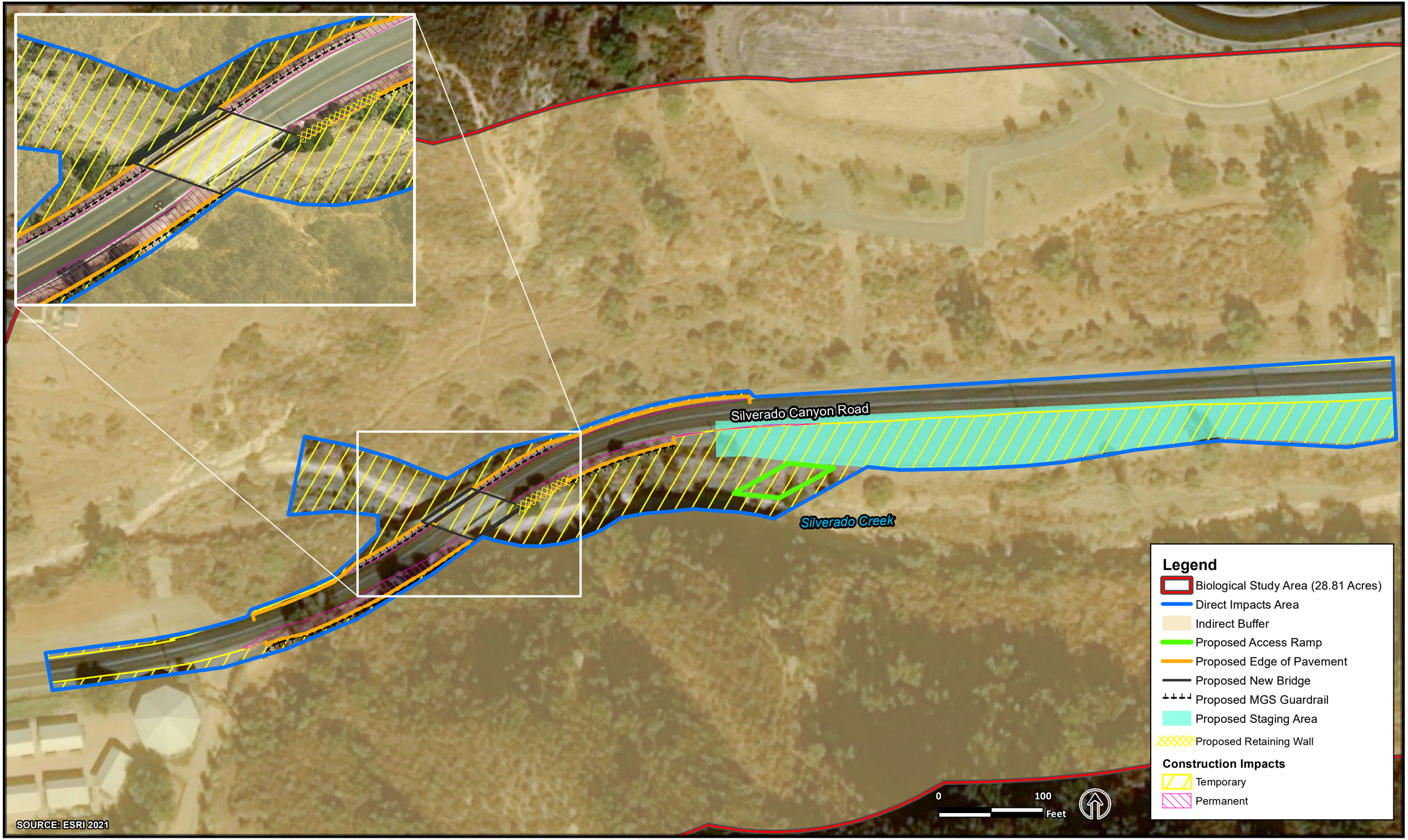

FIGURE 2. PROJECT IMPACT AREA
Silverado Canyon Road Bridge Replacement Project (Bridge No. 55C-0174) Over Silverado Creek

Chapter 2 Study Methods

The following discussion provides a summary of federal, state, and local laws and regulations that pertain to sensitive and/or protected species, their habitats, and waterways within or near the biological study area (BSA).

2.1 Regulatory Requirements

2.1.1 FEDERAL REGULATIONS

National Environmental Policy Act

The National Environmental Policy Act (NEPA) went into law on January 1, 1970 to establish a National policy for the environment. NEPA ensures that agencies consider the potential significant environmental impacts of their proposed projects and that the public is informed about those decisions. Section 102 of NEPA establishes requirements that must be applied to Federal actions that may significantly affect the human environment. Federal agencies are required to prepare a detailed declaration on (1) the environmental impact of the proposed action; (2) any adverse effects that cannot be avoided; (3) alternatives to the proposed action; (4) the relationship between local short-term uses of man's environment and the maintenance and enhancement of long-term productivity; and (5) any irreversible and irretrievable commitments of resources that would be involved in the proposed action.

Clean Water Act

The Clean Water Act (CWA) establishes the basic structure for regulating discharges of pollutants into water of the United States (U.S.) to maintain water quality standards for surface waters.

Clean Water Act Section 404

The United States Army Corps of Engineers (USACE) Regulatory Program regulates activities within waters of the U.S. which include those tidal and non-tidal waters listed in 33 Code of Federal Regulations (CFR) 328.3. No discharge of dredged or fill material into jurisdictional features is permitted unless authorized under an USACE Nationwide Permit (NWP) or Individual Permit. Federal wetlands are transitional areas between well-drained upland habitats and permanently flooded (deepwater) aquatic habitats and are defined differently by different resource agencies. The USACE and the U.S. Environmental Protection Agency define 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 CFR Section 328.3[c]).

Clean Water Act Section 401

The Regional Water Quality Control Board (RWQCB) is responsible for the administration of Section 401 of the CWA. Under Section 401 of the CWA, applicants for federal licenses or permits must provide a Water Quality Certification that any discharges from a project will comply with the CWA, including state-established water quality standard requirements. For all work subject to an USACE Section 404 permit, project proponents must obtain a Water Quality Certification from the

applicable RWQCB under CWA Section 401 stating that the project would comply with applicable water quality regulations.

The State Water Resources Control Board defines wetlands as “an area is deemed a wetland if, under normal circumstances, (1) the area has continuous or recurrent saturation of the upper substrate caused by groundwater, or shallow surface water, or both; (2) the duration of such saturation is sufficient to cause anaerobic conditions in the upper substrate; and (3) the area’s vegetation is dominated by hydrophytes or the area lacks vegetation.” This report uses the current definition of wetlands.

Federal Endangered Species Act

The Federal Endangered Species Act (FESA) was established in 1973 to provide a framework to conserve and protect endangered and threatened species and their habitat. Section 7 of the FESA requires federal agencies to ensure that actions they engage in, permit, or fund, do not jeopardize the continued existence of endangered or threatened species, or result in the destruction or adverse modification of designated critical habitat for these species. Section 7 consultation provides for the “incidental take” of endangered and threatened wildlife species by federal entities if adverse effects to species cannot be avoided. Incidental take is defined by the FESA as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. The term “take” means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) (50 CFR Part 10 and Part 21) protects migratory birds, their occupied nests, and their eggs from disturbance and/or destruction. “Migratory birds” under the MBTA include all bird species listed in 50 CFR Part 10.13, as updated in December 2013 (United States Fish and Wildlife Service, 2013). In accordance with the Migratory Bird Treaty Reform Act of 2004 the United States Fish and Wildlife Service (USFWS) included all species native to the U.S. (or U.S. territories) that are known to be present as a result of natural biological or ecological processes. In addition, the USFWS provided clarification that the MBTA does not apply to any nonnative species whose presence in the U.S. are solely the result of intentional or unintentional human-assisted introduction (USFWS, 2018). Nonnative bird species not protected by the MBTA include, but is not limited to, the house sparrow (*Passer domesticus*), European starling (*Sturnus vulgaris*), and rock pigeon (*Columba livia*).

Executive Order 13112 – Invasive Species

Executive Order 13112 directs all federal agencies to refrain from authorizing, funding, or carrying out actions or projects that may spread invasive species. This order further directs federal agencies to prevent the introduction of invasive species, control and monitor existing invasive species populations, restore native species to invaded ecosystems, research and develop prevention and control methods for invasive species, and promote public education on invasive species.

2.1.2 STATE REGULATIONS

Porter-Cologne Water Quality Control Act

The RWQCB also asserts authority over waters of the state under the Porter-Cologne Act, which establishes a regulatory program to protect water quality and to protect beneficial uses of state waters. The Porter-Cologne Act empowers the RWQCB to formulate and adopt a Water Quality Control Plan that designates beneficial uses and establishes such water quality objectives that in its judgment will ensure reasonable protection of beneficial uses. Each RWQCB establishes water quality objectives that will ensure the reasonable protection of beneficial uses and the prevention of water quality degradation. Dredge or fill activities with the potential to affect water quality in these waters must comply with Waste Discharge Requirements WDR issued by the RWQCB.

The term “waters of the state,” under jurisdiction of the RWQCB, is defined by California Water Code as “any surface water or groundwater, including saline waters, within the boundaries of the state” (California Water Code Section 13050(e)).

California Fish and Game Code

Section 1602: Lake and Streambed Alteration Agreement

Under the California Fish and Game Code Section 1602, the limits of California Department of Fish and Wildlife (CDFW) jurisdiction within streams and other drainages extends from the top of the stream bank to the top of the opposite bank, to the outer drip line in areas containing riparian vegetation, and/or within the 100-year floodplain of a stream or river system containing fish or wildlife resources. Under Section 1602, a Streambed Alteration Agreement must be issued by the CDFW prior to the initiation of construction activities that may substantially divert or obstruct the natural flow of any river, stream, or lake; substantially change or use any material from the bed, channel, or bank, of any river, stream, or lake; or deposit debris, waste, or other materials that could pass into any river, stream, or lake under CDFW’s jurisdiction.

The CDFW has jurisdictional authority over waters of the state, including wetlands. In practice, CDFW follows the USFWS definition of wetlands in Cowardin’s Classification of Wetlands and Deepwater Habitats of the United States: “Wetlands are lands transitional between terrestrial and aquatic systems where the water table is usually at or near the surface or the land is covered by shallow water. For purposes of this classification, wetlands must have one or more of the following three attributes: (1) at least periodically, the land supports hydrophytes; (2) the substrate is predominantly undrained hydric soil; and (3) the substrate is non-soil and is saturated with water or covered by shallow water at some time during the growing season of each year" (Cowardin, Carter, Golet, & LaRoe, 1979).

Section 2126: Bats

Section 2126 of the California Fish and Game Code states that it is unlawful for any person to take any mammal that are identified within Section 2118, including all species of bats.

Section 3503, 3503.5, and 3513: Migratory Birds and Raptors

Sections 3503, 3513, and 3800 of the California Fish and Game Code prohibit the take of birds protected under the MBTA and protects their occupied nests. In addition, Section 3503.5 of the

California Fish and Game Code prohibits the take of any birds in the order Falconiformes or Strigiformes (birds-of-prey) and protects their occupied nests. Pursuant to Section 3801 and 3800, the only species authorized for take without prior authorization from the CDFW is the house sparrow and European starling.

State-listed species and those petitioned for listing by the CDFW are fully protected under the California Endangered Species Act (CESA). Under Section 2080.1 of the California Fish and Game Code, if a project would result in take of a species that is both federally and state listed, a consistency determination may be completed in lieu of undergoing a separate CESA consultation. Under Section 2081, if a project would result in take of a species that is state-only listed as threatened or endangered, then an incidental take permit from the CDFW is required.

Sections 3511, 4700, 5050, and 5515 of the California Fish and Game Code prohibit the take or possession of 37 fully protected bird, mammal, reptile, amphibian, and fish species. Each of the statutes states that no provision of this code or any other law shall be construed to authorize the issuance of permits or licenses to "take" the species, and states that no previously issued permit or licenses for take of the species "shall have any force or effect" for authorizing take or possession. The CDFW will not authorize incidental take of fully protected species when activities are proposed in areas inhabited by those species.

2.1.3 LOCAL REGULATIONS

County of Orange General Plan Natural Resources Component

The County Natural Resource Component contains policies and programs to protect and conserve natural resources and scenic areas including ridgelines and hillsides, native vegetation, wildlife, and farmland. These resources carry an economic value and are also important to sustain the quality of life in Orange County (County of Orange, 2013).

- Goal 1: Protect wildlife and vegetation resources and promote development that preserves these resources.
    - Objective 1.1: To prevent the elimination of significant wildlife and vegetation through resource inventory and management strategies.
- Goal 3: Manage and utilize wisely the County's landform resources.
    - Objective 3.1: To minimize to the extent feasible the disruption of significant natural landforms in Orange County.

Policies include:

- Wildlife and Vegetation: To identify and preserve the significant wildlife and vegetation habitats of the County;
- Landforms: To protect the unique variety of significant landforms in Orange County through environmental review procedures and community and corridor planning activities.

Orange County Natural Communities Conservation Planning/Habitat Conservation Plan, Central Coastal Subregion

The Orange County Central Coastal Natural Communities Conservation Planning (NCCP)/Habitat Conservation Plan (HCP) is a comprehensive natural resources management conservation plan completed and approved by the County of Orange in 1996. The approval of the plan constitutes the formal approval by USFWS and CDFW. The County of Orange is a participating landowner. The purpose of the Orange County NCCP/HCP is to create a multi-species multi-habitat "Reserve System" and the implementation of a long term management program. The Orange County NCCP/HCP is intended to focus on coastal sage scrub and the species that utilize this habitat. The three main target species for the Orange County NCCP/HCP include coastal California gnatcatcher, San Diego cactus wren (*Campylorhynchus brunneicapillus sandiegensis*), and orange-throated whiptail. There are twenty-six (26) other species that are covered and an additional ten (10) species conditionally covered under the Orange County NCCP/HCP. The BSA is located specifically in land designated as Non-Reserve Open Space.

Silverado-Modjeska Specific Plan

The Silverado-Modjeska Specific Plan was originally adopted by the Orange County Board of Supervisors on August 31, 1977. The Silverado-Modjeska Specific Plan is a policy document for the defined areas of Modjeska Canyon, Williams Canyon, Silverado Canyon, Baker Canyon, and Black Star Canyon. The Plan details many general plan policies with specific reference to the Silverado-Modjeska area.

Tree Preservation

Trees exceeding five inches in diameter will be preserved or replaced in conjunction with any grading or construction activity. In situations where development necessitates tree removal, the county may require tree planting (appropriate species of any size) and maintenance (watering as necessary) on the subject property or public right of way on a one-for-one basis.

Stream Preservation

The natural character of all watercourses and areas subject to flooding including riparian vegetation, will be preserved. If development takes place within these areas the location structures must minimize the need for channelization (i.e., walls, berms, fill, etc.).

2.2 Studies Required

2.2.1 LITERATURE RESEARCH

Prior to conducting the biological surveys, available literature was reviewed to identify any special-status plants, wildlife, and/or sensitive habitats previously recorded within or near the BSA. Sources used to identify special-status species and/or habitats with potential to be in or near the BSA include the following:

- California Native Plant Society (CNPS) Inventory of Rare and Endangered Plants (CNPS, 2021) (see **Appendix A**);
- CDFW California Natural Diversity Database (CNDDB) for the El Toro, Orange, Black Star

Canyon, Corona South, Tustin, Santiago Peak, Laguna Beach, San Juan Capistrano, and Canada Gobernadora United States Geological Survey (USGS) 7.5-minute series topographic quadrangles (CDFW, 2021a) (see **Appendix A**);

- CDFW Biogeographic Information System (CDFW, 2021b);
- National Marine Fisheries Service (NMFS) California Species List Tool: El Toro quadrangle (NMFS, 2021) (see **Appendix A**);
- United States Department of Agriculture Natural Resources Conservation Service (NRCS) Web Soils Survey for Los Angeles County, California, Southeastern Part (USDA NRCS, 2019);
- USFWS Information for Planning and Consultation Database (USFWS, 2021) (see **Appendix A**); and
- USFWS National Wetlands Inventory Mapper (USFWS, 2019).

2.2.2 FIELD REVIEWS

After a review of the results of the CNDDB, USFWS, NMFS, and CNPS queries and related information described above, a reconnaissance survey of the BSA was conducted by biologists Katherine Warner and Joseph Vu and a focused special-status botanical survey was conducted by biologists Adelina Muñoz and Mr. Vu.

2.2.3 SURVEY METHODS

During the reconnaissance survey and focused special-status botanical survey, the BSA was visually surveyed on foot to the extent feasible, and all plant and wildlife species observed were identified to determine if special-status species were present in the BSA. In addition, the existing habitat was assessed to determine the potential for special-status species to occur within the BSA. Nomenclature for common, widespread plants and wildlife conforms to the Jepson eFlora (Jepson Herbarium, 2019), Sibley Guide to Birds (Sibley, 2014), and the CNDDB. Species observed in the BSA during the biological surveys are provided in **Appendix B**.

2.3 Personnel and Survey Dates

A reconnaissance survey of the BSA was conducted by biologists Ms. Warner and Mr. Vu on November 11, 2019. Weather conditions during the November 11, 2019 survey were partly cloudy skies with an average temperature of 58 degrees Fahrenheit (F). A focused special-status botanical survey was conducted by biologists Ms. Muñoz and Mr. Vu on May 15, 2020. Focused protocol surveys for arroyo toad (*Anaxyrus californicus*) were conducted by biologists Ryan Winkleman and Phillip Richards on April 22, May 6, 20, 27, and June 3 and 17, 2019 to identify the presence/absence of this species within the BSA (ICF, 2019) (see **Appendix E**). A jurisdictional delineation was conducted by biologist David Hughes on June 25, 2019 for the project to identify potentially jurisdictional areas (Psomas, 2019). Representative photographs of the BSA were taken during the November 11, 2019 and May 15, 2020 surveys and are included in **Appendix C**.

Ms. Muñoz holds a Bachelor of Science degree in Botany from the University of California, Riverside. Ms. Muñoz has more than 20 years of experience in the environmental field working with federal and state regulatory agencies, conducting botanical surveys and habitat assessments. Ms. Warner holds a Bachelor of Science degree in Ecology and Evolution, from the University of California, Santa Barbara. Ms. Warner has more than 20 years of experience conducting field surveys, mapping, technical reports, regulatory permitting, and construction monitoring for a range of projects in California. Mr. Vu holds a Bachelor of Science degree in Environmental Science and Management from University of California, Davis. Mr. Vu has seven years of experience working in the environmental field conducting plant surveys, special-status species surveys, mitigation monitoring, and Geographic Information Systems mapping and analysis.

2.4 Agency Coordination and Professional Contacts

The County has coordinated with the appropriate Caltrans and USFWS liaison for discussions regarding California gnatcatcher effects determination, and arroyo toad (critical habitat and species) effects determination. The coordination efforts are outlined below:

- On April 13, 2020 Charles Baker (Caltrans District 12, Environmental Branch Chief) informed Jonathan Snyder (Carlsbad USFWS Assistant Field Supervisor) of the proposed Project and requested guidance on the project's assumed presence of California gnatcatcher with proposed avoidance and minimization measures. Mr. Snyder stated that with appropriate conservation measures, a "not likely to adversely affect" determination would be appropriate for the Project's effects to California gnatcatcher.
- Mr. Snyder confirmed that a Natural Environment Study document would be suitable to present potential effects and conservation measures to California gnatcatcher rather than a separate document (i.e. Biological Assessment).Based on the habitat assessments and protocol level presence/absence surveys conducted in 2019, the arroyo toad is considered absent within the BSA.
- The BSA is within federally designated critical habitat for the arroyo toad. Mr. Snyder confirmed that if the design of the project avoids adverse impacts to arroyo toad critical habitat a "not likely to adversely effect" determination would be appropriate.

2.5 Limitations That May Influence Results

Portions of the BSA include private and open space properties that were not accessible by foot during the biological surveys. In those locations, a visual survey using binoculars was conducted. Because the potential to observe plant and wildlife species varies by season, it is possible that some species existing within the BSA may not have been observed during these surveys. Focused botanical surveys are typically only valid for one to two years; therefore, if construction is delayed another focused botanical survey may be needed to account for the seasonality of plant species. There were no other limitations or constraints that might influence the results of this analysis.

Chapter 3 Results: Environmental Setting

3.1 Description of the Existing Biological and Physical Conditions

3.1.1 BIOLOGICAL STUDY AREA

The BSA encompasses approximately 28 acres and includes Silverado Canyon Road and an approximately 300 foot-buffer around the limits of construction. The limits of the BSA were determined by reviewing project plans and aerial imagery. The BSA includes areas that could be directly and indirectly impacted by the project, either temporarily or permanently.

3.1.2 PHYSICAL CONDITIONS

Topography

The BSA is south of the Santa Ana Mountains within the El Toro USGS 7.5-minute topographic quadrangle. The topography in the BSA is generally flat along Silverado Canyon Road and the creek, and steeply sloped along the hills to the north and south. The BSA has an average elevation of approximately 1,100 feet above mean sea level.

Climate

The climate in the BSA is described as a Mediterranean climate. The average annual low temperature is approximately 47 degrees F and is lowest in January, and the average annual high is approximately 83 degrees F and is highest in August. The average annual precipitation is approximately 14 inches (U.S. Climate Data, 2019).

Soils

According to the review of the NRCS Web Soils Survey (NRCS, 2019) conducted for the project, there are three types of soils mapped in the BSA. The soils in the BSA consist of Cieneba Sandy Loam, 30 to 75 Percent Slopes, Eroded, Myford Sandy Loam, 2 to 9 Percent Slopes, and Soboba Gravelly Loamy Sand, 0 to 5 Percent Slopes. None of these soils are categorized as a hydric soil.

Hydrology

The BSA is within the Santa Ana River Watershed. The Santa Ana River Watershed encompasses approximately 1,695 square miles in the Counties of Los Angeles, Orange, Riverside, and San Bernardino. The Santa Ana River Watershed is surrounded by the San Gabriel Mountains to the north, the Los Angeles River to the west, and the Pacific Ocean to the south (USGS, 2019).

The creek is the only water feature in the BSA. The creek is an intermittent USGS blue line stream and flows east to west within the BSA and beneath the Silverado Canyon Road Bridge. The creek bottom consists of sandy soil with numerous rocks and boulders and is vegetated by a combination of chaparral shrubs and riparian trees. The creek flows into Santiago Creek approximately two miles downstream of the bridge, and Santiago Creek flows into Irvine Lake. In the western portion of the BSA, an unnamed ephemeral drainage flows into the creek. Water was not present during the biological survey conducted on November 11, 2019 but was present during the focused special-status botanical survey on May 15, 2020, the arroyo toad surveys on April 22, May 6, 20, 27, and June 3 and 17, 2019, and jurisdictional delineation on June 25, 2019.

3.1.3 BIOLOGICAL CONDITIONS IN THE BIOLOGICAL STUDY AREA

Vegetation within the BSA consists of native vegetation, non-native trees, and areas of riparian vegetation within the creek. Vegetation communities within the BSA were assessed and classified according to A Manual of California Vegetation (Sawyer, 2012). Vegetation communities and cover classes observed in the BSA include Arroyo Willow Thickets, Buckwheat Scrub, California Sycamore Woodland, Coast Live Oak Woodland, Developed, Disturbed, Disturbed Laurel Sumac Scrub, Disturbed Riparian Scrub, Disturbed Scale Broom Scrub, Laurel Sumac Scrub, Mule Fat Thickets, Oak/Sycamore Woodland, Ornamental Pines, Toyon Chaparral, and Upland Mustard (see **Figure 3 – Vegetation Communities and Cover Classes**).

Vegetation Communities

Arroyo Willow Thickets

The *Salix Lasiolepis* Shrubland Alliance is classified by A Manual of California Vegetation as Arroyo Willow Thicket or Southern Riparian Scrub which is listed as S3.2 by the CDFW. This community is dominated by arroyo willow (*Salix lasiolepis*) in the tall shrub or low tree canopy and is found along stream banks and benches, slope seeps, and along drainages. Within the BSA, this community is approximately 582 feet downstream of the Silverado Canyon Road Bridge within the creek.

Buckwheat Scrub

The *Eriogonum Fasciculatum* Shrubland Alliance is classified by A Manual of California Vegetation as Buckwheat Scrub. This community is dominated by California buckwheat (*Eriogonum fasciculatum*) in the shrub canopy, with California sagebrush (*Artemisia californica*) and black sage (*Salvia mellifera*) occurring in lesser quantities. This community is found in upland slopes, channels and washes, and intermittently flooded arroyos. Within the BSA, this community is on the south bank of the creek just west of the Silverado Canyon Road Bridge and extends approximately 1,135 feet downstream of the Silverado Canyon Road Bridge.

California Sycamore Woodland

The *Platanus Racemosa* Woodland Alliance is classified by A Manual of California Vegetation as California Sycamore Woodland. This community is dominated or co-dominated in the tree canopy by California sycamore (*Platanus racemosa*), willows (*Salix* sp.), and white alder (*Alnus rhombifolia*). This community is found in gullies, intermittent streams, springs, seeps, streambanks, and terraces adjacent to floodplains that are subject to high-intensity flooding. Within the BSA, this community is approximately 60 feet downstream of the Silverado Canyon Road Bridge within the creek.

Coast Live Oak Woodland

The *Quercus Agrifolia* Forest & Woodland Alliance is classified by A Manual of California Vegetation as Coast Live Oak Woodland. This community is dominated by coast live oak (*Quercus agrifolia*) in the canopy layer. This community is predominantly in canyons, on steep slopes, and raised stream banks and terraces. Within the BSA, this community is approximately 83 feet downstream of the Silverado Canyon Road Bridge and the creek.

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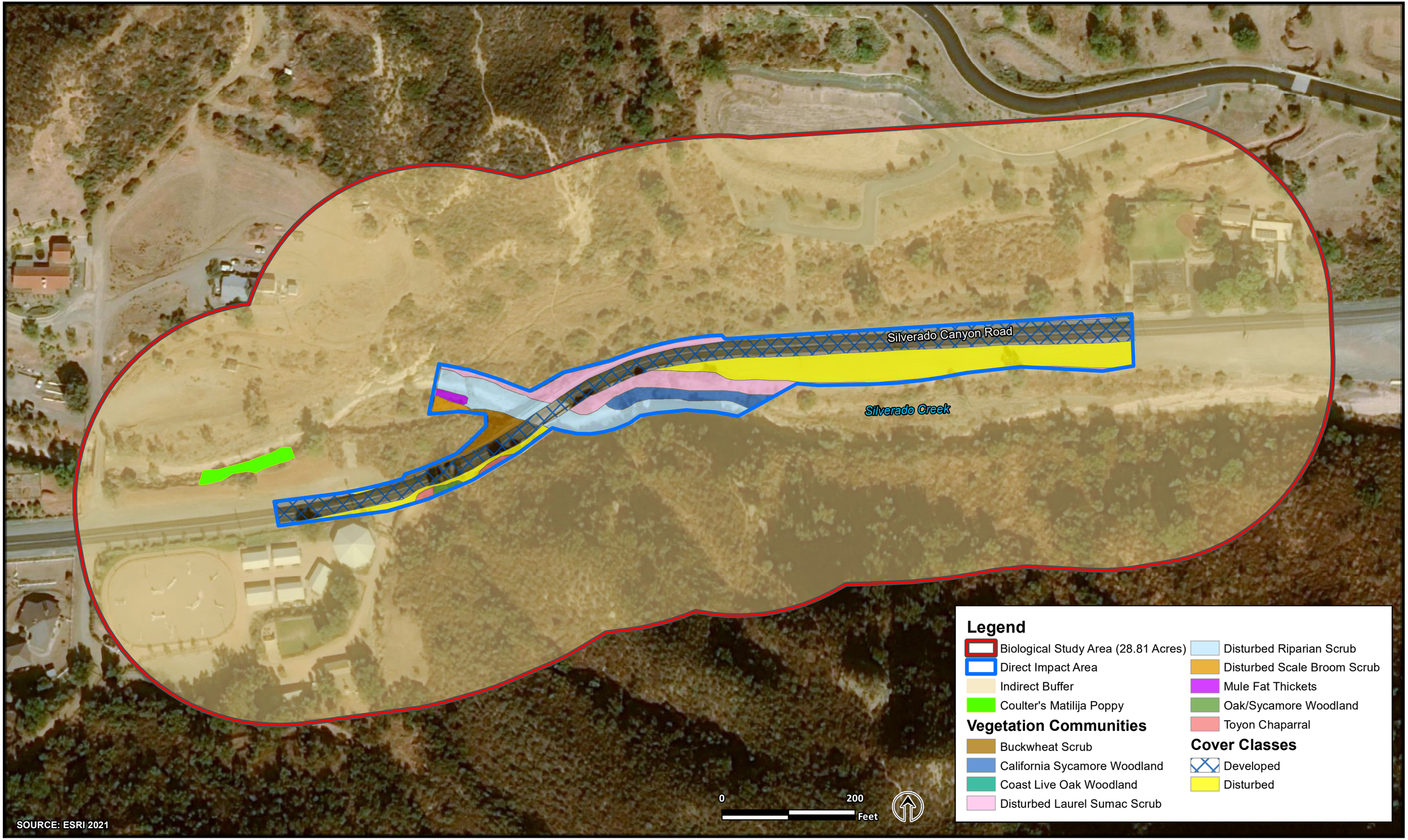

FIGURE 3. VEGETATION COMMUNITIES AND COVER CLASSES
Silverado Canyon Road Bridge Replacement Project (Bridge No. 55C-0174) Over Silverado Creek

Disturbed Laurel Sumac Scrub

The Disturbed *Malosma Laurina* Shrubland Alliance is classified by A Manual of California Vegetation as Disturbed Laurel Sumac Scrub. This community is dominated or co-dominated in the shrub canopy by laurel sumac (*Malosma laurina*), California sagebrush, California buckwheat, and chaparral yucca (*Hesperoyucca whipplei*). This community is found on slopes with fine textured soils. This community has been previously disturbed or undergone periodic disturbances such as cattle grazing or has been displaced by invasive non-native plant species. Within the BSA, this community is north and downstream of the Silverado Canyon Road Bridge.

Disturbed Riparian Scrub

The Disturbed Riparian Scrub community is co-dominated in the shrub canopy by willows and mulefat (*Baccharis salicifolia*). This community is found within stream courses that have been previous disturbed or are undergoing periodic scouring from major rainfall events. Within the BSA, this community is upstream and downstream of the Silverado Canyon Road Bridge within the creek.

Disturbed Scale Broom Scrub

The Disturbed *Lepidospartum Squamatum* Shrubland Alliance Scale is classified by A Manual of California Vegetation as Disturbed Broom Scrub. This community is dominated or co-dominated by scale broom (*Lepidospartum squamatum*), California sagebrush, California buckwheat, and mulefat. This community is found in low gradient alluvial deposits along streams, washes, and fans. This community has been previously disturbed or undergoing periodic scouring from major rainfall events. Within the BSA, this community is approximately 82 feet downstream of the Silverado Canyon Road Bridge.

Laurel Sumac Scrub

The *Malosma Laurina* Shrubland Alliance is classified by A Manual of California Vegetation as Disturbed Laurel Sumac Scrub. This community is dominated or co-dominated in the shrub canopy by laurel sumac, California sagebrush, California buckwheat, and chaparral yucca. This community is found on slopes with fine textured soils. Within the BSA, this community is approximately 1,265 feet upstream of the Silverado Canyon Road Bridge.

Mule Fat Thickets

The *Baccharis Salicifolia* Shrubland Alliance is classified by A Manual of California Vegetation as Mule Fat Thickets. This community is dominated or co-dominated in the shrub canopy by mule fat, willows, and California sycamore. This community is found in canyon bottoms, floodplains, irrigation ditches, edges of lakes, and streams. Within the BSA, this community is approximately 96 feet downstream of the Silverado Canyon Road Bridge and 318 feet west of the Silverado Canyon Road Bridge within the creek.

Oak/Sycamore Woodland

The Oak/Sycamore Woodland community is dominated or co-dominated in the tree canopy by California sycamore and coast live oak. This community is found in intermittent streams,

streambanks, and terraces adjacent to floodplains that are subject to high-intensity flooding. Within the BSA, this community is approximately 695 feet downstream of the Silverado Canyon Road Bridge north of the Silverado Canyon Road.

Ornamental Pines

The Ornamental Pines community is dominated by Italian stone pine (*Pinus pinea*) and Aleppo pine (*Pinus halepensis*). This community is found in landscaped and urban areas. Within the BSA, this community is approximately 986 feet downstream of the Silverado Canyon Road Bridge north of the Silverado Canyon Road.

Toyon Chaparral

The *Prunus Ilicifolia - Heteromeles Arbutifolia - Ceanothus Apinosus* Shrubland Alliance Toyon Chaparral is classified by A Manual of California Vegetation as Toyon Chaparral. This community is dominated or co-dominated in the shrub canopy by toyon (*Heteromeles arbutifolia*), California sagebrush, California buckwheat, and black sage. This community is found on steep north facing slopes. Within the BSA, this community is south and upstream and downstream of the Silverado Canyon Road and the creek.

Upland Mustard

The *Brassica Nigra - Raphanus* spp. Herbaceous Semi-Natural Alliance Upland Mustard community is classified by A Manual of California Vegetation as Upland Mustard. This community is dominated or co-dominated in the herbaceous layer by black mustard (*Brassica nigra*) and short pod mustard (*Hirschfeldia incana*). This community is found in fallow fields, grasslands, roadsides, disturbed coastal scrub, and riparian areas. Within the BSA, this community is approximately 259 feet downstream of the Silverado Canyon Road Bridge.

Cover Classes

Developed

Developed areas are where human disturbance has resulted in permanent impacts on natural communities. These include paved areas, buildings, bridges, and other structures. Within the BSA, this cover class includes the Silverado Canyon Road and Silverado Canyon Road Bridge.

Disturbed

Disturbed areas are mostly devoid of vegetation. Disturbed areas are the result of human disturbance and compaction of the soil from frequent vehicle traffic, grading, and the application of herbicide. Within the BSA, this cover class includes the adjacent residential and recreation parcels.

3.1.4 WILDLIFE

Habitat in the BSA includes native vegetation, non-native trees, and areas of riparian vegetation within the creek, which could provide suitable roosting habitat for bats and nesting habitat for birds. Silverado Canyon Road Bridge and mature trees (native and landscaped) adjacent to paved areas and beneath the Silverado Canyon Road Bridge could support birds and bats. Wildlife

species observed are those commonly found in developed and open areas, including mourning dove (*Zenaida macroura*), American crow (*Corvus brachyrhynchos*), and northern mockingbird (*Mimus polyglottos*).

3.1.5 HABITAT CONNECTIVITY

A migration or wildlife corridor is an area of habitat that connects two or more patches of habitat that would otherwise be isolated from each other. Wildlife corridors are typically adjacent to urban areas. A functional wildlife corridor allows for ease of movement between habitat patches and is important in preventing habitat fragmentation. Habitat fragmentation is typically caused by human development and can lead to a decrease in biodiversity and ecosystem functionality. The land surrounding the BSA includes residential and open space uses.

Silverado Canyon is situated in the Santa Ana Mountains and is largely undeveloped with the exception of the community of Silverado, a few residential and recreation parcels, and the Silverado Canyon Road. The BSA is located adjacent to extensive native open space habitats. In addition, downstream of the BSA, the creek opens up into a wide floodplain. Silverado Canyon and the creek allow for unrestricted travel for wildlife. The habitat surrounding the BSA is not fragmented and does not connect two or more patches of habitat that would otherwise be isolated from each other. Therefore, the BSA may be used for local foraging and movement by local wildlife species from the surrounding areas but is not considered a wildlife corridor. In addition, according to the CDFW Biogreographic Information System Habitat Connectivity viewer, the project area is not considered an Essential Connectivity Area (CDFW, 2021b).

3.2 Regional Species and Habitats and Natural Communities of Concern

CNDDB, CNPS, USFWS and NMFS species lists were obtained October 7, 2019 and updated on August 11, 2020 to identify federally and state listed species with the potential to be in the BSA based on their geographical range and to identify critical habitat and Essential Fish Habitat (EFH) within the BSA (see **Appendix A**). Special-status species include species listed as Endangered, Threatened, or Candidate Endangered/Threatened by the USFWS or CDFW; a species listed as Fully Protected or Species of Special Concern by CDFW; a CNPS rare plant; species listed as sensitive by the Bureau of Land Management or the United States Forest Services; or species protected under the MBTA or the California Fish and Game Code. Determinations on whether special-status and other sensitive resources could be in the BSA are based on 1) a record reported in the CNDDB, 2) the presence of suitable habitat, and 3) survey results.

3.2.1 NATURAL COMMUNITIES

According to the CNDDB species lists, fourteen (14) natural communities have the potential to be in the BSA based on recorded geographical distribution (see **Appendix A**). Based on the results of research and the biological surveys, one (1) special-status natural community is present within the BSA, Arroyo Willow Thickets. This community was mapped within the BSA during the jurisdictional delineation survey and verified during the reconnaissance survey. A full list with a discussion on the potential for each natural community to be in the BSA is in **Appendix D**.

3.2.2 SPECIAL-STATUS PLANTS

According to the CNDDB, CNPS, and USFWS searches, eighty-one (81) special-status plant species have the potential to be in the BSA based on recorded geographical distribution (see **Appendix A**). Based on literature reviews regarding habitat requirements and the focused botanical survey, there is potential for four (4) special-status plants to be in the BSA. There is no designated critical habitat for these species in the BSA. A full list with a discussion on the potential for special-status plant species to be in the BSA is in **Appendix D**.

3.2.3 SPECIAL-STATUS WILDLIFE

According to the CNDDB and USFWS searches, one-hundred thirteen (113) special-status wildlife species have the potential to be in the BSA based on recorded geographical distribution (see **Appendix A**). Based on the results of research and the biological surveys, there is potential for eighteen (18) special-status wildlife species to be in the BSA. In addition, there is designated critical habitat for the arroyo toad the BSA. A full list with a discussion on the potential for each special-status wildlife species to be in the BSA is in **Appendix D**.

Table 1. Special-Status Natural Communities, Plants, and Wildlife with Potential to be in the BSA

Common and Scientific Names	Status			General Habitat Requirements	Habitat Present/ Absent	Rationale for Natural Community/Species Presence/Absence
	Federal USFWS	State CDFW	CRPR			
Natural Communities						
Southern Riparian Scrub	--	S3.2	--	The Southern Riparian Scrub community consists of streamside thickets dominated by one or more willows and mulefat, as well as by other fast-growing shrubs and vines. This community is found along intermittent stream channels and requires flooding. Most plants recolonize following flood disturbance.	HP/P	**Present in the BSA.** There are Arroyo Willow Thickets in the BSA, which are equivalent to Holland's classification for Southern Riparian Scrub; therefore, this community is present in the BSA.
Plants						
Calandrinia breweri Brewer's calandrinia	--	S4	4.2	The Brewer's calandrinia is an annual herb found in chaparral and coastal scrub. This species is found in disturbed sites on sandy or loamy soils; on open, north-facing slopes. Typical blooming period: March to June Typical elevation range: Zero to 4,003 feet	HP	**Not expected to occur.** There is chaparral on north facing slopes in the BSA However, this species was not observed during the focused special-status botanical survey, which were conducted during the typical blooming period for this species. Therefore, this species is not expected to be in the BSA.
Lepidium virginicum var. *robinsonii* Robinson's pepper-grass	--	S3	4.3	The Robinson's pepper-grass is an annual herb found in chaparral and coastal scrub. This species is found on dry soils. Typical blooming period: January to July Typical elevation range: Three to 2,904 feet	HP	**Not expected to occur.** There is chaparral and coastal scrub within the BSA. However, this species was not observed during the focused special-status botanical survey, which were conducted during the typical blooming period for this species. Therefore, this species is not expected to be in the BSA.
Phacelia hubbyi	--	S4	4.2	The Hubby's phacelia is an annual herb found in chaparral, coastal scrub, and	HP	**Not expected to occur.** There is chaparral and coastal scrub

Common and Scientific Names	Status			General Habitat Requirements	Habitat Present/ Absent	Rationale for Natural Community/Species Presence/Absence
	Federal USFWS	State CDFW	CRPR			
Hubby's phacelia				valley and foothill grassland in gravelly or rocky slopes, and talus slopes, mostly away from the immediate coast. Typical blooming period: April to July Typical elevation range: Zero to 3,281 feet		within the BSA. However, this species was not observed during the focused special-status botanical survey, which were conducted during the typical blooming period for this species. Therefore, this species is not expected to be in the BSA.
Romneya coulteri Coulter's matilija poppy	--	S4	4.2	The Coulter's matilija poppy is a perennial rhizomatous herb found in chaparral and coastal scrub habitats in dry washes and canyons, in burned areas. This species is found generally away from the coast in the mountain foothills and Santa Ana Mountains. Typical blooming period: March to July Typical elevation range: 65 to 3,937 feet	HP/P	**Present in the BSA.** This species was observed within the BSA.
Amphibians						
Anaxyrus californicus Arroyo toad	FE	SSC	--	The arroyo toad is found in semi-arid regions near washes or intermittent streams, including valley-foothill and desert riparian, desert wash, etc. This species is found near rivers with sandy banks, willows, cottonwoods, and sycamores; and in loose, gravelly areas of streams in drier parts of the range. There is critical habitat designated for this species in the BSA.	HP	**Not expected to occur.** There is a creek with sandy banks, willows, and gravelly areas. However, focused protocol surveys for arroyo toad were conducted in 2019. The surveys were negative; therefore, this species is not expected to be in the BSA.
Reptiles						
Arizona elegans occidentalis California glossy snake	--	SSC	--	The California glossy snake is found in arid scrub, rocky washes, grasslands, and chaparral habitat, often is loose or sandy soils. This species is patchily distributed	HP	**Moderate potential to occur.** There is chaparral in the BSA; therefore, there is a moderate potential for this species to be in

Common and Scientific Names	Status			General Habitat Requirements	Habitat Present/ Absent	Rationale for Natural Community/Species Presence/Absence
	Federal USFWS	State CDFW	CRPR			
				from the eastern portion of San Francisco Bay, southern San Joaquin Valley, and the Coast, Transverse, and Peninsular Ranges, south to Baja California		the BSA.
Aspidoscelis hyperythra Orange-throated whiptail	--	WL	--	The orange-throated whiptail is found in low-elevation coastal scrub, chaparral, and valley-foothill hardwood habitats. This species prefers washes and other sandy areas with patches of brush and rocks. The primary food source for this species is termites.	HP	**Moderate potential to occur.** There is chaparral in the BSA; therefore, there is a moderate potential for this species to be in the BSA.
Aspidoscelis tigris stejnegeri Coastal whiptail	--	SSC	--	The coastal whiptail is found primarily in hot and dry open areas with sparse foliage, including chaparral, woodland, and riparian areas. This species is also found in woodland and riparian areas where the ground may be firm soil, sandy, or rocky.	HP	**Moderate potential to occur.** There is chaparral in the BSA; therefore, there is a moderate potential for this species to be in the BSA.
Phrynosoma blainvillii Coast horned lizard	--	SSC	--	The coast horned lizard is found in open areas of sandy soil and low vegetation in valleys, foothills, and semiarid mountains. This species is also found in grasslands, coniferous forests, woodlands, and chaparral, with open areas and patches of loose soil. Preferred plant species are either chaparral or a chaparral/coastal sage scrub mix with bare ground coverage averaging 20 to 40 percent.	HP	**Moderate potential to occur.** There is chaparral and coastal scrub within the BSA; therefore, there is a moderate potential for this species to be in the BSA.
Birds						
Accipiter cooperii Cooper's hawk	--	WL	--	The Cooper's hawk is found in cismontane woodland, riparian forest, riparian woodland, and upper montane coniferous forest, in wooded habitats from deep forests to leafy subdivisions and	HP (Nesting) HP (Foraging)	**Moderate potential to occur.** There are coast live oaks within the BSA that could provide suitable nesting and foraging habitat for this species.

Common and Scientific Names	Status			General Habitat Requirements	Habitat Present/ Absent	Rationale for Natural Community/Species Presence/Absence
	Federal USFWS	State CDFW	CRPR			
				backyards. This species nests mainly in riparian growths of deciduous trees, often in canyon bottoms on river floodplains, and will also nest in live oaks.		Therefore, there is a moderate potential for this species to nest and forage in the BSA.
Asio otus Long-eared owl	--	SSC	--	The long-eared owl is found in riparian habitats with willows, cottonwoods, and live oaks along stream courses. This species requires adjacent open land with mice for foraging, and old crow, hawk, or magpie nests for breeding. This species forages primarily at night by flying low over open ground, including grasslands, meadows, active or fallow agricultural lands, sagebrush scrub, and desert scrub.	HP (Nesting) HP (Foraging)	**Moderate potential to occur.** There are cottonwoods and oaks within the BSA that could provide suitable nesting and foraging habitat. Therefore, there is a moderate potential for this species to nest and forage in the BSA.
Baeolophus inornatus Oak titmouse	--	S4	--	The oak titmouse is found in oak woodland, pinyon-juniper habitat, montane and valley foothill riparian habitats in cismontane California. Sometimes this species ventures into residential areas. This species nests in natural tree cavities or woodpecker holes. This species eats seeds, berries, caterpillars, beetles, ants, flies, and spiders.	HP (Nesting) HP (Foraging)	**Moderate potential to occur.** There are coast live oak woodlands within the BSA that could provide suitable nesting and foraging habitat. Therefore, there is a moderate potential for this species to nest and forage in the BSA.
Calypte costae Costa's hummingbird	--	S4	--	The Costa's hummingbird is found in desert washes, and sage scrub habitat, mostly in dry and open areas such as washes and streamsides in the Sonoran Desert and lower parts of dry canyons. In California, this species may also use various chaparral and riparian areas. This species nests in sparsely leaved shrubs or small trees, and sometimes in yucca or cactus.	HP (Nesting) HP (Foraging)	**Moderate potential to occur.** There are shrubs within the BSA that could provide suitable nesting and foraging habitat. Therefore, there is a moderate potential for this species to nest and forage in the BSA.

Common and Scientific Names	Status			General Habitat Requirements	Habitat Present/ Absent	Rationale for Natural Community/Species Presence/Absence
	Federal USFWS	State CDFW	CRPR			
Lanius ludovicianus Loggerhead shrike	--	SSC	--	The loggerhead shrike is found in grasslands, orchards, and semi-open country with lookout posts, such as wires, trees, and scrub. This species builds nests in densely foliaged shrubs or trees, and thorny vegetation in semi-open terrain, from large clearings in wooded regions to open grassland or desert with a few scattered trees or large shrubs.	HP (Nesting) HP (Foraging)	**Moderate potential to occur.** There are shrubs within the BSA that could provide suitable nesting and foraging habitat. Therefore, there is a moderate potential for this species to nest and forage in the BSA.
Polioptila californica californica Coastal California gnatcatcher	FT	SSC	--	The coastal California gnatcatcher is found in chaparral, grassland, and riparian areas near sage scrub. An obligate, permanent resident of coastal sage scrub below 2,500 feet in Southern California, this species requires variable amounts of semi-open sage scrub dominated by California sagebrush on shallow slope gradients.	HP (Nesting) HP (Foraging)	**Moderate potential to occur.** There are scrub and chaparral within the BSA that could provide suitable nesting and foraging habitat. Therefore, there is a moderate potential for this species to nest and forage in the BSA. The presence of this species in the BSA has been inferred.
Mammals						
Antrozous pallidus Pallid bat	--	SSC	--	The pallid bat is found year round in a variety of low-elevation habitats in most parts of California, including grasslands, shrub lands, woodlands, and forests. This species is thought to prefer open, dry habitats with rocky areas for roosting. This species roosts in caves, crevices, mines, hollow trees, buildings, and bridges, and night roosts in more open sites, such as porches, open buildings, and bridges. Roosts must protect bats from high temperatures, and this species will move deeper into cover if temperatures rise.	HP	**Moderate potential to occur.** There are buildings, trees, and a bridge within the BSA which could provide suitable roosting habitat. Therefore, there is a moderate potential for this species to be in the BSA.

Common and Scientific Names	Status			General Habitat Requirements	Habitat Present/ Absent	Rationale for Natural Community/Species Presence/Absence
	Federal USFWS	State CDFW	CRPR			
Eumops perotis californicus Western mastiff bat	--	SSC	--	The western mastiff bat is found in many open, semi-arid and arid habitats, including conifer and deciduous woodlands, coastal scrub, annual and perennial grasslands, palm oases, chaparral, desert scrub, and urban areas. This species has been recorded throughout central and southern California, with a concentration in southern California. This species roosts in crevices on high vertical cliffs or surfaces (including buildings), trees, or tunnels. Because of their large size, they typically require a larger drop distance from roosting sites.	HP	**Moderate potential to occur.** There are buildings, trees, and a bridge within the BSA which could provide suitable roosting habitat. Therefore, there is a moderate potential for this species to be in the BSA.
Lasiurus cinereus Hoary bat	--	S4	--	The hoary bat is found in a wide variety of habitats and elevations in California. This species generally roosts in dense foliage of medium to large trees, and prefers open habitats or habitat mosaics, with access to trees for cover and open areas or habitat edges for feeding.	HP	**Moderate potential to occur.** There are trees within the BSA, which could provide suitable roosting habitat. Therefore, there is a moderate potential for this species to be in the BSA.
Lasiurus xanthinus Western yellow bat	--	SSC	--	The western yellow bat is uncommon in California, and is found in valley foothill riparian, desert riparian, desert wash, and palm oasis habitats. This species roosts in trees, particularly palms, and forages over water and among trees.	HP	**Moderate potential to occur.** There are trees within the BSA, including palm trees, which could provide suitable roosting habitat. Therefore, there is a moderate potential for this species to be in the BSA.
Lepus californicus bennettii San Diego black-tailed jackrabbit	--	SSC	--	The San Diego black-tailed jackrabbit is generally found in grasslands, agricultural fields, or areas of sparse coastal scrub. This species is not typically found in high grass or dense brush. This species uses shallow depressions under bushes or shrubs and does not construct burrows or	HP	**Moderate potential to occur.** There is coastal scrub within the BSA. Therefore, there is a moderate potential for this species to be in the BSA.

Common and Scientific Names	Status			General Habitat Requirements	Habitat Present/ Absent	Rationale for Natural Community/Species Presence/Absence
	Federal USFWS	State CDFW	CRPR			
				dens.		
Myotis ciliolabrum Western small-footed myotis	--	S3	--	The western small-footed myotis is found in a wide range of habitats but is generally found in arid woodlands and brushy upland areas near water. This species prefers open stands in forests and woodlands and seeks cover in caves, buildings, mines, and crevices.	HP	**Moderate potential to occur.** There are buildings and a bridge within the BSA which could provide suitable roosting habitat. Therefore, there is a moderate potential for this species to be in the BSA.
Myotis yumanensis Yuma myotis	--	S4	--	The Yuma myotis is found in open forests and woodlands with sources of water over which to feed, but has been documented in many urban areas. This species roosts in buildings, mines, caves, or crevices. The species also has been seen roosting in abandoned swallow nests and under bridges.	HP	**Moderate potential to occur.** There are buildings, swallow nests, and a bridge within the BSA which could provide suitable roosting habitat. Therefore, there is a moderate potential for this species to be in the BSA.

Table Key:

Absent [A] – The plant/wildlife species/vegetation community or habitat requirements were not observed in the BSA during the biological survey.

Habitat Present [HP] – There is habitat present within the BSA.

Present (P) – Species or Natural Community is present in the BSA.

Federal Endangered (FE)

Federal Threatened (FT)

Watch List (WL)

State Species of Special Concern (SSC)

State Rare (SR); S3 = Vulnerable- restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors making it vulnerable to extirpation; S4 = Apparently Secure - uncommon but not rare; some cause for long-term concern due to declines or other factors.

California Rare Plant Rank (CRPR), etc. 4 = Plants of limited distribution; 0.2 = moderately threatened in California; and 0.3 = Not very threatened in California.

Information for the habitat requirements was obtained from the following sources: (CDFW, 2021a)*, (CaliforniaHerps, 2019), (Sibley, 2014), (Cal Fish, 2019), (Bleich, V, 1977), (Cornell University, 2019), (CDFW, 2019b), (Holland, 1986), (Sawyer, 2012),* (CNPS, 2021)*, and (Jepson Herbarium, 2017).*

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Chapter 4 Results: Biological Resources, Discussion of Impacts and Mitigation

4.1 Habitats and Natural Communities of Special Concern

The Natural Communities of Special Concern within the BSA include Silverado Creek (jurisdictional features), an intermittent tributary of Santiago Creek, and southern riparian scrub (Arroyo Willow Thickets). The sensitive natural habitats are discussed in the following sections.

4.1.1 JURISDICTIONAL FEATURES

Survey Results

A jurisdictional delineation was conducted by biologist David Hughes on June 25, 2019 for the project to identify potentially jurisdictional areas (Psomas, 2019). The creek is expected to fall under jurisdiction of the USACE and RWQCB (see **Figure 4 – Jurisdictional Delineation**). The BSA was evaluated for waters under jurisdiction of the USACE and RWQCB by delineating the OHWM of the creek. Approximately 0.49 acres of waters under jurisdiction of the USACE and 0.49 acres under jurisdiction of the RWQCB were delineated in the direct impact area (see **Table 2**).

The creek has a defined bed and bank and supports riparian vegetation. Therefore, the creek is expected to fall under jurisdiction of the CDFW. The BSA was evaluated for waters under jurisdiction of the CDFW by delineating areas from the top of bank to the top of bank within the creek. Approximately 0.63 acres under jurisdiction of the CDFW were delineated in the direct impact area (see **Figure 4 – Jurisdictional Delineation** and **Table 2**). The direct impacts area are all areas needed to construct access ramps, bridge falsework, and equipment/personnel movement.

Table 2. Jurisdictional Features in the Direct Impact Area

Regulatory Agency	Jurisdictional Wetlands (acres)	Jurisdictional Non-Wetland Waters (acres)	Total Jurisdiction within Direct Impact Area (acres)
United States Army Corps of Engineers	--	0.49	0.49
Regional Water Quality Control Board	--	0.49	0.49
California Department of Fish and Wildlife	--	--	0.63

Project Impacts

The project would not result in permanent impacts on the creek. Construction of a temporary construction access ramp and bridge falsework within the creek and demolition of the existing bridge and construction of the new bridge would result in approximately 0.49 acre (497 linear feet) temporary impacts to waters under jurisdiction of the USACE and RWQCB, and approximately 0.63 acre (497 linear feet) of temporary impacts to waters under CDFW jurisdiction.

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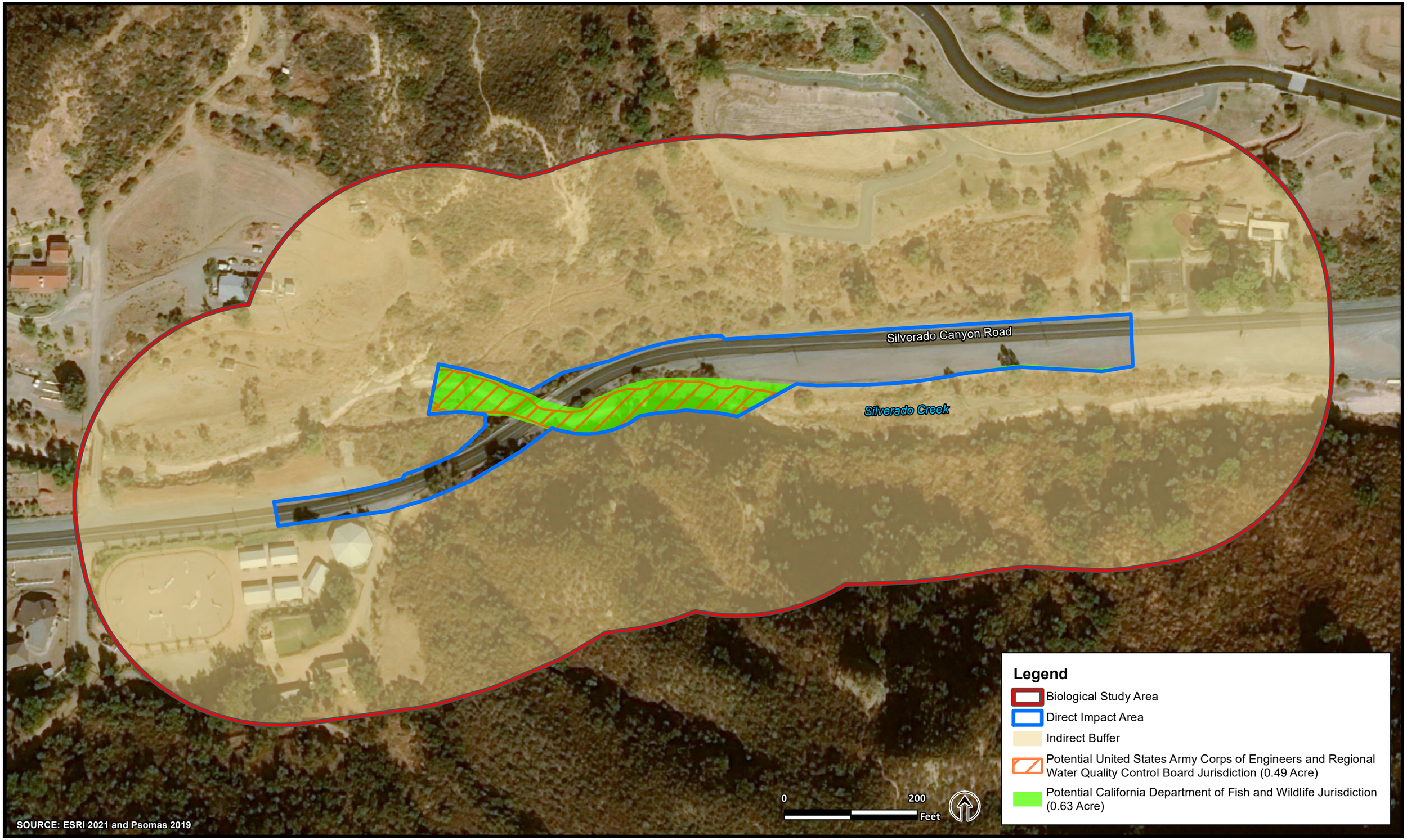

FIGURE 4. JURISDICTIONAL DELINEATION
Silverado Canyon Road Bridge Replacement Project (Bridge No. 55C-0174) Over Silverado Creek

Avoidance and Minimization Efforts

To avoid and/or minimize potential impacts on jurisdictional features, the following measures would be implemented:

- **BIO-1** Work areas would be reduced to the maximum extent feasible, and staging areas would be along the Silverado Canyon Road and outside of the creek.
- **BIO-2** Best management practices (BMP), such as silt fencing, fiber rolls, straw bales, or other measures would be implemented during construction to minimize dust, dirt, and construction debris from leaving the project area.
- **BIO-3** Water, chemical stabilizers/suppressants, tarps or other suitable covers, or vegetative ground cover composed of native plant species would be used to control dust on all disturbed areas, including storage piles that are not being actively utilized for construction purposes.
- **BIO-4** Water or chemical stabilizers/suppressants would be used to control dust on all unpaved access roads.
- **BIO-5** Appropriate temporary BMPs would be implemented to reduce the potential for chemical spills or contaminant releases into the creek, including any non-stormwater discharge.
- **BIO-6** All equipment refueling and maintenance would be conducted in the upland staging area away from the creek per standard specifications and regulatory permits. In addition, vehicles and equipment would be checked daily for fluid and fuel leaks, and drip pans would be placed under all equipment that is parked and not in operation.
- **BIO-7** Vegetation removed from the BSA would be treated and disposed of in a manner following the recommendations of the California Invasive Plant Council to prevent the spread of invasive species on site or off site. BMPs may include, but are not limited to, identification of existing invasive species, avoidance of invasive species in erosion control, staff training, equipment cleaning when entering and exiting the project area, and monitoring.
- **BIO-8** Following the completion of project construction, temporarily impacted areas would be restored to their pre-project conditions, and any re-vegetation would be completed using native species appropriate to the area.

Compensatory Mitigation

With the implementation of avoidance and minimization measures, adverse impacts on jurisdictional features are not anticipated; therefore, no mitigation is required.

Cumulative Impacts

Existing and continuing development in the region could contribute to cumulative impacts on jurisdictional features. Cumulative impacts on jurisdictional features may include the physical loss of jurisdictional features from grading, constructing an access ramp and bridge falsework within the creek, and demolition of the existing bridge. In addition, increases in impervious surfaces from roadway development could impact water quality by increasing roadway runoff and dust. Project

contributions to cumulative impacts on jurisdictional features, in combination with reasonably foreseeable development in the project vicinity, may incrementally cause further impacts to jurisdictional features regionally.

The proposed project would result in temporary impacts on jurisdictional features that could contribute to the cumulative regional loss of jurisdictional features if avoidance, minimization, and mitigation measures are not implemented. However, with implementation of avoidance and minimization measures, **BIO-1** through **BIO-8**, the proposed project would not result in a net loss of jurisdictional features.

4.1.2 DISCUSSION OF ARROYO WILLOW THICKETS

Survey Results

One (1) special-status natural community was observed in the BSA, Arroyo Willow Thickets. This community was mapped during the jurisdictional delineation survey and verified during the reconnaissance survey. Within the BSA, this community is adjacent to the Silverado Canyon Road Bridge within the creek east of the Silverado Canyon Road Bridge.

Project Impacts

All construction activities, including the construction temporary construction access ramp into the creek, would be outside of the Arroyo Willow Thickets community in the BSA. Direct impacts on this special-status natural community are not expected. Indirect impacts could include an increase in dust from construction activities. However, the project would be constructed in compliance with dust control regulations, and with implementation of the proposed avoidance measures listed below, adverse impacts on special-status natural communities are not anticipated.

Avoidance and Minimization Efforts

To avoid potential impacts on Arroyo Willow Thickets, the following measures would be implemented:

- **BIO-9** Prior to any construction activities, including staging, clearing and grubbing, highly visible barriers (such as orange construction fencing) would be installed around Arroyo Willow Thickets by or under the supervision of the Project Biologist. This area would be designated as an Environmentally Sensitive Area (ESA) and no access or activities, including equipment use or foot traffic, would be permitted within the ESA. All construction equipment would be operated in a manner so as to prevent accidental damage to Arroyo Willow Thickets.

Compensatory Mitigation

With the implementation of avoidance measures, adverse impacts on Arroyo Willow Thickets are not anticipated; therefore, no mitigation is required.

Cumulative Impacts

Existing and continuing development in the region could contribute to cumulative impacts on Arroyo Willow Thickets. Cumulative impacts on Arroyo Willow Thickets may include vegetation removal, and grading and modification of the creek, which could result in the physical destruction of Arroyo Willow Thickets. Project contributions to cumulative impacts on Arroyo Willow Thickets,

in combination with reasonably foreseeable development in the project vicinity, may incrementally cause further impacts to Arroyo Willow Thickets regionally.

The proposed project could result in temporary impacts on Arroyo Willow that could contribute to the cumulative regional loss of Arroyo Willow Thickets without implementation of avoidance, minimization, and mitigation measures. However, with implementation of avoidance and minimization measure, **BIO-9**, would be implemented and the proposed project would not result in a net loss of Arroyo Willow Thickets nor will it impact any Arroyo Willow Thickets.

4.2 Discussion of Special-Status Plant and Wildlife Species

4.2.1 SPECIAL-STATUS PLANT SPECIES

Survey Results

Brewer's Calandrinia

The Brewer's calandrinia (*Calandrinia breweri*) is an annual herb found in chaparral and coastal scrub. This species is found in disturbed sites on sandy or loamy soils; on open, north-facing slopes. There is chaparral on north facing slopes in the BSA. However, this species was not observed during the biological survey, which were conducted during the typical blooming period for this species. Therefore, this species is not expected to be in the BSA.

Robinson's Pepper-Grass

The Robinson's pepper-grass (*Lepidium virginicum* var. *robinsonii*) is an annual herb found in chaparral and coastal scrub. This species is found on dry soils. There is chaparral and coastal scrub within the BSA; therefore, there is potential for this species to be in the BSA. However, this species was not observed during the biological survey, which were conducted during the typical blooming period for this species. Therefore, this species is not expected to be in the BSA.

Hubby's Phacelia

The Hubby's phacelia (*Phacelia hubbyi*) is an annual herb found in chaparral, coastal scrub, and valley and foothill grassland in gravelly or rocky slopes, and talus slopes, mostly away from the immediate coast. There is chaparral and coastal scrub within the BSA; therefore, there is potential for this species to be in the BSA. However, this species was not observed during the biological survey, which were conducted during the typical blooming period for this species. Therefore, this species is not expected to be in the BSA.

Coulter's Matilija Poppy

The Coulter's matilija poppy (*Romneya coulteri*) is a perennial rhizomatous herb found in chaparral and coastal scrub habitats in dry washes and canyons, in burned areas. This species is found generally away from the coast in the mountain foothills and Santa Ana Mountains. This species was observed within the BSA.

Project Impacts

Construction activities, including vegetation/tree removal and trimming, staging, pedestrian and vehicle movement, and grading could result in direct and indirect impacts on special-status plants

if construction activities were to be conducted where individual plants are located. Direct impacts could include trampling and/or removal; indirect impacts could include habitat loss and increased dust. However, the project would be constructed in compliance with dust control regulations, and with the implementation of avoidance, minimization, and mitigation measures discussed below, adverse impacts on special-status plants are not anticipated.

Avoidance and Minimization Efforts

To avoid potential impacts on special-status plants, the following measures would be implemented:

- **BIO-10** Prior to construction, a qualified biologist would conduct a pre-construction plant survey within the construction area. Surveys would be conducted during the appropriate blooming period for species with potential to be in the construction area, to the extent feasible. If a special-status plant species is found during pre-construction survey, high visibility ESA protective fencing would be installed around the special-status plants to prevent construction staff or equipment from entering this area. ESA protective fencing would be installed by or under the supervision of the Project Biologist. No access or activities, including equipment use or foot traffic, would be permitted within the ESA .The ESA protective fencing buffer would be species specific, with a minimum buffer radius based on the guidance from a qualified biologist.
- **BIO-11** All excluded areas with ESA protective fencing would be monitored to determine whether exclusion measures were successful and to identify any outstanding concerns. Exclusionary measures would be monitored throughout construction to ensure they are functioning correctly and would be removed following construction.

Compensatory Mitigation

To mitigate for impacts on special-status plants, the following measure will be implemented:

- **BIO-12** If special-status plants cannot be avoided, a species-specific mitigation plan will be developed by a qualified biologist. The plan may include one or more of the following as appropriate: plant relocation, seed collection and dispersal, on or off-site restoration, or payment into an agency-approved mitigation bank. The plan will be implemented prior to the completion of the project.

Cumulative Impacts

Existing and continuing development in the region could contribute to cumulative impacts on special-status plants. Cumulative impacts on special-status plants may include habitat loss and the physical destruction of species from grading and equipment movement. Project contributions to cumulative impacts on special-status plants, in combination with reasonably foreseeable development in the project vicinity, may incrementally cause further impacts to special-status plants regionally.

The project could result in impacts on special-status plants that could contribute to the cumulative regional loss of special-status plants without implementation of avoidance, minimization, and mitigation measures. However, with implementation of avoidance and minimization measures,

BIO-10 through **BIO-12**, the project is not expected to result in an increase in cumulative impacts on special-status plants.

4.2.2 DISCUSSION OF SPECIAL-STATUS AMPHIBIAN AND REPTILE SPECIES

Survey Results

Arroyo Toad

The arroyo toad is found in semi-arid regions near washes or intermittent streams, including valley-foothill and desert riparian, desert wash, etc. This species is found near rivers with sandy banks, willows, cottonwoods, and sycamores; and in loose, gravelly areas of streams in drier parts of the range. There is a creek with sandy banks, willows, and gravelly areas; therefore, there is potential for this species to be in the BSA. In addition, there is critical habitat designated for this species in the BSA. Focused protocol surveys for arroyo toad were conducted in 2019 (ICF, 2019) (see **Appendix E**). The surveys were negative; therefore, this species is not expected to be in the BSA and there would be no impacts. In addition, the BSA is within designated critical habitat for the arroyo toad.

California Glossy Snake

The California glossy snake (*Arizona elegans occidentalis*) is found in arid scrub, rocky washes, grasslands, and chaparral habitat, often in loose or sandy soils. This species is patchily distributed from the eastern portion of San Francisco Bay, southern San Joaquin Valley, and the Coast, Transverse, and Peninsular Ranges, south to Baja California. There is chaparral in the BSA; therefore, there is a moderate potential for this species to be in the BSA.

Orange-Throated Whiptail

The Orange-throated whiptail (*Aspidoscelis hyperythra*) is found in low-elevation coastal scrub, chaparral, and valley-foothill hardwood habitats. This species prefers washes and other sandy areas with patches of brush and rocks. The primary food source for this species is termites. There is chaparral in the BSA; therefore, there is a moderate potential for this species to be in the BSA.

Coast Horned Lizard

The coast horned lizard (*Phrynosoma blainvillii*) is found in open areas of sandy soil and low vegetation in valleys, foothills, and semiarid mountains. This species is also found in grasslands, coniferous forests, woodlands, and chaparral, with open areas and patches of loose soil. Preferred plant species are either chaparral or a chaparral/coastal sage scrub mix with bare ground coverage averaging 20 to 40 percent. There is chaparral and coastal scrub within the BSA; therefore, there is a moderate potential for this species to be in the BSA.

Coastal Whiptail

The coastal whiptail (*Aspidoscelis tigris stejnegeri*) is found primarily in hot and dry open areas with sparse foliage, including chaparral, woodland, and riparian areas. This species is also found in woodland and riparian areas where the ground may be firm soil, sandy, or rocky. There is chaparral in the BSA; therefore, there is a moderate potential for this species to be in the BSA.

Project Impacts

Construction activities, including vegetation/tree removal and trimming, staging, demolition of pavement and concrete, excavation, pedestrian and vehicle movement, and grading could result in direct and indirect impacts on special-status amphibian and reptile species if construction activities were to be conducted while individuals are present within or adjacent to the affected areas. Direct impacts could include trampling by construction equipment resulting in mortality. Indirect impacts could include habitat loss, increased noise, vibration, and human activity. However, with the implementation of avoidance, minimization, and mitigation measures discussed below, adverse impacts on the special-status amphibians and reptile species are not anticipated.

Focused protocol surveys for arroyo toads within the BSA and surrounding tributaries were negative and this species is not expected to be in the BSA. Therefore, the project would have no effect on this species.

The project could result in temporary impacts on arroyo toad critical habitat (Silverado Creek). However, impacts on arroyo toad critical habitat will be short in duration and temporarily impacted areas would be restored to their pre-project conditions, and any re-vegetation would be completed using native species appropriate to the area. Therefore, temporary impacts on arroyo toad critical habitat from the construction of the project is not expected to result in destruction or adverse modification of arroyo toad critical habitat. However, because the BSA is within designated critical habitat for arroyo toad, informal consultation would be initiated with the USFWS under Section 7 of the FESA to obtain concurrence on the determination that construction activities in the creek would not likely adversely affect designated critical habitat for the arroyo toad.

Avoidance and Minimization Measures

To avoid impacts on special-status amphibian and reptile species, the following measures would be implemented:

- **BIO-13** A qualified biologist would complete pre-construction surveys no more than 48 hours prior to construction to determine the presence or absence of special-status amphibian and reptile species in the project area. Surveys would be repeated if construction activities are suspended for five days or more. If these species are identified onsite, appropriate measures would be developed and implemented to avoid impacts on these wildlife species, in consultation with appropriate resource agencies as applicable. Measures may include relocation, limiting construction to avoid these species, or creating a species-specific mitigation plan.
- **BIO-14** To prevent inadvertent entrapment of the special status wildlife species or other animals during construction, the Project Biologist and/or Contractor would ensure all excavated, steep-walled holes or trenches more than six inches deep are provided with one or more escape ramps constructed of earthen fill or wooden blanks. Before such holes or trenches are filled, they would be thoroughly inspected for trapped animals by the Project Biologist and/or Contractor.

To minimize impacts on arroyo toad critical habitat, the minimization measures listed under the

jurisdictional features (Section 4.1.1) discussion would be implemented.

Compensatory Mitigation

With the implementation of avoidance and minimization measures, adverse impacts on special-status amphibians and reptiles are not anticipated; therefore, no mitigation is required.

Cumulative Impacts

Existing and continuing development in the region could contribute to cumulative impacts on special-status amphibian and reptile species. Cumulative impacts on special-status amphibian and reptile species may include habitat loss and mortality of the species from grading and equipment movement. Project contributions to cumulative impacts on special-status amphibian and reptile species, in combination with reasonably foreseeable development in the project vicinity, may incrementally cause further impacts to special-status amphibian and reptile species regionally.

The project could result in impacts on special-status amphibian and reptile species that could contribute to the cumulative regional loss of special-status amphibian and reptile species. However, the project would include avoidance and minimization measures, **BIO-13** and **BIO-14** to offset impacts on special-status amphibian and reptile species. Therefore, the project would not result in an increase in cumulative impacts on special-status amphibian or reptile species.

4.2.3 DISCUSSION OF SPECIAL-STATUS AVIAN SPECIES

Survey Results

Cooper's Hawk

The Cooper's hawk (*Accipiter cooperii*) is found in cismontane woodland, riparian forest, riparian woodland, and upper montane coniferous forest, in wooded habitats from deep forests to leafy subdivisions and backyards. This species nests mainly in riparian growths of deciduous trees, often in canyon bottoms on river floodplains, and will also nest in live oaks. There are coast live oaks within the BSA that could provide suitable nesting and foraging habitat for this species. Therefore, there is a moderate potential for this species to nest and forage in the BSA.

Long-Eared Owl

The long-eared owl (*Asio otus*) is found in riparian habitats with willows, cottonwoods, and live oaks along stream courses. This species requires adjacent open land with mice for foraging, and old crow, hawk, or magpie nests for breeding. This species forages primarily at night by flying low over open ground, including grasslands, meadows, active or fallow agricultural lands, sagebrush scrub, and desert scrub. There is suitable nesting and foraging habitat in the BSA. Therefore, there is a moderate potential for this species to nest and forage in the BSA. Within the BSA, this species could forage in cottonwoods and oaks.

Oak Titmouse

The oak titmouse (*Baeolophus inornatus*) is found in oak woodland, pinyon-juniper habitat, montane and valley foothill riparian habitats in cismontane California. Sometimes this species ventures into residential areas. This species nests in natural tree cavities or woodpecker holes.

This species eats seeds, berries, caterpillars, beetles, ants, flies, and spiders. There is suitable nesting and foraging habitat in the BSA. Therefore, there is a moderate potential for this species to nest and forage in the BSA. Within the BSA, this species could forage and nest in coast live oak woodland.

Costa's Hummingbird

The Costa's hummingbird (*Calypte costae*) is found in desert washes, and sage scrub habitat, mostly in dry and open areas such as washes and streamsides in the Sonoran Desert and lower parts of dry canyons. In California, this species may also use various chaparral and riparian areas. This species nests in sparsely leaved shrubs or small trees, and sometimes in yucca or cactus. There is suitable nesting and foraging habitat in the BSA. Therefore, there is a moderate potential for this species to nest and forage in the BSA. Within the BSA, this species could forage throughout the project area and nest in shrubs.

Loggerhead Shrike

The loggerhead shrike (*Lanius ludovicianus*) is found in grasslands, orchards, and semi-open country with lookout posts, such as wires, trees, and scrub. This species builds nests in densely foliaged shrubs or trees, and thorny vegetation in semi-open terrain, from large clearings in wooded regions to open grassland or desert with a few scattered trees or large shrubs. There is suitable nesting and foraging habitat in the BSA. Therefore, there is a moderate potential for this species to nest and forage in the BSA. Within the BSA, this species could forage throughout the project area and nest in shrubs.

Coastal California Gnatcatcher

The coastal California gnatcatcher is a medium sized non-migratory gnatcatcher that inhabits sage scrub communities along the coastal regions of southern California and Baja Mexico Peninsula (Atwood, J, 1991). The males of this species have a black cap during the breeding season with blue-gray upperparts, black tail with white edges, and pale grey underparts. Females of this species is paler and lacks a black cap. The bill of this species is short, slender, and black. This species has a limited territory ranging in size from two to 14 acres. The breeding season of this species generally extends from mid-February through the end of August. Nests are composed of grasses, bark, mosses, small leaves, spider webs, down feathers, and other materials and are often located almost exclusively in California sagebrush (*Artemisia californica*) about 3 feet above the ground. The average clutch size is four eggs, and incubation takes about 14 days.

The coastal California gnatcatcher was listed as threatened by the USFWS on March 30, 1993 (USFWS, 1993). Habitat loss and fragmentation resulting from urban and agricultural development as well as fire, invasive plants, and predation all contributed to the listing decision. Critical habitat designation for this species was published on April 24, 2003 (USFWS, 2003) and updated on December 19, 2007 (USFWS, 2007). The final designation in included approximately 120,000 acres of land in Los Angeles, Orange, Riverside, San Bernardino, Ventura, and San Diego Counties.

There is suitable foraging and nesting habitat in the direct impact area; there is suitable scrub and chaparral habitat north and south of the BSA. The project is located in the central portion of the

coastal California gnatcatcher range within the Santa Ana Mountains. The nearest recording is approximately one mile west of the BSA according to CNDDB records. Therefore, there is a moderate potential for the species to forage and nest within the BSA. No protocol surveys were conducted for the project but the presence of this species has been inferred in the BSA.

Project Impacts

Construction activities would include vehicle movement, demolition of pavement and concrete, excavation, grading, and vegetation removal that could result in direct and indirect impacts on special-status bird species, including coastal California gnatcatcher, if these activities were to be conducted while birds are establishing territories or nesting within or adjacent to the affected areas. Post-construction activities would include monitoring and maintenance of re-vegetated areas. Direct impacts may include bird mortality and/or nest destruction if they were to be nesting in vegetation removed for construction. Indirect impacts on special-status bird species could include habitat loss, increased noise, vibration, and human activity. Noise and vibration could impact special-status bird species through disturbance causing nest abandonment or foraging disruption. However, with implementation of avoidance and minimization measures discussed below, adverse impacts on special-status bird species and coastal California gnatcatcher are not anticipated.

The project would require the removal of 0.06 acre of buckwheat scrub which would result in habitat loss for the coastal California gnatcatcher. Construction activities that completely remove habitat could reduce availability of breeding, feeding, and territory sites for gnatcatchers in these areas. However, the removal of 0.06 acre of buckwheat scrub would not reduce the quality and quantity of remaining suitable habitat in the general area. Informal consultation with the USFWS under Section 7 of the FESA would be required to obtain concurrence on the determination that the project would not likely adversely affect this species.

Avoidance and Minimization Measures

To avoid potential impacts on special-status bird species, the following measures would be implemented:

- **BIO-15** Vegetation removal would occur outside the nesting bird breeding season (February 15 - September 15).
- **BIO-16** In the event that vegetation removal and tree trimming must be conducted during the nesting season, nesting bird surveys would be completed within 300 feet of the construction area by a qualified biologist no more than 48 hours prior to trimming or clearing activities to determine if nesting birds are within the affected vegetation. Nesting bird surveys would be repeated if trimming or removal activities are suspended for five days or more.
- **BIO-17** If nesting birds are found within 300 feet of the construction area, appropriate buffers consisting of orange flagging/fencing or similar (typically 300 feet for birds and 500 feet for raptors) would be installed and maintained until nesting activity has ended. A reduced buffer can be established if determined appropriate by the Project Biologist and approved by the wildlife agencies.

- **BIO-18** In the event that any bird species is observed foraging within the construction area, it would be allowed to move away from the site prior to initiating any construction activities that could result in direct injury of the individual.

To avoid and minimize potential impacts on coastal California gnatcatcher, the following measures would be implemented:

- **BIO-19** To the maximum extent feasible, no grading and/or removal of coastal sage scrub habitat would be performed during the coastal California gnatcatcher breeding season (February 15 through July 15).
- **BIO-20** Grading and/or removal of coastal sage scrub should occur outside of the coastal California gnatcatcher breeding season. If grading and/or removal during the breeding season is unavoidable, then prior to the commencement of grading operations or other activities involving vegetation trimming or soil disturbance, a minimum of three pre-construction nesting bird surveys, conducted by a Permitted Biologist for the coastal California gnatcatcher, spaced one week a part, with the last survey no more than 72 hours prior to the first day of disturbance.
- **BIO-21** If an active coastal California gnatcatcher nest is located, the Carlsbad Fish and Wildlife Office would be contacted to determine if it is necessary to reinitiate consultation to address potential direct and/or indirect effects to this species beyond those addressed in this document.
- **BIO-22** Prior to the commencement of grading operations or other activities involving vegetation trimming or soil disturbance, all areas of coastal sage scrub habitat to be avoided, would be identified with temporary fencing or other markers clearly visible to construction personnel. The fencing or other markers will be installed by or under the supervision of the Project Biologist.
- **BIO-23** A monitoring biologist, acceptable to the USFWS would be on site during any clearing of coastal sage scrub. The County would notify the USFWS at least seven calendar days (and preferably 14 calendar days) prior to the clearing of any habitat occupied by coastal California gnatcatcher.

Compensatory Mitigation

To mitigate for impacts on coastal California gnatcatcher habitat, the following measure will be implemented:

- **BIO-24** Impacts on coastal California gnatcatcher habitat, 0.06 acre buckwheat scrub, will be offset through on-site or within the Santa Ana Watershed, or through the purchase of in-lieu fees or mitigation bank credits within the Santa Ana Watershed at a Caltrans and USFWS approved location. Mitigation will be at a minimum ratio of 1:1; however, the final ratio will be established through consultation and coordination with regulatory agencies.
- **BIO-25** Onsite re-vegetated areas will be monitored and maintained for 24 months to ensure adequate establishment and sustainability of the plantings/seedlings.

- **BIO-26** If maintenance of buckwheat scrub is necessary between February 15 to July 15, a minimum of three pre-construction nesting bird surveys will be conducted by a Permitted Biologist for the coastal California gnatcatcher, spaced one week a part, with the last survey no more than 72 hours prior to the first day of disturbance. If coastal California gnatcatchers are found, USFWS will be notified and appropriate measures would be coordinated.

Cumulative Impacts

Existing and continuing development in the region could contribute to cumulative impacts on special-status bird species. Cumulative impacts on special-status bird species may include habitat loss and mortality and/or nest destruction from grading and equipment movement. Project contributions to cumulative impacts on special-status bird species, in combination with reasonably foreseeable development in the project vicinity, may incrementally cause further impacts to special-status bird species regionally.

The project could result in impacts on special-status bird species that could contribute to the cumulative regional loss of special-status bird species. However, with implementation of avoidance and minimization measures **BIO-15** and **BIO-26,** the project would not result in an increase in cumulative impacts on special-status bird species.

4.2.4 DISCUSSION OF SPECIAL STATUS MAMMAL SPECIES

Survey Results

San Diego Black-Tailed Jack Rabbit

The San Diego black-tailed jack rabbit (*Lepus californicus bennettii*) is generally found in grasslands, agricultural fields, or areas of sparse coastal scrub. This species is not typically found in high grass or dense brush. This species uses shallow depressions under bushes or shrubs and does not construct burrows or dens. There is coastal scrub in the BSA; therefore, there is a moderate potential for this species to be in the BSA.

Pallid Bat

The pallid bat (*Antrozous pallidus*) is found year round in a variety of low-elevation habitats in most parts of California, including grasslands, shrub lands, woodlands, and forests. This species is thought to prefer open, dry habitats with rocky areas for roosting. This species roosts in caves, crevices, mines, hollow trees, buildings, and bridges, and night roosts in more open sites, such as porches, open buildings, and bridges. Roosts must protect bats from high temperatures, and this species will move deeper into cover if temperatures rise. There are bridges, buildings, and trees in the BSA which could provide suitable roosting habitat; therefore, there is a moderate potential for this species to be in the BSA.

Western Mastiff Bat

The western mastiff bat (*Eumops perotis californicus*) is found in many open, semi-arid and arid habitats, including conifer and deciduous woodlands, coastal scrub, annual and perennial grasslands, palm oases, chaparral, desert scrub, and urban areas. This species has been recorded throughout central and southern California, with a concentration in southern California. This species roosts in crevices on high vertical cliffs or surfaces (including buildings), trees, or

tunnels. Because of their large size, they typically require a larger drop distance from roosting sites. There are bridges, buildings, and trees in the BSA which could provide suitable roosting habitat; therefore, there is a moderate potential for this species to be in the BSA.

Hoary Bat

The hoary bat (*Lasiurus cinereus*) is found in a wide variety of habitats and elevations in California. This species generally roosts in dense foliage of medium to large trees, and prefers open habitats or habitat mosaics, with access to trees for cover and open areas or habitat edges for feeding. There are trees in the BSA, which could provide suitable roosting habitat; therefore, there is a moderate potential for this species to be in the BSA.

Western Yellow Bat

The western yellow bat (*Lasiurus xanthinus*) The western yellow bat is uncommon in California, and is found in valley foothill riparian, desert riparian, desert wash, and palm oasis habitats. This species roosts in trees, particularly palms, and forages over water and among trees. There are trees in the BSA, including palm trees, which could provide suitable roosting habitat; therefore, there is a moderate potential for this species to be in the BSA

Western Small-Footed Myotis

The western small-footed myotis (*Myotis ciliolabrum*) is found in a wide range of habitats but is generally found in arid woodlands and brushy upland areas near water. This species prefers open stands in forests and woodlands and seeks cover in caves, buildings, mines, and crevices. There are bridges and buildings in the BSA which could provide suitable roosting habitat; therefore, there is a moderate potential for this species to be in the BSA.

Yuma Myotis

The Yuma myotis (*Myotis yumanensis*) is found in open forests and woodlands with sources of water over which to feed but has been documented in many urban areas. This species roosts in buildings, mines, caves, or crevices. The species also has been seen roosting in abandoned swallow nests and under bridges. There are buildings and swallow nests in the BSA which could provide suitable roosting habitat; therefore, there is a moderate potential for this species to be in the BSA.

Project Impacts

Construction activities, including vegetation/tree removal and trimming, staging, pedestrian and vehicle movement, and grading could result in direct and indirect impacts on special-status mammal species if construction activities were to be conducted while individuals are present within or adjacent to the affected areas. Bats could be directly impacted if they were to be roosting in trees trimmed during construction. Direct impacts on the San Diego black-tailed jackrabbit could include trampling by construction equipment resulting in mortality. Indirect impacts on bats include increased noise, vibration, and human activity from construction which could lead to roost abandonment. Indirect impact on the San Diego black-tailed jackrabbit could include habitat loss, increased noise, dust, and vibration associated with construction activities. However, with implementation of the proposed avoidance and minimization measures listed below, adverse

impacts on bats are not anticipated.

Avoidance and Minimization Measures

To avoid impacts on the San Diego black-tailed jackrabbit, the following measure would be implemented:

- **BIO-27** A qualified biologist would complete pre-construction surveys no more than 48 hours prior to construction to determine the presence or absence of San Diego black-tailed jackrabbit in the project area. Surveys would be repeated if construction activities are suspended for five days or more.
- **BIO-28** If any San Diego black-tailed jackrabbit are identified in the BSA, those individuals would be allowed to move away from the site prior to initiating any construction activities that could result in direct injury of the individual.

To avoid and/or minimize impacts on special-status bat species, the following measures would be implemented:

- **BIO-29** Tree removal and trimming, if any, would be conducted outside of the recognized bat maternity season (approximately April 1–September 15), and non-active season (November 1 – February 28) season for bats..
- **BIO-30** Prior to construction, a qualified bat biologist would conduct a habitat assessment within the Project area. Any trees that are determined to provide potentially suitable habitat would be marked "habitat trees" by the qualified biologist. The contractor must contact the County prior to any planned removal of trees marked "habitat trees."
- **BIO-31** During the summer months (June 1 to August 31) prior to construction, visual and acoustic surveys would be conducted for at least two nights at all identified roosting habitat to assess the presence of roosting bats. If presence of a roost is detected, a count and species analysis would be completed to help assess the type of colony and usage.
- **BIO-32** If the presence or absence of bats cannot be confirmed in potential roosting habitat, a qualified biologist would be onsite during tree removal/trimming or disturbance of this area. If the biologist determines that bats are being disturbed during this work, work would be suspended until bats have left the vicinity on their own or can be safely excluded under direction of the biologist. Work would resume only once all bats have left the site and/or approval to resume work is given by a qualified biologist.
- **BIO-33** No less than two weeks prior to construction, and outside of the recognized bat maternity season (April 1–August 31), bats would be safely evicted from roosts impacted by the project under the direction of a qualified biologist. Exclusionary devices would be installed to prevent bats from returning and roosting in these areas. Roosts that would not be impacted by the project would be left undisturbed.
- **BIO-34** In the event that a maternal colony of bats is found, no work would be conducted within 100 feet of the maternal roosting site until the maternal season is finished or the bats have left the site, or as otherwise directed by a qualified biologist. The site would be designated as a sensitive area and protected as such until the bats have left the site. No

activities would be authorized adjacent to the roosting site. Combustion equipment, such as generators, pumps, and vehicles, would not to be parked nor operated under or adjacent to the roosting site. Construction personnel would not be authorized to enter areas beneath the colony, especially during the evening exodus (typically between 15 minutes prior to sunset and one hour following sunset).

Compensatory Mitigation

With the implementation of avoidance and minimization measures, adverse impacts on special-status mammals are not anticipated; therefore, no mitigation is required.

Cumulative Impacts

Existing and continuing development in the region could contribute to cumulative impacts on special-status mammals. Cumulative impacts on special-status mammals may include habitat loss and the removal of suitable roosting habitats in trees, bridge structures, and swallow nests. Project contributions to cumulative impacts on special-status mammals, in combination with reasonably foreseeable development in the project vicinity, may incrementally cause further impacts to special-status mammals regionally.

The proposed project could result in impacts on special-status mammals that could contribute to the cumulative regional loss of special-status mammals without implementation of avoidance, minimization, and mitigation measures. However, with implementation of avoidance and minimization measures, **BIO-27** and **BIO-34**, the project would not result in an increase in cumulative impacts on special-status mammal species.

Chapter 5 Conclusions and Regulatory Determinations

5.1 Federal Endangered Species Act Consultation Summary

There is suitable habitat within the BSA for the federally threatened Santa Monica dudleya. However, this species was not observed during the focused special-status botanical surveys conducted for the project; therefore, this species is not expected to be in the BSA and there would be no impacts. Therefore, for the project would have no effect on the federally threatened Santa Monica dudleya.

There is suitable habitat within the BSA for the federally endangered arroyo toad. However, this species was not observed during the focused protocol surveys conducted for the project; therefore, this species is not expected to be in the BSA and there would be no impacts. Therefore, the project would have no effect on the federally endangered arroyo toad.

Constriction activities would result in temporary impacts on arroyo toad critical habitat (Silverado Creek). However, impacts on arroyo toad critical habitat will be short in duration and temporarily impacted areas would be restored to their pre-project conditions, and any re-vegetation would be completed using native species appropriate to the area. Therefore, temporary impacts on arroyo toad critical habitat from the construction of the project is not expected to result in destruction or adverse modification of arroyo toad critical habitat. However, because the BSA is within designated critical habitat for arroyo toad informal consultation would be initiated with the USFWS under Section 7 of the FESA to obtain concurrence on the determination that construction activities in the creek would not likely adversely affect designated critical habitat for the arroyo toad.

There is suitable foraging and nesting habitat within the BSA for the federally threatened coastal California gnatcatcher. The coastal California gnatcatcher could be directly impacted by removal of 0.06 acre of buckwheat scrub if individuals were establishing territories or nesting in the vegetation to be removed. Additionally, increased noise and vibration levels caused by drilling, demolition, grading, and vegetation removal could result in indirect impacts on this species, including nest abandonment and foraging disruption. The proposed avoidance and minimization measures included in Section 4.2.3, including pre-construction surveys, consultation with USFWS if an active nest is found, having a biological monitor approved by USFWS on site during the nesting season, and on-site restoration of buckwheat scrub would substantially minimize impacts on the coastal California gnatcatcher. With implementation of the avoidance and minimization measures outlined above, the project may affect, not likely to adversely affect the coastal California gnatcatcher. Informal consultation with the USFWS under Section 7 of the FESA would be required to obtain concurrence on the determination that the project would not likely adversely affect this species. **Table 3** below summarizes the listed and proposed species and/or designated critical habitats that were identified on the federal species list and displays determinations of effect for each species.

Table 3. Federally Listed Species Impacts Determination

Scientific Name	Common Name	Federal Status	Critical Habitat	Determination
Anaxyrus californicus	Arroyo toad	Endangered	Yes	No effect
	Arroyo toad critical habitat		Yes	May affect, not likely to adversely affect
Brodiaea filifolia	Thread-leaved brodiaea	Threatened	None	No effect
Dudleya cymosa ssp. *ovatifolia*	Santa Monica Mountains dudleya	Threatened	None	No effect
Dudleya stolonifera	Laguna beach liveforever	Threatened	None	No effect
Oncorhynchus mykiss irideus pop. 10	Steelhead - southern California DPS	Endangered	None	No effect
Polioptila californica californica	Coastal California gnatcatcher	Threatened	None	May affect, not likely to adversely affect
Streptocephalus woottoni	Riverside fairy shrimp	Endangered	None	No effect
Vireo bellii pusillus	Least Bell's vireo	Endangered	None	No effect

5.2 Essential Fish Habitat Consultation Summary

There is no mapped EFH in the BSA. In addition, the creek has intermittent flows and is not suitable fish habitat. Since there is no mapped EFH and no suitable fish habitat in the BSA, the project would have no effect on EFH and consultation with NMFS is not required for this project.

5.3 California Endangered Species Act Consultation Summary

The project would have no impact on state listed species or result in take of state listed species; therefore, coordination with CDFW under CESA is not required.

5.4 Wetlands and Other Waters Coordination Summary

The project would require access to the creek to allow work on the Silverado Canyon Road Bridge. The creek is under the jurisdiction of the USACE, RWQCB, and CDFW. The project would result in approximately 0.49 acre (497 linear feet) of temporary impacts on waters under jurisdiction of the USACE and RWQCB, and approximately 0.63 acre (497 linear feet) temporary impacts on waters under CDFW jurisdiction. Therefore, a CWA Section 404 NWP Verification from the USACE, CWA Section 401 Water Quality Certification from the RWQCB, and Section 1602 Streambed Alteration Agreement from the CDFW are anticipated for the project.

5.5 Invasive Species

There are several invasive plant species growing in the BSA that are listed by the Invasive Species Council of California as invasive to California, including but not limited to Peruvian peppertree (*Schinus molle*), black mustard (*Brassica nigra*), Russian thistle (*Salsola tragus*),

slender oat (*Avena barbata*), castor bean (*Ricinus communis*), and bermuda grass (*Cynodon dactylon*). A complete list of native, non-native, and invasive plant species observed in the BSA is included in **Appendix B**.

Invasive plant species are often found in disturbed areas, and project activities would have the potential to spread invasive plant species through further disturbance of the BSA. These species could also be spread through the improper disposal of the graded and excavated soils on site or off site, or through landscaping with invasive plant species. However, the following standard BMP would be implemented to prevent the spread of invasive plant species:

- **BIO-35** Vegetation removed from the project area would follow Caltrans Standard Specifications for Clearing and Grubbing and Roadside Clearing.
- **BIO-36** Existing vegetation would be preserved to the extent feasible, and BMPs, such as identification of existing invasive species, avoidance of invasive species in erosion control, staff training, equipment cleaning, and monitoring, would be implemented in accordance with Executive Order 13112.

With implementation of these measures, the project would be in compliance with the Executive Order 13112.

5.6 Other

5.6.1 MIGRATORY BIRD TREATY ACT

There is potential for migratory birds to be nesting and foraging in the BSA and construction area during construction. During the biological surveys bird species were observed foraging in or flying over the BSA, including but not limited to house finch (*Haemorhous mexicanus*), mourning dove, American crow, and northern mockingbird. There is the potential for migratory birds to nest within the Silverado Canyon Road Bridge, vegetation, and trees adjacent to the BSA during construction. Nesting birds could be directly impacted by construction activities if they were to be nesting in vegetation and on the Silverado Canyon Road Bridge in the construction area. In addition, these species could be indirectly impacted by loss of habitat resulting from vegetation removal and tree trimming. With implementation of measures included in Chapter 4 above, the project would be in compliance with the MBTA and California Fish and Game Code.

Chapter 6 - References

Atwood, J. (1991). *Subspecies limits and geographic patterns of morphological variation in California gnatcatchers*. Retrieved from https://www.biodiversitylibrary.org/page/34209530#page/32/mode/1up

Bleich, V. (1977). *Mammalian Species - Dipodomys stephensi.* The American Society of Mammalogists.

Cal Fish. (2019, November). *https://www.calfish.org/*. Retrieved from https://www.calfish.org/

CaliforniaHerps. (2019, June 25). Retrieved from californiaherps.com: http://www.californiaherps.com/frogs/pages/r.draytonii.html

CDFW. (2019b, November). *California Species Account*. Retrieved from https://www.wildlife.ca.gov/Data/CWHR/Life-History-and-Range

CDFW. (2021a, April 26). *Database Record Search for Special-Status Species: El Toro, Orange, Black Star Canyon, Corona South, Tustin, Santiago Peak, Laguna Beach, San Juan Capistrano, and Canada Gobernadora*. Retrieved from California Department of Fish and Wildlife: https://www.wildlife.ca.gov/Data/CNDDB/Maps-and-Data

CDFW. (2021b). *Biogeographic Information System*. Retrieved from Essential Habitat Connectivity Viewer: https://wildlife.ca.gov/Data/BIOS

CNPS. (2021, April 26). *Inventory of Rare and Endangered Plants*. Retrieved from California Native Plant Society: http://www.rareplants.cnps.org/simple.html

Cornell University. (2019, November). *All About Birds*. Retrieved from https://www.allaboutbirds.org/

County of Orange. (2013). *County of Orange General Plan: Chapter VI. Resources Element.*

Cowardin, L. M., Carter, V., Golet, F. C., & LaRoe, E. T. (1979). *Classification of Wetlands and Deepwater Habitats of the United States.* Washington D.C.: U.S. Department of the Interior | Fish and Wildlife Service.

ICF. (2019). *Memorandum on the Availability of Suitable Arroyo Toad Habitat in Four Orange County.* ICF.

Jepson Herbarium. (2017). *Jepson Flora Project*. Retrieved from Jepson eFlora: http://ucjeps.berkeley.edu/IJM.html.

Jepson Herbarium. (2019). *Jepson Flora Project*. Retrieved from Jepson eFlora: http://ucjeps.berkeley.edu/IJM.html

NMFS. (2021, April 26). *California Species List Tool*. Retrieved from National Marine Fisheries Service - West Coast Region: http://www.westcoast.fisheries.noaa.gov/maps_data/california_species_list_tools.html

NRCS. (2019, November 12). *Custom Soil Report for Los Angeles County, California, Southeastern Part*. Retrieved from United States Department of Agriculture, Natural

Resources Concervation Service: https://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm

Psomas. (2019). *Jurisdictional Delineation.*

Sawyer, J. O.-W. (2012). *A Manual of California Vegetation, Second Edition. .* Sacramento, CA.: California Native Plant Society Press.

Sibley, D. (2014). *The Sibley Guide to Birds – Second Edition.*

U.S. Climate Data. (2019, September 27). *Tustin Weather*. Retrieved from U.S. Climate Data: https://www.usclimatedata.com/climate/irvine/california/united-states/usca2494

United States Fish and Wildlife Service. (2013, December 2). *Migratory Bird Treaty Act Protected Species (10.13 List)*. Retrieved November 2, 2018, from U.S. Fish and Wildlife Service Migratory Bird Program: https://www.fws.gov/birds/management/managed-species/migratory-bird-treaty-act-protected-species.php

USDA NRCS. (2019, November 12). *Web Soil Survey*. Retrieved from United States Department of Agriculture Natural Resources Conservation Service: https://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm

USFWS. (1993, March 30). *Determination of Threatened Status for the Coastal California Gnatcatcher 58 FR 16742-16757*. Retrieved from https://ecos.fws.gov/docs/federal_register/fr2253.pdf

USFWS. (2003, April 24). *Endangered and Threatened Wildlife and Plants; Designation of Critical Habitat for the Coastal California Gnatcatcher (Polioptila californica californica) and Determination of Distinct Vertebrate Population Segment for the California Gnatcatcher (Poliopti*. Retrieved from https://www.govinfo.gov/content/pkg/FR-2003-04-24/pdf/03-9435.pdf#page=1

USFWS. (2007, December 19). *Revised Designation of Critical Habitat for the Coastal California Gnatcatcher (Polioptila californica californica); Final Rule*. Retrieved from https://www.govinfo.gov/content/pkg/FR-2007-12-19/pdf/07-6003.pdf#page=2

USFWS. (2018, September 26). *Birds Protected*. Retrieved November 2, 2018, from Migratory Bird Treaty Act: https://www.fws.gov/birds/policies-and-regulations/laws-legislations/migratory-bird-treaty-act.php

USFWS. (2019, September 30). *National Wetlands Inventory*. Retrieved from United States Fish and Wildlife Service: https://www.fws.gov/wetlands/data/mapper.html

USFWS. (2021, April 26). *Information for Planning and Consultation*. Retrieved from United States Fish and Wildlife Service: https://ecos.fws.gov/ipac/

USGS. (2019, March 26). *The National Map Viewer*. Retrieved from https://viewer.nationalmap.gov/advanced-viewer/

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Appendix A. Special-Status Species Lists

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Selected Elements by Scientific Name

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad IS (San Juan Capistrano (3311756) OR El Toro (3311766) OR Corona South (3311775) OR Orange (3311777) OR Santiago Peak (3311765) OR Laguna Beach (3311757) OR Tustin (3311767) OR Black Star Canyon (3311776) OR Canada Gobernadora (3311755))

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Abronia villosa var. aurita chaparral sand-verbena	PDNYC010P1	None	None	G5T2?	S2	1B.1
Accipiter cooperii Cooper's hawk	ABNKC12040	None	None	G5	S4	WL
Agelaius tricolor tricolored blackbird	ABPBXB0020	None	Threatened	G1G2	S1S2	SSC
Aimophila ruficeps canescens southern California rufous-crowned sparrow	ABPBX91091	None	None	G5T3	S3	WL
Allium marvinii Yucaipa onion	PMLIL02330	None	None	G1	S1	1B.2
Ammodramus savannarum grasshopper sparrow	ABPBXA0020	None	None	G5	S3	SSC
Anaxyrus californicus arroyo toad	AAABB01230	Endangered	None	G2G3	S2S3	SSC
Anniella stebbinsi Southern California legless lizard	ARACC01060	None	None	G3	S3	SSC
Antrozous pallidus pallid bat	AMACC10010	None	None	G4	S3	SSC
Aphanisma blitoides aphanisma	PDCHE02010	None	None	G3G4	S2	1B.2
Aquila chrysaetos golden eagle	ABNKC22010	None	None	G5	S3	FP
Ardea herodias great blue heron	ABNGA04010	None	None	G5	S4	
Arizona elegans occidentalis California glossy snake	ARADB01017	None	None	G5T2	S2	SSC
Asio otus long-eared owl	ABNSB13010	None	None	G5	S3?	SSC
Aspidoscelis hyperythra orange-throated whiptail	ARACJ02060	None	None	G5	S2S3	WL
Aspidoscelis tigris stejnegeri coastal whiptail	ARACJ02143	None	None	G5T5	S3	SSC
Astragalus brauntonii Braunton's milk-vetch	PDFAB0F1G0	Endangered	None	G2	S2	1B.1
Athene cunicularia burrowing owl	ABNSB10010	None	None	G4	S3	SSC

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Atriplex coulteri Coulter's saltbush	PDCHE040E0	None	None	G3	S1S2	1B.2
Atriplex pacifica south coast saltscale	PDCHE041C0	None	None	G4	S2	1B.2
Atriplex parishii Parish's brittlescale	PDCHE041D0	None	None	G1G2	S1	1B.1
Atriplex serenana var. davidsonii Davidson's saltscale	PDCHE041T1	None	None	G5T1	S1	1B.2
Baccharis malibuensis Malibu baccharis	PDAST0W0W0	None	None	G1	S1	1B.1
Bombus crotchii Crotch bumble bee	IIHYM24480	None	Candidate Endangered	G3G4	S1S2	
Branchinecta sandiegonensis San Diego fairy shrimp	ICBRA03060	Endangered	None	G2	S2	
Brodiaea filifolia thread-leaved brodiaea	PMLIL0C050	Threatened	Endangered	G2	S2	1B.1
Buteo regalis ferruginous hawk	ABNKC19120	None	None	G4	S3S4	WL
California Walnut Woodland California Walnut Woodland	CTT71210CA	None	None	G2	S2.1	
Calochortus plummerae Plummer's mariposa-lily	PMLIL0D150	None	None	G4	S4	4.2
Calochortus weedii var. intermedius intermediate mariposa-lily	PMLIL0D1J1	None	None	G3G4T2	S2	1B.2
Campylorhynchus brunneicapillus sandiegensis coastal cactus wren	ABPBG02095	None	None	G5T3Q	S3	SSC
Canyon Live Oak Ravine Forest Canyon Live Oak Ravine Forest	CTT61350CA	None	None	G3	S3.3	
Catostomus santaanae Santa Ana sucker	AFCJC02190	Threatened	None	G1	S1	
Centromadia parryi ssp. australis southern tarplant	PDAST4R0P4	None	None	G3T2	S2	1B.1
Chaenactis glabriuscula var. orcuttiana Orcutt's pincushion	PDAST20095	None	None	G5T1T2	S1	1B.1
Chaetodipus fallax fallax northwestern San Diego pocket mouse	AMAFD05031	None	None	G5T3T4	S3S4	SSC
Choeronycteris mexicana Mexican long-tongued bat	AMACB02010	None	None	G3G4	S1	SSC
Chorizanthe parryi var. fernandina San Fernando Valley spineflower	PDPGN040J1	None	Endangered	G2T1	S1	1B.1
Chorizanthe polygonoides var. longispina long-spined spineflower	PDPGN040K1	None	None	G5T3	S3	1B.2

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Circus hudsonius northern harrier	ABNKC11011	None	None	G5	S3	SSC
Clinopodium chandleri San Miguel savory	PDLAM08030	None	None	G3	S2	1B.2
Coccyzus americanus occidentalis western yellow-billed cuckoo	ABNRB02022	Threatened	Endangered	G5T2T3	S1	
Comarostaphylis diversifolia ssp. diversifolia summer holly	PDERI0B011	None	None	G3T2	S2	1B.2
Coturnicops noveboracensis yellow rail	ABNME01010	None	None	G4	S1S2	SSC
Crotalus ruber red-diamond rattlesnake	ARADE02090	None	None	G4	S3	SSC
Danaus plexippus pop. 1 monarch - California overwintering population	IILEPP2012	Candidate	None	G4T2T3	S2S3	
Dipodomys stephensi Stephens' kangaroo rat	AMAFD03100	Endangered	Threatened	G2	S2	
Dudleya multicaulis many-stemmed dudleya	PDCRA040H0	None	None	G2	S2	1B.2
Dudleya stolonifera Laguna Beach dudleya	PDCRA040P0	Threatened	Threatened	G1	S1	1B.1
Dudleya viscida sticky dudleya	PDCRA040T0	None	None	G2	S2	1B.2
Elanus leucurus white-tailed kite	ABNKC06010	None	None	G5	S3S4	FP
Empidonax traillii extimus southwestern willow flycatcher	ABPAE33043	Endangered	Endangered	G5T2	S1	
Emys marmorata western pond turtle	ARAAD02030	None	None	G3G4	S3	SSC
Eremophila alpestris actia California horned lark	ABPAT02011	None	None	G5T4Q	S4	WL
Eriastrum densifolium ssp. sanctorum Santa Ana River woollystar	PDPLM03035	Endangered	Endangered	G4T1	S1	1B.1
Eucyclogobius newberryi tidewater goby	AFCQN04010	Endangered	None	G3	S3	
Eumops perotis californicus western mastiff bat	AMACD02011	None	None	G4G5T4	S3S4	SSC
Euphorbia misera cliff spurge	PDEUP0Q1B0	None	None	G5	S2	2B.2
Euphydryas editha quino quino checkerspot butterfly	IILEPK405L	Endangered	None	G5T1T2	S1S2	
Falco peregrinus anatum American peregrine falcon	ABNKD06071	Delisted	Delisted	G4T4	S3S4	FP

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Gila orcuttii arroyo chub	AFCJB13120	None	None	G2	S2	SSC
Glyptostoma gabrielense San Gabriel chestnut	IMGASB1010	None	None	G2	S2	
Haliaeetus leucocephalus bald eagle	ABNKC10010	Delisted	Endangered	G5	S3	FP
Helianthus nuttallii ssp. parishii Los Angeles sunflower	PDAST4N102	None	None	G5TX	SX	1A
Hesperocyparis forbesii Tecate cypress	PGCUP040C0	None	None	G2	S2	1B.1
Horkelia cuneata var. puberula mesa horkelia	PDROS0W045	None	None	G4T1	S1	1B.1
Icteria virens yellow-breasted chat	ABPBX24010	None	None	G5	S3	SSC
Imperata brevifolia California satintail	PMPOA3D020	None	None	G4	S3	2B.1
Isocoma menziesii var. decumbens decumbent goldenbush	PDAST57091	None	None	G3G5T2T3	S2	1B.2
Lasiurus blossevillii western red bat	AMACC05060	None	None	G4	S3	SSC
Lasiurus xanthinus western yellow bat	AMACC05070	None	None	G4G5	S3	SSC
Lasthenia glabrata ssp. coulteri Coulter's goldfields	PDAST5L0A1	None	None	G4T2	S2	1B.1
Laterallus jamaicensis coturniculus California black rail	ABNME03041	None	Threatened	G3G4T1	S1	FP
Lepechinia cardiophylla heart-leaved pitcher sage	PDLAM0V020	None	None	G3	S2S3	1B.2
Lepidium virginicum var. robinsonii Robinson's pepper-grass	PDBRA1M114	None	None	G5T3	S3	4.3
Monardella hypoleuca ssp. intermedia intermediate monardella	PDLAM180A4	None	None	G4T2?	S2?	1B.3
Monardella macrantha ssp. hallii Hall's monardella	PDLAM180E1	None	None	G5T3	S3	1B.3
Myotis yumanensis Yuma myotis	AMACC01020	None	None	G5	S4	
Nama stenocarpa mud nama	PDHYD0A0H0	None	None	G4G5	S1S2	2B.2
Nasturtium gambelii Gambel's water cress	PDBRA270V0	Endangered	Threatened	G1	S1	1B.1
Navarretia prostrata prostrate vernal pool navarretia	PDPLM0C0Q0	None	None	G2	S2	1B.2

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Neotoma lepida intermedia San Diego desert woodrat	AMAFF08041	None	None	G5T3T4	S3S4	SSC
Nolina cismontana chaparral nolina	PMAGA080E0	None	None	G3	S3	1B.2
Nyctinomops femorosaccus pocketed free-tailed bat	AMACD04010	None	None	G5	S3	SSC
Nyctinomops macrotis big free-tailed bat	AMACD04020	None	None	G5	S3	SSC
Oncorhynchus mykiss irideus pop. 10 steelhead - southern California DPS	AFCHA0209J	Endangered	None	G5T1Q	S1	
Onychomys torridus ramona southern grasshopper mouse	AMAFF06022	None	None	G5T3	S3	SSC
Passerculus sandwichensis beldingi Belding's savannah sparrow	ABPBX99015	None	Endangered	G5T3	S3	
Penstemon californicus California beardtongue	PDSCR1L110	None	None	G3	S2	1B.2
Pentachaeta aurea ssp. allenii Allen's pentachaeta	PDAST6X021	None	None	G4T1	S1	1B.1
Perognathus longimembris pacificus Pacific pocket mouse	AMAFD01042	Endangered	None	G5T1	S1	SSC
Phacelia keckii Santiago Peak phacelia	PDHYD0C4G1	None	None	G1	S1	1B.3
Phrynosoma blainvillii coast horned lizard	ARACF12100	None	None	G3G4	S3S4	SSC
Polioptila californica californica coastal California gnatcatcher	ABPBJ08081	Threatened	None	G4G5T3Q	S2	SSC
Pseudognaphalium leucocephalum white rabbit-tobacco	PDAST440C0	None	None	G4	S2	2B.2
Quercus dumosa Nuttall's scrub oak	PDFAG050D0	None	None	G3	S3	1B.1
Rallus obsoletus levipes light-footed Ridgway's rail	ABNME05014	Endangered	Endangered	G3T1T2	S1	FP
Rhinichthys osculus ssp. 3 Santa Ana speckled dace	AFCJB3705K	None	None	G5T1	S1	SSC
Riversidian Alluvial Fan Sage Scrub Riversidian Alluvial Fan Sage Scrub	CTT32720CA	None	None	G1	S1.1	
Salvadora hexalepis virgultea coast patch-nosed snake	ARADB30033	None	None	G5T4	S2S3	SSC
Senecio aphanactis chaparral ragwort	PDAST8H060	None	None	G3	S2	2B.2
Setophaga petechia yellow warbler	ABPBX03010	None	None	G5	S3S4	SSC

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Sidalcea neomexicana	PDMAL110J0	None	None	G4	S2	2B.2
salt spring checkerbloom						
Sorex ornatus salicornicus	AMABA01104	None	None	G5T1?	S1	SSC
southern California saltmarsh shrew						
Southern California Arroyo Chub/Santa Ana Sucker Stream	CARE2330CA	None	None	GNR	SNR	
Southern California Arroyo Chub/Santa Ana Sucker Stream						
Southern Coast Live Oak Riparian Forest	CTT61310CA	None	None	G4	S4	
Southern Coast Live Oak Riparian Forest						
Southern Coastal Salt Marsh	CTT52120CA	None	None	G2	S2.1	
Southern Coastal Salt Marsh						
Southern Cottonwood Willow Riparian Forest	CTT61330CA	None	None	G3	S3.2	
Southern Cottonwood Willow Riparian Forest						
Southern Interior Cypress Forest	CTT83230CA	None	None	G2	S2.1	
Southern Interior Cypress Forest						
Southern Mixed Riparian Forest	CTT61340CA	None	None	G2	S2.1	
Southern Mixed Riparian Forest						
Southern Riparian Forest	CTT61300CA	None	None	G4	S4	
Southern Riparian Forest						
Southern Riparian Scrub	CTT63300CA	None	None	G3	S3.2	
Southern Riparian Scrub						
Southern Sycamore Alder Riparian Woodland	CTT62400CA	None	None	G4	S4	
Southern Sycamore Alder Riparian Woodland						
Southern Willow Scrub	CTT63320CA	None	None	G3	S2.1	
Southern Willow Scrub						
Spea hammondii	AAABF02020	None	None	G2G3	S3	SSC
western spadefoot						
Sternula antillarum browni	ABNNM08103	Endangered	Endangered	G4T2T3Q	S2	FP
California least tern						
Streptocephalus woottoni	ICBRA07010	Endangered	None	G1G2	S1S2	
Riverside fairy shrimp						
Suaeda esteroa	PDCHE0P0D0	None	None	G3	S2	1B.2
estuary seablite						
Symphyotrichum defoliatum	PDASTE80C0	None	None	G2	S2	1B.2
San Bernardino aster						
Taricha torosa	AAAAF02032	None	None	G4	S4	SSC
Coast Range newt						
Taxidea taxus	AMAJF04010	None	None	G5	S3	SSC
American badger						
Thamnophis hammondii	ARADB36160	None	None	G4	S3S4	SSC
two-striped gartersnake						
Tryonia imitator	IMGASJ7040	None	None	G2	S2	
mimic tryonia (=California brackishwater snail)						

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Valley Needlegrass Grassland	CTT42110CA	None	None	G3	S3.1	
Valley Needlegrass Grassland						
Verbesina dissita	PDAST9R050	Threatened	Threatened	G1G2	S1	1B.1
big-leaved crownbeard						
Vireo bellii pusillus	ABPBW01114	Endangered	Endangered	G5T2	S2	
least Bell's vireo						

Record Count: 126

*The database used to provide updates to the Online Inventory is under construction. View updates and changes made since May 2019 here.

Plant List

75 matches found. *Click on scientific name for details*

Search Criteria

Found in Quads 3311777, 3311776, 3311775, 3311767, 3311766, 3311765, 3311757 3311756 and 3311755;

Modify Search Criteria | Export to Excel | Modify Columns | Modify Sort | Display Photos

Scientific Name	Common Name	Family	Lifeform	Blooming Period	CA Rare Plant Rank	State Rank	Global Rank
Abronia villosa var. aurita	chaparral sand-verbena	Nyctaginaceae	annual herb	(Jan)Mar-Sep	1B.1	S2	G5T2?
Allium munzii	Munz's onion	Alliaceae	perennial bulbiferous herb	Mar-May	1B.1	S1	G1
Aphanisma blitoides	aphanisma	Chenopodiaceae	annual herb	Feb-Jun	1B.2	S2	G3G4
Asplenium vespertinum	western spleenwort	Aspleniaceae	perennial rhizomatous herb	Feb-Jun	4.2	S4	G4
Astragalus brauntonii	Braunton's milk-vetch	Fabaceae	perennial herb	Jan-Aug	1B.1	S2	G2
Atriplex coulteri	Coulter's saltbush	Chenopodiaceae	perennial herb	Mar-Oct	1B.2	S1S2	G3
Atriplex pacifica	South Coast saltscale	Chenopodiaceae	annual herb	Mar-Oct	1B.2	S2	G4
Atriplex parishii	Parish's brittlescale	Chenopodiaceae	annual herb	Jun-Oct	1B.1	S1	G1G2
Atriplex serenana var. davidsonii	Davidson's saltscale	Chenopodiaceae	annual herb	Apr-Oct	1B.2	S1	G5T1
Baccharis malibuensis	Malibu baccharis	Asteraceae	perennial deciduous shrub	Aug	1B.1	S1	G1
Brodiaea filifolia	thread-leaved brodiaea	Themidaceae	perennial bulbiferous herb	Mar-Jun	1B.1	S2	G2
Calandrinia breweri	Brewer's calandrinia	Montiaceae	annual herb	(Jan)Mar-Jun	4.2	S4	G4
Calochortus catalinae	Catalina mariposa lily	Liliaceae	perennial bulbiferous herb	(Feb)Mar-Jun	4.2	S3S4	G3G4
Calochortus plummerae	Plummer's mariposa lily	Liliaceae	perennial bulbiferous herb	May-Jul	4.2	S4	G4
Calochortus weedii var. intermedius	intermediate mariposa lily	Liliaceae	perennial bulbiferous herb	May-Jul	1B.2	S2	G3G4T2
Camissoniopsis lewisii	Lewis' evening-primrose	Onagraceae	annual herb	Mar-May(Jun)	3	S4	G4
Caulanthus simulans	Payson's jewelflower	Brassicaceae	annual herb	(Feb)Mar-May(Jun)	4.2	S4	G4
Centromadia parryi ssp. australis	southern tarplant	Asteraceae	annual herb	May-Nov	1B.1	S2	G3T2
Centromadia pungens ssp. laevis	smooth tarplant	Asteraceae	annual herb	Apr-Sep	1B.1	S2	G3G4T2
	Orcutt's pincushion	Asteraceae	annual herb	Jan-Aug	1B.1	S1	G5T1T2

Chaenactis glabriuscula var. orcuttiana							
Chorizanthe leptotheca	Peninsular spineflower	Polygonaceae	annual herb	May-Aug	4.2	S3	G3
Chorizanthe parryi var. fernandina	San Fernando Valley spineflower	Polygonaceae	annual herb	Apr-Jul	1B.1	S1	G2T1
Chorizanthe polygonoides var. longispina	long-spined spineflower	Polygonaceae	annual herb	Apr-Jul	1B.2	S3	G5T3
Chorizanthe xanti var. leucotheca	white-bracted spineflower	Polygonaceae	annual herb	Apr-Jun	1B.2	S3	G4T3
Cistanthe maritima	seaside cistanthe	Montiaceae	annual herb	(Feb)Mar-Jun(Aug)	4.2	S3	G3G4
Clinopodium chandleri	San Miguel savory	Lamiaceae	perennial shrub	Mar-Jul	1B.2	S2	G3
Comarostaphylis diversifolia ssp. diversifolia	summer holly	Ericaceae	perennial evergreen shrub	Apr-Jun	1B.2	S2	G3T2
Convolvulus simulans	small-flowered morning-glory	Convolvulaceae	annual herb	Mar-Jul	4.2	S4	G4
Deinandra paniculata	paniculate tarplant	Asteraceae	annual herb	(Mar)Apr-Nov(Dec)	4.2	S4	G4
Dichondra occidentalis	western dichondra	Convolvulaceae	perennial rhizomatous herb	(Jan)Mar-Jul	4.2	S3S4	G3G4
Diplacus clevelandii	Cleveland's bush monkeyflower	Phrymaceae	perennial rhizomatous herb	Apr-Jul	4.2	S4	G4
Dodecahema leptoceras	slender-horned spineflower	Polygonaceae	annual herb	Apr-Jun	1B.1	S1	G1
Dudleya cymosa ssp. ovatifolia	Santa Monica dudleya	Crassulaceae	perennial herb	Mar-Jun	1B.1	S1	G5T1
Dudleya multicaulis	many-stemmed dudleya	Crassulaceae	perennial herb	Apr-Jul	1B.2	S2	G2
Dudleya stolonifera	Laguna Beach dudleya	Crassulaceae	perennial stoloniferous herb	May-Jul	1B.1	S1	G1
Dudleya viscida	sticky dudleya	Crassulaceae	perennial herb	May-Jun	1B.2	S2	G2
Eriastrum densifolium ssp. sanctorum	Santa Ana River woollystar	Polemoniaceae	perennial herb	Apr-Sep	1B.1	S1	G4T1
Erythranthe diffusa	Palomar monkeyflower	Phrymaceae	annual herb	Apr-Jun	4.3	S3	G4
Euphorbia misera	cliff spurge	Euphorbiaceae	perennial shrub	Dec-Aug(Oct)	2B.2	S2	G5
Harpagonella palmeri	Palmer's grapplinghook	Boraginaceae	annual herb	Mar-May	4.2	S3	G4
Hesperocyparis forbesii	Tecate cypress	Cupressaceae	perennial evergreen tree		1B.1	S2	G2
Hordeum intercedens	vernal barley	Poaceae	annual herb	Mar-Jun	3.2	S3S4	G3G4
Horkelia cuneata var. puberula	mesa horkelia	Rosaceae	perennial herb	Feb-Jul(Sep)	1B.1	S1	G4T1
Imperata brevifolia	California satintail	Poaceae	perennial rhizomatous herb	Sep-May	2B.1	S3	G4
Isocoma menziesii var. decumbens	decumbent goldenbush	Asteraceae	perennial shrub	Apr-Nov	1B.2	S2	G3G5T2T3
Lasthenia glabrata ssp. coulteri	Coulter's goldfields	Asteraceae	annual herb	Feb-Jun	1B.1	S2	G4T2
Lepechinia cardiophylla	heart-leaved pitcher sage	Lamiaceae	perennial shrub	Apr-Jul	1B.2	S2S3	G3
Lepidium virginicum var. robinsonii	Robinson's pepper-grass	Brassicaceae	annual herb	Jan-Jul	4.3	S3	G5T3
Lilium humboldtii ssp. ocellatum	ocellated Humboldt lily	Liliaceae	perennial bulbiferous herb	Mar-Jul(Aug)	4.2	S4?	G4T4?

Lycium californicum	California box-thorn	Solanaceae	perennial shrub	(Dec)Mar,Jun,Jul,Aug	4.2	S4	G4
Malacothrix saxatilis var. saxatilis	cliff malacothrix	Asteraceae	perennial rhizomatous herb	Mar-Sep	4.2	S4	G5T4
Monardella hypoleuca ssp. intermedia	intermediate monardella	Lamiaceae	perennial rhizomatous herb	Apr-Sep	1B.3	S2?	G4T2?
Monardella hypoleuca ssp. lanata	felt-leaved monardella	Lamiaceae	perennial rhizomatous herb	Jun-Aug	1B.2	S3	G4T3
Monardella macrantha ssp. hallii	Hall's monardella	Lamiaceae	perennial rhizomatous herb	Jun-Oct	1B.3	S3	G5T3
Nama stenocarpa	mud nama	Namaceae	annual / perennial herb	Jan-Jul	2B.2	S1S2	G4G5
Nasturtium gambelii	Gambel's water cress	Brassicaceae	perennial rhizomatous herb	Apr-Oct	1B.1	S1	G1
Navarretia prostrata	prostrate vernal pool navarretia	Polemoniaceae	annual herb	Apr-Jul	1B.1	S2	G2
Nolina cismontana	chaparral nolina	Ruscaceae	perennial evergreen shrub	(Mar)May-Jul	1B.2	S3	G3
Penstemon californicus	California beardtongue	Plantaginaceae	perennial herb	May-Jun(Aug)	1B.2	S2	G3
Pentachaeta aurea ssp. allenii	Allen's pentachaeta	Asteraceae	annual herb	Mar-Jun	1B.1	S1	G4T1
Phacelia keckii	Santiago Peak phacelia	Hydrophyllaceae	annual herb	May-Jun	1B.3	S1	G1
Phacelia ramosissima var. austrolitoralis	south coast branching phacelia	Hydrophyllaceae	perennial herb	Mar-Aug	3.2	S3	G5?T3Q
Pickeringia montana var. tomentosa	woolly chaparral-pea	Fabaceae	evergreen shrub	May-Aug	4.3	S3S4	G5T3T4
Piperia cooperi	chaparral rein orchid	Orchidaceae	perennial herb	Mar-Jun	4.2	S3S4	G3G4
Piperia leptopetala	narrow-petaled rein orchid	Orchidaceae	perennial herb	May-Jul	4.3	S4	G4
Polygala cornuta var. fishiae	Fish's milkwort	Polygalaceae	perennial deciduous shrub	May-Aug	4.3	S4	G5T4
Pseudognaphalium leucocephalum	white rabbit-tobacco	Asteraceae	perennial herb	(Jul)Aug-Nov(Dec)	2B.2	S2	G4
Quercus dumosa	Nuttall's scrub oak	Fagaceae	perennial evergreen shrub	Feb-Apr(May-Aug)	1B.1	S3	G3
Romneya coulteri	Coulter's matilija poppy	Papaveraceae	perennial rhizomatous herb	Mar-Jul(Aug)	4.2	S4	G4
Senecio aphanactis	chaparral ragwort	Asteraceae	annual herb	Jan-Apr(May)	2B.2	S2	G3
Sidalcea neomexicana	salt spring checkerbloom	Malvaceae	perennial herb	Mar-Jun	2B.2	S2	G4
Suaeda esteroa	estuary seablite	Chenopodiaceae	perennial herb	(May)Jul-Oct(Jan)	1B.2	S2	G3
Symphyotrichum defoliatum	San Bernardino aster	Asteraceae	perennial rhizomatous herb	Jul-Nov(Dec)	1B.2	S2	G2
Tetracoccus dioicus	Parry's tetracoccus	Picrodendraceae	perennial deciduous shrub	Apr-May	1B.2	S2	G2G3
Verbesina dissita	big-leaved crownbeard	Asteraceae	perennial herb	(Mar)Apr-Jul	1B.1	S1	G1G2

Suggested Citation

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The Jepson Flora Project
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Joseph Vu

From: Joseph Vu
Sent: Monday, April 26, 2021 2:16 PM
To: nmfswcrca.specieslist@noaa.gov
Subject: silverado canyon bridge project

Federal Agency Name and Address:
None

Non-federal Agency Name and Address
California Department of Transportation
1750 E 4th St #100
Santa Ana, CA 92705
Point-of-contact Name and Contact Information
GPA Consulting
Attn: Joseph Vu
2642 Michelle Drive, Suite 110
Tustin, CA 92780 (310) 792-2690

Quad Name **El Toro**
Quad Number **33117-F6**

ESA Anadromous Fish

SONCC Coho ESU (T) -
CCC Coho ESU (E) -
CC Chinook Salmon ESU (T) -
CVSR Chinook Salmon ESU (T) -
SRWR Chinook Salmon ESU (E) -
NC Steelhead DPS (T) -
CCC Steelhead DPS (T) -
SCCC Steelhead DPS (T) -
SC Steelhead DPS (E) - **X**
CCV Steelhead DPS (T) -
Eulachon (T) -
sDPS Green Sturgeon (T) -

ESA Anadromous Fish Critical Habitat

SONCC Coho Critical Habitat -
CCC Coho Critical Habitat -
CC Chinook Salmon Critical Habitat -
CVSR Chinook Salmon Critical Habitat -

SRWR Chinook Salmon Critical Habitat -
NC Steelhead Critical Habitat -
CCC Steelhead Critical Habitat -
SCCC Steelhead Critical Habitat -
SC Steelhead Critical Habitat -
CCV Steelhead Critical Habitat -
Eulachon Critical Habitat -
sDPS Green Sturgeon Critical Habitat -

ESA Marine Invertebrates

Range Black Abalone (E) -
Range White Abalone (E) -

ESA Marine Invertebrates Critical Habitat

Black Abalone Critical Habitat -

ESA Sea Turtles

East Pacific Green Sea Turtle (T) -
Olive Ridley Sea Turtle (T/E) -
Leatherback Sea Turtle (E) -
North Pacific Loggerhead Sea Turtle (E) -

ESA Whales

Blue Whale (E) -
Fin Whale (E) -
Humpback Whale (E) -
Southern Resident Killer Whale (E) -
North Pacific Right Whale (E) -
Sei Whale (E) -
Sperm Whale (E) -

ESA Pinnipeds

Guadalupe Fur Seal (T) -
Steller Sea Lion Critical Habitat -

Essential Fish Habitat

Coho EFH -
Chinook Salmon EFH -
Groundfish EFH -

Coastal Pelagics EFH -
Highly Migratory Species EFH -

MMPA Species (See list at left)

ESA and MMPA Cetaceans/Pinnipeds
See list at left and consult the NMFS Long Beach office 562-980-4000

MMPA Cetaceans -
MMPA Pinnipeds -

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United States Department of the Interior

FISH AND WILDLIFE SERVICE
Carlsbad Fish And Wildlife Office
2177 Salk Avenue - Suite 250
Carlsbad, CA 92008-7385
Phone: (760) 431-9440 Fax: (760) 431-5901
http://www.fws.gov/carlsbad/

In Reply Refer To: April 26, 2021
Consultation Code: 08ECAR00-2019-SLI-1590
Event Code: 08ECAR00-2021-E-02082
Project Name: Silverado Bridge Project

Subject: Updated 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, and proposed species, designated critical habitat, and candidate species 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

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (http://www.fws.gov/windenergy/) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm; http://www.towerkill.com; and http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html.

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 Tracking Number 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:

Carlsbad Fish And Wildlife Office
2177 Salk Avenue - Suite 250
Carlsbad, CA 92008-7385
(760) 431-9440

Project Summary

Consultation Code: 08ECAR00-2019-SLI-1590
Event Code: 08ECAR00-2021-E-02082
Project Name: Silverado Bridge Project
Project Type: TRANSPORTATION
Project Description: Silverado Bridge Project
Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@33.74566013531466,-117.65025718349669,14z



Counties: Orange County, California

Endangered Species Act Species

There is a total of 7 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 Fisheries[1], 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.

Birds

NAME	STATUS
Coastal California Gnatcatcher *Polioptila californica californica* 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/8178	Threatened
Least Bell's Vireo *Vireo bellii pusillus* 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/5945	Endangered

Amphibians

NAME	STATUS
Arroyo (=arroyo Southwestern) Toad *Anaxyrus californicus* There is **final** critical habitat for this species. Your location overlaps the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/3762	Endangered

Crustaceans

NAME	STATUS
Riverside Fairy Shrimp *Streptocephalus woottoni* 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/8148	Endangered

Flowering Plants

NAME	STATUS
Laguna Beach Liveforever *Dudleya stolonifera* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/7919	Threatened
Santa Monica Mountains Dudleyea *Dudleya cymosa ssp. ovatifolia* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/2538	Threatened
Thread-leaved Brodiaea *Brodiaea filifolia* 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/6087	Threatened

Critical habitats

There is 1 critical habitat wholly or partially within your project area under this office's jurisdiction.

NAME	STATUS
Arroyo (=arroyo Southwestern) Toad *Anaxyrus californicus* https://ecos.fws.gov/ecp/species/3762#crithab	Final

Appendix B. Species Observed During the Biological Survey

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Silverado Bridge C0174 Replacement Project - List of Species Observed in the BSA on November 11, 2019 and May 15, 2020

Scientific Name	Common Name	Native Status
Plant Species		
ANGIOSPERMS (EUDICOTS)		
ADOXACEAE	MOSCHATEL FAMILY	
Sambucus nigra	black elderberry	native
ANACARDIACEAE	SUMAC FAMILY	
Rhus laurina	laurel sumac	native
Rhus ovata	sugar bush	native
Schinus molle	Peruvian pepper tree	invasive non-native
APIACEAE	CARROT FAMILY	
Foeniculum vulgare	sweet fennel	invasive non-native
Torilis arvensis	field hedge parsley	invasive non-native
APOCYNACEAE	DOGBANE FAMILY	
Nerium oleander	oleander	non-native
ASTERACEAE	ASTER FAMILY	
Ambrosia psilostachya	ragweed	native
Artemisia californica	California sagebrush	native
Artemisia douglasiana	mugwort	native
Baccharis salicifolia	mule fat	native
Brickellia sp.	brickellia	native
Centaurea melitensis	tocolote	invasive non-native
Eriophyllum confertiflorum var. *confertiflorum*	golden yarrow	native
Lactuca serriola	prickly lettuce	non-native
Pseudognaphalium microcephalum	Wright's cudweed	native
Pulicaria paludosa	spanish false fleabane	non-native
Sonchus oleraceus	sow thistle	non-native
BORAGINACEAE	FORGET-ME-NOT FAMILY	
Eriodictyon crassifolium	thick leaved yerba santa	native
BRASSICACEAE	MUSTARD FAMILY	
Brassica nigra	black mustard	invasive non-native
Lepidium latifolium	broad leaved pepper grass	invasive non-native
Lepidium sp.	pepper grass	unknown
Hirschfeldia incana	summer mustard	invasive non-native
Nasturtium officinale	watercress	native
Raphanus sativus	wild radish	invasive non-native
CAPRIFOLIACEAE	HONEYSUCKLE FAMILY	
Lonicera subspicata	southern honeysuckle	native
CARYOPHYLLACEAE	PINK FAMILY	
Silene sp.	silene	unknown
CHENOPODIACEAE	GOOSEFOOT FAMILY	
Salsola tragus	Russian thistle	invasive non-native
CRASSULACEAE	STONECROP FAMILY	
Dudleya pulverulenta	chalk dudleya	native

Dudleya lanceolata	lance-leaved dudleya	native
CONVOLVULACEAE		
Calystegia macrostegia	island morning glory	native
Calystegia longipes	Piute morning glory	native
CUCURBITACEAE	GOURD FAMILY	
Marah macrocarpa	chilocothe	native
EUPHORBIACEAE	SPURGE FAMILY	
Ricinus communis	castor bean	invasive non-native
FABACEAE	PEA FAMILY	
Acmispon glaber	deerweed	native
Lupinus hirsutissimus	stinging lupine	native
Melilotus albus	white sweetclover	non-native
Spartium junceum	Spanish broom	invasive non-native
FAGACEAE	BEECH FAMILY	
Quercus agrifolia	coast live oak	native
HYDROPHYLACEAE		
Phacelia sp.	phacelia	unknown
LAMIACEAE	MINT FAMILY	
Salvia mellifera	black sage	native
Stachys bullata	California hedgenettle	native
MYRTACEAE	MYRTLE FAMILY	
Eucalyptus sp.	eucalyptus	non-native
OLEACEAE	OLIVE FAMILY	
Fraxinus dipetala	California ash	native
PHRYMACEAE	LOPSEED FAMILY	
Diplacus aurantiacus	sticky monkeyflower	native
PAPAVERACEAE	POPPY FAMILY	
Romneya coulteri	Coulter's matilija poppy	native
PLANTAGINACEAE	PLANTAIN FAMILY	
Keckiella antirrhinoides	chaparral beard tongue	native
PLATANACEAE	PLANE-TREE FAMILY	
Platanus racemosa	western sycamore	native
POLYGONACEAE	KNOTWEED FAMILY	
Eriogonum fasiculatum	California buckwheat	native
Persicaria maculosa	knotweed	non-native
Rumex sp.	dock	unknown
RANUNCULACEAE	BUTTERCUP FAMILY	
Clematis ligusticifolia	western virgin's bower	native
ROSACEAE	ROSE FAMILY	
Heteromeles arbutifolia	toyon	native
RUBIACEAE	BEDSTRAW FAMILY	
Galium sp.	bedstraw	native
SALICACEAE	WILLOW FAMILY	
Salix lasiolepis	arroyo willow	native
SIMAROUBACEAE	SAPINDALE FAMILY	
Ailanthus altissima	tree of heaven	invasive non-native

SOLANACEAE	POTATO FAMILY	
Datura wrightii	datura	native
Nicotiana glauca	tree tobacco	invasive non-native
Solanum sp.	nightshade	unknown
SAURURACEAE	LIZARD TAIL FAMILY	
Anemopsis californica	yerba mansa	native
TAMARICACEAE	TAMARISK FAMILY	
Tamarix sp.	tamarisk	unknown
VERBENACEAE	VERBENA FAMILY	
Verbena sp.	verbena	unknown
ANGIOSPERMS (MONOCOTS)		
AGAVACEAE	AGAVE FAMILY	
Hesperoyucca whipplei	chaparral yucca	native
CYPERACEAE	SEDGE FAMILY	
Cyperus sp.	cyperus	unknown
Cyperus involuctarus	umbrella plant	non-native
POACEAE	GRASS FAMILY	
Arundo donax	giant reed	invasive non-native
Avena barbata	slender oat	invasive non-native
Avena fatua	wild oat	invasive non-native
Bromus madritensis	foxtail brome	invasive non-native
Bromus tectorum	cheatgrass	invasive non-native
Cynodon dactylon	Bermuda grass	invasive non-native
Polypogon monspeliensis	rabbitsfoot grass	invasive non-native
Schismus barbatus	schismus	invasive non-native
Stipa miliaceae	smilo grass	invasive non-native
GYMNOSPERMS		
PINACEAE	PINE FAMILY	
Pinus halepensis	Aleppo pine	non-native
Scientific Name	**Common Name**	**Native Status**
Wildlife Species		
BIRDS		
Aphelocoma californica	California scrub jay	native
Cathartes aura	turkey vulture	native
Chamaea fasciata	wrentit	native
Corvus brachyrhynchos	American crow	native
Corvus corax	common raven	native
Haemorhous mexicanus	house finch	native
Melanerpes formicivorus	acorn woodpecker	native
Mimus polyglottos	northern mockingbird	native
Polioptila caerulea	blue-gray gnatcatcher	native
Setophaga coronata	yellow-rumped warbler	native
Thryomanes bewickii	Bewick's wren	native
Toxostoma curvirostre	curve-billed thrasher	native
Zenaida macroura	mourning dove	native
Zonotrichia leucophrys	white-crowned sparrow	native

INVERTEBRATES		
Myrmeleontidae sp.	antlion	native
MAMMALS		
Canis familiaris (tracks)	domestic dog	native
Neotoma sp.	woodrat	native
Sylvilagus sp.	cottontail rabbit	native
REPTILES		
Sceloporus occidentalis	western fence lizard	native

Appendix C. Photographs of Biological Study Area

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Silverado Bridge C0174 Replacement Project
Photo Appendix



Photo 1. Silverado Creek (creek) channel, upstream of Silverado Bridge C0174 (bridge); view facing northwest



Photo 2. Toyon chaparral and coast live oak woodland above upstream south bank of creek; view facing west



Photo 2. Dry creek channel lined with an algal mat, upstream of bridge; view facing northeast toward California sycamore woodland



Photo 3. Upstream view of bridge; facing northwest



Photo 4. Underside of bridge and western abutment; view facing south



Photo 5. Underside of bridge and eastern abutment; view facing northeast



Photo 6. Bridge beams and eastern abutment; view facing northeast

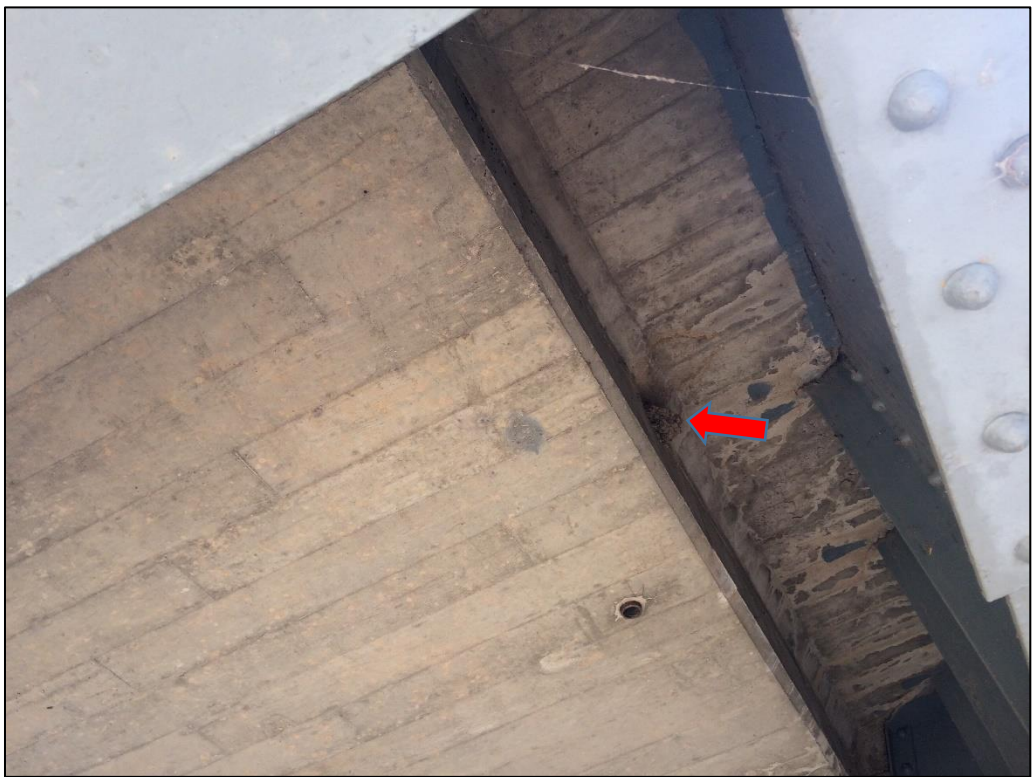

Photo 7. Inactive black phoebe nest under bridge deck



Photo 8. Eastern bridge abutment, overhead pedestrian walkway with guard rail, downstream side of bridge; view facing southeast



Photo 9. Disturbed riparian scrub in creek channel, downstream of bridge; view facing northwest



Photo 10. Disturbed coastal sage scrub along west bank of creek; view facing south



Photo 11. Disturbed laurel sumac scrub above north bank of creek; view facing north



Photo 12. Silverado Canyon Road (road) approach and bridge deck; view facing northeast



Photo 13. Road approach and bridge deck; view facing southwest



Photo 14. Bridge deck; view facing northeast

Appendix D. Special-Status Species Tables

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Table 1. Special-Status Natural Communities with Potential to be in the BSA

Common Names	Status		General Habitat Requirements	Habitat Present/ Absent	Rationale for Natural Community Presence/Absence
	Federal USFWS	State CDFW			
Natural Communities					
California Walnut Woodland	--	S2.1	The California Walnut Woodland community is comprised of open tree canopies locally dominated by the California black walnut (*Juglans californica*).	A	**Not expected to occur.** There are no communities dominated by California black walnut trees in the BSA; therefore, this community is absent from the BSA.
Canyon Live Oak Ravine Forest	--	S3.3	Canyon Live Oak Ravine Forests are a montane riparian community of steep headwaters dominated by various Quercus sp. and may include such tree species as maple (*Acer macrophyllum*), and California bay (*Umbellularia californica*).	A	**Not expected to occur.** There are no communities dominated by canyon live oak observed in the BSA; therefore, this community is absent from the BSA.
Riversidian Alluvial Fan Sage Scrub	--	S1.1	Riversidian Alluvial Fan Sage Scrub communities are found in washes and on gently sloping alluvial fans. This community is made up of predominantly drought tolerant soft-leaved shrubs, but includes a significant number of larger perennial species typically found in chaparral in its mature phases.	A	**Not expected to occur.** There are no alluvial areas in the BSA. Therefore, this community is absent from the BSA.
Southern California Arroyo Chub/Santa Ana Sucker Stream	--	SNR	The Southern California Arroyo Chub/Santa Ana Sucker Stream consists of streams with rocky or sandy substrate, clear, cool, water, and vegetation cover on the sides. Flow must be present in the stream, but it can vary from slight to swift. Native streams frequently have large flows due to flood events, and the sucker seems capable of coping with the increase flow and turbidity.	A	**Not expected to occur.** There was no water in the creek. Therefore, this community is absent from the BSA.
Southern Coast Live Oak Riparian Forest	--	S4	The Southern Coast Live Oak Riparian Forest community consists of open to locally dense evergreen sclerophyllous	A	There are no riparian communities dominated by coast live oak trees observed in the BSA; therefore, this

Common Names	Status		General Habitat Requirements	Habitat Present/ Absent	Rationale for Natural Community Presence/Absence
	Federal USFWS	State CDFW			
Natural Communities					
			riparian woodlands dominated by coast live oak (*Quercus agrifolia*). This community is found in canyons and valleys of coastal southern California, mostly south of Point Conception.		community is absent from the BSA.
Southern Coastal Salt Marsh	--	S2.1	Southern coastal salt marsh communities are found in bays, lagoons, and estuaries along the coast from Point Conception to the Mexican border. This community consist of highly productive, herbaceous, and salt-tolerant hydrophytes that form moderate to dense cover. Characteristic species include Watson's saltbush (*Atriplex watsonii*), Saltwort (*Batis maritima*), California boxthorn (*Lycium californicum*), shore grass (*Monanthochloe littoralis*), California seablite (*Suaeda californica*), and Parish's glasswort (*Arthrocnemum subterminale*).	A	**Not expected to occur.** There are no communities dominated by salt-tolerant hydrophytes observed in the BSA; therefore, this community is absent from the BSA.
Southern Cottonwood Willow Riparian Forest	--	S3.2	The Southern Cottonwood Willow Riparian Forests are tall, open, broadleafed winter-deciduous riparian forests dominated by Fremont cottonwood (*Populus fremonii*), black cottonwood (*Populus trichocarpa*), and willows.	A	**Not expected to occur.** There are no communities dominated by cottonwood observed in the BSA; therefore, this community is absent from the BSA.
Southern Interior Cypress Forest	--	S2.1	The Southern Interior Cypress Forest is a fairly dense, fire-maintained, low forest dominated by either *Cupressus nevadensis*, *C. forbesii*, or *C. stephensonii*. This forest often occurs as isolated groves within a matrix of chaparral or pinon-juniper woodland.	A	**Not expected to occur.** There are no communities dominated by cypress species observed in the BSA; therefore, this community is absent from the BSA.
Southern Mixed Riparian Forest	--	S2.1	The Southern Mixed Riparian Forests are dominated by tall cottonwoods and medium sized arroyo willow (*Salix*	A	**Not expected to occur.** There are no communities dominated by cottonwood and willows observed in the BSA;

Common Names	Status		General Habitat Requirements	Habitat Present/ Absent	Rationale for Natural Community Presence/Absence
	Federal USFWS	State CDFW			
Natural Communities					
			lasiolepis) and black willow (*Salix gooddingii*). The mid-story canopy layer consists of medium sized trees and tall shrubs such as sycamores and box elder. The understory consists of small shrubs.		therefore, this community is absent from the BSA.
Southern Riparian Forest	--	S4	The Southern Riparian Forest community consists of winter-deciduous trees with overlapping canopies. Associated understory species include mule fat (*Baccharis salicifolia*), stinging nettle (*Urtica dioica* ssp. *holosericea*), and wild grape (*Vitis girdiana*). This community requires water near the soil surface.	A	**Not expected to occur.** There are no communities dominated by winter-deciduous trees; therefore, this community is absent from the BSA.
Southern Riparian Scrub	--	S3.2	The Southern Riparian Scrub community consists of streamside thickets dominated by one or more willows and mulefat (*Baccharis salicifolia*), as well as by other fast-growing shrubs and vines. This community is found along intermittent stream channels and requires flooding. Most plants recolonize following flood disturbance.	HP	**Present in the BSA.** There are Arroyo Willow Thickets in the BSA, which are equivalent to Holland's classification for Southern Riparian Scrub; therefore, this community is present in the BSA.
Southern Sycamore Alder Riparian Woodland	--	S4	The Southern Sycamore Alder Riparian Woodland communities consists of tall, open, broad-leafed, winter-deciduous streamside woodland dominated by western sycamore and often also white alder (*Alnus rhombifolia*). These stands seldom form closed canopy forests, and even may appear as trees scattered in a shrubby thicket of sclerophyllous and deciduous species.	A	**Not expected to occur.** There are no communities dominated by sycamore or alder; therefore, this community is absent from the BSA.
Southern Willow Scrub	--	S2.1	The Southern Willow Scrub is a dense, broadleafed, winter-deciduous riparian thicket dominated by several Salix	A	**Not expected to occur.** There are no communities dominated by several willows observed in the BSA; therefore,

Common Names	Status		General Habitat Requirements	Habitat Present/ Absent	Rationale for Natural Community Presence/Absence
	Federal USFWS	State CDFW			
Natural Communities					
			species, with scattered emergent *Populus fremontii* and *Platanus racemosa*. Most stands are too dense to allow much understory development. This community is found in areas of loose, sandy, or fine gravelly alluvium soils near stream channels and requires repeated flooding.		this community is absent from the BSA.
Valley Needlegrass Grassland	--	S3.1	Valley needlegrass grassland is a midheight (up to two feet) grassland that is dominated by perennial, tussock-forming purple needle grass (*Stipa pulchra*). Native and introduced annuals are found between the perennials and can exceed the bunchgrass in cover. The typical elevation range for this community is from -210 to 5,640 feet.	A	**Not expected to occur.** There are no communities dominated by perennial grasses observed in the BSA; therefore, this community is absent from the BSA.

Table Key: Absent [A] – The vegetation community was not observed in the BSA during the biological survey. Habitat Present [HP] – There is habitat present within the BSA. Present (P) – Natural Community is present in the BSA. State Rare (SR); S1 = Critically Imperiled - extreme rarity (often five or fewer observations) or because of some factor(s) such as very steep declines making it especially vulnerable to extirpation from California; S2 = Imperiled- rarity due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors making it very vulnerable to extirpation from the nation or California; S3 = Vulnerable- restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors making it vulnerable to extirpation; S4 = Apparently Secure - uncommon but not rare; some cause for long-term concern due to declines or other factors. SNR= Unranked-State conservation status not yet assessed. Information for the habitat requirements was obtained from the following sources: (Holland, 1986) and (Sawyer, 2012).

Table 2. Special-Status Plants with Potential to be in the BSA

Common and Scientific Names	Status			General Habitat Requirements	Habitat Present/ Absent	Rationale for Species Presence/Absence
	Federal USFWS	State CDFW	CRPR			
Plants						
Abronia villosa var. *aurita* Chaparral sand-verbena	--	S2	1B.1	The chaparral sand-verbena is an annual herb found in sandy habitat in chaparral, and desert dunes. Typical blooming period: January to September Typical elevation range: 246 to 5,249 feet	A	**Not expected to occur.** The habitat typically preferred by this species is not in the BSA. In addition, this species was not observed during the focused special-status botanical survey, which were conducted during the typical blooming period for this species. Therefore, this species is not expected to be in the BSA.
Allium munzii Munz's onion	FE	SCT	1B.1	The Munz's onion is a perennial bulbiferous herb found in chaparral, cismontane woodland, coastal scrub, pinyon and juniper woodland, and valley and foothill grassland. This species is found in mesic areas with clay soils. This species distribution is limited to western Riverside County. Typical blooming period: March to May Typical elevation range: 974 to 3,510 feet	A	**Not expected to occur.** The BSA is outside of the known range for this species. In addition, this species was not observed during the focused special-status botanical survey, which were conducted during the typical blooming period for this species. Therefore, this species is not expected to be in the BSA.
Aphanisma blitoides Aphanisma	--	--	1B.2	The aphanisma is an annual herb found in coastal dunes, coastal, and coastal bluff scrub on sandy or gravelly soils. Typical blooming period: February to June Typical elevation range: Three to 1,000 feet	A	**Not expected to occur.** The habitat typically preferred by this species is not in the BSA. In addition, this species was not observed during the focused special-status botanical survey, which were conducted during the typical blooming period for this

Common and Scientific Names	Status			General Habitat Requirements	Habitat Present/ Absent	Rationale for Species Presence/Absence
	Federal USFWS	State CDFW	CRPR			
Plants						
						species. Therefore, this species is not expected to be in the BSA.
Asplenium vespertinum Western spleenwort	--	S4	4.2	The western spleenwort is a perennial rhizomatous herb found primarily in the San Gabriel Mountains and Peninsular Ranges on rocky slopes of chaparral, and cismontane woodland. Typical blooming period: February to June Typical elevation range: 590 to 3,280 feet	A	**Not expected to occur.** The habitat typically preferred by this species is not in the BSA. In addition, this species was not observed during the focused special-status botanical survey, which were conducted during the typical blooming period for this species. Therefore, this species is not expected to be in the BSA.
Astragalus brauntonii Braunton's milk-vetch	FE	S2	1B.1	The Braunton's milk-vetch is a perennial herb found in coastal scrub, valley and foothill grassland, and disturbed areas in chaparral. This species may be found in recently burned or naturally disturbed areas. This species is restricted to carbonate limestone substrates within the Santa Monica, San Gabriel, and Santa Ana Mountain ranges. Typical blooming period: January to August Typical elevation range: 13 to 2,100 feet	A	**Not expected to occur.** The habitat typically preferred by this species is not in the BSA. In addition, this species was not observed during the focused special-status botanical survey, which were conducted during the typical blooming period for this species. Therefore, this species is not expected to be in the BSA.
Atriplex coulteri Coulter's saltbush	--	S1S2	1B.2	The Coulter's saltbush is a perennial herb found in coastal bluff scrub, coastal dunes, and valley and foothill grassland in	A	**Not expected to occur.** The habitat typically preferred by this species is not in the BSA In addition, this species was not observed during the focused

Common and Scientific Names	Status			General Habitat Requirements	Habitat Present/ Absent	Rationale for Species Presence/Absence
	Federal USFWS	State CDFW	CRPR			
Plants						
				open sites with low lying clay or alkaline soils. Typical blooming period: March to October Typical elevation range: 82 to 1,443 feet		special-status botanical survey, which were conducted during the typical blooming period for this species. Therefore, this species is not expected to be in the BSA.
Atriplex pacifica South coast saltscale	--	S2	1B.2	The south coast saltscale is an annual herb found on alkali playa, coastal dunes, coastal and coastal bluff scrub on alkali soils. Typical blooming period: March to October Typical elevation range: Zero to 459 feet	A	**Not expected to occur.** The habitat typically preferred by this species is not in the BSA. In addition, this species was not observed during the focused special-status botanical survey, which were conducted during the typical blooming period for this species. Therefore, this species is not expected to be in the BSA.
Atriplex parishii Parish's brittlescale	--	S1	1B.1	The Parish's brittlescale is an annual herb found in vernal pools, chenopod scrub, and playas. This species is usually found on drying alkali flats with fine soils. Typical blooming period: June to October Typical elevation range: 82 to 6.234 feet	A	**Not expected to occur.** The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.
Atriplex serenana var. *davidsonii* Davidson's saltscale	--	S1	1B.2	The Davidson's saltscale is an annual herb found in coastal bluff scrub in alkaline soils. Typical blooming period: April to October	A	**Not expected to occur.** The habitat typically preferred by this species is not in the BSA. In addition, this species was not observed during the focused special-status botanical survey, which were conducted during the

Common and Scientific Names	Status			General Habitat Requirements	Habitat Present/ Absent	Rationale for Species Presence/Absence
	Federal USFWS	State CDFW	CRPR			
Plants						
				Typical elevation range: 32 to 656 feet		typical blooming period for this species. Therefore, this species is not expected to be in the BSA.
Baccharis malibuensis Malibu baccharis	--	S1	1B.1	The Malibu baccharis is a perennial deciduous shrub that is found in chaparral, cismontane woodland, coastal scrub, and riparian woodland. Typical blooming period: August Typical elevation range: 165 to 1,001 feet	HP	**Not expected to occur.** There is chaparral in the BSA. However, this species was not observed during the focused special-status botanical survey. Therefore, this species is not expected to be in the BSA.
Brodiaea filifolia Thread-leaved brodiaea	FT	SE	1B.1	The thread-leaved brodiaea is a perennial bulbiferous herb found primarily in the San Gabriel Mountains and Peninsular Ranges. In San Diego, Orange, and Los Angeles Counties, occurrences of this species are highly correlated with specific clay soil series such as, but not limited to: Alo, Altamont, Auld, and Diablo or clay lens inclusions in a matrix of loamy soils such as Fallbrook, Huerhuero, and Las Flores series. These soils are generally found on mesas and hillsides with gentle to moderate slopes, or in association with vernal pools. These soils are generally vegetated with open native or nonnative grassland, open coastal sage scrub, or open coastal sage scrub-chaparral communities.	A	**Not expected to occur.** The habitat typically preferred by this species is not in the BSA. In addition, this species was not observed during the focused special-status botanical survey, which were conducted during the typical blooming period for this species. Therefore, this species is not expected to be in the BSA.

Common and Scientific Names	Status			General Habitat Requirements	Habitat Present/ Absent	Rationale for Species Presence/Absence
	Federal USFWS	State CDFW	CRPR			
Plants						
				Typical blooming period: March to June Typical elevation range: 82 to 3,675 feet		
Calandrinia breweri Brewer's calandrinia	--	S4	4.2	The Brewer's calandrinia is an annual herb found in chaparral and coastal scrub. This species is found in disturbed sites on sandy or loamy soils, on open, north-facing slopes. Typical blooming period: March to June Typical elevation range: Zero to 4,003 feet	HP	**Not expected to occur.** There is chaparral with north facing slopes in the BSA. However, this species was not observed during the focused special-status botanical survey, which were conducted during the typical blooming period for this species. Therefore, this species is not expected to be in the BSA.
Calochortus catalinae Catalina mariposa lily	--	S3S4	4.2	The Catalina mariposa lily is a perennial bulbiferous herb found in open slopes or openings in brush on heavy soils of valley and foothill grassland, chaparral, coastal scrub, and cismontane woodland habitats. This species is primarily associated with coastal sage scrub communities. Typical blooming period: February to June Typical elevation range: 49 to 2,296 feet	HP	**Not expected to occur.** There is chaparral and coastal scrub within the BSA. However, this species was not observed during the focused special-status botanical survey, which were conducted during the typical blooming period for this species. Therefore, this species is not expected to be in the BSA.
Calochortus plummerae Plummer's mariposa lily	--	S4	4.2	The Plummer's mariposa-lily is a perennial bulbiferous herb inhabiting dry rocky slopes, brushy areas, and openings of chaparral.	A	**Not expected to occur.** The habitat typically preferred by this species is not in the BSA. In addition, this species was not

Common and Scientific Names	Status			General Habitat Requirements	Habitat Present/ Absent	Rationale for Species Presence/Absence
	Federal USFWS	State CDFW	CRPR			
Plants						
				This species prefers granitic or alluvial material and can be very common after fire. Typical blooming period: May to July Typical elevation range: 328 to 5,577 feet		observed during the focused special-status botanical survey, which were conducted during the typical blooming period for this species. Therefore, this species is not expected to be in the BSA.
Calochortus weedii var. *intermedius* Intermediate mariposa-lily	--	S2	1B.2	The intermediate mariposa-lily is a perennial bulbiferous herb found on dry, rocky, open slopes and rock outcrops, especially near sandstone cliffs, in chaparral, coastal scrub, and valley and foothill grassland. Typical blooming period: May to July Typical elevation range: 344 to 2,805 feet	HP	**Not expected to occur.** There is chaparral and coastal scrub within the BSA. However, this species was not observed during the focused special-status botanical survey, which were conducted during the typical blooming period for this species. Therefore, this species is not expected to be in the BSA.
Camissoniopsis lewisii Lewis' evening-primrose	--	S1	3	The Lewis' evening-primrose is an annual herb found in coastal strand, foothill woodland, and valley grassland communities in coastal dunes and coastal scrub habitat. This species is found in sandy or clay soils. Typical blooming period: March to June Typical elevation range: Zero to 984 feet	A	**Not expected to occur.** The habitat typically preferred by this species is not in the BSA. In addition, this species was not observed during the focused special-status botanical survey, which were conducted during the typical blooming period for this species. Therefore, this species is not expected to be in the BSA.
Caulanthus simulans Payson's jewelflower	--	S4	4.2	The Payson's jewelflower is an annual herb found in chaparral	A	**Not expected to occur.** The BSA is outside of the known

Common and Scientific Names	Status			General Habitat Requirements	Habitat Present/ Absent	Rationale for Species Presence/Absence
	Federal USFWS	State CDFW	CRPR			
Plants						
				and coastal scrub habitat. This species is found on sandy, granitic soils. This species frequently occurs in burned areas or in disturbed sites such as streambeds. This species distribution is limited to western Riverside County, eastern Peninsular ranges, and Sonoran desert region. Typical blooming period: February to June Typical elevation range: 295 to 7,218 feet		range for this species. In addition, this species was not observed during the focused special-status botanical survey, which were conducted during the typical blooming period for this species. Therefore, this species is not expected to be in the BSA.
Centromadia parryi ssp. *australis* Southern tarplant	--	S2	1B.1	The southern tarplant is an annual herb found in vernally wet areas such as along the edges of marshes and vernal pools, often in association with valley and foothill grasslands where competition from other plants is limited by alkalinity, seasonal soil saturation, or the effects of human disturbance. Typical blooming period: May to November Typical elevation range: Zero to 1,378 feet	A	**Not expected to occur.** The habitat typically preferred by this species is not in the BSA. In addition, this species was not observed during the focused special-status botanical survey, which were conducted during the typical blooming period for this species. Therefore, this species is not expected to be in the BSA.
Centromadia pungens ssp. *laevis* Smooth tarplant	--	S2	1B.1	The smooth tarplant is an annual herb found in alkali scrub, alkali playas, and grasslands with alkaline affinities. This species is	A	**Not expected to occur.** The BSA is outside of the known range for this species; therefore,

Common and Scientific Names	Status			General Habitat Requirements	Habitat Present/ Absent	Rationale for Species Presence/Absence
	Federal USFWS	State CDFW	CRPR			
Plants						
				found in poorly drained flats, depressions, waterway banks and beds, grasslands, and disturbed sites. This species is restricted to clay and alkaline, silty-clay soils. This species is found in San Bernardino, Riverside, and San Diego Counties. Typical blooming period: April to September Typical elevation range: Zero to 2,099 feet		this species is not expected to be in the BSA.
Chaenactis glabriuscula var. *orcuttiana* Orcutt's pincushion	--	S1	1B.1	The Orcutt's pincushion is an annual herb found in coastal bluff scrub and coastal dunes on sandy soil. Typical blooming period: January to August Typical elevation range: Zero to 328 feet	A	**Not expected to occur.** The habitat typically preferred by this species is not in the BSA. In addition, this species was not observed during the focused special-status botanical survey, which were conducted during the typical blooming period for this species. Therefore, this species is not expected to be in the BSA.
Chorizanthe leptotheca Peninsular spineflower	--	S3	4.2	The Peninsular spineflower is an annual herb found in chaparral, coastal scrub, and lower montane coniferous forest. This species is found on granitic soils in alluvial fans. This species distribution is limited to the eastern Peninsular ranges. Typical blooming period: May to August	A	**Not expected to occur.** The BSA is outside of the known range for this species. In addition, this species was not observed during the focused special-status botanical survey, which were conducted during the typical blooming period for this species. Therefore, this species is not expected to be in the BSA.

Common and Scientific Names	Status			General Habitat Requirements	Habitat Present/ Absent	Rationale for Species Presence/Absence
	Federal USFWS	State CDFW	CRPR			
Plants						
				Typical elevation range: 984 to 6,234 feet		
Chorizanthe parryi var. *Fernandina* San Fernando Valley spineflower	FPT	SE	1B.1	The San Fernando Valley spineflower is an annual herb found in coastal scrub and valley and foothill grasslands. This species is found on sandy soils. This species distribution is limited to the Santa Susana Mountains, Ventura and Los Angeles Counties. Typical blooming period: April to July Typical elevation range: 492 to 4,002 feet	A	**Not expected to occur.** The BSA is outside of the known range for this species; therefore, this species is not expected to be in the BSA.
Chorizanthe polygonoides var. *longispina* Long-spined spineflower	--	S3	1B.2	The long-spined spineflower is an annual herb found in chaparral, coastal scrub, meadows and seeps, valley and foothill grassland, and vernal pools. This species is often found on ultramafic and clay soils. This species distribution is limited to Riverside and San Diego Counties. Typical blooming period: April to July Typical elevation range: 98 to 5,020 feet	A	**Not expected to occur.** The BSA is outside of the known range for this species; therefore, this species is not expected to be in the BSA.
Chorizanthe xanti var. *leucotheca*	--	S3	1B.2	The white-bracted spineflower is an annual herb found in coastal scrub (alluvial fans), Mojavean	A	**Not expected to occur.** The BSA is outside of the known range for this species; therefore,

Common and Scientific Names	Status			General Habitat Requirements	Habitat Present/ Absent	Rationale for Species Presence/Absence
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Plants						
White-bracted spineflower				desert scrub, and pinyon and juniper woodland. This species is found in sandy or gravelly soil. This species distribution is limited to San Bernardino County and northern San Jacinto. Typical blooming period: April to June Typical elevation range: 984 to 3,937 feet		this species is not expected to be in the BSA.
Cistanthe maritima Seaside cistanthe	--	S3	4.2	The seaside cistanthe is an annual herb that is found in sandy soils in coastal bluff scrub, valley and foothill grassland, and sea bluffs. Typical blooming period: March to June Typical elevation range: 16 to 984 feet	A	**Not expected to occur.** The habitat typically preferred by this species is not in the BSA. In addition, this species was not observed during the focused special-status botanical survey, which were conducted during the typical blooming period for this species. Therefore, this species is not expected to be in the BSA.
Clinopodium chandleri San Miguel savory	--	S2	1B.2	The San Miguel savory is a perennial shrub that is found in chaparral, cismontane woodland, riparian woodland, and valley and foothill grassland. This species prefers rocky, gabbroic, or metavolcanic substrates. Typical blooming period: March to July Typical elevation range: 393 to 3,527 feet	A	**Not expected to occur.** The habitat typically preferred by this species is not in the BSA. In addition, this species was not observed during the focused special-status botanical survey, which were conducted during the typical blooming period for this species. Therefore, this species is not expected to be in the BSA.

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Plants						
Comarostaphylis diversifolia ssp. *diversifolia* Summer holly	--	S2	1B.2	The summer holly is a perennial evergreen shrub that is found in chaparral and cismontane woodland. Typical blooming period: April to June Typical elevation range: 98 to 2,591 feet	HP	**Not expected to occur.** There is chaparral within the BSA. However, this species was not observed during the focused special-status botanical survey, which were conducted during the typical blooming period for this species. Therefore, this species is not expected to be in the BSA.
Convolvulus simulans Small flowered morning glory	--	S2	4.2	The small flowered morning glory is an annual herb found in serpentine seeps, and valley and foothill grassland. This species grows on wet clay or occasionally serpentine soils. The species may be found on serpentine ridges. Typical blooming period: March to July Typical elevation range: 98 to 2,427 feet	A	**Not expected to occur.** The habitat typically preferred by this species is not in the BSA. In addition, this species was not observed during the focused special-status botanical survey, which were conducted during the typical blooming period for this species. Therefore, this species is not expected to be in the BSA.
Deinandra paniculata Paniculate tarplant	--	S4	4.2	The paniculate tarplant is an annual herb that is found in coastal scrub, valley and foothill grasslands, and vernal pools. This species typically prefers vernally mesic and sometimes sandy soils. Typical blooming period: April to November Typical elevation range: 82 to 3,084 feet	A	**Not expected to occur.** The habitat typically preferred by this species is not in the BSA. In addition, this species was not observed during the focused special-status botanical survey, which were conducted during the typical blooming period for this species. Therefore, this species is not expected to be in the BSA.

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Plants						
Dichondra occidentalis Western dichondra	--	S3S4	4.2	The western dichondra is a perennial rhizomatous herb found along the coast in chaparral, cismontane woodland, coastal scrub, and valley and foothill grassland. Typical blooming period: March to June Typical elevation range: 160 to 1,640 feet	A	**Not expected to occur.** The habitat typically preferred by this species is not in the BSA. In addition, this species was not observed during the focused special-status botanical survey, which were conducted during the typical blooming period for this species. Therefore, this species is not expected to be in the BSA.
Diplacus clevelandii Cleveland's bush monkeyflower	--	S4	4.2	The Cleveland's bush monkeyflower is a perennial rhizomatous herb found in chaparral, cismontane woodland, and lower montane coniferous forest. This species is found in gabbroic soils, often in disturbed area. Typical blooming period: April to July Typical elevation range: 1,476 to 6,561 feet	HP	**Not expected to occur.** There is chaparral within the BSA. However, this species was not observed during the focused special-status botanical survey, which were conducted during the typical blooming period for this species. Therefore, this species is not expected to be in the BSA.
Dodecahema leptoceras Slender-horned spineflower	FE	SCE	1B.1	The slender-horned spineflower is an annual herb found in alluvial fan scrub, specifically, riverbed alluvium with silty soils and cobbles. This species is found in sandy wash systems where intermittent, scouring flood events occur. This species is also found in openings in chaparral or with	A	**Not expected to occur.** The habitat typically preferred by this species is not in the BSA. In addition, this species was not observed during the focused special-status botanical survey, which were conducted during the typical blooming period for this

Common and Scientific Names	Status			General Habitat Requirements	Habitat Present/ Absent	Rationale for Species Presence/Absence
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Plants						
				coast live oak or western sycamore woodlands. This species can withstand low levels of exotic grass cover. Typical blooming period: April to June Typical elevation range: 656 to 2,493 feet		species. Therefore, this species is not expected to be in the BSA.
Dudleya cymosa ssp. *ovatifolia* Santa Monica dudleya	FT	S1	1B.1	The Santa Monica dudleya is a perennial herb found in chaparral in canyons on volcanic or sedimentary substrates; primarily on north-facing slopes. Typical blooming period: March to June Typical elevation range: 492 to 5,495 feet	HP	**Not expected to occur.** There is chaparral within the BSA. However, this species was not observed during the focused special-status botanical survey, which were conducted during the typical blooming period for this species. Therefore, this species is not expected to be in the BSA.
Dudleya multicaulis Many stemmed dudleya	--	S2	1B.2	The many stemmed dudleya is a perennial herb found in chaparral, coastal scrub, and valley and foothill grassland. This species is often associated with heavy clay soils in barrens, dry stony places, or thinly vegetated openings. Typical blooming period: May to September Typical elevation range: 49 to 2,592 feet	A	**Not expected to occur.** The habitat typically preferred by this species is not in the BSA. In addition, this species was not observed during the focused special-status botanical survey, which were conducted during the typical blooming period for this species. Therefore, this species is not expected to be in the BSA.
Dudleya stolonifera Laguna Beach dudleya	FT	ST	1B.1	The Laguna Beach dudleya is a perennial stoloniferous herb found in chaparral, coastal scrub,	A	**Not expected to occur.** The BSA is outside of the known range for this species; therefore,

Common and Scientific Names	Status			General Habitat Requirements	Habitat Present/ Absent	Rationale for Species Presence/Absence
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Plants						
				cismontane woodland, and valley and foothill grassland. This species is often associated with thin soil on north-facing sandstone. This species distribution is limited to south San Joaquin Hills in Laguna Beach. Typical blooming period: May to July Typical elevation range: 32 to 853 feet		this species is not expected to be in the BSA.
Dudleya viscida Sticky dudleya	--	S2	1B.2	The sticky dudleya is a perennial herb found in coastal scrub, coastal bluff scrub, chaparral, and cismontane woodland. This species is associated with north and south-facing cliffs and banks. Typical blooming period: May to June Typical elevation range: 32 to 1,804 feet	A	**Not expected to occur.** The habitat typically preferred by this species is not in the BSA. In addition, this species was not observed during the focused special-status botanical survey, which were conducted during the typical blooming period for this species. Therefore, this species is not expected to be in the BSA.
Eriastrum densifolium ssp. *sanctorum* Santa Ana River woollystar	FE	SE	1B.1	The Santa Ana River woollystar is a perennial herb endemic to the Santa Ana River drainage of southern California. This species is found in alluvial fan scrub habitats on higher floodplain terraces. This species is found in sandy or gravelly soils. Typical blooming period: May to September	A	**Not expected to occur.** The habitat typically preferred by this species is not in the BSA. In addition, this species was not observed during the focused special-status botanical survey, which were conducted during the typical blooming period for this species. Therefore, this species is not expected to be in the BSA.

Common and Scientific Names	Status			General Habitat Requirements	Habitat Present/ Absent	Rationale for Species Presence/Absence
	Federal USFWS	State CDFW	CRPR			
Plants						
				Typical elevation range: 298 to 2,001 feet		
Erythranthe diffusa Palomar monkeyflower	--	S3	4.3	The Palomar monkeyflower is an annual herb found in chaparral and lower montane coniferous forest. This species is found on granitic soils. Typical blooming period: April to June Typical elevation range: 4,003 to 6,004 feet	A	**Not expected to occur.** The habitat typically preferred by this species is not in the BSA. In addition, this species was not observed during the focused special-status botanical survey, which were conducted during the typical blooming period for this species. Therefore, this species is not expected to be in the BSA.
Euphorbia misera Cliff spurge	--	S2	2B.2	The cliff spurge is a perennial shrub found on rocky sites in coastal bluff scrub, coastal scrub, and Mojavean desert scrub. Typical blooming period: December to August Typical elevation range: 32 to 1,640 feet	A	**Not expected to occur.** The habitat typically preferred by this species is not in the BSA. In addition, this species was not observed during the focused special-status botanical survey, which were conducted during the typical blooming period for this species. Therefore, this species is not expected to be in the BSA.
Harpagonella palmeri Palmer's grapplinghook	--	S3	4.2	The Palmer's grapplinghook is an annual herb is found on dry, heavy clay and cobbly clay soils on semi-barren sites on slopes and mesas in chaparral, coastal sage scrub, valley and foothill grassland, and scrub oak woodland. Typical blooming period: March to May	A	**Not expected to occur.** The habitat typically preferred by this species is not in the BSA. In addition, this species was not observed during the focused special-status botanical survey, which were conducted during the typical blooming period for this species. Therefore, this species is not expected to be in the BSA.

Common and Scientific Names	Status			General Habitat Requirements	Habitat Present/ Absent	Rationale for Species Presence/Absence
	Federal USFWS	State CDFW	CRPR			
Plants						
				Typical elevation range: 66 to 3,133 feet		
Helianthus nuttallii ssp. *parishii* Los Angeles sunflower	--	SH	1A	The Los Angeles sunflower is a perennial rhizomatous herb found in coastal salt and freshwater marshes and swamps, damp meadows, springs, and streams. With the exception of recent observations in the Newhall Ranch area, sightings of this species in California are historical and this species is considered to have been extirpated by urbanization. Typical blooming period: August to October Typical elevation range: 32 to 5,495 feet	A	**Not expected to occur.** The BSA is outside of the known range for this species; therefore, this species is not expected to be in the BSA.
Hesperocyparis forbesii Tecate cypress	--	S2	1B.1	The Tecate cypress is a perennial evergreen tree found primarily on north-facing slopes. Groves of this species are often associated with chaparral. The Tecate cypress is found on gabbroic or metavolcanic clay substrate. Typical elevation range: 262 to 4,921 feet	A	**Not expected to occur.** The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.
Hesperocyparis goveniana Gowen cypress	FT	S1	1B.2	The Gowen cypress is a perennial evergreen tree found on coastal terraces in maritime chaparral and closed-cone coniferous forest. This species prefers sandy soils, and sometimes is found growing in	A	**Not expected to occur.** The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.

Common and Scientific Names	Status			General Habitat Requirements	Habitat Present/ Absent	Rationale for Species Presence/Absence
	Federal USFWS	State CDFW	CRPR			
Plants						
				association with Monterey pine and Bishop pine. Typical elevation range: 98 to 984 feet		
Hordeum intercedens Vernal barley	--	S3S4	3.2	The vernal barley is an annual herb found on seasonal and alkaline soils near seasonal flows and vernal pool habitats. This species is found in coastal dunes, coastal scrub, valley and foothill grassland (saline flats and depressions), saline riverbeds, and vernal pools. Typical blooming period: March to June Typical elevation range: Zero to 3,281 feet	A	**Not expected to occur.** The habitat typically preferred by this species is not in the BSA. In addition, this species was not observed during the focused special-status botanical survey, which were conducted during the typical blooming period for this species. Therefore, this species is not expected to be in the BSA.
Horkelia cuneata var. *puberula* Mesa horkelia	--	S1	1B.1	The mesa horkelia is a perennial herb found in chaparral (maritime), oak woodland, and coastal scrub habitat in sandy or gravelly soils. This species was historically found in the hills and plains of Los Angeles, western Riverside, southwestern San Bernardino, and northwest San Diego counties. The majority of these populations have been destroyed by urbanization. Typical blooming period: February to September	A	**Not expected to occur.** The habitat typically preferred by this species is not in the BSA. In addition, this species was not observed during the focused special-status botanical survey, which were conducted during the typical blooming period for this species. Therefore, this species is not expected to be in the BSA.

Common and Scientific Names	Status			General Habitat Requirements	Habitat Present/ Absent	Rationale for Species Presence/Absence
	Federal USFWS	State CDFW	CRPR			
Plants						
				Typical elevation range: 229 to 2,657 feet		
Imperata brevifolia California satintail	--	S3	2B.1	The California satintail is a perennial rhizomatous herb found in coastal scrub, chaparral, riparian scrub, mojavean scrub, meadows, seeps, springs, streamsides, and flood plains. In southern California, this species distribution is limited to Los Angeles, Riverside, and San Bernardino Counties. This species is also found in the Central Valley, Sierra Mountains, and northern California. Typical blooming period: September to May Typical elevation range: Zero to 3,986 feet	A	**Not expected to occur.** The BSA is outside of the known range for this species; therefore, this species is not expected to be in the BSA.
Isocoma menziesii var. *decumbens* Decumbent goldenbush	--	S2	1B.2	The decumbent goldenbush is a perennial shrub found in the South Coast, Southern Channel Islands, and Peninsular Ranges in disturbed chaparral, landward side of dunes, hillsides, and arroyos . Typical blooming period: April to November Typical elevation range: 33 to 443 feet	A	**Not expected to occur.** The habitat typically preferred by this species is not in the BSA. In addition, this species was not observed during the focused special-status botanical survey, which were conducted during the typical blooming period for this species. Therefore, this species is not expected to be in the BSA.
Juglans californica	--	S4	4.2	The southern California black walnut is a perennial deciduous tree that is found in chaparral,	A	**Not expected to occur.** The habitat typically preferred by this species is not in the BSA. In

Common and Scientific Names	Status			General Habitat Requirements	Habitat Present/ Absent	Rationale for Species Presence/Absence
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Plants						
Southern California black walnut				cismontane woodland, coastal scrub, and riparian woodland on slopes, and in canyons and alluvial habitats. Typical blooming period: March to August Typical elevation range: 164 to 2,953 feet		addition, this species was not observed during the focused special-status botanical survey, which were conducted during the typical blooming period for this species. Therefore, this species is not expected to be in the BSA.
Juncus acutus ssp. leopoldii Southwestern spiny rush	--	S4	4.2	The southwestern spiny rush is a perennial rhizomatous herb found in mesic coastal dunes, alkaline meadows and seeps, and marshes and swamps. Typical blooming period: March to June Typical elevation range: Nine to 2,952 feet	A	**Not expected to occur.** The habitat typically preferred by this species is not in the BSA. In addition, this species was not observed during the focused special-status botanical survey, which were conducted during the typical blooming period for this species. Therefore, this species is not expected to be in the BSA.
Lasthenia glabrata ssp. *coulteri* Coulter's goldfields	--	S2	1B.1	The Coulter's goldfield is an annual herb found in coastal salt marshes, swamps, playas, and vernal pools. Typical blooming period: May to August Typical elevation range: Zero to 98 feet	A	**Not expected to occur.** The habitat typically preferred by this species is not in the BSA. In addition, this species was not observed during the focused special-status botanical survey, which were conducted during the typical blooming period for this species. Therefore, this species is not expected to be in the BSA.
Lepechinia cardiophylla Heart-leaved pitcher sage	--	S232	1B.2	The heart-leaved pitcher sage is a perennial shrub found in chaparral, cismontane woodland, and closed-cone coniferous forest.	HP	**Not expected to occur.** There is chaparral within the BSA. However, this species was not observed during the focused

Common and Scientific Names	Status			General Habitat Requirements	Habitat Present/ Absent	Rationale for Species Presence/Absence
	Federal USFWS	State CDFW	CRPR			
Plants						
				Typical blooming period: April to July Typical elevation range: 1,706 to 4,495 feet		special-status botanical survey, which were conducted during the typical blooming period for this species. Therefore, this species is not expected to be in the BSA.
Lepidium virginicum var. *robinsonii* Robinson's pepper-grass	--	S3	4.3	The Robinson's pepper-grass is an annual herb found in chaparral and coastal scrub. This species is found on dry soils. Typical blooming period: January to July Typical elevation range: Three to 2,904 feet	HP	**Not expected to occur.** There is chaparral and coastal scrub within the BSA. However, this species was not observed during the focused special-status botanical survey, which were conducted during the typical blooming period for this species. Therefore, this species is not expected to be in the BSA.
Lilium humboldtii ssp. *ocellatum* Ocellated Humboldt lily	--	S4?	4.2	The ocellated Humboldt lily is a perennial bulbiferous herb found in the Central and South Coast, San Francisco Bay Area, Inner and Outer South Coast, western Transverse Ranges, Channel Islands, and San Bernardino and San Gabriel Mountains. This species is generally found in the understory of oak woodland in chaparral, cismontane woodland, coastal scrub, lower montane coniferous forest, and riparian woodland. Typical blooming period: March to August Typical elevation range: 98 to 5,905 feet	A	**Not expected to occur.** The habitat typically preferred by this species is not in the BSA. In addition, this species was not observed during the focused special-status botanical survey, which were conducted during the typical blooming period for this species. Therefore, this species is not expected to be in the BSA.

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Plants						
Lycium californicum California boxthorn	--	S4	4.2	The California box thorn is a perennial shrub found on the Northern and Southern Channel Islands and along the South Coast in coastal bluff scrub and coastal scrub habitat. Typical blooming period: December to August Typical elevation range: 16 to 492 feet	A	**Not expected to occur.** The habitat typically preferred by this species is not in the BSA. In addition, this species was not observed during the focused special-status botanical survey, which were conducted during the typical blooming period for this species. Therefore, this species is not expected to be in the BSA.
Malacothrix saxatilis var. *saxatilis* Cliff malacothrix	--	S4	4.2	The cliff malacothrix is a perennial, rhizomatous herb found in coastal bluff scrub. Typical blooming period: March to September Typical elevation range: Nine to 656 feet	A	**Not expected to occur.** The habitat typically preferred by this species is not in the BSA. In addition, this species was not observed during the focused special-status botanical survey, which were conducted during the typical blooming period for this species. Therefore, this species is not expected to be in the BSA.
Monardella hypoleuca ssp. *intermedia* Intermediate monardella	--	S2?	1B.3	The intermediate monardella is a perennial rhizomatous herb usually found in the understory of chaparral, and cismontane woodland. This species is sometimes also found in lower montane coniferous forest. Typical blooming period: April to September Typical elevation range: 1,312 to 4,101 feet	HP	**Not expected to occur.** There is chaparral within the BSA. However, this species was not observed during the focused special-status botanical survey, which were conducted during the typical blooming period for this species. Therefore, this species is not expected to be in the BSA.

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Plants						
Monardella hypoleuca ssp. *lanata* Felt-leaved monardella	--	S3	1B.2	The felt-leaved monardella is a perennial rhizomatous herb found chaparral and cismontane woodland. Typical blooming period: June to August Typical elevation range: 984 to 5,167 feet	HP	**Not expected to occur.** There is chaparral within the BSA, However, this species was not observed during the focused special-status botanical survey. Therefore, this species is not expected to be in the BSA.
Monardella macrantha ssp. *hallii* Hall's monardella	--	S3	1B.3	The Hall's monardella is a perennial rhizomatous herb found on dry slopes in openings in broadleafed upland forest, chaparral, lower montane coniferous forest, cismontane woodland, and valley and foothill grassland. Typical blooming period: June to October Typical elevation range: 2,395 to 7,201 feet	HP	**Not expected to occur.** There is chaparral within the BSA. However, this species was not observed during the focused special-status botanical survey. Therefore, this species is not expected to be in the BSA.
Nama stenocarpa Mud nama	--	S1S2	2B.2	The mud nama is an annual/perennial herb that is found in marshes and swamps. Typical blooming period: January to July Typical elevation range: 16 to 1,640 feet	A	**Not expected to occur.** The habitat typically preferred by this species is not in the BSA. In addition, this species was not observed during the focused special-status botanical survey, which were conducted during the typical blooming period for this species. Therefore, this species is not expected to be in the BSA.

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Plants						
Nasturtium gambelii Gambel's water cress	FE	ST	1B.1	The Gambel's watercress is a perennial herb known from interior wetland areas of San Diego, San Bernardino, and Los Angeles Counties as well as coastal wetland areas of San Luis Obispo and Santa Barbara Counties. This species is aquatic or semi-aquatic, its herbage sometimes floating on standing water or sprawling over wet ground. This species is likely to be found in undisturbed, brackish, and freshwater habitats. This species is found along lake margins, streams, swamps, marshes, and ponds. Typical blooming period: April to October Typical elevation range: 16 to 2,559 feet	A	**Not expected to occur.** The BSA is outside of the known range for this species; therefore, this species is not expected to be in the BSA.
Navarretia prostrata Prostrate vernal pool navarretia	--	S2	1B.1	The prostrate vernal pool navarretia is an annual herb found in coastal scrub, meadows and seeps, valley and foothill grassland, and vernal pools. This species is found in alkaline soils in grassland or in vernal pools. Typical blooming period: April to July Typical elevation range: Nine to 3,970 feet	A	**Not expected to occur.** The habitat typically preferred by this species is not in the BSA. In addition, this species was not observed during the focused special-status botanical survey, which were conducted during the typical blooming period for this species. Therefore, this species is not expected to be in the BSA.

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Plants						
Nolina cismontana Chaparral nolina	--	S3	1B.2	The chaparral nolina is a perennial evergreen shrub found in chaparral and coastal scrub, primarily on sandstone and shale substrates. Typical blooming period: March to July Typical elevation range: 459 to 4,183 feet	HP	**Not expected to occur.** There is chaparral and coastal scrub within the BSA. However, this species was not observed during the focused special-status botanical survey, which were conducted during the typical blooming period for this species. Therefore, this species is not expected to be in the BSA.
Penstemon californicus California beardtongue	--	S2	1B.2	The California beardtongue is a perennial herb found on stony slopes and shrubby openings in chaparral, lower montane coniferous forest, and pinyon and juniper woodland. This species is found on sandy or granitic soils. This species distribution is limited to Riverside County. Typical blooming period: May to June and October Typical elevation range: 3,838 to 7,546 feet	A	**Not expected to occur.** The BSA is outside of the known range for this species; therefore, this species is not expected to be in the BSA.
Pentachaeta aurea ssp. *allenii* Allen's pentachaeta	--	S1	1B.1	The Allen's pentachaeta is an annual herb found in openings in valley and foothill grassland. Typical blooming period: March to June Typical elevation range: 246 to 1,706 feet	A	**Not expected to occur.** The habitat typically preferred by this species is not in the BSA. In addition, this species was not observed during the focused special-status botanical survey, which were conducted during the typical blooming period for this

Common and Scientific Names	Status			General Habitat Requirements	Habitat Present/ Absent	Rationale for Species Presence/Absence
	Federal USFWS	State CDFW	CRPR			
Plants						
						species. Therefore, this species is not expected to be in the BSA.
Phacelia hubbyi Hubby's phacelia	--	S4	4.2	The Hubby's phacelia is an annual herb found in chaparral, coastal scrub, and valley and foothill grassland in gravelly or rocky slopes, and talus slopes, mostly away from the immediate coast. Typical blooming period: April to July Typical elevation range: Zero to 3,281 feet	HP	**Not expected to occur.** There is chaparral and coastal scrub within the BSA. However, this species was not observed during the focused special-status botanical survey, which were conducted during the typical blooming period for this species. Therefore, this species is not expected to be in the BSA.
Phacelia keckii Santiago Peak phacelia	--	S1	1B.3	The Santiago Peak phacelia is an annual herb found in open areas in chaparral and closed-cone coniferous forest near Santiago Peak. This species is sometimes found along creeks. Typical blooming period: May to June Typical elevation range: 1,788 to 5,249 feet	A	**Not expected to occur.** The BSA is outside of the known range for this species; therefore, this species is not expected to be in the BSA.
Phacelia ramosissima var. *austrolitoralis* South coast branching phacelia	--	S3	3.2	The south coast branching phacelia is a perennial herb found on sandy substrates in sage scrub near the beach, salt marshes, and coastal bluffs. Typical blooming period: March to August Typical elevation range: 16 to 984 feet	A	**Not expected to occur.** The habitat typically preferred by this species is not in the BSA. In addition, this species was not observed during the focused special-status botanical survey, which were conducted during the typical blooming period for this

Common and Scientific Names	Status			General Habitat Requirements	Habitat Present/ Absent	Rationale for Species Presence/Absence
	Federal USFWS	State CDFW	CRPR			
Plants						
						species. Therefore, this species is not expected to be in the BSA.
Piperia cooperi Chaparral rein orchid	--	S3S4	4.2	The chaparral rein orchid is a perennial herb found in chaparral, cismontane woodland, and valley and foothill grassland. Typical blooming period: March to June Typical elevation range: 49 to 5,200 feet	HP	**Not expected to occur.** There is chaparral within the BSA. However, this species was not observed during the focused special-status botanical survey, which were conducted during the typical blooming period for this species. Therefore, this species is not expected to be in the BSA.
Piperia leptopetala Narrow-petaled rein orchid	--	S4	4.3	The narrow-petaled rein orchid is a perennial herb found in cismontane woodland and lower and upper montane coniferous forest. Typical blooming period: May to July Typical elevation range: Zero to 7,300 feet	A	**Not expected to occur.** In addition, this species was not observed during the focused special-status botanical survey, which were conducted during the typical blooming period for this species. Therefore, this species is not expected to be in the BSA.
Polygala cornuta var. *fishiae* Fish's milkwort	--	S4	4.3	The Fish's milkwort is a perennial deciduous shrub found in chaparral, cismontane woodland, and riparian woodland. This species is found along scree slopes, bushy ridges, and creeks. The Fish's milkwort is often found with oaks. This species is found in Los Angeles, Orange, Riverside, Santa Barbara, San Diego, and Ventura Counties.	HP	**Not expected to occur.** There is chaparral within the BSA. However, this species was not observed during the focused special-status botanical survey, which were conducted during the typical blooming period for this species. Therefore, this species is not expected to be in the BSA.

Common and Scientific Names	Status			General Habitat Requirements	Habitat Present/ Absent	Rationale for Species Presence/Absence
	Federal USFWS	State CDFW	CRPR			
Plants						
				Typical Bloom Period: May to August Typical Elevation Range: 328 to 3,281 feet		
Pseudognaphalium leucocephalum White-rabbit tobacco	--	S2	2B.2	The white rabbit tobacco is a perennial herb found in riparian woodland, and cismontane woodland. This species is found on sandy, gravelly benches, dry stream bottoms, canyon bottoms arroyos, areas of oak-sycamore, oak-pine, to pine woodlands, and commonly in riparian vegetation. Typical blooming period: July to December Typical elevation range: Zero to 6,890 feet	A	**Not expected to occur.** The habitat typically preferred by this species is not in the BSA. In addition, this species was not observed during the focused special-status botanical survey, which were conducted during the typical blooming period for this species. Therefore, this species is not expected to be in the BSA.
Quercus dumosa Nuttall's scrub oak	--	--	1B.1	The Nuttall's scrub oak is a perennial evergreen shrub found in closed-cone coniferous forest, chaparral, and coastal scrub. This species is generally found on sandy soils near the coast, sometimes on clay loam. Typical blooming period: February to August Typical elevation range: 49 to 1,312 feet	A	**Not expected to occur.** The habitat typically preferred by this species is not in the BSA. In addition, this species was not observed during the focused special-status botanical survey, which were conducted during the typical blooming period for this species. Therefore, this species is not expected to be in the BSA.
Romneya coulteri Coulter's matilija poppy	--	S4	4.2	The Coulter's matilja poppy is a perennial rhizomatous herb found in chaparral and coastal scrub	HP/P	**Present in the BSA.** This species was observed within the BSA.

Common and Scientific Names	Status			General Habitat Requirements	Habitat Present/ Absent	Rationale for Species Presence/Absence
	Federal USFWS	State CDFW	CRPR			
Plants						
				habitats in dry washes and canyons, in burned areas. This species is found generally away from the coast in the mountain foothills and Santa Ana Mountains. Typical blooming period: March to July Typical elevation range: 65 to 3,937 feet		
Senecio aphanactis Chaparral ragwort	--	S2	2B.2	The chaparral ragwort is an annual herb found in alkaline flats, dry open rocky areas, and cismontane woodland. Typical blooming period: January to April Typical elevation range: 49 to 2,625 feet	A	**Not expected to occur.** The habitat typically preferred by this species is not in the BSA. In addition, this species was not observed during the focused special-status botanical survey, which were conducted during the typical blooming period for this species. Therefore, this species is not expected to be in the BSA.
Sidalcea neomexicana Salt spring checkerbloom	--	S2	2B.2	The salt spring checkerbloom is a perennial herb found in lower montane coniferous forest, Mojavean desert scrub, and playas on alkaline and mesic soils. Typical blooming period: March to June Typical elevation range: 49 to 5,019 feet	A	**Not expected to occur.** The habitat typically preferred by this species is not in the BSA. In addition, this species was not observed during the focused special-status botanical survey, which were conducted during the typical blooming period for this species. Therefore, this species is not expected to be in the BSA.

Common and Scientific Names	Status			General Habitat Requirements	Habitat Present/ Absent	Rationale for Species Presence/Absence
	Federal USFWS	State CDFW	CRPR			
Plants						
Suaeda esteroa Estuary seablite	--	--	1B.2	The estuary seablite is a perennial herb found in coastal salt marshes and swamps. Typical blooming period: May to January Typical elevation range: Zero to 16 feet	A	**Not expected to occur.** The habitat typically preferred by this species is not in the BSA. In addition, this species was not observed during the focused special-status botanical survey, which were conducted during the typical blooming period for this species. Therefore, this species is not expected to be in the BSA.
Suaeda taxifolia Woolly seablite	--	--	4.2	The woolly seablite is a perennial evergreen shrub found in coastal bluff scrub, coastal dunes, and marshes and swamps (margins of coastal salt). Typical blooming period: January to December Typical elevation range: Zero to 164 feet	A	**Not expected to occur.** The habitat typically preferred by this species is not in the BSA. In addition, this species was not observed during the focused special-status botanical survey, which were conducted during the typical blooming period for this species. Therefore, this species is not expected to be in the BSA.
Symphyotrichum defoliatum San Bernardino aster	--	S2	1B.2	The San Bernardino aster is a perennial rhizomatous herb known only from the San Bernardino and San Gabriel Mountains, and part of the Peninsular ranges to the south. This species may be found in vernally mesic grassland or near ditches, streams, and springs, and disturbed areas. Typical blooming period: July to November	A	**Not expected to occur.** The habitat typically preferred by this species is not in the BSA. In addition, this species was not observed during the focused special-status botanical survey, which were conducted during the typical blooming period for this species. Therefore, this species is not expected to be in the BSA.

Common and Scientific Names	Status			General Habitat Requirements	Habitat Present/ Absent	Rationale for Species Presence/Absence
	Federal USFWS	State CDFW	CRPR			
Plants						
				Typical elevation range: Six to 6,692 feet		
Tetracoccus dioicus Parry's tetracoccus	--	S2	1B.2	The Parry's tetracoccus is a perennial deciduous shrub found in chaparral and coastal scrub. This species distribution is limited to Riverside and San Diego Counties. Typical blooming period: April to May Typical elevation range: 541 to 3,280 feet	A	**Not expected to occur.** The BSA is outside of the known range for this species; therefore, this species is not expected to be in the BSA.
Verbesina dissita Big-leaved crownbeard	FT	ST	1B.1	The big-leaved crownbeard is a perennial herb found in maritime chaparral and coastal scrub. This species distribution is limited to the coastal area near Laguna Beach. Typical blooming period: April to July Typical elevation range: 147 to 672 feet	A	**Not expected to occur.** The BSA is outside of the known range for this species; therefore, this species is not expected to be in the BSA.
Viguiera laciniate San Diego County viguiera	--	--	4.3	The San Diego County viguiera is a perennial shrub found in chaparral and coastal scrub. Typical blooming period: February to August Typical elevation range: 196 to 2,460 feet	HP	**Not expected to occur.** There is chaparral and coastal scrub within the BSA. However, this species was not observed during the focused special-status botanical survey, which were conducted during the typical blooming period for this species.

Common and Scientific Names	Status			General Habitat Requirements	Habitat Present/ Absent	Rationale for Species Presence/Absence
	Federal USFWS	State CDFW	CRPR			
Plants						
						Therefore, this species is not expected to be in the BSA.

Table Key: Absent [A] –Plant species or habitat requirements were not observed in the BSA during the biological survey. Habitat Present [HP] – There is habitat present within the BSA. Present (P) – Species is present in the BSA. Federal Endangered (FE); Federal Threatened (FT); State Endangered (SE); State Threatened (ST); Federal Candidate Species (FC); State Candidate Endangered (SCE), State Candidate Threatened (SCT), Fully Protected (FP); Federally Delisted (FD); State Delisted (SD) Watch List (WL); State Species of Special Concern (SSC); State Rare (SR); S1 = Critically Imperiled - extreme rarity (often 5 or fewer observations) or because of some factor(s) such as very steep declines making it especially vulnerable to extirpation from California; S2 = Imperiled- rarity due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors making it very vulnerable to extirpation from the nation or California; S3 = Vulnerable- restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors making it vulnerable to extirpation; S4 = Apparently Secure - uncommon but not rare; some cause for long-term concern due to declines or other factors. SX = All California sites are extirpated

California Rare Plant Rank (CRPR), etc. 1A = Plants presumed extirpated in California and either rare, or extinct elsewhere;1B= Plant species that are rare, threatened, or endangered in California and elsewhere; 2B= Plant species that are rare, threatened, or endangered in California, but are more common elsewhere; 3= Plants about which we need more information; 4 = Plants of limited distribution; 0.1=seriously threatened in California; 0.2 = moderately threatened in California; and 0.3 = Not very threatened in California.

Information for the habitat requirements and species range was obtained from the following sources: (CNPS, 2021)*, (Sawyer, 2012), and (Jepson Herbarium, 2017).*

Table 3. Special-Status Wildlife Species with Potential to be in the BSA

Common and Scientific Names	Status		General Habitat Requirements	Habitat Present/ Absent	Rationale for Species Presence/Absence
	Federal USFWS	State CDFW			
Invertebrates					
Bombus crotchii	--	SCE	The Crotch bumble bee is found in open grassland and scrub habitats in coastal	A	**Not expected to occur.** The habitat typically preferred by this

Common and Scientific Names	Status		General Habitat Requirements	Habitat Present/ Absent	Rationale for Species Presence/Absence
	Federal USFWS	State CDFW			
Crotch bumble bee			California east to the Sierra-Cascade crest and south into Mexico. This species nests underground in abandoned rodent burrows or above ground in tufts of grass, old bird nests, rock piles, or cavities in dead trees. Food plant genera include snapdragons (*Antirrhinum* sp.), phacelia (*Phacelia sp.)*, clarkia (*Clarkia* sp.), dendromecon (*Dendromecon* sp.), poppy (*Eschscholzia* sp.*)*, and buckwheat (*Eriogonum* sp.).		species is not in the BSA; therefore, this species is not expected to be in the BSA.
Branchinecta sandiegonensis San Diego fairy shrimp	FE	S2	The San Diego fairy shrimp is endemic to San Diego County and Orange County in vernal pools complexes.	A	**Not expected to occur.** The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.
Danaus plexippus pop. 1 Monarch – California overwintering population	--	S2S3	The monarch California overwintering population requires closed-cone coniferous forests and milkweed for breeding and as a food source for larvae. This species roosts in groves of eucalyptus, Monterey pines (*Pinus radiata*), and Monterey cypresses (*Cupressus macrocarpa*) in California. Nectar and nearby water sources are required. The California overwintering population migrate to the coast of California and overwinter from Mendocino County in the north to Baja California in the south.	A	**Not expected to occur.** The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.
Euphydryas editha quino Quino checkerspot butterfly	FE	S1S2	The quino checkerspot butterfly is found in localized colonies and is closely associated with the larval food plant, plantain *(Plantago* sp.). Adults have been found feeding on the blossoms of chia *(Salvia columbariae*). This species was historically found from the Santa Monica Mountains south to the northern parts	A	**Not expected to occur.** The BSA is outside of the known range for this species; therefore, this species is not expected to be in the BSA.

Common and Scientific Names	Status		General Habitat Requirements	Habitat Present/ Absent	Rationale for Species Presence/Absence
	Federal USFWS	State CDFW			
			of Baja California. Currently, there are only six known populations of this species in southwestern Riverside and San Diego counties, and one population near Tecate, Mexico.		
Euphyes vestris harbisoni Dun skipper	--	S1S2	The dun skipper is found in riparian oak woodlands within chamise chaparral or southern mixed chaparral. This species requires a larval host plant, San Diego sedge *(Carex spissa)*.	A	**Not expected to occur.** The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.
Haliotis fulgens Green abalone	--	S2	The green abalone is found in rock crevices and under rocks in marine intertidal and splash zones.	A	**Not expected to occur.** The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.
Streptocephalus woottoni Riverside fairy shrimp	FE	--	The riverside fairy shrimp is found in coastal scrub, vernal pools, wetlands, valley and foothill grasslands. This species is endemic to Western Riverside, Orange, and San Diego Counties in areas of tectonic swales/earth slump basins in grassland and coastal sage scrub. This specie inhabits seasonally astatic pools filled by winter/spring rains.	A	**Not expected to occur.** The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.
Tryonia imitator Mimic tryonia (=California brackishwater snail)	--	S2	The mimic tryonia is found in coastal lagoons, estuaries, and salt marshes, from Sonoma County south to San Diego County. This species is found only in permanently submerged areas in a variety of sediment types and is able to tolerate a wide range of salinities.	A	**Not expected to occur.** The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.
Fish					

Common and Scientific Names	Status		General Habitat Requirements	Habitat Present/ Absent	Rationale for Species Presence/Absence
	Federal USFWS	State CDFW			
Catostomus santaanae Santa Ana sucker	FT	S1	The Santa Ana sucker is endemic to Los Angeles basin south coastal streams. This species is a habitat generalist and prefers streams with sand-rubble-boulder bottoms, cool, clear water, and algae	A	**Not expected to occur.** The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.
Eucyclogobius newberryi Tidewater goby	--	SSC	The tidewater goby is found in shallow lagoons and lower stream reaches and requires fairly still but not stagnant water and high oxygen levels. This species prefers brackish, slow-moving water with emergent vegetation.	A	**Not expected to occur.** The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.
Gasterosteus aculeatus microcephalus Resident threespine stickleback	--	S2S3	The resident threespine stickleback can live in fresh water and salt water. Most individuals spend the winter in coastal waters or river mouths and migrate in the spring to inland waters where they make a nest and lay eggs. Elevation: Zero to 6,700 feet	A	**Not expected to occur.** The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.
Gila orcuttii Arroyo chub	--	SSC	The arroyo chub is native to streams from Malibu Creek to San Luis Rey River basin. This species was introduced into streams in Santa Clara, Ventura, Santa Ynez, Mohave, and San Diego River basins. This species is found in slow water stream sections with mud or sand bottoms, and feeds heavily on aquatic vegetation and associated invertebrates.	A	**Not expected to occur.** The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.
Oncorhynchus mykiss irideus pop. 10 Steelhead - southern California DPS	FE	SSC	The steelhead - southern California DPS is found in low elevation lakes, slow-moving small to large rivers, sloughs, backwaters, and sluggish sandy pools and reservoirs. This species spawns in small streams or shallow waters.	A	**Not expected to occur.** The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.

Common and Scientific Names	Status		General Habitat Requirements	Habitat Present/ Absent	Rationale for Species Presence/Absence
	Federal USFWS	State CDFW			
Rhinichthys osculus ssp. 3 Santa Ana speckled dace	--	SSC	The Santa Ana speckled dace is found in perennial streams fed by cool springs that maintain summer water temperatures below 68 degrees Fahrenheit. This species is found in streams with gravel, cobble, sand, or boulder substrates. This species is found in the headwaters of the Santa Ana and San Gabriel Rivers and may be extirpated from the Los Angeles River system.	A	**Not expected to occur.** The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.
Amphibians					
Anaxyrus californicus Arroyo toad	FE	SSC	The arroyo toad is found in semi-arid regions near washes or intermittent streams, including valley-foothill and desert riparian, desert wash, etc. This species is found near rivers with sandy banks, willows, cottonwoods, and sycamores; and in loose, gravelly areas of streams in drier parts of the range. There is critical habitat designated for this species in the BSA.	HP	**Not expected to occur.** There is a creek with sandy banks, willows, and gravelly areas. However, focused protocol surveys for arroyo toad were conducted in 2019. The surveys were negative; therefore, this species is not expected to be in the BSA.
Rana draytonii California red-legged frog	FT	SSC	The California red-legged frog is found in lowlands and foothills in or near permanent sources of deep water with dense, shrubby, or emergent riparian vegetation. Suitable habitat includes freshwater ponds or streams with calm stable water, and good water quality. Seasonal water is required for up to five months to allow for egg laying, hatching and metamorphosis of tadpoles.	A	**Not expected to occur.** The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.
Spea hammondii Western spadefoot	--	SSC	The western spadefoot is found in open areas with sandy or gravelly soils in a variety of habitats including mixed woodlands, grasslands, coastal sage scrub, chaparral, sandy washes, lowlands, river floodplains,	A	**Not expected to occur.** The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.

Common and Scientific Names	Status		General Habitat Requirements	Habitat Present/ Absent	Rationale for Species Presence/Absence
	Federal USFWS	State CDFW			
			alluvial fans, foothills, and mountains. Grasslands with shallow temporary pools are optimal habitats for this species. This species requires vernal pools which are essential for breeding and egg-laying and breeds in pools that do not contain bullfrogs, fish, or crayfish. Adults remain in underground burrows for most of the year and will initiate surface movement after the first rains of the year.		
Taricha torosa Coast range newt	--	SSC	The coast range newt is found in coastal drainages from Mendocino County to San Diego County. This species nests along margins of bushes or on twigs projecting into open areas, usually willow, *Baccharis* sp., and mesquite in wet forests, oak forests, chaparral, and grasslands. Breeding takes place in ponds, reservoirs, and streams. Terrestrial individuals will migrate up to 0.25 mile to upland habitat.	A	**Not expected to occur.** The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.
Reptiles					
Anniella stebbinsi Southern California legless lizard	--	SSC	The southern California legless lizard is generally found south of the Transverse Range, extending to northwestern Baja California. This species is found in a variety of habitats in sandy or loose, loamy soils with high moisture content under sparse vegetation. This species is often locally abundant with specimens found in coastal sand dunes and a variety of interior habitats, including sandy washes and alluvial fans. This species is often found in leaf litter under trees and bushes in sunny areas and dunes stabilized with bush lupine and mock heather.	A	**Not expected to occur.** The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.

Common and Scientific Names	Status		General Habitat Requirements	Habitat Present/ Absent	Rationale for Species Presence/Absence
	Federal USFWS	State CDFW			
Arizona elegans occidentalis California glossy snake	--	SSC	The California glossy snake is found in arid scrub, rocky washes, grasslands, and chaparral habitat, often is loose or sandy soils. This species is patchily distributed from the eastern portion of San Francisco Bay, southern San Joaquin Valley, and the Coast, Transverse, and Peninsular Ranges, south to Baja California	HP	**Moderate potential to occur.** There is chaparral in the BSA; therefore, there is a moderate potential for this species to be in the BSA.
Aspidoscelis hyperythra Orange-throated whiptail	--	WL	The orange-throated whiptail is found in low-elevation coastal scrub, chaparral, and valley-foothill hardwood habitats. This species prefers washes and other sandy areas with patches of brush and rocks. The primary food source for this species is termites.	HP	**Moderate potential to occur.** There is chaparral in the BSA; therefore, there is a moderate potential for this species to be in the BSA.
Aspidoscelis tigris stejnegeri Coastal whiptail	--	SSC	The coastal whiptail is found primarily in hot and dry open areas with sparse foliage, including chaparral, woodland, and riparian areas. This species is also found in woodland and riparian areas where the ground may be firm soil, sandy, or rocky.	HP	**Moderate potential to occur.** There is chaparral in the BSA; therefore, there is a moderate potential for this species to be in the BSA.
Coleonyx variegatus abbotti San Diego banded gecko	--	SSC	The San Diego banded gecko is found in rocky areas in coastal sage scrub and chaparral from southern California to southern Nevada and portions of Utah, Arizona, New Mexico, and Mexico. Active at night, this species hides in burrows or under surface objects during the daytime, and feeds on a variety of small invertebrates.	A	**Not expected to occur.** The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.
Crotalus ruber Red-diamond rattlesnake	--	SSC	The red-diamond rattlesnake is found in arid scrub, coastal chaparral, oak and pine woodlands, rocky grassland, cultivated areas. This species is found in rocky areas and	A	**Not expected to occur.** The habitat typically preferred by this species is not in the BSA;

Common and Scientific Names	Status		General Habitat Requirements	Habitat Present/ Absent	Rationale for Species Presence/Absence
	Federal USFWS	State CDFW			
			areas of dense vegetation. The red-diamond rattlesnake requires rodent burrows or cracks in rocks for cover.		therefore, this species is not expected to be in the BSA.
Diadophis punctatus modestus San Bernardino ringneck snake	--	S2	The San Bernardino ringneck snake is most commonly found in moist habitats, including wet meadows, rocky hillsides, gardens, farmland, grassland, mixed coniferous forests, and woodlands. This species is found under surface objects along drainage courses, in mesic chaparral, and oak and walnut woodland communities. This species avoids moving through open or barren areas by restricting movements to areas of surface litter or herbaceous vegetation.	A	**Not expected to occur.** The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.
Diadophis punctatus similis San Diego ringneck snake	--	S2	The San Diego ringneck snake is found in, grasslands, woodlands, and rocky hillsides. This species uses boards, flat rocks, woodpiles, stable talus, rotting logs and small ground holes for cover. This species prefers areas with surface litter or herbaceous vegetation.	A	**Not expected to occur.** The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.
Emys marmorata Western pond turtle	--	SSC	The western pond turtle is found in slow moving rivers, streams, lakes, ponds, wetlands, reservoirs, and brackish estuarine waters. This species prefers areas that provide logs, algae, or vegetation for cover, and boulders, partially submerged logs, vegetation mats, or open mud banks for basking, and is found below 6,000 feet elevation.	A	**Not expected to occur.** The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.
Gopherus agassizii Desert tortoise	FT	ST	In California, the desert tortoise is found throughout the Mojave Desert and south along the Colorado river and along the east side of the Salton Basin in Sonoran Desert.	A	**Not expected to occur.** The BSA is outside of the known range for

Common and Scientific Names	Status		General Habitat Requirements	Habitat Present/ Absent	Rationale for Species Presence/Absence
	Federal USFWS	State CDFW			
			This species is absent from the Coachella Valley. This species is found in arid sandy or gravelly locations along riverbanks, washes, sandy dunes, alluvial fans, canyon bottoms, desert oases, rocky hillsides, creosote flats and hillsides. This species requires firm ground in order to dig burrows, or rocks to shelter among.		this species; therefore, this species is not expected to be in the BSA.
Phrynosoma blainvillii Coast horned lizard	--	SSC	The coast horned lizard is found in open areas of sandy soil and low vegetation in valleys, foothills, and semiarid mountains. This species is also found in grasslands, coniferous forests, woodlands, and chaparral, with open areas and patches of loose soil. Preferred plant species are either chaparral or a chaparral/coastal sage scrub mix with bare ground coverage averaging 20 to 40 percent.	HP	**Moderate potential to occur.** There is chaparral and coastal scrub within the BSA; therefore, there is a moderate potential for this species to be in the BSA.
Salvadora hexalepis virgultea Coast patch-nosed snake	--	SSC	The coast patch-nosed snake is found in semi-arid brushy areas and chaparral in canyons, rocky hillsides, and plains. This species requires small mammal burrows for refuge and overwintering sites. This species feeds on lizards, small mammals, and amphibians.	A	**Not expected to occur.** The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.
Thamnophis hammondii Two-striped gartersnake	--	SSC	The two-striped garter snake is found in coastal California from the vicinity of Salinas to northwest Baja California. This species is highly aquatic, found in or near permanent fresh water. This species is often found along streams with rocky beds and riparian growth.	A	**Not expected to occur.** The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.
Birds					

Common and Scientific Names	Status		General Habitat Requirements	Habitat Present/ Absent	Rationale for Species Presence/Absence
	Federal USFWS	State CDFW			
Accipiter cooperii Cooper's hawk	--	WL	The Cooper's hawk is found in cismontane woodland, riparian forest, riparian woodland, and upper montane coniferous forest, in wooded habitats from deep forests to leafy subdivisions and backyards. This species nests mainly in riparian growths of deciduous trees, often in canyon bottoms on river floodplains, and will also nest in live oaks.	HP (Nesting) HP (Foraging)	**Moderate potential to occur.** There are coast live oaks within the BSA that could provide suitable nesting and foraging habitat for this species. Therefore, there is a moderate potential for this species to nest and forage in the BSA.
Accipiter striatus Sharp-shinned hawk	--	WL	The sharp-shinned hawk is found in ponderosa pine, black oak, riparian deciduous, mixed conifer, and Jeffrey pine habitats. This species prefers riparian areas with north-facing slopes, containing plucking perches as critical requirements. Nests are usually within 275 feet of water.	A (Nesting) A (Foraging)	**Not expected to occur.** The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.
Agelaius tricolor Tricolored blackbird	--	ST	The tricolored blackbird is a highly colonial species that is found in freshwater marshes dominated by cattails and bulrushes. This species is most numerous in the Central Valley, where this species forages in fields and farms. This species breeds in large freshwater marshes, in dense strands of cattails or bulrushes. Mostly endemic to California, the tricolored blackbird requires open water, protected nesting substrate, and foraging area with insect prey within a few kilometers of the colony.	A (Nesting) A (Foraging)	**Not expected to occur.** The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.
Aimophila ruficeps canescens Southern California rufous-crowned sparrow	--	WL/S3	The southern California rufous-crowned sparrow is a resident in southern California. This species prefers coastal sage scrub dominated by California sagebrush (*Artemisia californica*), but they can also be found breeding in coastal bluff scrub, low growing serpentine chaparral, and along	A (Nesting) A (Foraging)	**Not expected to occur.** The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.

Common and Scientific Names	Status		General Habitat Requirements	Habitat Present/ Absent	Rationale for Species Presence/Absence
	Federal USFWS	State CDFW			
			edges of tall chaparral habitats in relatively steep, often rocky, xeric hillsides. This species is a ground nester and will infrequently be situated in low bushes.		
Ammodramus savannarum Grasshopper sparrow	--	SSC	The grasshopper sparrow is found in dense grasslands on rolling hills, lowland plains, in valleys and on hillsides on lower mountain slopes. Loosely colonial when nesting, this species favors native grasslands with a mix of grasses, forbs, and scattered shrubs.	A (Nesting) A (Foraging)	**Not expected to occur.** The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.
Aphelocoma californica cana Eagle Mountain scrub-jay	--	S3Q, WL	The Eagle Mountain scrub-jay is found in chaparral, open woodlands, and pinyon-juniper habitat in the Eagle Mountains of Riverside County.	A (Nesting) A (Foraging)	**Not expected to occur.** The BSA is outside of the known range for this species; therefore, this species is not expected to be in the BSA.
Ardea alba Great egret	--	S4	The great egret is found in brackish marsh, estuary, freshwater marsh, riparian forests, and wetlands. This species nests colonially in large trees. The rookery sites are located near marshes, tide-flats, irrigated pastures, and margins of rivers and lakes. This species feeds mainly on small fish, but will also eat amphibians, reptiles, small mammals, and invertebrates.	A (Nesting) A (Foraging)	**Not expected to occur.** The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.
Ardea herodias Great blue heron	--	S4	The great blue heron nests colonially in tall trees, cliff sides, and sequestered spots on marshes. This species forages in marshes, lake margins, tidal flats, rivers, streams, and wet meadows. Rookery sites are in close proximity to foraging areas.	A (Nesting) A (Foraging)	**Not expected to occur.** The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.
Artemisiospiza belli belli	--	S3	The Bell's sage sparrow nests in chaparral dominated by fairly dense stands of chamise (*Adenostoma fasciculatum*). Nests are	A (Nesting)	**Not expected to occur.** The habitat typically preferred by this species is not in the BSA;

Common and Scientific Names	Status		General Habitat Requirements	Habitat Present/ Absent	Rationale for Species Presence/Absence
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Bell's sage sparrow			located on the ground beneath a shrub or in a shrub six to 18 inches above ground with territories about 50 yards apart.	A (Foraging)	therefore, this species is not expected to be in the BSA.
Asio otus Long-eared owl	--	SSC	The long-eared owl is found in riparian habitats with willows, cottonwoods, and live oaks along stream courses. This species requires adjacent open land with mice for foraging, and old crow, hawk, or magpie nests for breeding. This species forages primarily at night by flying low over open ground, including grasslands, meadows, active or fallow agricultural lands, sagebrush scrub, and desert scrub.	HP (Nesting) HP (Foraging)	**Low potential to occur.** There are cottonwoods and oaks within the BSA that could provide suitable nesting and foraging habitat. Therefore, there is a low potential for this species to nest and forage in the BSA.
Athene cunicularia Burrowing owl	--	SSC	The burrowing owl is found in open, dry, annual, or perennial grasslands, deserts, and scrublands characterized by low-growing vegetation. This species is a subterranean nester, dependent upon burrowing mammals, most notably, the California ground squirrel. The burrowing owl is also common in disturbed areas, including roadsides, and may develop burrows in debris piles. Burrowing owls are opportunistic feeders and prey upon insects, scorpions, small mammals, birds, amphibians, and reptiles.	A (Nesting) A (Foraging)	**Not expected to occur.** The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.
Aythya americana Redhead	--	SSC	The redhead is found in seasonal ponds and other wetlands where emergent plants provide food and cover. This species also nests on dense marsh vegetation in reservoirs, sewage ponds, streams, and large marshes.	A (Nesting) A (Foraging)	**Not expected to occur.** The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.
Baeolophus inornatus	--	S4	The oak titmouse is found in oak woodland, pinyon-juniper habitat, montane and valley foothill riparian habitats in cismontane	HP (Nesting)	**Moderate potential to occur.** There are coast live oak woodlands within the BSA that could provide

Common and Scientific Names	Status		General Habitat Requirements	Habitat Present/ Absent	Rationale for Species Presence/Absence
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Oak titmouse			California. Sometimes this species ventures into residential areas. This species nests in natural tree cavities or woodpecker holes. This species eats seeds, berries, caterpillars, beetles, ants, flies, and spiders.	HP (Foraging)	suitable nesting and foraging habitat. Therefore, there is a moderate potential for this species to nest and forage in the BSA.
Botaurus lentiginosus American bittern	--	S3S4	The American bittern range includes most of North America. This species is a wading bird found in marshes and the coarse vegetation at the edge of lakes and ponds. Nests are constructed above the water, usually amount bulrushes and cattails.	A (Nesting) A (Foraging)	**Not expected to occur.** The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.
Buteo regalis Ferruginous hawk	--	WL	The ferruginous hawk is found in grasslands, sagebrush country, saltbrush-greasewood shrublands, and edges of pinyon-juniper forests at low to moderate elevations. This species avoids areas of intensive agriculture, urban, and suburban development. This species nests on cliffs, outcrops, and in tree groves. When nesting in trees, the nest tree is often isolated, or in a transition zone to an adjacent community. This species consumes mostly lagomorphs (hares, rabbits, and pikas), ground squirrels, and mice.	A (Nesting) A (Foraging)	**Not expected to occur.** The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.
Calypte costae Costa's hummingbird	--	S4	The Costa's hummingbird is found in desert washes, and sage scrub habitat, mostly in dry and open areas such as washes and streamsides in the Sonoran Desert and lower parts of dry canyons. In California, this species may also use various chaparral and riparian areas. This species nests in sparsely leaved shrubs or small trees, and sometimes in yucca or cactus.	HP (Nesting) HP (Foraging)	**Moderate potential to occur.** There are shrubs within the BSA that could provide suitable nesting and foraging habitat. Therefore, there is a moderate potential for this species to nest and forage in the BSA.

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	Federal USFWS	State CDFW			
Campylorhynchus brunneicapillus sandiegensis Coastal cactus wren	--	SSC	The coastal cactus wren is a San Diego subspecies that is an obligate inhabitant of coastal sage scrub, a natural vegetation community of low, semi-woody vegetation found only in coastal and near-coastal portions of the state. These areas have a plant species diversity that is relatively high, and includes such dominant components as buckwheat (*Eriogonum fasiculatum*), California sagebrush (*Artemisia californica*), white sage (*Salvia apiana*), and Black Sage (*Salvia mellifera*), and prickly pear and cholla cacti (*Opuntia* spp.). This species nests almost exclusively in prickly pear and coastal cholla (*Opuntia prolifera*).	A (Nesting) A (Foraging)	**Not expected to occur.** The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.
Cardinalis cardinalis Northern cardinal	--	S1, WL	The northern cardinal is found in brushy woodlands, streamside thickets, orchards, swamps, suburban gardens, and parks. The great majority of the state's northern cardinals are naturalized birds from escaped or introduced stock.	A (Nesting) A (Foraging)	**Not expected to occur.** The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.
Chaetura vauxi Vaux's swift	--	SSC	The Vaux's swift is found in forested coastal regions from Del Norte County to Santa Cruz County, with a small breeding population existing on the Big Sur coast of Monterey County. This species forages over rivers and lakes and feeds low over water. This species requires hollow structures such as decayed or burned trees, chimneys, barns, outbuildings, or building shafts.	A (Nesting) A (Foraging)	**Not expected to occur.** The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.
Charadrius nivosus nivosus Western snowy plover	--	SSC	The Pacific coast population of the western snowy plover breeds primarily on coastal beaches from southern Washington to southern Baja California, Mexico. The	A (Nesting) A	**Not expected to occur.** The habitat typically preferred by this species is not in the BSA;

Common and Scientific Names	Status		General Habitat Requirements	Habitat Present/ Absent	Rationale for Species Presence/Absence
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			population breeds above the high tide line on coastal beaches, sand spits, dune-backed beaches, sparsely-vegetated dunes, beaches at creek and river mouths, and salt pans at lagoons and estuaries.	(Foraging)	therefore, this species is not expected to be in the BSA.
Charadrius montanus Mountain plover	--	SSC	The mountain plover breeds in the high plains east of the Rocky Mountains from Montana to New Mexico and in western Texas and western Oklahoma south to central Mexico. In California, the primary wintering areas are the Central and Imperial Valleys. This species is strongly associated with short-grass prairie habitats, or their equivalents, that are flat and nearly devoid of vegetation. The mountain plover prefers grazed areas as well as areas with burrowing rodents.	A (Nesting) A (Foraging)	**Not expected to occur.** The BSA is outside of the known range for this species; therefore, this species is not expected to be in the BSA.
Circus hudsonius Northern harrier	--	SSC	The northern harrier is a widespread migrant and winter visitor through California. This species breeds and forages in a variety of open (treeless) habitats that provide adequate vegetative cover, an abundance of suitable prey, and scattered hunting, plucking, and lookout perches such as shrubs or fence posts.	A (Nesting) A (Foraging)	**Not expected to occur.** The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.
Cistothorus palustris clarkae Clark's marsh wren	--	SSC	The Clark's marsh wren is restricted to freshwater and brackish marshes dominated by bulrushes or cattails and nests in narrow strips of marsh along lakeshores. This species is mostly confined to the coastal slope of southern California. Because of agricultural and urban development only six nesting sites are currently known In Los	A (Nesting) A (Foraging)	**Not expected to occur.** The BSA is outside of the known range for this species; therefore, this species is not expected to be in the BSA.

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			Angeles County. This species feeds on bugs, moths, and beetles.		
Coccyzus americanus occidentalis Western yellow-billed cuckoo	FT	SE	The western yellow-billed cuckoo breeds in large blocks, or contiguous areas of riparian habitat, primarily cottonwood-willow riparian woodlands. Optimum patches are greater than 200 acres in size and wider than 1,950 feet. Sites smaller than 50 to 100 acres in size and 325 to 65 feet wide are not suitable. This species forages on caterpillars and large insects, and occasionally on small lizards, frogs, eggs, and young birds. This species is found in riparian jungles of willow, often mixed with cottonwoods, with lower story of blackberry, nettles, or wild grape.	A (Nesting) A (Foraging)	**Not expected to occur.** The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.
Contopus cooperi Olive-sided flycatcher	--	SSC	The olive-sided flycatcher is a summer resident and migrant mainly from mid-April through early October; the breeding season in California extends from early May to late August. This species is found in lower and upper montane coniferous forests and redwood forests. This species is associated with edges, openings, and natural and human-created clearings in otherwise relatively dense forests, but they also occupy semi open forests. Nests in California are mostly in conifers but may be in a variety of species, including willows (*Salix* spp.), alders (*Alnus* spp.), oaks (*Quercus* spp.), and eucalyptus.	A (Nesting) A (Foraging)	**Not expected to occur.** The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.
Coturnicops noveboracensis Yellow rail	--	SSC	The yellow rail is a rare summer California resident of fresh-water marshes in the eastern Sierra Nevada mountains in Mono County. This species is found in shallow	A (Nesting) A	**Not expected to occur.** The habitat typically preferred by this species is not in the BSA;

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			marshes and wet meadows. During the winter, this species is found in freshwater and brackish marshes, as well as dense, deep grass, and rice fields. During the summer, this species is found in large wet meadows or shallow marshes dominated by sedges and grasses.	(Foraging)	therefore, this species is not expected to be in the BSA.
Cypseloides niger Black swift	--	SSC	The black swift is found in the coastal belt of Santa Cruz and Monterey Counties; central and southern Sierra Nevada; San Bernardino and San Jacinto mountains. This species breeds in small colonies on cliffs behind or adjacent to waterfalls in deep canyons and sea-bluffs above the surf. This species eats flying insects, primarily flying ants and beetles, and often forages in small groups.	A (Nesting) A (Foraging)	**Not expected to occur.** The BSA is outside of the known range for this species; therefore, this species is not expected to be in the BSA.
Egretta thula Snowy egret	--	S4	The snowy egret is found in marshes and swamps, meadows and seeps, riparian forest, riparian woodland, and wetlands. This species is a colonial nester with nest sites situated in protected beds of dense tules or within trees or shrubs five to 10 feet up from the ground. Rookery sites are situated close to foraging areas. This species typically forages in shallow water but may also forage in open fields.	A (Nesting) A (Foraging)	**Not expected to occur.** The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.
Elanus leucrus White-tailed kite	--	FP	The white-tailed kite is found in rolling foothills and valley margins with scattered oaks and river bottomlands or marshes next to deciduous woodland. This species favors open grasslands, meadows, or marshes for foraging, close to isolated, dense-topped trees for nesting and perching.	A (Nesting) A (Foraging)	**Not expected to occur.** The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.

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Empidonax traillii Willow flycatcher	--	SE	The willow flycatcher is a common spring (mid-May to early June) and fall (mid-August to early September) migrant at lower elevations, primarily in riparian habitats, throughout the state exclusive of the North coast. This species is found in meadows and seeps, riparian scrub, riparian woodland, and wetland habitats. This species requires moist brushy thickets, open second-growth, and riparian woodland, especially with willow and buttonbush.	A (Nesting) A (Foraging)	**Not expected to occur.** The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.
Eremophila alpestris actia California horned lark	--	S4, WL	The California horned lark is found in coastal regions, chiefly from Sonoma County to San Diego County. This species is also found in the main part of San Joaquin Valley and east to the foothills. This species is found in short-grass prairie, "bald" hills, mountain meadows, open coastal plains, fallow grain fields, and alkali flats.	A (Nesting) A (Foraging)	**Not expected to occur.** The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.
Falco peregrinus anatum American peregrine falcon	Delisted	Delisted/FP	The American peregrine falcon can be found near wetlands, lakes, rivers, or other water, on cliffs, banks, dunes, mounds, and human-made structures. Their nests consist of a scrape or a depression or ledge in an open site.	A (Nesting) A (Foraging)	**Not expected to occur.** The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.
Haliaeetus leucocephalus Bald eagle	Delisted	SE/FP	The bald eagle is found in old growth lower montane coniferous forests along ocean shores, lake margins, and rivers and will use these habitats for both nesting and wintering. This species nests in large, old-growth, or dominant live trees with open branches, especially ponderosa pine. Most nests are typically within one mile of a water source with abundant fish. This species requires	A (Nesting) A (Foraging)	**Not expected to occur.** The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.

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			large bodies of water or free flowing rivers with fish and adjacent snags or other hunting perches.		
Hydroprogne caspia Caspian tern	--	S4	In western North America, the Caspian tern's breeding distribution has changed substantially from mostly inland wetlands to coastal environments. This species now breeds along the Pacific coast from Alaska to central Baja California, Mexico. For nesting, this species requires relatively barren, undisturbed islands, levees, or shores, and nearby foraging areas in lakes, estuaries, salt ponds, or emergent wetlands.	A (Nesting) A (Foraging)	**Not expected to occur.** The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.
Icteria virens Yellow-breasted chat	--	SSC	The yellow-breasted chat is found in riparian forests, riparian scrub, and riparian woodlands. The yellow-breasted chat nests in low, dense riparian thickets near water courses, consisting of willow, blackberry, and wild grape. This species forages and nests within 10 feet of the ground.	A (Nesting) A (Foraging)	**Not expected to occur.** The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.
Ixobrychus exilis Least bittern	--	SSC	The least bittern is found in freshwater and brackish marshes with tall, dense emergent vegetation and clumps of woody plants over deep water. This species is restricted to dense reeds with permanent water and is capable of colonizing new areas. This species is a colonial nester in marshlands and borders of ponds and reservoirs which provide ample cover. Nests are usually placed low in tules over water.	A (Nesting) A (Foraging)	**Not expected to occur.** The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.
Lanius ludovicianus	--	SSC	The loggerhead shrike is found in grasslands, orchards, and semi-open country with lookout posts, such as wires, trees, and scrub. This species builds nests in densely foliaged	HP (Nesting) HP	**Moderate potential to occur.** There are shrubs within the BSA that could provide suitable nesting and foraging habitat. Therefore,

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Loggerhead shrike			shrubs or trees, and thorny vegetation in semi-open terrain, from large clearings in wooded regions to open grassland or desert with a few scattered trees or large shrubs.	(Foraging)	there is a moderate potential for this species to nest and forage in the BSA.
Larus californicus California gull	--	S4, WL	The California gull is a fairly common nester at alkali and freshwater lacustrine habitats east of the Sierra Nevada and Cascades. This species is an abundant visitor to coastal and interior lowlands in nonbreeding season. Inland, this species frequents lacustrine, riverine, and cropland habitats, landfill dumps, and open lawns in cities. This species requires undisturbed, isolated islands for nesting.	A (Nesting) A (Foraging)	**Not expected to occur.** The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.
Laterallus jamaicensis coturniculus California black rail	--	ST/FP	The California black rail is found in freshwater marshes, wet meadows, and shallow margins of saltwater marshes bordering larger bays. This species requires a stable water depth of approximately one inch and dense vegetation for nesting.	A (Nesting) A (Foraging)	**Not expected to occur.** The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.
Nycticorax nycticorax Black-crowned night heron	--	S4	The black-crowned night heron is a primarily nocturnal or crepuscular species found in marshes, swamps, riparian forests, riparian woodlands, and wetlands. The rookery sites are usually located near aquatic or emergent foraging sites within dense-foliaged trees, dense emergent wetlands, dense shrubbery, or vine tangles. Non-breeding roosts may be farther away from nesting sites. This species is a colonial nester, usually in trees, and occasionally in tule patches.	A (Nesting) A (Foraging)	**Not expected to occur.** The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.
Oreothlypis luciae Lucy's warbler	--	SSC	The Lucy's warbler is found primarily along the lower Colorado River Valley and in washes and arroyos emptying into it. This	A (Nesting)	**Not expected to occur.** The BSA is outside of the known range for

Common and Scientific Names	Status		General Habitat Requirements	Habitat Present/ Absent	Rationale for Species Presence/Absence
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			species may also occasionally occur throughout the Sonoran and Mojave deserts. This species prefers riparian woodland with thickets of mesquite, riparian scrub, and stands of tamarisk.	A (Foraging)	this species; therefore, this species is not expected to be in the BSA.
Pandion haliaetus Osprey	--	S4, WL	The osprey is found near ocean shores, bays, fresh-water lakes, and larger streams. This species builds large nests in treetops within approximately 15 miles of a body of water where fish are abundant.	A (Nesting) A (Foraging)	**Not expected to occur.** The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.
Passerculus sandwichensis beldingi Belding's savannah sparrow	--	SE	The Belding's savannah sparrow is endemic to the upper littoral region of salt marshes and is associated with dense pickleweed, particularly Salicornia virginica, within which most nests are found.	A (Nesting) A (Foraging)	**Not expected to occur.** The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.
Pelecanus erythrorhynchos American white pelican	--	SSC	The American white pelican is found near lakes, rivers, and the coastline. This species nests on well-sequestered islets within large lakes that provide safe roosting and breeding places. .	A (Nesting) A (Foraging)	**Not expected to occur.** The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.
Pelecanus occidentalis californicus California brown pelican	--	FP	The California brown pelican is permanent resident of coastal marine environments along the Pacific Coast, extending from British Colombia, Canada south to Nayarit, Mexico. This species a colonial nester on islands and nests most commonly in Mexico, but also nests on the Anacapa Islands and Santa Barbara Islands in California. This species is found on rocky, sandy, or vegetated islands, beaches, estuaries, harbors, and marine areas near piers and jetties with offshore rocks and islands for	A (Nesting) A (Foraging)	**Not expected to occur.** The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.

Common and Scientific Names	Status		General Habitat Requirements	Habitat Present/ Absent	Rationale for Species Presence/Absence
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			nesting. This species forages in estuarine and inshore waters.		
Phalacrocorax auritus Double-crested cormorant	--	S4, WL	The double-crested cormorant is a colonial nester on coastal cliffs, offshore islands, riparian forest, and scrub or woodland habitat near lake margins. This species requires undisturbed nest-sites beside water, on islands or the mainland. This species uses wide rock ledges on cliffs; rugged slopes; and live or dead trees, especially tall ones, for nesting.	A (Nesting) A (Foraging)	**Not expected to occur.** The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.
Piranga rubra Summer tanager*	--	SSC	The summer tanager is found in riparian forests and requires cottonwood-willow riparian habitat for nesting and foraging. This species is a summer resident of desert riparian habitats along the lower Colorado and in California deserts.	A (Nesting) A (Foraging)	**Not expected to occur.** The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.
Plegadis chihi White-faced ibis	--	S3S4, WL	The white-faced ibis is found in marshes, irrigated land, tules, and urban parks with lakes. This species forages in shallow water including marshes, flooded pastures, and irrigated fields. This species breeds in colonies in areas of dense marsh or in low shrubs or trees above water.	A (Nesting) A (Foraging)	**Not expected to occur.** The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.
Polioptila californica californica Coastal California gnatcatcher	FT	SSC	The coastal California gnatcatcher is found in chaparral, grassland, and riparian areas near sage scrub. An obligate, permanent resident of coastal sage scrub below 2,500 feet in Southern California, this species requires variable amounts of semi-open sage scrub dominated by California sagebrush on shallow slope gradients.	HP (Nesting) HP (Foraging)	**Moderate potential to occur.** There are scrub and chaparral within the BSA that could provide suitable nesting and foraging habitat. Therefore, there is a moderate potential for this species to nest and forage in the BSA. The presence of this species in the BSA has been inferred.

Common and Scientific Names	Status		General Habitat Requirements	Habitat Present/ Absent	Rationale for Species Presence/Absence
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Progne subis Purple martin	--	SSC	The purple martin is a summer migrant found in valley foothill and montane hardwood/hardwood-conifer, coniferous habitats and riparian habitats. The purple martin nests in tall, old, isolated trees or snags in open forest or woodlands and in close proximity to a body of water. The species frequently nests in old woodpecker cavities but has also been found nesting in human-made structures such as bridges and culverts. Foraging habitats must provide large amounts of aerial insects.	A (Nesting) A (Foraging)	**Not expected to occur.** The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.
Pyrocephalus rubinus Vermilion flycatcher	--	SSC	The vermilion flycatcher is found in marshes, swamps, riparian forest, riparian scrub, riparian woodland, and wetland habitats. This species nests in cottonwoods, willows, mesquite, and other large desert riparian trees near mesic areas.	A (Nesting) A (Foraging)	**Not expected to occur.** The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.
Rallus obsoletus levipes Light-footed Ridgeway's rail	FE	SE, FP	The light-footed Ridgway's rail is found exclusively in salt marshes between Santa Barbara, California and San Quintin Bay, Baja California, Mexico. This species nests primarily in dense cordgrass, wrack deposits, and in hummocks of high marsh within the low marsh zone.	A (Nesting) A (Foraging)	**Not expected to occur.** The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.
Rynchops niger Black skimmer	--	SSC	The black skimmer is found along ocean beaches and tide waters. This species favors coastal waters protected from open surf, such as lagoons, estuaries, inlets, and sheltered bays. This species nests on gravel bars, low islets, and sandy beaches. Nesting colonies consist of less than 200 breeding pairs.	A (Nesting) A (Foraging)	**Not expected to occur.** The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.

Common and Scientific Names	Status		General Habitat Requirements	Habitat Present/ Absent	Rationale for Species Presence/Absence
	Federal USFWS	State CDFW			
Setophaga petechia Yellow warbler	--	SSC	The yellow warbler is found in riparian plant associations in close proximity to water. This species also nests in montane shrubbery in open coniferous forests in the Cascades and Sierra Nevada Mountains. This species is found nesting and foraging in willow shrubs and thickets, and other riparian plants including cottonwoods (*Aigeiros* sp.), sycamores (*Plantanus* sp.), ash (*Fraxinus* sp.), and alders (*Alnus* sp.).	A (Nesting) A (Foraging)	**Not expected to occur.** The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.
Spinus lawrencei Lawrence's goldfinch	--	S3S4	The Lawrence's goldfinch is found in valley foothill hardwood and valley foothill hardwood-conifer habitats in northern California and desert riparian, palm oasis, pinion and juniper woodlands, and lower montane habitats in southern California. This species has a narrow breeding range within the woodlands of California and Baja California.	A (Nesting) A (Foraging)	**Not expected to occur.** The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.
Sternula antillarum browni California least tern	FE	SE/FP	The California least tern nests in sparsely vegetated sandy or gravelly ground (typically tidal flats and beaches) near lagoons, estuaries, or bays.	A (Nesting) A (Foraging)	**Not expected to occur.** The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.
Strix occidentalis occidentalis California spotted owl	--	S3	The California spotted owl is found in the Sierra Nevada Mountains, the mountains of central coastal California, and the peninsular and Transverse Ranges of southern California. This species is found in mature forests and nests in cavities, broken tree tops, and occasionally on nests of other species, or in mistletoe. This species is territorial and exhibit strong fidelity to their territory.	A (Nesting) A (Foraging)	**Not expected to occur.** The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.

Common and Scientific Names	Status		General Habitat Requirements	Habitat Present/ Absent	Rationale for Species Presence/Absence
	Federal USFWS	State CDFW			
Thalasseus elegans Elegant tern	--	WL	The elegant tern is found near coastal waters along the Pacific Coast. This species nests on the ground on undisturbed island beaches.	A (Nesting) A (Foraging)	**Not expected to occur.** The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.
Toxostoma crissale Crissal thrasher	--	SSC	The Crissal thrasher is found in dense, low shrubby vegetation, such as desert and foothill scrub and riparian brush. This species builds well concealed nests in dense low growth, often in mesquites, but also in other shrubs such as willows, greasewood, saltbrush, and saltcedar. This species distribution is limited to southeastern California in desert habitat.	A (Nesting) A (Foraging)	**Not expected to occur.** The BSA is outside of the known range for this species; therefore, this species is not expected to be in the BSA.
Vireo bellii pusillus Least Bell's vireo	FE	SE	The least Bell's vireo is found in dense, willow dominated riparian habitat with lush understory vegetation. This species primarily occupies riparian habitats that typically feature dense cover within three to seven feet of the ground and a dense, stratified canopy. This species inhabits edge riparian growth along water or along dry parts of intermittent streams.	A (Nesting) A (Foraging)	**Not expected to occur.** The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.
Vireo huttoni unitti Catalina Hutton's vireo	--	SSC	The Catalina Hutton's vireo is found only on Santa Catalina Island within chaparral and oak woodlands.	A (Nesting) A (Foraging)	**Not expected to occur.** The BSA is outside of the known range for this species; therefore, this species is not expected to be in the BSA.
Mammals					
Antrozous pallidus Pallid bat	--	SSC	The pallid bat is found year round in a variety of low-elevation habitats in most parts of California, including grasslands, shrub lands, woodlands, and forests. This species is	HP	**Moderate potential to occur.** There are buildings, trees, and a bridge within the BSA which could provide suitable roosting habitat.

Common and Scientific Names	Status		General Habitat Requirements	Habitat Present/ Absent	Rationale for Species Presence/Absence
	Federal USFWS	State CDFW			
			thought to prefer open, dry habitats with rocky areas for roosting. This species roosts in caves, crevices, mines, hollow trees, buildings, and bridges, and night roosts in more open sites, such as porches, open buildings, and bridges. Roosts must protect bats from high temperatures, and this species will move deeper into cover if temperatures rise.		Therefore, there is a moderate potential for this species to be in the BSA.
Chaetodipus californicus femoralis Dulzura pocket mouse	--	SSC	The Dulzura pocket mouse is found in coastal scrub, chamise-redshank chaparral, sagebrush, desert wash, desert scrub, desert succulent shrub, pinyon-juniper, and annual grassland in southwestern California. In San Diego County this species occurs mainly in arid coastal and desert border areas and its range also includes portions of Riverside and San Bernardino counties. This species prefers sandy herbaceous areas, usually in association with rocks or coarse gravel and has a high preference for grass seeds.	A	**Not expected to occur.** The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.
Chaetodipus fallax fallax Northwestern San Diego pocket mouse	--	SSC	The San Diego pocket mouse occurs in coastal scrub, chaparral, grasslands, and sagebrush in western San Diego County. This species prefers sandy, herbaceous areas, usually in association with rocks or coarse gravel. Some common plants seen in these habitats include Yucca and desert scrub. This species consumes seeds with high moisture content and is capable of surviving without drinking additional water.	A	**Not expected to occur.** The BSA is outside of the known range for this species; therefore, this species is not expected to be in the BSA.
Choeronycteris Mexicana	--	SSC	The Mexican Long-tongue bat has been recorded in the coastal counties of Southern California, including San Diego County. This	A	**Not expected to occur.** The BSA is outside of the known range for

Common and Scientific Names	Status		General Habitat Requirements	Habitat Present/ Absent	Rationale for Species Presence/Absence
	Federal USFWS	State CDFW			
Mexican long-tongued bat			species is found in pinyon and juniper woodlands, riparian scrub, and Sonoran thorn woodlands and roosts in well-lit caves and in buildings. This species has also been documented roosting in bridges.		this species; therefore, this species is not expected to be in the BSA.
Chaetodipus californicus femoralis Dulzura pocket mouse	--	SSC	The Dulzura pocket mouse is found in chaparral, coastal scrub, and grasslands in San Diego County. This species prefers gravelly and rocky substrates.	A	**Not expected to occur.** The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.
Dipodomys stephensi Stephens' kangaroo rat	FE	FT	The Stephens' kangaroo rat is found primarily in arid and semiarid coastal scrub, and valley and foothill annual and perennial grasslands. This species also occurs in sagebrush. This species prefers open habitats with less than 50% canopy cover containing buckwheat, chamise, brome grass, and filaree and will burrow into firm soil. The species is only found in San Jacinto Valley, western Riverside, southwestern San Bernardino, and northwestern San Diego county.	A	**Not expected to occur.** The BSA is outside of the known range for this species; therefore, this species is not expected to be in the BSA.
Eumops perotis californicus Western mastiff bat	--	SSC	The western mastiff bat is found in many open, semi-arid and arid habitats, including conifer and deciduous woodlands, coastal scrub, annual and perennial grasslands, palm oases, chaparral, desert scrub, and urban areas. This species has been recorded throughout central and southern California, with a concentration in southern California. This species roosts in crevices on high vertical cliffs or surfaces (including buildings), trees, or tunnels. Because of their large size,	HP	**Moderate potential to occur.** There are buildings, trees, and a bridge within the BSA which could provide suitable roosting habitat. Therefore, there is a moderate potential for this species to be in the BSA.

Common and Scientific Names	Status		General Habitat Requirements	Habitat Present/ Absent	Rationale for Species Presence/Absence
	Federal USFWS	State CDFW			
			they typically require a larger drop distance from roosting sites.		
Lasiurus cinereus Hoary bat	--	S4	The hoary bat is found in a wide variety of habitats and elevations in California. This species generally roosts in dense foliage of medium to large trees, and prefers open habitats or habitat mosaics, with access to trees for cover and open areas or habitat edges for feeding.	HP	**Moderate potential to occur.** There are trees within the BSA, which could provide suitable roosting habitat. Therefore, there is a moderate potential for this species to be in the BSA.
Lasiurus xanthinus Western yellow bat	--	SSC	The western yellow bat is uncommon in California, and is found in valley foothill riparian, desert riparian, desert wash, and palm oasis habitats. This species roosts in trees, particularly palms, and forages over water and among trees.	HP	**Moderate potential to occur.** There are trees within the BSA, including palm trees, which could provide suitable roosting habitat. Therefore, there is a moderate potential for this species to be in the BSA.
Lepus californicus bennettii San Diego black-tailed jackrabbit	--	SSC	The San Diego black-tailed jackrabbit is generally found in grasslands, agricultural fields, or areas of sparse coastal scrub. This species is not typically found in high grass or dense brush. This species uses shallow depressions under bushes or shrubs and does not construct burrows or dens.	HP	**Moderate potential to occur.** There is coastal scrub within the BSA. Therefore, there is a moderate potential for this species to be in the BSA.
Lynx rufus pallescens Pallid bobcat	--	S3?	The pallid bobcat is found on the Modoc Plateau and adjacent areas of the Great Basin province of northeastern California in Lassen, Modoc, Shasta, and Siskiyou counties.	A	**Not expected to occur.** The BSA is outside of the known range for this species; therefore, this species is not expected to be in the BSA.
Myotis ciliolabrum Western small-footed myotis	--	S3	The western small-footed myotis is found in a wide range of habitats but is generally found it arid woodlands and brushy upland areas near water. This species prefers open stands	HP	**Moderate potential to occur.** There are buildings and a bridge within the BSA which could provide suitable roosting habitat. Therefore,

Common and Scientific Names	Status		General Habitat Requirements	Habitat Present/ Absent	Rationale for Species Presence/Absence
	Federal USFWS	State CDFW			
			in forests and woodlands and seeks cover in caves, buildings, mines, and crevices.		there is a moderate potential for this species to be in the BSA.
Myotis yumanensis Yuma myotis	--	S4	The Yuma myotis is found in open forests and woodlands with sources of water over which to feed but has been documented in many urban areas. This species roosts in buildings, mines, caves, or crevices. The species also has been seen roosting in abandoned swallow nests and under bridges.	HP	**Moderate potential to occur.** There are buildings, swallow nests, and a bridge within the BSA which could provide suitable roosting habitat. Therefore, there is a moderate potential for this species to be in the BSA.
Neotoma lepida intermedia San Diego desert woodrat	--	SSC	The San Diego desert woodrat is found in Joshua tree woodlands, pinyon-juniper woodlands, mixed chaparral, sagebrush, and desert habitats in Southern California from San Diego County to San Luis Obispo County. This species prefers moderate to dense canopies and is particularly abundant in rock outcrops, rocky cliffs, and slopes. This species builds dens using sticks, leaves, and other assorted materials.	A	**Not expected to occur.** The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.
Nyctinomops femorosaccus Pocketed free-tailed bat	--	SSC	The pocketed free-tailed bat is found in pinyon-juniper woodlands, desert scrub, desert succulent shrub, desert riparian, desert wash, alkali desert scrub, Joshua tree, and palm oasis habitats. This species typically roosts in cavities of cliffs, high rocky outcrops, and slopes, but there is potential for this species to roost in other crevices in structures, including bridges.	A	**Not expected to occur.** The BSA is outside of the known range for this species; therefore, this species is not expected to be in the BSA.
Nyctinomops macrotis Big free-tailed bat	--	SSC	The big-free tailed bat is believed to prefer rugged, rocky canyons, and typically roosts in high cliffs or rock outcrops, buildings, caves, and occasionally in holes in trees. This species has also been documented roosting in bridges. This species is rare in California	A	**Not expected to occur.** The BSA is outside of the known range of this species; therefore, this species is not expected to be in the BSA.

Common and Scientific Names	Status		General Habitat Requirements	Habitat Present/ Absent	Rationale for Species Presence/Absence
	Federal USFWS	State CDFW			
			but found in San Diego. This species is commonly found in southern Arizona, New Mexico, and Texas.		
Onychomys torridus ramona Southern grasshopper mouse	--	SSC	The Southern grasshopper mouse is found inhabits low, open, and semi-open scrub habitats including mixed chaparral, low sagebrush, riparian scrub, and annual grassland with scattered shrubs. This species prefers low to moderate shrub cover and nests in abandoned burrows. This species feeds on scorpions and other arthropods. This species distribution is limited to the Mojave desert.	A	**Not expected to occur.** The BSA is outside of the known range of this species; therefore, this species is not expected to be in the BSA.
Perognathus longimembris pacificus Pacific pocket mouse	FE	SSC	The Pacific pocket mouse is found in fine, sandy soils within about two to four miles from the Pacific coast of southern California. Historically, this species was found from the Mexican border to El Segundo in Los Angeles County. The only known populations are in Dana Point, San Mateo, and on the Camp Pendleton Marine Base.	A	**Not expected to occur.** The BSA is outside of the known range for this species; therefore, this species is not expected to be in the BSA.
Sorex ornatus salicornius Southern California salt marsh shrew	--	SSC	The southern California saltmarsh shrew is found in coastal marshes in Los Angeles, Orange and Ventura counties. This species requires dense vegetation and woody debris for cover.	A	**Not expected to occur.** The habitat typically preferred by this species is not in the BSA; therefore, this species is not expected to be in the BSA.
Thomomys bottae operarius Owens Lake pocket gopher	--	S1?	The Owens Lake pocket gopher is restricted to the immediate vicinity of Owens Lake.	A	**Not expected to occur.** The BSA is outside of the known range for this species; therefore, this species is not expected to be in the BSA.

Table Key: Absent [A] – The plant species/vegetation community or habitat requirements were not observed in the BSA during the biological survey. Habitat Present [HP] – There is habitat present within the BSA. Present (P) – Species is present in the BSA. Federal Endangered (FE); Federal Threatened (FT); State Endangered

(SE); State Threatened (ST); Federal Candidate Species (FC); State Candidate Endangered (SCE), State Candidate Threatened (SCT), Fully Protected (FP); Federally Delisted (FD); State Delisted (SD) Watch List (WL); State Species of Special Concern (SSC); State Rare (SR); S1 = Critically Imperiled - extreme rarity (often five or fewer occurrences) or because of some factor(s) such as very steep declines making it especially vulnerable to extirpation from California; S2 = Imperiled- rarity due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors making it very vulnerable to extirpation from the nation or California; S3 = Vulnerable- restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors making it vulnerable to extirpation; S4 = Apparently Secure - uncommon but not rare; some cause for long-term concern due to declines or other factors.

Information for the habitat requirements and species range was obtained from the following sources: (CDFW, 2021)*, (CaliforniaHerps, 2019), (Sibley, 2014), (Cal Fish, 2019), (Bleich, V, 1977), (Cornell University, 2019), and* (CDFW, 2019).

Appendix E. Arroyo Toad Protocol Survey Report

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October 23, 2019

Giles Matthews
Orange County Public Works
300 N Flower Street, Santa Ana, CA 92703

Subject: 2019 Arroyo Toad Results for Santiago Creek, Silverado Creek, and Trabuco Creek in Orange County, California.

Dear Mr. Matthews:

This letter report documents the results of United States Fish and Wildlife Service (USFWS) protocol presence/absence surveys for the federally endangered arroyo toad (*Anaxyrus californicus*; ARTO) in select reaches of Santiago Creek, Silverado Creek, and Trabuco Creek in Orange County, California (Figures 1 and 2). These surveys were conducted by qualified ICF biologists under contract to Orange County Public Works (OCPW).

Project Background

The follow provides a summary of the purpose and need for focused surveys for ARTO in select reaches of Santiago Creek, Silverado Creek, and Trabuco Creek and summarizes the results of the ARTO habitat suitability study that was performed in order to identify the specific areas to be surveyed during the focused survey effort. For additional information pertaining detailing to the methodology and results of the ARTO habitat suitability, please refer to Appendix A.

OCPW proposes to remove and replace one bridge in Modjeska Canyon, three bridges in Silverado Canyon, and one bridge in Trabuco Canyon. OCPW also has ongoing maintenance interests in Santiago Canyon and the other canyons that occasionally require in-stream construction. Portions of all four creeks are designated as Critical Habitat for ARTO (USFWS 2019). Areas in Santiago Creek have also been identified in the Orange County Central/Coastal Natural Community Conservation Plan/Habitat Conservation Plan (NCCP/HCP) as being suitable for ARTO (RJM 1996).

In order to allow OCPW to conduct bridge replacement and future maintenance work in areas where ARTO may occur and/or where federally-designated Critical Habitat is present, the USFWS Carlsbad Fish and Wildlife Office (CFWO) requested that ARTO suitability assessments and subsequent focused surveys be conducted in the vicinity of proposed and future work areas, including areas where ARTOs have previously been reported. The results of focused surveys would determine the need, if any, for future informal consultation with the CFWO when OCPW is proposing work in these areas. The approach established for the ARTO habitat suitability and subsequent protocol presence/absence survey was reviewed and agreed to by Jonathan Snyder, USFWS Division Chief, and OCPW (Giles Matthews, personal communication, 2019). The goal of the approach was to provide representative survey results that could be applied to the stream reaches where OCPW is proposing future work so as to avoid subsequent survey efforts where results were negative.

The initial ARTO suitability assessment was conducted in March and April 2019 in specific areas, as identified by OCPW (with concurrence with USFWS), within Modjeska, Santiago, Silverado, and Trabuco Canyons, as well as specific areas within general survey boundaries where ARTO have been previously recorded as provided by the CFWO (Figure 3). The habitat suitability assessment included all areas within these Canyons that were accessible (e.g., County owned property, from publicly accessible roads and paths, or along any other publicly accessible reaches of creeks in the watershed). The habitat assessment was not carried out on private property that could not be observed from publicly permitted access points. While not all reaches of these creeks were physically inspected, large representative reaches were assessed in order to confidently determine the habitat suitability for ARTO within the entire survey area.

Based on the results of the habitat suitability assessment, suitable ARTO habitat was found to be present within various portions of Santiago, Silverado, and Trabuco Canyons; however, suitable ARTO habitat was not found within the assessed areas of Modjeska Canyon (ICF 2019; Appendix A). Based upon conditions at the time of the ARTO habitat suitability assessment, primary and secondary survey areas were identified (Figure 2) (ICF 2019; Appendix A). Primary survey areas included areas that were suitable for focused surveys at the time of the ARTO suitability assessment. Secondary survey areas were deemed not quite suitable for one or more reasons (e.g., lack of sand or stream flow was too strong). These survey areas intersected with areas where historic ARTO occurrences have been reported. Primary and secondary survey areas were mapped as either isolated survey points or as linear stretches of creek depending on the extent of suitable habitat at any given location.

In August 2019, following the completion of the protocol ARTO presence/absence surveys in June 2019, an additional two discrete stream portions were inspected as a follow-up to the ARTO habitat assessment. These included approximately 2 miles within Trabuco Canyon and 0.5 mile in Modjeska Canyon. These areas represented portions of the respective canyons that were not originally part of the survey area, but that were added in order to provide a more thorough picture of floodplain conditions and to help better contextualize the results of the areas that were analyzed during the wet season. As with the spring assessments, data points were taken approximately every 500 feet, including photographs upstream and downstream. Because there was no water flow during the August 2019 reconnaissance surveys, these areas were characterized solely based on substrate and vegetative cover. Results of this effort confirmed no suitable ARTO habitat within Modjeska Canyon; however, the 2 miles of upper Trabuco Creek, upstream of Trabuco Canyon Road/Live Oak Canyon Road, was determined to have a varying mosaic of suitable and unsuitable habitat along the flow channel and within the floodplain. A copy of the revised ARTO habitat suitability memorandum is provided in Appendix A.

ARTO Survey Area

The protocol presence/absence ARTO survey area included approximately 6.5 miles in Santiago Canyon, 2 miles in Silverado Canyon, and 2 miles in Trabuco Canyon. Silverado and Trabuco Creek only required a single visit to complete a daytime/nighttime survey; however, Santiago Creek required two visits to complete a single daytime/nighttime survey. As a result, the Santiago Creek survey area included one reach upstream of the Santiago Canyon Road Bridge over Santiago Creek (Bridge # 55C-0038) and another reach downstream of this location. Figure 2 shows the location of the four survey areas requiring six visits each. The survey areas depicted in Figure 2 include the

specific reaches within the floodplain of Silverado, Santiago, and Trabuco Creeks and consists of main channels, side channels, and suitable adjacent terraces. In addition, Figure 2 depicts the primary and secondary survey areas identified during the ARTO suitability assessment that were also specifically inspected within the survey areas during each visit. These survey areas were located in the Black Star Canyon, El Toro, and Santiago Peak United States Geological Survey (USGS) 7.5-minute topographic quadrangles (USGS 2019). In Santiago Canyon, the survey areas were located in Township 4S, Range 8W, Sections 78 and 111; Township 5S, Range 8W, Sections 111, 115, 116, 146, and 149; and Township 5S, Range 7W, Sections 149 and 179. In Silverado Canyon, the survey areas were located in Township 5S, Range 8W, Sections 115 and 147; Township 5S, Range 7W, Sections 7, 8, 9, 10, and 11. In Trabuco Canyon, the survey area was located in Township 6S, Range 7W, Sections 11, 12, 14, and 15; and Township 6S, Range 6W, Section 6.

It should be noted that some portions of the general ARTO survey area are located in the Cleveland National Forest. In an email dated March 7, 2019, Cleveland National Forest Biologist Kirsten Winter stated that there is no suitable ARTO habitat on National Forest System lands within the general survey area vicinity. As a result of this information as well as the results of the ARTO suitability assessment (ICF 2019; Appendix A), most areas within the Cleveland National Forest were not included in the protocol presence/absence ARTO survey effort. Only short reaches within Silverado Creek and Trabuco Creek, along the edge of the Cleveland National Forest, were included in the ARTO protocol survey effort.

Study Area Conditions

The protocol presence/absence ARTO survey effort began on April 22, 2019 and was completed June 20, 2019. During this two-month period the survey area, which included portions of Silverado Creek, Santiago Creek (Upstream), Santiago Creek (Downstream), and Trabuco Creek, all experienced similar hydrological and biological fluctuations over time due to precipitation events that generally declined in intensity and duration over the course of the study. The most notable fluctuations during this time period included the following: 1) gradual reduction of main channel velocity, 2) gradual reduction of surface water volume, 3) gradual increase in vegetation cover on adjacent upland terraces, and 4) increased densities of filamentous algae within persisting surface water. Channel braiding was persistent within each survey area for the duration of the ARTO survey effort. Although some low flow side channels dried up over time, other side channels that were once high-velocity flows slowed significantly over time, which provided improved surface water breeding conditions for ARTO.

The physical conditions of the ARTO survey areas as described in the ARTO suitability assessment (ICF 2019) remained unchanged during the focused survey effort. The dominant creek substrate was a mix of gravel, cobbles, and boulders. With the exception of a few very small patches of sand deposits, sandy creek banks were not a physical component of any of the reaches surveyed.

Substrates associated with adjacent floodplain terraces varied among the survey areas and some reasonably flat sandy terraces were present, but most terraces consisted of gravel and cobble. Adjacent floodplain terraces along the Silverado Creek survey area included an active riparian restoration site with a mixed substrate ranging from silty sand to gravelly cobble. Floodplain terrace substrates adjacent to the Santiago Creek (Upstream), Santiago Creek (Downstream), and Trabuco Creek survey areas were similarly dominated with gravel and cobble benches; however, on

several higher terraces, open sandy conditions were present. The lower end of the Trabuco Creek survey area provided the best quality terraces as some of these terraces exhibited relatively large, flat, open sandy areas for ARTO foraging and burrowing.

As the survey season progressed, vegetation cover in the form of herbaceous annuals and recovering riparian shrubs filled in much of the adjacent terraces and gradually covered areas that were relatively bare at the start of the survey period. Filamentous algae was present in all survey areas. As the survey period continued, dense algae mats formed within the surface water, and in several areas, the algae mats were thick enough to displace, redirect, and/or spread the flow of water.

Arroyo Toad Biology

The ARTO is federally listed as endangered by the USFWS and has been designated as a Species of Special Concern by the California Department of Fish and Wildlife (CDFW).

The ARTO is a small (2.2 to 3.2 inches), dark-spotted toad of the family Bufonidae, with females larger than males. Adult ARTO have a light olive green or gray to tan dorsum (back) with dark spots and warty skin. The venter (underside) is white or buff and without dark blotches or spots. A light colored, V-shaped stripe crosses the head and eyelids, and the anterior portions of the oval parotoid glands (one just behind each eye) are pale (USFWS 2000).

The ARTO is found in coastal and desert drainages from Monterey County, California, south into northwestern Baja California, Mexico. These drainage systems are inherently quite dynamic, with marked seasonal and annual fluctuations in climatic regimes, particularly rainfall (USFWS 2000).

The ARTO exhibits breeding habitat specialization that favors shallow pools and open sand and gravel channels along low-gradient reaches of medium to large-sized streams. These streams can have either intermittent or perennial streamflow and typically experience periodic flooding that scours vegetation and replenishes fine sediments. In at least some portions of its range, the species also breeds in smaller streams and canyons where low-gradient breeding sites are more sporadically distributed (USFWS 2000).

Breeding ARTO use open sites such as overflow pools, old flood channels, and shallow pools along streams. Such habitats rarely have closed canopies over the lower banks of the stream channel due to regular flood events. Heavily-shaded pools are generally unsuitable for larval and juvenile ARTO because of lower water and soil temperatures (important for egg and larval development) and poor algal mat development (important for foraging). Episodic (temporary) flooding is critical to keep the low stream terraces relatively vegetation-free and the soils friable enough for juvenile and adult toads to create burrows. Pools less than 12 inches deep with clear water, flow rates less than 0.2 ft per second, and bottoms composed of sand or well-sorted fine gravel are favored by adults for breeding. Areas that are used by juveniles consist primarily of sand or fine gravel bars with varying amounts of large gravel or cobble with adjacent stable sandy terraces and streamside flats. Areas that are damp and have less than 10 percent vegetation cover provide the best conditions for juvenile survival and rapid growth (USFWS 2000).

Males call from the streams during the breeding period, which is generally from late February to early July, although it can be extended in some years, depending on weather conditions. Males may remain at or near the breeding pools for several weeks and are particularly susceptible to predation

at this time. Females move to the breeding pools in the streams for only short time periods, in order to breed. Amplexus (mating embrace of the female by the male) and egg-laying generally occur at the site where the male was calling. Female ARTO release their entire clutch of 2,000 to 10,000 eggs as a single breeding effort and based on known information are probably unable to produce a second clutch during the mating season. If conditions are unsuitable, females may not obtain sufficient food for egg production and, in these circumstances, will forgo breeding during that year. The eggs are laid on substrates of sand, gravel, or cobble generally located away from vegetation in the shallow margins of the pool. High water flows can wash the eggs out of pools, breaking up the egg strands and killing the developing embryos. Silt eroding into the streams from road crossings, adjacent roads, overgrazing, or mining activities can cover and suffocate eggs (USFWS 2000).

Larvae usually hatch in 4 to 6 days at water temperatures of 54 to 59 degrees Fahrenheit. Larvae (tadpoles) may take 8 to 14 days to become free-swimming, depending on the water temperature. They are particularly susceptible to the effects of high water flows during this time period, and heavy rains or untimely releases of water from dams can easily kill thousands of tadpoles. The larval period for ARTO lasts about 65 to 85 days, depending on water temperatures. Metamorphosis may occur at any time between April and the beginning of September, depending on the time of breeding, weather, and water quality. Peak metamorphosis occurs from the end of June to mid-July in the northern part of the toad's range and from late April to mid-May in southern California, although it may be later, particularly at higher elevations (USFWS 2000).

Although they are initially primarily active diurnally after metamorphosing into terrestrial toads, as the toads grow, they begin to dig shallow burrows in fine sand and eventually switch to a nocturnal activity pattern, when they forage for ants and beetles. Suitable sandy habitat can be highly localized resulting in dense concentrations of juvenile toads. If the substrate is not friable enough, juvenile toads often disperse farther away from the breeding pool into nearby stands of woody riparian vegetation. Most toads will move into willows or other vegetation as they grow, and as the stream dries naturally. Individual toads have been observed as far as 1.2 miles from the streams where they breed, but are most commonly found within 0.3 mile of those streams. The adjacent alluvial terraces used by subadults and adults for foraging and burrowing are typically sparsely to moderately vegetated with brush and trees such as mulefat (*Baccharis salicifolia*), western sycamore (*Platanus racemosa*), cottonwoods (*Populus* spp.), coast live oak (*Quercus agrifolia*), and willows (*Salix* spp.). The understory of stream terraces may consist of scattered short grasses, herbs, and leaf litter, with patches of bare or disturbed soil, or have no vegetation at all. Substantial areas of fine sand, into which adult toads burrow, must be present, but can be interspersed with gravel or cobble deposits. Upland habitats used by ARTO during both the breeding and nonbreeding seasons include alluvial scrub, coastal sage scrub, chaparral, grassland, and oak woodland (USFWS 2000).

Survey Methods

The protocol ARTO presence/absence survey area for this effort included four specific survey areas referred to as Silverado Creek, Santiago Creek (Upstream), Santiago Creek (Downstream), and Trabuco Creek (Figure 2). These survey areas covered most of the floodplain along specific reaches and consisted of main channels, side channels, and suitable adjacent terraces. Based on the results of the ARTO habitat suitability study (ICF 2019; Appendix A), initial target areas consisting of primary and secondary survey areas were identified prior to the commencement of the protocol presence/absence ARTO survey effort. All areas outside of the primary and secondary survey areas

were initially deemed to have unsuitable conditions for ARTO based on lack of suitable surface water conditions, unsuitable substrate, and/or dense canopy cover. However, because accessing the primary and secondary survey areas required biologists to physically traverse the floodplain on foot, this afforded the biologists the opportunity to incidentally survey all the surface water between primary and secondary areas. These survey conditions proved beneficial as the survey effort extended further into the breeding season and surface flow conditions changed. Over the course of the survey effort, many of the low flow channels, including many primary and secondary areas, would eventually dry up while high flow channels, which were initially deemed unsuitable earlier in the season, would slow and exhibit conditions favorable for ARTO breeding.

Six daytime and six nighttime surveys were conducted at each of the four survey areas between April 22, 2019 and June 20, 2019; all surveys followed the USFWS survey protocol for ARTO (USFWS 1999). Daytime and nighttime surveys on each date were conducted within the same 24-hour period.

During each survey, the entire selected reach of the floodplain within each survey area was traversed on foot. Daytime surveys were conducted by walking slowly along stream margins and in adjacent riparian habitat, visually searching for egg strands, larvae, and juveniles. When necessary, biologists walked within the stream, but took care not to disturb or create silt deposits within potential breeding pools. Biologists used the Collector ArcGIS application on their mobile devices to navigate to primary and secondary survey areas that were previously identified during the ARTO suitability assessment. The Collector application was also used to update conditions and attach digital photographs to the existing survey points and lines. While walking between points and lines, the biologists would continue to survey for ARTO along main channels and side channels in order to be thorough.

Nighttime surveys were conducted by walking slowly and carefully on stream banks. Adjacent terraces with relatively low vegetation cover were also slowly inspected for foraging ARTO. Biologists stopped periodically and remained still and silent for between 5 and 15 minutes at appropriate sites to listen for ARTO calls. Biologists were equipped with bright headlamps to assist in locating individual animals (primarily via “eye shine”) and safely traverse the terrain. Per the USFWS survey protocol (USFWS 1999), nighttime surveys were conducted between one hour after dusk and midnight, when air temperature at dusk was generally 55 degrees Fahrenheit or greater. Surveys were not conducted during nights when a full moon was illuminating the survey area or during adverse weather conditions such as rain, high winds, or flood flows.

During both daytime and nighttime surveys, observed toad egg strands, frog and toad tadpoles, and juvenile and adult toads were identified to species.

Tables 1 through 4 provide a summary of dates, times, personnel, and weather conditions during each visit to the Silverado Creek, Santiago Creek (Upstream), Santiago Creek (Downstream), and Trabuco Creek survey areas.

Table 1. Survey Dates, Personnel, and Weather Conditions for Silverado Creek

Visit Number	Date	Biologists	Daytime Time	Nighttime Time	Nighttime Conditions
1	4/22/19	PR, JH	1635-1855	2010-2230	58-61°F, 0% clouds, wind 0-3 mph
2	5/06/19	PR, WK	1650-1900	2040-2225	54-57°F, 30%clouds, wind 0-2 mph
3	5/20/19	PR, RW	1500-1705	2050-2245	53-57°F, 15% clouds, wind 0-3 mph
4	5/27/19	PR, AU	1715-1905	2040-2220	52-54°F, 0% clouds, wind 1-4 mph
5	6/03/19	PR, WK	1745-1925	2040-2200	57-59°F, 100% clouds, wind 0-4 mph
6	6/17/19	PR, AU	1750-1930	2040-2205	58-59°F, 100% clouds, wind 1-3 mph

PR=Phil Richards JH=James Hickman AU=Andrew Underwood
WK=Will Kohn RW=Ryan Winkleman

Table 2. Survey Dates, Personnel, and Weather Conditions for Santiago Canyon (Upstream)

Visit Number	Date	Biologists	Daytime Time	Nighttime Time	Nighttime Conditions
1	4/23/19	PR, JH	1510-1915	2015-2255	60-65°F, 0% clouds, wind 0-3 mph
2	5/08/19	PR, WK	1540-1710	2020-2315	55-56°F, 100% clouds, wind 0-3 mph
3	5/21/19	PR, ML	1615-1920	2025-2315	53-55°F, 100% clouds, wind 1-6 mph
4	5/28/19	PR, JH	1500-1845	2030-2350	54-55°F, 0% clouds, wind 1-4 mph
5	6/04/19	PR, AU	1720-2010	2040-2305	59-60°F, 100% clouds, wind 0-3 mph
6	6/18/19	PR, AU	1700-1905	2040-2250	58-60°F, 0% clouds, wind 1-3 mph

PR=Phil Richards JH=James Hickman AU=Andrew Underwood
WK=Will Kohn ML=Marty Lewis

Table 3. Survey Dates, Personnel, and Weather Conditions for Santiago Canyon (Downstream)

Visit Number	Date	Biologists	Daytime Time	Nighttime Time	Nighttime Conditions
1	4/24/19	PR, WK	1615-1900	2015-2200	60-65°F, 0% clouds, wind 0-2 mph
2	5/07/19	PR, JH	1700-1926	2020-2215	56-57°F, 100% clouds, wind 0-3 mph
3	5/22/19	PR, JH	1805-1930	2025-2210	50-53°F, 100% clouds, wind 0-3 mph
4	5/29/19	PR, JH	1735-1915	2035-2215	59-63°F, 0% clouds, winds 2-4 mph
5	6/11/19	PR, AU	1805-1940	2035-2230	70-72°F, 35% clouds, wind 0-4 mph
6	6/20/19	PR, JH	1810-1930	2000-2245	59-61°F, 95% clouds, wind 0-4 mph

PR=Phil Richards JH=James Hickman
WK=Will Kohn AU=Andrew Underwood

Table 4. Survey Dates, Personnel, and Weather Conditions for Trabuco Canyon

Visit Number	Date	Biologists	Daytime Time	Nighttime Time	Nighttime Conditions
1	4/25/19	PR, JH	1600-1900	2020-2240	58-63°F, 5% clouds, wind 0-3 mph
2	5/09/19	WK, JH	1700-1900	2030-2315	57-58°F, 100% clouds, wind 0-3 mph
3	5/23/19	PR, JH	1550-1925	2040-2230	50-55°F, 10% clouds, wind 1-3 mph
4	5/30/19	PR, JH	1755-1955	2050-2240	57-59°F, 100% clouds, wind 1-3 mph
5	6/06/19	PR, RL	1715-1955	2035-2300	59-61°F, 100% clouds, wind 1-4 mph
6	6/19/19	PR, JH	1715-1935	2045-2255	62-64°F, 100% clouds, wind 1-3 mph

PR=Phil Richards JH=James Hickman WK=Will Kohn
ML=Marty Lewis RL=Ryan Layden

Results

The 2019 survey effort along portions of Silverado, Santiago, and Trabuco Creeks yielded no observations of ARTO. No ARTO egg strands, larvae, or juveniles were observed. No male ARTO calls were detected during any of the visits.

Amphibian species observed included California Toads (*Anaxyrus boreas halophilus*), California Treefrog (*Pseudacris cadaverina*), Baja California Treefrog (*Pseudacris hypochondriaca*), American Bullfrog (*Lithobates catesbeianus*), and African Clawed Frog (*Xenopus laevis*). With the exception of African Clawed Frog, which was only observed as adults, all of these species were observed at various stages of development including tadpoles, metamorphs (tadpoles with limbs forming in water), juveniles (post metamorphosis), and adults. California Toad egg strands were regularly observed and, on numerous occasions, California Toads were observed in amplexus surrounded by a mass of egg strands. Table 5 summarizes the total number of juvenile and adult California Toad, American Bullfrog, and African Clawed Frog observed at each survey area. The total number of adult California Toads varied considerably among survey areas. The total of adult California Toads ranged from 13 along the Santiago Creek (Upstream) survey area to 639 along the Trabuco Creek survey area. As the survey effort extended later into the breeding season, the number of observed juvenile California Toads significantly increased. For example, at the Santiago Creek (Downstream) survey area, the three May visits averaged 45 juvenile California Toads per visit and the two June visits averaged 306 juveniles per visit.

Table 5. Total Observed California Toads, American Bullfrogs, and African Clawed Frogs

Survey Area	California Toad	American Bullfrog	African Clawed Frog
Silverado Creek	Adult = 15 Juvenile = 490	0	0
Santiago Creek (Upstream)	Adult = 13 Juvenile = 567	4	0
Santiago Creek (Downstream)	Adult = 52 Juvenile = 748	Adult = 1 Juvenile = 2	0
Trabuco Creek	Adult = 639 Juvenile = 431	0	3
Total	Adult = 719 Juvenile = 2,236	Adult = 5 Juvenile = 2	3

Exotic predators observed in the survey areas included American Bullfrog and African Clawed Frog. The number of post larval individuals were relatively low within the survey areas (see Table 5). No African Clawed Frog tadpoles were observed; however, several American Bullfrog tadpoles were observed. American Bullfrog tadpoles were only occasionally seen during the later visits along a few of the survey areas; however, the isolated upstream reach of the Trabuco Creek survey area contained large numbers of tadpoles. Another exotic species observed, but only in the isolated upstream reach of the Trabuco Creek survey area, was Common Goldfish (*Carassius auratus*). Approximately ten Common Goldfish were observed at this location.

Appendix B provides representative photographs of the survey areas. A list of wildlife species detected during the survey effort is provided in Appendix C.

Discussion

According to rainfall totals recorded from OCPW's gauge at the nearby Villa Park Dam, the 2018/2019 rain season total prior to the start of the protocol presence/absence ARTO survey effort was 20.89 inches, which is 6.31 inches higher than the average for this location (OCPW 2019). The steady rain events that occurred in the region during this period contributed to increased run-off and strong scouring events within the ARTO survey areas. With floodplains cleared of debris and vegetation and surface water conditions remaining suitable for ARTO breeding throughout the survey period, conditions for detecting ARTO were excellent. In addition to having scoured floodplains allowing for excellent access and visibility of the survey area, the ample amount of surface water provided suitable breeding conditions throughout the duration of the survey effort. Despite these exceptional survey conditions, no ARTO were detected within the identified portions of Silverado, Santiago, and Trabuco Creeks during ICF's 2019 focused survey effort.

With no ARTO being found during this protocol survey effort, it appears that ARTO are currently absent from the survey area. Combining these findings with the results of the ARTO habitat suitability assessment, which documented significant creek reaches with no suitable ARTO habitat, and Forest Service findings that no suitable habitat is present within any of these creeks within the Cleveland National Forest, it appears that ARTO are also absent in reaches well beyond the limits of the protocol survey effort. These combined findings confirm the absence of ARTO in Modjeska Canyon, Silverado Creek, Santiago Creek (from Modjeska Canyon to Irvine Lake), and most of Trabuco Creek.

As previously discussed, approximately 2 miles of upper Trabuco Creek upstream of Bridge #55C0008 at Trabuco Canyon Road/Live Oak Canyon Road (Figure 2) were determined to have a varying mosaic of suitable and unsuitable habitat along the flow channel and within the wider floodplain. This 2-mile reach could not be surveyed during the protocol ARTO presence/absence survey due to ownership issues at the time; however, based on the negative results of the representative surveys performed upstream and downstream from this reach and the habitat suitability assessment that was conducted within this reach, it is unlikely that ARTO would be present within these 2 miles.

If you have questions or need clarifications regarding this report, please contact me at (949) 333-6643 or Phillip.Richards@icf.com.

Sincerely,



Phillip Richards
Wildlife Biologist
ICF International

Enclosed:

Figure 1: Regional Vicinity
Figure 2: Arroyo Toad Survey Area
Figure 3: Historical Arroyo Toad Occurrences

Appendix A: Memorandum on the Availability of Suitable Arroyo Toad Habitat (ICF 2019)
Appendix B: Representative Photographs
Appendix C: Wildlife Species Detected

Literature Cited

ICF 2019. Memorandum on the Availability of Suitable Arroyo Toad Habitat in Four Orange County Canyons. Prepared for Giles Matthews, Orange County Public Works. April 11, 2019.

Orange County Public Works. 2019. Rainfall and Stream Gage Data. Last Accessed July 17, 2019. http://ocwatersheds.com/monitoring/hydrology/data

R.J. Meade, Inc. (RJM). 1996. *Central and Coastal Subregion Natural Community Conservation Plan/Habitat Conservation Plan Parts I & II: NCCP/HCP. Implementation Agreement.* Prepared for County of Orange Environmental Management Agency and United States Fish and Wildlife Service/California Department of Fish and Game. July 17, 1996.

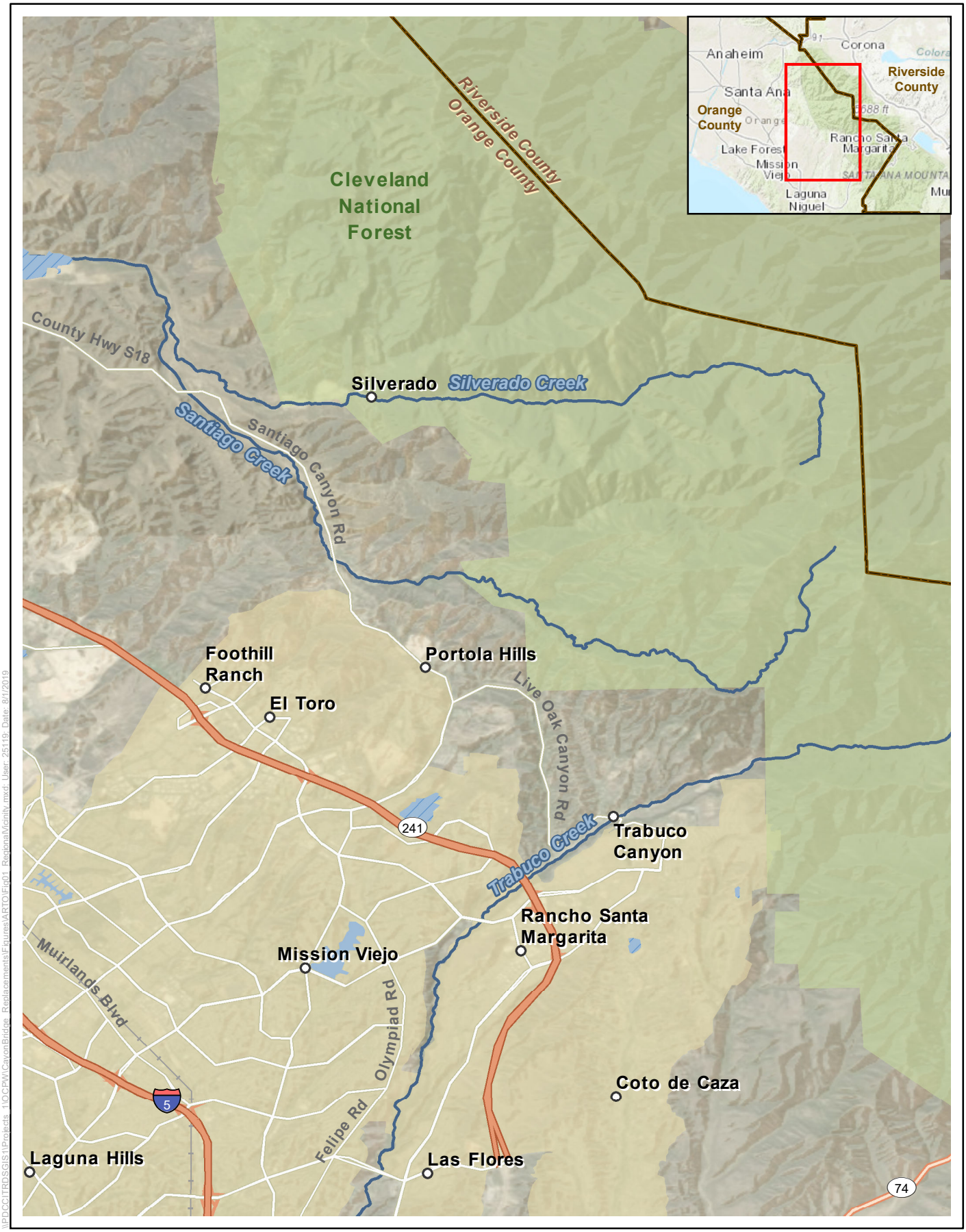
Snyder, J. 2019. Personal communication regarding authorization and approval of arroyo toad survey methodology. United States Fish and Wildlife Service, Division Chief, Los Angeles and Orange Counties. April 12, 2019.

U.S. Fish and Wildlife Service. 1999. Survey Protocol for the Arroyo Toad. May 19, 1999.

_____. 2000. Endangered and Threatened Wildlife and Plants; Proposed Designation of Critical Habitat for the Arroyo Southwestern Toad. Proposed Rule. Federal Register 65: 111.

U.S. Geological Survey (USGS). 2019. 7.5-minute Topographic Quadrangle Maps for Black Star Canyon, El Toro, and Santiago Peak, California.

Figures



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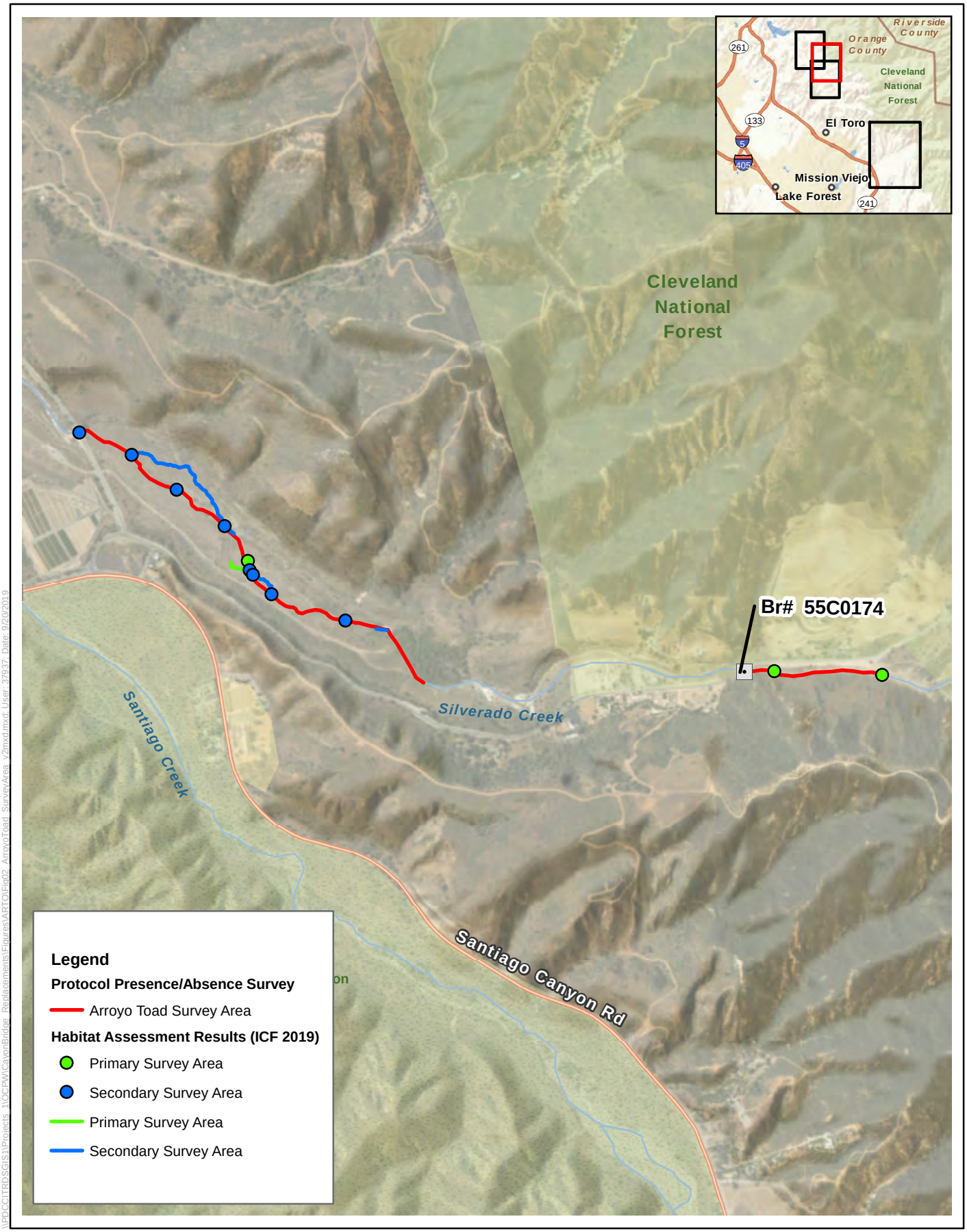
0 2 Miles

1:120,000

Figure 1
Regional Vicinity
Arroyo Toad Survey



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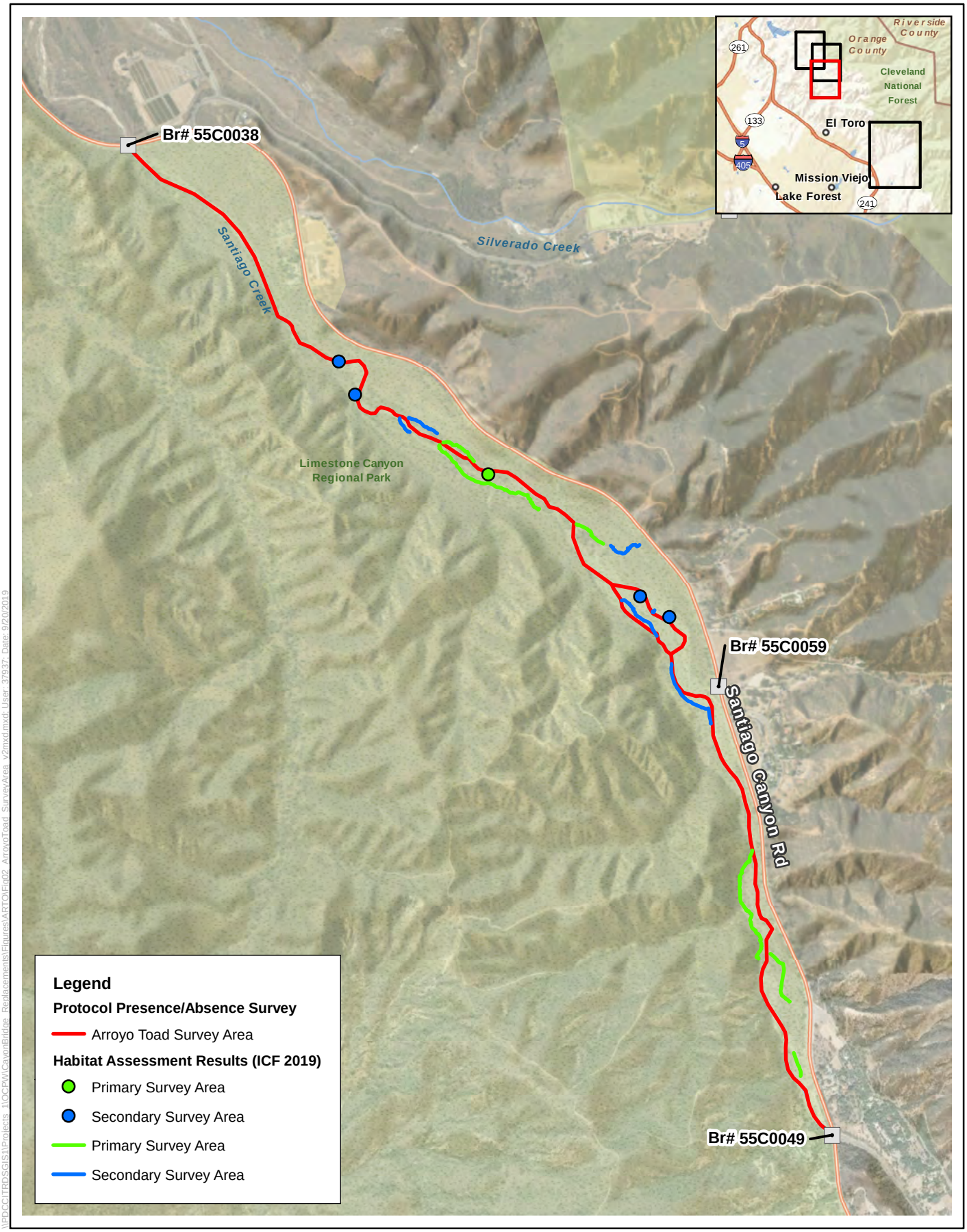
1:16,800

Figure 2a
Arroyo Toad Survey Area
Silverado Creek Survey Area



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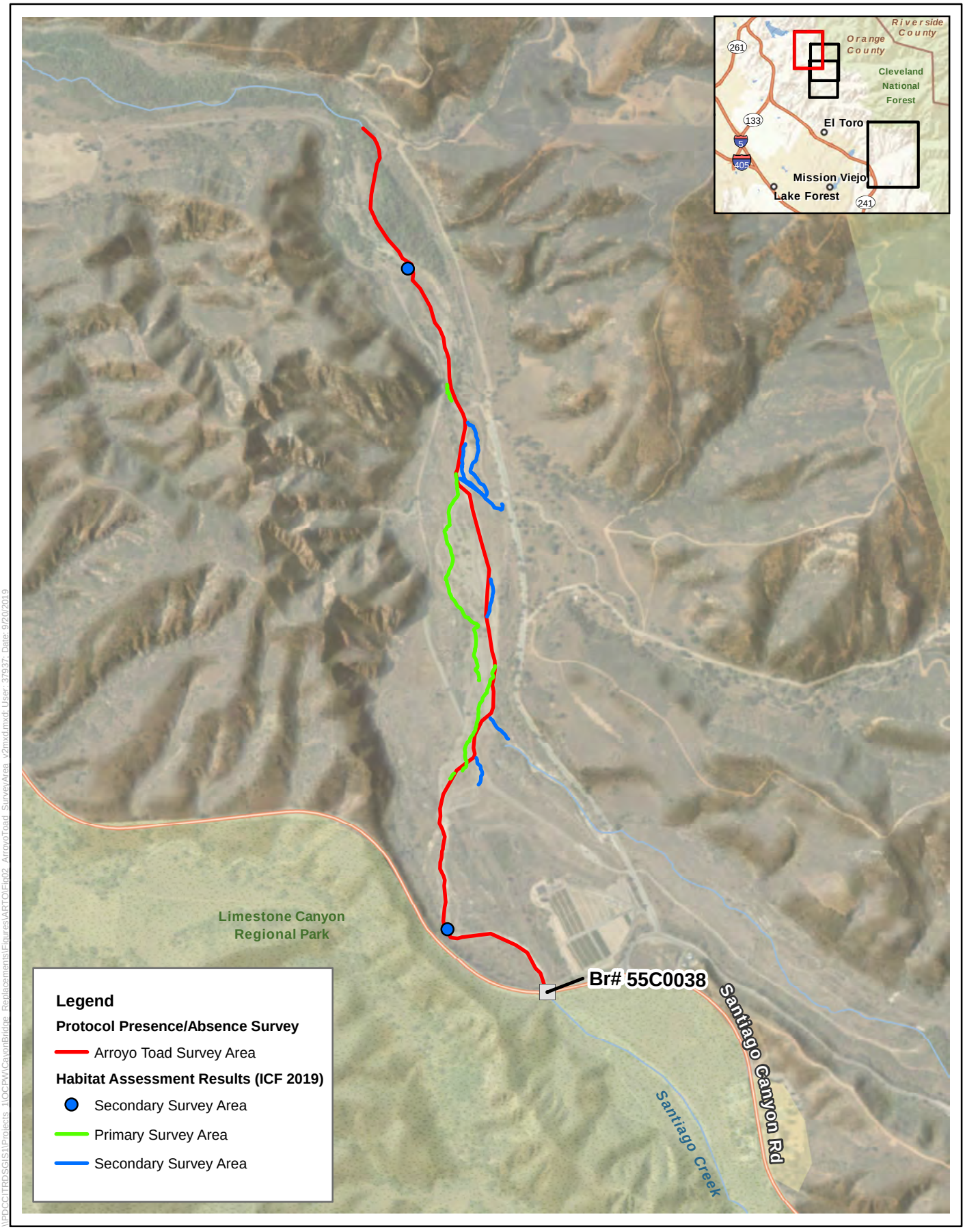
1:20,400

Figure 2b
Arroyo Toad Survey Area
Santiago Creek (Upstream) Survey Area



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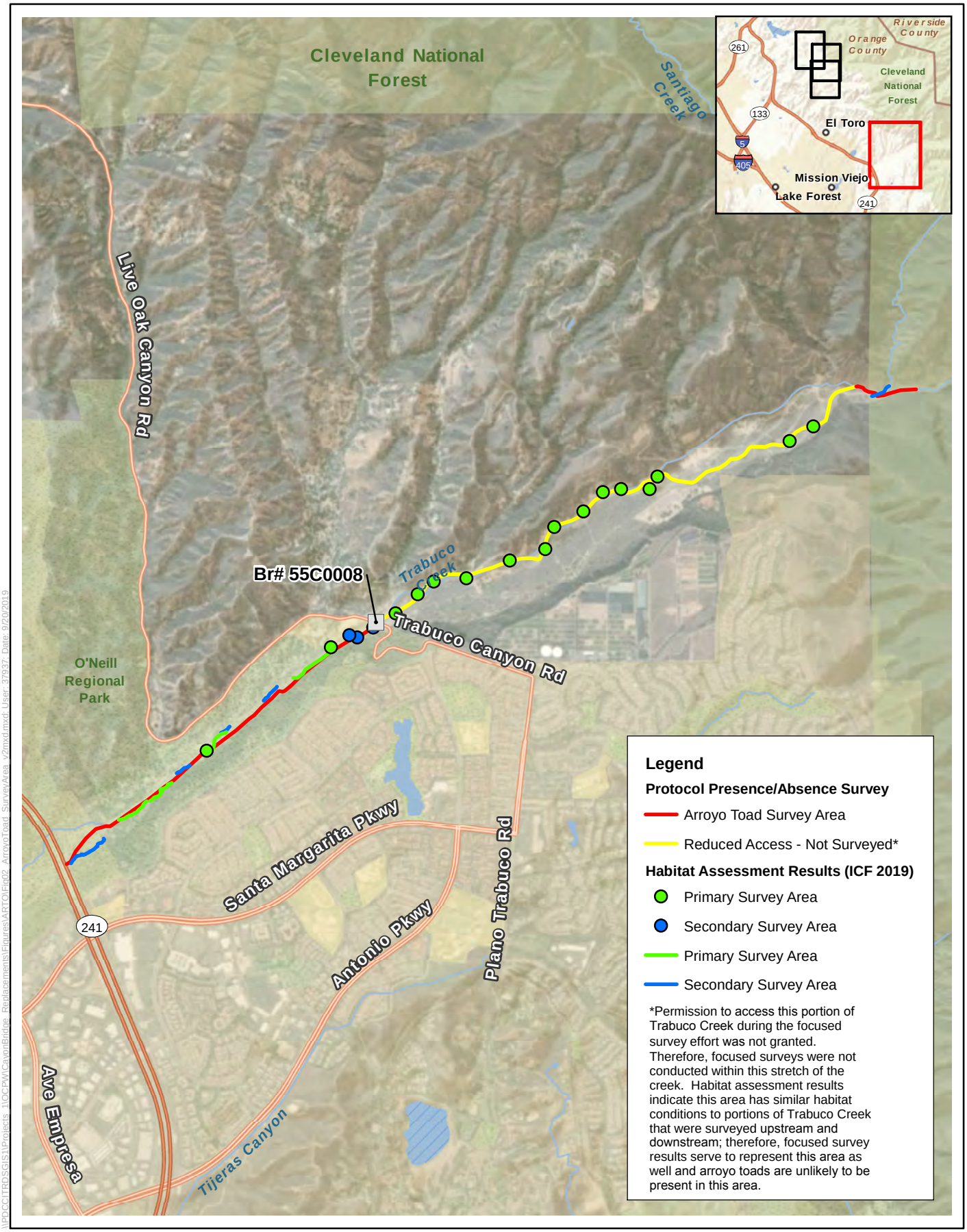
1:16,800

Figure 2c
Arroyo Toad Survey Area
Santiago Creek (Downstream) Survey Area



N

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1:30,000

Figure 2d
Arroyo Toad Survey Area
Trabuco Creek Survey Area

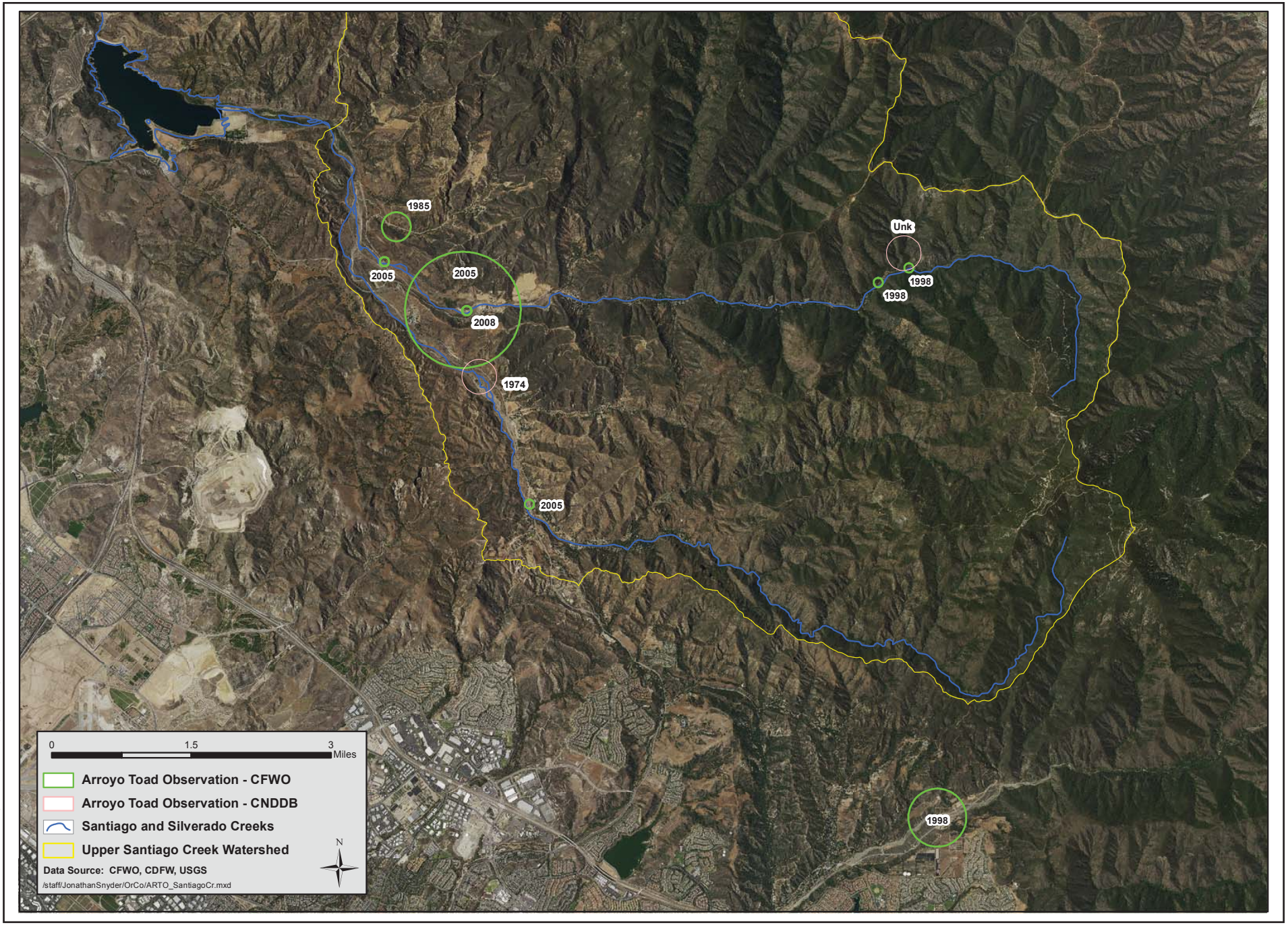

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Figure 3
Historic Arroyo Toad Occurrences
Arroyo Toad Survey

Appendix A

Memorandum on the Availability of Suitable Arroyo Toad Habitat (ICF 2019)

September 23, 2019

Giles Matthews
Orange County Public Works
300 N Flower Street, Santa Ana, CA 92703

Subject: Memorandum on the Availability of Suitable Arroyo Toad Habitat in Four Orange County Canyons

Dear Mr. Matthews:

This memorandum discusses the results of arroyo toad (*Anaxyrus californicus*; ARTO) suitability assessments conducted by ICF under contract to Orange County Public Works (OCPW). ARTO suitability assessments were conducted in canyons in the foothills of Orange County (Figure 1 in Attachment A).

Background

OCPW proposes to remove and replace one bridge in Modjeska Canyon, three bridges in Silverado Canyon, and one bridge in Trabuco Canyon. OCPW also has ongoing maintenance interests in Santiago Canyon that occasionally require in-stream construction. Portions of all four creeks have been designated as Critical Habitat for ARTO, a federally endangered species (USFWS 2019). Areas in Santiago Creek have also been identified in the Orange County Central/Coastal Natural Community Conservation Plan/Habitat Conservation Plan (NCCP/HCP) as being suitable for arroyo toad (RJM 1996).

In order to allow OCPW to conduct bridge replacement and future maintenance work in areas where arroyo toad may occur and/or where federally-designated Critical Habitat is present, the U.S. Fish and Wildlife Service Carlsbad Fish and Wildlife Office (CFWO) has requested that arroyo toad suitability assessments be conducted in the vicinity of proposed and future work areas, including areas where arroyo toads have previously been reported. The results of the suitability assessments would determine where focused surveys should be conducted in spring 2019, and the results of those focused surveys would determine the need, if any, for future consultation with the CFWO when OCPW is working in these areas.

Location

ARTO suitability assessments were conducted in Modjeska, Santiago, Silverado, and Trabuco Canyons (Figures 2a – 2d in Attachment A). OCPW Senior Environmental Resources Specialist Mr. Giles Matthews provided specific assessment boundaries totaling approximately 0.67 mile in Modjeska Canyon, 6.5 miles in Santiago Canyon, 2 miles in Silverado Canyon, and 2 miles in Trabuco Canyon, as well as standalone bridges in Modjeska, Silverado, and Trabuco Canyons. An additional 2 miles in Trabuco Canyon and 0.5 mile in Modjeska Canyon were later added to the assessment area to provide a more complete assessment of the waterways. Sites were located in the Black Star Canyon, El Toro, and Santiago Peak United States Geological Survey (USGS) 7.5-minute topographic quadrangles (USGS 2019). In Modjeska Canyon the assessment limits included sections of Modjeska Creek located in Township 5S, Range 7W, Sections 28 and 29, as well as a small un-sectioned area just east of Santiago Canyon Road. In Santiago Canyon, the assessment areas were located in Township 4S, Range 8W, Sections 78 and 111; Township 5S, Range 8W, Sections 111, 115, 116, 146, and 149; and Township 5S, Range 7W, Sections 149 and 179. In Silverado Canyon, assessments were conducted in Township 5S, Range 8W, Sections 115

and 147; Township 5S, Range 7W, Sections 7, 8, 9, 10, and 11. In Trabuco Canyon, suitability assessments were conducted in areas located in Township 6S, Range 7W, Sections 11, 12, 14, and 15; and Township 6S, Range 6W, Section 6.

Methods

The evaluation included a literature review and site visits to the specified creek sections.

Literature Review
Prior to the start of field surveys, ICF completed a literature review to identify records of ARTO in the vicinity of the survey areas. A search of the California Department of Fish and Wildlife's (CDFW) California Natural Diversity Database (CNDDB) was conducted in the Black Star Canyon, El Toro, and Santiago Peak USGS 7.5-minute topographic quadrangles (CDFW 2019, USGS 2019). In addition, the CFWO supplied a map showing where ARTO was recorded in the project vicinity between 1974 and 2008 (Figure 3 in Attachment A).

Survey Methods
Field surveys were initially conducted by ICF biologist Mr. Ryan Winkleman on March 26 and April 1, 2019 and by Mr. Winkleman and ICF biologist Mr. Phillip Richards on March 27 and 28, 2019. Field surveys included discrete areas within Modjeska, Santiago, Silverado, and Trabuco Canyons as provided by Mr. Matthews, as well as specific areas within these general survey boundaries where ARTO had been previously recorded as provided by the CFWO (Figure 3 in Attachment A). The biologist(s) walked the entire survey limits evaluating all wet areas including the main channel and all flowing/wet side channels. Areas at bridges were evaluated from the bridge/public road, with binoculars as necessary. The biologist(s) used the ArcGIS app "Collector" on their mobile devices in the field to navigate suitability limits and plot data points and linear stretches of creek, as well as to record site characteristics. Photos were taken with the external app "Timestamp Camera" and then attached to data points and lines in Collector; all photos include a stamp showing date, time, and coordinates where photos were taken.

When evaluating the creeks, surveyors generally considered the following characteristics, roughly based on the arroyo toad Primary Constituent Elements (USFWS 2011) to determine if a site should be considered for focused ARTO surveys:

- Stream substrate (mud, sand, gravel, cobble, boulder, bedrock)
- Water depth
- Bank width
- Approximate rate of water flow
- Relative percentages of pools, riffles, and runs along a linear stretch or within 25 feet on either side of isolated points
- Presence of sandy banks or terraces in adjacent areas outside of the flow channel
- Percentage of vegetative canopy over the creek section
- Dominant riparian vegetation on the site
- Presence of concomitant anurans

Areas that had poor substrate for ARTO (i.e., excessive rocks), were flowing too fast, lacked or had a very small presence of in-stream or adjacent sandy areas, were very deep, and/or were excessively shaded by vegetation and/or manmade features were generally unsuitable for focused surveys and were disregarded. Substrate and other more concrete conditions were generally valued in this assessment higher than water flow conditions. Areas that had a good percentage of in-stream or upland sandy areas, no or slow flow,

were relatively shallow, had decent-sized pools for breeding, and were relatively unshaded were generally considered suitable for focused surveys (hereafter referred to as primary survey areas). Some areas were considered intermediate, in that conditions were not wholly adequate for focused surveys at the time of the suitability assessments, but may be worth "checking up on" in the future (e.g., areas that fit most good characteristics but had a moderate water flow that may slow down in time for focused surveys) (hereafter referred to as secondary survey areas). Areas identified by the CFWO and CNDDB as having previous ARTO records were given slightly more weight and were scrutinized a bit more in determining suitability because of historic presence, but the biologist(s) also recognized that historic records in these areas ranged from 1974 to 2008 and that stream conditions have likely changed over time, particularly after the rain season of 2018/2019, when there was more rain in February 2019 alone than in all of 2018 (National Weather Service Forecast Office 2019).

The biologist(s) did not overly speculate on what future conditions may be. For example, slow-flowing areas that were obviously going to dry up in the imminent future were disregarded, and areas that had relatively slow flow (0.5 to 1 foot per second) were in many cases deemed potentially suitable for future focused surveys. However, main channels were generally swiftly-flowing (2 to 3 feet per second, whereas ARTO prefers 0.2 feet per second for breeding; USFWS 1999) and the biologist(s) made no attempt to assume or predict when the flow may slow down enough to be suitable for ARTO breeding in areas like these.

To save time, because the main active flow channel of each canyon was, for various reasons, generally unsuitable to support ARTO at this time or, in some cases, at all, comprehensive data was not obtained at each point along the way. Rather, the biologist(s) generally took full sets of data based on the bullets above at an isolated data point to start out each reach and then took follow-up data points approximately every 500 to 1,000 feet afterward and noted whether the general conditions had changed. Photographs were taken at every single point regardless of suitability. As a result, the main active flow channels were not comprehensively geographically mapped in GIS, but were approximated on the maps in Attachment A based on the data points that were taken (i.e., the dots were connected to give the approximate current location of the main channel, which in some cases had shifted away from historical channels because of heavy rains in winter 2018-2019). Shorter side channels and tributaries were generally mapped precisely in the field with linear GPS tracks in Collector, and a single set of data was taken for the entire side channel.

In August 2019, two additional discrete stream portions were added to the assessment area. These included approximately 2 miles within Trabuco Canyon and 0.5 mile in Modjeska Canyon. These areas represented portions of the respective canyons that were not originally part of the survey area but that were added in order to provide a more thorough picture of floodplain conditions and to help better contextualize the results of the areas that were analyzed during the wet season. As with the spring assessments, data points were taken approximately every 500 feet, including photographs upstream and downstream. Because there was no water flow during the August 2019 reconnaissance surveys, these areas were characterized solely based on substrate and vegetative cover, and thus were classified conservatively as either a primary survey area or as an unsuitable survey area.

Assessment areas are shown on Figures 2a through 2d in Attachment A. Those areas that were directly walked either in the spring or summer of 2019 are referred to in these figures as "Direct Habitat Assessment Areas," indicating they were directly assessed on foot. Areas included on these maps as "Indirect Habitat Assessment Areas" refer to areas that were not walked, but were indirectly assessed either while traversing through the area, based on conditions observed upstream and downstream, and/or based on a review of aerial imagery. These areas were generally unsuitable for ARTO.

Results and Discussion

Data obtained for each data point or linear feature are shown in Attachment B; representative photos are included in Attachment C. While all data points and linear features are represented with photographs in Attachment C, due to the aforementioned "bundling" of data in the field for similar stream sections, Attachment B contains some areas where multiple data points are represented by a single row of data, which is intended to represent average conditions across that particular reach.

The following sections briefly describe the broad results of ICF's suitability assessments. It should be noted that in an email dated March 7, 2019, Cleveland National Forest Biologist Kirsten Winter stated that there is no suitable ARTO habitat on National Forest System lands within the general survey area vicinity (Attachment D).

Modjeska Creek

No primary survey areas were designated anywhere in Modjeska Creek (Figure 4a in Attachment A). The bridge crossing at Santiago Canyon Road was deemed a secondary survey area due to the presence of decent breeding substrate and upland sandy terraces with limited shade directly under the bridge, and should be reviewed at the time of focused surveys to determine if water flow has slowed enough to support breeding. The entire remainder of Modjeska Creek, including the area that was reconnoitered in August 2019, was deemed unsuitable for focused surveys because of excessive rockiness, fast water flows, a lack of sandy terraces, and/or excessive shade.

Santiago Creek

The main active flow channel throughout the entire length of Santiago Creek is generally unsuitable for ARTO (Figure 4b in Attachment A). First and foremost, the water flow is much too fast (minimum of 2 feet per second throughout), and across most of its length, the area is just too rocky and has too much cobble and too many boulders with not enough sandy upland terraces for juvenile toads to burrow into after metamorphosing. Long sections of the creek throughout the middle stretch are entirely encompassed by bedrock. The final stretch of the creek encompassing the last approximately 1.1 miles is in a riparian woodland leading into Irvine Lake and is not suitable due to heavy canopy cover, swift flows, and lack of suitable substrate. There are mostly short side channels upstream of the Santiago Canyon Road crossing and several long side channels downstream of the crossing that are characterized as primary or secondary survey areas. However, because the primary and secondary survey areas are located throughout the length of the creek, many of the areas marked as unsuitable habitat will likely be inspected during the focused surveys while walking between survey points, and are thus shown as having an "incidental survey area" layer along most of the length of Santiago Creek in Figure 4b.

Silverado Creek

The highest quality habitat in Silverado Creek is in approximately the last 0.75 mile of the creek upstream of Black Star Canyon Road, where the main channel flows through a restoration/mitigation site (Figure 4c in Attachment A). Mulefat is plentiful without causing excessive shady spots, and sandy terraces are relatively abundant; however, the water flow is still for the most part too fast for this species. This particular area is recommended as a secondary survey location that generally cannot support breeding ARTO at this time but would be good habitat if the water slows down by the time of focused surveys. Most of the rest of lower Silverado Creek is unsuitable due to water flow, lack of terraces, excessive shade, and/or poor substrate, with a few isolated exceptions that are currently suitable south of the new St. Michael's Abbey construction. Silverado Creek from Ladd Canyon upstream to the Maple Springs gate

was deemed entirely unsuitable for ARTO due to swift flows, excessive shading and rockiness, and lack of sandy terraces.

Trabuco Creek

Lower Trabuco Creek within the limits of O'Neill Regional Park contains patchy side channels that are suitable for surveying as either primary or secondary survey areas (Figure 4d in Attachment A). The main active flow channel is generally unsuitable for surveying due to swift flows, generally poor substrate (mostly cobble), and in many areas inadequate water depths (i.e., the creek is too deep). The first 2 miles of Upper Trabuco Creek upstream of Trabuco Canyon Road/Live Oak Canyon Road was determined in August 2019 to have a varying mosaic of suitable and unsuitable habitat along the flow channel and within the floodplain. As with Santiago Creek, this portion of Trabuco Creek is shown as being an "incidental survey area," as the habitat in between survey points may or may not be suitable but would be walked through regardless during any surveys. The area of Trabuco Creek around and heading inside (i.e. upstream) of the National Forest System boundary as assessed in March 2019 is generally unsuitable for ARTO due to swift flows, poor substrate (generally cobble), and lack of sandy terraces for burrowing, particularly as the floodplain gets narrower.

Conclusion

Based on the results of ICF's habitat suitability assessments conducted in March, April, and August 2019 in the Orange County foothills, it was determined that there is suitable ARTO habitat within discrete sections of Santiago, Silverado, and Trabuco Creeks. These include both primary survey areas, defined as areas that were suitable for focused surveys at the time of the assessments, and secondary survey areas, defined as areas that were not quite suitable for one or more reasons but may be suitable in the future and should be checked again over time. Focused surveys are recommended within the primary survey areas that were mapped in Santiago, Silverado, and Trabuco Creeks. Secondary survey areas should be checked at the time of the surveys in order to determine whether they should be surveyed as well. Where historic ARTO sites were deemed to still have suitable habitat, these general areas would be surveyed as part of the same effort, and when located near or between suitable habitat, areas that would otherwise be unsuitable would still be incidentally surveyed. It is ICF's determination that focusing protocol survey efforts on the primary survey areas and, as needed, the secondary survey areas, will have the greatest chance of determining whether arroyo toads are present in the entire assessment areas of these creeks.

Sincerely,



Ryan Winkleman
Senior Biologist

Attachment A: Figures
Attachment B: Site Characteristics
Attachment C: Site Photographs
Attachment D: USFS Correspondence

References

California Department of Fish and Wildlife (CDFW). 2019. *Element Reports for Black Star Canyon, El Toro, and Santiago Peak 7.5-minute Topographic Maps*. California Natural Diversity Database, Wildlife Habitat Data Analysis Branch, Habitat Conservation Division. Sacramento, CA. Available: https://map.dfg.ca.gov/rarefind/view/RareFind.aspx. Accessed: March 2019.

National Weather Service Forecast Office. 2019. NOWData – NOAA Online Weather Data; Monthly Total Precipitation for SILVERADO 1.0 ESE, CA. Available: https://w2.weather.gov/climate/xmacis.php?wfo=sgx. Accessed: April 2019.

R.J. Meade, Inc. (RJM). 1996. *Central and Coastal Subregion Natural Community Conservation Plan/Habitat Conservation Plan Parts I & II: NCCP/HCP. Implementation Agreement.* Prepared for County of Orange Environmental Management Agency and United States Fish and Wildlife Service/California Department of Fish and Game. July 17, 1996.

U.S. Fish and Wildlife Service (USFWS). *Arroyo Southwestern Toad (Bufo microscaphus californicus) Recovery Plan.* U.S. Fish and Wildlife Service, Portland, Oregon. vi + 119 pp.

_____. 2011. *Endangered and Threatened Wildlife and Plants; Revised Critical Habitat for the Arroyo Toad*. Published in the Federal Register Volume 76, No. 27. Available: https://www.govinfo.gov/content/pkg/FR-2011-02-09/pdf/2011-1703.pdf.

_____. 2019. *Critical Habitat GIS Data*. Carlsbad, CA. Available: http://www.fws.gov/carlsbad/GIS/CFWOGIS.html. Accessed: March 2019.

U.S. Geological Survey (USGS). 2019. *7.5-minute Topographic Quadrangle Maps for Black Star Canyon, El Toro, and Santiago Peak, California.*

Attachment A: Figures

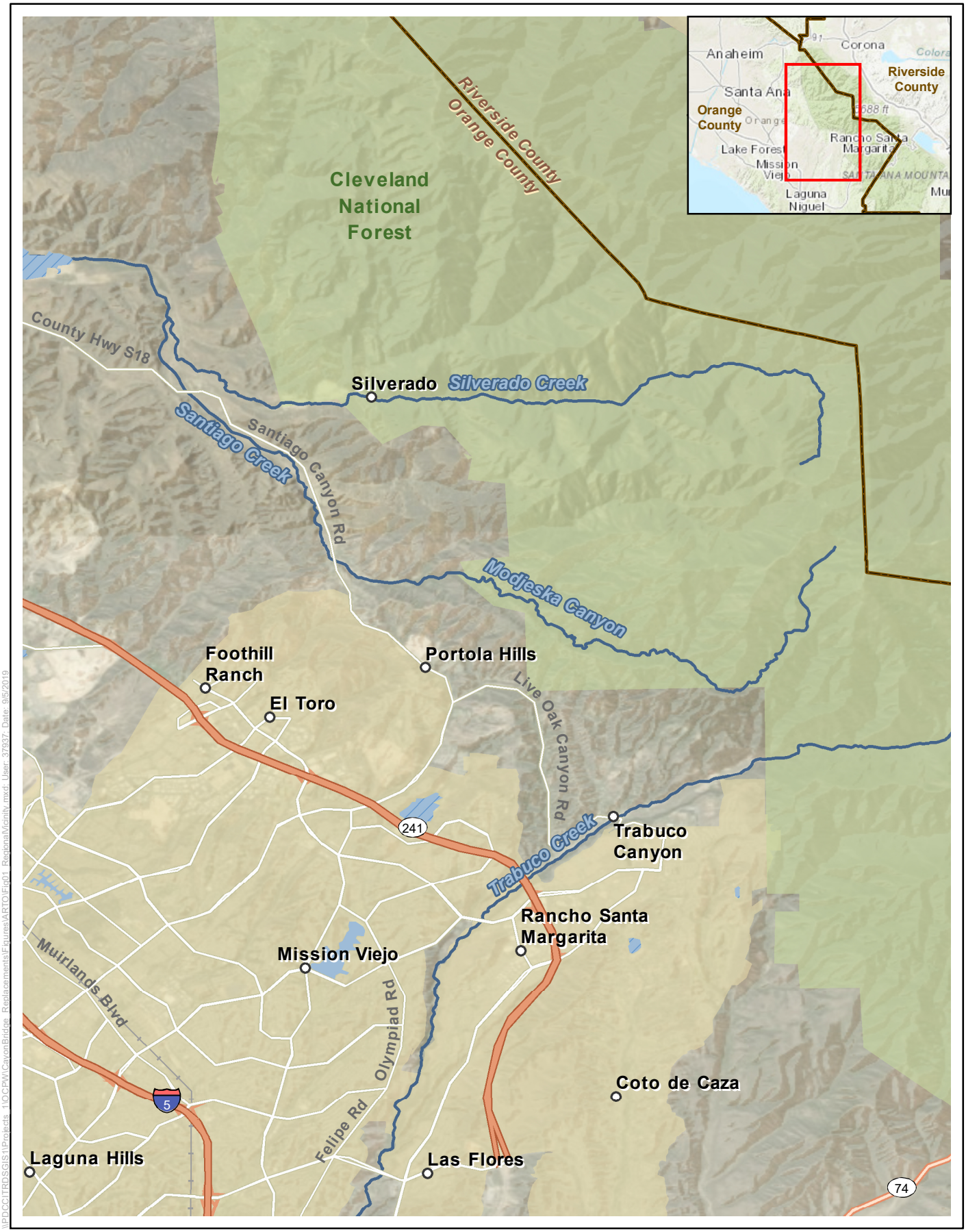

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Figure 1
Project Vicinity
Habitat Assessment Areas



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Figure 2a
Habitat Assessment Areas
Modjeska Canyon



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Figure 2b
Habitat Assessment Areas
Santiago Canyon

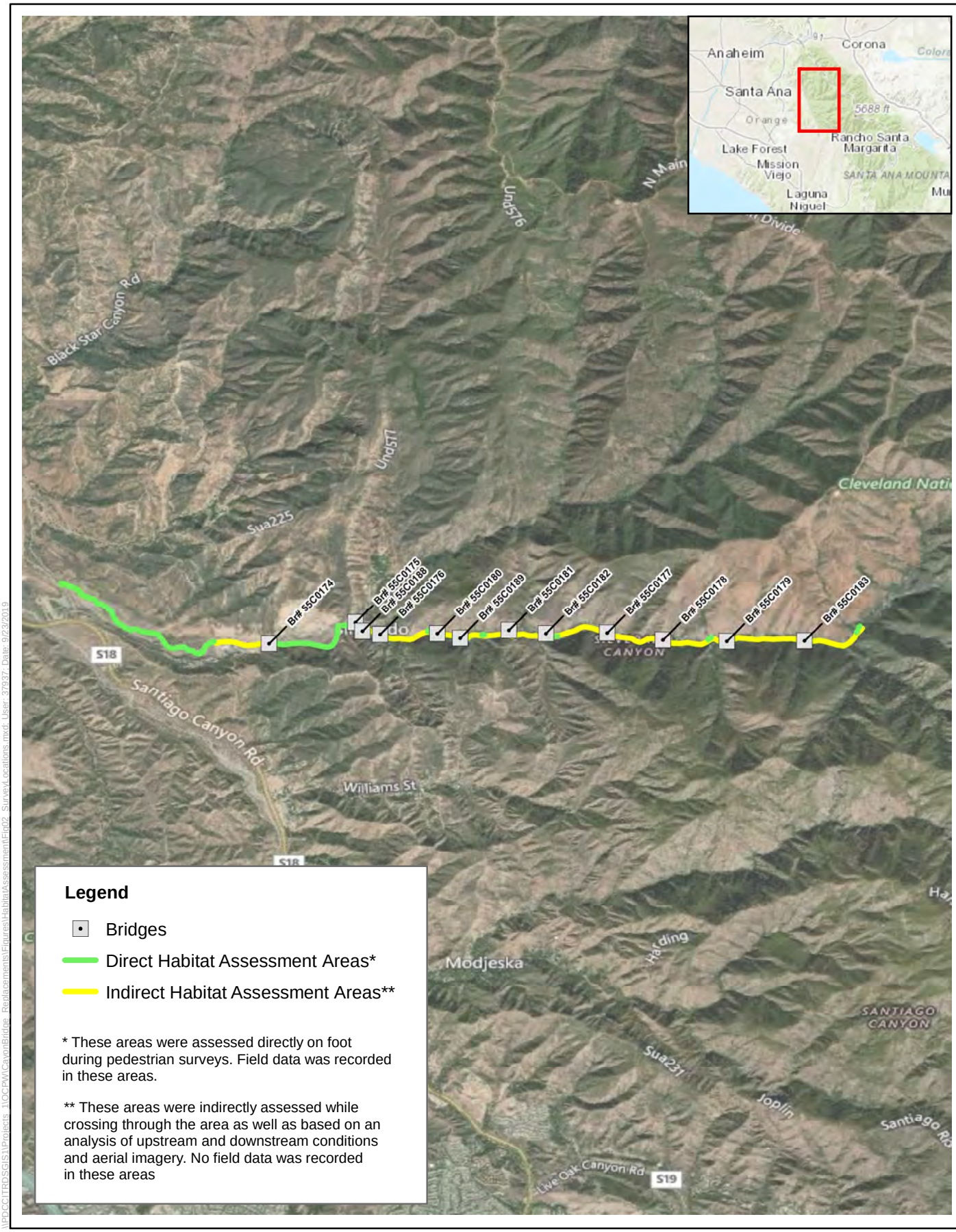

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Figure 2c
Habitat Assessment Areas
Silverado Canyon



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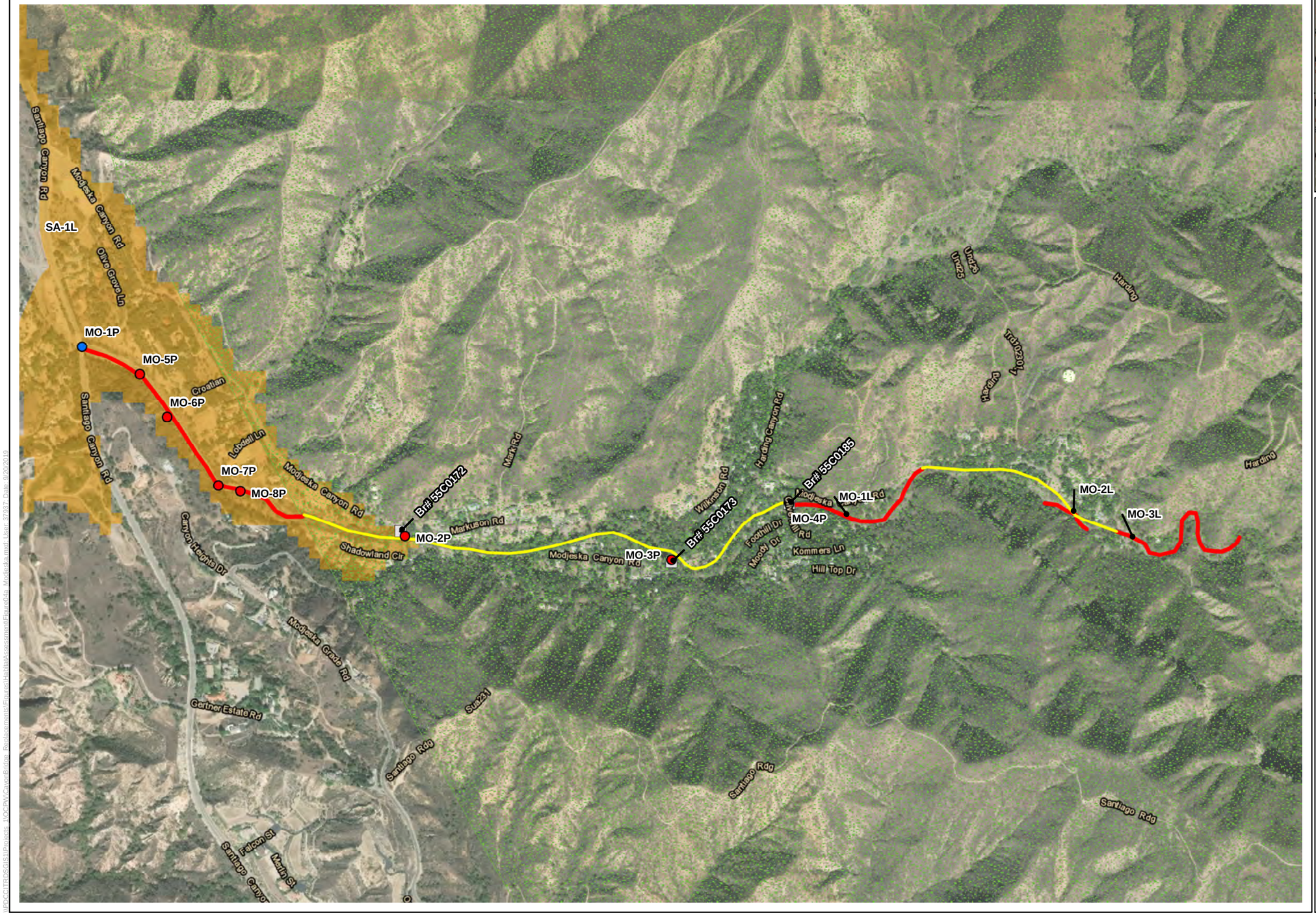
Figure 2d
Habitat Assessment Areas
Trabuco Canyon





Legend

- Data Point
- Indirect Assessment Areas*
- Arroyo Toad Critical Habitat
- USFS Lands

Focused Survey Recommendations

- Secondary Survey Area
- Do Not Survey
- Do Not Survey

*Based on in-person observations, aerial imagery, and/or communications with land stewards, these areas are determined to not contain suitable arroyo toad habitat and do not need to be surveyed further.

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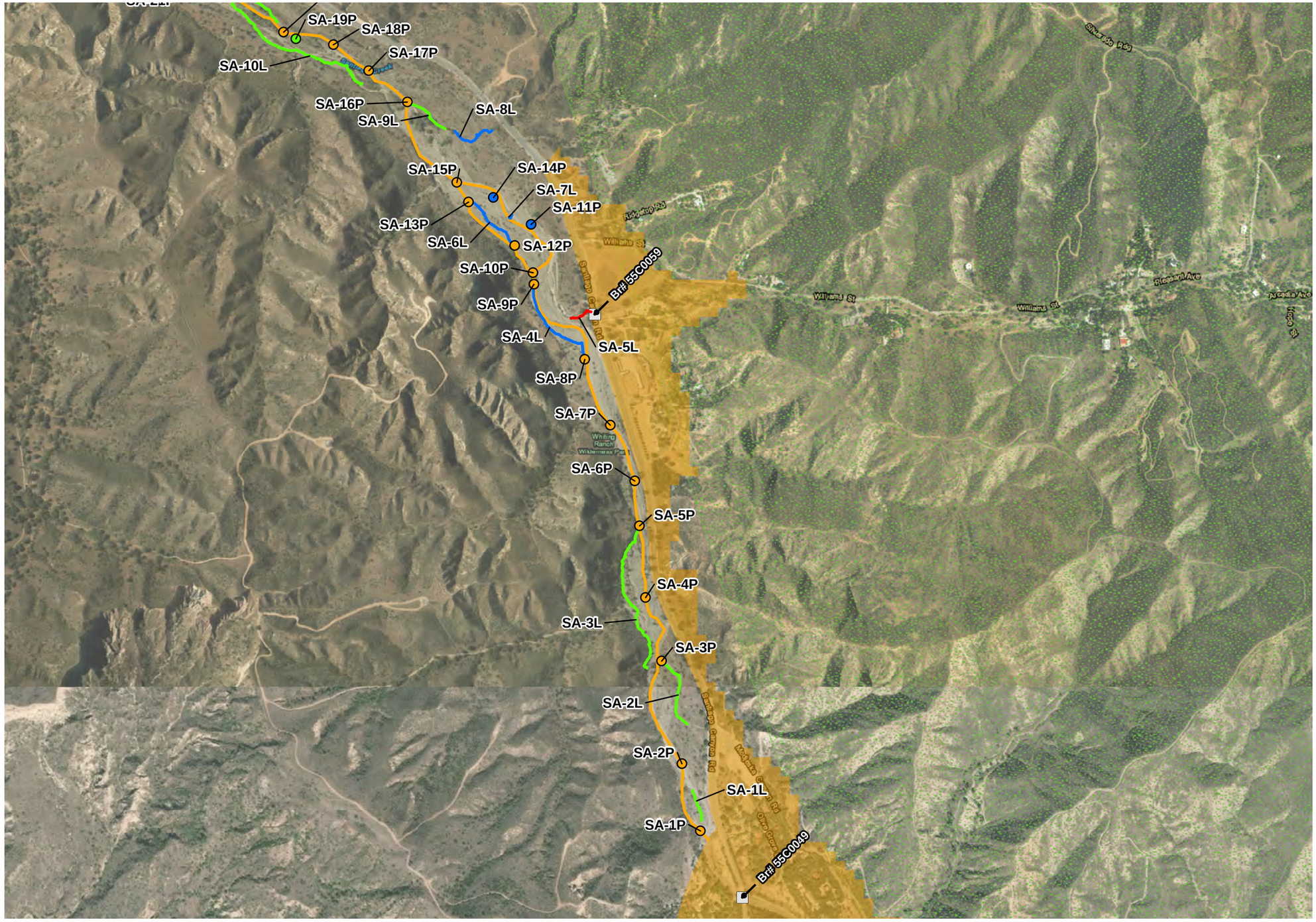
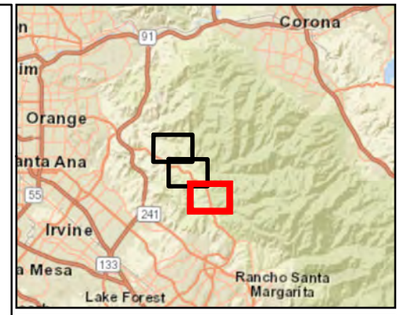
Figure 4a
Habitat Assessment Results
Modjeska Canyon





Legend

- Data Point
- Bridges
- Arroyo Toad Critical Habitat
- Cleveland National Forest

Focused Survey Recommendations

- Primary Survey Area
- Secondary Survey Area
- Incidental Survey Area
- Do Not Survey

- Primary Survey Area
- Secondary Survey Area
- Incidental Survey Area
- Do Not Survey

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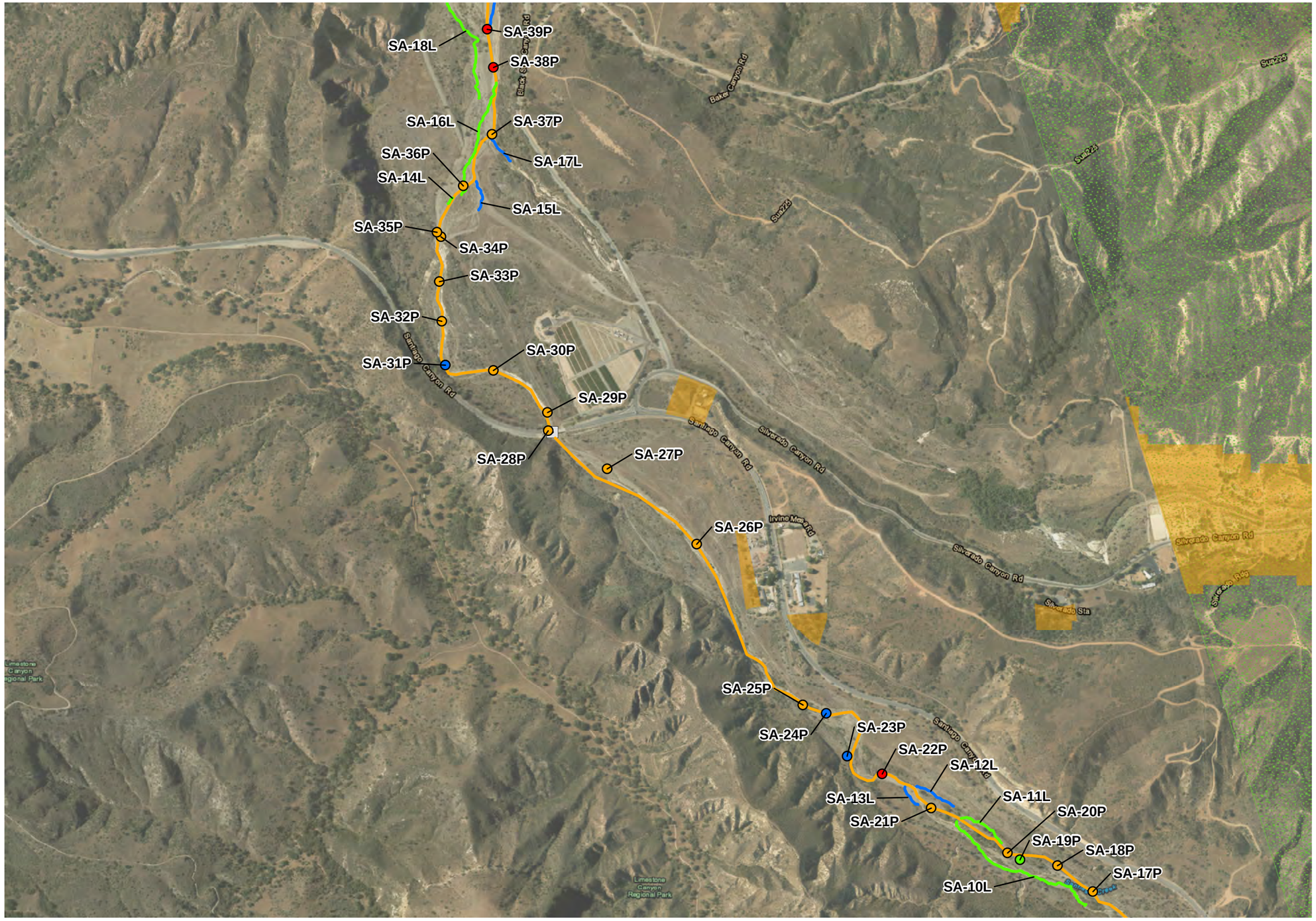
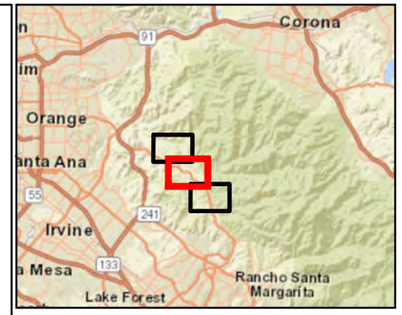
Figure 4b, Sheet 1 of 3
Habitat Assessment Results
Santiago Canyon





Legend

- Data Point
- Bridges
- Arroyo Toad Critical Habitat
- Cleveland National Forest

Focused Survey Recommendations

- Primary Survey Area
- Secondary Survey Area
- Incidental Survey Area
- Do Not Survey
- Primary Survey Area
- Secondary Survey Area
- Incidental Survey Area
- Do Not Survey

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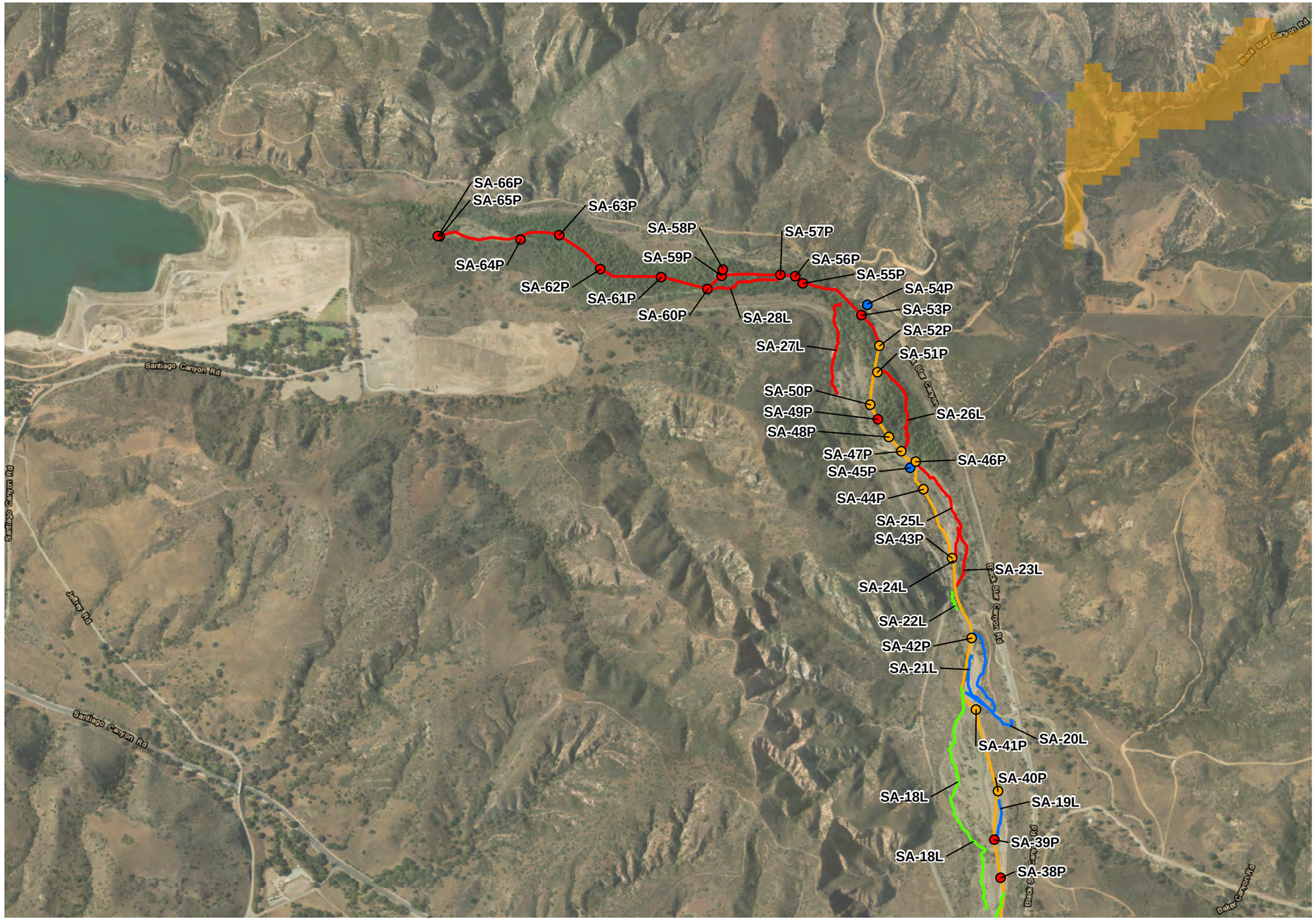
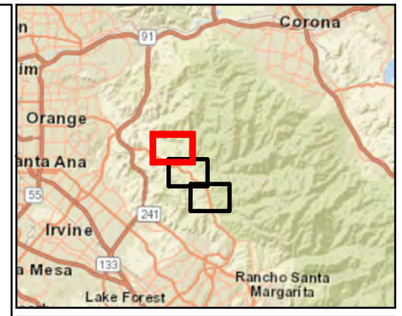
Figure 4b, Sheet 2 of 3
Habitat Assessment Results
Santiago Canyon





Legend

- Data Point
- Bridges
- Arroyo Toad Critical Habitat
- Cleveland National Forest

Focused Survey Recommendations

- Primary Survey Area
- Secondary Survey Area
- Incidental Survey Area
- Do Not Survey

- Primary Survey Area
- Secondary Survey Area
- Incidental Survey Area
- Do Not Survey

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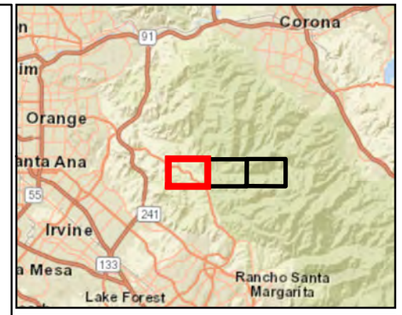
Figure 4b, Sheet 3 of 3
Habitat Assessment Results
Santiago Canyon





Legend

- Data Point
- Indirect Assessment Areas*
- Arroyo Toad Critical Habitat
- Cleveland National Forest

Focused Survey Recommendations

- Primary Survey Area
- Secondary Survey Area
- Do Not Survey
- Primary Survey Area
- Secondary Survey Area
- Incidental Survey Area
- Do Not Survey

*Based on in-person observations, aerial imagery, and/or communications with land stewards, these areas are determined to not contain suitable arroyo toad habitat and do not need to be surveyed further.

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Figure 4c, Sheet 1 of 3
Habitat Assessment Results
Silverado Canyon





Legend

- Data Point
- Indirect Assessment Areas*
- Arroyo Toad Critical Habitat
- Cleveland National Forest

Focused Survey Recommendations

- Primary Survey Area
- Secondary Survey Area
- Do Not Survey
- Primary Survey Area
- Secondary Survey Area
- Incidental Survey Area
- Do Not Survey

*Based on in-person observations, aerial imagery, and/or communications with land stewards, these areas are determined to not contain suitable arroyo toad habitat and do not need to be surveyed further.

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Figure 4c, Sheet 2 of 3
Habitat Assessment Results
Silverado Canyon

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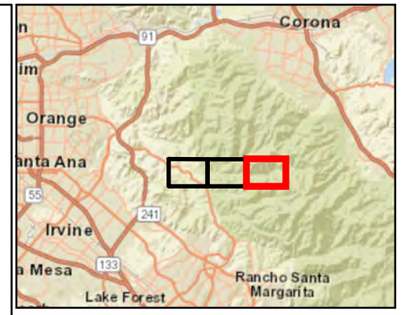

Legend

- Data Point
- Indirect Assessment Areas*
- Arroyo Toad Critical Habitat
- Cleveland National Forest

Focused Survey Recommendations

- Primary Survey Area
- Secondary Survey Area
- Do Not Survey
- Primary Survey Area
- Secondary Survey Area
- Incidental Survey Area
- Do Not Survey

*Based on in-person observations, aerial imagery, and/or communications with land stewards, these areas are determined to not contain suitable arroyo toad habitat and do not need to be surveyed further.

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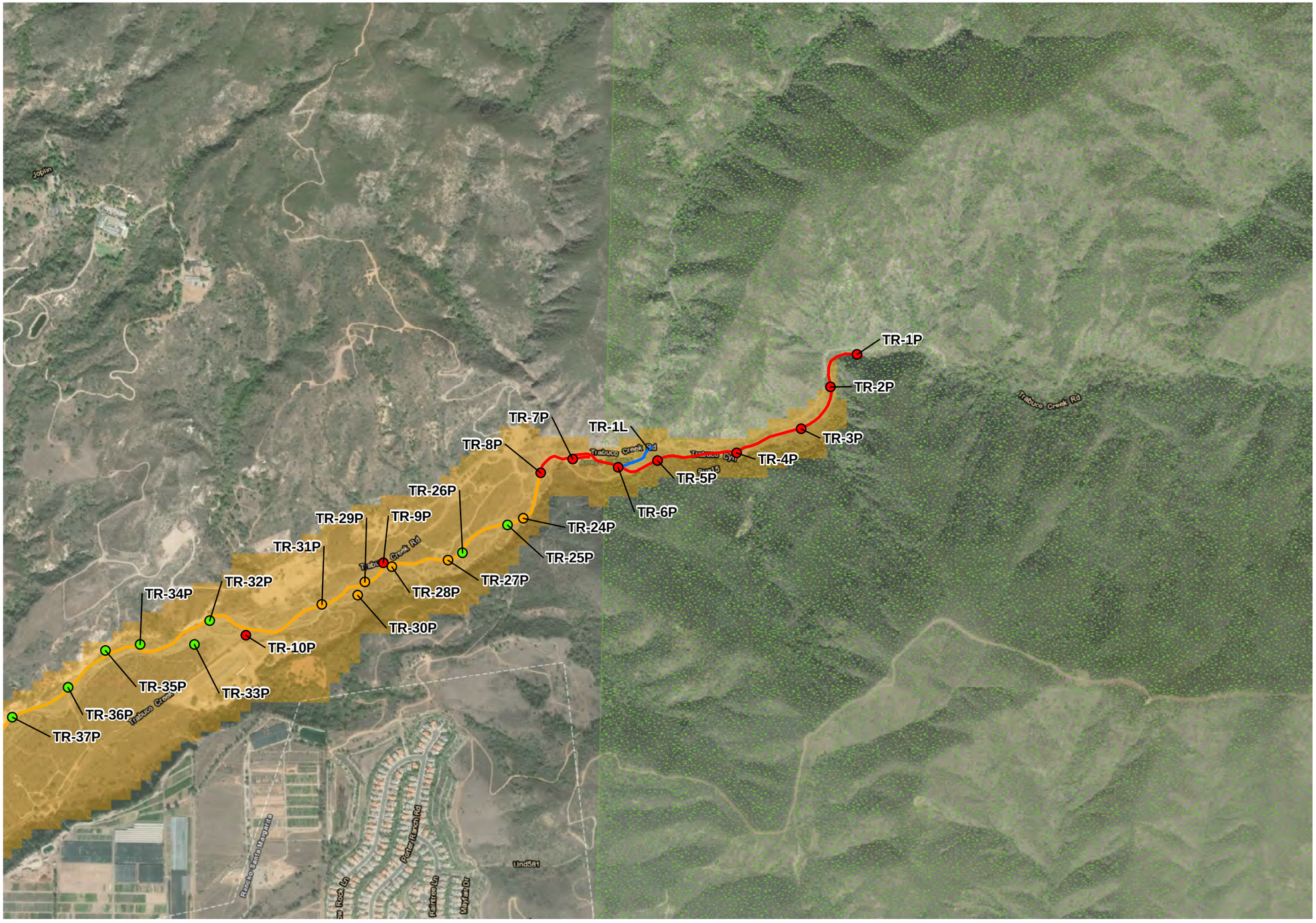
Figure 4c, Sheet 3 of 3
Habitat Assessment Results
Silverado Canyon





Legend

- Data Point
- Main Active Flow Channel
- Arroyo Toad Critical Habitat
- Cleveland National Forest

Focused Survey Recommendations

- Primary Survey Area
- Secondary Survey Area
- Incidental Survey Area
- Do Not Survey
- Primary Survey Area
- Secondary Survey Area
- Incidental Survey Area
- Do Not Survey

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Figure 4d, Sheet 1 of 2
Habitat Assessment Results
Trabuco Canyon

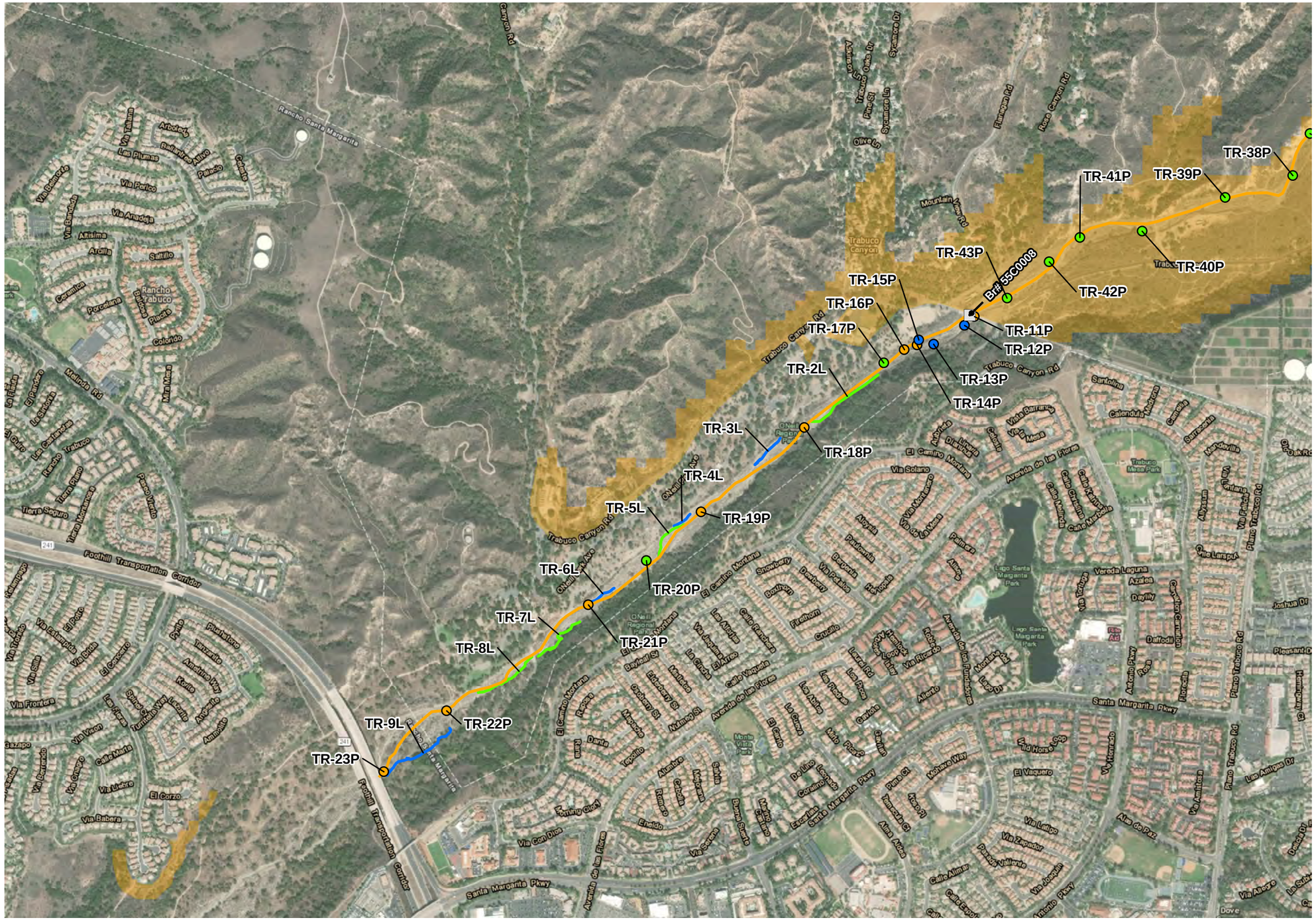


Figure 4d, Sheet 2 of 2
Habitat Assessment Results
Trabuco Canyon

Attachment B: Site Characteristics

Data ID[1]	Assessment Effort[2]	Substrate	Depth (inches)	Width (feet)	Approximate Rate of Flow (feet/sec)	Pools (%)	Riffle (%)	Run (%)	Canopy Cover (%)	Dominant In-stream Vegetation	Amphibians Present	Focused Survey Recommendation[3]	Justification
Modjeska Canyon													
MO-1P	Full	Mostly cobble with some gravel	4 – 6	12 – 15	2	10	1	89	< 5	Eucalyptus	No	Secondary Survey Area	Stream substrate is not great, but there's a decent amount of sandy banks up on the terraces surrounding the wet areas.
MO-2P	Full	Gravel and cobble	6 – 8	10	2	0	15	85	100	Willow, oak, white alder	No	Do Not Survey	Not suitable habitat. Substrate is wrong, the flow is much too fast, and it's basically completely shaded with large trees overhead.
MO-3P	Full	Gravel and cobble	6 – 10	10 – 15	2+	0	20	80	80	Oak, sycamore	No	Do Not Survey	Substrate is wrong, flow is too fast, and there is too much canopy cover.
MO-4P	Full	Gravel and cobble	2 – 8	10	2+	0	10	90	85	Oak, willow, arundo, and sycamore on banks	No	Do Not Survey	Flow is too fast, substrate is wrong, too shaded.
MO-5P to MO-8P	Reduced	Gravel and cobble	NA	NA	NA	NA	NA	NA	0	Mulefat along edges	No	Do Not Survey	The substrate is essentially entirely rock, and there is a lack of any sandy terracing or in-stream sand deposits.
MO-1L	Full	Mostly cobble	2 – 10	10	3	0	25	75	75	Willow, mulefat, oak, sycamore on banks	No	Do Not Survey	The substrate is wrong, the flow is too fast, and there is too much canopy cover.
MO-3L	Full	Gravel and cobble	2 – 12+	10	2 – 2.5	< 5	60	35	65 – 70	Willow, mulefat, alder, oak, sycamore	*Pseudacris cadaverina* adults	Do Not Survey	The water is too fast, the substrate is wrong, there's too much shading, and it's just not the right habitat.
MO-2L	Full	Gravel and cobble	2 – 10	10 – 12	2.5 – 3	0	25	75	10	Mulefat, willow	No	Do Not Survey	Stream is flowing too fast, the substrate is wrong, the habitat is just not good for arroyo toad.
Santiago Creek													
SA-1P	Full	Gravel and cobble	2 – 6	20	2	5	15	80	0	NA	No	Incidental Survey Area	The stream is flowing too quickly, the substrate is heavy on rocks.
SA-2P	Full	Gravel and cobble	4 – 8	15	2	5	10	85	0	NA	No	Incidental Survey Area	The substrate is too rocky, the flow is too fast.
SA-3P	Full	Gravel and cobble with a tiny amount of silt	2 – 8	12	2.5	0	30	70	5	Laurel sumac overhanging with recovering sycamore on the bank	No	Incidental Survey Area	The stream is flowing too fast, the substrate is not good.
SA-4P	Full	Gravel and cobble	4 – 8	10	2	0	40	60	0	Recovering mulefat upstream and recovering sycamore downstream	No	Incidental Survey Area	The stream flow is just too fast, and the substrate is not great.

Data ID[1]	Assessment Effort[2]	Substrate	Depth (inches)	Width (feet)	Approximate Rate of Flow (feet/sec)	Pools (%)	Riffle (%)	Run (%)	Canopy Cover (%)	Dominant In-stream Vegetation	Amphibians Present	Focused Survey Recommendation[3]	Justification
SA-5P to SA-10P	Full	Gravel and cobble	2 – 6	12 – 15	1.8	0	10	90	10	Mulefat	No	Incidental Survey Area	Extreme flows are too fast and the substrate is too rocky.
SA-11P	Full	Cobble and gravel	2 – 5	3 – 6	2	0	20	80	0	NA	No	Secondary Survey Area	All flow, no pools or slow flow, all cobbles & gravel. Good upland areas.
SA-12P to SA-13P	Full	Cobble and gravel	2 – 6	8 – 10	2 – 2.5	0	25	75	0	NA	No	Incidental Survey Area	The stream is too fast, the substrate is too rocky.
SA-14P	Full	Cobble and gravel	1 – 3	5 – 6, with some braiding	1.5	0	0	100	0	NA	No	Secondary Survey Area	All run, very little slow flow except short braiding. Substrate is mainly gravel and cobble but some sandy patches are present.
SA-15P to SA-18P	Full	Gravel and cobble with small pockets of sand	2 – 8	10	2 – 2.5	0	15	85	0	NA	No	Incidental Survey Area	The stream is too fast, the substrate is too rocky.
SA-19P	Full	Mud	3	12	NA	100	0	0	0	Mulefat all over the banks	*Anaxyrus boreas* tadpoles	Primary Survey Area	Soft substrate, large pool, shallow water, lots of algal development. May dry up but should definitely be checked during surveys.
SA-20P to SA-22P	Full	Gravel and cobble with a bit of sand	2 – 8	10	2	0	5	95	0	NA	No	Incidental Survey Area	The stream is too fast, the substrate is too rocky.
SA-23P	Full	Mud and cobble	4	4	NA	100	0	0	0	Some mulefat along banks	No	Secondary Survey Area	Large pooled area adjacent to the main channel. Decent substrate for toads.
SA-24P	Full	Mud and gravel	2 – 4	2	1.5	0	0	100	10	Mulefat	No	Secondary Survey Area	Braided area of the main channel. Slower flow across multiple braids, decent substrate.
SA-25P	Full	Bedrock	2 – 12+	8	2 – 2.5	0	20	80	0	Mulefat is present at this point but otherwise there is no vegetation	No	Incidental Survey Area	The main channel goes into a narrow bedrock area at this point with swift flow and plunge pools.
SA-26P to SA-28P	Full	Gravel and cobble	2 – 4	10	2	0	10	90	0	NA	No	Incidental Survey Area	The stream is too fast, the substrate is too rocky.
SA-29P	Full	Bedrock	18 – 24	10	2.5 – 3	0	60	40	15	Cottonwood, mulefat, Willow	No	Incidental Survey Area	The water is extremely rapid and this is all a bedrock channel right here.
SA-30P	Full	Bedrock	3 – 10+	3 – 15	2+	0	5	95	10	Mulefat	No	Incidental Survey Area	Fast-flowing bedrock channel continues. Some small pools were present up on the rock terraces, but have mostly dried by now and have desiccated tadpole mats.

Data ID[1]	Assessment Effort[2]	Substrate	Depth (inches)	Width (feet)	Approximate Rate of Flow (feet/sec)	Pools (%)	Riffle (%)	Run (%)	Canopy Cover (%)	Dominant In-stream Vegetation	Amphibians Present	Focused Survey Recommendation[3]	Justification
SA-31P	Full	Bedrock, sand, cobble	3 – 6	6 – 8	1.5 – 2	0	10	90	0	NA	No	Secondary Survey Area	There is a slower-flowing side channel at this point with good upland sandy terraces. It extends for approximately 400 feet from this point. The bedrock areas disappear for a while.
SA-32P to SA-34P	Full	Bedrock, gravel, cobble	2 – 8+	6 – 8	2	0	30	70	0	NA	No	Incidental Survey Area	This is a swift-flowing bedrock channel again.
SA-35P to SA-44P	Full	Gravel with a small amount of mud, sand up on the terrace	1 – 4	15 – 18	2	0	0	100	< 5	Mulefat	No	Incidental Survey Area	Stream is still flowing just too fast, and the substrate both in-stream and on the terraces is generally pretty rocky with some sandy patches.
SA-45P	Full	Sand and gravel	4 – 6	6 – 10	1	0	0	100	0	NA	No	Secondary Survey Area	The water flow is still on the fast side, but if it slows down it would be a good spot for toads. The substrate is good, there is a lot of sand in the terraces.
SA-46P to SA-52P	Full	Cobble, gravel, sandy silt	3 – 6	10 – 20	2	0	5	95	40	Willow, mulefat	No	Incidental Survey Area	High rate of flow, poor substrate, and the creek is entering into willow woodland/forest where it has significant reaches that are under canopy cover.
SA-53P and SA-55P to SA-57P	Full	Gravel and cobble	6 – 8	10 – 15	3	0	15	85	100 from this point forward	Primarily sycamore and alder	No	Do Not Survey	The flow is way too fast, and you're going to get into a dense overhanging canopy from this point which is going to provide too much shade even when the water is flowing slowly.
SA-54P	Full	Cobble, gravel, silt	NA	NA	NA	0	10	90	1	Mulefat, maybe more canopy farther upstream.	NA	Secondary Survey Area	This is where Black Star Creek enters Santiago Creek. Looking from a distance, it appeared as if water flow, substrate, terracing, and canopy cover would all be good for this species.
SA-58P to SA-66P	Full	Gravel and silt	2 – 4	6 – 8	2	0	5	95	80+	Willow and mulefat	No	Do Not Survey	The flow is fast, the riparian vegetation in this area is very densely canopied, and the substrate is generally poor.
SA-1L	Full	Mostly sand and gravel, with some cobble	2, with some deeper pools	Multiple braided channels, generally 1 – 2 feet wide	0 – 0.5	80	0	20	< 5	Sycamore and mulefat, with oaks on the banks	*Anaxyrus boreas* tadpoles	Primary Survey Area	The creek is shallow, water flow is slow, and there's an abundance of pools that could be used for breeding.

Data ID[1]	Assessment Effort[2]	Substrate	Depth (inches)	Width (feet)	Approximate Rate of Flow (feet/sec)	Pools (%)	Riffle (%)	Run (%)	Canopy Cover (%)	Dominant In-stream Vegetation	Amphibians Present	Focused Survey Recommendation[3]	Justification
SA-2L	Full	Mostly silty sand with some cobble. Sand is very soft.	1 – 2 and occasionally deeper	1 – 2	0 – 0.5	60	< 5	35	10	Mulefat, sycamore	*Anaxyrus* tadpoles (probably *A. boreas*)	Primary Survey Area	This is pretty much perfect habitat, if a little on the narrow side. It has a soft substrate, the water is shallow and slow-flowing, and it has breeding pools already.
SA-3L	Full	Generally gravel cobbles with pockets of sandy patches	2 – 8 with some pools	4 – 6, with some areas up to 20	0 – 2	25	0	75	< 25	Mulefat, occasionally sycamore and eucalyptus	*Anaxyrus boreas* tadpoles	Primary Survey Area	Good habitat, presence of pools, and evidence of anuran breeding already.
SA-4L	Full	Mostly soft sand with small gravel, a little bit of cobble	2	< 3	0.5	10	< 5	85+	< 5	Mulefat, sycamore, laurel sumac	*Anaxyrus* tadpoles (probably *A. boreas*)	Secondary Survey Area	This is a generally slow-flowing stretch with good algal development and a pretty good substrate, although the terraces are on the rocky side.
SA-5L	Full	Gravel, cobble	1 – 3	2 – 3	1	0	0	100	0	NA	No	Do Not Survey	All flow, no pools or slow flow, just gravel and cobble.
SA-6L	Full	Generally gravel and cobble with mud pockets and pockets of sandy terraces	2 – 4	2 – 3	0.5 – 1	< 5	10	85	< 5	Laurel sumac and black sage	No	Secondary Survey Area	The water is a little fast right now, and the substrate is not great, but if it slows down a little bit it could probably be pretty good for toads based on substrate, terracing, and canopy cover.
SA-7L	Full	Gravel and cobble	1 – 3	1 – 2	< 1	80	0	20	0	NA	No	Secondary Survey Area	Very short reach with gravel and cobble substrate. May be good to check up on later.
SA-8L	Full	Gravel, cobble, sand	1 – 5 but generally less than 2	1 – 2	< 0.5	40	0	70	0	Grass and CSS	No	Secondary Survey Area	This is a slow-flowing area with decent substrate and shallow water.
SA-9L	Full	Mostly sand with fine cobble	2 – 8	2	0 – 1	40	0	60	30 – 40	Mulefat, sycamore, general CSS	*Anaxyrus boreas* tadpoles	Primary Survey Area	The substrate is mostly sand, the water flow is very slow, and this is very obviously a successful anuran breeding area with tons of tadpoles already.
SA-10L	Full	Sandy silt, gravel, cobble	2 – 3, with some pools 3 – 9	3 – 5 with some braiding	0 – 1+	20	5	75	5	Willow and mulefat	*Anaxyrus* tadpoles (probably *A. boreas*)	Primary Survey Area	Good surface water flow, breeding pools, and nice upland with some sandy pockets.

Data ID[1]	Assessment Effort[2]	Substrate	Depth (inches)	Width (feet)	Approximate Rate of Flow (feet/sec)	Pools (%)	Riffle (%)	Run (%)	Canopy Cover (%)	Dominant In-stream Vegetation	Amphibians Present	Focused Survey Recommendation[3]	Justification
SA-11L	Full	Mostly mud with bits of gravel and some cobble sections	2 – 6	2 – 3	0 – 0.5	60	0	40	35	Mulefat	*Anaxyrus* tadpoles (probably *A. boreas*)	Primary Survey Area	Slow-flowing, lots of pools, soft substrate, tons of tadpoles already.
SA-12L	Full	Mud	1 – 3	1 – 3	Negligible	90	0	10	25	Mulefat	*Anaxyrus* tadpoles (probably *A. boreas*)	Secondary Survey Area	The soft mud is a little iffy, but otherwise this seems to be a pretty decent place with tons of pools and good habitat otherwise. There is a risk that this will dry up, downstream it is already drying up with piles of dead tadpoles. It may not be here in another month.
SA-13L	Full	Gravel	0.5 – 2	0.5 – 3	Negligible	50	0	50	0	NA	*Anaxyrus* tadpoles (probably *A. boreas*)	Secondary Survey Area	This area is short and has a poor substrate but should be checked at the time of surveys to see if there is any activity.
SA-14L	Full	Gravel, cobble, silt	2 – 4	3 – 5	0.7	0	0	100	20	Mulefat	No	Primary Survey Area	This is a branch off of the main channel that is generally slow flowing, and there is quite a bit of sandy habitat on the terrace next to it.
SA-15L	Full	Gravel and cobble	2 – 3	1 – 2	1.5 – 2	0	30	70	< 5	Mulefat	No	Secondary Survey Area	The flow is simply too fast for it to be suitable right now. However, there is quite a bit of sand on the adjacent terrace, and if the flow were to slow down it might be worth coming back for.
SA-16L	Full	Gravel, cobble, silt	2 – 4	2 – 4	1	0	5	95	20	Mulefat	*Anaxyrus* tadpoles (probably *A. boreas*)	Primary Survey Area	Fast flow but sandy terraces.
SA-17L	Full	Gravel, cobble, and sand	2 – 4, with some areas 8 – 12	10 – 40	1 – 2.5	5	10	85	35 – 40	Mulefat	*Anaxyrus* egg strands (probably *A. boreas*)	Secondary Survey Area	Generally slow-flowing and with sandy terraces.
SA-18L	Full	Gravel and silt	1+	1 – 3	Negligible	10	0	90	10	Mulefat	*Anaxyrus* tadpoles (probably *A. boreas*)	Primary Survey Area	Slow flow, good substrate, and upland sandy terraces.

Data ID[1]	Assessment Effort[2]	Substrate	Depth (inches)	Width (feet)	Approximate Rate of Flow (feet/sec)	Pools (%)	Riffle (%)	Run (%)	Canopy Cover (%)	Dominant In-stream Vegetation	Amphibians Present	Focused Survey Recommendation[3]	Justification
SA-19L	Full	Gravel and cobble with some silt	1 – 4	1 – 2 and occasionally wider	Negligible	50	0	50	0	NA	*Anaxyrus boreas* tadpoles	Secondary Survey Area	It's possible this may dry up, but for now it seems pretty good with a slow flow, lots of pools, and some sandy terraces.
SA-20L	Full	Gravel, cobble, silt	1 – 4	2 – 4	1+	0	15	85	10	Mulefat and CSS	No	Secondary Survey Area	Sandy terraces, slower flow.
SA-21L	Full	Gravel, followed by mud and silt	2 – 4	2 – 4	0 – 1	0	10	90	< 5	Mulefat	No	Secondary Survey Area	Generally slow-flowing, but a weird mucky substrate and may dry up soon.
SA-22L	Full	Generally sand and mud with some gravel	2	10	0.5 – 1	30	5	65	10	Mulefat, willow	*Anaxyrus boreas* tadpoles, one adult *Pseudacris hypochondriaca*	Primary Survey Area	A slow-flowing area with proven anuran breeding success.
SA-23L	Full	Cobble, gravel, silt	3 – 6	4 – 6	2	0	0	100	50	Willows and mulefat	No	Do Not Survey	Fast flow with dense willows upstream.
SA-24L	Full	Gravel, cobble	2 – 5	3 – 6	2	0	0	100	20	Willows and mulefat	No	Do Not Survey	Flowing too fast and the substrate is too rocky.
SA-25L	Full	Gravel, cobble	3 – 7	6 – 8	2	0	5	95	5	Mulefat	No	Do Not Survey	Flowing too fast and the substrate is too rocky.
SA-26L	Full	Mud, gravel, and cobble. In many areas, only mud	2 – 4 with some deep plunge pools	3 – 5 and sometimes narrower	1 – 1.5	0	10	90	90	White alder, sycamore, willow	No	Do Not Survey	In addition to the fast water flow and the poor substrate, this area is almost entirely shaded by large trees.
SA-27L	Full	Gravel, bedrock, silt	1 – 6	2 – 6	< 1	5	1	94	60	Willows and mulefat	*Anaxyrus* tadpoles (probably *A. boreas*)	Do Not Survey	While surface flow is good, this area is primarily bedrock and is highly shaded.
SA-28L	Full	Cobble and mud	2 – 4 with some areas 12+	10	2	0	15	85	80	Willows, white alder, sycamore	No	Do Not Survey	The flow is too fast, the area is too shaded, and the substrate is all wrong.
Silverado Creek													
SI-1P to SI-4P and SI-6P to SI-9P	Full	Gravel	4 – 6	12	2	0	0	100	10	Mulefat	No	Secondary Survey Area	The flow is currently too fast, but there are tons of sandy terraces, great mulefat patches, and historic presence in this area.

Data ID[1]	Assessment Effort[2]	Substrate	Depth (inches)	Width (feet)	Approximate Rate of Flow (feet/sec)	Pools (%)	Riffle (%)	Run (%)	Canopy Cover (%)	Dominant In-stream Vegetation	Amphibians Present	Focused Survey Recommendation[3]	Justification
SI-5P	Full	Mud and wet sand	1 – 6	8 – 12	0	100	0	0	< 5	Mulefat	*Anaxyrus* tadpoles (probably *A. boreas*)	Primary Survey Area	This is a good breeding pool with a soft substrate both in the pool and up on the surrounding terraces. This is a pool in a side channel that is being secondarily fed by the main channel. While the area upstream has dried out the pool itself does not appear to be going anywhere anytime soon.
SI-10P to SI-17P	Full	Gravel and bedrock	1 – 3	2 – 3	1	0	5	95	50	Willow and mulefat	No	Do Not Survey	At this point the channel goes into an area with a high proportion of bedrock substrate and a good amount of canopy cover. Sandy terraces are lost.
SI-18P	Full	Gravel and cobble	6	12	2.5	0	0	100	5	Mulefat	No	Do Not Survey	The substrate in this area is not good, and the flow is too fast.
SI-19P	Full	Cobble	2 – 6	10 – 15	2.5	0	40	60	5	NA	No	Do Not Survey	The flow is too fast and the substrate is not good. This is also right next to a bridge which provides shade along with a retaining wall.
SI-20P to SI-21P	Full	Gravel, cobble, boulders	2 – 4	15 – 20	1 – 2	25	0	75	5	Sparse mulefat, eucalyptus	*Anaxyrus* tadpoles and egg strands (probably *A. boreas*)	Primary Survey Area	There are slow-flowing areas and pools in side channels on either side of the main channel at these locations.
SI-22P to SI-24P	Full	Bedrock, boulder, cobble, retaining wall	2 – 6	10 – 15	2	0	15	85	0	NA	No	Do Not Survey	The water is flowing too fast and there are no suitable terraces in this stretch. The entire eastern/southern side is bedrock, and the western/northern side is primarily boulders.
SI-25P	Full	Cobble	2 – 8	10	2	0	5	95	75	Mulefat, eucalyptus	No	Do Not Survey	The channel is flowing very rapidly right here, it's very shaded from large eucalyptus trees overhead, and it's coming out from under a bridge as well.
SI-26P	Full	Sand, cobble, and grouted riprap	2 – 12	10	2.5	Plunge pool about 25 ft downstream, but the water is hitting it fast and hard	55	45	< 5	Mulefat	No	Do Not Survey	The water is flowing way too fast, and a big portion of this is grouted riprap. What remains is mostly not suitable for burrowing anyway.

Data ID[1]	Assessment Effort[2]	Substrate	Depth (inches)	Width (feet)	Approximate Rate of Flow (feet/sec)	Pools (%)	Riffle (%)	Run (%)	Canopy Cover (%)	Dominant In-stream Vegetation	Amphibians Present	Focused Survey Recommendation[3]	Justification
SI-27P	Full	Rocks, grouted riprap	2 – 8	10	2.5	Large plunge pull about 20 ft downstream of the bridge. 15%	60	40	80	Coast live oak, sycamore	No	Do Not Survey	This area is just plain too rocky, with big areas of grouted riprap under the bridge. The flow is also way too fast and there are no sandy terraces.
SI-28P	Full	Gravel	2 – 6, up to 15 in a plunge pool	20 ft upstream, 10 to 12 ft downstream	2	33	20	47	50	Willow and mulefat	No	Do Not Survey	The stream is fast-flowing and is pretty shaded. There is a large dammed pool upstream, but there is no burrowing habitat anywhere. It's very channelized.
SI-29P	Full	Boulders	2 – 6	6 – 10	2.5	15	10	75	100	Willow, sycamore, white alder	No	Do Not Survey	Water is flowing too fast, in-stream substrate is wrong, there are no terraces to burrow into, and it's too shaded.
SI-30P	Full	Gravel and rock	2 – 6	15	2	0	50	50	100	Arroyo willow, white alder, olive, fig	*Pseudacris cadaverina*	Do Not Survey	The flow is too fast, the substrate is not good, there are no terraces, and it's completely shaded.
SI-31P and SI-32P	Full	Gravel and boulders	2 – 12	1 – 8	2	25	30	45	25	Willow, sycamore, white alder	No	Do Not Survey	The flow is too fast, substrate is wrong, there are no terraces, and it's too shady.
SI-33P	Full	Sand, gravel, cobble, boulders	2 – 6	12	2	10	60	30	100	Coast live oak, white alder, willow	No	Do Not Survey	Flow is too fast, the substrate is not good, there are no terraces, it is too shaded.
SI-34P	Full	Bedrock	2 – 8	10	1.5 – 2	0	5	95	33	Mulefat, willow, sycamore	*Pseudacris cadaverina*	Do Not Survey	Flow is too fast, this is all bedrock, there is nowhere to burrow.
SI-35P	Full	Cement, boulders	2 – 12	10	2 – 2.5	0	10	90	15	Coast live oak, ornamentals	No	Do Not Survey	Flow is too fast, the substrate is completely wrong, there are no terraces.
SI-1L	Full	Gravel	2 – 5	3 – 4	1+	0	0	100	10	Mulefat	No	Secondary Survey Area	This area is mostly too fast and is heavy on gravel but should be checked due to some slower-flowing areas and sandy terraces.
SI-2L	Full	Gravel	1 – 6	2	Negligible	45	0	55	50	Mulefat	No	Primary Survey Area	Slow-flowing surface water and decent substrate.
SI-3L	Full	Gravel	1 – 4	2 – 3	1	0	0	100	20	Mulefat	No	Secondary Survey Area	Water flow is too fast, poor substrate.
SI-4L	Full	Sand and gravel	2 – 4	2 – 3	0 – 0.5	20	0	80	60	Mulefat	No	Secondary Survey Area	There might be a bit too much shade, and this might dry up, but otherwise it's slow flowing and has a decent substrate and seems to be fed okay for now.

Data ID[1]	Assessment Effort[2]	Substrate	Depth (inches)	Width (feet)	Approximate Rate of Flow (feet/sec)	Pools (%)	Riffle (%)	Run (%)	Canopy Cover (%)	Dominant In-stream Vegetation	Amphibians Present	Focused Survey Recommendation[3]	Justification
SI-5L	Full	Sand, gravel, and rocks	2 – 8	10 – 12	2	15	40	45	100	White alder, willow, coast live oak	No	Do Not Survey	Flow is too fast, there are no terraces to burrow into, and it is too shaded.
SI-6L	Full	Gravel and cobble	2 – 6	8 – 12	2	0	5	95	80	Coast live oak, white alder, arroyo willow	*Pseudacris cadaverina*	Do Not Survey	Flow is too fast, substrate is wrong, no terraces for burrowing, very shaded.
Trabuco Creek													
TR-1P to TR-7P	Full	Gravel and cobble	2 – 8	10	2	0	20	80	0	Mulefat on banks	*Pseudacris cadaverina*	Do Not Survey	The flow is too fast, the substrate is very rocky with a general lack of sandy terraces.
TR-8P	Full	Gravel and cobble	2 – 8	18	2.5	0	40	60	0	NA	No	Do Not Survey	The stream is flowing too quickly, the substrate is not correct, and I don't see any amphibians at all breeding in here.
TR-9P	Full	Appears to be gravel and cobble in the wet channel	Looks like 2 – 8 inches	10	2+	0	50	50	0	NA	No	Do Not Survey	Flowing too fast and the substrate is probably not correct. It doesn't look like a good place for arroyo toads to breed.
TR-10P	Full	Gravel and cobble	2 – 4	10 – 15	2.5	0	15	85	0	Sycamore and mulefat on bank	No	Do Not Survey	The water is flowing too fast, the substrate is not good, and this does not seem like an area where arroyo toads would breed.
TR-11P	Full	Gravel and sand	2 – 8	multiple braids from 1 – 3 ft wide	2	0	100	0	0	NA	No	Incidental Survey Area	The flow is too fast, it is too rocky, and it is entirely riffle habitat.
TR-12P	Full	Sand and mud with a little bit of gravel	2	1 – 3 with multiple braids	0.5	20	10	70	5	California buckwheat	No	Secondary Survey Area	Flow is slow through this section, with decent amounts of mud and sad for burrowing.
TR-13P	Full	Sand and gravel	2 – 3	3	1.2	0	30	70	< 5	Small sycamores on bank	No	Secondary Survey Area	Slow flow with sandy terraces.
TR-14P	Full	Almost all gravel in the main channel, mixture of sand and gravel but mostly gravel in the slower side channel	2 – 8+	1 – 25	0.5 – 2	0	20	80	5	A few arroyo willows recovering in main channel	No	Incidental Survey Area	There are some slow areas but on the whole this is just too fast and too rocky to support this species.

Data ID[1]	Assessment Effort[2]	Substrate	Depth (inches)	Width (feet)	Approximate Rate of Flow (feet/sec)	Pools (%)	Riffle (%)	Run (%)	Canopy Cover (%)	Dominant In-stream Vegetation	Amphibians Present	Focused Survey Recommendation[3]	Justification
TR-15P	Full	Mostly sand and small gravel	2 – 8	2	NA	45	0	55	0	NA	*Anaxyrus* tadpoles and egg strands (probably *A. boreas*)	Secondary Survey Area	The flow is negligible here and the substrate and surrounding area is mostly sand and small gravel.
TR-16P	Full	Gravel	8 – 12	12	1.6	0	100	0	< 5	A single willow	No	Incidental Survey Area	The flow is too fast, the water is too deep, and it's too rocky.
TR-17P	Full	Sand with gravel and rock	2 – 6	2 – 6	Negligible	33	67	0	up to 40% when recovered	Recovering mulefat	*Anaxyrus* egg strands (probably *A. boreas*)	Primary Survey Area	There is very slow flow in this area, the channel is generally wide and shallow, and it has a good substrate for this species' needs.
TR-18P	Full	Gravel	2 – 6	25	3	0	10	90	0	NA	No	Incidental Survey Area	This location at much of the main channel is currently flowing too fast, is almost entirely gravel, and is relatively deep.
TR-19P	Full	Mostly gravel and cobble with some boulders	2 – 12	15	3	0	30	70	0	NA	No	Incidental Survey Area	This site continues in the main channel, and it's still much too fast, much too deep, and has too many rocks in it for it to be suitable for arroyo toad.
TR-20P	Full	Sand and cobble	1 – 5	2 – 4	0	100	0	0	30	Mulefat	*Anaxyrus boreas*	Primary Survey Area	Slow flow, not too deep, lots of algae.
TR-21P	Full	Cobble and rocks	4 – 12	15 – 20	2	0	70	30	0	NA	No	Incidental Survey Area	Flow is too fast, water is too deep, creek is too rocky.
TR-22P	Full	Gravel and cobble	2 – 8	15	2	0	0	100	0	NA	No	Incidental Survey Area	Flow is too fast, and the creek is too rocky.
TR-23P	Full	Gravel and cobble with some boulders	4 – 15	10 – 12	3	0	30	70	10	Sycamore on the bank	No	Incidental Survey Area	Flow is too fast, water is too deep, creek is too rocky.
TR-24P	Reduced	Rock, gravel, minimal sand	NA	NA	NA	NA	NA	NA	0	Scalebroom scrub	No	Incidental Survey Area	The floodplain is generally highly rocky, and there is a general lack of sandy habitat around this location.
TR-25P to TR-26P	Reduced	Cobble, gravel, scattered sand patches	NA	NA	NA	NA	NA	NA	0	Scalebroom scrub	No	Primary Survey Area	Sand deposits are relatively good at this location, patchy to the north of the flow channel and abundant to the south of it on raised terraces. Habitat here is as good as some other areas downstream.

Data ID[1]	Assessment Effort[2]	Substrate	Depth (inches)	Width (feet)	Approximate Rate of Flow (feet/sec)	Pools (%)	Riffle (%)	Run (%)	Canopy Cover (%)	Dominant In-stream Vegetation	Amphibians Present	Focused Survey Recommendation[3]	Justification
TR-27P to TR-31P	Reduced	Cobble, gravel, some boulders, minimal sand	NA	NA	NA	NA	NA	NA	0	Scalebroom scrub	No	Incidental Survey Area	The creek through this area is generally very rocky with minimal in-stream sand. There are occasional sandy terraces but they are generally hard and compacted. This stretch of the floodplain is generally too rocky to be suitable for this species, with few aestivation opportunities for young toads.
TR-32P to TR-43P	Reduced	Cobble, gravel, boulders, sand	NA	NA	NA	NA	NA	NA	0 – 10	Mulefat, buckwheat scrub	No	Primary Survey Area	This whole portion of the creek is generally suitable habitat. While the flow channel may have extensive rock at points, there are nearly always extensive sandy patches in terraces as well as occasional sandy patches directly in the channel bottom.
TR-1L	Full	Mostly cobble with some sand	1 – 6	4+	1	10	20	70	10	California buckwheat and laurel sumac	No	Secondary Survey Area	This area is generally slow-flowing and shallow. There are some sandy deposits.
TR-2L	Full	Sand and gravel	2 – 6	1 – 3	0 – 0.5	65	25	10	20	Mixture of white alder, willow, and sycamore, with additional CSS	*Anaxyrus* tadpoles (probably *A. boreas*)	Primary Survey Area	This side channel has generally slow-flowing water or pools throughout the entire reach. There is a decent amount of vegetation overhanging on the banks. There are tens of thousands of existing tadpoles which are probably all western toads, but I think this should be checked for potential arroyo toad breeding in the future.
TR-3L	Full	Mostly sand, with some small gravel	1 – 3	0.5 – 2	0 – 0.67	40	10	50	10	Mulefat	*Anaxyrus* tadpoles (probably *A. boreas*)	Secondary Survey Area	I think there is potential for arroyo toads to breed at this site. However I do not think that this water will last through the season, I think that it will dry up before the end of the breeding season.
TR-4L	Full	Mostly sand	1 – 2	1	0 – 0.5	50	0	50	0	NA	*Anaxyrus boreas* tadpoles	Secondary Survey Area	I think the site has enough of a pool structure and enough algae buildup to support arroyo toad breeding. The question would be mainly whether this is actually going to persist for most of the season or whether it will dry up.

Data ID[1]	Assessment Effort[2]	Substrate	Depth (inches)	Width (feet)	Approximate Rate of Flow (feet/sec)	Pools (%)	Riffle (%)	Run (%)	Canopy Cover (%)	Dominant In-stream Vegetation	Amphibians Present	Focused Survey Recommendation[3]	Justification
TR-5L	Full	Sand and gravel	1 – 3	3 – 8	0.67	25	10	65	0	Mulefat and CSS species	No	Primary Survey Area	This side channel is generally wide, shallow, and more or less slow-flowing. I think it might be a good spot for toads to breed.
TR-6L	Full	Sand and gravel	1 – 3	1 – 3.5	1	0	10	90	5	Mulefat	No	Secondary Survey Area	I think this area has potential. It's generally slow-flowing, it's shallow, and it has sandy patches.
TR-7L	Full	Sand	1 – 6	1 – 3	Negligible	90	0	10	40 – 50	Mulefat overwhelmingly, with oaks and sycamores on banks	*Anaxyrus* tadpoles and egg strands (probably *A. boreas*)	Primary Survey Area	Other than being on the narrow side, this is basically perfect habitat for arroyo toads.
TR-8L	Full	Sand and gravel	1 – 6	2 – 8	0 – 1.5	10	10	80	10	Mulefat	*Anaxyrus* tadpoles (probably *A. boreas*)	Primary Survey Area	I think that there are periodic patches of this stretch that have suitable habitat for arroyo toads. The entire thing itself is not suitable, but occasional patches where the flow slows down and the water is more shallow should definitely be checked.
TR-9L	Full	Sand, gravel, cobble	2 – 10 but generally closer to 2	2 – 4+	0 – 1	30	35	35	50	Mulefat, sycamore, coast live oak	No	Secondary Survey Area	This generally seems like a good place for arroyo toads, but it may be a bit more shaded than would be optimal. Otherwise it has some sandy pockets and generally slow flow with mostly shallow water.

LEGEND

[1]Data ID Key:

MO- Modjeska
SA- Santiago
SI- Silverado
TR- Trabuco
#P- Point Number
#L- Line Number

[2]Assessment Effort Key:

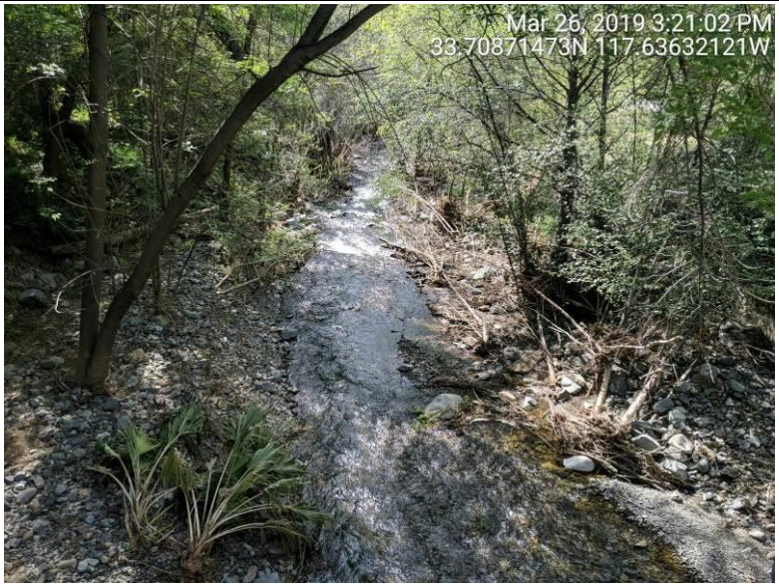
Full- These areas were assessed on foot in spring 2019. Observations incorporated both aquatic and in-stream conditions.
Reduced- These areas were assessed on foot in late summer 2019. Observations in late summer 2019 only incorporated notes on the dry conditions, as creeks had dried up already.

[3]Survey Category Key:

Primary Survey Area- This area contained suitable habitat for arroyo toad and focused surveys will be conducted.
Secondary Survey Area- This area contained marginal habitat for arroyo toad and will be reviewed in the field at the time of focused surveys to determine if the habitat should be surveyed in greater detail as part of the focused surveys.
Incidental Survey Area- This area generally did not contain suitable habitat for arroyo toad but is located in proximity to or in between areas of suitable habitat. It will be incidentally surveyed while walking to or between patches of suitable habitat during focused surveys but no great effort will be expended to do so other than walking through the area and recording any anurans that are present.
Do Not Survey- This area did not contain suitable habitat for arroyo toad and will be completely skipped due to the lack of any suitable habitat in the surrounding area.

Attachment C: Site Photographs

	**Data ID:** MO-1P **Photo Date:** April 1, 2019 **Location:** Santiago Creek (in Modjeska Canyon) at Santiago Canyon Road Bridge (#55C0049) **Direction:** Southeast **Focused Survey Recommendation:** Secondary Survey Area
	**Data ID:** MO-1P **Photo Date:** April 1, 2019 **Location:** Santiago Creek (in Modjeska Canyon) at Santiago Canyon Road Bridge (#55C0049) **Direction:** Southwest **Focused Survey Recommendation:** Secondary Survey Area

	**Data ID:** MO-2P **Photo Date:** March 26, 2019 **Location:** Santiago Creek (in Modjeska Canyon) at Modjeska Canyon Road Bridge (#55C0172) **Direction:** North **Focused Survey Recommendation:** Do Not Survey
	**Data ID:** MO-2P **Photo Date:** March 26, 2019 **Location:** Santiago Creek (in Modjeska Canyon) at Modjeska Canyon Road Bridge (#55C0172) **Direction:** West **Focused Survey Recommendation:** Do Not Survey

	**Data ID:** MO-3P **Photo Date:** March 26, 2019 **Location:** Santiago Creek (in Modjeska Canyon) at Modjeska Canyon Road Bridge (#55C0173) **Direction:** North **Survey Recommendation:** Do Not Survey
	**Data ID:** MO-3P **Photo Date:** March 26, 2019 **Location:** Santiago Creek (in Modjeska Canyon) at Modjeska Canyon Road Bridge (#55C0173) **Direction:** South **Focused Survey Recommendation:** Do Not Survey

	**Data ID:** MO-4P **Photo Date:** March 26, 2019 **Location:** Santiago Creek (in Modjeska Canyon) at Olive Hill Road Bridge (#55C0185) **Direction:** East **Focused Survey Recommendation:** Do Not Survey
	**Data ID:** MO-4P **Photo Date:** March 26, 2019 **Location:** Santiago Creek (in Modjeska Canyon) at Olive Hill Road Bridge (#55C0185) **Direction:** West **Focused Survey Recommendation:** Do Not Survey

	**Data ID:** MO-5P **Photo Date:** August 22, 2019 **Location:** Santiago Creek (in Modjeska Canyon) between Bridges #55C0049 and #55C0172 **Direction:** Southeast **Focused Survey Recommendation:** Do Not Survey
	**Data ID:** MO-5P **Photo Date:** August 22, 2019 **Location:** Santiago Creek (in Modjeska Canyon) between Bridges #55C0049 and #55C0172 **Direction:** Northwest **Focused Survey Recommendation:** Do Not Survey



Data ID: MO-6P

Photo Date: August 22, 2019

Location: Santiago Creek (in Modjeska Canyon) between Bridges #55C0049 and #55C0172

Direction: Southeast

Focused Survey Recommendation: Do Not Survey



Data ID: MO-6P

Photo Date: August 22, 2019

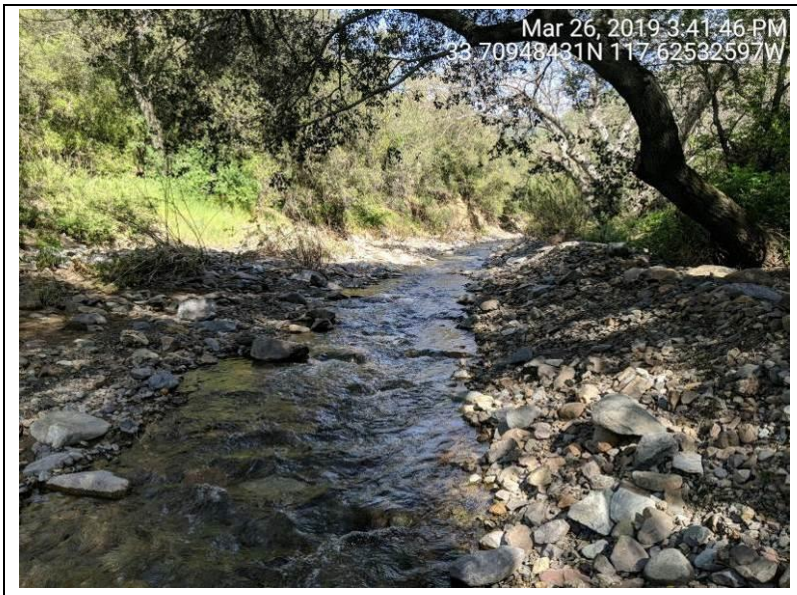
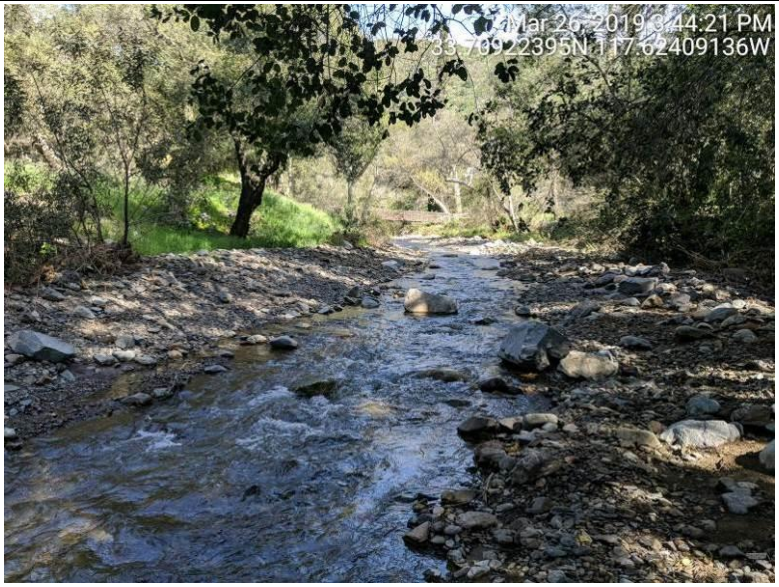
Location: Santiago Creek (in Modjeska Canyon) between Bridges #55C0049 and #55C0172

Direction: Northwest

Focused Survey Recommendation: Do Not Survey

	**Data ID:** MO-7P **Photo Date:** August 22, 2019 **Location:** Santiago Creek (in Modjeska Canyon) between Bridges #55C0049 and #55C0172 **Direction:** Southeast **Focused Survey Recommendation:** Do Not Survey
	**Data ID:** MO-7P **Photo Date:** August 22, 2019 **Location:** Santiago Creek (in Modjeska Canyon) between Bridges #55C0049 and #55C0172 **Direction:** Northwest **Focused Survey Recommendation:** Do Not Survey

	**Data ID:** MO-8P **Photo Date:** August 22, 2019 **Location:** Santiago Creek (in Modjeska Canyon) between Bridges #55C0049 and #55C0172 **Direction:** East **Focused Survey Recommendation:** Do Not Survey
	**Data ID:** MO-8P **Photo Date:** August 22, 2019 **Location:** Santiago Creek (in Modjeska Canyon) between Bridges #55C0049 and #55C0172 **Direction:** West **Focused Survey Recommendation:** Do Not Survey

	**Data ID:** MO-1L **Photo Date:** March 26, 2019 **Location:** Santiago Creek (in Modjeska Canyon) east of Olive Hill Road **Direction:** West **Focused Survey Recommendation:** Do Not Survey
	**Data ID:** MO-1L **Photo Date:** March 26, 2019 **Location:** Santiago Creek (in Modjeska Canyon) east of Olive Hill Road **Direction:** East **Focused Survey Recommendation:** Do Not Survey

	**Data ID:** MO-1L **Photo Date:** March 26, 2019 **Location:** Santiago Creek (in Modjeska Canyon) east of Olive Hill Road **Direction:** Northeast **Focused Survey Recommendation:** Do Not Survey
	**Data ID:** MO-1L **Photo Date:** March 26, 2019 **Location:** Santiago Creek (in Modjeska Canyon) east of Olive Hill Road **Direction:** Northeast **Focused Survey Recommendation:** Do Not Survey

	**Data ID:** MO-2L **Photo Date:** March 26, 2019 **Location:** Santiago Creek (in Modjeska Canyon) east of Tucker Wildlife Sanctuary **Direction:** Northwest **Focused Survey Recommendation:** Do Not Survey
	**Data ID:** MO-2L **Photo Date:** March 26, 2019 **Location:** Santiago Creek (in Modjeska Canyon) east of Tucker Wildlife Sanctuary **Direction:** Southeast **Focused Survey Recommendation:** Do Not Survey

	**Data ID:** MO-3L **Photo Date:** March 26, 2019 **Location:** Upper Santiago Creek (in Modjeska Canyon) **Direction:** East **Focused Survey Recommendation:** Do Not Survey
	**Data ID:** MO-3L **Photo Date:** March 26, 2019 **Location:** Upper Santiago Creek (in Modjeska Canyon) **Direction:** North **Focused Survey Recommendation:** Do Not Survey

	**Data ID:** MO-3L **Photo Date:** March 26, 2019 **Location:** Upper Santiago Creek (in Modjeska Canyon) **Direction:** Northeast **Focused Survey Recommendation:** Do Not Survey
	**Data ID:** MO-3L **Photo Date:** March 26, 2019 **Location:** Upper Santiago Creek (in Modjeska Canyon) **Direction:** Northeast **Focused Survey Recommendation:** Do Not Survey

	**Data ID:** SA-1P **Photo Date:** March 27, 2019 **Location:** Main Channel of Santiago Creek near Modjeska Canyon Road **Direction:** Southeast **Focused Survey Recommendation:** Incidental Survey Area
	**Data ID:** SA-1P **Photo Date:** March 27, 2019 **Location:** Main Channel of Santiago Creek near Modjeska Canyon Road **Direction:** Northwest **Focused Survey Recommendation:** Incidental Survey Area

	**Data ID:** SA-2P **Photo Date:** March 27, 2019 **Location:** Main Channel of Santiago Creek near Modjeska Canyon Road **Direction:** South **Focused Survey Recommendation:** Incidental Survey Area
	**Data ID:** SA-2P **Photo Date:** March 27, 2019 **Location:** Main Channel of Santiago Creek near Modjeska Canyon Road **Direction:** Northwest **Focused Survey Recommendation:** Incidental Survey Area

	**Data ID:** SA-3P **Photo Date:** March 27, 2019 **Location:** Main Channel of Santiago Creek **Direction:** Southwest **Focused Survey Recommendation:** Incidental Survey Area
	**Data ID:** SA-3P **Photo Date:** March 27, 2019 **Location:** Main Channel of Santiago Creek **Direction:** Northeast **Focused Survey Recommendation:** Incidental Survey Area

	**Data ID:** SA-4P **Photo Date:** March 27, 2019 **Location:** Main Channel of Santiago Creek at Hangman's Tree Road **Direction:** South **Focused Survey Recommendation:** Incidental Survey Area
	**Data ID:** SA-4P **Photo Date:** March 27, 2019 **Location:** Main Channel of Santiago Creek at Hangman's Tree Road **Direction:** North **Focused Survey Recommendation:** Incidental Survey Area

	**Data ID:** SA-5P **Photo Date:** March 27, 2019 **Location:** Main Channel of Santiago Creek **Direction:** South **Focused Survey Recommendation:** Incidental Survey Area
	**Data ID:** SA-5P **Photo Date:** March 27, 2019 **Location:** Main Channel of Santiago Creek **Direction:** North **Focused Survey Recommendation:** Incidental Survey Area

	**Data ID:** SA-6P **Photo Date:** March 27, 2019 **Location:** Main Channel of Santiago Creek at Jackson Ranch Road South **Direction:** North **Focused Survey Recommendation:** Incidental Survey Area
	**Data ID:** SA-6P **Photo Date:** March 27, 2019 **Location:** Main Channel of Santiago Creek at Jackson Ranch Road South **Direction:** South **Focused Survey Recommendation:** Incidental Survey Area

	**Data ID:** SA-7P **Photo Date:** March 27, 2019 **Location:** Main Channel of Santiago Creek **Direction:** Southeast **Focused Survey Recommendation:** Incidental Survey Area
	**Data ID:** SA-7P **Photo Date:** March 27, 2019 **Location:** Main Channel of Santiago Creek **Direction:** Northwest **Focused Survey Recommendation:** Incidental Survey Area

	**Data ID:** SA-8P **Photo Date:** March 27, 2019 **Location:** Main Channel of Santiago Creek at Jackson Ranch Road North **Direction:** North **Focused Survey Recommendation:** Incidental Survey Area
	**Data ID:** SA-8P **Photo Date:** March 27, 2019 **Location:** Main Channel of Santiago Creek at Jackson Ranch Road North **Direction:** South **Focused Survey Recommendation:** Incidental Survey Area

	**Data ID:** SA-9P **Photo Date:** March 27, 2019 **Location:** Main Channel of Santiago Creek **Direction:** South **Focused Survey Recommendation:** Incidental Survey Area
	**Data ID:** SA-9P **Photo Date:** March 27, 2019 **Location:** Main Channel of Santiago Creek **Direction:** North **Focused Survey Recommendation:** Incidental Survey Area



Data ID: SA-10P

Photo Date: March 27, 2019

Location: Main Channel of Santiago Creek at Divergence

Direction: North

Focused Survey Recommendation: Incidental Survey Area

	**Data ID:** SA-11P **Photo Date:** March 27, 2019 **Location:** Main Channel of Santiago Creek (Eastern Fork) **Direction:** North **Focused Survey Recommendation:** Secondary Survey Area
	**Data ID:** SA-11P **Photo Date:** March 27, 2019 **Location:** Main Channel of Santiago Creek (Eastern Fork) **Direction:** South **Focused Survey Recommendation:** Secondary Survey Area

	**Data ID:** SA-12P **Photo Date:** March 27, 2019 **Location:** Main Channel of Santiago Creek (Western Fork) **Direction:** North **Focused Survey Recommendation:** Incidental Survey Area
	**Data ID:** SA-12P **Photo Date:** March 27, 2019 **Location:** Main Channel of Santiago Creek (Western Fork) **Direction:** North **Focused Survey Recommendation:** Incidental Survey Area

	**Data ID:** SA-13P **Photo Date:** March 27, 2019 **Location:** Main Channel of Santiago Creek (Western Fork) **Direction:** Northwest **Focused Survey Recommendation:** Incidental Survey Area
	**Data ID:** SA-13P **Photo Date:** March 27, 2019 **Location:** Main Channel of Santiago Creek (Western Fork) **Direction:** South **Focused Survey Recommendation:** Incidental Survey Area

	**Data ID:** SA-14P **Photo Date:** March 27, 2019 **Location:** Main Channel of Santiago Creek (Eastern Fork) **Direction:** Northwest **Focused Survey Recommendation:** Secondary Survey Area
	**Data ID:** SA-14P **Photo Date:** March 27, 2019 **Location:** Main Channel of Santiago Creek (Eastern Fork) **Direction:** South **Focused Survey Recommendation:** Secondary Survey Area

	**Data ID:** SA-15P **Photo Date:** March 27, 2019 **Location:** Main Channel of Santiago Creek at Convergence **Direction:** Northwest **Focused Survey Recommendation:** Incidental Survey Area
	**Data ID:** SA-15P **Photo Date:** March 27, 2019 **Location:** Main Channel of Santiago Creek at Convergence **Direction:** Southeast **Focused Survey Recommendation:** Incidental Survey Area

	**Data ID:** SA-16P **Photo Date:** March 27, 2019 **Location:** Main Channel of Santiago Creek **Direction:** Northwest **Focused Survey Recommendation:** Incidental Survey Area
	**Data ID:** SA-16P **Photo Date:** March 27, 2019 **Location:** Main Channel of Santiago Creek **Direction:** Southeast **Focused Survey Recommendation:** Incidental Survey Area

	**Data ID:** SA-17P **Photo Date:** March 27, 2019 **Location:** Main Channel of Santiago Creek **Direction:** Northwest **Focused Survey Recommendation:** Incidental Survey Area
	**Data ID:** SA-17P **Photo Date:** March 27, 2019 **Location:** Main Channel of Santiago Creek **Direction:** Southeast **Focused Survey Recommendation:** Incidental Survey Area

	**Data ID:** SA-18P **Photo Date:** March 27, 2019 **Location:** Main Channel of Santiago Creek **Direction:** Northwest **Focused Survey Recommendation:** Incidental Survey Area
	**Data ID:** SA-18P **Photo Date:** March 27, 2019 **Location:** Main Channel of Santiago Creek **Direction:** Southeast **Focused Survey Recommendation:** Incidental Survey Area



Data ID: SA-19P

Photo Date: March 27, 2019

Location: Pool Adjacent to Main Channel of Santiago Creek

Direction: South

Focused Survey Recommendation: Primary Survey Area

	**Data ID:** SA-20P **Photo Date:** March 27, 2019 **Location:** Main Channel of Santiago Creek **Direction:** Northwest **Focused Survey Recommendation:** Incidental Survey Area
	**Data ID:** SA-20P **Photo Date:** March 27, 2019 **Location:** Main Channel of Santiago Creek **Direction:** Southeast **Focused Survey Recommendation:** Incidental Survey Area

	**Data ID:** SA-21P **Photo Date:** March 27, 2019 **Location:** Main Channel of Santiago Creek **Direction:** Northwest **Focused Survey Recommendation:** Incidental Survey Area
	**Data ID:** SA-21P **Photo Date:** March 27, 2019 **Location:** Main Channel of Santiago Creek **Direction:** Southeast **Focused Survey Recommendation:** Incidental Survey Area

	**Data ID:** SA-22P **Photo Date:** March 27, 2019 **Location:** Main Channel of Santiago Creek **Direction:** North **Focused Survey Recommendation:** Incidental Survey Area
	**Data ID:** SA-22P **Photo Date:** March 27, 2019 **Location:** Main Channel of Santiago Creek **Direction:** Southeast **Focused Survey Recommendation:** Incidental Survey Area



Data ID: SA-23P

Photo Date: March 27, 2019

Location: Pool Adjacent to Main Channel of Santiago Creek

Direction: Northwest

Focused Survey Recommendation: Secondary Survey Area



Data ID: SA-24P

Photo Date: March 27, 2019

Location: Braiding at Main Channel of Santiago Creek

Direction: Northwest

Focused Survey Recommendation: Secondary Survey Area



Data ID: SA-25P

Photo Date: March 27, 2019

Location: Main Channel of Santiago Creek

Direction: Northwest

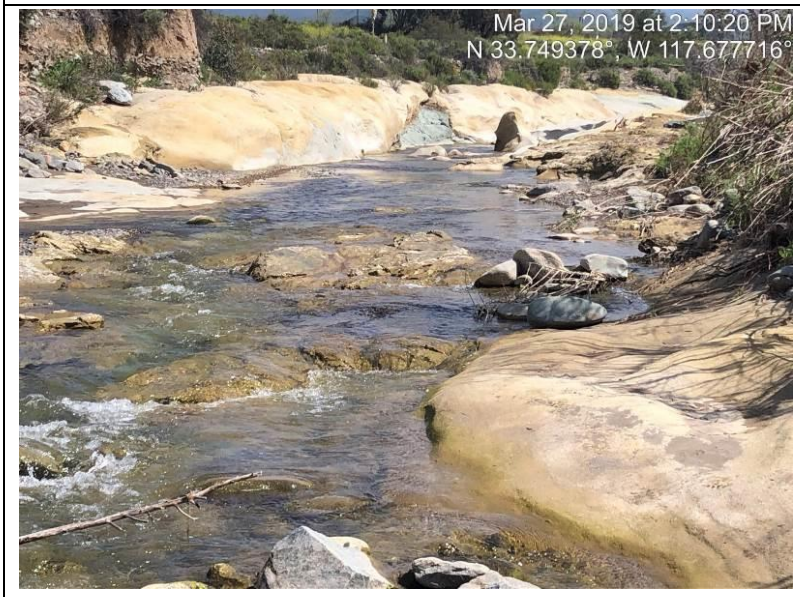
Focused Survey Recommendation: Incidental Survey Area

	**Data ID:** SA-26P **Photo Date:** March 27, 2019 **Location:** Main Channel of Santiago Creek **Direction:** Northwest **Focused Survey Recommendation:** Incidental Survey Area
	**Data ID:** SA-26P **Photo Date:** March 27, 2019 **Location:** Main Channel of Santiago Creek **Direction:** Southeast **Focused Survey Recommendation:** Incidental Survey Area

	**Data ID:** SA-27P **Photo Date:** March 27, 2019 **Location:** Main Channel of Santiago Creek Approaching Santiago Canyon Road Bridge **Direction:** Northwest **Focused Survey Recommendation:** Incidental Survey Area
	**Data ID:** SA-27P **Photo Date:** March 27, 2019 **Location:** Main Channel of Santiago Creek Approaching Santiago Canyon Road Bridge **Direction:** Southeast **Focused Survey Recommendation:** Incidental Survey Area

	**Data ID:** SA-28P **Photo Date:** March 27, 2019 **Location:** Main Channel of Santiago Creek at Santiago Canyon Road Bridge **Direction:** North **Focused Survey Recommendation:** Incidental Survey Area
	**Data ID:** SA-28P **Photo Date:** March 27, 2019 **Location:** Main Channel of Santiago Creek at Santiago Canyon Road Bridge **Direction:** Southeast **Focused Survey Recommendation:** Incidental Survey Area

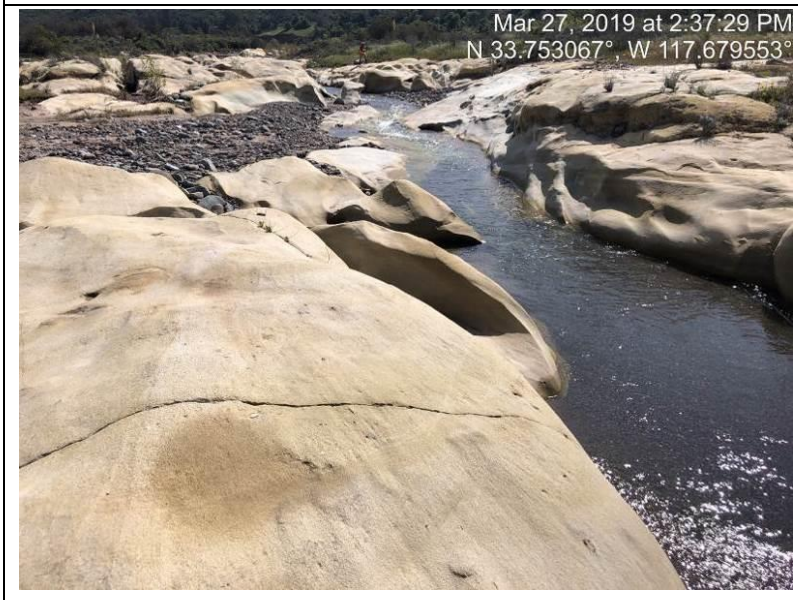
	**Data ID:** SA-29P **Photo Date:** March 27, 2019 **Location:** Main Channel of Santiago Creek North of Santiago Canyon Road Bridge **Direction:** North **Focused Survey Recommendation:** Incidental Survey Area
	**Data ID:** SA-29P **Photo Date:** March 27, 2019 **Location:** Main Channel of Santiago Creek North of Santiago Canyon Road Bridge **Direction:** South **Focused Survey Recommendation:** Incidental Survey Area

	**Data ID:** SA-30P **Photo Date:** March 27, 2019 **Location:** Main Channel of Santiago Creek **Direction:** West **Focused Survey Recommendation:** Incidental Survey Area
	**Data ID:** SA-30P **Photo Date:** March 27, 2019 **Location:** Main Channel of Santiago Creek **Direction:** Southeast **Focused Survey Recommendation:** Incidental Survey Area

	**Data ID:** SA-31P **Photo Date:** March 27, 2019 **Location:** Main Channel of Santiago Creek **Direction:** North **Focused Survey Recommendation:** Secondary Survey Area
	**Data ID:** SA-31P **Photo Date:** March 27, 2019 **Location:** Main Channel of Santiago Creek **Direction:** South **Focused Survey Recommendation:** Secondary Survey Area

	**Data ID:** SA-32P **Photo Date:** March 27, 2019 **Location:** Main Channel of Santiago Creek **Direction:** North **Focused Survey Recommendation:** Incidental Survey Area
	**Data ID:** SA-32P **Photo Date:** March 27, 2019 **Location:** Main Channel of Santiago Creek **Direction:** South **Focused Survey Recommendation:** Incidental Survey Area

	**Data ID:** SA-33P **Photo Date:** March 27, 2019 **Location:** Main Channel of Santiago Creek **Direction:** North **Focused Survey Recommendation:** Incidental Survey Area
	**Data ID:** SA-33P **Photo Date:** March 27, 2019 **Location:** Main Channel of Santiago Creek **Direction:** South **Focused Survey Recommendation:** Incidental Survey Area

	**Data ID:** SA-34P **Photo Date:** March 27, 2019 **Location:** Main Channel of Santiago Creek **Direction:** North **Focused Survey Recommendation:** Incidental Survey Area
	**Data ID:** SA-34P **Photo Date:** March 27, 2019 **Location:** Main Channel of Santiago Creek **Direction:** South **Focused Survey Recommendation:** Incidental Survey Area

	**Data ID:** SA-35P **Photo Date:** March 27, 2019 **Location:** Main Channel of Santiago Creek **Direction:** North **Focused Survey Recommendation:** Incidental Survey Area
	**Data ID:** SA-35P **Photo Date:** March 27, 2019 **Location:** Main Channel of Santiago Creek **Direction:** South **Focused Survey Recommendation:** Incidental Survey Area

	**Data ID:** SA-36P **Photo Date:** March 27, 2019 **Location:** Main Channel of Santiago Creek at Red Rock Ridge Road **Direction:** North **Focused Survey Recommendation:** Incidental Survey Area
	**Data ID:** SA-36P **Photo Date:** March 27, 2019 **Location:** Main Channel of Santiago Creek at Red Rock Ridge Road **Direction:** South **Focused Survey Recommendation:** Incidental Survey Area

	**Data ID:** SA-37P **Photo Date:** March 27, 2019 **Location:** Main Channel of Santiago Creek **Direction:** North **Focused Survey Recommendation:** Incidental Survey Area
	**Data ID:** SA-37P **Photo Date:** March 27, 2019 **Location:** Main Channel of Santiago Creek **Direction:** Southwest **Focused Survey Recommendation:** Incidental Survey Area



Data ID: SA-38P

Photo Date: March 27, 2019

Location: Main Channel of Santiago Creek

Direction: North

Focused Survey Recommendation: Incidental Survey Area



Data ID: SA-38P

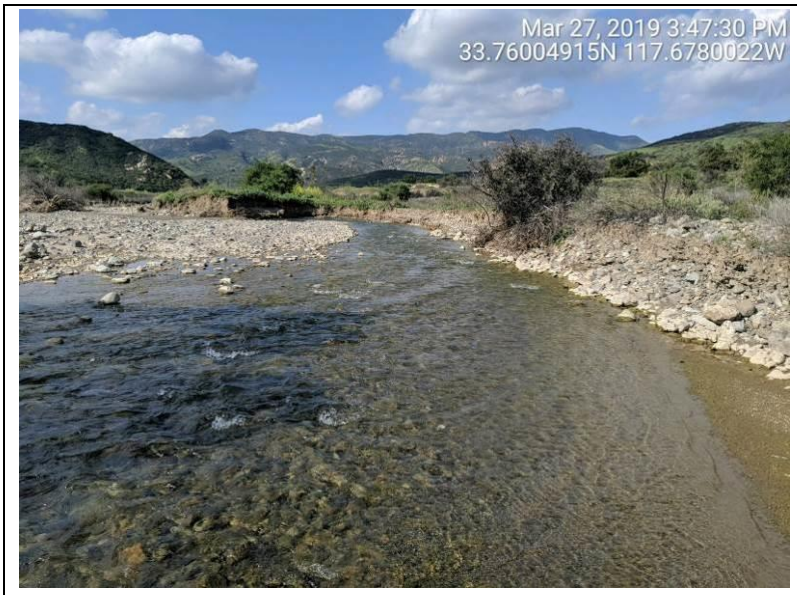
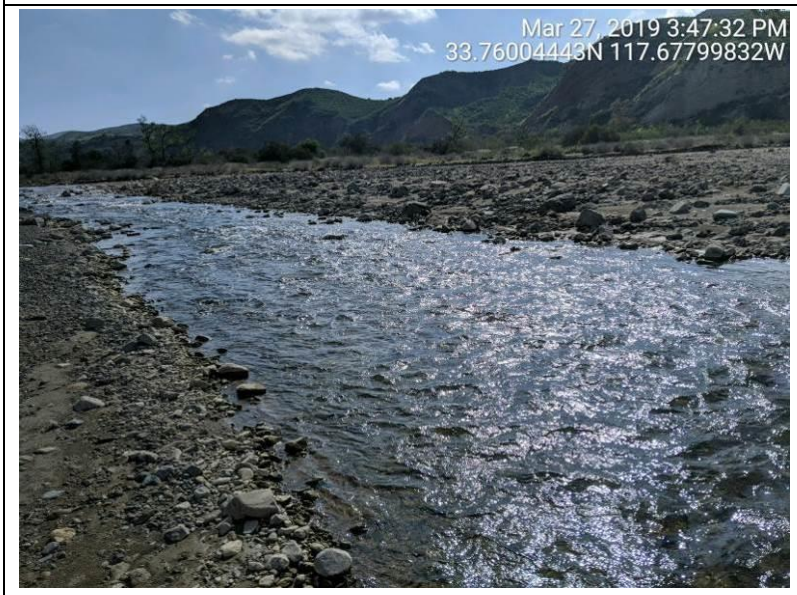
Photo Date: March 27, 2019

Location: Main Channel of Santiago Creek

Direction: South

Focused Survey Recommendation: Incidental Survey Area

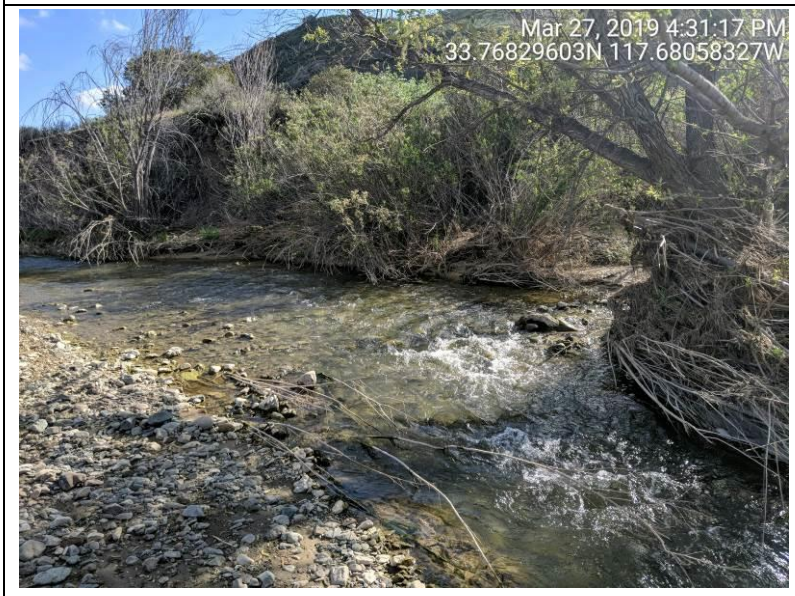
	**Data ID:** SA-39P **Photo Date:** March 27, 2019 **Location:** Main Channel of Santiago Creek **Direction:** North **Focused Survey Recommendation:** Incidental Survey Area
	**Data ID:** SA-39P **Photo Date:** March 27, 2019 **Location:** Main Channel of Santiago Creek **Direction:** South **Focused Survey Recommendation:** Incidental Survey Area

	**Data ID:** SA-40P **Photo Date:** March 27, 2019 **Location:** Main Channel of Santiago Creek **Direction:** North **Focused Survey Recommendation:** Incidental Survey Area
	**Data ID:** SA-40P **Photo Date:** March 27, 2019 **Location:** Main Channel of Santiago Creek **Direction:** Southwest **Focused Survey Recommendation:** Incidental Survey Area

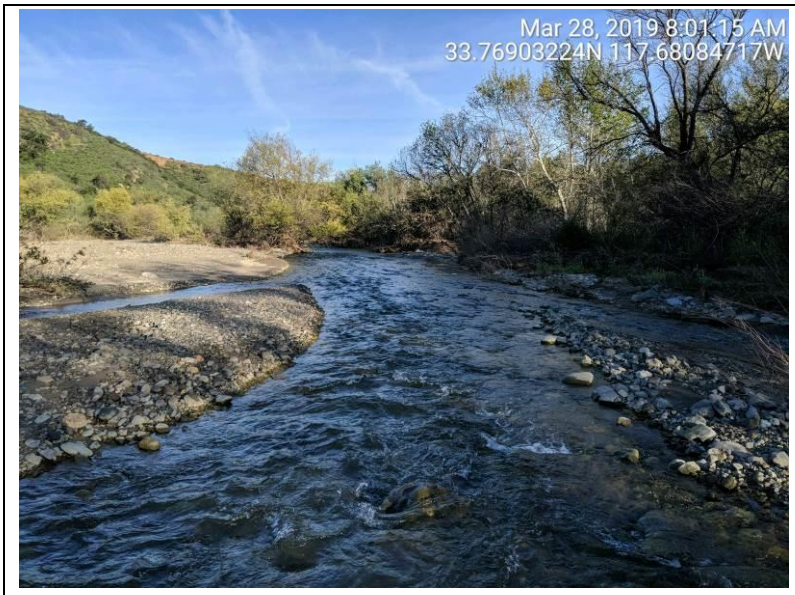
	**Data ID:** SA-41P **Photo Date:** March 27, 2019 **Location:** Main Channel of Santiago Creek **Direction:** North **Focused Survey Recommendation:** Incidental Survey Area
	**Data ID:** SA-41P **Photo Date:** March 27, 2019 **Location:** Main Channel of Santiago Creek **Direction:** South **Focused Survey Recommendation:** Incidental Survey Area

	**Data ID:** SA-42P **Photo Date:** March 27, 2019 **Location:** Main Channel of Santiago Creek **Direction:** North **Focused Survey Recommendation:** Incidental Survey Area
	**Data ID:** SA-42P **Photo Date:** March 27, 2019 **Location:** Main Channel of Santiago Creek **Direction:** South **Focused Survey Recommendation:** Incidental Survey Area

	**Data ID:** SA-43P **Photo Date:** March 27, 2019 **Location:** Main Channel of Santiago Creek **Direction:** North **Focused Survey Recommendation:** Incidental Survey Area
	**Data ID:** SA-43P **Photo Date:** March 27, 2019 **Location:** Main Channel of Santiago Creek **Direction:** South **Focused Survey Recommendation:** Incidental Survey Area

	**Data ID:** SA-44P **Photo Date:** March 27, 2019 **Location:** Main Channel of Santiago Creek **Direction:** North **Focused Survey Recommendation:** Incidental Survey Area
	**Data ID:** SA-44P **Photo Date:** March 27, 2019 **Location:** Main Channel of Santiago Creek **Direction:** South **Focused Survey Recommendation:** Incidental Survey Area

	**Data ID:** SA-45P **Photo Date:** March 27, 2019 **Location:** Small Branch off of Main Channel of Santiago Creek **Direction:** North **Focused Survey Recommendation:** Secondary Survey Area
	**Data ID:** SA-45P **Photo Date:** March 27, 2019 **Location:** Small Branch off of Main Channel of Santiago Creek **Direction:** South **Focused Survey Recommendation:** Secondary Survey Area

	**Data ID:** SA-46P **Photo Date:** March 28, 2019 **Location:** Main Channel of Santiago Creek **Direction:** Northwest **Focused Survey Recommendation:** Incidental Survey Area
	**Data ID:** SA-46P **Photo Date:** March 28, 2019 **Location:** Main Channel of Santiago Creek **Direction:** Southeast **Focused Survey Recommendation:** Incidental Survey Area

	**Data ID:** SA-47P **Photo Date:** March 28, 2019 **Location:** Main Channel of Santiago Creek **Direction:** Northwest **Focused Survey Recommendation:** Incidental Survey Area
	**Data ID:** SA-47P **Photo Date:** March 28, 2019 **Location:** Main Channel of Santiago Creek **Direction:** Southeast **Focused Survey Recommendation:** Incidental Survey Area



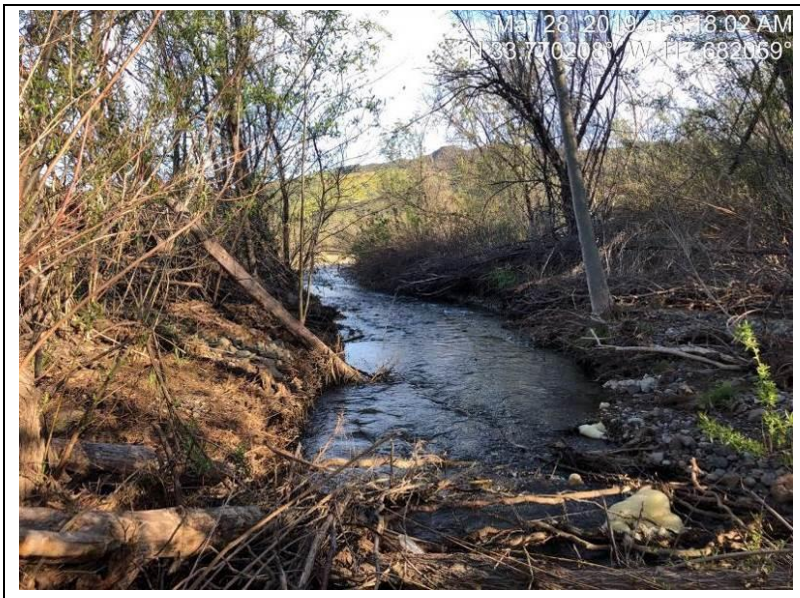
Data ID: SA-48P

Photo Date: March 28, 2019

Location: Main Channel of Santiago Creek

Direction: Northwest

Focused Survey Recommendation: Incidental Survey Area



Data ID: SA-49P

Photo Date: March 28, 2019

Location: Main Channel of Santiago Creek

Direction: Northwest

Focused Survey Recommendation: Incidental Survey Area



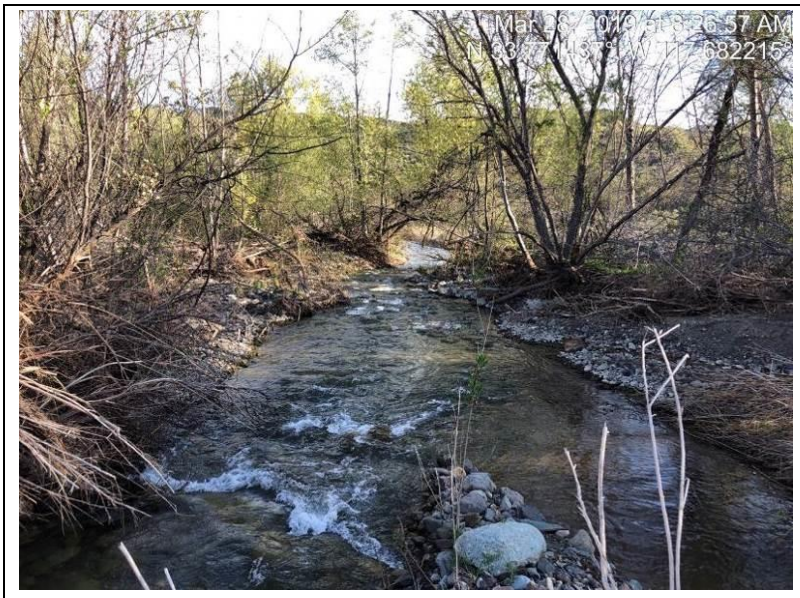
Data ID: SA-50P

Photo Date: March 28, 2019

Location: Main Channel of Santiago Creek

Direction: Northwest

Focused Survey Recommendation: Incidental Survey Area

	**Data ID:** SA-51P **Photo Date:** March 28, 2019 **Location:** Main Channel of Santiago Creek **Direction:** North **Focused Survey Recommendation:** Incidental Survey Area
	**Data ID:** SA-51P **Photo Date:** March 28, 2019 **Location:** Main Channel of Santiago Creek **Direction:** South **Focused Survey Recommendation:** Incidental Survey Area

	**Data ID:** SA-52P **Photo Date:** March 28, 2019 **Location:** Main Channel of Santiago Creek **Direction:** Northwest **Focused Survey Recommendation:** Incidental Survey Area
	**Data ID:** SA-52P **Photo Date:** March 28, 2019 **Location:** Main Channel of Santiago Creek **Direction:** South **Focused Survey Recommendation:** Incidental Survey Area

	**Data ID:** SA-53P **Photo Date:** March 28, 2019 **Location:** Main Channel of Santiago Creek **Direction:** Northwest **Focused Survey Recommendation:** Do Not Survey
	**Data ID:** SA-53P **Photo Date:** March 28, 2019 **Location:** Main Channel of Santiago Creek **Direction:** Southeast **Focused Survey Recommendation:** Do Not Survey

	**Data ID:** SA-54P **Photo Date:** March 28, 2019 **Location:** Black Star Creek **Direction:** North **Focused Survey Recommendation:** Secondary Survey Area
	**Data ID:** SA-54P **Photo Date:** March 28, 2019 **Location:** Black Star Creek **Direction:** North **Focused Survey Recommendation:** Secondary Survey Area

	**Data ID:** SA-55P **Photo Date:** March 28, 2019 **Location:** Main Channel of Santiago Creek **Direction:** West **Focused Survey Recommendation:** Do Not Survey
	**Data ID:** SA-55P **Photo Date:** March 28, 2019 **Location:** Main Channel of Santiago Creek **Direction:** East **Focused Survey Recommendation:** Do Not Survey

	**Data ID:** SA-56P **Photo Date:** March 28, 2019 **Location:** Main Channel of Santiago Creek **Direction:** West **Focused Survey Recommendation:** Do Not Survey
	**Data ID:** SA-56P **Photo Date:** March 28, 2019 **Location:** Main Channel of Santiago Creek **Direction:** East **Focused Survey Recommendation:** Do Not Survey



Data ID: SA-57P

Photo Date: March 28, 2019

Location: Main Channel of Santiago Creek at Divergence

Direction: West

Focused Survey Recommendation: Do Not Survey



Data ID: SA-58P

Photo Date: March 28, 2019

Location: Main Channel of Santiago Creek (Northern Fork)

Direction: West

Focused Survey Recommendation: Do Not Survey

	**Data ID:** SA-59P **Photo Date:** March 28, 2019 **Location:** Main Channel of Santiago Creek (Northern Fork) **Direction:** Southwest **Focused Survey Recommendation:** Do Not Survey
	**Data ID:** SA-59P **Photo Date:** March 28, 2019 **Location:** Main Channel of Santiago Creek (Northern Fork) **Direction:** East **Focused Survey Recommendation:** Do Not Survey

	**Data ID:** SA-60P **Photo Date:** March 28, 2019 **Location:** Main Channel of Santiago Creek at Convergence **Direction:** Southwest **Focused Survey Recommendation:** Do Not Survey
	**Data ID:** SA-60P **Photo Date:** March 28, 2019 **Location:** Main Channel of Santiago Creek at Convergence **Direction:** Northeast **Focused Survey Recommendation:** Do Not Survey



Data ID: SA-61P

Photo Date: March 28, 2019

Location: Main Channel of Santiago Creek

Direction: North

Focused Survey Recommendation: Do Not Survey

	**Data ID:** SA-62P **Photo Date:** March 28, 2019 **Location:** Main Channel of Santiago Creek **Direction:** Northwest **Focused Survey Recommendation:** Do Not Survey
	**Data ID:** SA-62P **Photo Date:** March 28, 2019 **Location:** Main Channel of Santiago Creek **Direction:** Southeast **Focused Survey Recommendation:** Do Not Survey

	**Data ID:** SA-63P **Photo Date:** March 28, 2019 **Location:** Main Channel of Santiago Creek **Direction:** West **Focused Survey Recommendation:** Do Not Survey
	**Data ID:** SA-63P **Photo Date:** March 28, 2019 **Location:** Main Channel of Santiago Creek **Direction:** East **Focused Survey Recommendation:** Do Not Survey

	**Data ID:** SA-64P **Photo Date:** March 28, 2019 **Location:** Main Channel of Santiago Creek **Direction:** West **Focused Survey Recommendation:** Do Not Survey
	**Data ID:** SA-64P **Photo Date:** March 28, 2019 **Location:** Main Channel of Santiago Creek **Direction:** East **Focused Survey Recommendation:** Do Not Survey

	**Data ID:** SA-65P **Photo Date:** March 28, 2019 **Location:** Main Channel of Santiago Creek **Direction:** West **Focused Survey Recommendation:** Do Not Survey
	**Data ID:** SA-65P **Photo Date:** March 28, 2019 **Location:** Main Channel of Santiago Creek **Direction:** East **Focused Survey Recommendation:** Do Not Survey

	**Data ID:** SA-66P **Photo Date:** March 28, 2019 **Location:** Main Channel of Santiago Creek **Direction:** West **Focused Survey Recommendation:** Do Not Survey
	**Data ID:** SA-66P **Photo Date:** March 28, 2019 **Location:** Main Channel of Santiago Creek **Direction:** East **Focused Survey Recommendation:** Do Not Survey

	**Data ID:** SA-1L **Photo Date:** March 27, 2019 **Location:** Side Channel of Santiago Creek **Direction:** North **Focused Survey Recommendation:** Primary Survey Area
	**Data ID:** SA-1L **Photo Date:** March 27, 2019 **Location:** Pool Associated with Side Channel of Santiago Creek **Direction:** South **Focused Survey Recommendation:** Primary Survey Area

	**Data ID:** SA-2L **Photo Date:** March 27, 2019 **Location:** Side Channel of Santiago Creek **Direction:** South **Focused Survey Recommendation:** Primary Survey Area
	**Data ID:** SA-2L **Photo Date:** March 27, 2019 **Location:** Side Channel of Santiago Creek **Direction:** South **Focused Survey Recommendation:** Primary Survey Area

	**Data ID:** SA-3L **Photo Date:** March 27, 2019 **Location:** Side Channel of Santiago Creek at Hangman's Tree Road **Direction:** Southwest **Focused Survey Recommendation:** Primary Survey Area
	**Data ID:** SA-3L **Photo Date:** March 27, 2019 **Location:** Side Channel of Santiago Creek at Hangman's Tree Road **Direction:** Southwest **Focused Survey Recommendation:** Primary Survey Area

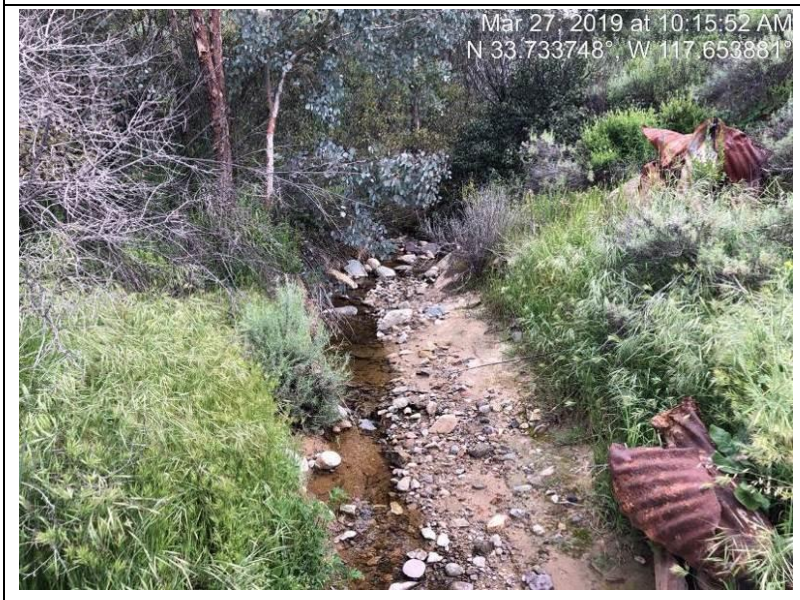
	**Data ID:** SA-3L **Photo Date:** March 27, 2019 **Location:** Side Channel of Santiago Creek at Hangman's Tree Road **Direction:** North **Focused Survey Recommendation:** Primary Survey Area
	**Data ID:** SA-3L **Photo Date:** March 27, 2019 **Location:** Side Channel of Santiago Creek at Hangman's Tree Road **Direction:** South **Focused Survey Recommendation:** Primary Survey Area

	**Data ID:** SA-4L **Photo Date:** March 27, 2019 **Location:** Side Channel of Santiago Creek at Jackson Ranch Road North **Direction:** North **Focused Survey Recommendation:** Secondary Survey Area
	**Data ID:** SA-4L **Photo Date:** March 27, 2019 **Location:** Side Channel of Santiago Creek at Jackson Ranch Road North **Direction:** South **Focused Survey Recommendation:** Secondary Survey Area

	**Data ID:** SA-5L **Photo Date:** March 27, 2019 **Location:** Side Channel of Santiago Creek **Direction:** West **Focused Survey Recommendation:** Do Not Survey
	**Data ID:** SA-5L **Photo Date:** March 27, 2019 **Location:** Side Channel of Santiago Creek **Direction:** West **Focused Survey Recommendation:** Do Not Survey

	**Data ID:** SA-6L **Photo Date:** March 27, 2019 **Location:** Side Channel of Santiago Creek at Williams Canyon Road **Direction:** North **Focused Survey Recommendation:** Secondary Survey Area
	**Data ID:** SA-6L **Photo Date:** March 27, 2019 **Location:** Side Channel of Santiago Creek at Williams Canyon Road **Direction:** South **Focused Survey Recommendation:** Secondary Survey Area

	**Data ID:** SA-7L **Photo Date:** March 27, 2019 **Location:** Side Channel of Santiago Creek **Direction:** West **Focused Survey Recommendation:** Secondary Survey Area
	**Data ID:** SA-7L **Photo Date:** March 27, 2019 **Location:** Side Channel of Santiago Creek **Direction:** South **Focused Survey Recommendation:** Secondary Survey Area

	**Data ID:** SA-8L **Photo Date:** March 27, 2019 **Location:** Side Channel of Santiago Creek **Direction:** Northwest **Focused Survey Recommendation:** Secondary Survey Area
	**Data ID:** SA-8L **Photo Date:** March 27, 2019 **Location:** Side Channel of Santiago Creek **Direction:** West **Focused Survey Recommendation:** Secondary Survey Area

	**Data ID:** SA-9L **Photo Date:** March 27, 2019 **Location:** Side Channel of Santiago Creek **Direction:** Northwest **Focused Survey Recommendation:** Primary Survey Area
	**Data ID:** SA-9L **Photo Date:** March 27, 2019 **Location:** Side Channel of Santiago Creek **Direction:** Southeast **Focused Survey Recommendation:** Primary Survey Area

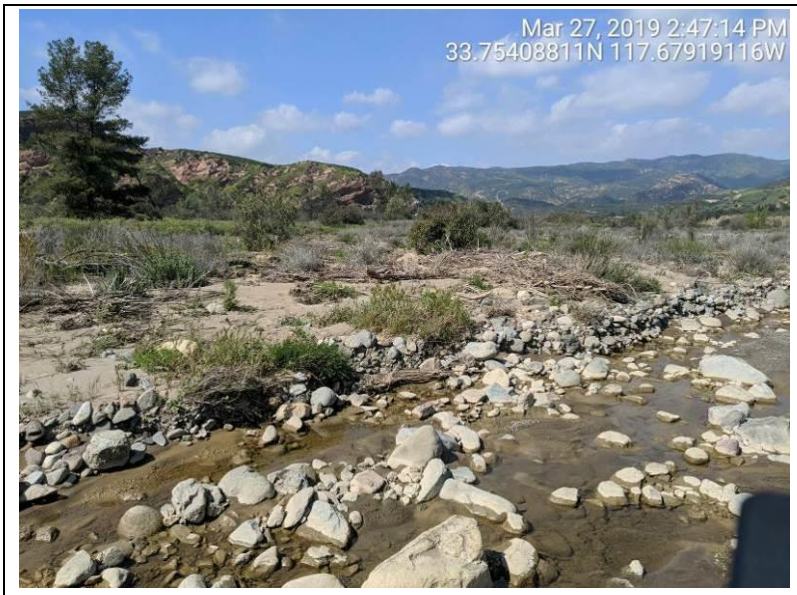
	**Data ID:** SA-10L **Photo Date:** March 27, 2019 **Location:** Side Channel of Santiago Creek **Direction:** Southeast **Focused Survey Recommendation:** Primary Survey Area
	**Data ID:** SA-10L **Photo Date:** March 27, 2019 **Location:** Side Channel of Santiago Creek **Direction:** Northwest **Focused Survey Recommendation:** Primary Survey Area

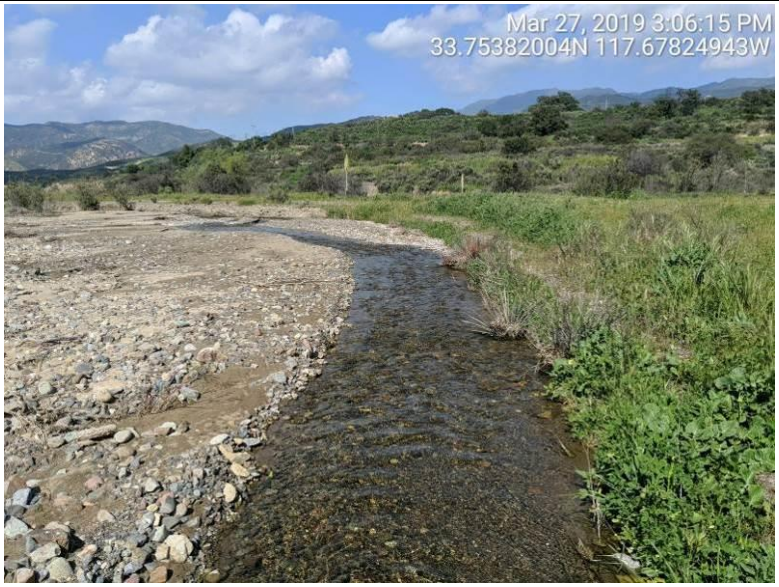
	**Data ID:** SA-10L **Photo Date:** March 27, 2019 **Location:** Side Channel of Santiago Creek **Direction:** Southeast **Focused Survey Recommendation:** Primary Survey Area
	**Data ID:** SA-10L **Photo Date:** March 27, 2019 **Location:** Side Channel of Santiago Creek **Direction:** Northwest **Focused Survey Recommendation:** Primary Survey Area

	**Data ID:** SA-11L **Photo Date:** March 27, 2019 **Location:** Side Channel of Santiago Creek **Direction:** Northwest **Focused Survey Recommendation:** Primary Survey Area
	**Data ID:** SA-11L **Photo Date:** March 27, 2019 **Location:** Side Channel of Santiago Creek **Direction:** Southeast **Focused Survey Recommendation:** Primary Survey Area

	**Data ID:** SA-12L **Photo Date:** March 27, 2019 **Location:** Side Channel of Santiago Creek **Direction:** Northwest **Focused Survey Recommendation:** Secondary Survey Area
	**Data ID:** SA-12L **Photo Date:** March 27, 2019 **Location:** Side Channel of Santiago Creek **Direction:** Southeast **Focused Survey Recommendation:** Secondary Survey Area

	**Data ID:** SA-13L **Photo Date:** March 27, 2019 **Location:** Side Channel of Santiago Creek **Direction:** Northwest **Focused Survey Recommendation:** Secondary Survey Area
	**Data ID:** SA-13L **Photo Date:** March 27, 2019 **Location:** Side Channel of Santiago Creek **Direction:** Southeast **Focused Survey Recommendation:** Secondary Survey Area

	**Data ID:** SA-14L **Photo Date:** March 27, 2019 **Location:** Side Channel of Santiago Creek **Direction:** Northeast **Focused Survey Recommendation:** Primary Survey Area
	**Data ID:** SA-14L **Photo Date:** March 27, 2019 **Location:** Side Channel of Santiago Creek **Direction:** Southwest **Focused Survey Recommendation:** Primary Survey Area



Data ID: SA-15L

Photo Date: March 27, 2019

Location: Side Channel of Santiago Creek

Direction: Northwest

Focused Survey Recommendation: Secondary Survey Area



Data ID: SA-15L

Photo Date: March 27, 2019

Location: Side Channel of Santiago Creek

Direction: Southeast

Focused Survey Recommendation: Secondary Survey Area

	**Data ID:** SA-16L **Photo Date:** March 27, 2019 **Location:** Side Channel of Santiago Creek **Direction:** North **Focused Survey Recommendation:** Primary Survey Area
	**Data ID:** SA-16L **Photo Date:** March 27, 2019 **Location:** Side Channel of Santiago Creek **Direction:** North **Focused Survey Recommendation:** Primary Survey Area

	**Data ID:** SA-17L **Photo Date:** March 27, 2019 **Location:** Confluence of Silverado Creek and Santiago Creek **Direction:** Southeast **Focused Survey Recommendation:** Secondary Survey Area
	**Data ID:** SA-17L **Photo Date:** March 27, 2019 **Location:** Confluence of Silverado Creek and Santiago Creek **Direction:** Southeast **Focused Survey Recommendation:** Secondary Survey Area

	**Data ID:** SA-18L **Photo Date:** March 27, 2019 **Location:** Side Channel of Santiago Creek **Direction:** North **Focused Survey Recommendation:** Primary Survey Area
	**Data ID:** SA-18L **Photo Date:** March 27, 2019 **Location:** Side Channel of Santiago Creek **Direction:** North **Focused Survey Recommendation:** Primary Survey Area

	**Data ID:** SA-18L **Photo Date:** March 27, 2019 **Location:** Side Channel of Santiago Creek **Direction:** North **Focused Survey Recommendation:** Primary Survey Area
	**Data ID:** SA-18L **Photo Date:** March 27, 2019 **Location:** Side Channel of Santiago Creek **Direction:** North **Focused Survey Recommendation:** Primary Survey Area

	**Data ID:** SA-19L **Photo Date:** March 27, 2019 **Location:** Side Channel of Santiago Creek **Direction:** North **Focused Survey Recommendation:** Secondary Survey Area
	**Data ID:** SA-19L **Photo Date:** March 27, 2019 **Location:** Side Channel of Santiago Creek **Direction:** North **Focused Survey Recommendation:** Secondary Survey Area

	**Data ID:** SA-20L **Photo Date:** March 27, 2019 **Location:** Baker Creek **Direction:** North **Focused Survey Recommendation:** Secondary Survey Area
	**Data ID:** SA-20L **Photo Date:** March 27, 2019 **Location:** Baker Creek **Direction:** North **Focused Survey Recommendation:** Secondary Survey Area

	**Data ID:** SA-21L **Photo Date:** March 27, 2019 **Location:** Confluence of Baker Creek and Santiago Creek **Direction:** North **Focused Survey Recommendation:** Secondary Survey Area
	**Data ID:** SA-21L **Photo Date:** March 27, 2019 **Location:** Confluence of Baker Creek and Santiago Creek **Direction:** North **Focused Survey Recommendation:** Secondary Survey Area

	**Data ID:** SA-22L **Photo Date:** March 27, 2019 **Location:** Side Channel of Santiago Creek **Direction:** North **Focused Survey Recommendation:** Primary Survey Area
	**Data ID:** SA-22L **Photo Date:** March 27, 2019 **Location:** Side Channel of Santiago Creek **Direction:** South **Focused Survey Recommendation:** Primary Survey Area

	**Data ID:** SA-23L **Photo Date:** March 27, 2019 **Location:** Side Channel of Santiago Creek **Direction:** South **Focused Survey Recommendation:** Do Not Survey
	**Data ID:** SA-23L **Photo Date:** March 27, 2019 **Location:** Side Channel of Santiago Creek **Direction:** North **Focused Survey Recommendation:** Do Not Survey

	**Data ID:** SA-24L **Photo Date:** March 27, 2019 **Location:** Side Channel of Santiago Creek **Direction:** North **Focused Survey Recommendation:** Do Not Survey
	**Data ID:** SA-24L **Photo Date:** March 27, 2019 **Location:** Side Channel of Santiago Creek **Direction:** South **Focused Survey Recommendation:** Do Not Survey

	**Data ID:** SA-25L **Photo Date:** March 27, 2019 **Location:** Side Channel of Santiago Creek **Direction:** North **Focused Survey Recommendation:** Do Not Survey
	**Data ID:** SA-25L **Photo Date:** March 27, 2019 **Location:** Side Channel of Santiago Creek **Direction:** South **Focused Survey Recommendation:** Do Not Survey

	**Data ID:** SA-26L **Photo Date:** March 28, 2019 **Location:** Side Channel of Santiago Creek **Direction:** Northeast **Focused Survey Recommendation:** Do Not Survey
	**Data ID:** SA-26L **Photo Date:** March 28, 2019 **Location:** Side Channel of Santiago Creek **Direction:** Northwest **Focused Survey Recommendation:** Do Not Survey

	**Data ID:** SA-27L **Photo Date:** March 28, 2019 **Location:** Side Channel of Santiago Creek **Direction:** North **Focused Survey Recommendation:** Do Not Survey
	**Data ID:** SA-27L **Photo Date:** March 28, 2019 **Location:** Side Channel of Santiago Creek **Direction:** North **Focused Survey Recommendation:** Do Not Survey



Data ID: SA-28L

Photo Date: March 28, 2019

Location: Santiago Creek (Southern Fork)

Direction: West

Focused Survey Recommendation: Do Not Survey



Data ID: SI-1P

Photo Date: March 28, 2019

Location: Silverado Creek at Black Star Canyon Road

Direction: East

Focused Survey Recommendation: Secondary Survey Area

	**Data ID:** SI-2P **Photo Date:** March 28, 2019 **Location:** Silverado Creek Near Black Star Canyon Road **Direction:** Southeast **Focused Survey Recommendation:** Secondary Survey Area
	**Data ID:** SI-2P **Photo Date:** March 28, 2019 **Location:** Silverado Creek Near Black Star Canyon Road **Direction:** Northwest **Focused Survey Recommendation:** Secondary Survey Area

	**Data ID:** SI-3P **Photo Date:** March 28, 2019 **Location:** Silverado Creek **Direction:** Southeast **Focused Survey Recommendation:** Secondary Survey Area
	**Data ID:** SI-3P **Photo Date:** March 28, 2019 **Location:** Silverado Creek **Direction:** Northwest **Focused Survey Recommendation:** Secondary Survey Area

	**Data ID:** SI-4P **Photo Date:** March 28, 2019 **Location:** Silverado Creek **Direction:** Southeast **Focused Survey Recommendation:** Secondary Survey Area
	**Data ID:** SI-4P **Photo Date:** March 28, 2019 **Location:** Silverado Creek **Direction:** Northwest **Focused Survey Recommendation:** Secondary Survey Area



Data ID: SI-5P

Photo Date: March 28, 2019

Location: Pond Adjacent to Silverado Creek

Direction: Northeast

Focused Survey Recommendation: Primary Survey Area

	**Data ID:** SI-6P **Photo Date:** March 28, 2019 **Location:** Silverado Creek **Direction:** Southeast **Focused Survey Recommendation:** Secondary Survey Area
	**Data ID:** SI-6P **Photo Date:** March 28, 2019 **Location:** Silverado Creek **Direction:** Northwest **Focused Survey Recommendation:** Secondary Survey Area



Data ID: SI-7P

Photo Date: March 28, 2019

Location: Silverado Creek at Convergence

Direction: Southeast

Focused Survey Recommendation: Secondary Survey Area

	**Data ID:** SI-8P **Photo Date:** March 28, 2019 **Location:** Silverado Creek at Divergence **Direction:** Southeast **Focused Survey Recommendation:** Secondary Survey Area
	**Data ID:** SI-8P **Photo Date:** March 28, 2019 **Location:** Silverado Creek at Divergence **Direction:** Northwest **Focused Survey Recommendation:** Secondary Survey Area

	**Data ID:** SI-9P **Photo Date:** March 28, 2019 **Location:** Silverado Creek **Direction:** Southeast **Focused Survey Recommendation:** Secondary Survey Area
	**Data ID:** SI-9P **Photo Date:** March 28, 2019 **Location:** Silverado Creek **Direction:** Northwest **Focused Survey Recommendation:** Secondary Survey Area

	**Data ID:** SI-10P **Photo Date:** March 28, 2019 **Location:** Silverado Creek **Direction:** Southeast **Focused Survey Recommendation:** Do Not Survey
	**Data ID:** SI-10P **Photo Date:** March 28, 2019 **Location:** Silverado Creek **Direction:** Northwest **Focused Survey Recommendation:** Do Not Survey



Data ID: SI-11P

Photo Date: March 28, 2019

Location: Silverado Creek

Direction: Southeast

Focused Survey Recommendation: Do Not Survey



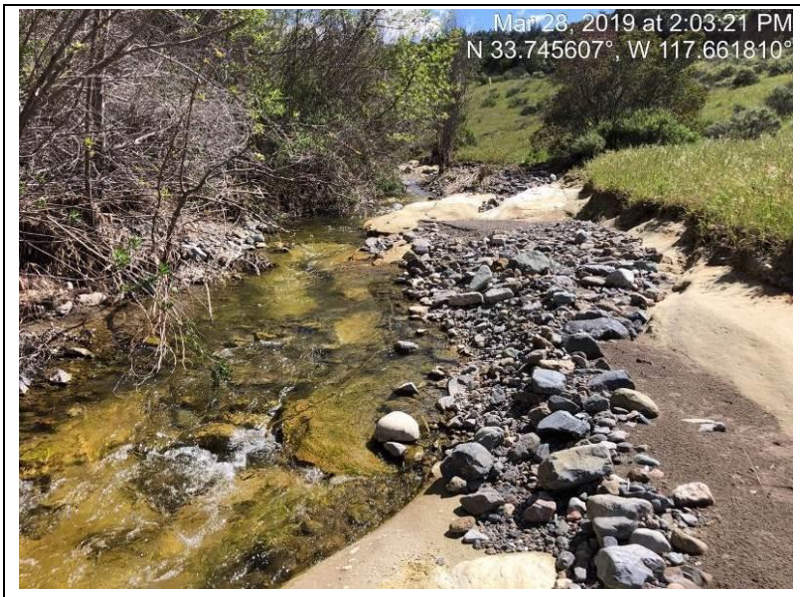
Data ID: SI-11P

Photo Date: March 28, 2019

Location: Silverado Creek

Direction: Northwest

Focused Survey Recommendation: Do Not Survey



Data ID: SI-12P

Photo Date: March 28, 2019

Location: Silverado Creek

Direction: Southeast

Focused Survey Recommendation: Do Not Survey

	**Data ID:** SI-13P **Photo Date:** March 28, 2019 **Location:** Silverado Creek **Direction:** Southeast **Focused Survey Recommendation:** Do Not Survey
	**Data ID:** SI-13P **Photo Date:** March 28, 2019 **Location:** Silverado Creek **Direction:** Northwest **Focused Survey Recommendation:** Do Not Survey



Data ID: SI-14P

Photo Date: March 28, 2019

Location: Silverado Creek

Direction: Southeast

Focused Survey Recommendation: Do Not Survey



Data ID: SI-15P

Photo Date: March 28, 2019

Location: Silverado Creek

Direction: Northwest

Focused Survey Recommendation: Do Not Survey

	**Data ID:** SI-16P **Photo Date:** March 28, 2019 **Location:** Silverado Creek **Direction:** Southeast **Focused Survey Recommendation:** Do Not Survey
	**Data ID:** SI-16P **Photo Date:** March 28, 2019 **Location:** Silverado Creek **Direction:** Northwest **Focused Survey Recommendation:** Do Not Survey

	**Data ID:** SI-17P **Photo Date:** March 28, 2019 **Location:** Silverado Creek at Waterfall **Direction:** Southeast **Focused Survey Recommendation:** Do Not Survey
	**Data ID:** SI-17P **Photo Date:** March 28, 2019 **Location:** Silverado Creek at Waterfall **Direction:** Northwest **Focused Survey Recommendation:** Do Not Survey

	**Data ID:** SI-18P **Photo Date:** March 28, 2019 **Location:** Silverado Creek **Direction:** Southeast **Focused Survey Recommendation:** Do Not Survey
	**Data ID:** SI-18P **Photo Date:** March 28, 2019 **Location:** Silverado Creek **Direction:** Northwest **Focused Survey Recommendation:** Do Not Survey

	**Data ID:** SI-19P **Photo Date:** March 28, 2019 **Location:** Silverado Creek at Silverado Canyon Road **Direction:** East **Focused Survey Recommendation:** Do Not Survey
	**Data ID:** SI-19P **Photo Date:** March 28, 2019 **Location:** Silverado Creek at Silverado Canyon Road **Direction:** Northwest **Focused Survey Recommendation:** Do Not Survey



Data ID: SI-20P

Photo Date: March 28, 2019

Location: Silverado Creek Upstream of Silverado Canyon Road

Direction: East

Focused Survey Recommendation: Primary Survey Area

	**Data ID:** SI-21P **Photo Date:** March 28, 2019 **Location:** Silverado Creek **Direction:** East **Focused Survey Recommendation:** Primary Survey Area
	**Data ID:** SI-21P **Photo Date:** March 28, 2019 **Location:** Silverado Creek **Direction:** West **Focused Survey Recommendation:** Primary Survey Area



Data ID: SI-22P

Photo Date: March 28, 2019

Location: Silverado Creek

Direction: Northeast

Focused Survey Recommendation: Do Not Survey



Data ID: SI-22P

Photo Date: March 28, 2019

Location: Silverado Creek

Direction: Southwest

Focused Survey Recommendation: Do Not Survey



Data ID: SI-23P

Photo Date: March 28, 2019

Location: Silverado Creek

Direction: Northeast

Focused Survey Recommendation: Do Not Survey



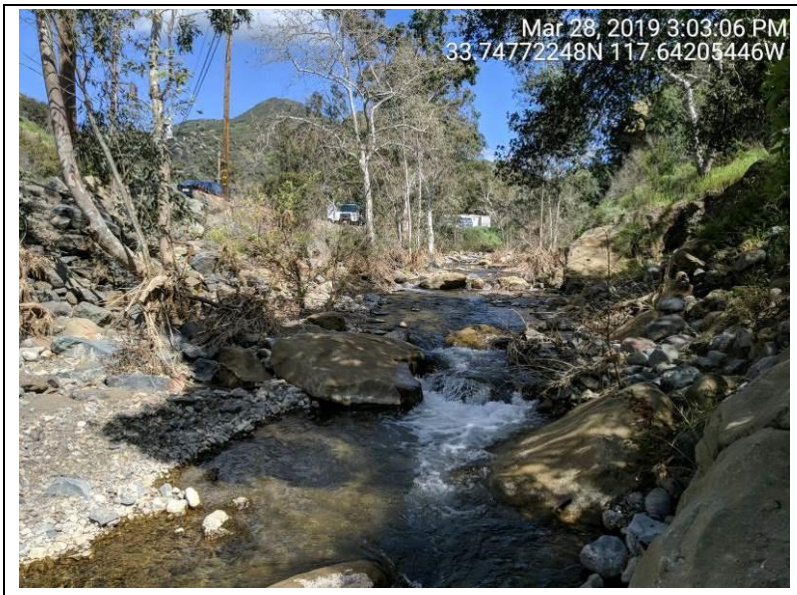
Data ID: SI-23P

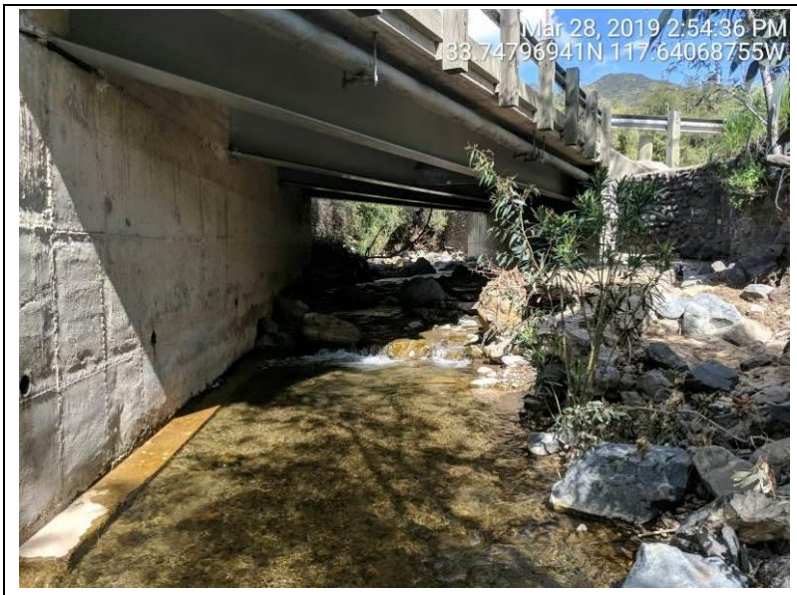
Photo Date: March 28, 2019

Location: Silverado Creek

Direction: Southwest

Focused Survey Recommendation: Do Not Survey

	**Data ID:** SI-24P **Photo Date:** March 28, 2019 **Location:** Silverado Creek Downstream of Ladd Creek **Direction:** Northeast **Focused Survey Recommendation:** Do Not Survey
	**Data ID:** SI-24P **Photo Date:** March 28, 2019 **Location:** Silverado Creek Downstream of Ladd Creek **Direction:** Southwest **Focused Survey Recommendation:** Do Not Survey

	**Data ID:** SI-25P **Photo Date:** March 28, 2019 **Location:** Ladd Creek at Silverado Canyon Road Bridge **Direction:** Northeast **Focused Survey Recommendation:** Do Not Survey
	**Data ID:** SI-25P **Photo Date:** March 28, 2019 **Location:** Ladd Creek at Silverado Canyon Road Bridge **Direction:** Southwest **Focused Survey Recommendation:** Do Not Survey

	**Data ID:** SI-26P **Photo Date:** April 1, 2019 **Location:** Silverado Creek at Thisa Way Bridge **Direction:** East **Focused Survey Recommendation:** Do Not Survey
	**Data ID:** SI-26P **Photo Date:** April 1, 2019 **Location:** Silverado Creek at Thisa Way Bridge **Direction:** West **Focused Survey Recommendation:** Do Not Survey

	**Data ID:** SI-27P **Photo Date:** April 1, 2019 **Location:** Silverado Creek at Kitterman Drive Bridge **Direction:** East **Focused Survey Recommendation:** Do Not Survey
	**Data ID:** SI-27P **Photo Date:** April 1, 2019 **Location:** Silverado Creek at Kitterman Drive Bridge **Direction:** West **Focused Survey Recommendation:** Do Not Survey

	**Data ID:** SI-28P **Photo Date:** April 1, 2019 **Location:** Silverado Creek **Direction:** East **Focused Survey Recommendation:** Do Not Survey
	**Data ID:** SI-28P **Photo Date:** April 1, 2019 **Location:** Silverado Creek **Direction:** West **Focused Survey Recommendation:** Do Not Survey

	**Data ID:** SI-29P **Photo Date:** April 1, 2019 **Location:** Silverado Creek **Direction:** Northeast **Focused Survey Recommendation:** Do Not Survey
	**Data ID:** SI-29P **Photo Date:** April 1, 2019 **Location:** Silverado Creek **Direction:** Southwest **Focused Survey Recommendation:** Do Not Survey

	**Data ID:** SI-30P **Photo Date:** April 1, 2019 **Location:** Silverado Creek at Hazel Bell Drive **Direction:** East **Focused Survey Recommendation:** Do Not Survey
	**Data ID:** SI-30P **Photo Date:** April 1, 2019 **Location:** Silverado Creek at Hazel Bell Drive **Direction:** West **Focused Survey Recommendation:** Do Not Survey

	**Data ID:** SI-31P **Photo Date:** April 1, 2019 **Location:** Silverado Creek **Direction:** East **Focused Survey Recommendation:** Do Not Survey
	**Data ID:** SI-32P **Photo Date:** April 1, 2019 **Location:** Silverado Creek **Direction:** West **Focused Survey Recommendation:** Do Not Survey

	**Data ID:** SI-33P **Photo Date:** April 1, 2019 **Location:** Silverado Creek **Direction:** East **Focused Survey Recommendation:** Do Not Survey
	**Data ID:** SI-33P **Photo Date:** April 1, 2019 **Location:** Silverado Creek **Direction:** West **Focused Survey Recommendation:** Do Not Survey

	**Data ID:** SI-34P **Photo Date:** April 1, 2019 **Location:** Silverado Creek **Direction:** East **Focused Survey Recommendation:** Do Not Survey
	**Data ID:** SI-34P **Photo Date:** April 1, 2019 **Location:** Silverado Creek **Direction:** West **Focused Survey Recommendation:** Do Not Survey

	**Data ID:** SI-35P **Photo Date:** April 1, 2019 **Location:** Silverado Creek **Direction:** Northeast **Focused Survey Recommendation:** Do Not Survey
	**Data ID:** SI-35P **Photo Date:** April 1, 2019 **Location:** Silverado Creek **Direction:** Southwest **Focused Survey Recommendation:** Do Not Survey

	**Data ID:** SI-1L **Photo Date:** March 28, 2019 **Location:** Silverado Creek Downstream of Black Star Canyon Road **Direction:** East **Focused Survey Recommendation:** Secondary Survey Area
	**Data ID:** SI-1L **Photo Date:** March 28, 2019 **Location:** Silverado Creek Downstream of Black Star Canyon Road **Direction:** West **Focused Survey Recommendation:** Secondary Survey Area

	**Data ID:** SI-2L **Photo Date:** March 28, 2019 **Location:** Silverado Creek **Direction:** East **Focused Survey Recommendation:** Primary Survey Area
	**Data ID:** SI-2L **Photo Date:** March 28, 2019 **Location:** Silverado Creek **Direction:** East **Focused Survey Recommendation:** Primary Survey Area



Data ID: SI-3L

Photo Date: March 28, 2019

Location: Silverado Creek

Direction: Southeast

Focused Survey Recommendation: Secondary Survey Area



Data ID: SI-3L

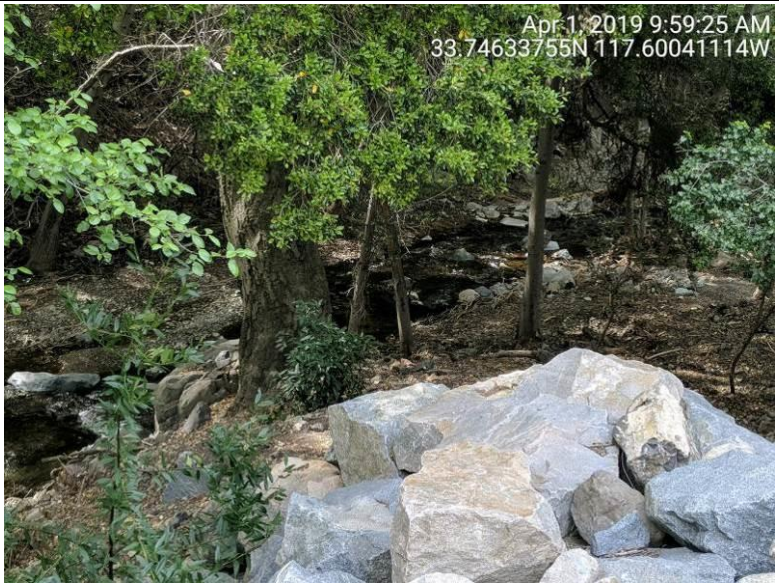
Photo Date: March 28, 2019

Location: Silverado Creek

Direction: Northwest

Focused Survey Recommendation: Secondary Survey Area

	**Data ID:** SI-4L **Photo Date:** March 28, 2019 **Location:** Silverado Creek **Direction:** East **Focused Survey Recommendation:** Secondary Survey Area
	**Data ID:** SI-4L **Photo Date:** March 28, 2019 **Location:** Silverado Creek **Direction:** West **Focused Survey Recommendation:** Secondary Survey Area

	**Data ID:** SI-5L **Photo Date:** April 1, 2019 **Location:** Silverado Creek **Direction:** South **Focused Survey Recommendation:** Do Not Survey
	**Data ID:** SI-5L **Photo Date:** April 1, 2019 **Location:** Silverado Creek **Direction:** South **Focused Survey Recommendation:** Do Not Survey

	**Data ID:** SI-6L **Photo Date:** April 1, 2019 **Location:** Silverado Creek at Maple Springs Forest Gate **Direction:** Northeast **Focused Survey Recommendation:** Do Not Survey
	**Data ID:** SI-6L **Photo Date:** April 1, 2019 **Location:** Silverado Creek at Maple Springs Forest Gate **Direction:** North **Focused Survey Recommendation:** Do Not Survey

	**Data ID:** TR-1P **Photo Date:** March 26, 2019 **Location:** Trabuco Creek Near Trabuco Canyon Forest Gate **Direction:** East **Focused Survey Recommendation:** Do Not Survey
	**Data ID:** TR-1P **Photo Date:** March 26, 2019 **Location:** Trabuco Creek Near Trabuco Canyon Forest Gate **Direction:** West **Focused Survey Recommendation:** Do Not Survey

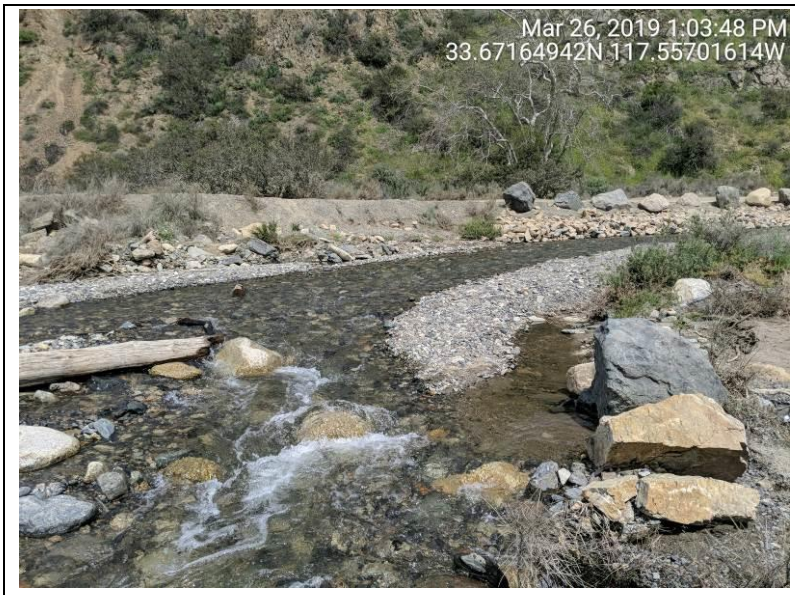
	**Data ID:** TR-2P **Photo Date:** March 26, 2019 **Location:** Trabuco Creek **Direction:** North **Focused Survey Recommendation:** Do Not Survey
	**Data ID:** TR-2P **Photo Date:** March 26, 2019 **Location:** Trabuco Creek **Direction:** South **Focused Survey Recommendation:** Do Not Survey

	**Data ID:** TR-3P **Photo Date:** March 26, 2019 **Location:** Trabuco Creek **Direction:** Northeast **Focused Survey Recommendation:** Do Not Survey
	**Data ID:** TR-3P **Photo Date:** March 26, 2019 **Location:** Trabuco Creek **Direction:** Southwest **Focused Survey Recommendation:** Do Not Survey

	**Data ID:** TR-4P **Photo Date:** March 26, 2019 **Location:** Trabuco Creek **Direction:** Northeast **Focused Survey Recommendation:** Do Not Survey
	**Data ID:** TR-4P **Photo Date:** March 26, 2019 **Location:** Trabuco Creek **Direction:** Southwest **Focused Survey Recommendation:** Do Not Survey

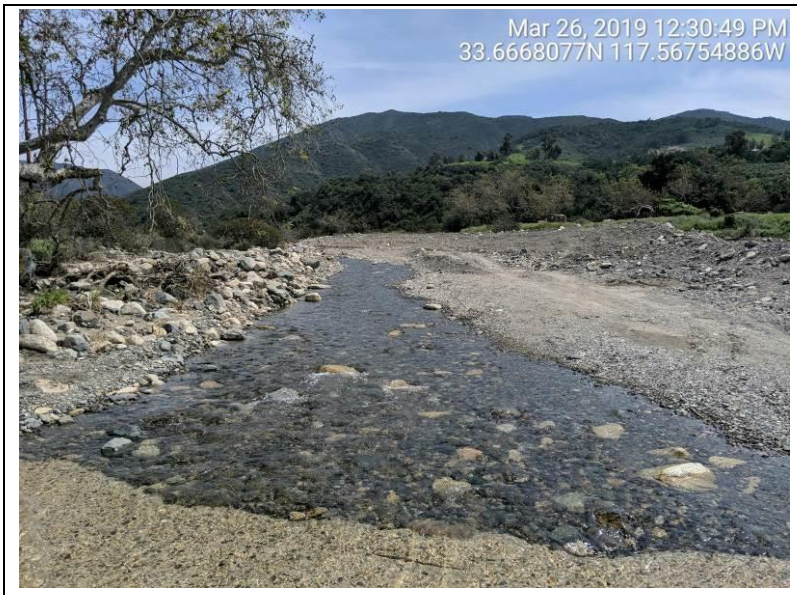
	**Data ID:** TR-5P **Photo Date:** March 26, 2019 **Location:** Trabuco Creek **Direction:** Northeast **Focused Survey Recommendation:** Do Not Survey
	**Data ID:** TR-5P **Photo Date:** March 26, 2019 **Location:** Trabuco Creek **Direction:** Southwest **Focused Survey Recommendation:** Do Not Survey

	**Data ID:** TR-6P **Photo Date:** March 26, 2019 **Location:** Trabuco Creek **Direction:** East **Focused Survey Recommendation:** Do Not Survey
	**Data ID:** TR-6P **Photo Date:** March 26, 2019 **Location:** Trabuco Creek **Direction:** West **Focused Survey Recommendation:** Do Not Survey

	**Data ID:** TR-7P **Photo Date:** March 26, 2019 **Location:** Trabuco Creek **Direction:** East **Focused Survey Recommendation:** Do Not Survey
	**Data ID:** TR-7P **Photo Date:** March 26, 2019 **Location:** Trabuco Creek **Direction:** West **Focused Survey Recommendation:** Do Not Survey

	**Data ID:** TR-8P **Photo Date:** March 26, 2019 **Location:** Trabuco Creek **Direction:** Northeast **Focused Survey Recommendation:** Do Not Survey
	**Data ID:** TR-8P **Photo Date:** March 26, 2019 **Location:** Trabuco Creek **Direction:** Southwest **Focused Survey Recommendation:** Do Not Survey

	**Data ID:** TR-9P **Photo Date:** March 26, 2019 **Location:** Trabuco Creek **Direction:** Northeast **Focused Survey Recommendation:** Do Not Survey
	**Data ID:** TR-9P **Photo Date:** March 26, 2019 **Location:** Trabuco Creek **Direction:** Southwest **Focused Survey Recommendation:** Do Not Survey

	**Data ID:** TR-10P **Photo Date:** March 26, 2019 **Location:** Trabuco Creek at Arizona Crossing **Direction:** East **Focused Survey Recommendation:** Do Not Survey
	**Data ID:** TR-10P **Photo Date:** March 26, 2019 **Location:** Trabuco Creek at Arizona Crossing **Direction:** West **Focused Survey Recommendation:** Do Not Survey

	**Data ID:** TR-11P **Photo Date:** March 26, 2019 **Location:** Trabuco Creek at Trabuco Creek Road Bridge **Direction:** Northeast **Focused Survey Recommendation:** Incidental Survey Area
	**Data ID:** TR-11P **Photo Date:** March 26, 2019 **Location:** Trabuco Creek at Trabuco Creek Road Bridge **Direction:** Southwest **Focused Survey Recommendation:** Incidental Survey Area

	**Data ID:** TR-12P **Photo Date:** March 26, 2019 **Location:** Side Channel of Trabuco Creek Downstream of Trabuco Creek Road Bridge **Direction:** Northeast **Focused Survey Recommendation:** Secondary Survey Area
	**Data ID:** TR-12P **Photo Date:** March 26, 2019 **Location:** Side Channel of Trabuco Creek Downstream of Trabuco Creek Road Bridge **Direction:** Southwest **Focused Survey Recommendation:** Secondary Survey Area

	**Data ID:** TR-13P **Photo Date:** March 26, 2019 **Location:** Side Channel of Trabuco Creek Downstream of Trabuco Creek Road Bridge **Direction:** Northeast **Focused Survey Recommendation:** Secondary Survey Area
	**Data ID:** TR-13P **Photo Date:** March 26, 2019 **Location:** Side Channel of Trabuco Creek Downstream of Trabuco Creek Road Bridge **Direction:** Southwest **Focused Survey Recommendation:** Secondary Survey Area



Data ID: TR-14P

Photo Date: March 26, 2019

Location: Main Channel of Trabuco Creek

Direction: Northeast

Focused Survey Recommendation: Incidental Survey Area



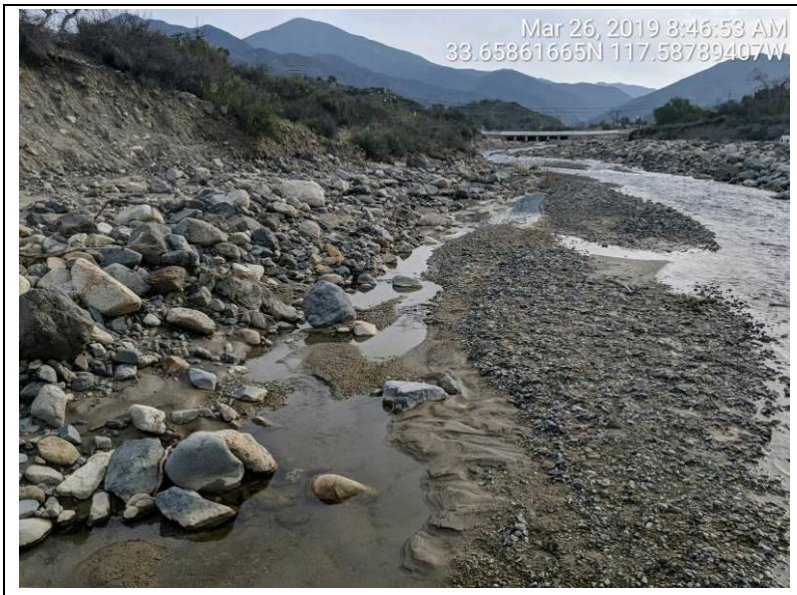
Data ID: TR-14P

Photo Date: March 26, 2019

Location: Main Channel of Trabuco Creek

Direction: Southwest

Focused Survey Recommendation: Incidental Survey Area



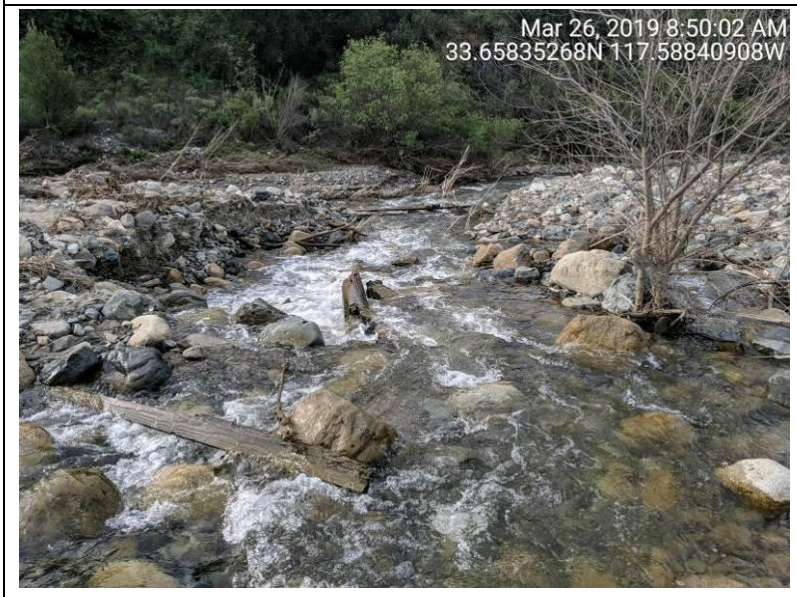
Data ID: TR-15P

Photo Date: March 26, 2019

Location: Side Channel of Trabuco Creek

Direction: Northeast

Focused Survey Recommendation: Secondary Survey Area

	**Data ID:** TR-16P **Photo Date:** March 26, 2019 **Location:** Main Channel of Trabuco Creek **Direction:** Northeast **Focused Survey Recommendation:** Incidental Survey Area
	**Data ID:** TR-16P **Photo Date:** March 26, 2019 **Location:** Main Channel of Trabuco Creek **Direction:** Southwest **Focused Survey Recommendation:** Incidental Survey Area

	**Data ID:** TR-17P **Photo Date:** March 26, 2019 **Location:** Side Channel of Trabuco Creek **Direction:** Northeast **Focused Survey Recommendation:** Primary Survey Area
	**Data ID:** TR-17P **Photo Date:** March 26, 2019 **Location:** Side Channel of Trabuco Creek **Direction:** Southwest **Focused Survey Recommendation:** Primary Survey Area



Data ID: TR-18P

Photo Date: March 26, 2019

Location: Main Channel of Trabuco Creek

Direction: Northeast

Focused Survey Recommendation: Incidental Survey Area



Data ID: TR-18P

Photo Date: March 26, 2019

Location: Main Channel of Trabuco Creek

Direction: Southwest

Focused Survey Recommendation: Incidental Survey Area

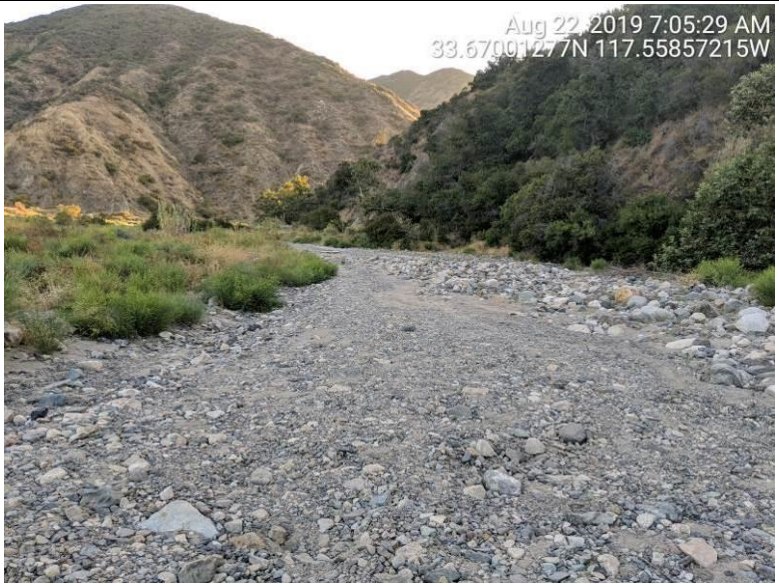
	**Data ID:** TR-19P **Photo Date:** March 26, 2019 **Location:** Main Channel of Trabuco Creek **Direction:** Northeast **Focused Survey Recommendation:** Incidental Survey Area
	**Data ID:** TR-19P **Photo Date:** March 26, 2019 **Location:** Main Channel of Trabuco Creek **Direction:** Southwest **Focused Survey Recommendation:** Incidental Survey Area

	**Data ID:** TR-20P **Photo Date:** March 26, 2019 **Location:** Side Channel of Trabuco Creek **Direction:** North **Focused Survey Recommendation:** Primary Survey Area
	**Data ID:** TR-20P **Photo Date:** March 26, 2019 **Location:** Side Channel of Trabuco Creek **Direction:** South **Focused Survey Recommendation:** Primary Survey Area

	**Data ID:** TR-21P **Photo Date:** March 26, 2019 **Location:** Main Channel of Trabuco Creek **Direction:** East **Focused Survey Recommendation:** Incidental Survey Area
	**Data ID:** TR-21P **Photo Date:** March 26, 2019 **Location:** Main Channel of Trabuco Creek **Direction:** West **Focused Survey Recommendation:** Incidental Survey Area

	**Data ID:** TR-22P **Photo Date:** March 26, 2019 **Location:** Main Channel of Trabuco Creek **Direction:** Northeast **Focused Survey Recommendation:** Incidental Survey Area
	**Data ID:** TR-22P **Photo Date:** March 26, 2019 **Location:** Main Channel of Trabuco Creek **Direction:** Southwest **Focused Survey Recommendation:** Incidental Survey Area

	**Data ID:** TR-23P **Photo Date:** March 26, 2019 **Location:** Main Channel of Trabuco Creek **Direction:** Northeast **Focused Survey Recommendation:** Incidental Survey Area
	**Data ID:** TR-23P **Photo Date:** March 26, 2019 **Location:** Main Channel of Trabuco Creek **Direction:** Southwest **Focused Survey Recommendation:** Incidental Survey Area

	**Data ID:** TR-24P **Photo Date:** August 22, 2019 **Location:** Trabuco Creek **Direction:** Southwest **Focused Survey Recommendation:** Incidental Survey Area
	**Data ID:** TR-24P **Photo Date:** August 22, 2019 **Location:** Trabuco Creek **Direction:** Northeast **Focused Survey Recommendation:** Incidental Survey Area

	**Data ID:** TR-25P **Photo Date:** August 22, 2019 **Location:** Trabuco Creek **Direction:** Southwest **Focused Survey Recommendation:** Primary Survey Area
	**Data ID:** TR-25P **Photo Date:** August 22, 2019 **Location:** Trabuco Creek **Direction:** East **Focused Survey Recommendation:** Primary Survey Area

	**Data ID:** TR-25P **Photo Date:** August 22, 2019 **Location:** Trabuco Creek **Direction:** Northeast **Focused Survey Recommendation:** Primary Survey Area
	**Data ID:** TR-25P **Photo Date:** August 22, 2019 **Location:** Trabuco Creek **Direction:** East **Focused Survey Recommendation:** Primary Survey Area

	**Data ID:** TR-25P **Photo Date:** August 22, 2019 **Location:** Trabuco Creek **Direction:** Southeast **Focused Survey Recommendation:** Primary Survey Area
	**Data ID:** TR-25P **Photo Date:** August 22, 2019 **Location:** Trabuco Creek **Direction:** East **Focused Survey Recommendation:** Primary Survey Area

	**Data ID:** TR-26P **Photo Date:** August 22, 2019 **Location:** Trabuco Creek **Direction:** Southwest **Focused Survey Recommendation:** Primary Survey Area
	**Data ID:** TR-26P **Photo Date:** August 22, 2019 **Location:** Trabuco Creek **Direction:** Northeast **Focused Survey Recommendation:** Primary Survey Area

	**Data ID:** TR-26P **Photo Date:** August 22, 2019 **Location:** Trabuco Creek **Direction:** West **Focused Survey Recommendation:** Primary Survey Area
	**Data ID:** TR-26P **Photo Date:** August 22, 2019 **Location:** Trabuco Creek **Direction:** Southwest **Focused Survey Recommendation:** Primary Survey Area



Data ID: TR-27P

Photo Date: August 22, 2019

Location: Trabuco Creek

Direction: Southwest

Focused Survey Recommendation: Incidental Survey Area

	**Data ID:** TR-28P **Photo Date:** August 22, 2019 **Location:** Trabuco Creek **Direction:** Southwest **Focused Survey Recommendation:** Incidental Survey Area
	**Data ID:** TR-28P **Photo Date:** August 22, 2019 **Location:** Trabuco Creek **Direction:** Northeast **Focused Survey Recommendation:** Incidental Survey Area



Data ID: TR-28P

Photo Date: August 22, 2019

Location: Trabuco Creek

Direction: NA

Focused Survey Recommendation: Incidental Survey Area

	**Data ID:** TR-29P **Photo Date:** August 22, 2019 **Location:** Trabuco Creek **Direction:** Northwest **Focused Survey Recommendation:** Incidental Survey Area
	**Data ID:** TR-29P **Photo Date:** August 22, 2019 **Location:** Trabuco Creek **Direction:** North **Focused Survey Recommendation:** Incidental Survey Area



Data ID: TR-30P

Photo Date: August 22, 2019

Location: Trabuco Creek

Direction: Northwest

Focused Survey Recommendation: Incidental Survey Area

	**Data ID:** TR-31P **Photo Date:** August 22, 2019 **Location:** Trabuco Creek **Direction:** West **Focused Survey Recommendation:** Incidental Survey Area
	**Data ID:** TR-31P **Photo Date:** August 22, 2019 **Location:** Trabuco Creek **Direction:** East **Focused Survey Recommendation:** Incidental Survey Area

	**Data ID:** TR-32P **Photo Date:** August 22, 2019 **Location:** Trabuco Creek **Direction:** Southwest **Focused Survey Recommendation:** Primary Survey Area
	**Data ID:** TR-32P **Photo Date:** August 22, 2019 **Location:** Trabuco Creek **Direction:** Northeast **Focused Survey Recommendation:** Primary Survey Area



Data ID: TR-32P

Photo Date: August 22, 2019

Location: Trabuco Creek

Direction: North

Focused Survey Recommendation: Primary Survey Area



Data ID: TR-33P

Photo Date: August 22, 2019

Location: Trabuco Creek

Direction: Northeast

Focused Survey Recommendation: Primary Survey Area

	**Data ID:** TR-34P **Photo Date:** August 22, 2019 **Location:** Trabuco Creek **Direction:** Southwest **Focused Survey Recommendation:** Primary Survey Area
	**Data ID:** TR-34P **Photo Date:** August 22, 2019 **Location:** Trabuco Creek **Direction:** Northeast **Focused Survey Recommendation:** Primary Survey Area

	**Data ID:** TR-35P **Photo Date:** August 22, 2019 **Location:** Trabuco Creek **Direction:** Southwest **Focused Survey Recommendation:** Primary Survey Area
	**Data ID:** TR-35P **Photo Date:** August 22, 2019 **Location:** Trabuco Creek **Direction:** Northeast **Focused Survey Recommendation:** Primary Survey Area

	**Data ID:** TR-36P **Photo Date:** August 22, 2019 **Location:** Trabuco Creek **Direction:** Southwest **Focused Survey Recommendation:** Primary Survey Area
	**Data ID:** TR-36P **Photo Date:** August 22, 2019 **Location:** Trabuco Creek **Direction:** NA **Focused Survey Recommendation:** Primary Survey Area

	**Data ID:** TR-37P **Photo Date:** August 22, 2019 **Location:** Trabuco Creek **Direction:** Southwest **Focused Survey Recommendation:** Primary Survey Area
	**Data ID:** TR-37P **Photo Date:** August 22, 2019 **Location:** Trabuco Creek **Direction:** Northeast **Focused Survey Recommendation:** Primary Survey Area

	**Data ID:** TR-38P **Photo Date:** August 22, 2019 **Location:** Trabuco Creek **Direction:** Southwest **Focused Survey Recommendation:** Primary Survey Area
	**Data ID:** TR-38P **Photo Date:** August 22, 2019 **Location:** Trabuco Creek **Direction:** NA **Focused Survey Recommendation:** Primary Survey Area

	**Data ID:** TR-39P **Photo Date:** August 22, 2019 **Location:** Trabuco Creek **Direction:** Southwest **Focused Survey Recommendation:** Primary Survey Area
	**Data ID:** TR-39P **Photo Date:** August 22, 2019 **Location:** Trabuco Creek **Direction:** Northeast **Focused Survey Recommendation:** Primary Survey Area



Data ID: TR-40P

Photo Date: August 22, 2019

Location: Trabuco Creek

Direction: Northeast

Focused Survey Recommendation: Primary Survey Area



Data ID: TR-41P

Photo Date: August 22, 2019

Location: Trabuco Creek

Direction: Southwest

Focused Survey Recommendation: Primary Survey Area



Data ID: TR-42P

Photo Date: August 22, 2019

Location: Trabuco Creek

Direction: Southwest

Focused Survey Recommendation: Primary Survey Area

	**Data ID:** TR-39P **Photo Date:** August 22, 2019 **Location:** Trabuco Creek **Direction:** Southwest **Focused Survey Recommendation:** Primary Survey Area
	**Data ID:** TR-43P **Photo Date:** August 22, 2019 **Location:** Trabuco Creek **Direction:** Northeast **Focused Survey Recommendation:** Primary Survey Area

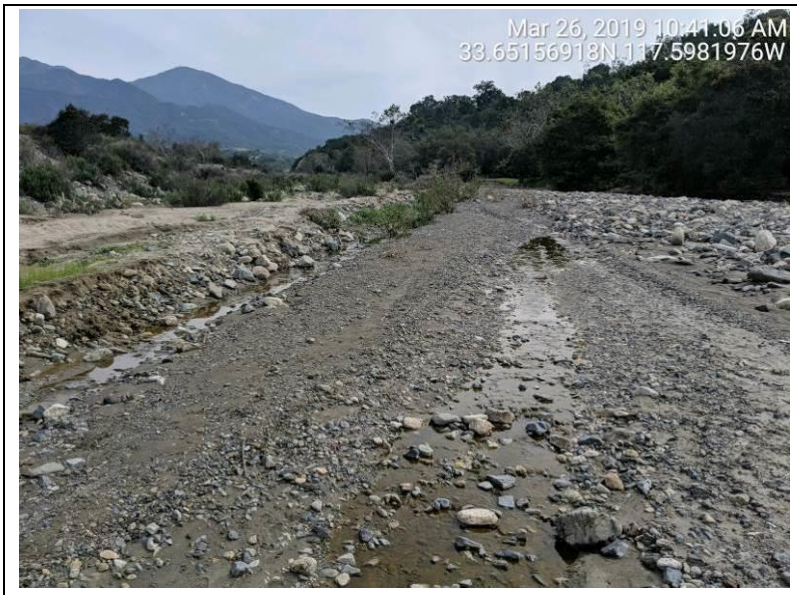
	**Data ID:** TR-1L **Photo Date:** March 26, 2019 **Location:** Unnamed Tributary to Trabuco Creek **Direction:** Northeast **Focused Survey Recommendation:** Secondary Survey Area
	**Data ID:** TR-1L **Photo Date:** March 26, 2019 **Location:** Unnamed Tributary to Trabuco Creek **Direction:** Northeast **Focused Survey Recommendation:** Secondary Survey Area

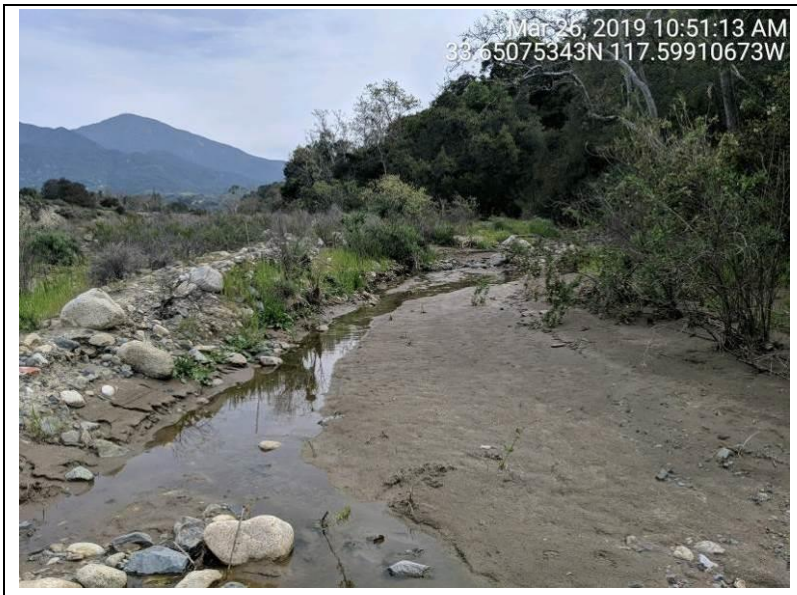
	**Data ID:** TR-2L **Photo Date:** March 26, 2019 **Location:** Side Channel of Trabuco Creek **Direction:** Northeast **Focused Survey Recommendation:** Primary Survey Area
	**Data ID:** TR-2L **Photo Date:** March 26, 2019 **Location:** Side Channel of Trabuco Creek **Direction:** Southwest **Focused Survey Recommendation:** Primary Survey Area

	**Data ID:** TR-3L **Photo Date:** March 26, 2019 **Location:** Side Channel of Trabuco Creek **Direction:** Northeast **Focused Survey Recommendation:** Secondary Survey Area
	**Data ID:** TR-3L **Photo Date:** March 26, 2019 **Location:** Side Channel of Trabuco Creek **Direction:** Southwest **Focused Survey Recommendation:** Secondary Survey Area

	**Data ID:** TR-4L **Photo Date:** March 26, 2019 **Location:** Side Channel of Trabuco Creek **Direction:** Northeast **Focused Survey Recommendation:** Secondary Survey Area
	**Data ID:** TR-4L **Photo Date:** March 26, 2019 **Location:** Side Channel of Trabuco Creek **Direction:** Northeast **Focused Survey Recommendation:** Secondary Survey Area

	**Data ID:** TR-5L **Photo Date:** March 26, 2019 **Location:** Side Channel of Trabuco Creek **Direction:** Northeast **Focused Survey Recommendation:** Primary Survey Area
	**Data ID:** TR-5L **Photo Date:** March 26, 2019 **Location:** Side Channel of Trabuco Creek **Direction:** Southwest **Focused Survey Recommendation:** Primary Survey Area

	**Data ID:** TR-6L **Photo Date:** March 26, 2019 **Location:** Side Channel of Trabuco Creek **Direction:** Northeast **Focused Survey Recommendation:** Secondary Survey Area
	**Data ID:** TR-6L **Photo Date:** March 26, 2019 **Location:** Side Channel of Trabuco Creek **Direction:** Northeast **Focused Survey Recommendation:** Secondary Survey Area



Data ID: TR-7L

Photo Date: March 26, 2019

Location: Side Channel of Trabuco Creek

Direction: Northeast

Focused Survey Recommendation: Primary Survey Area



Data ID: TR-7L

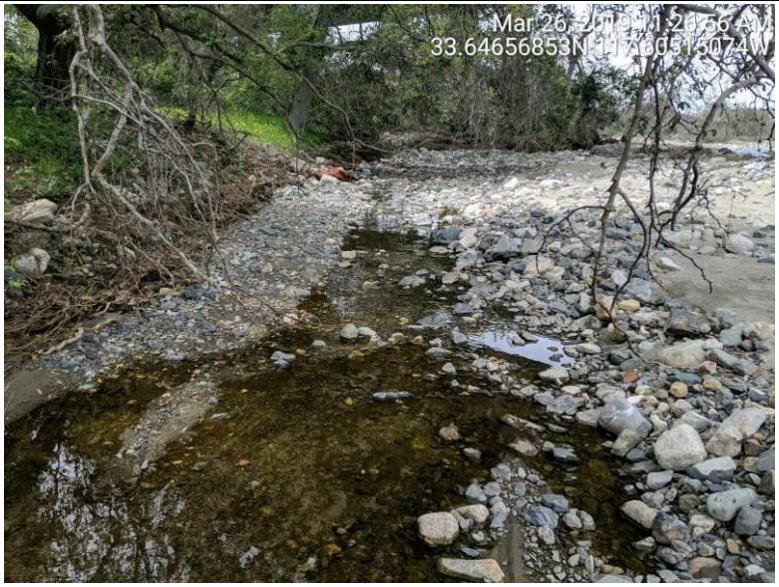
Photo Date: March 26, 2019

Location: Side Channel of Trabuco Creek

Direction: Southwest

Focused Survey Recommendation: Primary Survey Area

	**Data ID:** TR-8L **Photo Date:** March 26, 2019 **Location:** Side Channel of Trabuco Creek **Direction:** North **Focused Survey Recommendation:** Primary Survey Area
	**Data ID:** TR-8L **Photo Date:** March 26, 2019 **Location:** Side Channel of Trabuco Creek **Direction:** Southwest **Focused Survey Recommendation:** Primary Survey Area

	**Data ID:** TR-9L **Photo Date:** March 26, 2019 **Location:** Side Channel of Trabuco Creek **Direction:** Northeast **Focused Survey Recommendation:** Secondary Survey Area
	**Data ID:** TR-9L **Photo Date:** March 26, 2019 **Location:** Side Channel of Trabuco Creek **Direction:** Southwest **Focused Survey Recommendation:** Secondary Survey Area

Attachment D: USFS Correspondence

From:	Matthews, Giles
To:	Hoisington, Greg; Winkleman, Ryan; Richards, Phillip
Subject:	FW: Arroyo Toad in the Cleveland National Forest
Date:	Monday, August 19, 2019 11:18:44 AM
Attachments:	image001.png image002.png image003.png image004.png

Greg, Ryan, Phil,
Thanks for the call. This is the correspondence I received from the Forest Service. I have reached out to Julie Donnell this morning and will forward anything that I hear back.

Thanks

Giles

Giles Matthews
Senior Environmental Resources Specialist
OC Infrastructure Programs
Tel. 714-647-3933
Cell. 714-949-4962
300 N Flower Street, Santa Ana, CA 92703



From: Winter, Kirsten -FS <kwinter@fs.fed.us>
Sent: Thursday, March 7, 2019 12:38 PM
To: Matthews, Giles <Giles.Matthews@ocpw.ocgov.com>

Cc: 'Snyder, Jonathan' <jonathan_d_snyder@fws.gov>; Don, Michelle <Michelle.Don@ocpw.ocgov.com>; Donnell, Julie - FS <juliedonnell@fs.fed.us>
Subject: RE: Arroyo Toad in the Cleveland National Forest

Hi Giles,

I am ccing our fish bio Julie on this as she will have the most current information.

As you may know we have been doing dam removal work in Holy Jim and Trabuco Canyons for several years, in general the habitat on the forest does not appear to be suitable for Arroyo Toad. We did have Dan Holland do some surveys around 1999 and he reported Arroyo Toad just west of the forest on private land.

As far as Silverado Canyon goes, we did have Arroyo Toads there until about 1999, but subsequent flooding changed the stream condition and our current conclusion (based on habitat evaluation, and surveys, by Forest and USGS staff), is that the habitat on the Forest there is not suitable for Arroyo Toad. USFWS has concurred with that finding.

Julie likely has much more info especially regarding Modjeska and Santiago Canyons, she is at training this week but should be back on Monday.

We do have many records of Arroyo Toad for San Juan Creek and a few for San Mateo/Los Alamos Creek which you probably already know of..

Please let me or Julie know if you have questions. Good luck with your investigation!

Best regards
Kirsten

Kirsten Winter
Forest Biologist

Wildlife, Fish, Rare Plants Program Manager

Forest Service
Cleveland National Forest, Supervisor's Office

p: 858-674-2956
f: 858-673-6192
kirsten.winter@usda.gov

10845 Rancho Bernardo Rd #200
San Diego, CA 92127
www.fs.fed.us

Caring for the land and serving people

From: Matthews, Giles [mailto:Giles.Matthews@ocpw.ocgov.com]
Sent: Thursday, March 7, 2019 11:52 AM
To: Winter, Kirsten -FS <kwinter@fs.fed.us>
Cc: 'Snyder, Jonathan' <jonathan_d_snyder@fws.gov>; Don, Michelle <Michelle.Don@ocpw.ocgov.com>
Subject: RE: Arroyo Toad in the Cleveland National Forest

From: Matthews, Giles
Sent: Thursday, March 7, 2019 11:43 AM
To: 'mailto:kwinter@fs.fed.us' <mailto:kwinter@fs.fed.us>
Cc: 'Snyder, Jonathan' <jonathan_d_snyder@fws.gov>; Don, Michelle <Michelle.Don@ocpw.ocgov.com>
Subject: Arroyo Toad in the Cleveland National Forest

Good morning Kirsten,
I have been given your contact details by Jonathan Snyder. We at the County of Orange are developing a strategy to try to definitively determine if Arroyo Toad are still present in the Trabuco, Modjeska, Silverado and Santiago Canyons. I wanted to know what the Forest Service has been doing with regard to Arroyo Toad in this area. It would be great to have any records that you guys have to help with our project. Any information would be greatly received. We will be more than happy to share our findings with you as well.

All the best,

Giles

Giles Matthews
Senior Environmental Resources Specialist
OC Infrastructure Programs
Tel. 714-647-3933
Cell. 714-949-4962
300 N Flower Street, Santa Ana, CA 92703

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Appendix B

Representative Photographs



Photograph: 1

Photo Date: April 22, 2019

Location: Silverado Creek, upstream end of small isolated part of survey area.

Direction: View facing east.

Comment: Photo depicts conditions of upper part of Silverado Creek at the start of the survey period.



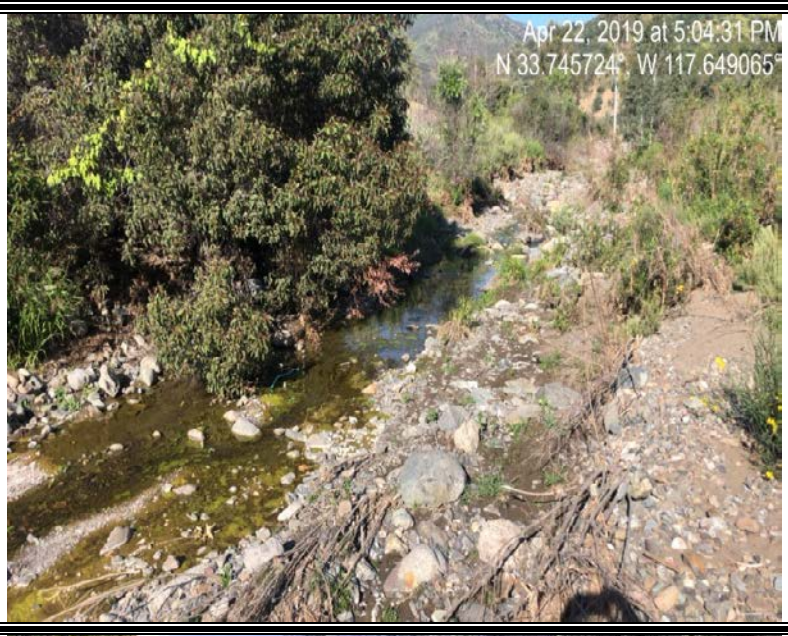
Photograph: 2

Photo Date: 6/17/2019

Location: Silverado Creek, same location as photo 1.

Direction: View facing east.

Comment: Photo depicts conditions at the end of the survey period. Decrease in flow and increase in algae.



Photograph: 3

Photo Date: April 22, 2019

Location: Silverado Creek, downstream end of small isolated part of survey area.

Direction: View facing east.

Comment: Photo depicts low flowing side channel at the start of the survey period.



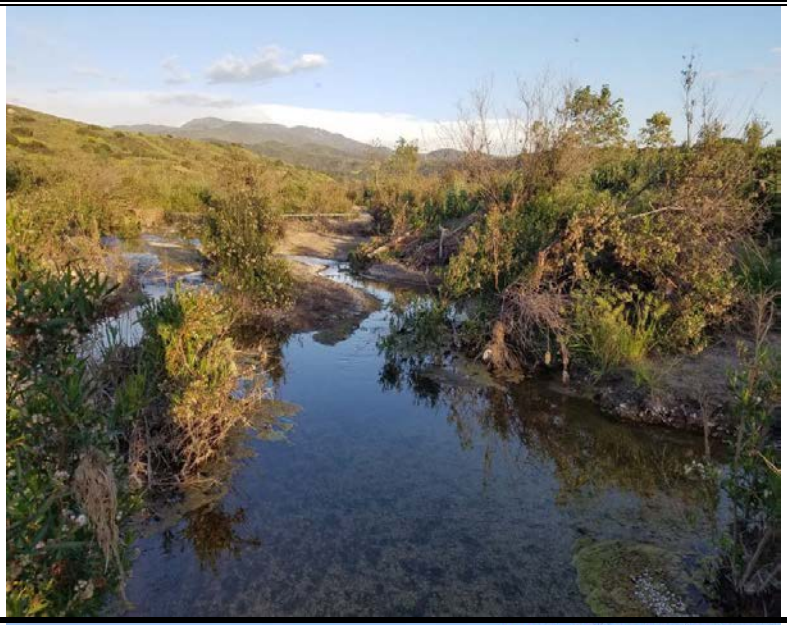
Photograph: 4

Photo Date: June 17, 2019

Location: Silverado Creek, same location as photo 3.

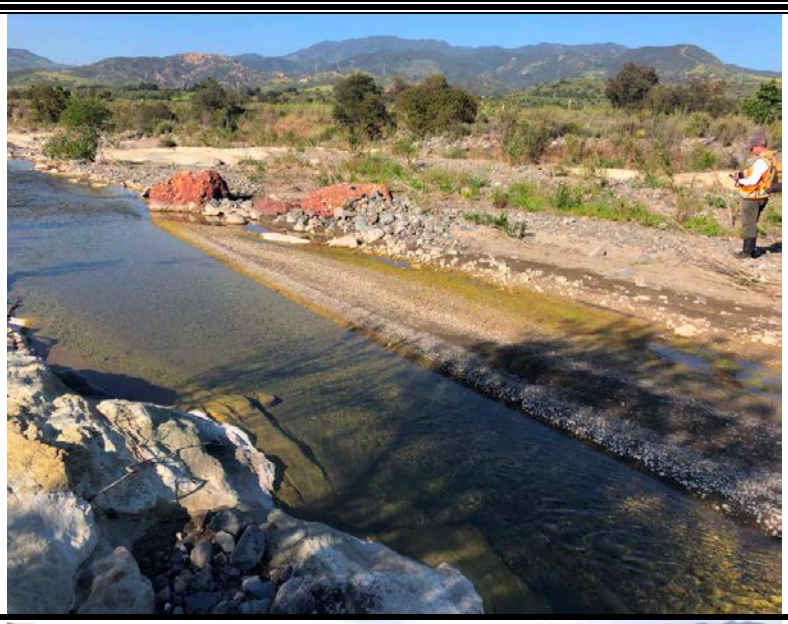
Direction: View facing east.

Comment: Photo depicts same side channel at the end of the survey period now covered with algae.

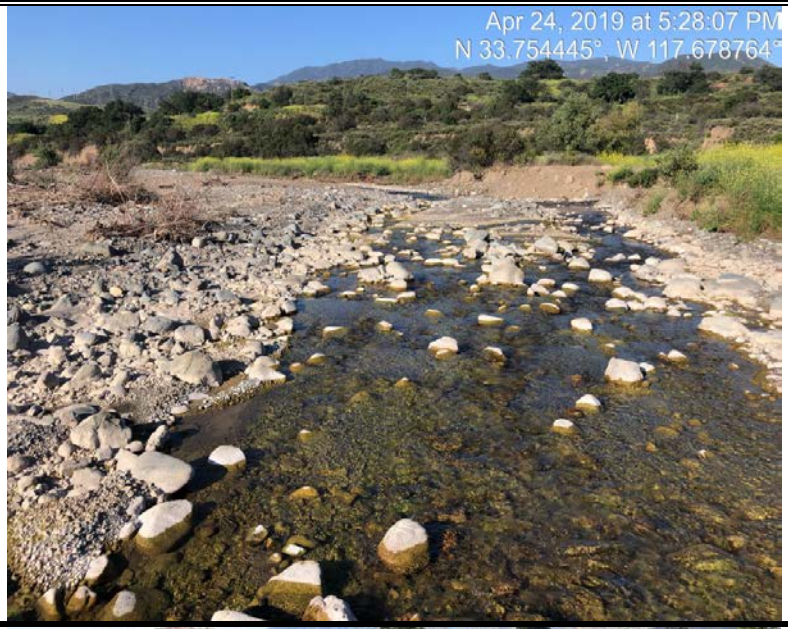
	**Photograph:** 5 **Photo Date:** April 22, 2019 **Location:** Silverado Creek, downstream end of main Silverado Creek survey area. **Direction:** View facing southeast. **Comment:** Photo depicts braided channel and surface water conditions at the start of the survey period.
	**Photograph:** 6 **Photo Date:** June 3, 2019 **Location:** Silverado Creek, near same location of photo 5. **Direction:** View facing southeast. **Comment:** Photo depicts the downstream portion of the main survey area with no surface water.

	**Photograph:** 7 **Photo Date:** April 23, 2019 **Location:** Santiago Creek (Upstream) survey area, downstream end. **Direction:** View facing southeast. **Comment:** Photo depicts conditions of the downstream end of this survey area at the beginning of the survey period.
	**Photograph:** 8 **Photo Date:** June 18, 2019 **Location:** Santiago Creek (Upstream) survey area, downstream end. **Direction:** View facing southeast. **Comment:** Photo depicts conditions at the end of the survey period along the downstream end. Compared with Photo 7, surface flow was persistent.

	**Photograph:** 9 **Photo Date:** May 21, 2019 **Location:** Santiago Creek (Upstream) survey area, about halfway downstream. **Direction:** View facing southeast. **Comment:** Photo depicts braided side channel with emergent vegetation starting to fill in.
	**Photograph:** 10 **Photo Date:** June 4, 2019 **Location:** Santiago Creek (Upstream) survey area, near same location as photo 9. **Direction:** View facing southeast. **Comment:** Photo depicts continued surface flow and increasing density of emergent vegetation.
	**Photograph:** 11 **Photo Date:** June 18, 2019 **Location:** Silverado Creek (Upstream) survey area, upstream end of survey area. **Direction:** View facing south. **Comment:** Photo depicts dry conditions along the upstream end of this survey area during the final visit.

	**Photograph:** 12 **Photo Date:** April 24, 2019 **Location:** Santiago Creek (Downstream) survey area, upstream end. **Direction:** View facing north. **Comment:** Photo depicts conditions along the upstream end of this survey area at the start of the survey period.
	**Photograph:** 13 **Photo Date:** June 20, 2019 **Location:** Santiago Creek (Downstream) survey area, same location as photo 12. **Direction:** View facing north. **Comment:** When compared to photo 12, reduced surface flow at the end of the survey period is apparent.

	**Photograph:** 14 **Photo Date:** May 7, 2019 **Location:** Santiago Creek (Downstream) survey area, about halfway downstream. **Direction:** View facing south. **Comment:** Photo depicts one of many low flowing side channels found early in the survey period.
	**Photograph:** 15 **Photo Date:** June 20, 2019 **Location:** Santiago Creek (Downstream) survey area, near same location as photo 14. **Direction:** View facing south. **Comment:** Photo depicts same side channel shown in photo 14 now dry.



Photograph: 16

Photo Date: April 24, 2019

Location: Santiago Creek (Downstream) survey area, about halfway downstream.

Direction: View facing north.

Comment: Photo depicts main channel flow conditions at the start of the survey period.



Photograph: 17

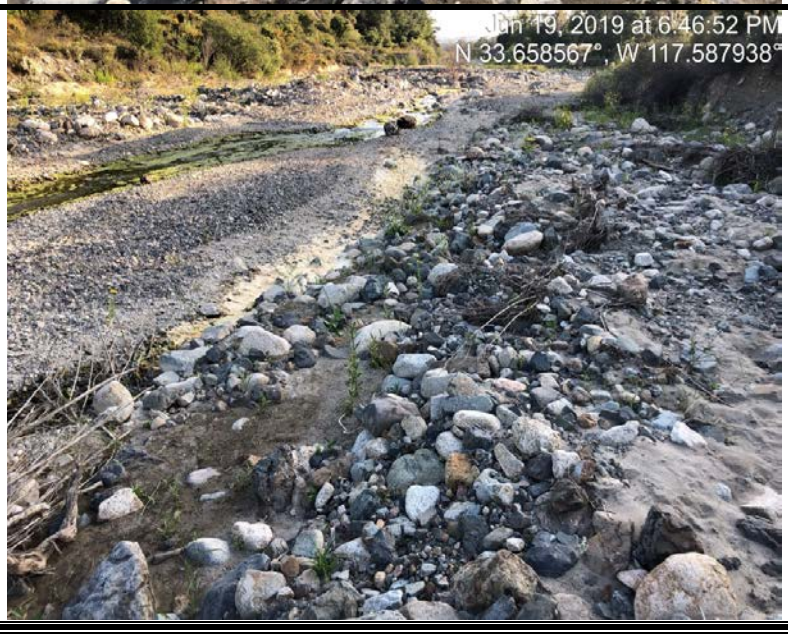
Photo Date: June 11, 2019

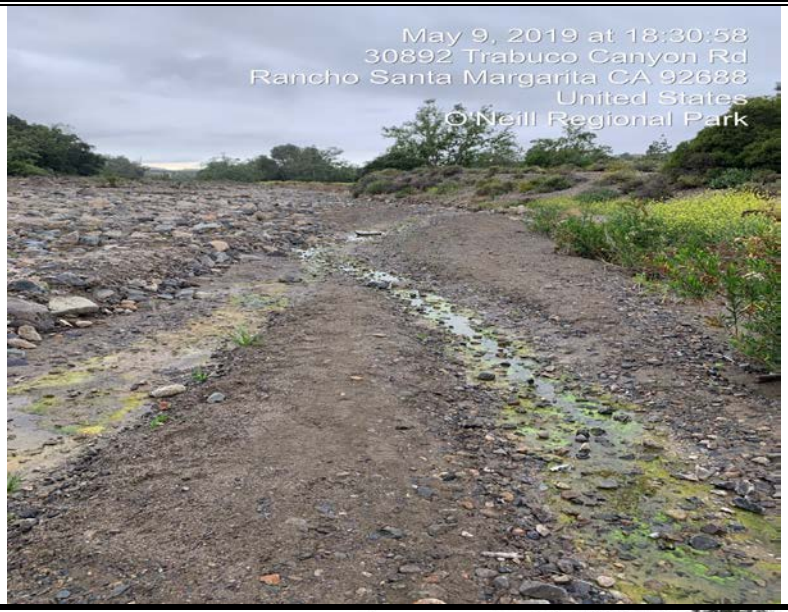
Location: Santiago Creek (Downstream) survey area, near same location of photo 16.

Direction: View facing north.

Comment: Photo depicts main channel flow conditions near the end of the survey period.

	**Photograph:** 18 **Photo Date:** April 24, 2019 **Location:** Santiago Creek (Downstream) survey area, near downstream end of this survey area. **Direction:** View facing north. **Comment:** Photo depicts side channel flow conditions at the start of the survey period.
	**Photograph:** 19 **Photo Date:** May 22, 2019 **Location:** Santiago Creek (Downstream) survey area, near same location of photo 18. **Direction:** View facing north. **Comment:** Photo depicts the development of emergent vegetation at this location later in the season.

	**Photograph:** 20 **Photo Date:** April 25, 2019 **Location:** Trabuco Creek, upstream end of main reach of this survey area. **Direction:** View facing southwest. **Comment:** Photo depicts conditions of survey area at the start of the survey period. Small side channels in background.
	**Photograph:** 21 **Photo Date:** June 19, 2019 **Location:** Trabuco Creek, near same location of photo 21. **Direction:** View facing southwest. **Comment:** Photo depicts conditions of survey area at the end of the survey period. Most side channels are dry by this time.



Photograph: 22

Photo Date: May 9, 2019

Location: Trabuco Creek, about halfway downstream main survey area.

Direction: View facing southwest.

Comment: Photo depicts low flow side channel prior to OCPW creek stabilization grading performed during survey period.



Photograph: 23

Photo Date: June 19, 2019

Location: Trabuco Creek, near same location of photo 23.

Direction: View facing southwest.

Comment: Conditions of floodplain after completion of OCPW creek grading. Numerous breeding CA Toads observed here after grading demonstrating the earth work did not preclude toad breeding.

Appendix C

Wildlife Species Detected

Appendix B. Wildlife Species Detected

Scientific Name	Common Name	Special Status
INVERTEBRATES		
Helicidae - Helix Snail Family		
**Helix aspersa*	Brown Garden Snail	
Physidae - Bladder Snail Family		
Physa sp.	Left-handed Aquatic Snail	
Ephemeroptera - Mayfly Order		
	Mayfly	
Opiliones - Daddy Longleg Family		
	Harvestman	
Vejovidae - Vejovid Scorpion Family		
Paruroctonus silvestrii	Stripe-tailed Scorpion	
Lycosidae - Wolf Spider Family		
Lycosa sp.	Wolf Spider	
Ostracod		
Ostracod	Seed Shrimp	
Theridiidae - Comb-footed Spider Family		
Latrodectus hesperus	Western Black Widow	
Armadillidiidae - Pillbug Family		
**Armadillidium vulgare*	Common Pillbug	
Araneidae - Orb Weavers Family		
Cyclosa turbinata	Trash-web Spider	
Belostomatidae - Giant Water Bug Family		
Abedus sp.	Toe Biter	
Culicidae - Mosquitoesl Family		
Culex sp.	Mosquito	
Gerridae - Water Strider Family		
Gerris sp.	Common Water Strider	
Hydrophilidae - Water Scavenger Beetle Family		
Tropisternus sp.	Water Scavenger Beetle	
Noctuidae - Owlet Moth Family		
	Owlet Moth	
Notonectidae - Backswimmer Family		
Notonecta sp.	Backswimmer	
Spirobolidae - Millipede Family		
Hiltonius pulchrus	Large Round-backed Millipede	

Scientific Name	Common Name	Special Status
Gryllidae - True Cricket Family		
**Acheta domesticus*	Common House Cricket	
Gryllus sp.	Field Cricket	
Corydalidae - Dobsonfly Family		
Neohermes sp.	California Dobsonfly	
Carabidae - Ground Beetle Family		
	Ground Beetles	
Stratiomyidae - Soldier Fly Family		
Hermetia illucens	Window Fly	
Tenebrionidae - Darkling Beetle Family		
Coelocnemis californica	Broad-necked Darkling Beetle	
Apidae - True Bee Family		
**Apis mellifera*	Honey Bee	
Formicidae - Ant Family		
**Linepithema humile*	Argentine Ant	
Pompilidae - Spider Wasp Family		
Pepsis / Hemipepsis sp.	Tarantula Hawk Wasp	
Papilionidae - Swallowtail Family		
Papilio rutulus	Western Tiger Swallowtail	
Nymphalidae - Brush-footed Butterfly Family		
Nymphalis antiopa	Mourning Cloak	
Junonia coenia	Common Buckeye	
Chironomidae - Water Midge Family		
Chironomus sp.	Water Midge	
Muscidae - Muscid Fly Family		
Musca domestica	House Fly	
Simuliidae - Black Flies Family		
Simulium sp.	Black Fly	
Tipulidae - Crane Fly Family		
Tipula sp.	Common Crane Fly	
VERTEBRATES		
Cyprinidae - Minnow Family		
**Carassius auratus*	Common Goldfish	
Bufonidae - True Toad Family		
Anaxyrus boreas halophilus	California Toad	
Ranidae - True Frog Family		
**Lithobates catesbeianus*	American Bullfrog	

Scientific Name	Common Name	Special Status
Hylidae - Treefrog Family		
Pseudacris cadaverina	California Treefrog	
Pseudacris hypochondriaca	Baja California Treefrog	
Pipidae - Tongueless Frog Family		
**Xenopus laevis*	African Clawed Frog	
Phrynosomatidae - Spiny Lizard Family		
Sceloporus occidentalis	Western Fence Lizard	
Uta stansburiana elegans	Western Side-blotched Lizard	
Colubridae - Colubrid Snake Family		
Coluber flagellum piceus	Red Racer	
Viperidae - Viper and Pitviper Family		
Crotalus oreganus helleri	Southern Pacific Rattlesnake	
Crotalus ruber	Red Diamond Rattlesnake	CSC
Natricidae - Harmless Live-Bearing Snake Family		
Thamnophis hammondii	Two-striped Gartersnake	CSC
Xenodontidae - Harmless Rear-Fanged Snake Family		
Trimorphodon lyrophanes	California Lyresnake	
Anatidae - Swan, Goose, and Duck Family		
Anas platyrhynchos	Mallard	
Odontophoridae - New World Quail Family		
Callipepla californica	California Quail	
Ardeidae - Heron Family		
Ardea alba	Great Egret	
Cathartidae - New World Vulture Family		
Cathartes aura	Turkey Vulture	
Accipitridae - Hawk Family		
Accipiter cooperii	Cooper's Hawk	
Buteo lineatus	Red-shouldered Hawk	
Buteo jamaicensis	Red-tailed Hawk	
Charadriidae - Plover Family		
Charadrius vociferus	Killdeer	
Columbidae - Pigeon and Dove Family		
Zenaida macroura	Mourning Dove	
Cuculidae - Cuckoo and Roadrunner Family		
Geococcyx californianus	Greater Roadrunner	
Tytonidae - Barn Owl Family		
Tyto alba	Barn Owl	

Scientific Name	Common Name	Special Status
Strigidae - Typical Owl Family		
Bubo virginianus	Great Horned Owl	
Caprimulgidae - Nightjar Family		
Chordeiles acutipennis	Lesser Nighthawk	
Phalaenoptilus nuttallii	Common Poorwill	
Apodidae - Swift Family		
Aeronautes saxatalis	White-throated Swift	
Trochilidae - Hummingbird Family		
Calypte anna	Anna's Hummingbird	
Calypte costae	Costa's Hummingbird	
Selasphorus sasin	Allen's Hummingbird	
Picidae - Woodpecker Family		
Melanerpes formicivorus	Acorn Woodpecker	
Picoides nuttallii	Nuttall's Woodpecker	
Colaptes auratus	Northern Flicker	
Falconidae - Falcon Family		
Falco sparverius	American Kestrel	
Tyrannidae - Tyrant Flycatcher Family		
Sayornis nigricans	Black Phoebe	
Myiarchus cinerascens	Ash-throated Flycatcher	
Tyrannus vociferans	Cassin's Kingbird	
Corvidae - Jay and Crow Family		
Aphelocoma californica	California Scrub-Jay	
Corvus brachyrhynchos	American Crow	
Corvus corax	Common Raven	
Hirundinidae - Swallow Family		
Tachycineta thalassina	Violet-green Swallow	
Stelgidopteryx serripennis	Northern Rough-winged Swallow	
Petrochelidon pyrrhonota	Cliff Swallow	
Hirundo rustica	Barn Swallow	
Paridae - Titmouse Family		
Baeolophus inornatus	Oak Titmouse	
Aegithalidae - Bushtit Family		
Psaltriparus minimus	Bushtit	
Troglodytidae - Wren Family		
Salpinctes obsoletus	Rock Wren	

Scientific Name	Common Name	Special Status
Catherpes mexicanus	Canyon Wren	
Troglodytes aedon	House Wren	
Thryomanes bewickii	Bewick's Wren	
Polioptilidae - Gnatcatcher Family		
Polioptila caerulea	Blue-gray Gnatcatcher	
Polioptila californica californica	Coastal California Gnatcatcher	FT, CSC
Sylviidae - Old World Warblers Family		
Chamaea fasciata	Wrentit	
Turdidae - Thrush Family		
Turdus migratorius	American Robin	
Mimidae - Thrasher Family		
Toxostoma redivivum	California Thrasher	
Mimus polyglottos	Northern Mockingbird	
Sturnidae - Starling Family		
**Sturnus vulgaris*	European Starling	
Ptilogonatidae - Silky-flycatcher Family		
Phainopepla nitens	Phainopepla	
Parulidae - Wood-Warbler Family		
Oreothypis celata	Orange-crowned Warbler	
Geothlypis trichas	Common Yellowthroat	
Setophaga petechia	Yellow Warbler	CSC
Setophaga coronata	Yellow-rumped Warbler	
Icteria virens	Yellow-breasted Chat	CSC
Emberizidae - Sparrow Family		
Pipilo maculatus	Spotted Towhee	
Aimophila ruficeps canescens	Southern California Rufous-crowned Sparro	
Melozone crissalis	California Towhee	
Spizella atrogularis	Black-chinned Sparrow	
Melospiza melodia	Song Sparrow	
Cardinalidae - Cardinals, Grosbeaks and Allies Family		
Piranga ludoviciana	Western Tanager	
Pheucticus melanocephalus	Black-headed Grosbeak	
Passerina caerulea	Blue Grosbeak	
Passerina amoena	Lazuli Bunting	
Icteridae - Blackbird, Cowbird and Oriole Family		
Agelaius phoeniceus	Red-winged Blackbird	

Scientific Name	Common Name	Special Status
**Molothrus ater*	Brown-headed Cowbird	
Icterus cucullatus	Hooded Oriole	
Icterus bullockii	Bullock's Oriole	
Fringillidae - Finch Family		
Haemorhous mexicanus	House Finch	
Carduelis psaltria	Lesser Goldfinch	
Carduelis tristis	American Goldfinch	
Leporidae - Hare and Rabbit Family		
Sylvilagus audubonii	Desert Cottontail	
Sciuridae - Squirrel Family		
Ostospermophilus beecheyi	California Ground Squirrel	
Canidae - Canid Family		
Canis latrans	Coyote	
Felidae - Cat Family		
Puma concolor	Mountain Lion	
Lynx rufus	Bobcat	
Cervidae - Cervid Family		
Odocoileus hemionus	Southern Mule Deer	

Legend

*= Non-native or invasive species

Special Status:

Federal:
FE = Endangered
FT = Threatened

State:
SE = Endangered
ST =Threatened
CSC = California Species of Special Concern
CFP = California Fully Protected Species

Appendix C Historic Property Survey Report (HPSR) and Archaeological Survey Report (ASR)

HISTORIC PROPERTY SURVEY REPORT

1. UNDERTAKING DESCRIPTION AND LOCATION

District	*County*	*Federal Project. Number. (Prefix, Agency Code, Project No.)*	*Location*
12	ORA	BRLO-5955 (095)	Silverado Canyon Road over Silverado Creek

The environmental review, consultation, and any other actions required by applicable Federal environmental laws for this project are being, or have been, carried out by Caltrans pursuant to 23 U.S.C. 327 and the Memorandum of Understanding dated December 23, 2016, and executed by FHWA and Caltrans.

The studies for this undertaking were carried out in a manner consistent with Caltrans' regulatory responsibilities under Section 106 of the National Historic Preservation Act (36 CFR Part 800) and pursuant to the January 2014 *First Amended Programmatic Agreement among the Federal Highway Administration, the Advisory Council on Historic Preservation, the California State Historic Preservation Officer, and the California Department of Transportation Regarding Compliance with Section 106 of the National Historic Preservation Act* (Section 106 PA).

Project Description:

The California Department of Transportation (Caltrans) and County of Orange Public Works (County) propose to remove and replace the existing Silverado Canyon Road Bridge over Silverado Creek (Bridge No. 55C0174) to address deficiencies identified in the bridge and maintain safety. The bridge spans Silverado Creek on Silverado Canyon Road and is roughly 0.65 mile west of the rural community of Silverado. Project Vicinity, Study Area, and Area of Potential Effects (APE) maps are attached in Appendix A, Figures 1, through 3 of the Archeological Survey Report (ASR), in Attachment A of this HPSR.

The Project will include removal of the existing steel bridge; modification of the existing abutments and wingwalls; and construction of a wider concrete bridge, wingwalls, and retaining walls. Additional construction activities will include road widening near the bridge approaches; grading and contouring; scour countermeasures; and building a temporary construction access ramp. Existing guardrails will also be replaced. For a complete project description, see the ASR.

2. AREA OF POTENTIAL EFFECTS

In accordance with Section 106 PA Stipulation VIII.A, the Area of Potential Effects (APE) for the project was established in consultation with Jonathan Wright, Caltrans District 12 Professionally Qualified Staff (PQS) Lead Archaeological Surveyor and Tifini Tran, Caltrans District 12 Local Assistance Engineer, on May 19, 2021. The APE map is located in Appendix A, Figure 3 of the Archaeological Survey Report (ASR), which is included as Attachment A of this HPSR.

The APE was established to ensure the identification of known or potential historic properties that may be directly or indirectly affected by the project. The proposed project area is located on a two-lane highway near the rural community of Silverado in unincorporated Orange County. The existing Silverado Canyon Road Bridge was constructed in 1935 and provides access to approximately 270 homes, as well as to the local Silverado Fire Station, library, and post office.

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The area immediately adjacent to the project site is primarily undeveloped, but also includes an equestrian facility to the southwest and a community center to the northeast.

Proposed work will primarily take place within the existing public right-of-way (ROW), with the exception of temporary construction easements (TCE) on two private parcels (APNs 105-051-86 and 105-051-87). As such, the Area of Direct Impact (ADI) is limited to the public ROW, plus the portions of the private parcels which may be subject to TCE. The horizontal extent of the APE encompasses all ground disturbance associated with the project, including areas of physical work, site access, potential temporary bridge location, and staging areas for construction vehicles, equipment, and materials. The vertical extent of the APE ranges from the maximum structural height to the maximum depth of ground disturbance associated with the proposed project. Roadway signage is the tallest proposed feature, with a maximum height of approximately 10 feet above the roadway. The maximum depth of excavation would be approximately 25 feet below the lowest point of the streambed and approximately 38 feet 6 inches below the roadway.

Geologic and topographic maps were examined, as well as known resources in the area of the APE, to identify areas of low, moderate, or high sensitivity for prehistoric and historic archaeological resources. Soils in the APE are young alluvium with a moderate potential for archaeological resources. The APE, however, is heavily disturbed and developed from roadway construction associated with Silverado Canyon Road, as well as the Silverado Canyon Road Bridge. Disturbances have likely removed and/or heavily impacted resources, if any were present, near the road alignment or bridge. The overall potential to encounter intact subsurface archaeological deposits within the APE is considered to be low.

Due to the nature of the proposed construction and the surrounding land uses, indirect effects are not anticipated beyond the ADI. The proposed TCE would take place on two vacant parcels with no structures that would be subject to indirect effects. Both are very large, rural parcels with densely vegetated, sloping terrain. Parcel 105-051-86 to the north of the APE is approximately 160 acres and parcel 105-051-87 to the south is approximately 40 acres. Approximately 1-2 acres of each parcel would be subject to TCE. No permanent acquisition is proposed. Due to the large size of the adjacent parcels and limited potential for indirect effects beyond the ADI, including the entire parcels in the APE would not result in an appropriately scaled level of effort. Additionally, based on the records search results, there were no resources identified or present that would require the inclusion of the additional parcel areas.

The nearest structures to the ADI are an equestrian facility to the southwest and a community center to the northeast. The work proposed immediately adjacent to the parcels containing these structures is limited to roadway paving and striping in the roadway east of the equestrian facility and construction staging south of the community center, on the opposite side of the roadway. These activities do not have the potential to indirectly affect the nearby structures. Therefore, the ADI and APE are coterminous.

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3. CONSULTING PARTIES / PUBLIC PARTICIPATION

☒ Local Government

The following local government offices were contacted by letter on September 23, 2020. The purpose of the letters was to inform each potential interested party of the proposed undertaking and to solicit information on known or potential historic properties in the vicinity of the Project area.

- Orange County Planning Division
- Orange County Planning Commission
- Orange County Historical Commission

Follow up emails were sent on October 26, 2020. To date, no responses have been received. Copies of correspondence and a contact log are provided as Attachment B of this HPSR.

☒ Native American Heritage Commission

A Sacred Lands File (SLF) request was submitted to the Native American Heritage Commission (NAHC) in January 2018. The search of the SLF revealed negative results for the relevant USGS quadrangles. The NAHC results are provided in Appendix A of the ASR (located in Attachment A of this HPSR). The NAHC also provided a list of Native American tribes who could provide knowledge of cultural resources in the Project area. This list included the following Native American contacts:

- Campo Band of Mission Indians
  - Ralph Goff, Chairperson
- Ewiiaapaayp Tribal Office
  - Robert Pinto, Chairperson
  - Michael Garcia, Vice Chairperson
- Gabrieleno Band of Mission Indians – Kizh Nation
  - Andrew Salas, Chairperson
- Gabrieleno/Tongva San Gabriel Ban of Mission Indians
  - Anthony Morales, Chairperson
- Gabrielino/Tongva Nation
  - Sandonne Goad, Chairperson
- Gabrielino Tongva Indians of California Tribal Council
  - Robert Dorame, Chairperson
- Gabrielino-Tongva Tribe
  - Charles Alvarez
- Jamul Indian Village
  - Erica Pinto, Chairperson

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- Juaneno Band of Mission Indians
  - Sonia Johnson, Chairperson
- Juaneno Band of Mission Indians Acjachemen Nation – Belardes
  - Matias Belardes, Chairperson
  - Joyce Perry, Tribal Manager
- Juaneno Band of Mission Indians Acjachemen Nation – Romero
  - Teresa Romero, Chairperson
- La Posta Band of Mission Indians
  - Gwendolyn Parada, Chairperson
  - Javaughn Miller, Tribal Adminstrator
- Manzanita Band of Kumeyaay Nation
  - Angela Elliott Santos, Chairperson
- Pauma Band of Luiseno Indians – Pauma and Yuima Reservation
  - Temet Aguilar, Chairperson
- San Fernando Band of Mission Indians
  - John Valenzuela, Chairperson
- San Pasqual Band of Mission Indians
  - John Flores, Environmental Coordinator
  - Allen E. Lawson, Chairperson
- Sycuan Band of the Kumeyaay Nation
  - Cody J. Martinez, Chairperson
  - Lisa Haws, Cultural Resources Manager
- Viejas Band of Kumeyaay Indians
  - Robert Welch, Chairperson
  - Julie Hagen

☒ Native American Tribes, Groups and Individuals

The County is conducting AB 52 consultation under CEQA, and Caltrans is conducting Native American consultation under Section 106. On March 19, 2021, initial consultation letters were mailed to the Native American individuals on the list provided by the NAHC. On April 6, 2021, a follow-up email including a digital copy of the March 19, 2021 letter was sent. An overview of consultation efforts is included in the ASR (Attachment A of this HPSR). No responses have been received to date. Copies of correspondence are included in Appendix C of the ASR.

☒ Local Historical Society / Historic Preservation Group

The following organizations were contacted by mail on September 23, 2020. The purpose of the letter was to inform each potential interested party of the proposed undertaking and to solicit information on known or potential historic properties in the vicinity of the Project area.

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- Orange County Archives
- Library of the Canyons/Silverado
- Orange County Historical Society
- Preserve Orange County

Follow up emails were sent on October 26, 2020. An email response was received from Susan Berumen at the Orange County Archives on October 26, 2020. In response to confusion generated by another project with a similar name, a follow up email was sent on October 27, 2020. Ms. Berumen responded, stating that "Other than what is available online, I have no additional information on Bridge 5C-0174. OC Public Works may be able to help you as they worked on a repair project for the bridge in 2013." A copy of this response is included in Attachment B of this HPSR.

Email responses were received from Krista Nicholds with Preserve Orange County on October 26 and 27, 2020. Ms. Nicholds had several follow up questions regarding the bridge, which were answered. A copy of this correspondence is included in Attachment B of this HPSR.

4. SUMMARY OF IDENTIFICATION EFFORTS

☒ National Register of Historic Places (NRHP)

☒ California Register of Historical Resources (CRHR)

☒ National Historic Landmark (NHL)

☒ California Historical Landmarks (CHL)

☒ California Points of Historical Interest

☒ California Historical Resources Information System (CHRIS)

☒ Caltrans Historic Bridge Inventory

☐ Caltrans Cultural Resources Database (CCRD)

☒ Other Sources consulted:

Archival sources consulted:

- Records searches were conducted at the South Central Coastal Information Center (SCCIC) at California State University Fullerton on August 18 and November 9, 2020. The records search included a review of all recorded archaeological and historical resources within a 0.25-mile radius of the APE, as well as a review of cultural resource reports on file. The CHRIS records search results are provided in the ASR (Attachment A of this HPSR).

Field survey methods:

- An intensive-level built environment survey of the APE was performed by Associate Architectural Historians Amanda Duane and Elysha Paluszek of GPA

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Consulting on September 29, 2020. Parcels within the APE were observed from the public right of way to identify potential built environment historic properties (45 years or older). Field notes and photographs documenting current conditions were taken during the built environment survey. The Silverado Canyon Road Bridge was photographed during the survey. No additional built environment resources are located within the Project's APE.

- A pedestrian archaeological survey of the APE was performed by Principal Investigator Liz Denniston, M.A., RPA of Paleo Solutions on February 12, 2021. Most of the survey area is located along or to the south of Silverado Canyon Road and around Silverado Canyon Road Bridge. The area under the Silverado Canyon Road Bridge was also examined. Systematic survey transects were conducted in all accessible, unpaved areas at 3 to 5-meter intervals. No archaeological resources were observed in the APE during the field survey.

☒ Results:

Due to state ordered quarantine, Paleo Solutions archeologists were unable to conduct an in-person cultural resources record search. In lieu of this, SCCIC staff conducted an electronic records search on August 18 and November 9, 2020. The results of the records search showed that there are 28 cultural resource studies that have been previously conducted within the 0.25-mile records search radius. Eleven of these previous studies overlap with the APE.

There are five previously recorded resources that have been identified within the 0.25-mile records search radius. These include two prehistoric sites, one multicomponent site, one historic-age ranch complex, and one historic-age trail. Three of the resources have not been evaluated for the NRHP, CRHR, or local listing. Two have been determined ineligible for the NRHP. The record boundary for one of the resources, the Holtz Ranch Complex, is immediately north of the APE. This complex includes 17 historic-age buildings and structures recorded in 2000 and evaluated in 2003, of which all but five were demolished in 2006 (Primary Record 30-177443). None of the demolished/extant buildings and structures were/are within the APE. The Holtz Ranch Complex was evaluated as ineligible for listing in the NRHP in 2003, and the extant structures were again evaluated as ineligible for listing in the NRHP in 2012. See the ASR in Attachment A for the complete listing of CHRIS records search results.

No cultural resources were identified in the APE as a result of the built environment or archaeological surveys.

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5. PROPERTIES IDENTIFIED

☒ **No cultural resources are present** within the APE.

☒ Jenna Kachour, consultant architectural historian, who meets the Professionally Qualified Staff (PQS) Standards in Section 106 PA Attachment 1 as an Architectural Historian, has determined that the only other properties present within the APE meet the criteria for Section 106 PA Attachment 4 (**Properties Exempt from Evaluation**).

☒ Caltrans, in accordance with Section 106 PA Stipulation VIII.C.5 has determined there are cultural resources within the APE that were **previously determined not eligible** for inclusion in the NRHP with SHPO concurrence and those determinations remain valid. Copy of SHPO/Keeper correspondence is attached.

- See "Bridges listed as Category 5," below. Historic Bridge Inventory sheet is attached in lieu of SHPO/Keeper correspondence.

☒ Bridges listed as **Category 5** (previously determined not eligible for listing in the NRHP) in the Caltrans Historic Bridge Inventory are present within the APE and those determinations remain valid. Appropriate pages from the Caltrans Historic Bridge Inventory are attached.

- There is one local agency bridge within the APE. It is listed as a Category 5 (Bridge not eligible for NRHP) in the Caltrans Historic Bridge Inventory (see Attachment C to this HPSR for the Inventory sheet).

Bridge No.	Bridge Name	Location	Date
55C0174	Silverado Canyon Creek	1.6 MI E/O Santiago Road	1935

6. FINDING FOR THE UNDERTAKING

☒ Caltrans, pursuant to Section 106 PA Stipulation IX.A, has determined a Finding of **No Historic Properties Affected** is appropriate for this undertaking because there are no historic properties within the APE.

7. CEQA CONSIDERATIONS

☒ Not applicable; **Caltrans is not the lead agency under CEQA**.

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8. LIST OF ATTACHED DOCUMENTATION

☒ Project Vicinity, Location, and APE Maps – Included in Appendix A, Figure 1, Figure 2, and Figure 3, respectively, of the Archaeological Survey Report (Attachment A of this HPSR).

☒ Caltrans Historic Bridge Inventory Sheet – Included in Attachment C of this HPSR.

☒ Archaeological Survey Report (ASR) – Included in Attachment A of this HPSR.

- Paleo Solutions, "Archeological Survey Report: Silverado Canyon Road Bridge Replacement Project, Orange County, California," April 2021.

☒ Other

- Contact logs and copies of correspondence with potential interested parties. – Included in Attachment B of this HPSR.
- Contact logs and copies of correspondence with Native American contacts – Included in Appendix C of the ASR (Attachment A of this HPSR).

9. HPSR PREPARATION AND CALTRANS APPROVAL

Prepared by: _____ May 21, 2021
Jenna Kachour, Senior Architectural Historian Date
Elysha Paluszek, Associate Architectural Historian
GPA Consulting, 617 S. Olive Street Suite 910, Los Angeles, CA 90014

Reviewed for
Approval by: _____ May 24, 2021
Jonathan Wright, District 12 Caltrans PQS Lead Archaeological Surveyor Date

Approval by: Charles Baker 5/24/2021
Charles Baker, District 12 EBC Date

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Attachment A
Archaeological Survey Report

ARCHAEOLOGICAL SURVEY REPORT

Silverado Canyon Bridge Replacement Project

Orange County, California

FID: BRLO-5955 (095)

Prepared for



STATE OF CALIFORNIA

Department of Transportation

May 2021

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Archaeological Survey Report
Silverado Canyon Bridge Replacement Project, Orange County, California
(FID: BRLO-5955 [095])

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Reviewed By:

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United States U.S. Geological Survey 7.5 minute quadrangle: El Toro, California
Acreage: *3.8 acres*
Identified Archaeological Resources: *None*

May 2021

The environmental review, consultation, and any other actions required by applicable Federal environmental laws for this project are being, or have been, carried out by Caltrans pursuant to 23 U.S.C. 327 and the Memorandum of Understanding dated December 23, 2016, and executed by FHWA and Caltrans.

The studies for this undertaking were carried out in a manner consistent with Caltrans' regulatory responsibilities under Section 106 of the National Historic Preservation Act (36 CFR Part 800) and pursuant to the January 2014 First Amended Programmatic Agreement among the Federal Highway Administration, the Advisory Council on Historic Preservation, the California State Historic Preservation Officer, and the California Department of Transportation Regarding Compliance with Section 106 of the National Historic Preservation Act (Section 106 PA).

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Acronyms and Abbreviations

AB 52	Assembly Bill 52
ACHP	Advisory Council on Historic Preservation
ADI	Area of Direct Impact [ADI]
ADII	Area of Indirect Impact [AII]
amsl	above mean sea level
APE	Area of Potential Effects
ASR	Archaeological Survey Report
BP	before present
CCR	California Code of Regulations
CEQA	California Environmental Quality Act
CRHR	California Register of Historical Resources
DPR	Department of Parks and Recreation
FHWA	Federal Highway Administration
HBI	Caltrans Statewide Historic Bridge Inventory Update
MLD	most likely descendants
NAHC	Native American Heritage Commission
NRHP	National Register of Historic Places
OHP	Office of Historic Preservation
PA	Programmatic Agreement
PQS	Caltrans Professionally Qualified Staff
PRC	Public Resources Code
ROW	right-of-way
RPA	Register of Professional Archaeologists
SCCIC	South Central Coastal Information Center
Section 106	Section 106 of the National Historic Preservation Act
SHPO	State Historic Preservation Officer
SLF	Sacred Lands File
TCE	temporary construction easements
TCR	tribal cultural resources

1 Summary of Findings

County of Orange Public Works (County), in cooperation with the California Department of Transportation (Caltrans) on behalf of the Federal Highway Administration (FHWA), proposes to replace the existing road bridge (Bridge No. 55C 0174) in Silverado Canyon (Project). The bridge spans Silverado Creek and is approximately 0.65 mile west of the community of Silverado in unincorporated Orange County, California.

The purpose of the archaeological survey was to identify all archaeological resources in the Area of Potential Effects (APE) that could be affected by the Project. The total length of the APE is 865 feet and the total area of the APE is 3.8 acres. Although the intent was to survey the entire APE, approximately 50 percent of the APE could not be surveyed for archaeological resources because it is paved roadway.

A records search and archaeological field survey of the APE was conducted in support of the Project. The records search found that 28 previous investigations have been conducted within one mile of the Project area, several of which overlap the APE. Five previously-recorded cultural resources are within one mile of the APE, none of which overlap the APE. Additionally, Bridge #55C 0174 is listed as Category 5 (ineligible) structures in the *Caltrans Statewide Historic Bridge Inventory Update* (HBI) database.

Previously-recorded archaeological resources within one mile of the APE include two prehistoric sites, one multicomponent site, a historic-age (i.e., 50 years old or older) trail, and the historic-age Holtz Ranch Complex. None of these five overlap the APE. A search of the Sacred Lands File (SLF) with the Native American Heritage Commission (NAHC) had negative results. No archaeological resources were identified within the APE as a result of the field survey. An archaeological sensitivity analysis was conducted and indicates that the Project alignment is deemed to have a low sensitivity for buried archaeological resources.

A total of 20 Native American groups were contacted for consultation under Assembly Bill (AB) 52 and Section 106 of the National Historic Preservation Act (Section 106). AB 52 consultation is being conducted by the County, and Section 106 consultation is being conducted by Caltrans. An overview of consultation efforts will be appended to this ASR once consultation is complete.

It is Caltrans' policy to avoid cultural resources whenever possible. Further investigations may be needed if cultural resources cannot be avoided by the Project. If buried cultural materials are encountered during construction, it is Caltrans' policy that work stop in that area until a qualified archaeologist can evaluate the nature and significance of the find. Additional surveys will be required if the project changes to include areas not previously surveyed.

2 Introduction

The purpose of the Project is to remove and replace the existing roadway bridge (Bridge No. 55C 0174) to address deficiencies identified in the bridge and maintain safety. The bridge spans Silverado Creek on Silverado Canyon Road and is roughly 0.65 mile west of the rural community of Silverado. Project Vicinity, Study Area, and APE maps are attached in Appendix A, Figures 1, through 3. It is depicted on the USGS *El Toro, California*, 7.5-minute quadrangle (T5S, R7W, Section 7).

In accordance with Section 106 Programmatic Agreement (PA) Stipulation VIII.A, the APE for this project is being established in consultation with Jonathan Wright, Caltrans District 12 Professionally Qualified Staff (PQS) Lead Archaeological Surveyor and Tifini Tran, Caltrans District 12 Local Assistance Engineer, on May 19, 2021. (see Appendix A, Figure 3).

The APE consists of both the Area of Direct Impact (ADI) and the Area of Direct Indirect Impact (ADII), as the maximum amount of potential ground disturbances is the same for both (see Appendix A, Figure 3). The Project will be conducted within existing Caltrans right-of-way (ROW) with the exception of two temporary construction easements (TCE) on private parcels (APNs 105-051-86 and 105-051-87). The ADI is limited to the public ROW, plus the portions of the private parcels that may be subject to TCEs. Indirect effects are not anticipated beyond the ADI because of the nature of the proposed construction and surrounding land uses. The TCEs are on vacant parcels with no structures. The nearest structures are an equestrian facility near the southwest of the APE and a community center to the northeast. Both structures are outside the APE. Work planned adjacent to these parcels is limited to roadway paving and striping in the roadway east of the equestrian facility and construction staging south of the community center, on the opposite side of the roadway. These activities do not have the potential to directly or indirectly affect the structures. The ADI and ADII are, therefore, coterminous.

Excavation associated with the Project will include removal of the existing steel bridge (to be completed in two stages); modification of the existing abutments and wingwalls; and construction of a wider concrete bridge, wingwalls and retaining walls. The vertical APE extends to a maximum depth of 25 feet below the lowest point of the streambed and 38 feet 6 inches below the roadway. The tallest proposed permanent feature would be roadway signage with a maximum height of 10 feet. Additional construction activities will include road widening near the bridge approaches; grading and contouring; scour countermeasures; and building a temporary construction access ramp. Existing guardrails will also be replaced. These activities will require limited to moderate ground disturbance in these areas.

The studies for this undertaking were carried out in a manner consistent with Caltrans' regulatory responsibilities under Section 106 of the National Historic Preservation Act (NHPA) and its implementing regulations, 36 CFR Part 800, and pursuant to the January 2014 First Amended PA among the Federal Highway Administration, the Advisory Council on Historic Preservation, the

California State Historic Preservation Officer, and the California Department of Transportation Regarding Compliance with Section 106. The Project is anticipated to receive federal funding and is, therefore, an undertaking subject to review by Caltrans under the Section 106 PA. This ASR also addresses compliance under California state law for the proposed Project in accordance with the California Environmental Quality Act (CEQA) guidelines at Title 14 California Code of Regulations (CCR) §15064.5 and Public Resources Code (PRC) 5024. Caltrans is the lead agency for National Environmental Policy Act (NEPA) compliance and the County is the lead agency for CEQA compliance. Both federal and state-level cultural resources compliance includes resource identification, evaluation for significance, determination of effects, and mitigation, when necessary.

This ASR was prepared by Liz Denniston, M.A. Register of Professional Archaeologists (RPA) and Evelyn Chandler, M.A. Ms. Denniston has 23 years of experience in California archaeology (PQS equivalence - Principal Investigator, Prehistoric and Historic Archaeology). Ms. Chandler has 28 years of experience in California archaeology (PQS equivalence – Principal Investigator, Prehistoric and Historic Archaeology. The field survey was conducted on February 12, 2021 by Liz Denniston. Resumes for project personnel are provided in Appendix B.

3 Project Description

Caltrans and the County propose to remove and replace the existing roadway bridge over Silverado Creek. The replacement bridge will be concrete and measure 58 feet long by 44 feet wide. The bridge will support two 12-foot wide traffic lanes, two 5-foot shoulders, two traffic barriers, and a 5-foot sidewalk with railing (on the north side).

Construction will include removal of the existing steel bridge; modification of the existing abutments and wingwalls; and construction of the new bridge, wingwalls and retaining walls. Maximum depth of ground disturbance is 25 feet below the lowest point of the streambed and 38 feet 6 inches below the roadway. Portions of existing abutments could be reused to minimize construction activity in the creek. The abutments will be supported on concrete spread footings similar to the existing foundations.

Replacing the existing bridge will require road widening at the west and east bridge approaches; re-grading creek banks at the bridge; grading in the Silverado Creek channel; construction of a temporary construction access ramp into the creek; and construction of scour countermeasures at the bridge foundations. Existing metal beam guardrails will also be removed and replaced. These activities will require limited to moderate ground disturbing in these areas.

The existing bridge will be removed in two stages to maintain one lane of traffic open during construction. No detour is available for Silverado Canyon Road; therefore, the Project will require staged construction to maintain one lane of traffic. Additional staging area would be provided on a vacant lot (also part of APN 105-051-87) approximately 150 feet south of the bridge, along the existing shoulder.

The Project will use existing ROW and two TCEs on private parcels (APNs 105-051-86 and 105-051-87). No residential or commercial relocations are anticipated. The Project may also require relocation of existing utilities, including overhead and underground electrical/ telecommunications lines and storm drain inlets.

3.1 Background

3.1.1 Project History

Various assessments have designated the existing steel bridge as structurally obsolete. It has deteriorated, rusted, and weakened over time. Safety has become a concern and the bridge will be replaced with a concrete bridge.

3.1.2 Existing Facility

The Silverado Canyon Road Bridge (Bridge No. 55C 0174) spanning Silverado Creek was constructed in 1935. The road and the bridge provide access to approximately 270 homes, as

well as the Silverado Fire Station, library, and post office. The area adjacent to the Project is primarily undeveloped but includes an equestrian facility to the southwest and a community center to the northeast.

The bridge spans Silverado Creek, which rises on the north slope of Modjeska Peak and flows north and west before joining Santiago Creek. The Project is in a rural setting in unincorporated Orange County. Silverado Canyon Road is covered by asphalt and road shoulders are covered with imported sediments and gravel. Most of the ground surface along the roadway is open, lightly vegetated, but disturbed by modern activities such as roadway construction and maintenance. A recent wildfire has also burned most of the vegetation near the roadway, bridge, and slopes to the south.

3.1.3 Local Roads and Intersections

The Project is located on Silverado Canyon Road, a two-lane highway with a small shoulder on both sides. The west end of the APE extends roughly 406 feet west of the west edge of the bridge; the east end of the APE extends 860 feet to the east of the east end of the bridge. No other roads intersect with Silverado Canyon Road in the APE. Outside the APE, several roads spur from Silverado Canyon Road to provide access to the surrounding mountains, including lands managed by the Cleveland National Forest.

3.2 Purpose and Need

3.2.1 Purpose

The purpose of the Project is to address the structural deficiencies of the bridge, improve safety, and maintain access to the community of Silverado and surrounding areas.

3.2.2 Need

The Silverado Canyon Road Bridge was constructed in 1935. Over time, the bridge has deteriorated and was recently deemed structurally obsolete. Safety is also a concern. The Project intends to address these concerns by replacing the bridge with a concrete bridge that will conform with current environmental and design standards, both structurally and hydraulically, and will have a life expectancy of 75 years minimum.

4 Laws, Regulations, and Orders

The Project is subject to federal, state, and local regulations. All regulations are discussed below.

4.1 Federal

4.1.1 National Historic Preservation Act

The NHPA establishes a federal program for the preservation of historic properties throughout the country. Historic properties are defined as those resources that are listed in or eligible for listing in the National Register of Historic Places (NRHP). Section 106 of the NHPA, and its implementing regulations, 36 CFR Part 800 "Protection of Historic Properties," requires that federal agencies must take into account the effects of their actions on historic properties and must afford the Advisory Council on Historic Preservation (ACHP) a reasonable opportunity to comment on their actions.

The Section 106 process includes five steps: (1) initiating the Section 106 process, (2) identifying historic properties, (3) assessing adverse effects, (4) resolving adverse effects, and (5) implementing the project and any stipulations in an agreement document.

To determine whether an undertaking could affect NRHP-listed or -eligible properties, cultural resources (including archaeological, historical, and architectural properties) must be inventoried and evaluated for listing in the NRHP. For a property to be considered for inclusion in the NRHP, it must meet the criteria for evaluation set forth in 36 CFR § 60.4, as follows:

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

Among other criteria considerations, a property that has achieved significance within the last 50 years is not considered eligible for inclusion in the NRHP unless certain exceptional conditions are met.

Under 36 CFR § 800.5(1), an adverse effect to a historic property is found when an undertaking may alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the NRHP in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association. Adverse effects may include reasonably foreseeable effects caused by the undertaking that may occur later in time, be farther removed in distance, or be cumulative.

Section 106 affords consulting Native American Tribes, the ACHP, and the State Historic Preservation Officer (SHPO) a reasonable opportunity to comment on any undertaking that would adversely affect historic properties. Consultation with Native American tribes and SHPO occurs throughout the Section 106 process. The ACHP can be invited to participate in the Section 106 review process by any of the consulting parties, and typically assists in identifying or negotiating appropriate treatments for the resolution of adverse effects to historic properties that cannot be avoided through project redesign.

4.2 State

4.2.1 California Environmental Quality Act

Lead Agencies and project proponents are required to comply with the CEQA Statute and Guidelines (as amended through 2015) by determining if cultural resources that could be affected by Project activities are "historically significant" and whether Project activities will have a significant impact on these resources (Title 14 CCR Section 15064.5[b]).

A cultural resource is considered "historically significant" if the resource is 50 years old or older, possesses integrity of location, design, setting, materials, workmanship, feeling, association, and meets the requirements for listing in the California Register of Historical Resources (CRHR) under any one of the following criteria (Title 14 CCR Section 15064.5):

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

Additionally, the CRHR consists of resources that are listed automatically and those that must be nominated through an application and public hearing process. The CRHR automatically includes the following:

- California properties listed in the NRHP and those formally Determined Eligible for the NRHP.

- California Registered Historical Landmarks from No. 770 onward.
- Those California Points of Historical Interest that have been evaluated by the Office of Historic Preservation (OHP) and have been recommended to the State Historical Commission for inclusion on the CRHR.

Other resources that may be nominated to the CRHR include:

- Historical resources with a significance rating of Category 3 through 5 (those properties identified as eligible for listing in the NRHP, the CRHR, and/or a local jurisdiction register).
- Individual historical resources.
- Historical resources contributing to historic districts.
- Historical resources designated or listed as local landmarks, or designated under any local ordinance, such as an historic preservation overlay zone.

The fact that a resource is not listed in or determined to be eligible for listing in the CRHR or is not included in a local register of historical resources, does not preclude a lead agency from determining that the resource may be a historical resource.

According to Appendix G of the CEQA Guidelines, a project would normally have a significant effect on the environment if the project would:

- Cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5.
- Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5.
- Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature; or
- Disturb any human remains, including those interred outside of formal cemeteries.

In addition, CEQA Guidelines Section 15064.5(e) requires that excavation activities be stopped whenever human remains are uncovered and that the County Coroner be called in to assess the remains. If the County Coroner determines that the remains are those of Native Americans, the NAHC must be contacted within 24 hours. At that time, the lead agency must consult with the most likely descendants (MLD), if any, as identified by the NAHC. CEQA Guidelines Section 15064.5 directs the lead agency (or project proponent), under certain circumstances, to develop an agreement with the MLD for the treatment and disposition of the remains, or to rebury the remains in an area not subject to further disturbance if the MLD fails to make a recommendation within 48 hours of being granted access to the remains.

4.2.2 California Public Resources Code

Archaeological and historical sites are protected pursuant to policies and regulations enumerated under the California PRC. The following PRC sections apply to activities related to this Project:

- California PRC Sections 5020–5029.5 continue the former Historical Landmarks Advisory Committee as the State Historical Resources Commission. The commission oversees the administration of the CRHR and is responsible for the designation of State Historical Landmarks and Historical Points of Interest.
- California PRC Sections 5079–5079.65 define the functions and duties of the OHP. The OHP is responsible for the administration of federally and state-mandated historic preservation programs in California and the California Heritage Fund.
- California PRC Sections 5097.9–5097.991 provide protection to Native American historical and cultural resources and sacred sites and identify the powers and duties of the NAHC. It also requires notification to descendants of discoveries of Native American human remains and provides for treatment and disposition of human remains and associated grave goods.
- PRC Section 21083.2(g) protects "unique archaeological resources" which are defined as an archaeological artifact, object, or site with a high probability of:
    1. Containing information needed to answer important scientific research questions with a demonstrable public interest in that information.
    2. A special and particular quality such as being the oldest of its type or the best available example of its type.
    3. Being directly associated with a scientifically recognized important prehistoric or historic event or person (PRC Section 21083.2(g)).
- PRC Sections 21083.2(b) and 21083.2(c) and CEQA Guidelines Section 15126.4 provide information regarding the mitigation framework for archaeological and historic resources, including examples of preservation-in-place mitigation measures. Preservation in place is the preferred manner of mitigating impacts to significant archaeological sites because it maintains the relationship between artifacts and the archaeological context and may also help avoid conflict with religious or cultural values of groups associated with the archaeological site(s).

4.2.3 California State Assembly Bill (AB) 52

AB 52 of 2014 amended PRC Section 5097.94 and added PRC Sections 21073, 21074, 21080.3.1, 21080.3.2, 21082.3, 21083.09, 21084.2, and 21084.3. AB 52 established that "tribal cultural resource" (TCRs) must be considered under CEQA and also provided for additional Native American consultation requirements for the lead agency. Section 21074 describes a TCR as a site, feature, place, cultural landscape, sacred place, or object that is considered of cultural value to a California Native American Tribe and that is either:

- On or determined to be eligible for the California Register of Historical Resources or a local historic register; or
- A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Section 5024.1.

AB 52 formalizes the lead agency–tribal consultation process, requiring the lead agency to initiate consultation with California Native American groups that are traditionally and culturally affiliated with the Project site, including tribes that may not be federally recognized. Lead agencies are required to begin consultation prior to the release of a negative declaration, mitigated negative declaration, or environmental impact report.

> Section 1 (a)(9) of AB 52 establishes that "a substantial adverse change to a tribal cultural resource has a significant effect on the environment." Effects on TCRs should be considered under CEQA. Section 6 of AB 52 adds Section 21080.3.2 to the PRC, which states that parties may propose mitigation measures "capable of avoiding or substantially lessening potential significant impacts to a tribal cultural resource or alternatives that would avoid significant impacts to a tribal cultural resource." Further, if a California Native American tribe requests consultation regarding project alternatives, mitigation measures, or significant effects to tribal cultural resources, the consultation shall include those topics (PRC Section 21080.3.2[a]). The environmental document and the mitigation monitoring and reporting program (where applicable) shall include any mitigation measures that are adopted (PRC Section 21082.3[a]).

4.2.4 California Health and Safety Code

The California Health and Safety Code Section 7050.5(b) specifies protocol when human remains are discovered. Specifically, burials or human remains found either inside or outside a known cemetery are not to be disturbed or removed unless by authority of law, and the area of a discovery of human remains should remain undisturbed until the County Coroner is notified and has examined the remains prior to determining the appropriate course of action.

4.3 Local

4.3.1.1 County of Orange General Plan (2013): Chapter 6: Resource Element

The Resources Element, one of nine elements of the General Plan, contains official County policies on the conservation and management of resources. The Resources Element is comprised of six components (Natural Resources, Energy Resources, Water Resources, Air Resources, Open Space, and Cultural-Historical). For each resource component, specific goals, objectives and policies are identified. In addition, each component includes implementation programs to address identified constraints.

Component 6: Cultural-Historic Resources

Goal 1: *To raise the awareness and appreciation of Orange County's cultural and historic heritage.*

Objective

1.1: Facilitate and participate in activities that inform people about the social, cultural, economic, and scientific values of Orange County's heritage.
1.2: Work through the Orange County Historical Commission in the areas of history, paleontology, archaeology, and historical preservation.

Policies

1.1: To stimulate and encourage financial support for projects in the public and private sector.
1.2: To coordinate countywide programs and be the liaison for local organizations.
1.3: To advise and aid the public and private sectors in meeting museum needs and finding funding sources for same.
1.4: To stimulate and encourage research, writing, and publication of articles on Orange County subjects.
1.5: To develop and maintain a County archive for historically valuable records.
1.6: To encourage and facilitate cooperation among local historical societies.

Goal 2: *To encourage through a resource management effort the preservation of the county's cultural and historic heritage.*

Objectives

2.1: Promote the preservation and use of buildings, sites, structures, objects, and districts of importance in Orange County through the administration of planning, environmental, and resource management programs.
2.2: Take all reasonable and proper steps to achieve the preservation of archaeological and paleontological remains, or their recovery and analysis to preserve cultural, scientific, and educational values.
2.3: Take all reasonable and proper steps to achieve the preservation and use of significant historic resources including properties of historic, historic architectural, historic archaeological, and/or historic preservation value.
2.4: Provide assistance to County agencies in evaluating the cultural environmental impact of proposed projects and reviewing EIRs.
2.5: Provide incentives to encourage greater private sector participation in historic preservation.

Policies: The following policies addressing archaeological, paleontological, and historical resources shall be implemented at appropriate stage(s) of planning, coordinated with the processing of a project application, as follows:

- Identification of resources shall be completed at the earliest stage of project planning and review such as general plan amendment or zone change.

- Evaluation of resources shall be completed at intermediate stages of project planning and review such as site plan review, subdivision map approval, or at an earlier stage of project review.
- Final preservation actions shall be completed at final stages of project planning and review such as grading, demolition, or at an earlier stage of project review.

Archaeological Resources Policies:

1. To identify archaeological resources through literature and records research and surface surveys.

2. To evaluate archaeological resources through subsurface testing to determine significance and extent.

3. To observe and collect archaeological resources during the grading of a project.

4. To preserve archaeological resources by:

a) Maintaining them in an undisturbed condition, or

b) Excavating and salvaging materials and information in a scientific manner.

5 Sources Consulted

5.1 Records Search

Records searches were conducted at the South Central Coastal Information Center (SCCIC) at California State University Fullerton on August 18 and November 9, 2020. The searches were conducted by SCCIC staff. A 0.25-mile records search radius was established. The purpose of the records searches was to identify previously-recorded cultural resources and any previously-conducted cultural investigations within the APE and records search radius. The scope of the records search included examination of SCCIC mapped resource locations, Department of Parks and Recreation (DPR) 523 site forms, and all other associated data for each previously- recorded cultural resource. Additional consulted sources included the Built Environment Resources Directory, which identifies resources listed on or determined eligible for listing on the NRHP, the CRHR, local registers, and the lists of California State Historical Landmarks, California Points of Historical Interest, and the Archaeological Determinations of Eligibility.

5.1.1 Previous Studies

Twenty-eight previous investigations have been conducted within the 0.25-mile records search radius. All studies occurred between 1976 and 2015 (Table 1). Twelve (12) of the investigations were conducted after 2000 (five [5] of these were completed in the last 10 years) and thirteen (13) of the investigations were conducted between 1976 and 2000. The investigations were surveys for several types of undertakings, including electric transmission, property assessments, land exchanges, and roads. Several planning studies were also conducted, but it does not appear pedestrian surveys were conducted as part of these efforts. Eleven (11) of the previous studies overlap with the APE, though several of these were architectural surveys and an ethnographic study. Three (3) of the previous investigations were archaeological surveys that overlapped the western end of the APE and northern half of the APE; these three surveys are more than ten years old. Roughly half of the APE (mostly the southern half) has not been previously surveyed for archaeological resources.

Table 1. Previous Investigations within 0.25-Mile of Project's Direct APE

Report No. (OR-)	Year	Author(s)	Title	Proximity to APE
126	1976	Desautels, Roger J.	Archaeological Survey Report on 12.03 Acres of Land (PTN NW 1/4 Sec 8 T5S R7W) Located in the Silverado/Ladd Canyon Area of the County of Orange	Overlaps
228	1978	Cottrell, Marie G.	Report of an Archaeological Resource Survey Conducted for a Proposed Sand and Gravel Operation in Silverado Canyon	Outside

286	1979	Bean, Lowell	Cultural Resources and the High Voltage Transmission Line From San Onofre to Santiago Substation and Black Star Canyon	Outside
305	1979	Schroth, Adella	The History of Archaeological Research on Irvine Ranch Property: the Evolution of a Company Tradition	Outside
394	1979	Anonymous	Archaeological Survey Report on the E.A. Lepe Property Located in the Ladd Canyon Area of the County of Orange	Outside
470	1979	Desautels, Roger J.	Archaeological Survey Report on an 8 Acre Parcel of Land North of Silverado Canyon Road in the Silverado Canyon Area of the County of Orange	Overlaps
581	1982	McCoy, Lesley C. and Kirkish, Alex N.	Cultural Resources Data Recovery Program for the 230kV Transmission Line Rights-of-way From San Onofre Nuclear Generating Station to Black Star Canyon and Santiago Substation and to Encina and Mission Valley Substations	Outside
746	1984	Bissell, Ronald M.	Cultural Resources Assessment Miyasako Property, Irvine Mesa Area, Orange County, California	Outside
1182	1991	Anderson, Robert A.	Historical Research Report for the El Cariso and Silverado Truck Trails	Outside
1187	1991	Gallegos, Dennis R.	Draft Report Cultural Resource Inventory for Portions of Parcels 13, 22, 23, 24, and 25 Trabuco District Land Exchange, Cleveland National Forest	Outside
1200	1991	Gallegos, Dennis R.	Cultural Resource Inventory for Portions of Parcels 13, 22, 23, 24, and 25 and National Register Evaluation for Sites CA-ORA-1015 and CA-ORA-1259 Trabuco District, Cleveland National Forest	Outside
1398	1994	Carbone, Larry A.	Cultural Resources Survey for Santiago Canyon Central Pool Water Facilities, Orange County, California	Outside
1439	1980	McCoy, Lesley C. and Phillips Roxana	National Register Assessment Program of Cultural Resources of the 230kV Transmission Line Rights-of-way From San Onofre Nuclear Generating Station to Black Star Canyon and Santiago Substation and to Encina and Mission Valley Substation	Outside
1441	1976	Leonard, Nelson N. III	Archaeological Report on the Silverado-Modjeska Planning Area Orange County California P.O. No. X 49525	Overlaps
2225	1978	Strozier, Hardy	The Irvine Company Planning Process and California Archaeology- A Review and Critique	Outside
2534	1976	Anonymous	Annual Report to The Irvine Company from Archaeological Research, Inc.	Outside

2698	2002	Bissell, Ronald M.	Cultural Resources Monitoring of Grading at 14401 Ladd Canyon Road, Silverado, Orange County, California	Outside
3273	2000	Whitney-Desautels, Nancy A., Beer, Robert M., and Couch, Joanne S.	Documentation of Seventeen Historic Buildings, Holtz Ranch, Orange County, California	Overlaps
3989	2011	Deering, Mark and Mason, Roger D.	Cultural Resources Documentation and Monitoring of Southern California Edison Access Roads During Maintenance by the Orange County Fire Authority, 2010 Orange County, California	Outside
4029	2010	Deering, Mark and Roger Mason	Cultural Resources Monitoring of Southern California Edison Access Roads Maintained by Orange County Fire Authority, Orange County, California (JPA E6088-0031; I.O. 305869)	Outside
4177	2003	Carrico, Richard	Historical And Architectural Assessment of the Holtz Ranch Complex, Orange County, California	Overlaps
4178	2012	Daly, Pamela	Historic Resources Assessment Report of St. Micheal's Abbey Project Silverado Canyon Road, Silverado, Orange County, CA. Owned by: Norbertine Fathers of Orange, Saint Michael's Abbey 19292 El Toro Road, Silverado, CA 92676	Overlaps
4314	2001	Desaulets, Nancy and Beer, Robert	Cultural Resource Assessment for the Silverado Canyon Ranch Project Tentative Tract No 16191	Overlaps
4315	2003	Beer, Robert	Cultural Resource Assessment Addendum Silverado Canyon Ranch Project	Overlaps
4316	2003	Carrico, Richard	Silverado Canyon Ranch Project Tentative Tract No. 16191	Overlaps
4317	2003	Carrico, Richard	Ethnographic Overview for the Silverado Canyon Ranch Project	Overlaps
4318	2012	Maxon, Patrick	Phase I Cultural Resources Assessment, St. Michael's Abbey Expansion Project	Overlaps
4561	2015	Fulton, Terri and Phil Fulton	Archaeology Sensitivity Assessment, Macpherson Preserve Property, County of Orange, California	Outside

5.1.2 Previously-Recorded Resources

Five (5) previously-recorded archaeological resources have been identified within the records search radius (table 2). These include two prehistoric sites, one multicomponent site, one historic-age ranch complex, and one historic-age trail. Three of the resources have not been evaluated for the NRHP, CRHR, or local listing. Two have been determined ineligible for the NRHP (see Table 2). Additionally, Bridge #55C 0174 is listed as Category 5 (ineligible) structures in the HBI database.

Table 2. Previously-Documented Resources within 0.25 Mile of the Project Direct APE					
Primary No. (P-36-)	**Trinomial (CA-SBR-)**	**Type**	**Description**	**Evaluation Status**	**Vicinity to Project Area**
P-30-000831	CA-ORA-000831	Prehistoric Site	Lithic flakes and cores	7R (Not evaluated)	Outside
P-30-001059	CA-ORA-001059/H	Multi-Component Site	Miyasako Site: Prehistoric lithic scatter and historic wells/cisterns.	7R (Not evaluated)	Outside
P-30-001305	CA-ORA-001305H	Historic-Age Site	Silverado Truck Trail	6Y (Determined ineligible for NR)	Outside
P-30-001630	CA-ORA-001630	Prehistoric Site	Four bedrock mortars	7R (Not evaluated)	Outside
P-30-177443	None	Historic-Age Site	Holtz Ranch Complex	6Z (Found ineligible for NR, CR, or Local designation through survey evaluation)	Overlaps

The boundary for one of the resources, the Holtz Ranch Complex, overlaps with the APE. This complex includes 17 historic-age buildings. None of the buildings are within the APE, as the resource boundary was derived from the parcel boundary rather than concentration of features.

5.2 Native American Consultation

AB 52 consultation is being conducted by the County and Native American consultation under Section 106 is being conducted by Caltrans. A search of the SLF was requested from the NAHC in January 2018. The NAHC reported the search of the SLF revealed negative results for the relevant USGS quadrangles. The NAHC provided a list of Native American individuals and groups to contact for Section 106 of the NHPA and AB-52 consultation.

The following Native American groups/individuals have been contacted to date:

- Campo Band of Mission Indians - Ralph Goff
- Gabrieleno Band of Mission Indians - Kizh Nation - Andrew Salas
- Juaneno Band of Mission Indians Acjachemen Nation - Belardes - Matias Belardes
- La Posta Band of Mission Indians - Gwendolyn Parada
- Pauma Band of Luiseno Indians -Pauma & Yuima Reservation - Temet Aguilar
- Viejas Band of Kumeyaay Indians - Julie Hagen
- Ewiiaapaayp Tribal Office - Michael Garcia

- Gabrieleno/Tongva San Gabriel Band of Mission Indians - Anthony Morales
- Juaneno Band of Mission Indians Acjachemen Nation - Belardes - Joyce Perry
- La Posta Band of Mission Indians - Javaughn Miller
- San Fernando Band of Mission Indians - John Valenzuela
- Sycuan Band of the Kumeyaay Nation - Cody J. Martinez
- Viejas Band of Kumeyaay Indians - Robert Welch
- Gabrielino Tongva Indians of California Tribal Council - Robert Dorame
- Gabrielino/Tongva Nation - Sandonne Goad
- Juaneno Band of Mission Indians - Sonia Johnston
- Juaneno Band of Mission Indians Acjachemen Nation - Romero - Teresa Romero
- Manzanita Band of Kumeyaay Nation - Angela Elliott Santos
- San Pasqual Band of Mission Indians - John Flores
- Sycuari Band of the Kumeyaay Nation - Lisa Haws
- Ewiiaapaayp Tribal Office - Robert Pinto

A summary of Native American outreach to date is presented in Table 3. Copies of correspondence conducted to date are included in Appendix C.

Table 3. Summary of Section 106 Coordination Communication

Recipient	Response
Ralph Goff Campo Band of Mission Indians	**March 9, 2021:** Request to initiate consultation sent by certified mail. **April 6, 2021:** A follow-up email including the 03/09/20 letter was sent. No reply to date.
Andrew Salas Gabrieleno Band of Mission Indians - Kizh Nation	**March 9, 2021:** Request to initiate consultation sent by certified mail. **April 6, 2021:** A follow-up email including the 03/09/20 letter was sent. No reply to date.

Matias Belardes Juaneno Band of Mission Indians Acjachemen Nation - Belardes	**March 9, 2021:** Request to initiate consultation sent by certified mail. **April 6, 2021:** A follow-up email including the 03/09/20 letter was sent. No reply to date.
Gwendolyn Parada La Posta Band of Mission Indians	**March 9, 2021:** Request to initiate consultation sent by certified mail. **April 6, 2021:** A follow-up email including the 03/09/20 letter was sent. No reply to date.
Temet Aguilar Pauma Band of Luiseno Indians - Pauma & Yuima Reservation	**March 9, 2021:** Request to initiate consultation sent by certified mail. **April 6, 2021:** A follow-up email including the 03/09/20 letter was sent. No reply to date.
Julie Hagen Viejas Band of Kumeyaay Indians	**March 9, 2021:** Request to initiate consultation sent by certified mail. **April 6, 2021:** A follow-up email including the 03/09/20 letter was sent. No reply to date.
Michael Garcia Ewiiaapaayp Tribal Office	**March 9, 2021:** Request to initiate consultation sent by certified mail. **April 6, 2021:** A follow-up email including the 03/09/20 letter was sent. No reply to date.
Anthony Morales Gabrieleno/Tongva San Gabriel Band of Mission Indians	**March 9, 2021:** Request to initiate consultation sent by certified mail. **April 6, 2021:** A follow-up email including the 03/09/20 letter was sent. No reply to date.
Joyce Perry Juaneno Band of Mission Indians Acjachemen Nation - Belardes	**March 9, 2021:** Request to initiate consultation sent by certified mail. **April 6, 2021:** A follow-up email including the 03/09/20 letter was sent. No reply to date.

Javaughn Miller La Posta Band of Mission Indians	**March 9, 2021:** Request to initiate consultation sent by certified mail. **April 6, 2021:** A follow-up email including the 03/09/20 letter was sent. No reply to date.
John Valenzuela San Fernando Band of Mission Indians	**March 9, 2021:** Request to initiate consultation sent by certified mail. **April 6, 2021:** A follow-up email including the 03/09/20 letter was sent. No reply to date.
Cody J. Martinez Sycuan Band of the Kumeyaay Nation	**March 9, 2021:** Request to initiate consultation sent by certified mail. **April 6, 2021:** A follow-up email including the 03/09/20 letter was sent. No reply to date.
Robert Welch Viejas Band of Kumeyaay Indians	**March 9, 2021:** Request to initiate consultation sent by certified mail. **April 6, 2021:** A follow-up email including the 03/09/20 letter was sent. No reply to date.
Robert Dorame Gabrielino Tongva Indians of California Tribal Council	**March 9, 2021:** Request to initiate consultation sent by certified mail. **April 6, 2021:** A follow-up email including the 03/09/20 letter was sent. No reply to date.
Sandonne Goad Gabrielino/Tongva Nation	**March 9, 2021:** Request to initiate consultation sent by certified mail. **April 6, 2021:** A follow-up email including the 03/09/20 letter was sent. No reply to date.
Sonia Johnston Juaneno Band of Mission Indians	**March 9, 2021:** Request to initiate consultation sent by certified mail. **April 6, 2021:** A follow-up email including the 03/09/20 letter was sent. No reply to date.

Teresa Romero Juaneno Band of Mission Indians Acjachemen Nation - Romero	**March 9, 2021:** Request to initiate consultation sent by certified mail. **April 6, 2021:** A follow-up email including the 03/09/20 letter was sent. No reply to date.
Angela Elliott Santos Manzanita Band of Kumeyaay Nation	**March 9, 2021:** Request to initiate consultation sent by certified mail. **April 6, 2021:** A follow-up email including the 03/09/20 letter was sent. No reply to date.
John Flores San Pasqual Band of Mission Indians	**March 9, 2021:** Request to initiate consultation sent by certified mail. **April 6, 2021:** A follow-up email including the 03/09/20 letter was sent. No reply to date.
Lisa Haws Sycuari Band of the Kumeyaay Nation	**March 9, 2021:** Request to initiate consultation sent by certified mail. **April 6, 2021:** A follow-up email including the 03/09/20 letter was sent. No reply to date.
Robert Pinto Ewiiaapaayp Tribal Office	**March 9, 2021:** Request to initiate consultation sent by certified mail. **April 6, 2021:** A follow-up email including the 03/09/20 letter was sent. No reply to date.
Ralph Goff Campo Band of Mission Indians	**March 9, 2021:** Request to initiate consultation sent by certified mail. **April 6, 2021:** A follow-up email including the 03/09/20 letter was sent. No reply to date.

6 Background

6.1 Environmental Setting

The Project is in Silverado Canyon, an east-west oriented canyon in the Santa Ana Mountains. Topographic features surrounding the APE include Irvine Lake to the west, Irvine Mesa to the southwest, Ladd Canyon to the northeast, and White Canyon to the east. Silverado Creek rises on the north slope of Modjeska Peak, flows northwest through the APE, then continues west before joining Santiago Creek. From there, the creek continues until emptying into Irvine Lake, roughly 3.5 miles northwest of the APE. Silverado Creek flows year round, generally high in the winter and early spring but decreasing to a trickle in summer and fall.

No active or potentially active fault zones have been mapped within or near the APE. Topography within the APE is relatively level, with a moderate slope from east to west overall. On the surface, the APE has been drastically altered from its natural state over the last 130 years. Silverado Canyon Road is a paved roadway bordered by gravel shoulders. The APE has been impacted by road construction, road maintenance, and the importing of gravels along the road edge.

The APE is largely barren of vegetation except for occasional low-lying grasses or shrubs and landscaped areas near the community center or equestrian facility. Prior to survey, a small fire burned most of the vegetation near the bridge, along the roadway, and on the slopes south of the APE. Plant species in the surrounding area are consistent with the chaparral; other species include Common buttonbush, Winter honeysuckle, Common ninebark, and Beach Plum. Bigleaf Maple and Dougals Fir are also present near the mouths of canyons. Within the APE, no riparian species were noted along Silverado Creek and here the creek channel is either devoid of vegetation (e.g., burned or rocky creek bank) or contains plants consistent with the surrounding area. Several California Buckeye and Sycamore trees are also present near the creek.

Several native mammalian species are present; these include mule deer, ground squirrel, mice, badger, and hare. The area also includes reptiles, such as garter snake, and various species of birds like magpie, blackbird, woodpecker, and raptors (Browne and Lowe 1981). Several species of fish are present in Silverado Creek. Several of the mammals, birds, and fish were important food sources for Native American groups.

Climate is Mediterranean, with cool, wet winters and warm, dry summers. Annual precipitation totals range from 20 to 30 inches in the higher parts of the range above 3,000 feet above mean sea level (amsl). Most of the precipitation falls between November and March. Snow falls during winter on the highest peaks.

6.2 Cultural Setting

6.2.1 Ethnography

The APE is in an area traditionally occupied by the Gabrieleño (also known as Tongva) and the 1.1.1.2 Luiseño/Juaneño. A summary of each is provided below.

1.1.1.1 Gabrieleño

Ethnographic accounts of Native Americans indicate that the Gabrieleño once occupied the southern Channel Islands, the Los Angeles Basin, much of Orange County, and extended as far east as western San Bernardino Valley. The Gabrieleño were one of several Takic-speaking groups in Southern California at the time of Spanish contact. The term "Gabrieleño" came from the period of missionization with Mission San Gabriel Arcangel, established in 1771.

The Gabrieleño occupied villages located along rivers and at the mouths of canyons. Populations ranged from 50 to 200 inhabitants. Residential structures within the villages were domed, circular, and made from thatched tule or other available wood. Gabrieleño society was organized by kinship groups, with each group composed of several related families who together owned hunting and gathering territories. Settlement patterns varied according to the availability of floral and faunal resources (Bean and Smith 1978b; McCawley 1996; Miller 1991).

The Gabrieleño were fisher/ hunter-gatherers that exploited a wide array of marine and terrestrial game as well as acorns, islay, pinion nut, and a wide array of seeds, roots, and other plant materials (Bean and Smith 1978b; McCawley 1996; Miller 1991). The Gabrieleño utilized plank canoes (te'aat), dugout canoes, nets, shellfish hooks, harpoons, and traps to exploit a wide array of deepsea fish, marine mammals, and shellfish. They hunted large game with bow and arrow, and used traps, nets and throwing sticks for small game. Plant processing was done with groundstone milling equipment, baskets and seed beaters. The Gabrieleño had a wide array of decorative and ceremonial objects made from steatite, brownware ceramics, bone, shell, asphaltum, and wood (Blackburn 1963).

By the late 18th century, Gabrieleño had significantly dwindled due to introduced European diseases and dietary deficiencies. Gabrieleño communities disintegrated as families were separated during the practice of missionization (Bean and Smith 1978b; McCawley 1996; Miller 1991). However, current descendants of the Gabrieleño remain in the Los Angeles Basin today. Although there are no federally-recognized Gabrieleño groups or tribes, State of California recognizes several groups of Gabrieleño descent, including the Tongva and Kizh Nation bands.

1.1.1.2 Luiseño/ Juaneño

The Luiseno and the Juaneño are considered very closely related tribes. Older studies had divided the two groups based on their relative locations to Spanish missions, and from perceived language differences. The Juaneño are Cupan speakers historically related to Mission San Juan

Capistrano. The Luiseno are Cupan speakers historically related to Mission San Luis Rey. The Luiseño and Juaneño share many similar cultural traits to the Gabrieleño. The Luiseno spoke a dialect of the Cupan group of the Takic language family (Bean and Shipek 1978). This language was part of the larger Uto-Aztecan language stock which migrated west from the Great Basin. The Luiseno and Juaneño homeland is present-day Orange and San Diego counties, the region south of the Aliso Creek drainage, east into the Santa Ana Mountains and the Temecula Valley, and the Palomar Mountains, and south along the coast to the San Luis Rey River drainage. There are six band of Luiseno people today.

The Luiseño lived in sedentary and independent village groups, each with specific subsistence territories encompassing hunting, food gathering, and fishing areas. Villages were usually located in valley basins, along creeks and streams adjacent to mountain ranges where water was available and where the villages would be protected from environmental conditions and potential enemies. Most inland populations had access to fishing and food gathering sites on the coast (Bean and Shipek 1978). There was some indication of seasonal movement from major villages to smaller camps and hamlets.

Villages were organized around an inherited chief (nó·t) who exerted sole control over the economy, religious rituals, and territorial matters within the village (Bean and Shipek 1978:555). Village consisted of partially subterranean residential structures made of brush or reeds, ramadas, partially subterranean sweat lodges, and a ceremonial structure (wámkiš). The chief at times would consult with an assistant chief, a council of elders and shamans on matters of religious practices and on environmental conditions effecting village life. Large villages may have had a complex behavioral and political structure due to their territorial size and economic control, while the smaller villages' political complexity was limited by their territorial size (Strong 1929; Bean and Shipek 1978:555).

The Luiseno, like other coastal Native American tribes, groups exploited a wide variety of plants and animals. The Luiseno were heavily dependent on acorns as well as other seeds and plants and a variety of large and small game inland and marine mammal, fish and shellfish along the coast. Acorns encompassed as much 50 percent of the Luiseño diet (White 1963). Acorns provided a reliable and abundant food source that was high in calories and could be easily stored for future use. Hunting activities were conducted both on an individual basis and/or organized into group activities, depending on seasonal factors and the game hunted. Tool technologies were organized around food collection, storage, and preparation strategies, which was reflected in the type, size, and quantity of food items gathered. Material culture included a variety of ground stone implements (manos, metates, mortar, pestles, etc.), brownware ceramics, basketry, decorative shell objects and jewelry, bone fish hooks, bone tools, and lithic tools (arrow projectile points, drills, scrapers, etc.). Luiseno traded coastal goods inland and traded coastal goods to interior tribes.

6.2.2 Prehistory

Humans have lived within California for at least 10,000 years before present (BP), and several chronologies have been proposed to divide different periods of habitation and development. Generally, the prehistory of the region is categorized into four major cultural periods: the Early Period (10,000 years BP to 7,000 years BP); the Millingstone Period (7,000 years BP to 3,000 years BP); the Intermediate Period (3,000 years BP to 1,500 years BP); and the Late Prehistoric Period (1,500 years BP to the point of Spanish contact [i.e., AD 1769]) (Wallace 1955; Warren 1968).

During the Early Period, hunters/gatherers utilized lacustrine settings where the abundant resources were available. Milling-related artifacts are not evident, but the atlatl and dart are common, indicating hunting of large and small game. It has been theorized that few scattered permanent settlements were established near large water sources, but a nomadic lifestyle was more common (Moratto 1984). Along the coast, people exploited shellfish and on-shore fishing. Some archaeologists have theorized of a Paleo-Coastal Tradition during this period (Byrd and Raab 2007).

Groundstone first appear in sites dating to the Millingstone Period. Hunting and gathering continue but with greater reliance on seed, nut and root procurement, especially acorns. Artifacts diagnostic to the period include core tools, groundstone, and cogged stones and discoidals. The exploitation of shellfish and other marine resources intensifies in the Intermediate Period. Tools used during this period included mortars and pestles to process plant-based foods, use of earth ovens to cook yucca and other starch-rich plants, and higher frequencies of side-notched projectile points (Glassow et al. 2007). Occupation of permanent or semi-permanent villages occurred in this period, as did reoccupation of seasonal sites. Takic speakers from the Central Valley entered Southern California around 3,500 BP (Sutton 2009).

During the Late Prehistoric Period, population densities were high and settlement in permanent villages increased (Erlandson 1994; Moratto 1984). Subsistence was based primarily on fauna, supplemented by some plant foods, mainly acorns. Larger villages served as trade centers and shell beads were introduced as currency, which was supported by a strong artistic tradition in bone, shell, stone, and basketry (Chartkoff and Chartkoff 1988:181). Shell beads became more stylized through time and took on a real value as currency. Regional subcultures also developed, each with their own geographical territory and language or dialect. These groups, bound by shared cultural traits, maintained a high degree of interaction, including extensive trade networks.

6.2.3 History

The first European to visit California was Spanish maritime explorer Juan Rodriguez Cabrillo in 1542. Cabrillo was sent north by the Viceroy of New Spain (Mexico) to look for the Northwest Passage. Cabrillo visited San Diego Bay, Catalina Island, San Pedro Bay, and the northern Channel Islands. The English adventurer Francis Drake visited the Miwok Native American

group at Drake's Bay or Bodega Bay in 1579. Sebastian Vizcaíno explored the coast as far north as Monterey in 1602. He reported that Monterey was an excellent location for a port (Castillo 1978). Vizcaíno also named San Diego Bay to commemorate Saint Didacus. The name began to appear on European maps of the New World by 1624 (Gudde 1998:332). The historic era is generally divided into three periods: the Spanish or Mission Period (1769 to 1821), the Mexican or Rancho Period (1821 to 1848), and the American Period (1848 to present).

6.2.3.1 Spanish Mission Period (1769–1821)

The return of Spanish presence in California was marked by the 1769 expedition led by Captain Gaspar de Portola (Treutlein 1968:291). Shortly thereafter, Spain began to establish a system of pueblos, presidios, ranchos, and missions along the California coast to bolster Spanish settlement. The Spanish Franciscan missionaries established a system of 21 missions along El Camino Real, and enacted the practice of missionization or forced removal and cultural education of the local Native American groups. The Missions of San Gabriel and San Fernando were founded in 1771 and 1797 respectively. Pueblo de Los Angeles was founded 1781, near the Los Angeles River in downtown Los Angeles (Starr 2015).

The Mission San Gabriel Arcángel was constructed in 1771 and was the beginning of the Spanish occupation of the area. Mission San Gabriel was the fourth Franciscan mission and was one of the most profitable because it established agricultural holdings beyond its physical base. Its land holdings stretched through the San Bernardino Valley to present-day Redlands.

The Gabrieleño were forcefully integrated into Mission San Gabriel. The Gabrieleño worked as farmers or craftsmen or grazing herds in the valley. Integration devastated the Native American groups through the introduction of diseases to which they had no immunity and through the loss of traditional lifestyles. The Spanish period began a decline in 1821, when Mexico gained independence from Spain and subsequently secularized the missions (Bean and Smith 1978; McCawley 1996; Miller 1991).

6.2.3.2 Mexican Rancho Period (1821–1848)

During the Spanish and subsequent Mexican periods, ranchos were a concession-granting system that awarded many military officers with large tracts of land for settlement and raising livestock. In 1821, the Mexican government closed the missions, and former mission lands were granted to retired soldiers and other Mexican citizens. Much of the land along the coast and in the interior valleys became part of Mexican ranchos used primarily as cattle ranches (Robinson 1948). In 1833, the government required land be set aside for each Native American family. But the requirement was quickly brushed aside by Californios who, with the help of those in power, acquired the church lands as grants. Native peoples were forced to work on the rancheros.

The ranchos established land-use patterns still used today. Rancho boundaries became the basis for California's land survey system and are found on modern maps and land titles. The rancheros

(rancho owners) patterned themselves after the landed gentry of New Spain, primarily raising cattle or sheep (Robinson 1948).

Several ranchos were established in present-day Orange County in or along the foothills of the Santa Ana Mountains. These include Rancho Cañón de Santa Ana (meaning "Canyon of Santa Ana"), a 13,328-acre land grant given to Bernardo Yorba in 1834; Rancho Potrero los Pinos, a 523-acre land grant given to Juan Forster on April 5, 1846; and Rancho Cañada de los Alisos, a 10,668-acre grant given to José Serrano on May 3, 1842. Rancho Lomas de Santiago (meaning "Hills of St. James") was granted to Teodocio Yorba on May 26, 1846. It was patented at 47,226 acres and became the northern end of the Irvine Ranch, which included parts of present-day Irvine and Tustin and extended into the Santa Ana Mountains, including portions of present-day Silverado (Spanish and Mexican Ranches of Orange County 2021; History of the Canyons 2021; A Brief History of Silverado 2021).

6.2.3.3 American Period (1848–Present)

In 1848, the Treaty of Guadalupe Hidalgo, which ended the Mexican-American War (1846–1848), marks the beginning of the American period. In 1850, California became the 31st state in the American Union. In the late nineteenth century, droughts decimated the cattle industry in Southern California, which resulted in the purchase of many of the ranchos by American investors (Cleland 1941). The Los Angeles & San Pedro Railroad was built in 1869 (Guinn 2015). It was the first railway built in Southern California.

On February 18, 1850, the County of Los Angeles was established as one of the 27 original counties in California. The City of Los Angeles grew exponentially in the late nineteenth and early twentieth century. The urban downtown sprawled outward incorporating much of the San Fernando Valley, major portions of the Los Angeles Basin, and parts of the Rancho Palos Verdes peninsula (Fogelson 1993:226–227). After World War II, when much of the Los Angeles Basin began to develop into dense residences and commercial areas for a burgeoning post-war economy. The Los Angeles basin has become a center for intensive and large-scale industry, logistics and warehousing, and petroleum development.

Continued growth led to the formation of new communities and counties, including Orange County, which broke away from Los Angeles County on March 11, 1889. Prominent Orange County-communities include Irvine and Santa Ana, both originally founded in the late 1700s. Both communities extended to the foothills of the Santa Ana Mountains and, in the early years, were reliant on ranching and agriculture.

6.2.3.4 Silverado

The area that became Silverado was originally known as Canon de la Madera (Timber Canyon). Its earliest resident was Francisco Soto, who built an adobe house there in the 1850s. In 1860, William Wolfskill bought the Rancho Lomas de Santiago at the entrance to Silverado Canyon. The Santa Ana range was already overgrazed, however, and could not sustain large herds of

livestock. The steep, hilly terrain also made large-scale farming impractical. A persistent drought complicated matters. In 1866, Benjamin and Thomas Flint, Llewellyn Bixby, and James Irvine acquired the rancho and it eventually became part of the Irvine Ranch (History of the Canyons 2021; A Brief History of Silverado 2021).

Sometime in the 1860s, Sam Shrewsbury took up residence in the canyon and began commercial production of honey. The canyon contained an assortment of sages, from white to black to purple to buckwheat, and the honey contained a variety of flavors and colors. Shrewsbury also built a kiln and burned limestone. Other settlers trickled in during the 1870s. Timber was also harvested from the canyon for use by the railroad (History of the Canyons 2021; A Brief History of Silverado 2021).

In 1877, two men from Santa Ana, Hank Smith and William Curry, found silver ore while hunting game. Assays came back at $60 a ton. Their promising discovery fueled a mining boom and more than 500 silver claims were filed in the canyon and surrounding hills (a year after, coal was found near the canyon's entrance, kicking off a short-lived coal mining boom in neighboring Santiago Canyon). The town of Silverado (Silverado is a Spanglish word for a place where silver is found) was founded in 1878 and boasted saloons, hotels, stores, and dozens of other businesses. The richest silver mine was claimed by Jonathon Dunlap, whose Blue Light Mine operated longer than any other Silverado mine (History of the Canyons 2021; A Brief History of Silverado 2021).

The mining boom was short-lived, a common theme across the West, and within ten years the mines had failed. Miners moved on to other promising discoveries and Silverado was left largely abandoned. In 1901, Joseph Holtz purchased a 112-acre ranch and in 1904 began construction of a homestead (located past remnants of the Carbondale coal mine). For more than 80 years, his family grew wheat, barley, alfalfa, English walnuts, avocadoes, and a variety of fruit. Holtz Ranch also had 160 bee colonies, a dairy and creamery, and raised turkeys and chickens (History of the Canyons 2021).

Silver mining surged at the Blue Light Mine, located at the end of Silverado Canyon, from 1920 to the 1950s. The Blue Light Mine (later known as the Silverado Mine Company) produced $47,000 worth of zinc, lead, gold and silver during the 1940s. The town of Silverado enjoyed a renaissance in the 1940s with establishment of a hot springs vacation retreat. Numerous weekend cabins were also built at that time. The town is currently home to a number of artists and craftsmen and boasts a population of about 2,000 residents, a general store, cafe, library, church, fire stations, community center, and post office (History of the Canyons 2021; A Brief History of Silverado 2021).

7 Field Methods and Results

Paleo Solutions archaeologist Liz Denniston conducted a pedestrian archaeological survey of the APE on February 12, 2021. Most of the survey area is located along or to the south of the road and around Silverado Canyon Bridge. The land surrounding the survey area consists of hills and mountains in all directions. The area along the south side of the road, near the bridge, and on the mountain south of the road were recently burned by wildfire. A fenced-in private area is to the northeast, and further behind that is St. Michael's Abbey. The area under the Silverado Canyon Bridge was also examined. Systematic survey transects were conducted in all accessible, unpaved areas at 3 to 5-meter intervals.

Ground visibility was between 80 to 100 percent in the southern portion of the APE and along the creek channel. A small cluster of dense vegetation remains in the northwest portion of the survey area and ground visibility here was between 25 to 50 percent. As noted, because of modern road development, there is very little visibility of the natural surface along the edges of the roadway. Here, sediments are largely imported gravels. Away from the road, natural sediments consist of alluvial, sandy soils. No archaeological resources were observed the APE during the field survey.

8 Archaeological Sensitivity Analysis

An archaeological sensitivity analysis was conducted to assess the potential of the APE to contain buried archaeological resources. The analysis was conducted using the results of the field survey, records search, and a review of geological and topographic maps of the APE and vicinity.

8.1 Survey Results

The APE consists of a stretch of road along Silverado Canyon Road. Unpaved surfaces comprise roughly fifty percent of the overall APE and the survey was primarily confined to unpaved areas to the south of the road and bridge (see Appendix D – Survey Photographs).

In unpaved areas, ground visibility was mostly free of vegetation and open, with a small area of constrained visibility present in the southern portion. Plants observed during the survey include various tree species, various species of brush, and several species of introduced grasses and forbs. Few animals were observed. No archaeological resources were identified within the APE as a result of the field survey.

8.2 Geological Setting

Past geologic activity, in addition to the location of known sites and historical and ethnographic information, can play a role in the likelihood of buried archaeological resources. Alluviation, colluviation, and/or aeolian processes may bury archaeological materials. The highest potential for buried archaeological materials generally occurs where young sediment deposits (i.e., Late Holocene-age or younger) occur near a natural water source, such as a river, lake, drainage, or natural spring. The potential diminishes with increasing landform age and increased distance from fresh water. Topography must be considered too. Steep topography is a detriment to the preservation of archaeological resources, particularly in active geologic environments or areas subject to significant erosion from rain and wind. Therefore, with some exceptions (e.g., cave sites and rock shelters), archaeological sensitivity generally decreases as slopes increase. Thus, areas that are relatively flat or have moderate slopes, contain relatively young surface sediments, and are near historic or even intermittent water sources have the highest potential to contain buried archaeological sites. Conversely, areas of steep slopes composed of older sediments (i.e., Pleistocene or older) that are distant from historic water sources have the least potential to contain subsurface cultural deposits.

The APE is situated in the bottom of Silverado Canyon in the Peninsular Ranges physiographic province. Elevations range from 1,132 feet amsl at the eastern end to 1,111 feet amsl at the western end. Topographic variation is minimal and makes the APE amenable to human occupation. Silverado Creek flows through the APE. Water sources, such as creeks, were important resources and influenced prehistoric and historic land use and settlement. The presence

of a year-round, natural water source in the APE would suggest high or moderate probability of seasonal prehistoric or historic settlement in the APE.

The natural geology of the APE primarily consists of gravelly loamy sand. The soil type is a mix of alluvial fan and toeslope soils. Within and along the creek channel, a moderate covering of silt is also present. The young alluvial fan deposits are typically Holocene-age (11,700 years ago to present) near the surface and transition to older, late Pleistocene-age (126,000 to 11,700 years ago) deposits at depth.

The soils of the APE are considered Urban land–Typic Xerorthents, terraced Windfetch complex, 2-9 percent slopes (NRCS 2019). This soil type is common to alluvial fan remnants in a heavily disturbed environment. The soil is mainly loam with an A Horizon up to 16 inches below the surface before becoming a loam clay B Horizon more deeply buried. Generally, Urban soils are more highly disturbed than native or natural soils and have an anthropogenic surface layer more than 50 centimeters thick on the surface produced by mixing, filling, or contamination (Bockheim 1974).

8.3 Records Search Data

The records search identified five (5) previously-recorded cultural resources within the records search radius (see Table 2). Previously-identified resources include two prehistoric sites, one multicomponent site, one historic-age ranch complex, and one historic-age trail. Three of the resources have not been evaluated for the NRHP, CRHR, or local listing. Two have been determined not eligible for the NRHP. The boundary of the Holtz Ranch Complex overlaps with the APE; however, the resource boundary was derived from the parcel boundary rather than concentration of features. No built environment features of the Holtz Ranch Complex are within the APE. Additionally, Bridge #55C 0174 is listed as Category 5 (ineligible) structures in the HBI database.

8.4 Summary of Archaeological Sensitivity Assessment

For the current Project, geologic and topographic maps were examined, as well as known resources in the area of the APE, to identify areas of low, moderate, or high sensitivity for prehistoric and historic archaeological resources. Soils in the APE are young alluvium with a moderate potential for archaeological resources. The APE, however, is heavily disturbed and developed from roadway construction associated with Silverado Canyon Road, as well as the Silverado Creek Bridge. Disturbances have likely removed and/or heavily impacted resources, if any were present, near the road alignment or bridge. The overall potential to encounter intact subsurface archaeological deposits within the Project APE is considered to be low.

9 Study Findings and Conclusions

A records search and archaeological field survey of the APE was conducted in support of the Project. The records search found that 28 previous investigations have been conducted and 5 previously-recorded cultural resources are within one mile of the APE. Several investigations overlap the APE and roughly half of the APE has been previously inventoried for archaeological resources. Previously-recorded archaeological resources include two prehistoric sites, one multicomponent site, a historic-age trail, and the historic-age Holtz Ranch Complex. The resources are unevaluated or ineligible for the NRHP. Additionally, Bridge #55C 0174 is listed as Category 5 (ineligible) structures in the HBI database. A search of the SLF with the NAHC had negative results.

Excavation associated with the Project will include removal of the existing steel bridge (to be completed in two stages); modification of the existing abutments and wingwalls; and construction of a wider concrete bridge, wingwalls and retaining walls. Maximum depth of ground disturbance is 25 feet below the lowest point of the streambed and 38 feet 6 inches below the roadway. The tallest proposed permanent feature would be roadway signage with a maximum height of 10 feet. Additional construction activities will include road widening near the bridge approaches; grading and contouring; scour countermeasures; and building a temporary construction access ramp. Existing guardrails will also be replaced. These activities will require limited to moderate ground disturbance in these areas.

No archaeological resources were identified within the APE as a result of the field survey. The majority of the APE has been heavily disturbed by the construction and maintenance of Silverado Canyon Road, as well as the bridge. The exact depth of modern disturbance is unknown, but it is likely extensive across the Project corridor. Because of these factors, the Project's potential to affect cultural resources is considered to be low.

If previously unidentified cultural materials are unearthed during construction, it is Caltrans' policy that work be halted in that area until a qualified archaeologist can assess the significance of the find. Additional archaeological survey will be needed if project limits are extended beyond the present survey limits.

10 References

Bean, Lowell J. and Florence C. Shipek. 1978. Luiseno. In California, edited by Robert F. Heizer, pp. 550-563. Handbook of North American Indians, Volume 8, William C. Sturtevant, general editor, Smithsonian Institution, Washington, D.C.

A Brief History of Silverado. 2021. https://www.ocregister.com/2007/10/23/a-brief-history-of-silverado-and-modjeska-canyons/, accessed 3/5/2021.

Bean, Lowell J. and Charles R. Smith. 1978. Gabrielino. Robert F. Heizer, vol. ed. In *Handbook of North American Indians, Volume 8: California*: 538–549. Smithsonian Institution, Washington, D.C.

Blackburn, T., 1963. Ethnohistoric Descriptions of Gabrielino Material Culture. UCLA Archaeological Survey Annual Reports 5:1-50.

Bockheim, J.G. 1974. Nature and Properties of Highly Distributed Urban Soils, Philadelphia, Pennsylvania. Paper presented at Division S-5, Soil Sciences Society of America Meeting, Chicago., Illinois.

Browne, D. E., and C. H. Lowe. 1981. California Coastal Scrub Community Biotic Communities of the Southwest. Electronic document: http://azconservation.org/downloads/biotic_communities_of_the_southwest_gis_data/.

Byrd, Brian F. and L. Mark Raab. 2007. Prehistory of the Southern Bight: Models for a New Millennium. In *California Prehistory: Colonization, Culture, and Complexity*, Terry L. Jones and Kathryn A. Klar, eds., pps. 215–227. AltaMira Press, New York.

Castillo, Edward D. 1978. The Impact of Euro-American Exploration and Settlement. In *Handbook of North American Indians Vol. 8*: *California*. Edited by Robert F. Heizer, pp. 99-127. William C. Sturtevant, general editor. Smithsonian Institution, Washington, D.C.

Chartkoff, J. L. and K. K. Chartkoff. 1988. The Archaeology of California. Stanford University Press, Stanford, California.

Cleland, Robert G. 1941. The Cattle on a Thousand Hills—Southern California, 1850–80. San Marino, California: Huntington Library.

Erlandson, Jon M. 1994. Early Hunter-Gatherers of the California Coast. Plenum Press, New York. 2012. A Land by the Sea: An Ocean View of California Archaeology. In Contemporary Issues in California Archaeology, edited by Terry L. Jones and Jennifer E. Perry, pp.21-48. Routledge, New York.

Glassow, Michael A., Lynn H. Gamble, Jennifer E. Perry, and Glenn S. Russell. 2007. Prehistory of the Northern California Bight and the Adjacent Transverse Ranges. In *California*

Prehistory: Colonization, Culture, and Complexity. Edited by Terry L. Jones and Kathryn A. Klar. AltaMira Press, Walnut Creek, California.

Gudde, E. G., 1949. California Place Names: The Origin and Etymology of Current Geographical Names. Revised from first edition, University of California Press, Berkeley, 1998.

Guinne, James M. 2015. *A History of California and an Extended History of Los Angeles*. Edited by Juergen Beck. Originally published in 1915. Historical Record Company, Los Angeles.

History of the Canyons. 2021. http://smrpd.org/about/silverado/, accessed 3/5/2021.

Kroeber, A.L. 1925. Handbook of the Indians of California. *Bureau of American Ethnology Bulletin No. 78*. U.S. Government Printing Office, Washington, D.C.

McCawley, William. 1996. *The First Angelinos: The Gabrielino Indians of Los Angeles.* A Malki Museum Press/ Ballena Press Cooperative Publication.

Miller, Bruce W. 1991. *The Gabrielino*. Sand River Press, Los Osos, California.

Moratto, Michael J. 1984. *California Archaeology*. Academic Press, New York.

Natural Resources Conservation Service (NRCS). 2018. Web Soil Survey – Carson, CA. website, https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx, accessed 7/24/19.

Robinson, W. W. 1948. *Land in California: The Story of Mission Lands, Ranchos, Squatters, Mining Claims, Railroad Grants, Land Scrip, Homestead*s. University of California Press, Berkeley, California.

Spanish and Mexican Ranchos of Orange County. 2021. https://web.archive.org/web/20110726003947/http://egov.ocgov.com/vgnfiles/ocgov/Clerk-Recorder/Docs/Archives/Spanish_and_Mexican_Ranchos.pdf, accessed 3/5/2021.

Starr, Kevin. 2015. *California: A History*. The Modern Library, New York.

Sutton, Mark Q. 2009. People and Language: Defining the Takic Expansion into Southern California. *Pacific Coast Archaeological Society Quarterly* 41(1/2):31-94.

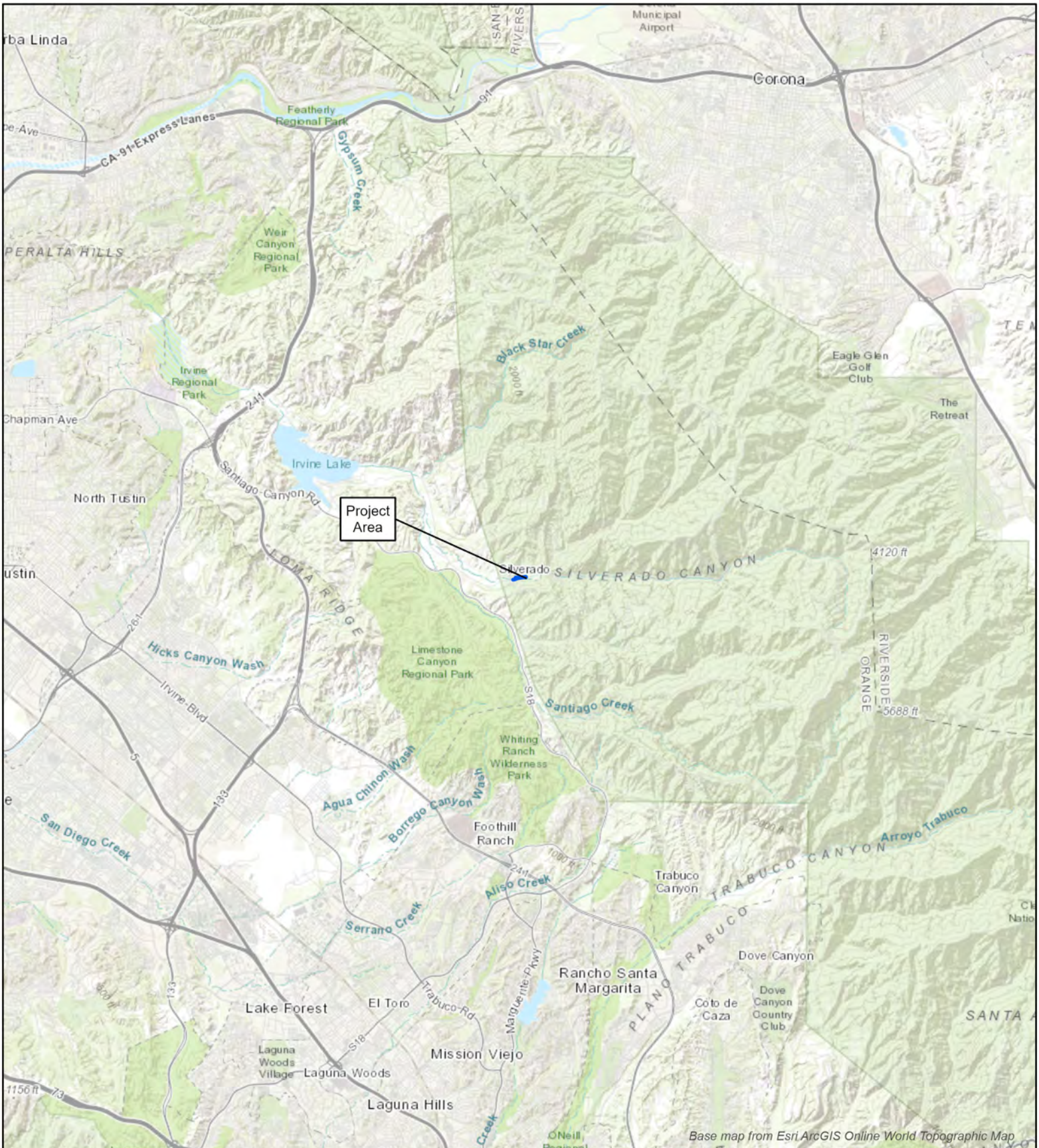
Treutlein, Theodore E. 1968. The Portolà Expedition of 1769-1770. *California Historical Society Quarterly* 47(4): 291.

Wallace, W. J. 1955. A Suggested Chronology for Southern California Coastal Archaeology. *Southwest Journal of Anthropology* 11(3): 214-230.

Warren, C.N. 1968. Cultural Traditions and Ecological Adaptation on the Southern California Coast in Archaic Prehistory in the Western United States. Cynthia Irwin-Williams (ed.). *Eastern New Mexico University Contributions in Anthropology* 1(3):1-14.

White, Raymond C. 1963. Luiseño Social Organization. University of California Publications in American Archaeology and Ethnology 48(2):91–194.

Appendix A: Figures


Project Area
Corona
Municipal Airport
Featherly Regional Park
CA-91-Express-Lanes
Gypsum Creek
Weir Canyon Regional Park
PERALTA HILLS
Irvine Regional Park
Chapman Ave
Black Star Creek
Eagle Glen Golf Club
The Retreat
Irvine Lake
Santiago Canyon Rd
North Tustin
Silverado
SILVERADO CANYON
4120 ft
LOMA RIDGE
Limestone Canyon Regional Park
Hicks Canyon Wash
Irvine Blvd
Santiago Creek
RIVERSIDE
ORANGE
5688 ft
Whiting Ranch Wilderness Park
Agua Chinon Wash
Borrego Canyon Wash
San Diego Creek
Foothill Ranch
Arroyo Trabuco
TRABUCO CANYON
Trabuco Canyon
Aliso Creek
Serrano Creek
Dove Canyon
Rancho Santa Margarita
PLANO TRABUCO
Coto de Caza
Dove Canyon Country Club
Lake Forest
El Toro
Trabuco Rd
Marguerite Pkwy
Laguna Woods Village
Laguna Woods
Mission Viejo
Laguna Hills
1156 ft
O'Neill Regional
Base map from Esri ArcGIS Online World Topographic Map
Project Area
N
0 1 2 3 4 5 Miles
Project Area
PALEO SOLUTIONS
EST. 2004
PALEONTOLOGICAL AND CULTURAL RESOURCES CONSULTING SERVICES



Silverado Canyon Road Bridge Replacement Project

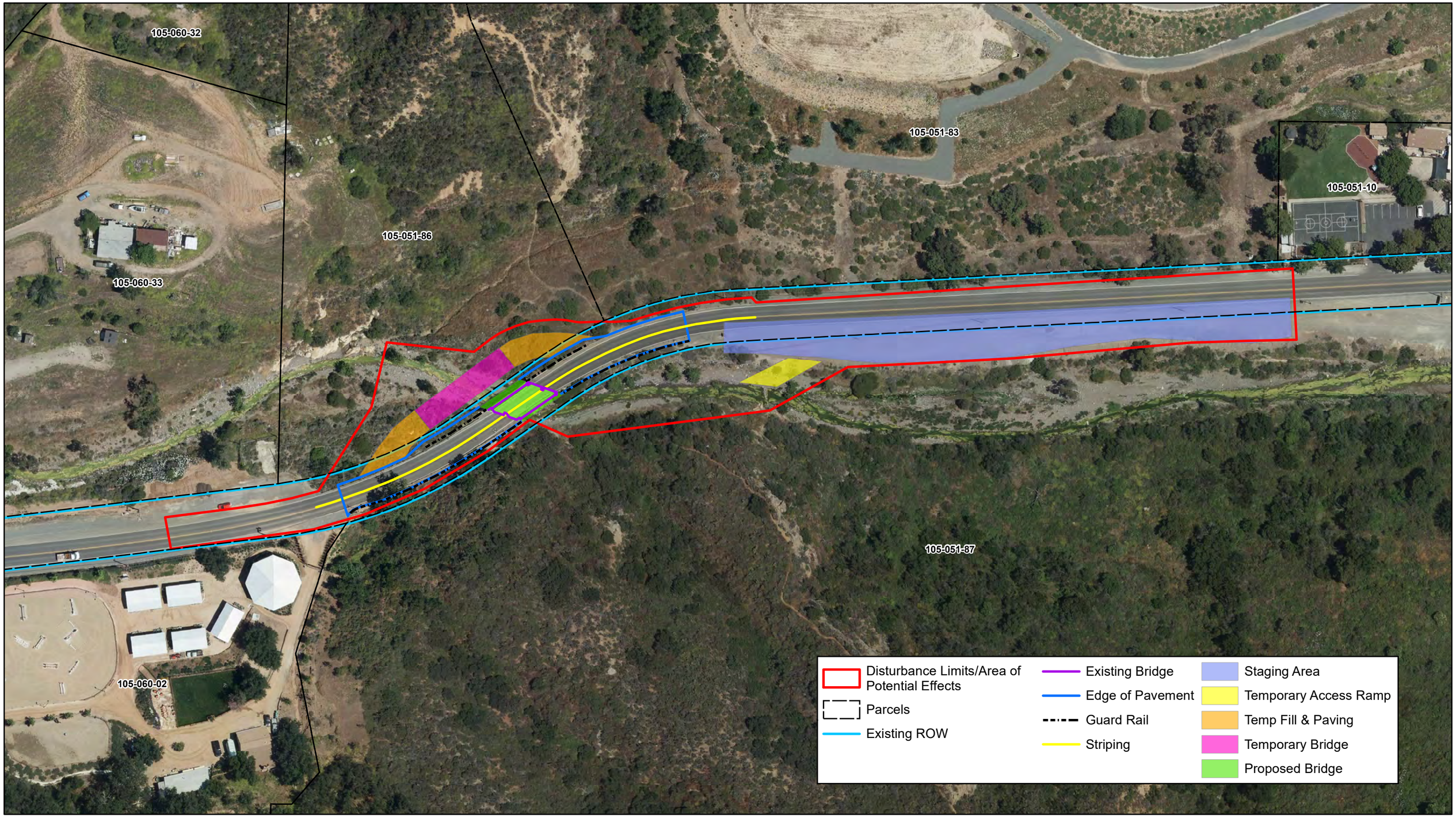
Project Area

USGS 7.5' Quadrangle

N 0 0.25 0.5 1 Miles



PALEO SOLUTIONS
EST. 2004
PALEONTOLOGICAL AND CULTURAL RESOURCES CONSULTING SERVICES



N

0 50 100 Feet

Approvals:

Jonathan M. Wright 5/19/2021

Jonathan Wright, Caltrans District 12 PQS — Date

5/19/2021

Tifini Tran, Caltrans District 12 Local Assistance Engineer — Date

Figure 3: Area of Potential Effects
Federal Project # BRLO-5955 (095)
Silverado Canyon Road Bridge over Silverado Creek (Bridge No. 55C-0174) Replacement Project
Orange County

Appendix B: Resumes



EVELYN CHANDLER

Principal Archaeologist

PROFILE

Ms. Chandler has over 27 years of experience in cultural resources management. She has developed an expertise in compliance with the cultural resources requirements of the California Environmental Quality Act (CEQA) and Section 106 of the National Historic Preservation Act (NHPA). She routinely manages cultural resources inventories, test excavations, and evaluations of archaeological sites and historic resources for eligibility to the National Register of Historic Places (NRHP) and California Register of Historical Resources (CRHR) for public and private clients. She is skilled in impact assessment and the development and implementation of mitigation measures, including data recovery and construction monitoring. Ms. Chandler regularly assists clients with coordination with Native American groups and with the State Historic Preservation Officer. She has authored numerous cultural resources technical reports, research designs, and cultural resource management plans, and has contributed to and reviewed a variety of environmental compliance documents including Environmental Impact Statements (EISs) and Environmental Impact Reports (EIRs). Ms. Chandler is qualified as a Principal Investigator under the Secretary of Interior's Professional Qualification Standards and the California Department of Transportation (Caltrans) standards for Professionally Qualified Staff for Archaeology and History.

EXPERIENCE & EDUCATION

Years of Experience
27 Years

Education
M.A. Archaeology and Heritage
University of Leicester, England

B.A. Anthropology/Sociology
University of Redlands

B.A. Political Science
University of Redlands

CERTIFICATIONS & TRAINING

- Consultation with the Office of Historic Preservation under Section 106 of the National Historic Preservation Act. Office of Historic Preservation, Ontario, California, 2016
- Native Use of Local Plants. University of California, Riverside (UCR) Extension Program, 2008
- Dillard Flintknapping Workshop. Desert Studies Center, Baker, 2008
- CEQA, the Subdivision Map Act, and Local Zoning Laws. UCR Extension, 2000

AFFILIATIONS

Listed as Principal Investigator on Statewide Cultural Resources Use Permit issued by the U.S. Bureau of Land Management (BLM)

PROJECT EXPERIENCE

San Dimas Canyon Road Phase I Archaeological Survey
Los Angeles County, Department of Public Works •
San Dimas Vicinity, Los Angeles County

Project Manager and Field Archaeologist. Ms. Chandler performed a cultural resources inventory of 1 acre along San Dimas Canyon Road at Mile Marker 0.28, just north of the cities of San Dimas and La Verne, California. Responsible for project management, records search, pedestrian survey, recordation of project area environmental data, logistics coordination, and report preparation. Project was completed in compliance with CEQA. All project activities were coordinated with the Forest Archaeologist of the Angeles National Forest, with the report submitted for Forest Service review.

14 Proposed Road Improvement Projects on the Angeles Forest Highway Heritage Resources Inventory
Los Angeles County, Department of Public Works •
Angeles National Forest, Los Angeles County

Cultural Resources Task Leader. Ms. Chandler was responsible for the oversight of field survey of 45 linear miles of roads and 10 acres of land along county-maintained roads within the Angeles National Forest. Also reviewed technical report and site records completed for sites identified during the field survey. All work was conducted under a survey permit issued by the U.S. Forest Service.

State Route 73 Widening
Caltrans District 12 • Newport Beach, Orange County, CA

Principal Archaeologist. Ms. Chandler was responsible for preparation of the Historic Property Survey Report (HPSR) and Archaeological Survey Report (ASR) for the proposed widening and lane additions of SR-73. Also, assisted Caltrans with Native American consultation with seven tribal groups under Assembly Bill (AB) 52 and Section 106 of the NHPA.

West Valley Connector Bus Rapid Transit Project
San Bernardino County Transportation Authority • Los Angeles and San Bernardino Counties, CA

Principal Investigator. Ms. Chandler was responsible for updating a Historic Property Survey Report (HPSR), Historic Resources Evaluation Report (HRER),

and Archaeological Survey Report (ASR) for this 35-mile long BRT project that would provide speed and quality improvements to the public transit system within the corridor and increase ridership. The proposed project would address the growing traffic congestion and travel demands of the one million people that would be added to the area by 2030. Tasks included records searches and field surveys of new project components, preparation of updated Department of Parks and Recreation (DPR) 523 site record forms, NRHP and CRHR site eligibility evaluations, and preparation of portions of the EIR and Cultural Resources Mitigation and Monitoring Plan (CRMMP). Ms. Chandler also assisted SBCTA and the Federal Transit Administration (FTA) with Native American consultation under Section 106 of the NHPA and AB 52.

Interstate 15 Express Lanes: Revalidation #14 and Revalidation #16
Riverside County Transportation Commission • Riverside County, CA

Principal Investigator. Ms. Chandler was the primary author of a Supplemental Historic Property Survey Report (SHSPR) as a result of changes to the Area of Potential Effect (APE). As a result of the SHPSR, Caltrans, pursuant to Section 106 PA Stipulation IX.A and as applicable PRC 5024 MOU Stipulation IX.A.2, has determined a Finding of No Historic Properties Affected is appropriate for this undertaking because there are no historic properties within the revised APE.

Link Union Station
Los Angeles County Metropolitan Transportation Authority • Los Angeles, CA

Principal Investigator. Ms. Chandler updated an Archaeological Survey Report (ASR), revised a Finding of Effect (FOE) Report and Evaluation Report, drafted a Cultural Resources Mitigation and Monitoring Report (CRMMP), and is overseeing archaeological monitoring during ground-disturbing activities. The Federal Railroad Administration (FRA) and Metro are proposing the project to transform Union Station from a "stub-end tracks station" into a "run-through tracks station" with a new passenger concourse that would improve the efficient of the station and accommodate future growth and transportation demands in the region. The purpose of the FOE was to document that FRA has applied the criteria of adverse effect to determine the impacts on Link Union Station on the historic properties identified in the Area of Potential Effect (APE) based on the types of effects anticipated for alternatives considered. The FRA is the federal agency with responsibility to comply with Section 106 of the National Historic Preservation Act of 1966 (NHPA) and is implementing regulations contained in 36 Code of Federal Regulations (CFR) as they pertain to federally funding undertakings and their impacts on historic properties. Metro is the applicable for federal assistance and is the lead agency pursuant to the California Environmental Quality Act (CEQA). Caltrans agreed to be a cooperating agency under NEPA and a responsible agency under CEQA.

Division 20 Portal Widening/Turnback Facility Project
Los Angeles County Metropolitan Transportation Authority • Los Angeles, CA

Principal Investigator. Ms. Chandler authored an updated archaeological assessment for proposed facility improvements to accommodate future service increases on the Metro Red and Purple Lines. These improvements, which include portal and new tracks and switches, will allow trains to provide faster service times to Union Station. As part of the update, Ms. Chandler oversaw a records search at the South Central California Information Center, a pedestrian field survey, and AB 52 Native American consultation. She also contributed to and provide QA/QC review of the cultural resources technical report and sections of the EIR. She is currently overseeing archaeological monitoring during ground-disturbing activities. The Metro Division 20 rail yard, located at 300 S. Santa Fe Avenue in Los Angeles, serves as a maintenance and operations facility for Metro's Red and Purple line trains. Metro is proposing facility improvements to accommodate future service increases on the Metro Red and Purple Lines. These improvements, which include widening the portal and new tracks and switches, will allow trains to provide faster service times at Union Station.

State Route 55 Improvement from Interstate 5 to State Route 91 Project
Caltrans District 12 • Orange County, CA

Principal Investigator. Ms. Chandler was responsible for preparation of the Archaeological Survey Report (ASR) for the proposed improvements to a 7.5-mile segment of SR 55. The purpose of the ASR was to identify all archaeological resources in the Area of Potential Effect (APE) that could be affected by the project. The total length of the APE is 7.5-miles, and the total area of the APE is 820.7 acres. She also assisted Caltrans District 12 with Native American consultation with 17 tribal groups under Assembly Bill (AB) 52 and Section 106 of the NHPA. Caltrans, in cooperation with the Orange County Transportation Authority (OCTA), is proposing to improve State Route 55 from just north of Interstate 5 to just south of State Route 91 within the cities of Anaheim, Santa Ana, Orange, and Tustin. The proposed project adds general-purpose and auxiliary lanes in each direction at strategic locations along SR 55 between just north of the I-5/SR 55 Interchange and just south of the SR 55/SR 91 Interchange.

Interstate 15 Express Lanes: Electrical Connections Project
Riverside County Transportation Commission • Riverside County, CA

Principal Investigator. Ms. Chandler was the primary author of a Cultural Resources Desktop Assessment that presented the results of a California Historical Resources Information System (CHRIS) records search at the Eastern Information Center. The cultural resources study was conducted in compliance with the California Environmental Quality Act (CEQA) and Section 106 of the National Historic Preservation Act (NHPA) and in accordance with the requirements of the California Department of Transportation (Caltrans) and Riverside County Transportation Commission (RCTC), to determine if the project has the potential to affect known cultural resources situated within or immediately adjacent to 14 project locations where electrical connections are proposed. RCTC, in cooperation with Caltrans and Southern California Edison (SCE), proposes to modify existing or install new electrical handholes and pedestals, and replace underground service cables connecting them in 14 locations along the I-15 freeway as part of the larger I-15 ELP. The I-15 ELP consists of the construction of Tolled Express Lanes (TEL) along a 14.6-mile segment of I-15 in Riverside County to meet current and future travel demands.



LIZ DENNISTON

Principal Archaeologist
Cultural Resources Specialist

PROFILE

Ms. Denniston has more than 22 years of experience in cultural resource management, specializing in California archaeology and human osteology. She has managed and participated in all aspects of cultural resources field and laboratory work throughout California, including surveying, monitoring, excavation, laboratory analysis, and curation of cultural artifacts, as well as osteological and forensic recovery and analysis of human remains, documentation and recovery of associated personal artifacts, and repatriation of several hundred human remains in accordance with Native American Graves Protection and Repatriation Act (NAGPRA). Ms. Denniston's project management experience regularly assists clients with the successful completion of cultural resources technical reports, coordination with Native American groups and organizations, as well as with the State Historic Preservation Officers. She has authored numerous cultural resources technical reports and has contributed to a variety of environmental compliance documents including Environmental Impact Statements (EISs) and Environmental Impact Reports (EIRs). She has supervised and directed crews of varying sizes through the organization, planning, and execution of field projects in compliance with Section 106 of the National Historic Preservation Act (NHPA) and California Environmental Quality Act (CEQA).

EXPERIENCE & EDUCATION

Years of Experience
22 years

Education
M.A. Anthropology
California State University, Los Angeles

B.A. Anthropology
Minnesota State University, Moorhead

G.I.S. Certification
University of California, Riverside Extension

CERTIFICATIONS & TRAINING

- Register of Professional Archaeologists #2554340
- Riverside County Certified Archaeologist
- California Environmental Quality Act (CEQA)

PUBLICATIONS

Master's Thesis. "A Test of the Berrizbeitia Method of Sex Determination via Metric Analysis of the Radial Head." Presented to California State University, Los Angeles. 2007

PROJECT EXPERIENCE

State Route 91/Acacia Court to Central Avenue Improvement Project Approval and Environmental Document (PA&ED)
Los Angeles Metropolitan Transportation Authority
• Compton, Los Angeles County, CA

Principal Investigator/Project Manager. Ms. Denniston is currently drafting a Historic Property Survey Report (HPSR) that will include the results of a cultural resources record research and background research. The HPSR will include a background context, identify known resources within and near the project area, and assess the potential of the area to contain prehistoric and historic-age archaeological resources and historic-age architectural resources. She is also conducting a review of the Caltrans Bridge Inventory and other Caltrans in-house records and will analyze historic maps and aerial photographs of the project Area of Potential Effects (APE) and assisting Metro and Caltrans with Native American consulting under Assembly Bill (AB) 52 and Section 106 of the National Historic Preservation Act (NHPA). Metro, in cooperation with Caltrans District 7 and the Gateway Cities Council of Governments (CGCOG), is advancing the development and implementation on State Route 91 between Acacia Court and Central Avenue to reduce congestion, improvement freeway-to-local street interchange operations, and enhance accessibility, safety, and multimodal integration for pedestrian, bicycle, transit, and motorist needs.

Stormwater Mitigation along State Route 60 (EA32040)
Caltrans District 7 • Los Angeles County, CA

Principal Investigator. Ms. Denniston was the primary author of a Cultural Resources Constraints Analysis Memorandum that presented the methods and results of a records search, literature review, and field survey in support of the preparation of the Project Report (PR) and Environmental Document (ED). The memorandum was completed in accordance with the California Environmental Quality Act (CEQA), National Environmental Policy Act (NEPA), Section 106 of the National Historic Preservation Act (NHPA), the Caltrans Standard Environmental Reference (SER) Volume II (Handbook) on Cultural Resources, the Caltrans Project Development Procedures Manual, the Highway Design Manual, Los Angeles County, and pertinent city regulations. Caltrans District 7 proposes to implement storm water mitigation along SR 60, from post mile (PM) 11 to PM 20, between Peck Road and Nogales Street in Los Angeles County,

California. Stormwater runoff in the project area currently discharges into the San Gabriel River Watershed, specifically the San Gabriel River, Coyote Creek, and San Jose Creek, which are impaired water bodies subject to Total Maximum Daily Loads (TMDL) under Section 303(d) of the Federal Clean Water Act. The purpose of the project is to capture and treat storm water runoff along SR-60 through implementation of roadside best management practice (BMP) devices.

US Route 405 Pass Corridor Improvement Project
Los Angeles Metropolitan Transportation Authority • Los Angeles County, CA

Principal Investigator. Ms. Denniston was the primary author of a Cultural Resources Constraint Analysis in support of a Project Study Report and Project Development Support (PSR-PDS) prepared for the Los Angeles County Metropolitan Transportation Authority, in cooperation with Caltrans District 7 and the South Bay Cities Council of Governments. This initial research provides and overview of available information regarding documented cultural resources within the study area, as well as an indication of the archaeological sensitivity of the area. The project is proposing improvements along the I-405 Corridor from El Segundo Boulevard to the Artesia Boulevard on-ramp, including the addition of a general-purpose lane and/or auxiliary lane within the Caltrans right of way.

Link Union Station
Los Angeles County Metropolitan Transportation Authority • Los Angeles, CA

Principal Investigator. Ms. Denniston was responsible for contributing and applying all requested edits to the Cultural Resources Monitoring and Management Plan (CRMMP). Pursuant to the requirements of CEQA, Metro prepared an EIR that evaluated the potential impacts of the proposed project on existing cultural, historical, and tribal cultural resources within the project study area and proposed mitigation measures to reduce impacts on said resources to a level less than significant. Mitigation Measure HIST-5 required the preparation of a CRMMP. The CRMMP provided guidance for how Metro and its contractors shall carry out requirements for archaeological and Native American monitoring of ground-disturbing construction activities, identified topics for Worker Environmental Awareness Program (WEAP) training, and presented guidelines for artifact curation. The Federal Railroad Administration (FRA) and Metro are proposing the project to transform Union Station from a "stub-end tracks station" into a "run-through tracks station" with a new passenger concourse that would improve the efficient of the station and accommodate future growth and transportation demands in the region. The FRA is the federal agency with responsibility to comply with Section 106 of the National Historic Preservation Act of 1966 (NHPA) and is implementing regulations contained in 36 Code of Federal Regulations (CFR) as they pertain to federally funding undertakings and their impacts on historic properties. Metro is the applicable for federal assistance and is the lead agency pursuant to the California Environmental Quality Act (CEQA). Caltrans agreed to be a cooperating agency under NEPA and a responsible agency under CEQA.

Division 20 Portal Widening
Los Angeles Metropolitan Transportation Authority • Los Angeles, CA

Principal Investigator. Ms. Denniston authored the Cultural Resources Monitoring and Mitigation Plan for proposed facility improvements to accommodate future service increases on the Metro Red and Purple Lines. These improvements, which include portal and new tracks and switches, will allow trains to provide faster service times to Union Station. She also contributed to and provide QA/QC review of the cultural resources technical report and sections of the EIR. The Metro Division 20 rail yard, located at 300 S. Santa Fe Avenue in Los Angeles, serves as a maintenance and operations facility for Metro's Red and Purple line trains. Metro is proposing facility improvements to accommodate future service increases on the Metro Red and Purple Lines.

North Hollywood to Pasadena Bus Rapid Transit Planning and Environmental Study
Los Angeles Metropolitan Transportation Authority • Los Angeles, CA

Principal Investigator/Project Manager. Ms. Denniston is currently drafting an Archaeological Survey Report (ASR) that will be prepared to document the methods and results of the records search and archaeological field survey. The report will be prepared following the guidelines specified in Archaeological Resources Management Reports (ARMR): Recommended Contents and Format issued by the Office of Historic Preservation (OHP) and will be prepared to comply with the cultural resources requirements of the California Environmental Quality Act (CEQA). She has overseen a limited archival research to assist in the identification and evaluation of historic-age archaeological resources, a cultural resources record search at the South Central Coastal Information Center, and a Class III/Phase I archaeological survey along the route. She has also assisted Metro with Native American consultation in compliance with AB 52. The North Hollywood to Pasadena Bus Rapid Transit Corridor (NoHo to Pasadena BRT) extends approximately 18 miles and is a key regional connection between the San Fernando and San Gabriel Valleys with connections to the Metro Red, Orange and Gold Lines, as well as Metrolink and other municipal bus lines.

US 101 Pass Corridor Improvement Project
Private Client • Los Angeles County, CA

Principal Investigator. Ms. Denniston was the primary author of a Cultural Resources Constraints Analysis in support of a Project Study Report and Project Development Support prepared for Caltrans review and approval. This initial research provided an overview of available information regarding documented cultural resources within the search area, as well as an indication of the archaeological sensitivity of the area. This memorandum was completed in accordance with the Caltrans Guidelines for Preparing a Preliminary Environmental Analysis Report (PEAR). Any additional work will be conducted in compliance with the California Environmental Quality Act (CEQA), National Environmental Policy Act (NEPA), Section 106 of the National Historic Preservation Act (NHPA) and Caltrans' Project Development Procedure Manual (PDPM) –Appendix S –Preparation Guidelines for Project Study Report –Project Development Support Project Initiation Document.

Alameda Corridor Extension
Alameda Construction Authority • Los Angeles County, CA

Lead Osteologist. Ms. Denniston served as lead osteologist for the excavation and analysis of 73 burial features containing over 140 individuals. Daily coordination efforts included ACE construction crew and project directors, Native American representatives from multiple factions of the Gabrielino-Tongva Tribe, and in-house project management team. All remains, and funerary items were reburied off site at a location agreed upon by all involved parties. Managed project osteological excavations and laboratory analysis, performed GIS analysis, and produced report figures.

Appendix C: Native American Correspondence

NATIVE AMERICAN HERITAGE COMMISSION
Environmental and Cultural Department
1550 Harbor Blvd., Suite 100
West Sacramento, CA 95691
(916) 373-3710

January 9, 2018

Andrew Belcourt
ICF

Sent by E-mail: Andrew.belcourt@icf.com

RE: Proposed OCPW Silverado Bridge Replacement Project, near the Community of Santiago Canyon; El Toro and Santiago Peak USGS Quadrangles, Orange County, California

Dear Mr. Belcourt:

A record search of the Native American Heritage Commission (NAHC) *Sacred Lands File* was completed for the area of potential project effect (APE) referenced above with negative results however the area is sensitive for cultural resources. Please note that the absence of specific site information in the *Sacred Lands File* does not indicate the absence of Native American cultural resources in any APE.

Attached is a list of tribes culturally affiliated to the project area. I suggest you contact all of the listed Tribes. If they cannot supply information, they might recommend others with specific knowledge. The list should provide a starting place to locate areas of potential adverse impact within the APE. By contacting all those on the list, your organization will be better able to respond to claims of failure to consult. If a response has not been received within two weeks of notification, the NAHC requests that you follow-up with a telephone call to ensure that the project information has been received.

If you receive notification of change of addresses and phone numbers from any of these individuals or groups, please notify me. With your assistance we are able to assure that our lists contain current information. If you have any questions or need additional information, please contact via email: gayle.totton@nahc.ca.gov.

Sincerely,

Gayle Totton, M.A., PhD.
Associate Governmental Program Analyst
(916) 373-3714

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Native American Heritage Commission
Native American Contact List
Orange County
1/9/2018

Campo Band of Mission Indians
Ralph Goff, Chairperson
36190 Church Road, Suite 1 — Kumeyaay
Campo, CA, 91906
Phone: (619) 478 - 9046
Fax: (619) 478-5818
rgoff@campo-nsn.gov

Ewiiaapaayp Tribal Office
Robert Pinto, Chairperson
4054 Willows Road — Kumeyaay
Alpine, CA, 91901
Phone: (619) 445 - 6315
Fax: (619) 445-9126

Ewiiaapaayp Tribal Office
Michael Garcia, Vice Chairperson
4054 Willows Road — Kumeyaay
Alpine, CA, 91901
Phone: (619) 445 - 6315
Fax: (619) 445-9126
michaelg@leaningrock.net

Gabrieleno Band of Mission Indians - Kizh Nation
Andrew Salas, Chariperson
P.O. Box 393 — Gabrieleno
Covina, CA, 91723
Phone: (626) 926 - 4131
gabrielenoindians@yahoo.com

Gabrieleno/Tongva San Gabriel Band of Mission Indians
Anthony Morales, Chairperson
P.O. Box 693 — Gabrieleno
San Gabriel, CA, 91778
Phone: (626) 483 - 3564
Fax: (626) 286-1262
GTTribalcouncil@aol.com

Gabrielino /Tongva Nation
Sandonne Goad, Chairperson
106 1/2 Judge John Aiso St., — Gabrielino
#231
Los Angeles, CA, 90012
Phone: (951) 807 - 0479
sgoad@gabrielino-tongva.com

Gabrielino Tongva Indians of California Tribal Council
Robert Dorame, Chairperson
P.O. Box 490 — Gabrielino
Bellflower, CA, 90707
Phone: (562) 761 - 6417
Fax: (562) 761-6417
gtongva@gmail.com

Gabrielino-Tongva Tribe
Charles Alvarez,
23454 Vanowen Street — Gabrielino
West Hills, CA, 91307
Phone: (310) 403 - 6048
roadkingcharles@aol.com

Jamul Indian Village
Erica Pinto, Chairperson
P.O. Box 612 — Kumeyaay
Jamul, CA, 91935
Phone: (619) 669 - 4785
Fax: (619) 669-4817

Juaneno Band of Mission Indians
Sonia Johnston, Chairperson
P.O. Box 25628 — Juaneno
Santa Ana, CA, 92799
sonia.johnston@sbcglobal.net

Juaneno Band of Mission Indians Acjachemen Nation - Belardes
Matias Belardes, Chairperson
32161 Avenida Los Amigos — Juaneno
San Juan Capisttrano, CA, 92675
Phone: (949) 293 - 8522

Juaneno Band of Mission Indians Acjachemen Nation - Belardes
Joyce Perry, Tribal Manager
4955 Paseo Segovia — Juaneno
Irvine, CA, 92603
Phone: (949) 293 - 8522
kaamalam@gmail.com

This list is current only as of the date of this document. Distribution of this list does not relieve any parson of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resource Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources assessment for the proposed OCPW Silverado Bridge Replacement Project, Orange County.

Native American Heritage Commission
Native American Contact List
Orange County
1/9/2018

Juaneno Band of Mission Indians Acjachemen Nation - Romero
Teresa Romero, Chairperson
31411-A La Matanza Street — Juaneno
San Juan Capistrano, CA, 92675
Phone: (949) 488 - 3484
Fax: (949) 488-3294
tromero@juaneno.com

La Posta Band of Mission Indians
Gwendolyn Parada, Chairperson
8 Crestwood Road — Kumeyaay
Boulevard, CA, 91905
Phone: (619) 478 - 2113
Fax: (619) 478-2125
LP13boots@aol.com

La Posta Band of Mission Indians
Javaughn Miller, Tribal Administrator
8 Crestwood Road — Kumeyaay
Boulevard, CA, 91905
Phone: (619) 478 - 2113
Fax: (619) 478-2125
jmiller@LPtribe.net

Manzanita Band of Kumeyaay Nation
Angela Elliott Santos, Chairperson
P.O. Box 1302 — Kumeyaay
Boulevard, CA, 91905
Phone: (619) 766 - 4930
Fax: (619) 766-4957

Pauma Band of Luiseno Indians - Pauma & Yuima Reservation
Temet Aguilar, Chairperson
P.O. Box 369 — Luiseno
Pauma Valley, CA, 92061
Phone: (760) 742 - 1289
Fax: (760) 742-3422

San Fernando Band of Mission Indians
John Valenzuela, Chairperson
P.O. Box 221838 — Kitanemuk
Newhall, CA, 91322 — Serrano
Phone: (760) 885 - 0955 — Tataviam
tsen2u@hotmail.com

San Pasqual Band of Mission Indians
John Flores, Environmental Coordinator
P. O. Box 365 — Kumeyaay
Valley Center, CA, 92082
Phone: (760) 749 - 3200
Fax: (760) 749-3876
johnf@sanpasqualtribe.org

San Pasqual Band of Mission Indians
Allen E. Lawson, Chairperson
P.O. Box 365 — Kumeyaay
Valley Center, CA, 92082
Phone: (760) 749 - 3200
Fax: (760) 749-3876
allenl@sanpasqualtribe.org

Sycuan Band of the Kumeyaay Nation
Cody J. Martinez, Chairperson
1 Kwaaypaay Court — Kumeyaay
El Cajon, CA, 92019
Phone: (619) 445 - 2613
Fax: (619) 445-1927
ssilva@sycuan-nsn.gov

Sycuan Band of the Kumeyaay Nation
Lisa Haws, Cultural Resources Manager
1 Kwaaypaay Court — Kumeyaay
El Cajon, CA, 92019
Phone: (619) 312 - 1935
lhaws@sycuan-nsn.gov

This list is current only as of the date of this document. Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resource Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources assessment for the proposed OCPW Silverado Bridge Replacement Project, Orange County.

Viejas Band of Kumeyaay Indians
Julie Hagen,
1 Viejas Grade Road
Alpine, CA, 91901
Phone: (619) 445 - 3810
Fax: (619) 445-5337
jhagen@viejas-nsn.gov

Kumeyaay

Viejas Band of Kumeyaay Indians
Robert Welch, Chairperson
1 Viejas Grade Road
Alpine, CA, 91901
Phone: (619) 445 - 3810
Fax: (619) 445-5337
jhagen@viejas-nsn.gov

Kumeyaay

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This list is only applicable for contacting local Native Americans with regard to cultural resources assessment for the proposed OCPW Silverado Bridge Replacement Project, Orange County.

DEPARTMENT OF TRANSPORTATION
DISTRICT 12, DIVISION OF ENVIRONMENTAL PLANNING
1750 East 4th Street, Suite 100
Santa Ana CA 92705
PHONE (657) 328-6000
TTY 711
www.dot.ca.gov

Making Conservation a California Way of Life.

March 19, 2021

Temet Aguilar, Chairperson
Pauma Band of Luiseno Indians -Pauma & Yuima Reservation
P.O. Box 369
Pauma Valley, CA, 92061

Dear Chairperson Aguilar:

The County of Orange Public Works (County), in cooperation with the California Department of Transportation (Caltrans) and the Federal Highway Administration (FHWA) proposes to replace the Silverado Canyon Road Bridge over Silverado Creek (Bridge No. 55C-0174) (project). The project would utilize federal funding from the Federal Highway Administration (FHWA) for the proposed improvements; as a result, Caltrans must comply with Section 106 of the National Historic Preservation Act (36 CFR §800) on FHWA's behalf. The County is the lead agency under the California Environmental Quality Act (CEQA), and Caltrans is the lead agency under the National Environmental Policy Act (NEPA). This notification is intended to ensure compliance with requirements in Section 106.

Project Name: Silverado Canyon Road Bridge over Silverado Creek (Bridge No. 55C-0174) Replacement Project, County of Orange, California (Federal Project Number BRLO-5955 (095))

Project Location: The bridge replacement project is located at Silverado Canyon Road over Silverado Creek in Unincorporated Orange County. Please see enclosed maps.

Project Description: Demolish and replace the existing single-span riveted steel through plate girder bridge over Silverado Creek. The proposed construction would involve removing the existing steel bridge in two separate stages; the full or partial removal of the existing abutments and wingwalls; the construction of a wider concrete bridge, abutments, wingwalls, and retaining walls; the replacement of the existing metal beam guardrails; the widening of the roadway at both ends of the bridge approaches; regrading of the existing creek banks at the bridge; construction of a temporary construction access ramp into the creek; and the construction of scour countermeasures at the bridge foundations.

The proposed bridge would be approximately 58 feet long and 44 feet wide consisting of two 12-foot wide traffic lanes, two 5-foot shoulders, two traffic barriers, and a 5-foot sidewalk with railing (north side). The maximum depth of ground disturbance would be approximately 25 feet below the lowest point of the streambed and approximately 38 feet 6 inches below the roadway. The tallest proposed permanent feature would be roadway signage with a maximum height of approximately 10 feet.
In order to minimize construction activities within the creek, portions of the existing abutments may be reused and both sides widened in order to support the new bridge. The new abutments are expected to be supported on concrete spread

footings, similar to the existing foundations. Half of the existing steel bridge would be removed during the first construction phase while the remaining half is expected to be supported on temporary falsework in order to maintain one lane of traffic open during construction. The falsework supports are anticipated to be supported on spread footings within the creek. Construction is anticipated to start in May 2022 and last for approximately 1 year.

The proposed project would correct existing bridge deficiencies and enhance vehicular safety on the bridge. The project is being proposed because the existing bridge received a low Sufficiency Rating of 46.5 (out of 100) on the most recent Caltrans bridge inspection report. In addition to its advanced age and noticeable signs of deterioration, it has also been classified as functionally obsolete, which means that the bridge deck is too narrow for the current and anticipated traffic needs.

Caltrans is consulting with potentially interested parties for Section 106 and would appreciate any information you may provide regarding the presence of known or potential archaeological resources within the project location and/or immediate vicinity.

If you would like to share information about known or potential historic properties that could be affected by the project, Caltrans would greatly appreciate your response by March 26, 2021. If no response is received by this date, you will be contacted as a follow-up. Please direct your response to:

Jonathan Wright
PQS District Archeologist
Caltrans District 12
1750 East 4th Street, Suite 100
Santa Ana, CA 92705
Phone: (657) 328-6167
Email: jonathan.wright@dot.ca.gov

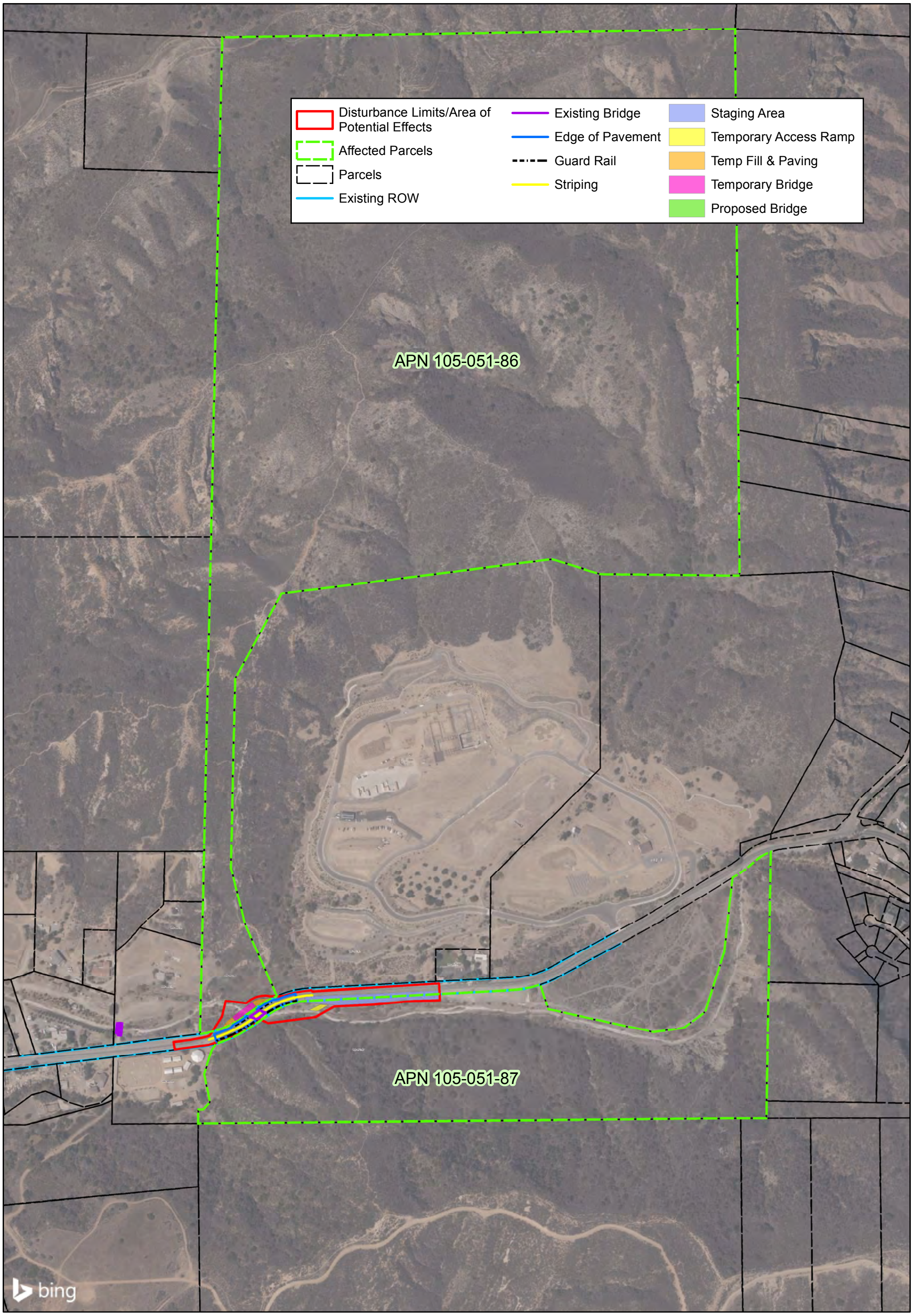
Charles Baker
Environmental Branch Chief
Caltrans District 12
1750 East 4th Street, Suite 100
Santa Ana, CA 92705
Phone: (657) 328-6139
Email: charles.baker@dot.ca.gov

Sincerely,

Charles Baker

CHARLES BAKER
Environmental Branch Chief
Caltrans District 12

Enclosure



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Project Study Area Map
Federal Project # BRLO-5955 (095)
Silverado Canyon Road Bridge over Silverado Creek (Bridge No. 55C-0174) Replacement Project
Orange County

Gmail

Liz Denniston <liz@paleosolutions.com>

Silverado Canyon Bridge Replacement Section 106 Consultation Request

1 message

Liz Denniston <liz@paleosolutions.com> Tue, Apr 6, 2021 at 12:00 PM
To: bennaecalac@aol.com

Dear Chairperson Aguilar,

You were recently mailed a consultation request letter from California Department of Transportation (Caltrans) regarding the Silverado Canyon Bridge Replacement Project [FID: BRLO-5955 (095)] (Project). On behalf of Caltrans, I am reaching out to ask if you had any questions, comments, or concerns regarding the Project. I have attached a copy of the letter sent for your convenience.

If you would like to share information about known or potential historic properties that could be affected by the Project, please direct your response to:

Jonathan Wright

- PQS District Archeologist
- Caltrans District 12
- 1750 East 4th Street, Suite 100
- Santa Ana, CA 92705
- Phone: (657) 328-6167
- Email: jonathan.wright@dot.ca.gov

or

Charles Baker

- Environmental Branch Chief
- Caltrans District 12
- 1750 East 4th Street, Suite 100
- Santa Ana, CA 92705
- Phone: (657) 328-6139
- Email: charles.baker@dot.ca.gov

Thank you,

Liz Denniston, MA, RPA Archaeological Principal Investigator, Paleo Solutions, Inc.
Phone: (626) 205-5444
Website: www.paleosolutions.com
Address: 911 S. Primrose Ave., Unit N., Monrovia, CA 91016
Branches: Denver, CO; Redlands, CA; Oceanside, CA; Bend, OR
Certifications: DBE • SBE • WBE • SDB • WOSB • EDWOSB

Silverado Canyon Section 106_Aguilar.pdf
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DEPARTMENT OF TRANSPORTATION
DISTRICT 12, DIVISION OF ENVIRONMENTAL PLANNING
1750 East 4th Street, Suite 100
Santa Ana CA 92705
PHONE (657) 328-6000
TTY 711
www.dot.ca.gov

Making Conservation a California Way of Life.

March 19, 2021

Charles Alvarez, Chairperson
Gabrielino-Tongva Tribe
23454 Vanowen Street
West Hills, CA, 91307

Dear Chairperson Alvarez:

The County of Orange Public Works (County), in cooperation with the California Department of Transportation (Caltrans) and the Federal Highway Administration (FHWA) proposes to replace the Silverado Canyon Road Bridge over Silverado Creek (Bridge No. 55C-0174) (project). The project would utilize federal funding from the Federal Highway Administration (FHWA) for the proposed improvements; as a result, Caltrans must comply with Section 106 of the National Historic Preservation Act (36 CFR §800) on FHWA's behalf. The County is the lead agency under the California Environmental Quality Act (CEQA), and Caltrans is the lead agency under the National Environmental Policy Act (NEPA). This notification is intended to ensure compliance with requirements in Section 106.

Project Name: Silverado Canyon Road Bridge over Silverado Creek (Bridge No. 55C-0174) Replacement Project, County of Orange, California (Federal Project Number BRLO-5955 (095))

Project Location: The bridge replacement project is located at Silverado Canyon Road over Silverado Creek in Unincorporated Orange County. Please see enclosed maps.

Project Description: Demolish and replace the existing single-span riveted steel through plate girder bridge over Silverado Creek. The proposed construction would involve removing the existing steel bridge in two separate stages; the full or partial removal of the existing abutments and wingwalls; the construction of a wider concrete bridge, abutments, wingwalls, and retaining walls; the replacement of the existing metal beam guardrails; the widening of the roadway at both ends of the bridge approaches; regrading of the existing creek banks at the bridge; construction of a temporary construction access ramp into the creek; and the construction of scour countermeasures at the bridge foundations.

The proposed bridge would be approximately 58 feet long and 44 feet wide consisting of two 12-foot wide traffic lanes, two 5-foot shoulders, two traffic barriers, and a 5-foot sidewalk with railing (north side). The maximum depth of ground disturbance would be approximately 25 feet below the lowest point of the streambed and approximately 38 feet 6 inches below the roadway. The tallest proposed permanent feature would be roadway signage with a maximum height of approximately 10 feet.
In order to minimize construction activities within the creek, portions of the existing abutments may be reused and both sides widened in order to support the new bridge. The new abutments are expected to be supported on concrete spread

footings, similar to the existing foundations. Half of the existing steel bridge would be removed during the first construction phase while the remaining half is expected to be supported on temporary falsework in order to maintain one lane of traffic open during construction. The falsework supports are anticipated to be supported on spread footings within the creek. Construction is anticipated to start in May 2022 and last for approximately 1 year.

The proposed project would correct existing bridge deficiencies and enhance vehicular safety on the bridge. The project is being proposed because the existing bridge received a low Sufficiency Rating of 46.5 (out of 100) on the most recent Caltrans bridge inspection report. In addition to its advanced age and noticeable signs of deterioration, it has also been classified as functionally obsolete, which means that the bridge deck is too narrow for the current and anticipated traffic needs.

Caltrans is consulting with potentially interested parties for Section 106 and would appreciate any information you may provide regarding the presence of known or potential archaeological resources within the project location and/or immediate vicinity.

If you would like to share information about known or potential historic properties that could be affected by the project, Caltrans would greatly appreciate your response by March 26, 2021. If no response is received by this date, you will be contacted as a follow-up. Please direct your response to:

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PQS District Archeologist
Caltrans District 12
1750 East 4th Street, Suite 100
Santa Ana, CA 92705
Phone: (657) 328-6167
Email: jonathan.wright@dot.ca.gov

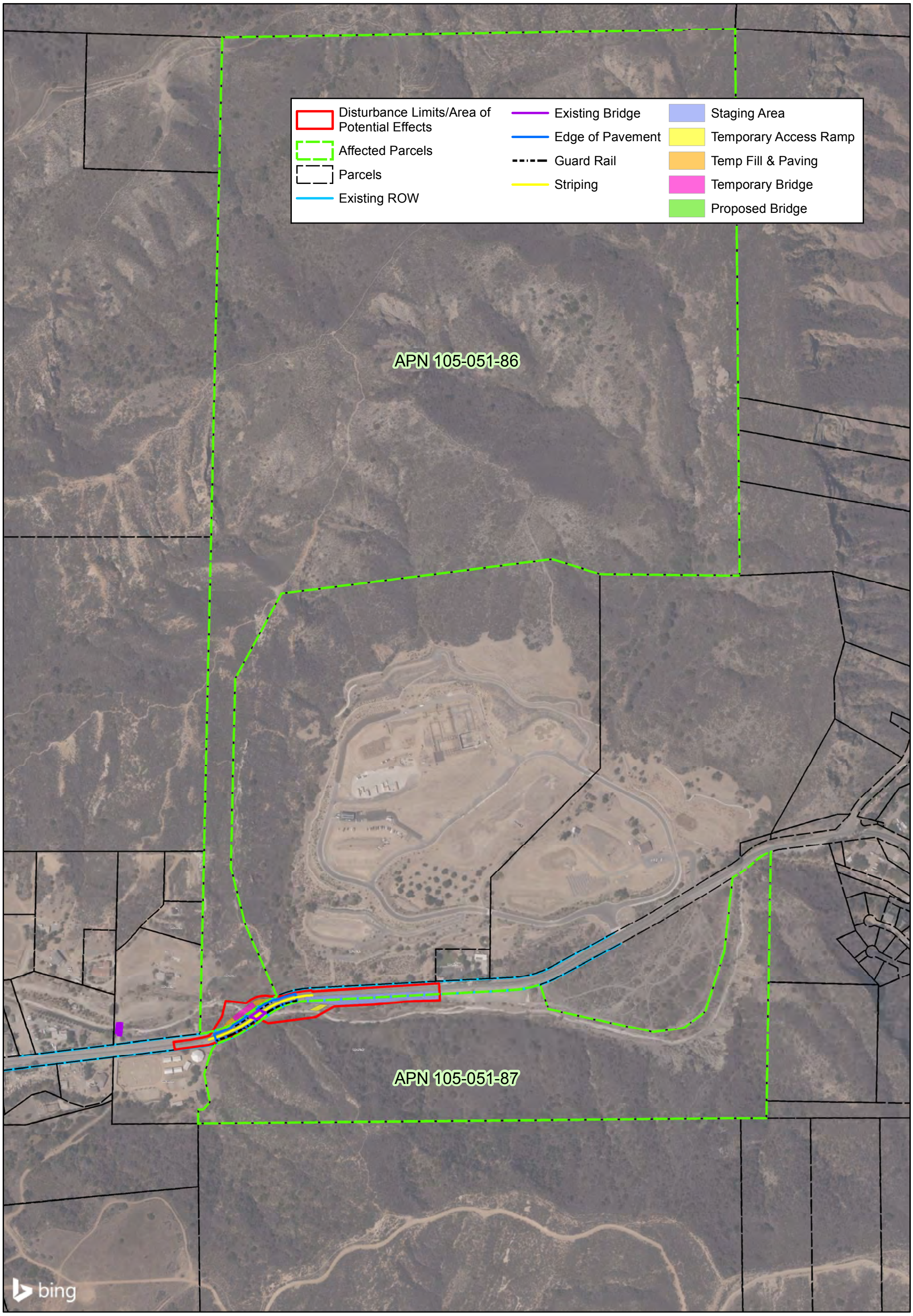
Charles Baker
Environmental Branch Chief
Caltrans District 12
1750 East 4th Street, Suite 100
Santa Ana, CA 92705
Phone: (657) 328-6139
Email: charles.baker@dot.ca.gov

Sincerely,

Charles Baker

CHARLES BAKER
Environmental Branch Chief
Caltrans District 12

Enclosure



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Project Study Area Map
Federal Project # BRLO-5955 (095)
Silverado Canyon Road Bridge over Silverado Creek (Bridge No. 55C-0174) Replacement Project
Orange County

Gmail

Liz Denniston <liz@paleosolutions.com>

Silverado Canyon Bridge Replacement Section 106 Consultation Request

1 message

Liz Denniston <liz@paleosolutions.com> Tue, Apr 6, 2021 at 11:47 AM
To: roadkingcharles@aol.com

Dear Chairperson Alvarez,

You were recently mailed a consultation request letter from California Department of Transportation (Caltrans) regarding the Silverado Canyon Bridge Replacement Project [FID: BRLO-5955 (095)] (Project). On behalf of Caltrans, I am reaching out to ask if you had any questions, comments, or concerns regarding the Project. I have attached a copy of the letter sent for your convenience.

If you would like to share information about known or potential historic properties that could be affected by the Project, please direct your response to:

Jonathan Wright

- PQS District Archeologist
- Caltrans District 12
- 1750 East 4th Street, Suite 100
- Santa Ana, CA 92705
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- Email: jonathan.wright@dot.ca.gov

or

Charles Baker

- Environmental Branch Chief
- Caltrans District 12
- 1750 East 4th Street, Suite 100
- Santa Ana, CA 92705
- Phone: (657) 328-6139
- Email: charles.baker@dot.ca.gov

Thank you,

Liz Denniston, MA, RPA Archaeological Principal Investigator, Paleo Solutions, Inc.
Phone: (626) 205-5444
Website: www.paleosolutions.com
Address: 911 S. Primrose Ave., Unit N., Monrovia, CA 91016
Branches: Denver, CO; Redlands, CA; Oceanside, CA; Bend, OR
Certifications: DBE • SBE • WBE • SDB • WOSB • EDWOSB

Silverado Canyon Section 106_Alvarez.pdf
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DEPARTMENT OF TRANSPORTATION
DISTRICT 12, DIVISION OF ENVIRONMENTAL PLANNING
1750 East 4th Street, Suite 100
Santa Ana CA 92705
PHONE (657) 328-6000
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www.dot.ca.gov

Making Conservation a California Way of Life.

March 19, 2021

Matias Belardes, Chairperson
Juaneno Band of Mission Indians Acjachemen Nation - Belardes
32161 Avenida Los Amigos
San Juan Capistrano, CA, 92675

Dear Chairperson Belardes:

The County of Orange Public Works (County), in cooperation with the California Department of Transportation (Caltrans) and the Federal Highway Administration (FHWA) proposes to replace the Silverado Canyon Road Bridge over Silverado Creek (Bridge No. 55C-0174) (project). The project would utilize federal funding from the Federal Highway Administration (FHWA) for the proposed improvements; as a result, Caltrans must comply with Section 106 of the National Historic Preservation Act (36 CFR §800) on FHWA's behalf. The County is the lead agency under the California Environmental Quality Act (CEQA), and Caltrans is the lead agency under the National Environmental Policy Act (NEPA). This notification is intended to ensure compliance with requirements in Section 106.

Project Name: Silverado Canyon Road Bridge over Silverado Creek (Bridge No. 55C-0174) Replacement Project, County of Orange, California (Federal Project Number BRLO-5955 (095))

Project Location: The bridge replacement project is located at Silverado Canyon Road over Silverado Creek in Unincorporated Orange County. Please see enclosed maps.

Project Description: Demolish and replace the existing single-span riveted steel through plate girder bridge over Silverado Creek. The proposed construction would involve removing the existing steel bridge in two separate stages; the full or partial removal of the existing abutments and wingwalls; the construction of a wider concrete bridge, abutments, wingwalls, and retaining walls; the replacement of the existing metal beam guardrails; the widening of the roadway at both ends of the bridge approaches; regrading of the existing creek banks at the bridge; construction of a temporary construction access ramp into the creek; and the construction of scour countermeasures at the bridge foundations.

The proposed bridge would be approximately 58 feet long and 44 feet wide consisting of two 12-foot wide traffic lanes, two 5-foot shoulders, two traffic barriers, and a 5-foot sidewalk with railing (north side). The maximum depth of ground disturbance would be approximately 25 feet below the lowest point of the streambed and approximately 38 feet 6 inches below the roadway. The tallest proposed permanent feature would be roadway signage with a maximum height of approximately 10 feet.
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The proposed project would correct existing bridge deficiencies and enhance vehicular safety on the bridge. The project is being proposed because the existing bridge received a low Sufficiency Rating of 46.5 (out of 100) on the most recent Caltrans bridge inspection report. In addition to its advanced age and noticeable signs of deterioration, it has also been classified as functionally obsolete, which means that the bridge deck is too narrow for the current and anticipated traffic needs.

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If you would like to share information about known or potential historic properties that could be affected by the project, Caltrans would greatly appreciate your response by March 26, 2021. If no response is received by this date, you will be contacted as a follow-up. Please direct your response to:

Jonathan Wright
PQS District Archeologist
Caltrans District 12
1750 East 4th Street, Suite 100
Santa Ana, CA 92705
Phone: (657) 328-6167
Email: jonathan.wright@dot.ca.gov

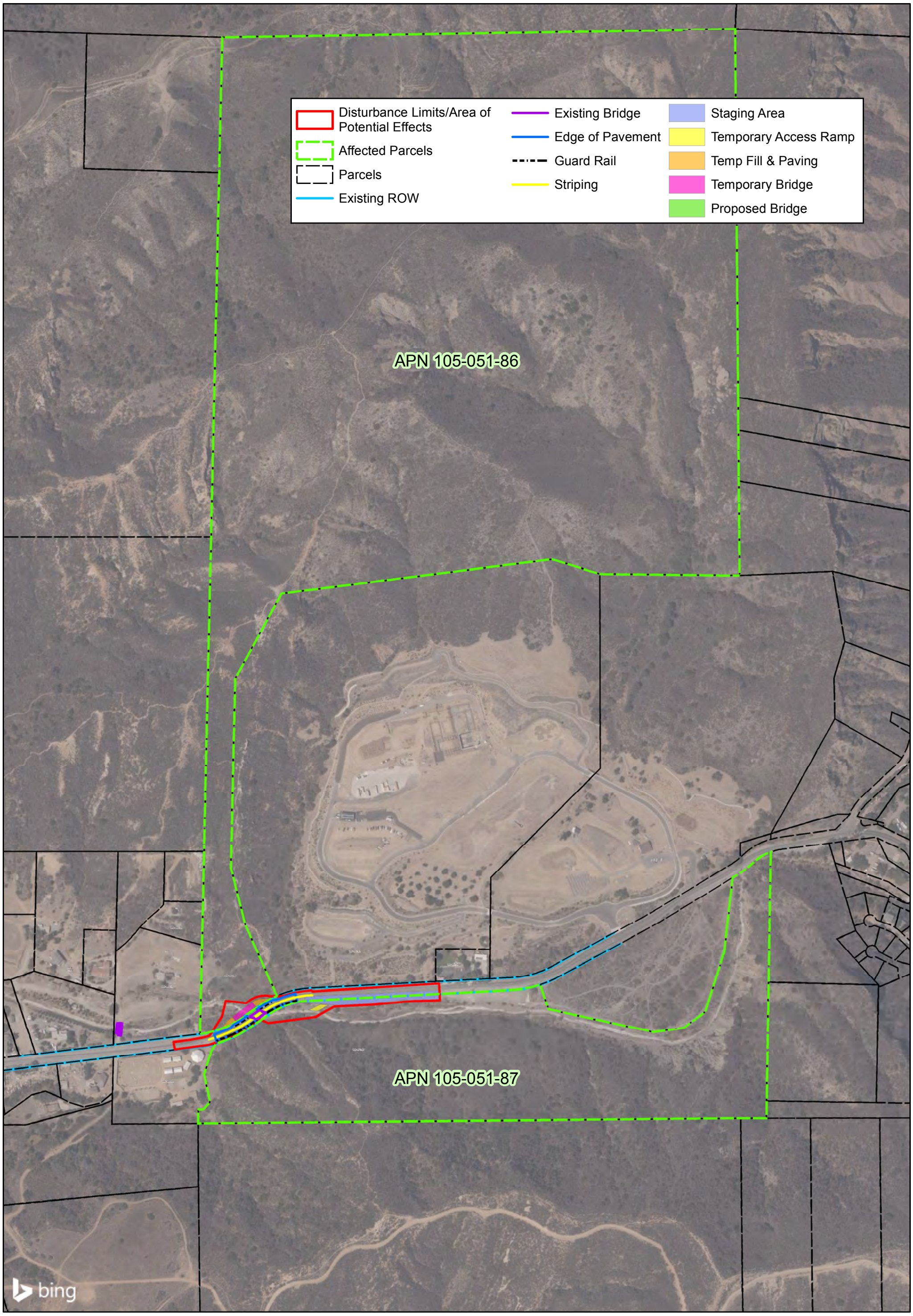
Charles Baker
Environmental Branch Chief
Caltrans District 12
1750 East 4th Street, Suite 100
Santa Ana, CA 92705
Phone: (657) 328-6139
Email: charles.baker@dot.ca.gov

Sincerely,

Charles Baker

CHARLES BAKER
Environmental Branch Chief
Caltrans District 12

Enclosure



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Project Study Area Map
Federal Project # BRLO-5955 (095)
Silverado Canyon Road Bridge over Silverado Creek (Bridge No. 55C-0174) Replacement Project
Orange County

Gmail

Liz Denniston <liz@paleosolutions.com>

Silverado Canyon Bridge Replacement Section 106 Consultation Request

1 message

Liz Denniston <liz@paleosolutions.com> Tue, Apr 6, 2021 at 11:51 AM
To: kaamalam@gmail.com

Dear Chairperson Belardes,

You were recently mailed a consultation request letter from California Department of Transportation (Caltrans) regarding the Silverado Canyon Bridge Replacement Project [FID: BRLO-5955 (095)] (Project). On behalf of Caltrans, I am reaching out to ask if you had any questions, comments, or concerns regarding the Project. I have attached a copy of the letter sent for your convenience.

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Jonathan Wright

- PQS District Archeologist
- Caltrans District 12
- 1750 East 4th Street, Suite 100
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- Phone: (657) 328-6167
- Email: jonathan.wright@dot.ca.gov

or

Charles Baker

- Environmental Branch Chief
- Caltrans District 12
- 1750 East 4th Street, Suite 100
- Santa Ana, CA 92705
- Phone: (657) 328-6139
- Email: charles.baker@dot.ca.gov

Thank you,

Liz Denniston, MA, RPA Archaeological Principal Investigator, Paleo Solutions, Inc.
Phone: (626) 205-5444
Website: www.paleosolutions.com
Address: 911 S. Primrose Ave., Unit N., Monrovia, CA 91016
Branches: Denver, CO; Redlands, CA; Oceanside, CA; Bend, OR
Certifications: DBE • SBE • WBE • SDB • WOSB • EDWOSB

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DEPARTMENT OF TRANSPORTATION
DISTRICT 12, DIVISION OF ENVIRONMENTAL PLANNING
1750 East 4th Street, Suite 100
Santa Ana CA 92705
PHONE (657) 328-6000
TTY 711
www.dot.ca.gov

Making Conservation a California Way of Life.

March 19, 2021

Robert Dorame, Chairperson
Gabrielino Tongva Indians of California Tribal Council
P.O. Box 490
Bellflower, CA, 90707

Dear Chairperson Dorame:

The County of Orange Public Works (County), in cooperation with the California Department of Transportation (Caltrans) and the Federal Highway Administration (FHWA) proposes to replace the Silverado Canyon Road Bridge over Silverado Creek (Bridge No. 55C-0174) (project). The project would utilize federal funding from the Federal Highway Administration (FHWA) for the proposed improvements; as a result, Caltrans must comply with Section 106 of the National Historic Preservation Act (36 CFR §800) on FHWA's behalf. The County is the lead agency under the California Environmental Quality Act (CEQA), and Caltrans is the lead agency under the National Environmental Policy Act (NEPA). This notification is intended to ensure compliance with requirements in Section 106.

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1750 East 4th Street, Suite 100
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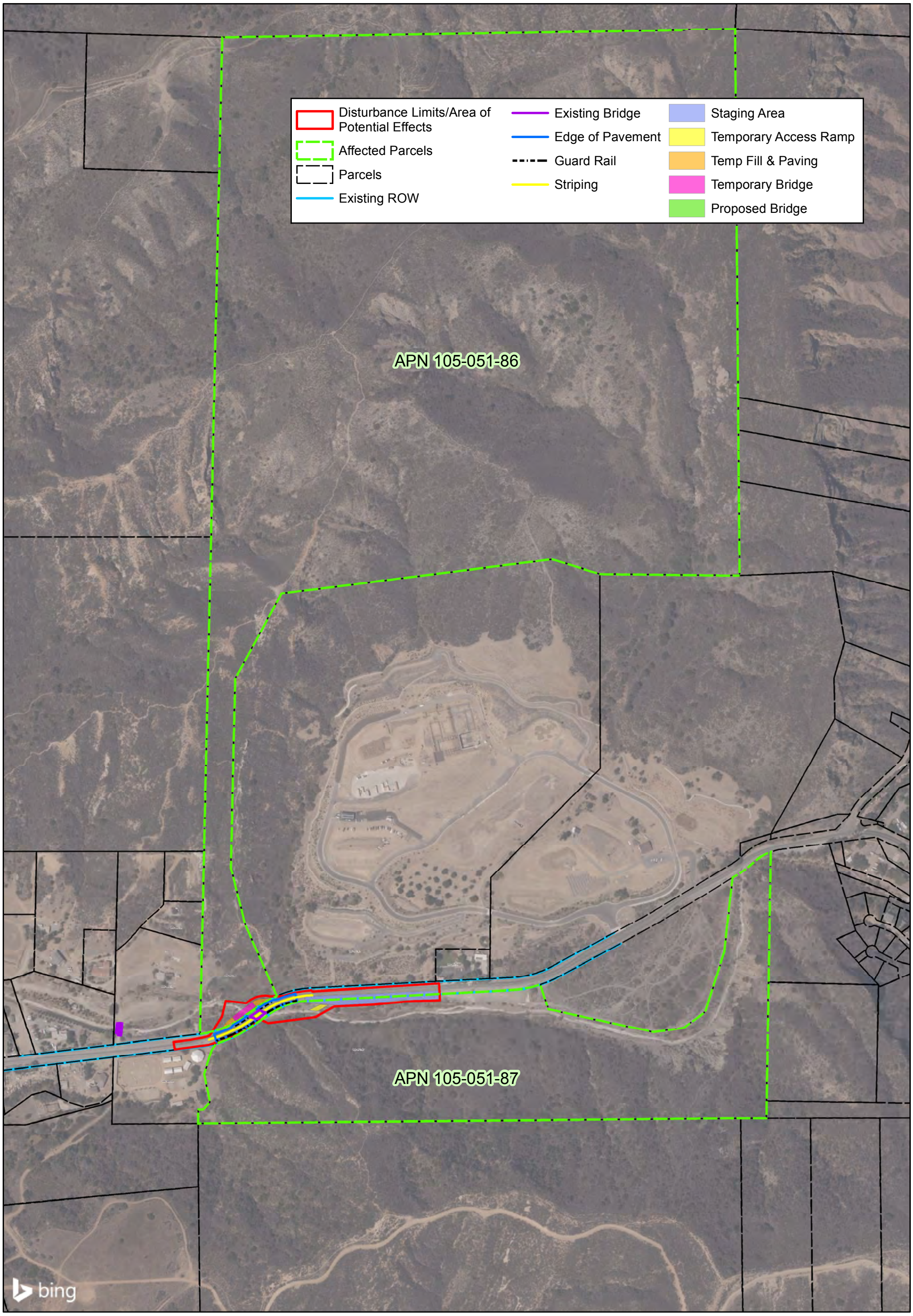
Charles Baker
Environmental Branch Chief
Caltrans District 12
1750 East 4th Street, Suite 100
Santa Ana, CA 92705
Phone: (657) 328-6139
Email: charles.baker@dot.ca.gov

Sincerely,

Charles Baker

CHARLES BAKER
Environmental Branch Chief
Caltrans District 12

Enclosure



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Project Study Area Map
Federal Project # BRLO-5955 (095)
Silverado Canyon Road Bridge over Silverado Creek (Bridge No. 55C-0174) Replacement Project
Orange County

Gmail

Liz Denniston <liz@paleosolutions.com>

Silverado Canyon Bridge Replacement Section 106 Consultation Request

1 message

Liz Denniston <liz@paleosolutions.com> Tue, Apr 6, 2021 at 11:46 AM
To: gtongva@gmail.com

Dear Chairperson Dorame,

You were recently mailed a consultation request letter from California Department of Transportation (Caltrans) regarding the Silverado Canyon Bridge Replacement Project [FID: BRLO-5955 (095)] (Project). On behalf of Caltrans, I am reaching out to ask if you had any questions, comments, or concerns regarding the Project. I have attached a copy of the letter sent for your convenience.

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or

Charles Baker

- Environmental Branch Chief
- Caltrans District 12
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- Email: charles.baker@dot.ca.gov

Thank you,

Liz Denniston, MA, RPA Archaeological Principal Investigator, Paleo Solutions, Inc.
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DEPARTMENT OF TRANSPORTATION
DISTRICT 12, DIVISION OF ENVIRONMENTAL PLANNING
1750 East 4th Street, Suite 100
Santa Ana CA 92705
PHONE (657) 328-6000
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www.dot.ca.gov

Making Conservation a California Way of Life.

March 19, 2021

Angela Elliott Santos, Chairperson
Manzanita Band of Kumeyaay Nation
P.O. Box 1302
Boulevard, CA, 91905

Dear Chairperson Elliott Santos:

The County of Orange Public Works (County), in cooperation with the California Department of Transportation (Caltrans) and the Federal Highway Administration (FHWA) proposes to replace the Silverado Canyon Road Bridge over Silverado Creek (Bridge No. 55C-0174) (project). The project would utilize federal funding from the Federal Highway Administration (FHWA) for the proposed improvements; as a result, Caltrans must comply with Section 106 of the National Historic Preservation Act (36 CFR §800) on FHWA's behalf. The County is the lead agency under the California Environmental Quality Act (CEQA), and Caltrans is the lead agency under the National Environmental Policy Act (NEPA). This notification is intended to ensure compliance with requirements in Section 106.

Project Name: Silverado Canyon Road Bridge over Silverado Creek (Bridge No. 55C-0174) Replacement Project, County of Orange, California (Federal Project Number BRLO-5955 (095))

Project Location: The bridge replacement project is located at Silverado Canyon Road over Silverado Creek in Unincorporated Orange County. Please see enclosed maps.

Project Description: Demolish and replace the existing single-span riveted steel through plate girder bridge over Silverado Creek. The proposed construction would involve removing the existing steel bridge in two separate stages; the full or partial removal of the existing abutments and wingwalls; the construction of a wider concrete bridge, abutments, wingwalls, and retaining walls; the replacement of the existing metal beam guardrails; the widening of the roadway at both ends of the bridge approaches; regrading of the existing creek banks at the bridge; construction of a temporary construction access ramp into the creek; and the construction of scour countermeasures at the bridge foundations.

The proposed bridge would be approximately 58 feet long and 44 feet wide consisting of two 12-foot wide traffic lanes, two 5-foot shoulders, two traffic barriers, and a 5-foot sidewalk with railing (north side). The maximum depth of ground disturbance would be approximately 25 feet below the lowest point of the streambed and approximately 38 feet 6 inches below the roadway. The tallest proposed permanent feature would be roadway signage with a maximum height of approximately 10 feet.
In order to minimize construction activities within the creek, portions of the existing abutments may be reused and both sides widened in order to support the new bridge. The new abutments are expected to be supported on concrete spread

footings, similar to the existing foundations. Half of the existing steel bridge would be removed during the first construction phase while the remaining half is expected to be supported on temporary falsework in order to maintain one lane of traffic open during construction. The falsework supports are anticipated to be supported on spread footings within the creek. Construction is anticipated to start in May 2022 and last for approximately 1 year.

The proposed project would correct existing bridge deficiencies and enhance vehicular safety on the bridge. The project is being proposed because the existing bridge received a low Sufficiency Rating of 46.5 (out of 100) on the most recent Caltrans bridge inspection report. In addition to its advanced age and noticeable signs of deterioration, it has also been classified as functionally obsolete, which means that the bridge deck is too narrow for the current and anticipated traffic needs.

Caltrans is consulting with potentially interested parties for Section 106 and would appreciate any information you may provide regarding the presence of known or potential archaeological resources within the project location and/or immediate vicinity.

If you would like to share information about known or potential historic properties that could be affected by the project, Caltrans would greatly appreciate your response by March 26, 2021. If no response is received by this date, you will be contacted as a follow-up. Please direct your response to:

Jonathan Wright
PQS District Archeologist
Caltrans District 12
1750 East 4th Street, Suite 100
Santa Ana, CA 92705
Phone: (657) 328-6167
Email: jonathan.wright@dot.ca.gov

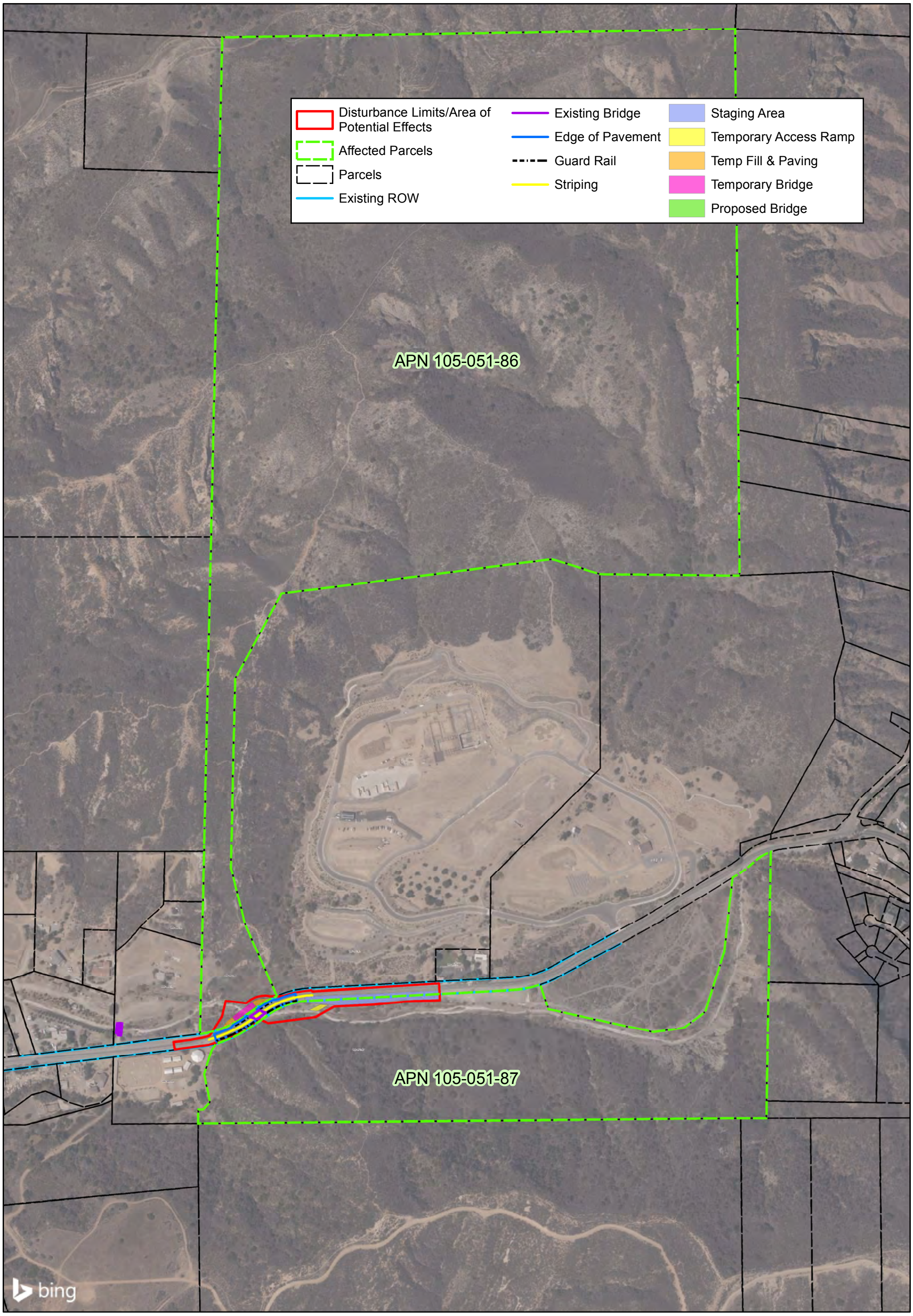
Charles Baker
Environmental Branch Chief
Caltrans District 12
1750 East 4th Street, Suite 100
Santa Ana, CA 92705
Phone: (657) 328-6139
Email: charles.baker@dot.ca.gov

Sincerely,

Charles Baker

CHARLES BAKER
Environmental Branch Chief
Caltrans District 12

Enclosure



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Project Study Area Map
Federal Project # BRLO-5955 (095)
Silverado Canyon Road Bridge over Silverado Creek (Bridge No. 55C-0174) Replacement Project
Orange County

Gmail

Liz Denniston <liz@paleosolutions.com>

Silverado Canyon Bridge Replacement Section 106 Consultation Request

1 message

Liz Denniston <liz@paleosolutions.com> Tue, Apr 6, 2021 at 11:59 AM
To: ljbirdsinger@aol.com

Dear Chairperson Santos,

You were recently mailed a consultation request letter from California Department of Transportation (Caltrans) regarding the Silverado Canyon Bridge Replacement Project [FID: BRLO-5955 (095)] (Project). On behalf of Caltrans, I am reaching out to ask if you had any questions, comments, or concerns regarding the Project. I have attached a copy of the letter sent for your convenience.

If you would like to share information about known or potential historic properties that could be affected by the Project, please direct your response to:

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- Caltrans District 12
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or

Charles Baker

- Environmental Branch Chief
- Caltrans District 12
- 1750 East 4th Street, Suite 100
- Santa Ana, CA 92705
- Phone: (657) 328-6139
- Email: charles.baker@dot.ca.gov

Thank you,

Liz Denniston, MA, RPA Archaeological Principal Investigator, Paleo Solutions, Inc.
Phone: (626) 205-5444
Website: www.paleosolutions.com
Address: 911 S. Primrose Ave., Unit N., Monrovia, CA 91016
Branches: Denver, CO; Redlands, CA; Oceanside, CA; Bend, OR
Certifications: DBE • SBE • WBE • SDB • WOSB • EDWOSB

Silverado Canyon Section 106_Elliott Santos.pdf
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DEPARTMENT OF TRANSPORTATION
DISTRICT 12, DIVISION OF ENVIRONMENTAL PLANNING
1750 East 4th Street, Suite 100
Santa Ana CA 92705
PHONE (657) 328-6000
TTY 711
www.dot.ca.gov

Making Conservation a California Way of Life.

March 19, 2021

Erica Pinto, Chairperson
Jamul Indian Village
P.O. Box 612
Jamul, CA, 91935

Dear Chairperson Pinto:

The County of Orange Public Works (County), in cooperation with the California Department of Transportation (Caltrans) and the Federal Highway Administration (FHWA) proposes to replace the Silverado Canyon Road Bridge over Silverado Creek (Bridge No. 55C-0174) (project). The project would utilize federal funding from the Federal Highway Administration (FHWA) for the proposed improvements; as a result, Caltrans must comply with Section 106 of the National Historic Preservation Act (36 CFR §800) on FHWA's behalf. The County is the lead agency under the California Environmental Quality Act (CEQA), and Caltrans is the lead agency under the National Environmental Policy Act (NEPA). This notification is intended to ensure compliance with requirements in Section 106.

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The proposed bridge would be approximately 58 feet long and 44 feet wide consisting of two 12-foot wide traffic lanes, two 5-foot shoulders, two traffic barriers, and a 5-foot sidewalk with railing (north side). The maximum depth of ground disturbance would be approximately 25 feet below the lowest point of the streambed and approximately 38 feet 6 inches below the roadway. The tallest proposed permanent feature would be roadway signage with a maximum height of approximately 10 feet.
In order to minimize construction activities within the creek, portions of the existing abutments may be reused and both sides widened in order to support the new bridge. The new abutments are expected to be supported on concrete spread

footings, similar to the existing foundations. Half of the existing steel bridge would be removed during the first construction phase while the remaining half is expected to be supported on temporary falsework in order to maintain one lane of traffic open during construction. The falsework supports are anticipated to be supported on spread footings within the creek. Construction is anticipated to start in May 2022 and last for approximately 1 year.

The proposed project would correct existing bridge deficiencies and enhance vehicular safety on the bridge. The project is being proposed because the existing bridge received a low Sufficiency Rating of 46.5 (out of 100) on the most recent Caltrans bridge inspection report. In addition to its advanced age and noticeable signs of deterioration, it has also been classified as functionally obsolete, which means that the bridge deck is too narrow for the current and anticipated traffic needs.

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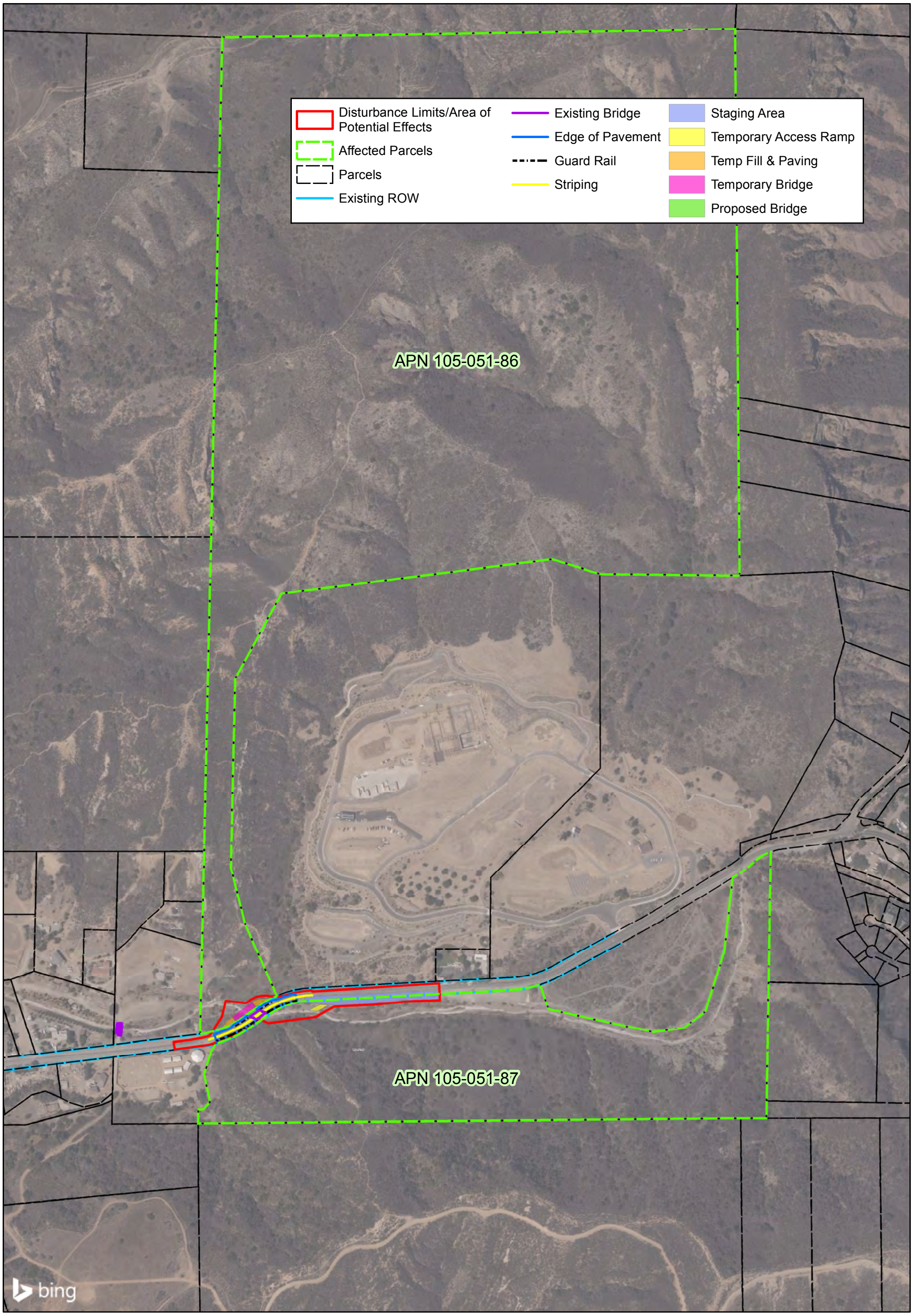
Charles Baker
Environmental Branch Chief
Caltrans District 12
1750 East 4th Street, Suite 100
Santa Ana, CA 92705
Phone: (657) 328-6139
Email: charles.baker@dot.ca.gov

Sincerely,

Charles Baker

CHARLES BAKER
Environmental Branch Chief
Caltrans District 12

Enclosure



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Project Study Area Map
Federal Project # BRLO-5955 (095)
Silverado Canyon Road Bridge over Silverado Creek (Bridge No. 55C-0174) Replacement Project
Orange County

Gmail

Liz Denniston <liz@paleosolutions.com>

Silverado Canyon Bridge Replacement Section 106 Consultation Request

1 message

Liz Denniston <liz@paleosolutions.com> Tue, Apr 6, 2021 at 11:35 AM
To: ceo@leaningrock.com

Dear Chairperson Pinto,

You were recently mailed a consultation request letter from California Department of Transportation (Caltrans) regarding the Silverado Canyon Bridge Replacement Project [FID: BRLO-5955 (095)] (Project). On behalf of Caltrans, I am reaching out to ask if you had any questions, comments, or concerns regarding the Project. I have attached a copy of the letter sent for your convenience.

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- Email: charles.baker@dot.ca.gov

Thank you,

Liz Denniston, MA, RPA Archaeological Principal Investigator, Paleo Solutions, Inc.
Phone: (626) 205-5444
Website: www.paleosolutions.com
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Silverado Canyon Section 106_R Pinto.pdf
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DEPARTMENT OF TRANSPORTATION
DISTRICT 12, DIVISION OF ENVIRONMENTAL PLANNING
1750 East 4th Street, Suite 100
Santa Ana CA 92705
PHONE (657) 328-6000
TTY 711
www.dot.ca.gov

Making Conservation a California Way of Life.

March 19, 2021

John Flores, Environmental Coordinator
San Pasqual Band of Mission Indians
P. 0. Box 365
Valley Center, CA, 92082

Dear Mr. Flores:

The County of Orange Public Works (County), in cooperation with the California Department of Transportation (Caltrans) and the Federal Highway Administration (FHWA) proposes to replace the Silverado Canyon Road Bridge over Silverado Creek (Bridge No. 55C-0174) (project). The project would utilize federal funding from the Federal Highway Administration (FHWA) for the proposed improvements; as a result, Caltrans must comply with Section 106 of the National Historic Preservation Act (36 CFR §800) on FHWA's behalf. The County is the lead agency under the California Environmental Quality Act (CEQA), and Caltrans is the lead agency under the National Environmental Policy Act (NEPA). This notification is intended to ensure compliance with requirements in Section 106.

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The proposed bridge would be approximately 58 feet long and 44 feet wide consisting of two 12-foot wide traffic lanes, two 5-foot shoulders, two traffic barriers, and a 5-foot sidewalk with railing (north side). The maximum depth of ground disturbance would be approximately 25 feet below the lowest point of the streambed and approximately 38 feet 6 inches below the roadway. The tallest proposed permanent feature would be roadway signage with a maximum height of approximately 10 feet.
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The proposed project would correct existing bridge deficiencies and enhance vehicular safety on the bridge. The project is being proposed because the existing bridge received a low Sufficiency Rating of 46.5 (out of 100) on the most recent Caltrans bridge inspection report. In addition to its advanced age and noticeable signs of deterioration, it has also been classified as functionally obsolete, which means that the bridge deck is too narrow for the current and anticipated traffic needs.

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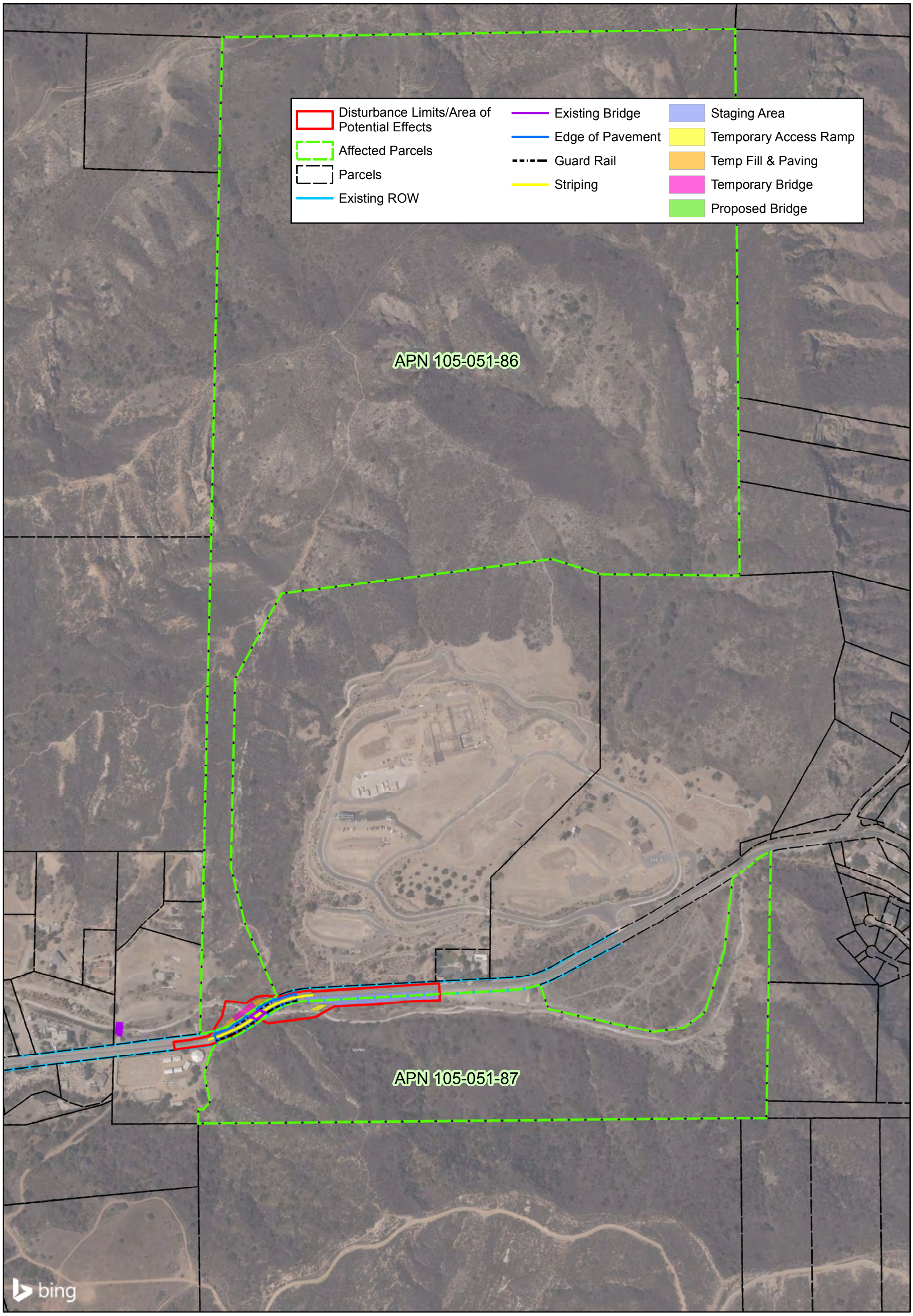
Charles Baker
Environmental Branch Chief
Caltrans District 12
1750 East 4th Street, Suite 100
Santa Ana, CA 92705
Phone: (657) 328-6139
Email: charles.baker@dot.ca.gov

Sincerely,

Charles Baker

CHARLES BAKER
Environmental Branch Chief
Caltrans District 12

Enclosure



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Project Study Area Map
Federal Project # BRLO-5955 (095)
Silverado Canyon Road Bridge over Silverado Creek (Bridge No. 55C-0174) Replacement Project
Orange County

Gmail

Liz Denniston <liz@paleosolutions.com>

Silverado Canyon Bridge Replacement Section 106 Consultation Request

1 message

Liz Denniston <liz@paleosolutions.com> Tue, Apr 6, 2021 at 12:03 PM
To: johnf@sanpasqualtribe.org

Dear Coordinator Flores,

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or

Charles Baker

- Environmental Branch Chief
- Caltrans District 12
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- Santa Ana, CA 92705
- Phone: (657) 328-6139
- Email: charles.baker@dot.ca.gov

Thank you,

Liz Denniston, MA, RPA Archaeological Principal Investigator, Paleo Solutions, Inc.
Phone: (626) 205-5444
Website: www.paleosolutions.com
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Silverado Canyon Section 106_Flores.pdf
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DEPARTMENT OF TRANSPORTATION
DISTRICT 12, DIVISION OF ENVIRONMENTAL PLANNING
1750 East 4th Street, Suite 100
Santa Ana CA 92705
PHONE (657) 328-6000
TTY 711
www.dot.ca.gov

Making Conservation a California Way of Life.

March 19, 2021

Michael Garcia, Vice Chairperson
Ewiiaapaayp Tribal Office
4054 Willows Road
Alpine, CA, 91901

Dear Vice Chairperson Garcia:

The County of Orange Public Works (County), in cooperation with the California Department of Transportation (Caltrans) and the Federal Highway Administration (FHWA) proposes to replace the Silverado Canyon Road Bridge over Silverado Creek (Bridge No. 55C-0174) (project). The project would utilize federal funding from the Federal Highway Administration (FHWA) for the proposed improvements; as a result, Caltrans must comply with Section 106 of the National Historic Preservation Act (36 CFR §800) on FHWA's behalf. The County is the lead agency under the California Environmental Quality Act (CEQA), and Caltrans is the lead agency under the National Environmental Policy Act (NEPA). This notification is intended to ensure compliance with requirements in Section 106.

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Charles Baker
Environmental Branch Chief
Caltrans District 12
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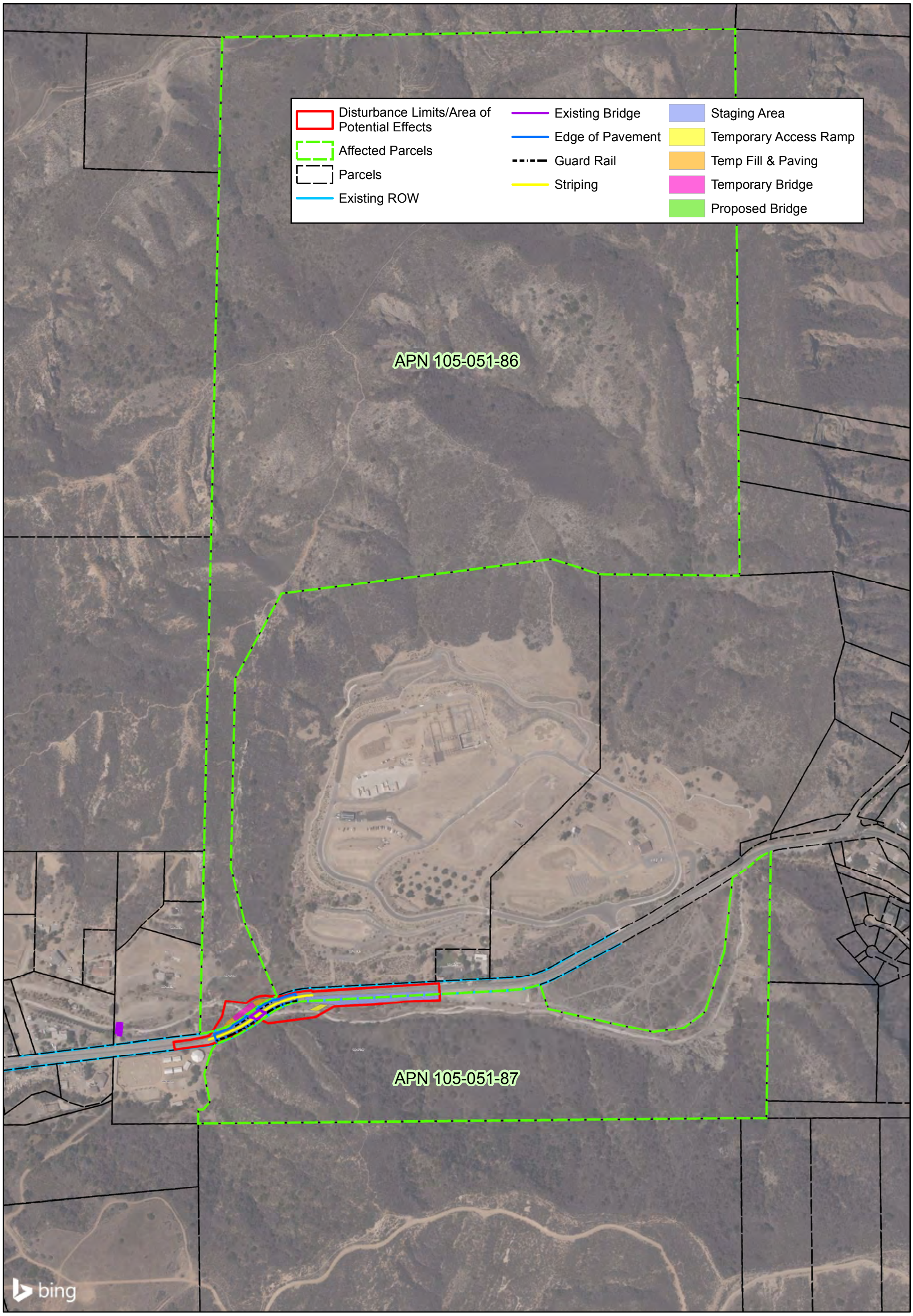
Santa Ana, CA 92705
Phone: (657) 328-6139
Email: charles.baker@dot.ca.gov

Sincerely,

Charles Baker

CHARLES BAKER
Environmental Branch Chief
Caltrans District 12

Enclosure



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Project Study Area Map
Federal Project # BRLO-5955 (095)
Silverado Canyon Road Bridge over Silverado Creek (Bridge No. 55C-0174) Replacement Project
Orange County

Gmail

Liz Denniston <liz@paleosolutions.com>

Silverado Canyon Bridge Replacement Section 106 Consultation Request

1 message

Liz Denniston <liz@paleosolutions.com> Tue, Apr 6, 2021 at 11:37 AM
To: michaelg@leaningrock.net

Dear Vice Chairperson Garcia,

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1750 East 4th Street, Suite 100
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Making Conservation a California Way of Life.

March 19, 2021

Sandonne Goad, Chairperson
Gabrielino/Tongva Nation
106 1/2 Judge John Aiso St., #231
Los Angeles, CA, 90012

Dear Chairperson Goad:

The County of Orange Public Works (County), in cooperation with the California Department of Transportation (Caltrans) and the Federal Highway Administration (FHWA) proposes to replace the Silverado Canyon Road Bridge over Silverado Creek (Bridge No. 55C-0174) (project). The project would utilize federal funding from the Federal Highway Administration (FHWA) for the proposed improvements; as a result, Caltrans must comply with Section 106 of the National Historic Preservation Act (36 CFR §800) on FHWA's behalf. The County is the lead agency under the California Environmental Quality Act (CEQA), and Caltrans is the lead agency under the National Environmental Policy Act (NEPA). This notification is intended to ensure compliance with requirements in Section 106.

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Charles Baker
Environmental Branch Chief
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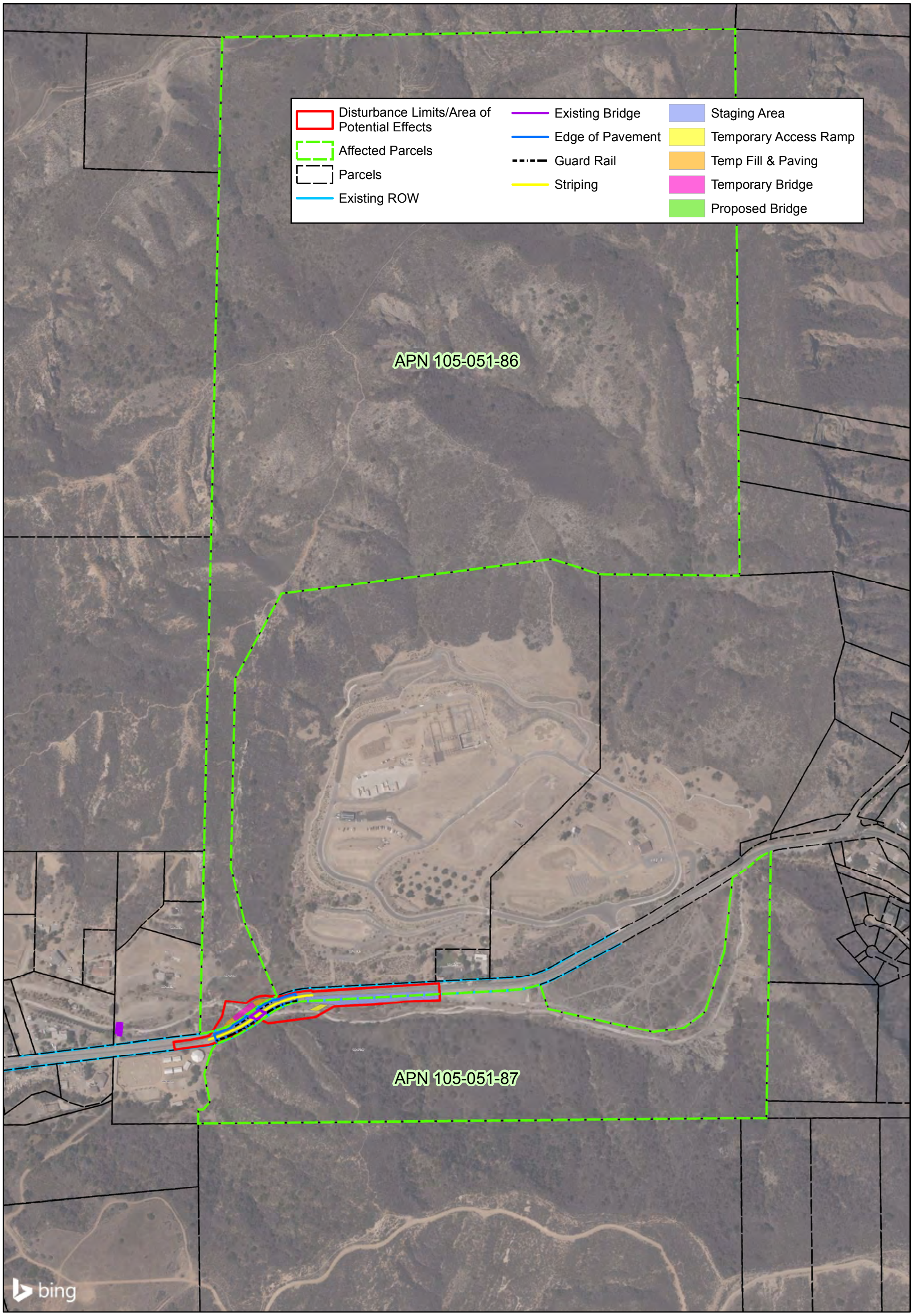
Email: charles.baker@dot.ca.gov

Sincerely,

Charles Baker

CHARLES BAKER
Environmental Branch Chief
Caltrans District 12

Enclosure



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Project Study Area Map
Federal Project # BRLO-5955 (095)
Silverado Canyon Road Bridge over Silverado Creek (Bridge No. 55C-0174) Replacement Project
Orange County

Gmail

Liz Denniston <liz@paleosolutions.com>

Silverado Canyon Bridge Replacement Section 106 Consultation Request

1 message

Liz Denniston <liz@paleosolutions.com> Tue, Apr 6, 2021 at 11:44 AM
To: sgoad@gabrielino-tongva.com

Dear Chairperson Goad,

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- PQS District Archeologist
- Caltrans District 12
- 1750 East 4th Street, Suite 100
- Santa Ana, CA 92705
- Phone: (657) 328-6167
- Email: jonathan.wright@dot.ca.gov

or

Charles Baker

- Environmental Branch Chief
- Caltrans District 12
- 1750 East 4th Street, Suite 100
- Santa Ana, CA 92705
- Phone: (657) 328-6139
- Email: charles.baker@dot.ca.gov

Thank you,

Liz Denniston, MA, RPA Archaeological Principal Investigator, Paleo Solutions, Inc.
Phone: (626) 205-5444
Website: www.paleosolutions.com
Address: 911 S. Primrose Ave., Unit N., Monrovia, CA 91016
Branches: Denver, CO; Redlands, CA; Oceanside, CA; Bend, OR
Certifications: DBE • SBE • WBE • SDB • WOSB • EDWOSB

Silverado Canyon Section 106_Goad.pdf
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DEPARTMENT OF TRANSPORTATION
DISTRICT 12, DIVISION OF ENVIRONMENTAL PLANNING
1750 East 4th Street, Suite 100
Santa Ana CA 92705
PHONE (657) 328-6000
TTY 711
www.dot.ca.gov

Making Conservation a California Way of Life.

March 19, 2021

Ralph Goff, Chairperson
Campo Band of Mission Indians
36190 Church Road, Suite 1
Campo, CA, 91906

Dear Chairperson Goff:

The County of Orange Public Works (County), in cooperation with the California Department of Transportation (Caltrans) and the Federal Highway Administration (FHWA) proposes to replace the Silverado Canyon Road Bridge over Silverado Creek (Bridge No. 55C-0174) (project). The project would utilize federal funding from the Federal Highway Administration (FHWA) for the proposed improvements; as a result, Caltrans must comply with Section 106 of the National Historic Preservation Act (36 CFR §800) on FHWA's behalf. The County is the lead agency under the California Environmental Quality Act (CEQA), and Caltrans is the lead agency under the National Environmental Policy Act (NEPA). This notification is intended to ensure compliance with requirements in Section 106.

Project Name: Silverado Canyon Road Bridge over Silverado Creek (Bridge No. 55C-0174) Replacement Project, County of Orange, California (Federal Project Number BRLO-5955 (095))

Project Location: The bridge replacement project is located at Silverado Canyon Road over Silverado Creek in Unincorporated Orange County. Please see enclosed maps.

Project Description: Demolish and replace the existing single-span riveted steel through plate girder bridge over Silverado Creek. The proposed construction would involve removing the existing steel bridge in two separate stages; the full or partial removal of the existing abutments and wingwalls; the construction of a wider concrete bridge, abutments, wingwalls, and retaining walls; the replacement of the existing metal beam guardrails; the widening of the roadway at both ends of the bridge approaches; regrading of the existing creek banks at the bridge; construction of a temporary construction access ramp into the creek; and the construction of scour countermeasures at the bridge foundations.

The proposed bridge would be approximately 58 feet long and 44 feet wide consisting of two 12-foot wide traffic lanes, two 5-foot shoulders, two traffic barriers, and a 5-foot sidewalk with railing (north side). The maximum depth of ground disturbance would be approximately 25 feet below the lowest point of the streambed and approximately 38 feet 6 inches below the roadway. The tallest proposed permanent feature would be roadway signage with a maximum height of approximately 10 feet.
In order to minimize construction activities within the creek, portions of the existing abutments may be reused and both sides widened in order to support the new bridge. The new abutments are expected to be supported on concrete spread

footings, similar to the existing foundations. Half of the existing steel bridge would be removed during the first construction phase while the remaining half is expected to be supported on temporary falsework in order to maintain one lane of traffic open during construction. The falsework supports are anticipated to be supported on spread footings within the creek. Construction is anticipated to start in May 2022 and last for approximately 1 year.

The proposed project would correct existing bridge deficiencies and enhance vehicular safety on the bridge. The project is being proposed because the existing bridge received a low Sufficiency Rating of 46.5 (out of 100) on the most recent Caltrans bridge inspection report. In addition to its advanced age and noticeable signs of deterioration, it has also been classified as functionally obsolete, which means that the bridge deck is too narrow for the current and anticipated traffic needs.

Caltrans is consulting with potentially interested parties for Section 106 and would appreciate any information you may provide regarding the presence of known or potential archaeological resources within the project location and/or immediate vicinity.

If you would like to share information about known or potential historic properties that could be affected by the project, Caltrans would greatly appreciate your response by March 26, 2021. If no response is received by this date, you will be contacted as a follow-up. Please direct your response to:

Jonathan Wright
PQS District Archeologist
Caltrans District 12
1750 East 4th Street, Suite 100
Santa Ana, CA 92705
Phone: (657) 328-6167
Email: jonathan.wright@dot.ca.gov

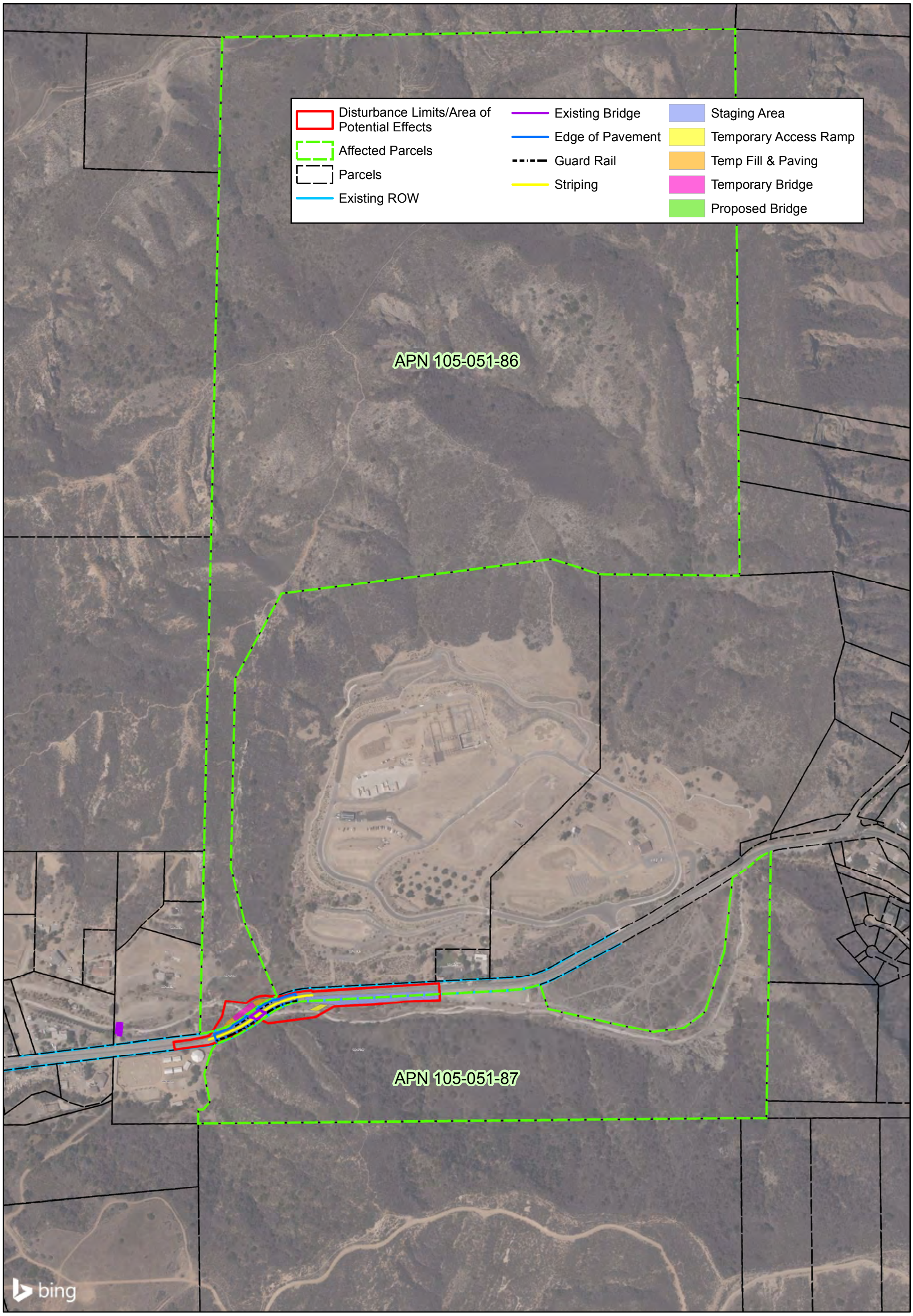
Charles Baker
Environmental Branch Chief
Caltrans District 12
1750 East 4th Street, Suite 100
Santa Ana, CA 92705
Phone: (657) 328-6139
Email: charles.baker@dot.ca.gov

Sincerely,

Charles Baker

CHARLES BAKER
Environmental Branch Chief
Caltrans District 12

Enclosure



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Project Study Area Map
Federal Project # BRLO-5955 (095)
Silverado Canyon Road Bridge over Silverado Creek (Bridge No. 55C-0174) Replacement Project
Orange County

Gmail

Liz Denniston <liz@paleosolutions.com>

Silverado Canyon Bridge Replacement Section 106 Consultation Request

1 message

Liz Denniston <liz@paleosolutions.com> Tue, Apr 6, 2021 at 11:28 AM
To: rgoff@campo-nsn.gov

Dear Mr. Goff,

You were recently mailed a consultation request letter from California Department of Transportation (Caltrans) regarding the Silverado Canyon Bridge Replacement Project [FID: BRLO-5955 (095)] (Project). On behalf of Caltrans, I am reaching out to ask if you had any questions, comments, or concerns regarding the Project. I have attached a copy of the letter sent for your convenience.

If you would like to share information about known or potential historic properties that could be affected by the Project, please direct your response to:

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Silverado Canyon Section 106_Goff.pdf
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Making Conservation a California Way of Life.

March 19, 2021

Julie Hagen, Chairperson
Viejas Band of Kumeyaay Indians
1 Viejas Grade Road
Alpine, CA, 91901

Dear Chairperson Hagen:

The County of Orange Public Works (County), in cooperation with the California Department of Transportation (Caltrans) and the Federal Highway Administration (FHWA) proposes to replace the Silverado Canyon Road Bridge over Silverado Creek (Bridge No. 55C-0174) (project). The project would utilize federal funding from the Federal Highway Administration (FHWA) for the proposed improvements; as a result, Caltrans must comply with Section 106 of the National Historic Preservation Act (36 CFR §800) on FHWA's behalf. The County is the lead agency under the California Environmental Quality Act (CEQA), and Caltrans is the lead agency under the National Environmental Policy Act (NEPA). This notification is intended to ensure compliance with requirements in Section 106.

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Project Location: The bridge replacement project is located at Silverado Canyon Road over Silverado Creek in Unincorporated Orange County. Please see enclosed maps.

Project Description: Demolish and replace the existing single-span riveted steel through plate girder bridge over Silverado Creek. The proposed construction would involve removing the existing steel bridge in two separate stages; the full or partial removal of the existing abutments and wingwalls; the construction of a wider concrete bridge, abutments, wingwalls, and retaining walls; the replacement of the existing metal beam guardrails; the widening of the roadway at both ends of the bridge approaches; regrading of the existing creek banks at the bridge; construction of a temporary construction access ramp into the creek; and the construction of scour countermeasures at the bridge foundations.

The proposed bridge would be approximately 58 feet long and 44 feet wide consisting of two 12-foot wide traffic lanes, two 5-foot shoulders, two traffic barriers, and a 5-foot sidewalk with railing (north side). The maximum depth of ground disturbance would be approximately 25 feet below the lowest point of the streambed and approximately 38 feet 6 inches below the roadway. The tallest proposed permanent feature would be roadway signage with a maximum height of approximately 10 feet.
In order to minimize construction activities within the creek, portions of the existing abutments may be reused and both sides widened in order to support the new bridge. The new abutments are expected to be supported on concrete spread

footings, similar to the existing foundations. Half of the existing steel bridge would be removed during the first construction phase while the remaining half is expected to be supported on temporary falsework in order to maintain one lane of traffic open during construction. The falsework supports are anticipated to be supported on spread footings within the creek. Construction is anticipated to start in May 2022 and last for approximately 1 year.

The proposed project would correct existing bridge deficiencies and enhance vehicular safety on the bridge. The project is being proposed because the existing bridge received a low Sufficiency Rating of 46.5 (out of 100) on the most recent Caltrans bridge inspection report. In addition to its advanced age and noticeable signs of deterioration, it has also been classified as functionally obsolete, which means that the bridge deck is too narrow for the current and anticipated traffic needs.

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Caltrans District 12
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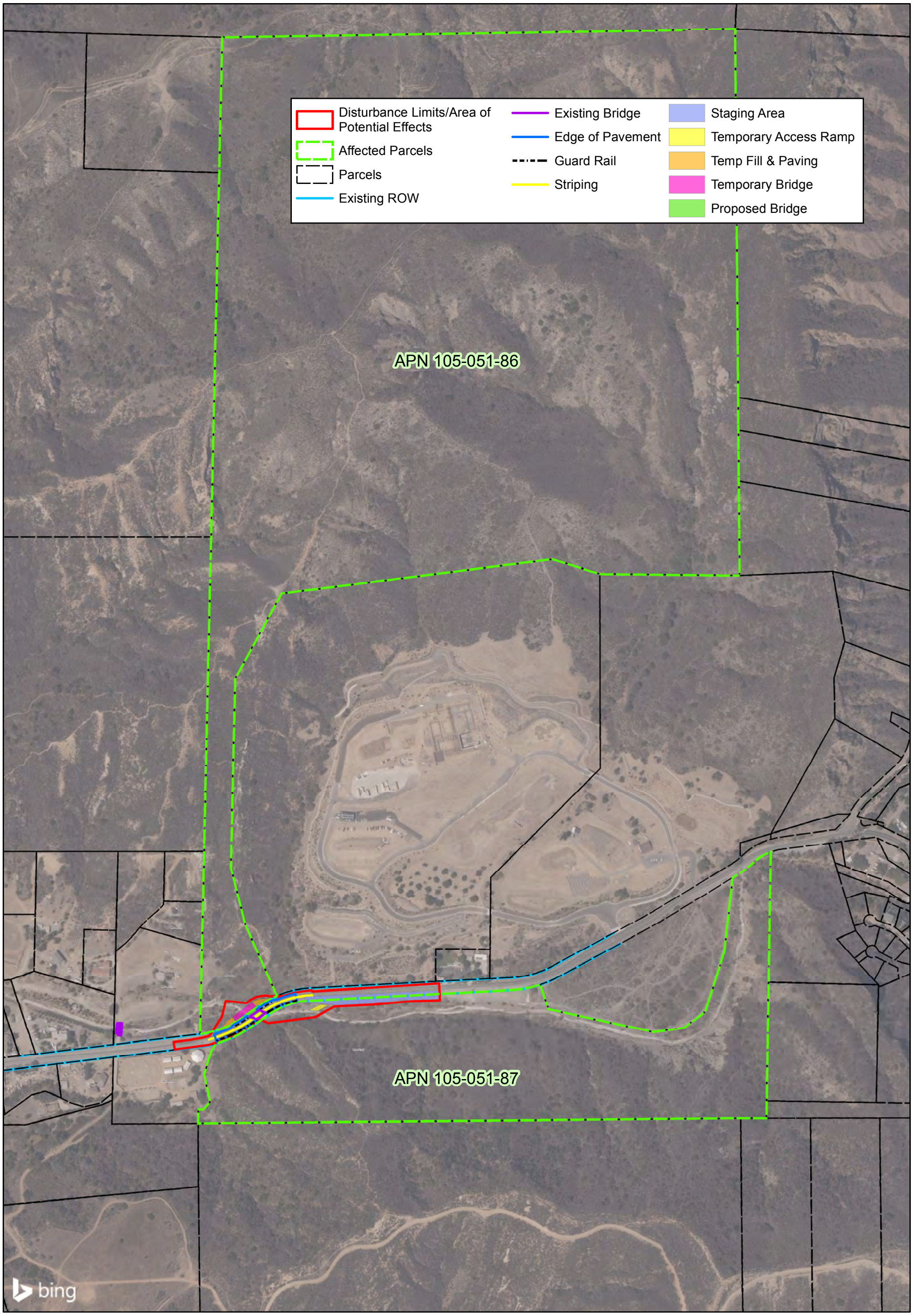
Charles Baker
Environmental Branch Chief
Caltrans District 12
1750 East 4th Street, Suite 100
Santa Ana, CA 92705
Phone: (657) 328-6139
Email: charles.baker@dot.ca.gov

Sincerely,

Charles Baker

CHARLES BAKER
Environmental Branch Chief
Caltrans District 12

Enclosure



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Project Study Area Map
Federal Project # BRLO-5955 (095)
Silverado Canyon Road Bridge over Silverado Creek (Bridge No. 55C-0174) Replacement Project
Orange County

Gmail

Liz Denniston <liz@paleosolutions.com>

Silverado Canyon Bridge Replacement Section 106 Consultation Request

1 message

Liz Denniston <liz@paleosolutions.com> Tue, Apr 6, 2021 at 12:07 PM
To: jhagen@viejas-nsn.gov

Dear Chairperson Hagen,

You were recently mailed a consultation request letter from California Department of Transportation (Caltrans) regarding the Silverado Canyon Bridge Replacement Project [FID: BRLO-5955 (095)] (Project). On behalf of Caltrans, I am reaching out to ask if you had any questions, comments, or concerns regarding the Project. I have attached a copy of the letter sent for your convenience.

If you would like to share information about known or potential historic properties that could be affected by the Project, please direct your response to:

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1750 East 4th Street, Suite 100
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www.dot.ca.gov

Making Conservation a California Way of Life.

March 19, 2021

Lisa Haws, Cultural Resources Manager
Sycuari Band of the Kumeyaay Nation
1 Kwaaypaay Court
El Cajon, CA, 92019

Dear Ms. Haws:

The County of Orange Public Works (County), in cooperation with the California Department of Transportation (Caltrans) and the Federal Highway Administration (FHWA) proposes to replace the Silverado Canyon Road Bridge over Silverado Creek (Bridge No. 55C-0174) (project). The project would utilize federal funding from the Federal Highway Administration (FHWA) for the proposed improvements; as a result, Caltrans must comply with Section 106 of the National Historic Preservation Act (36 CFR §800) on FHWA's behalf. The County is the lead agency under the California Environmental Quality Act (CEQA), and Caltrans is the lead agency under the National Environmental Policy Act (NEPA). This notification is intended to ensure compliance with requirements in Section 106.

Project Name: Silverado Canyon Road Bridge over Silverado Creek (Bridge No. 55C-0174) Replacement Project, County of Orange, California (Federal Project Number BRLO-5955 (095))

Project Location: The bridge replacement project is located at Silverado Canyon Road over Silverado Creek in Unincorporated Orange County. Please see enclosed maps.

Project Description: Demolish and replace the existing single-span riveted steel through plate girder bridge over Silverado Creek. The proposed construction would involve removing the existing steel bridge in two separate stages; the full or partial removal of the existing abutments and wingwalls; the construction of a wider concrete bridge, abutments, wingwalls, and retaining walls; the replacement of the existing metal beam guardrails; the widening of the roadway at both ends of the bridge approaches; regrading of the existing creek banks at the bridge; construction of a temporary construction access ramp into the creek; and the construction of scour countermeasures at the bridge foundations.

The proposed bridge would be approximately 58 feet long and 44 feet wide consisting of two 12-foot wide traffic lanes, two 5-foot shoulders, two traffic barriers, and a 5-foot sidewalk with railing (north side). The maximum depth of ground disturbance would be approximately 25 feet below the lowest point of the streambed and approximately 38 feet 6 inches below the roadway. The tallest proposed permanent feature would be roadway signage with a maximum height of approximately 10 feet.
In order to minimize construction activities within the creek, portions of the existing abutments may be reused and both sides widened in order to support the new bridge. The new abutments are expected to be supported on concrete spread

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The proposed project would correct existing bridge deficiencies and enhance vehicular safety on the bridge. The project is being proposed because the existing bridge received a low Sufficiency Rating of 46.5 (out of 100) on the most recent Caltrans bridge inspection report. In addition to its advanced age and noticeable signs of deterioration, it has also been classified as functionally obsolete, which means that the bridge deck is too narrow for the current and anticipated traffic needs.

Caltrans is consulting with potentially interested parties for Section 106 and would appreciate any information you may provide regarding the presence of known or potential archaeological resources within the project location and/or immediate vicinity.

If you would like to share information about known or potential historic properties that could be affected by the project, Caltrans would greatly appreciate your response by March 26, 2021. If no response is received by this date, you will be contacted as a follow-up. Please direct your response to:

Jonathan Wright
PQS District Archeologist
Caltrans District 12
1750 East 4th Street, Suite 100
Santa Ana, CA 92705
Phone: (657) 328-6167
Email: jonathan.wright@dot.ca.gov

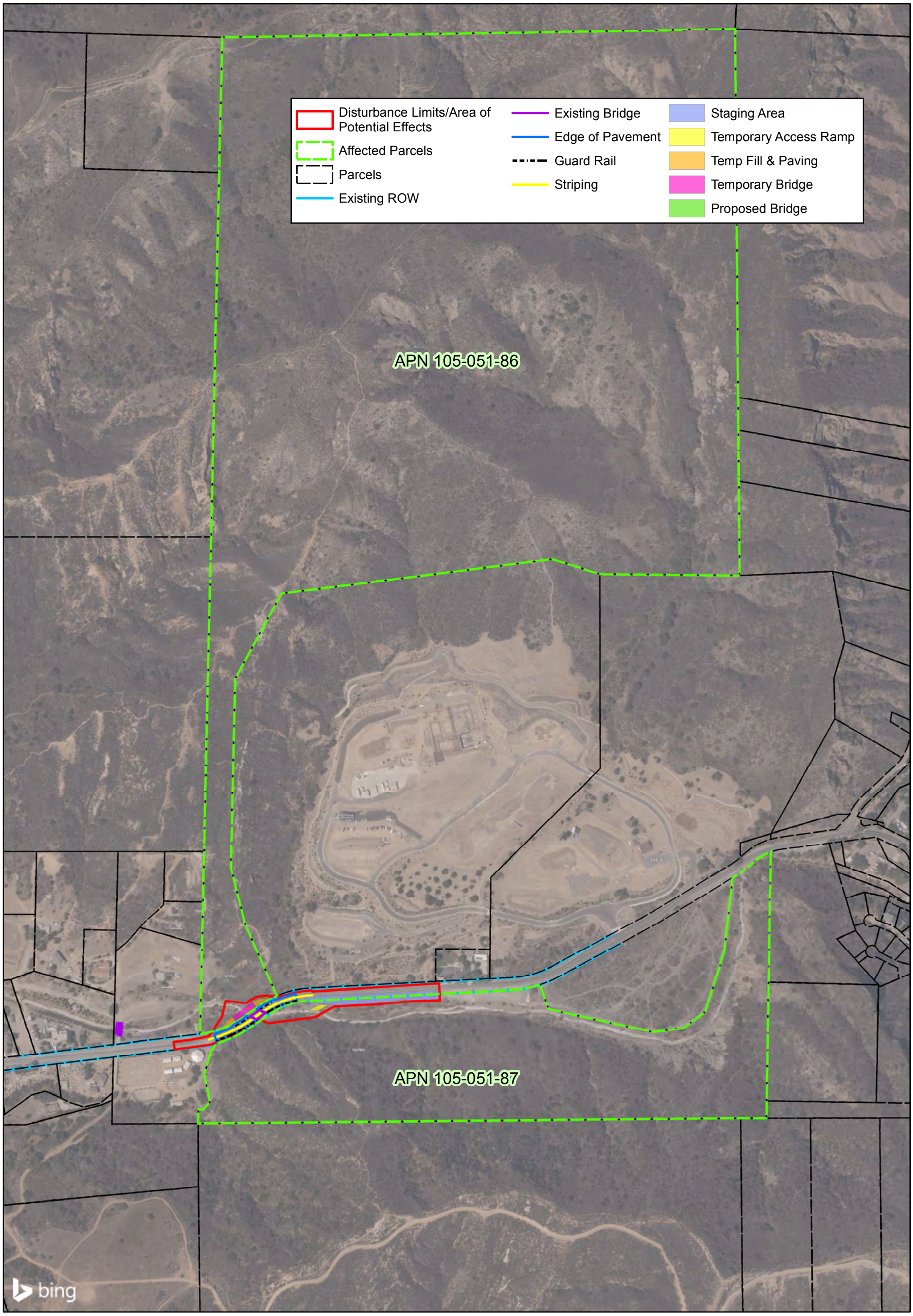
Charles Baker
Environmental Branch Chief
Caltrans District 12
1750 East 4th Street, Suite 100
Santa Ana, CA 92705
Phone: (657) 328-6139
Email: charles.baker@dot.ca.gov

Sincerely,

Charles Baker

CHARLES BAKER
Environmental Branch Chief
Caltrans District 12

Enclosure



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Project Study Area Map
Federal Project # BRLO-5955 (095)
Silverado Canyon Road Bridge over Silverado Creek (Bridge No. 55C-0174) Replacement Project
Orange County

Gmail

Liz Denniston <liz@paleosolutions.com>

Silverado Canyon Bridge Replacement Section 106 Consultation Request

1 message

Liz Denniston <liz@paleosolutions.com> Tue, Apr 6, 2021 at 12:06 PM
To: lhaws@sycuan-nsn.gov

Dear Ms. Haws,

You were recently mailed a consultation request letter from California Department of Transportation (Caltrans) regarding the Silverado Canyon Bridge Replacement Project [FID: BRLO-5955 (095)] (Project). On behalf of Caltrans, I am reaching out to ask if you had any questions, comments, or concerns regarding the Project. I have attached a copy of the letter sent for your convenience.

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DISTRICT 12, DIVISION OF ENVIRONMENTAL PLANNING
1750 East 4th Street, Suite 100
Santa Ana CA 92705
PHONE (657) 328-6000
TTY 711
www.dot.ca.gov

Making Conservation a California Way of Life.

March 19, 2021

Sonia Johnston, Chairperson
Juaneno Band of Mission Indians
P.O. Box 25628
Santa Ana, CA, 92799

Dear Chairperson Johnston:

The County of Orange Public Works (County), in cooperation with the California Department of Transportation (Caltrans) and the Federal Highway Administration (FHWA) proposes to replace the Silverado Canyon Road Bridge over Silverado Creek (Bridge No. 55C-0174) (project). The project would utilize federal funding from the Federal Highway Administration (FHWA) for the proposed improvements; as a result, Caltrans must comply with Section 106 of the National Historic Preservation Act (36 CFR §800) on FHWA's behalf. The County is the lead agency under the California Environmental Quality Act (CEQA), and Caltrans is the lead agency under the National Environmental Policy Act (NEPA). This notification is intended to ensure compliance with requirements in Section 106.

Project Name: Silverado Canyon Road Bridge over Silverado Creek (Bridge No. 55C-0174) Replacement Project, County of Orange, California (Federal Project Number BRLO-5955 (095))

Project Location: The bridge replacement project is located at Silverado Canyon Road over Silverado Creek in Unincorporated Orange County. Please see enclosed maps.

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Charles Baker
Environmental Branch Chief
Caltrans District 12
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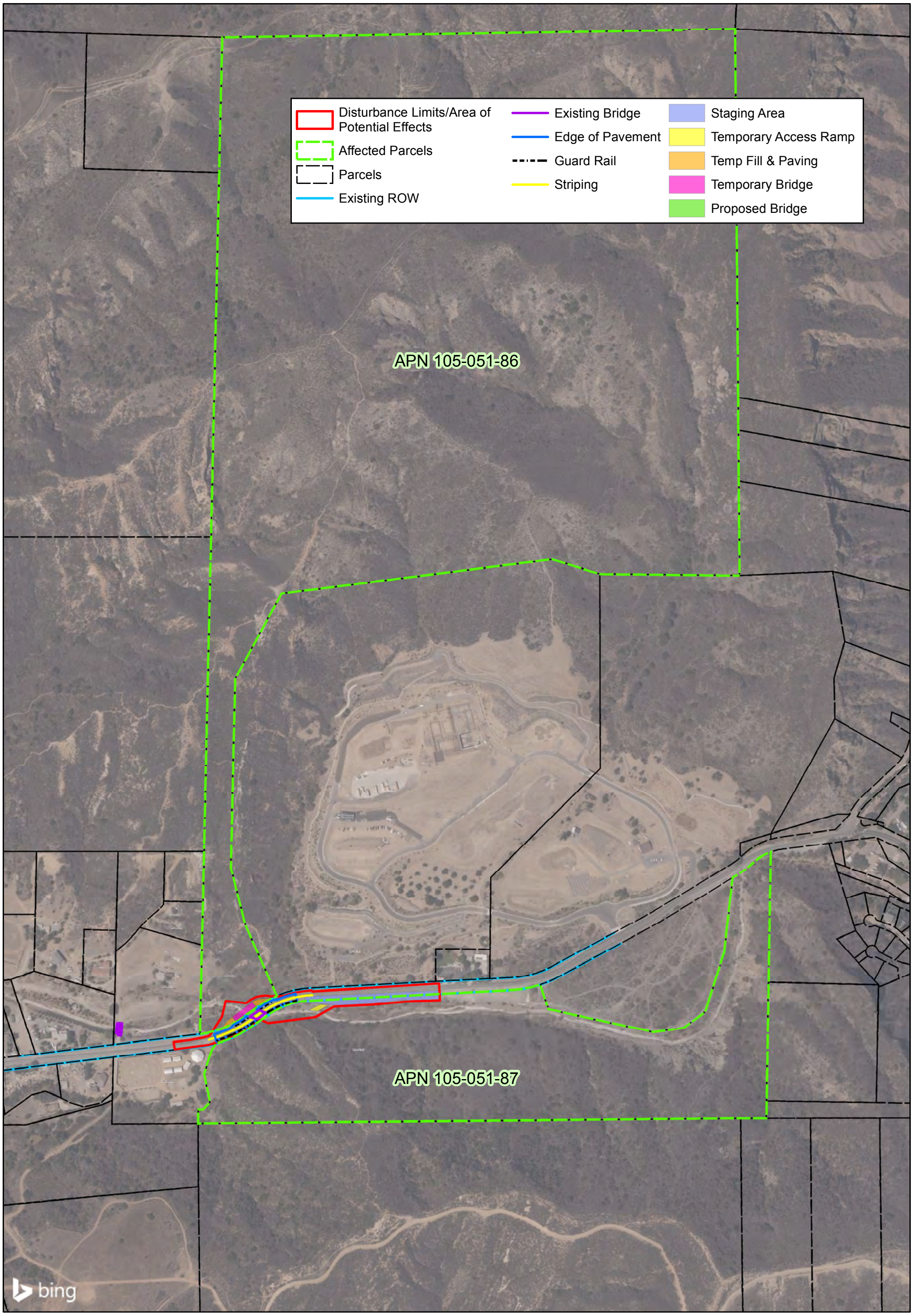
Santa Ana, CA 92705
Phone: (657) 328-6139
Email: charles.baker@dot.ca.gov

Sincerely,

Charles Baker

CHARLES BAKER
Environmental Branch Chief
Caltrans District 12

Enclosure



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Project Study Area Map
Federal Project # BRLO-5955 (095)
Silverado Canyon Road Bridge over Silverado Creek (Bridge No. 55C-0174) Replacement Project
Orange County

Gmail

Liz Denniston <liz@paleosolutions.com>

Silverado Canyon Bridge Replacement Section 106 Consultation Request

1 message

Liz Denniston <liz@paleosolutions.com> Tue, Apr 6, 2021 at 11:49 AM
To: sonia.johnston@sbcglobal.net

Dear Chairperson Johnston,

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Making Conservation a California Way of Life.

March 19, 2021

Allen E. Lawson, Chairperson
San Pasqual Band of Mission Indians
P.O. Box 365
Valley Center, CA, 92082

Dear Chairperson Lawson:

The County of Orange Public Works (County), in cooperation with the California Department of Transportation (Caltrans) and the Federal Highway Administration (FHWA) proposes to replace the Silverado Canyon Road Bridge over Silverado Creek (Bridge No. 55C-0174) (project). The project would utilize federal funding from the Federal Highway Administration (FHWA) for the proposed improvements; as a result, Caltrans must comply with Section 106 of the National Historic Preservation Act (36 CFR §800) on FHWA's behalf. The County is the lead agency under the California Environmental Quality Act (CEQA), and Caltrans is the lead agency under the National Environmental Policy Act (NEPA). This notification is intended to ensure compliance with requirements in Section 106.

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If you would like to share information about known or potential historic properties that could be affected by the project, Caltrans would greatly appreciate your response by March 26, 2021. If no response is received by this date, you will be contacted as a follow-up. Please direct your response to:

Jonathan Wright
PQS District Archeologist
Caltrans District 12
1750 East 4th Street, Suite 100
Santa Ana, CA 92705
Phone: (657) 328-6167
Email: jonathan.wright@dot.ca.gov

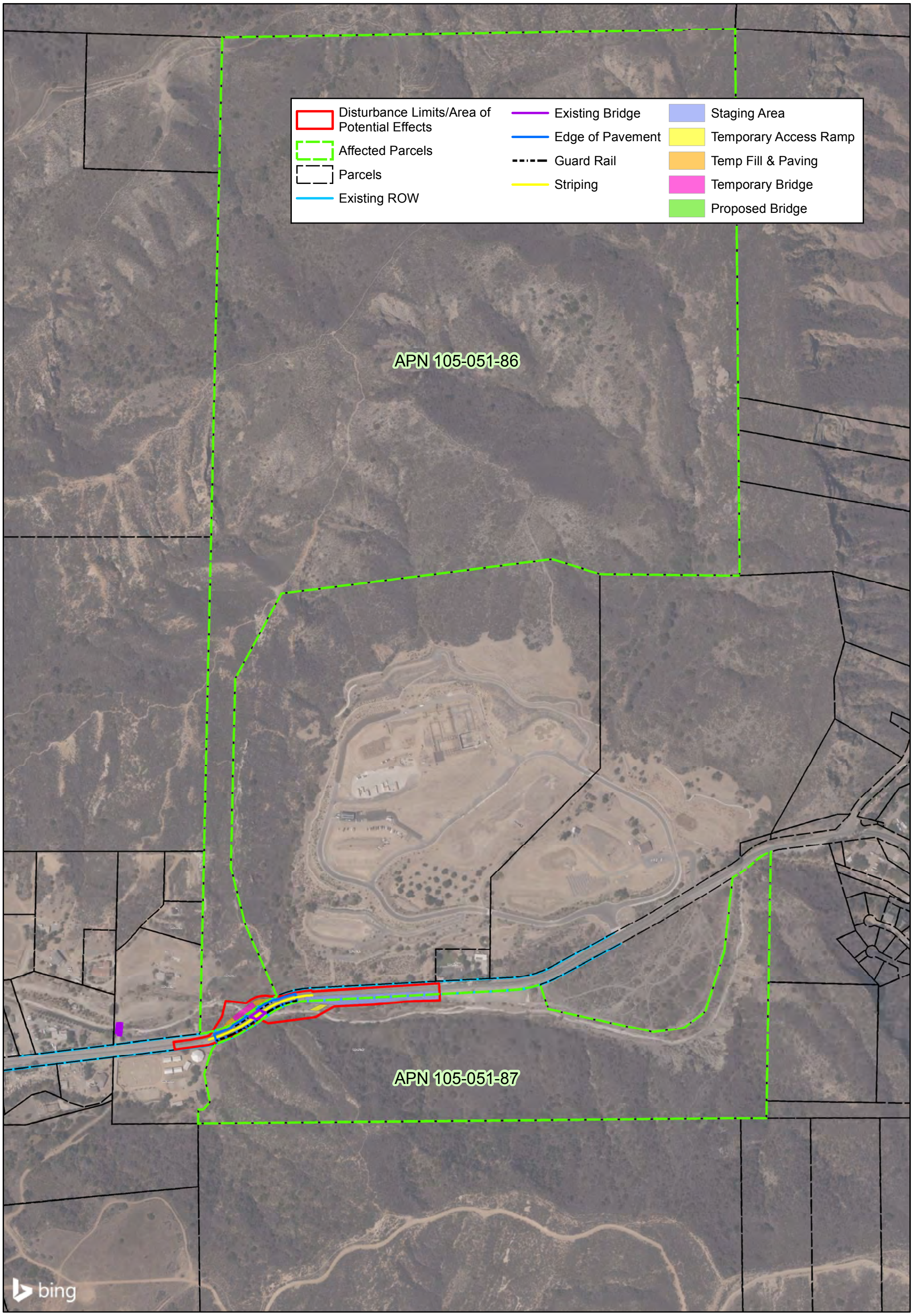
Charles Baker
Environmental Branch Chief
Caltrans District 12
1750 East 4th Street, Suite 100
Santa Ana, CA 92705
Phone: (657) 328-6139
Email: charles.baker@dot.ca.gov

Sincerely,

Charles Baker

CHARLES BAKER
Environmental Branch Chief
Caltrans District 12

Enclosure



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Project Study Area Map
Federal Project # BRLO-5955 (095)
Silverado Canyon Road Bridge over Silverado Creek (Bridge No. 55C-0174) Replacement Project
Orange County

Gmail

Liz Denniston <liz@paleosolutions.com>

Silverado Canyon Bridge Replacement Section 106 Consultation Request

1 message

Liz Denniston <liz@paleosolutions.com> Tue, Apr 6, 2021 at 12:04 PM
To: allenl@sanpasqualtribe.org

Dear Chairperson Lawson,

You were recently mailed a consultation request letter from California Department of Transportation (Caltrans) regarding the Silverado Canyon Bridge Replacement Project [FID: BRLO-5955 (095)] (Project). On behalf of Caltrans, I am reaching out to ask if you had any questions, comments, or concerns regarding the Project. I have attached a copy of the letter sent for your convenience.

If you would like to share information about known or potential historic properties that could be affected by the Project, please direct your response to:

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or

Charles Baker

- Environmental Branch Chief
- Caltrans District 12
- 1750 East 4th Street, Suite 100
- Santa Ana, CA 92705
- Phone: (657) 328-6139
- Email: charles.baker@dot.ca.gov

Thank you,

Liz Denniston, MA, RPA Archaeological Principal Investigator, Paleo Solutions, Inc.
Phone: (626) 205-5444
Website: www.paleosolutions.com
Address: 911 S. Primrose Ave., Unit N., Monrovia, CA 91016
Branches: Denver, CO; Redlands, CA; Oceanside, CA; Bend, OR
Certifications: DBE • SBE • WBE • SDB • WOSB • EDWOSB

Silverado Canyon Section 106_Lawson.pdf
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DEPARTMENT OF TRANSPORTATION
DISTRICT 12, DIVISION OF ENVIRONMENTAL PLANNING
1750 East 4th Street, Suite 100
Santa Ana CA 92705
PHONE (657) 328-6000
TTY 711
www.dot.ca.gov

Making Conservation a California Way of Life.

March 19, 2021

Cody J. Martinez, Chairperson
Sycuan Band of the Kumeyaay Nation
1 Kwaaypaay Court
El Cajon, CA, 92019

Dear Chairperson Martinez:

The County of Orange Public Works (County), in cooperation with the California Department of Transportation (Caltrans) and the Federal Highway Administration (FHWA) proposes to replace the Silverado Canyon Road Bridge over Silverado Creek (Bridge No. 55C-0174) (project). The project would utilize federal funding from the Federal Highway Administration (FHWA) for the proposed improvements; as a result, Caltrans must comply with Section 106 of the National Historic Preservation Act (36 CFR §800) on FHWA's behalf. The County is the lead agency under the California Environmental Quality Act (CEQA), and Caltrans is the lead agency under the National Environmental Policy Act (NEPA). This notification is intended to ensure compliance with requirements in Section 106.

Project Name: Silverado Canyon Road Bridge over Silverado Creek (Bridge No. 55C-0174) Replacement Project, County of Orange, California (Federal Project Number BRLO-5955 (095))

Project Location: The bridge replacement project is located at Silverado Canyon Road over Silverado Creek in Unincorporated Orange County. Please see enclosed maps.

Project Description: Demolish and replace the existing single-span riveted steel through plate girder bridge over Silverado Creek. The proposed construction would involve removing the existing steel bridge in two separate stages; the full or partial removal of the existing abutments and wingwalls; the construction of a wider concrete bridge, abutments, wingwalls, and retaining walls; the replacement of the existing metal beam guardrails; the widening of the roadway at both ends of the bridge approaches; regrading of the existing creek banks at the bridge; construction of a temporary construction access ramp into the creek; and the construction of scour countermeasures at the bridge foundations.

The proposed bridge would be approximately 58 feet long and 44 feet wide consisting of two 12-foot wide traffic lanes, two 5-foot shoulders, two traffic barriers, and a 5-foot sidewalk with railing (north side). The maximum depth of ground disturbance would be approximately 25 feet below the lowest point of the streambed and approximately 38 feet 6 inches below the roadway. The tallest proposed permanent feature would be roadway signage with a maximum height of approximately 10 feet.
In order to minimize construction activities within the creek, portions of the existing abutments may be reused and both sides widened in order to support the new bridge. The new abutments are expected to be supported on concrete spread

footings, similar to the existing foundations. Half of the existing steel bridge would be removed during the first construction phase while the remaining half is expected to be supported on temporary falsework in order to maintain one lane of traffic open during construction. The falsework supports are anticipated to be supported on spread footings within the creek. Construction is anticipated to start in May 2022 and last for approximately 1 year.

The proposed project would correct existing bridge deficiencies and enhance vehicular safety on the bridge. The project is being proposed because the existing bridge received a low Sufficiency Rating of 46.5 (out of 100) on the most recent Caltrans bridge inspection report. In addition to its advanced age and noticeable signs of deterioration, it has also been classified as functionally obsolete, which means that the bridge deck is too narrow for the current and anticipated traffic needs.

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Charles Baker
Environmental Branch Chief
Caltrans District 12
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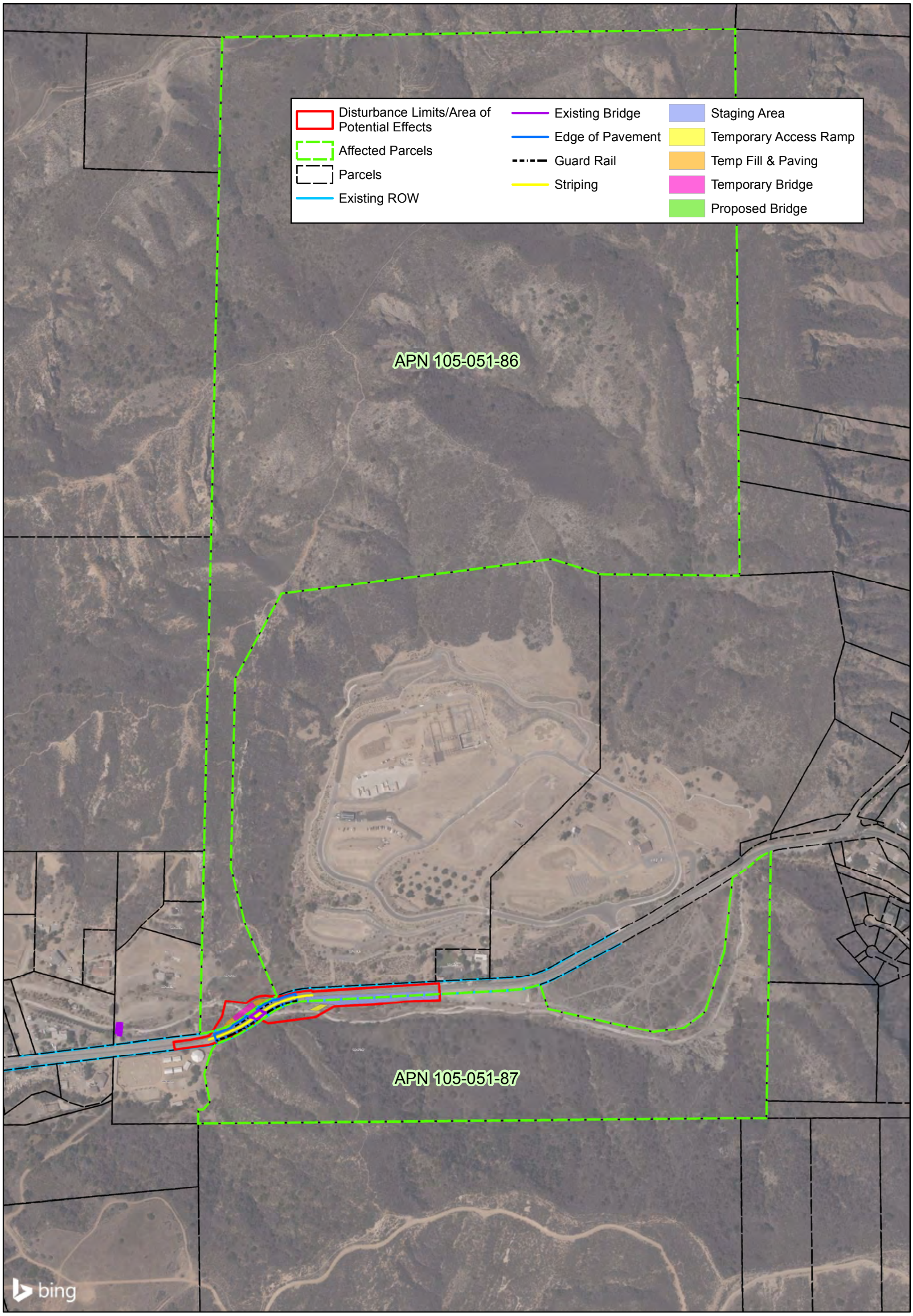
Santa Ana, CA 92705
Phone: (657) 328-6139
Email: charles.baker@dot.ca.gov

Sincerely,

Charles Baker

CHARLES BAKER
Environmental Branch Chief
Caltrans District 12

Enclosure



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Project Study Area Map
Federal Project # BRLO-5955 (095)
Silverado Canyon Road Bridge over Silverado Creek (Bridge No. 55C-0174) Replacement Project
Orange County

Gmail

Liz Denniston <liz@paleosolutions.com>

Silverado Canyon Bridge Replacement Section 106 Consultation Request

1 message

Liz Denniston <liz@paleosolutions.com> Tue, Apr 6, 2021 at 12:05 PM
To: ssilva@sycuan-nsn.gov

Dear Chairperson Martinez,

You were recently mailed a consultation request letter from California Department of Transportation (Caltrans) regarding the Silverado Canyon Bridge Replacement Project [FID: BRLO-5955 (095)] (Project). On behalf of Caltrans, I am reaching out to ask if you had any questions, comments, or concerns regarding the Project. I have attached a copy of the letter sent for your convenience.

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- Caltrans District 12
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Thank you,

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Silverado Canyon Section 106_Martinez.pdf
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1750 East 4th Street, Suite 100
Santa Ana CA 92705
PHONE (657) 328-6000
TTY 711
www.dot.ca.gov

Making Conservation a California Way of Life.

March 19, 2021

Javaughn Miller, Tribal Administrator
La Posta Band of Mission Indians
8 Crestwood Road
Boulevard, CA, 91905

Dear Administrator Miller:

The County of Orange Public Works (County), in cooperation with the California Department of Transportation (Caltrans) and the Federal Highway Administration (FHWA) proposes to replace the Silverado Canyon Road Bridge over Silverado Creek (Bridge No. 55C-0174) (project). The project would utilize federal funding from the Federal Highway Administration (FHWA) for the proposed improvements; as a result, Caltrans must comply with Section 106 of the National Historic Preservation Act (36 CFR §800) on FHWA's behalf. The County is the lead agency under the California Environmental Quality Act (CEQA), and Caltrans is the lead agency under the National Environmental Policy Act (NEPA). This notification is intended to ensure compliance with requirements in Section 106.

Project Name: Silverado Canyon Road Bridge over Silverado Creek (Bridge No. 55C-0174) Replacement Project, County of Orange, California (Federal Project Number BRLO-5955 (095))

Project Location: The bridge replacement project is located at Silverado Canyon Road over Silverado Creek in Unincorporated Orange County. Please see enclosed maps.

Project Description: Demolish and replace the existing single-span riveted steel through plate girder bridge over Silverado Creek. The proposed construction would involve removing the existing steel bridge in two separate stages; the full or partial removal of the existing abutments and wingwalls; the construction of a wider concrete bridge, abutments, wingwalls, and retaining walls; the replacement of the existing metal beam guardrails; the widening of the roadway at both ends of the bridge approaches; regrading of the existing creek banks at the bridge; construction of a temporary construction access ramp into the creek; and the construction of scour countermeasures at the bridge foundations.

The proposed bridge would be approximately 58 feet long and 44 feet wide consisting of two 12-foot wide traffic lanes, two 5-foot shoulders, two traffic barriers, and a 5-foot sidewalk with railing (north side). The maximum depth of ground disturbance would be approximately 25 feet below the lowest point of the streambed and approximately 38 feet 6 inches below the roadway. The tallest proposed permanent feature would be roadway signage with a maximum height of approximately 10 feet.
In order to minimize construction activities within the creek, portions of the existing abutments may be reused and both sides widened in order to support the new bridge. The new abutments are expected to be supported on concrete spread

footings, similar to the existing foundations. Half of the existing steel bridge would be removed during the first construction phase while the remaining half is expected to be supported on temporary falsework in order to maintain one lane of traffic open during construction. The falsework supports are anticipated to be supported on spread footings within the creek. Construction is anticipated to start in May 2022 and last for approximately 1 year.

The proposed project would correct existing bridge deficiencies and enhance vehicular safety on the bridge. The project is being proposed because the existing bridge received a low Sufficiency Rating of 46.5 (out of 100) on the most recent Caltrans bridge inspection report. In addition to its advanced age and noticeable signs of deterioration, it has also been classified as functionally obsolete, which means that the bridge deck is too narrow for the current and anticipated traffic needs.

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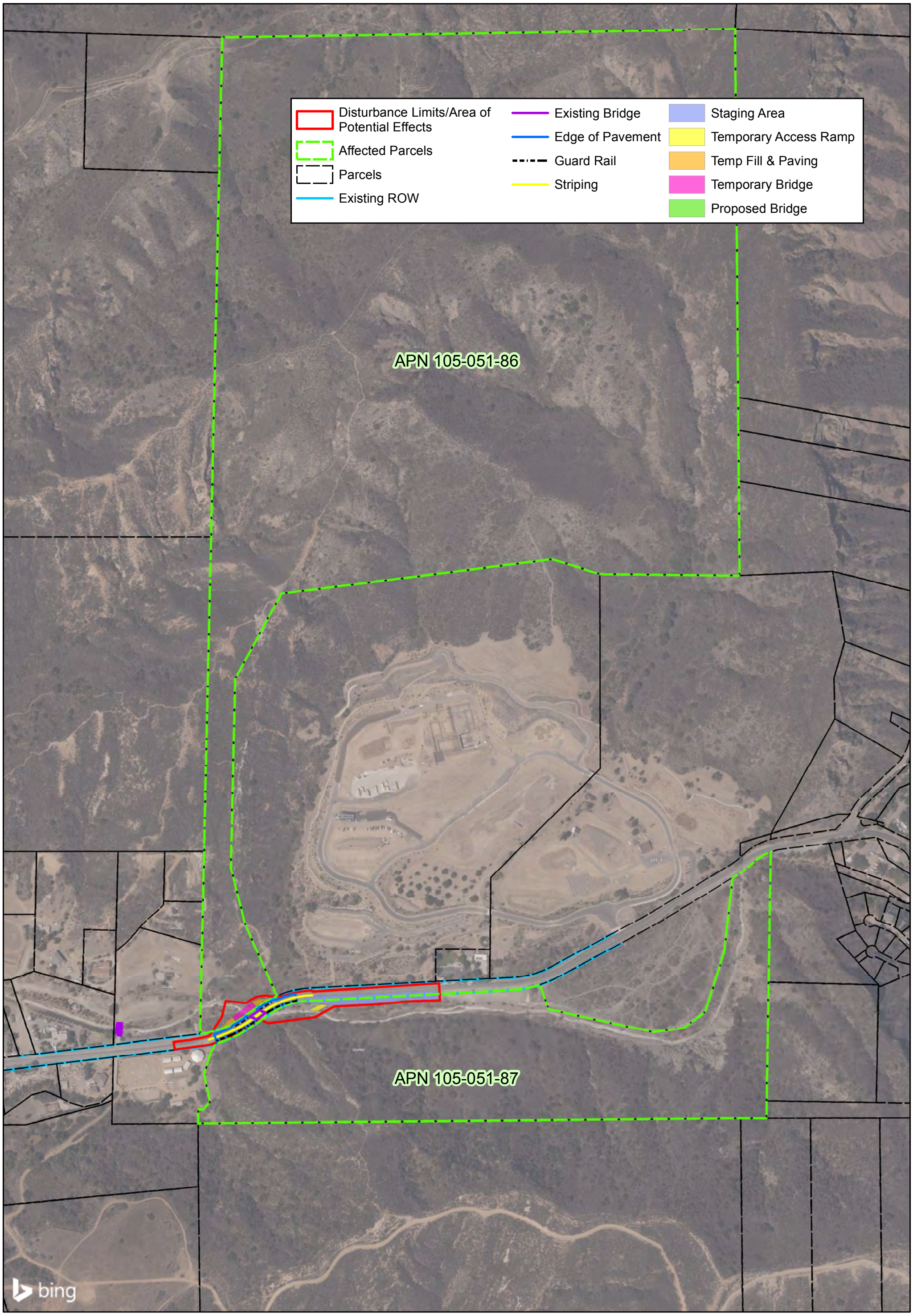
Charles Baker
Environmental Branch Chief
Caltrans District 12
1750 East 4th Street, Suite 100
Santa Ana, CA 92705
Phone: (657) 328-6139
Email: charles.baker@dot.ca.gov

Sincerely,

Charles Baker

CHARLES BAKER
Environmental Branch Chief
Caltrans District 12

Enclosure



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Project Study Area Map
Federal Project # BRLO-5955 (095)
Silverado Canyon Road Bridge over Silverado Creek (Bridge No. 55C-0174) Replacement Project
Orange County

Gmail

Liz Denniston <liz@paleosolutions.com>

Silverado Canyon Bridge Replacement Section 106 Consultation Request

1 message

Liz Denniston <liz@paleosolutions.com> Tue, Apr 6, 2021 at 11:57 AM
To: jmiller@lptribe.net

Dear Adminstrator Miller,

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or

Charles Baker

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Thank you,

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Silverado Canyon Section 106_Miller.pdf
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1750 East 4th Street, Suite 100
Santa Ana CA 92705
PHONE (657) 328-6000
TTY 711
www.dot.ca.gov

Making Conservation a California Way of Life.

March 19, 2021

Anthony Morales, Chairperson
Gabrieleno/Tongva San Gabriel Band of Mission Indians
P.O. Box 693
Gabrieleno San Gabriel, CA, 91778

Dear Chairperson Morales:

The County of Orange Public Works (County), in cooperation with the California Department of Transportation (Caltrans) and the Federal Highway Administration (FHWA) proposes to replace the Silverado Canyon Road Bridge over Silverado Creek (Bridge No. 55C-0174) (project). The project would utilize federal funding from the Federal Highway Administration (FHWA) for the proposed improvements; as a result, Caltrans must comply with Section 106 of the National Historic Preservation Act (36 CFR §800) on FHWA's behalf. The County is the lead agency under the California Environmental Quality Act (CEQA), and Caltrans is the lead agency under the National Environmental Policy Act (NEPA). This notification is intended to ensure compliance with requirements in Section 106.

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The proposed bridge would be approximately 58 feet long and 44 feet wide consisting of two 12-foot wide traffic lanes, two 5-foot shoulders, two traffic barriers, and a 5-foot sidewalk with railing (north side). The maximum depth of ground disturbance would be approximately 25 feet below the lowest point of the streambed and approximately 38 feet 6 inches below the roadway. The tallest proposed permanent feature would be roadway signage with a maximum height of approximately 10 feet.
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Charles Baker
Environmental Branch Chief
Caltrans District 12
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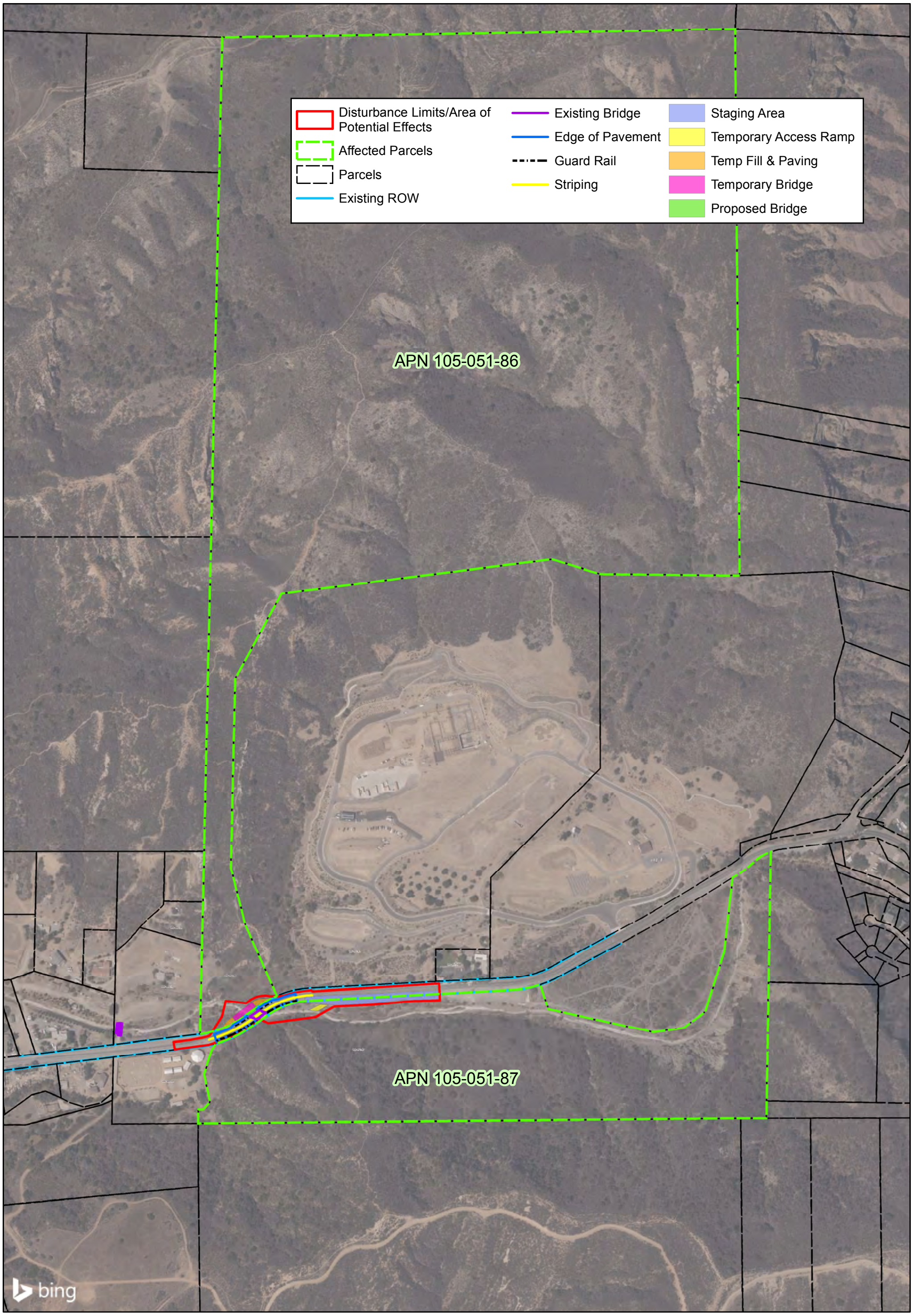
Santa Ana, CA 92705
Phone: (657) 328-6139
Email: charles.baker@dot.ca.gov

Sincerely,

Charles Baker

CHARLES BAKER
Environmental Branch Chief
Caltrans District 12

Enclosure



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Project Study Area Map
Federal Project # BRLO-5955 (095)
Silverado Canyon Road Bridge over Silverado Creek (Bridge No. 55C-0174) Replacement Project
Orange County

Gmail

Liz Denniston <liz@paleosolutions.com>

Silverado Canyon Bridge Replacement Section 106 Consultation Request

1 message

Liz Denniston <liz@paleosolutions.com> Tue, Apr 6, 2021 at 11:42 AM
To: GTTribalcouncil@aol.com

Dear Chairperson Morales,

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Thank you,

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1750 East 4th Street, Suite 100
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www.dot.ca.gov

Making Conservation a California Way of Life.

March 19, 2021

Gwendolyn Parada, Chairperson
La Posta Band of Mission Indians
8 Crestwood Road
Boulevard, CA, 91905

Dear Chairperson Parada:

The County of Orange Public Works (County), in cooperation with the California Department of Transportation (Caltrans) and the Federal Highway Administration (FHWA) proposes to replace the Silverado Canyon Road Bridge over Silverado Creek (Bridge No. 55C-0174) (project). The project would utilize federal funding from the Federal Highway Administration (FHWA) for the proposed improvements; as a result, Caltrans must comply with Section 106 of the National Historic Preservation Act (36 CFR §800) on FHWA's behalf. The County is the lead agency under the California Environmental Quality Act (CEQA), and Caltrans is the lead agency under the National Environmental Policy Act (NEPA). This notification is intended to ensure compliance with requirements in Section 106.

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Charles Baker
Environmental Branch Chief
Caltrans District 12
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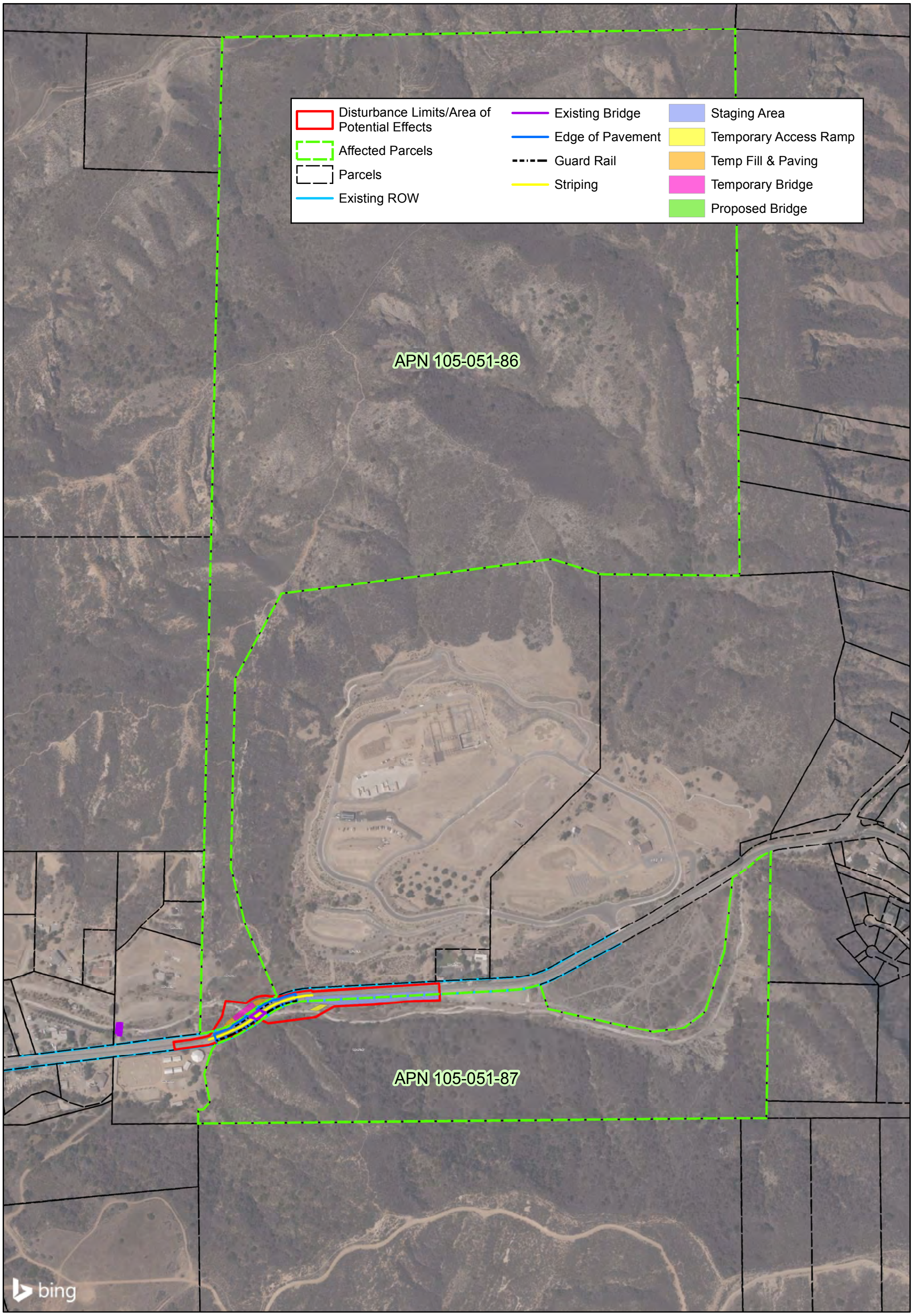
Santa Ana, CA 92705
Phone: (657) 328-6139
Email: charles.baker@dot.ca.gov

Sincerely,

Charles Baker

CHARLES BAKER
Environmental Branch Chief
Caltrans District 12

Enclosure



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Project Study Area Map
Federal Project # BRLO-5955 (095)
Silverado Canyon Road Bridge over Silverado Creek (Bridge No. 55C-0174) Replacement Project
Orange County

Gmail

Liz Denniston <liz@paleosolutions.com>

Silverado Canyon Bridge Replacement Section 106 Consultation Request

1 message

Liz Denniston <liz@paleosolutions.com> Tue, Apr 6, 2021 at 11:56 AM
To: LP13boots@aol.com

Dear Chairperson Parada,

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Charles Baker

- Environmental Branch Chief
- Caltrans District 12
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- Email: charles.baker@dot.ca.gov

Thank you,

Liz Denniston, MA, RPA Archaeological Principal Investigator, Paleo Solutions, Inc.
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DISTRICT 12, DIVISION OF ENVIRONMENTAL PLANNING
1750 East 4th Street, Suite 100
Santa Ana CA 92705
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Making Conservation a California Way of Life.

March 19, 2021

Joyce Perry, Tribal Manager
Juaneno Band of Mission Indians Acjachemen Nation - Belardes
4955 Paseo Segovia
Irvine, CA, 92603

Dear Ms. Perry:

The County of Orange Public Works (County), in cooperation with the California Department of Transportation (Caltrans) and the Federal Highway Administration (FHWA) proposes to replace the Silverado Canyon Road Bridge over Silverado Creek (Bridge No. 55C-0174) (project). The project would utilize federal funding from the Federal Highway Administration (FHWA) for the proposed improvements; as a result, Caltrans must comply with Section 106 of the National Historic Preservation Act (36 CFR §800) on FHWA's behalf. The County is the lead agency under the California Environmental Quality Act (CEQA), and Caltrans is the lead agency under the National Environmental Policy Act (NEPA). This notification is intended to ensure compliance with requirements in Section 106.

Project Name: Silverado Canyon Road Bridge over Silverado Creek (Bridge No. 55C-0174) Replacement Project, County of Orange, California (Federal Project Number BRLO-5955 (095))

Project Location: The bridge replacement project is located at Silverado Canyon Road over Silverado Creek in Unincorporated Orange County. Please see enclosed maps.

Project Description: Demolish and replace the existing single-span riveted steel through plate girder bridge over Silverado Creek. The proposed construction would involve removing the existing steel bridge in two separate stages; the full or partial removal of the existing abutments and wingwalls; the construction of a wider concrete bridge, abutments, wingwalls, and retaining walls; the replacement of the existing metal beam guardrails; the widening of the roadway at both ends of the bridge approaches; regrading of the existing creek banks at the bridge; construction of a temporary construction access ramp into the creek; and the construction of scour countermeasures at the bridge foundations.

The proposed bridge would be approximately 58 feet long and 44 feet wide consisting of two 12-foot wide traffic lanes, two 5-foot shoulders, two traffic barriers, and a 5-foot sidewalk with railing (north side). The maximum depth of ground disturbance would be approximately 25 feet below the lowest point of the streambed and approximately 38 feet 6 inches below the roadway. The tallest proposed permanent feature would be roadway signage with a maximum height of approximately 10 feet.
In order to minimize construction activities within the creek, portions of the existing abutments may be reused and both sides widened in order to support the new bridge. The new abutments are expected to be supported on concrete spread

footings, similar to the existing foundations. Half of the existing steel bridge would be removed during the first construction phase while the remaining half is expected to be supported on temporary falsework in order to maintain one lane of traffic open during construction. The falsework supports are anticipated to be supported on spread footings within the creek. Construction is anticipated to start in May 2022 and last for approximately 1 year.

The proposed project would correct existing bridge deficiencies and enhance vehicular safety on the bridge. The project is being proposed because the existing bridge received a low Sufficiency Rating of 46.5 (out of 100) on the most recent Caltrans bridge inspection report. In addition to its advanced age and noticeable signs of deterioration, it has also been classified as functionally obsolete, which means that the bridge deck is too narrow for the current and anticipated traffic needs.

Caltrans is consulting with potentially interested parties for Section 106 and would appreciate any information you may provide regarding the presence of known or potential archaeological resources within the project location and/or immediate vicinity.

If you would like to share information about known or potential historic properties that could be affected by the project, Caltrans would greatly appreciate your response by March 26, 2021. If no response is received by this date, you will be contacted as a follow-up. Please direct your response to:

Jonathan Wright
PQS District Archeologist
Caltrans District 12
1750 East 4th Street, Suite 100
Santa Ana, CA 92705
Phone: (657) 328-6167
Email: jonathan.wright@dot.ca.gov

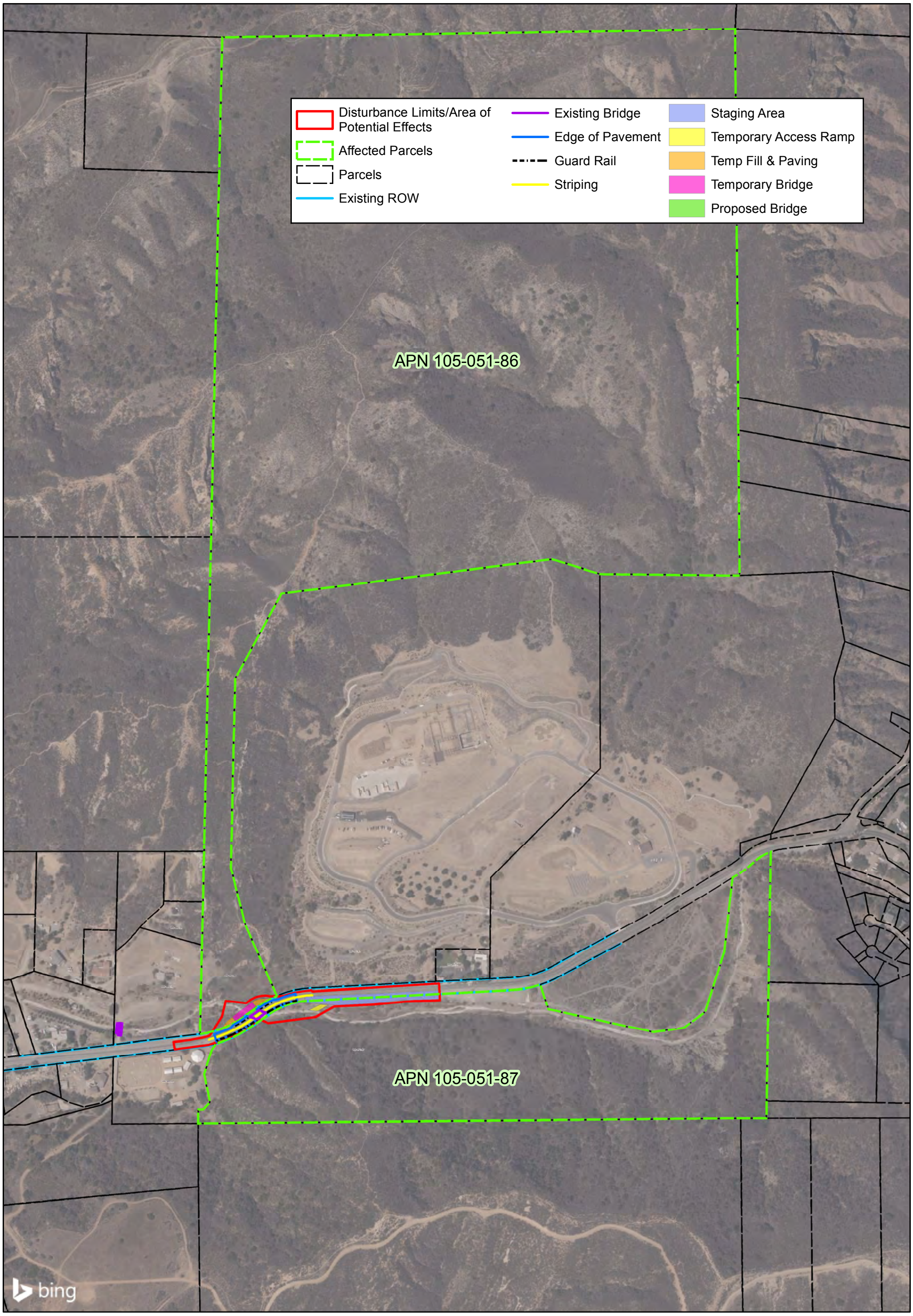
Charles Baker
Environmental Branch Chief
Caltrans District 12
1750 East 4th Street, Suite 100
Santa Ana, CA 92705
Phone: (657) 328-6139
Email: charles.baker@dot.ca.gov

Sincerely,

Charles Baker

CHARLES BAKER
Environmental Branch Chief
Caltrans District 12

Enclosure



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Project Study Area Map
Federal Project # BRLO-5955 (095)
Silverado Canyon Road Bridge over Silverado Creek (Bridge No. 55C-0174) Replacement Project
Orange County

Gmail

Liz Denniston <liz@paleosolutions.com>

Silverado Canyon Bridge Replacement Section 106 Consultation Request

1 message

Liz Denniston <liz@paleosolutions.com> Tue, Apr 6, 2021 at 11:53 AM
To: kaamalam@gmail.com

Dear Chairperson Perry,

You were recently mailed a consultation request letter from California Department of Transportation (Caltrans) regarding the Silverado Canyon Bridge Replacement Project [FID: BRLO-5955 (095)] (Project). On behalf of Caltrans, I am reaching out to ask if you had any questions, comments, or concerns regarding the Project. I have attached a copy of the letter sent for your convenience.

If you would like to share information about known or potential historic properties that could be affected by the Project, please direct your response to:

Jonathan Wright

- PQS District Archeologist
- Caltrans District 12
- 1750 East 4th Street, Suite 100
- Santa Ana, CA 92705
- Phone: (657) 328-6167
- Email: jonathan.wright@dot.ca.gov

or

Charles Baker

- Environmental Branch Chief
- Caltrans District 12
- 1750 East 4th Street, Suite 100
- Santa Ana, CA 92705
- Phone: (657) 328-6139
- Email: charles.baker@dot.ca.gov

Thank you,

Liz Denniston, MA, RPA Archaeological Principal Investigator, Paleo Solutions, Inc.
Phone: (626) 205-5444
Website: www.paleosolutions.com
Address: 911 S. Primrose Ave., Unit N., Monrovia, CA 91016
Branches: Denver, CO; Redlands, CA; Oceanside, CA; Bend, OR
Certifications: DBE • SBE • WBE • SDB • WOSB • EDWOSB

Silverado Canyon Section 106_Perry.pdf
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DEPARTMENT OF TRANSPORTATION
DISTRICT 12, DIVISION OF ENVIRONMENTAL PLANNING
1750 East 4th Street, Suite 100
Santa Ana CA 92705
PHONE (657) 328-6000
TTY 711
www.dot.ca.gov

Making Conservation a California Way of Life.

March 19, 2021

Robert Pinto, Chairperson
Ewiiaapaayp Tribal Office
4054 Willows Road
Alpine, CA, 91901

Dear Chairperson Pinto:

The County of Orange Public Works (County), in cooperation with the California Department of Transportation (Caltrans) and the Federal Highway Administration (FHWA) proposes to replace the Silverado Canyon Road Bridge over Silverado Creek (Bridge No. 55C-0174) (project). The project would utilize federal funding from the Federal Highway Administration (FHWA) for the proposed improvements; as a result, Caltrans must comply with Section 106 of the National Historic Preservation Act (36 CFR §800) on FHWA's behalf. The County is the lead agency under the California Environmental Quality Act (CEQA), and Caltrans is the lead agency under the National Environmental Policy Act (NEPA). This notification is intended to ensure compliance with requirements in Section 106.

Project Name: Silverado Canyon Road Bridge over Silverado Creek (Bridge No. 55C-0174) Replacement Project, County of Orange, California (Federal Project Number BRLO-5955 (095))

Project Location: The bridge replacement project is located at Silverado Canyon Road over Silverado Creek in Unincorporated Orange County. Please see enclosed maps.

Project Description: Demolish and replace the existing single-span riveted steel through plate girder bridge over Silverado Creek. The proposed construction would involve removing the existing steel bridge in two separate stages; the full or partial removal of the existing abutments and wingwalls; the construction of a wider concrete bridge, abutments, wingwalls, and retaining walls; the replacement of the existing metal beam guardrails; the widening of the roadway at both ends of the bridge approaches; regrading of the existing creek banks at the bridge; construction of a temporary construction access ramp into the creek; and the construction of scour countermeasures at the bridge foundations.

The proposed bridge would be approximately 58 feet long and 44 feet wide consisting of two 12-foot wide traffic lanes, two 5-foot shoulders, two traffic barriers, and a 5-foot sidewalk with railing (north side). The maximum depth of ground disturbance would be approximately 25 feet below the lowest point of the streambed and approximately 38 feet 6 inches below the roadway. The tallest proposed permanent feature would be roadway signage with a maximum height of approximately 10 feet.
In order to minimize construction activities within the creek, portions of the existing abutments may be reused and both sides widened in order to support the new bridge. The new abutments are expected to be supported on concrete spread

footings, similar to the existing foundations. Half of the existing steel bridge would be removed during the first construction phase while the remaining half is expected to be supported on temporary falsework in order to maintain one lane of traffic open during construction. The falsework supports are anticipated to be supported on spread footings within the creek. Construction is anticipated to start in May 2022 and last for approximately 1 year.

The proposed project would correct existing bridge deficiencies and enhance vehicular safety on the bridge. The project is being proposed because the existing bridge received a low Sufficiency Rating of 46.5 (out of 100) on the most recent Caltrans bridge inspection report. In addition to its advanced age and noticeable signs of deterioration, it has also been classified as functionally obsolete, which means that the bridge deck is too narrow for the current and anticipated traffic needs.

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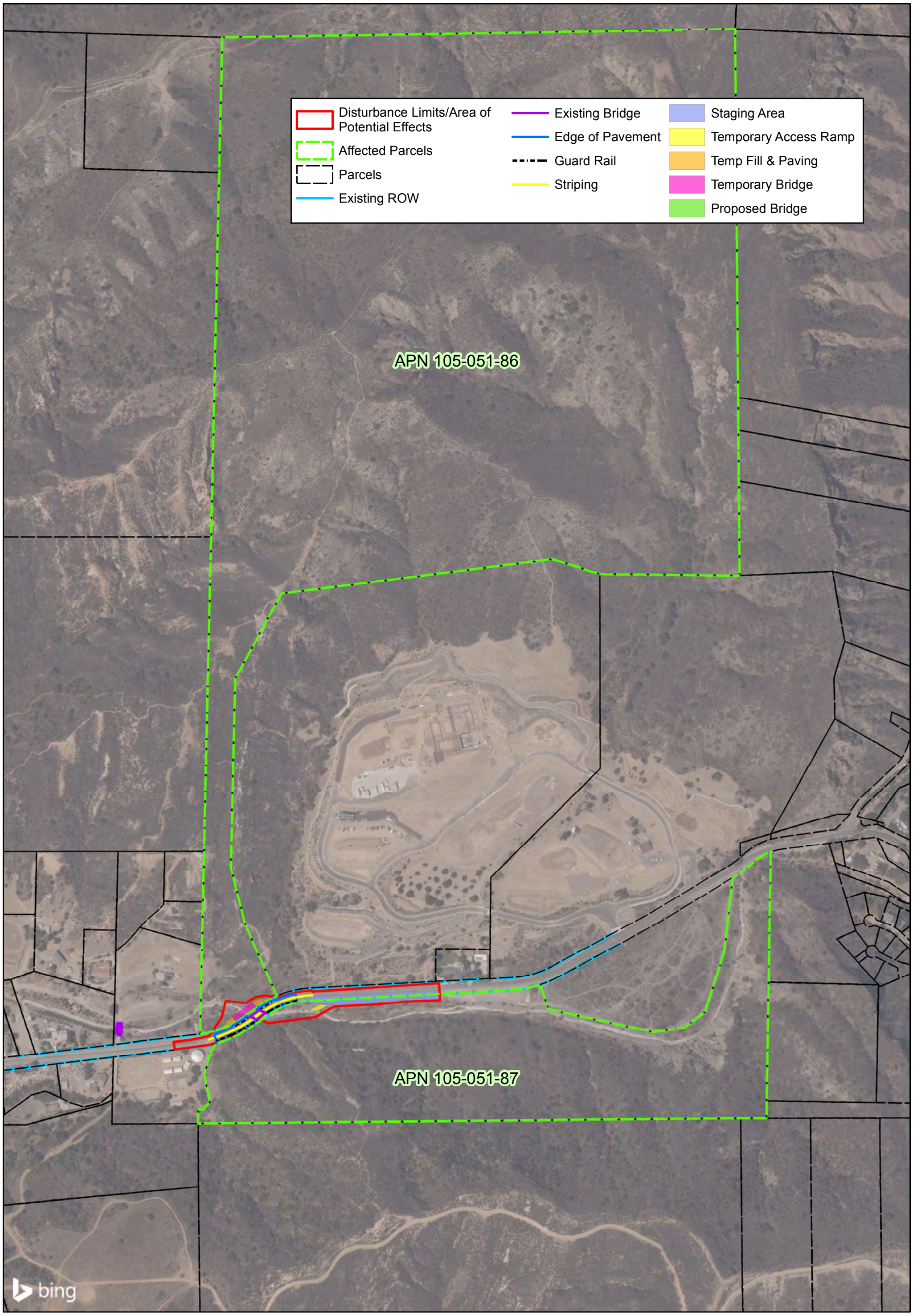
Charles Baker
Environmental Branch Chief
Caltrans District 12
1750 East 4th Street, Suite 100
Santa Ana, CA 92705
Phone: (657) 328-6139
Email: charles.baker@dot.ca.gov

Sincerely,

Charles Baker

CHARLES BAKER
Environmental Branch Chief
Caltrans District 12

Enclosure



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Project Study Area Map
Federal Project # BRLO-5955 (095)
Silverado Canyon Road Bridge over Silverado Creek (Bridge No. 55C-0174) Replacement Project
Orange County

Gmail

Liz Denniston <liz@paleosolutions.com>

Silverado Canyon Bridge Replacement Section 106 Consultation Request

1 message

Liz Denniston <liz@paleosolutions.com> Tue, Apr 6, 2021 at 11:35 AM
To: ceo@leaningrock.com

Dear Chairperson Pinto,

You were recently mailed a consultation request letter from California Department of Transportation (Caltrans) regarding the Silverado Canyon Bridge Replacement Project [FID: BRLO-5955 (095)] (Project). On behalf of Caltrans, I am reaching out to ask if you had any questions, comments, or concerns regarding the Project. I have attached a copy of the letter sent for your convenience.

If you would like to share information about known or potential historic properties that could be affected by the Project, please direct your response to:

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- Environmental Branch Chief
- Caltrans District 12
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Thank you,

Liz Denniston, MA, RPA Archaeological Principal Investigator, Paleo Solutions, Inc.
Phone: (626) 205-5444
Website: www.paleosolutions.com
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Certifications: DBE • SBE • WBE • SDB • WOSB • EDWOSB

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DEPARTMENT OF TRANSPORTATION
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1750 East 4th Street, Suite 100
Santa Ana CA 92705
PHONE (657) 328-6000
TTY 711
www.dot.ca.gov

Making Conservation a California Way of Life.

March 19, 2021

Teresa Romero, Chairperson
Juaneno Band of Mission Indians Acjachemen Nation - Romero
31411-A La Matanza Street
San Capistrano, CA, 92675

Dear Chairperson Romero:

The County of Orange Public Works (County), in cooperation with the California Department of Transportation (Caltrans) and the Federal Highway Administration (FHWA) proposes to replace the Silverado Canyon Road Bridge over Silverado Creek (Bridge No. 55C-0174) (project). The project would utilize federal funding from the Federal Highway Administration (FHWA) for the proposed improvements; as a result, Caltrans must comply with Section 106 of the National Historic Preservation Act (36 CFR §800) on FHWA's behalf. The County is the lead agency under the California Environmental Quality Act (CEQA), and Caltrans is the lead agency under the National Environmental Policy Act (NEPA). This notification is intended to ensure compliance with requirements in Section 106.

Project Name: Silverado Canyon Road Bridge over Silverado Creek (Bridge No. 55C-0174) Replacement Project, County of Orange, California (Federal Project Number BRLO-5955 (095))

Project Location: The bridge replacement project is located at Silverado Canyon Road over Silverado Creek in Unincorporated Orange County. Please see enclosed maps.

Project Description: Demolish and replace the existing single-span riveted steel through plate girder bridge over Silverado Creek. The proposed construction would involve removing the existing steel bridge in two separate stages; the full or partial removal of the existing abutments and wingwalls; the construction of a wider concrete bridge, abutments, wingwalls, and retaining walls; the replacement of the existing metal beam guardrails; the widening of the roadway at both ends of the bridge approaches; regrading of the existing creek banks at the bridge; construction of a temporary construction access ramp into the creek; and the construction of scour countermeasures at the bridge foundations.

The proposed bridge would be approximately 58 feet long and 44 feet wide consisting of two 12-foot wide traffic lanes, two 5-foot shoulders, two traffic barriers, and a 5-foot sidewalk with railing (north side). The maximum depth of ground disturbance would be approximately 25 feet below the lowest point of the streambed and approximately 38 feet 6 inches below the roadway. The tallest proposed permanent feature would be roadway signage with a maximum height of approximately 10 feet.
In order to minimize construction activities within the creek, portions of the existing abutments may be reused and both sides widened in order to support the new bridge. The new abutments are expected to be supported on concrete spread

footings, similar to the existing foundations. Half of the existing steel bridge would be removed during the first construction phase while the remaining half is expected to be supported on temporary falsework in order to maintain one lane of traffic open during construction. The falsework supports are anticipated to be supported on spread footings within the creek. Construction is anticipated to start in May 2022 and last for approximately 1 year.

The proposed project would correct existing bridge deficiencies and enhance vehicular safety on the bridge. The project is being proposed because the existing bridge received a low Sufficiency Rating of 46.5 (out of 100) on the most recent Caltrans bridge inspection report. In addition to its advanced age and noticeable signs of deterioration, it has also been classified as functionally obsolete, which means that the bridge deck is too narrow for the current and anticipated traffic needs.

Caltrans is consulting with potentially interested parties for Section 106 and would appreciate any information you may provide regarding the presence of known or potential archaeological resources within the project location and/or immediate vicinity.

If you would like to share information about known or potential historic properties that could be affected by the project, Caltrans would greatly appreciate your response by March 26, 2021. If no response is received by this date, you will be contacted as a follow-up. Please direct your response to:

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Santa Ana, CA 92705
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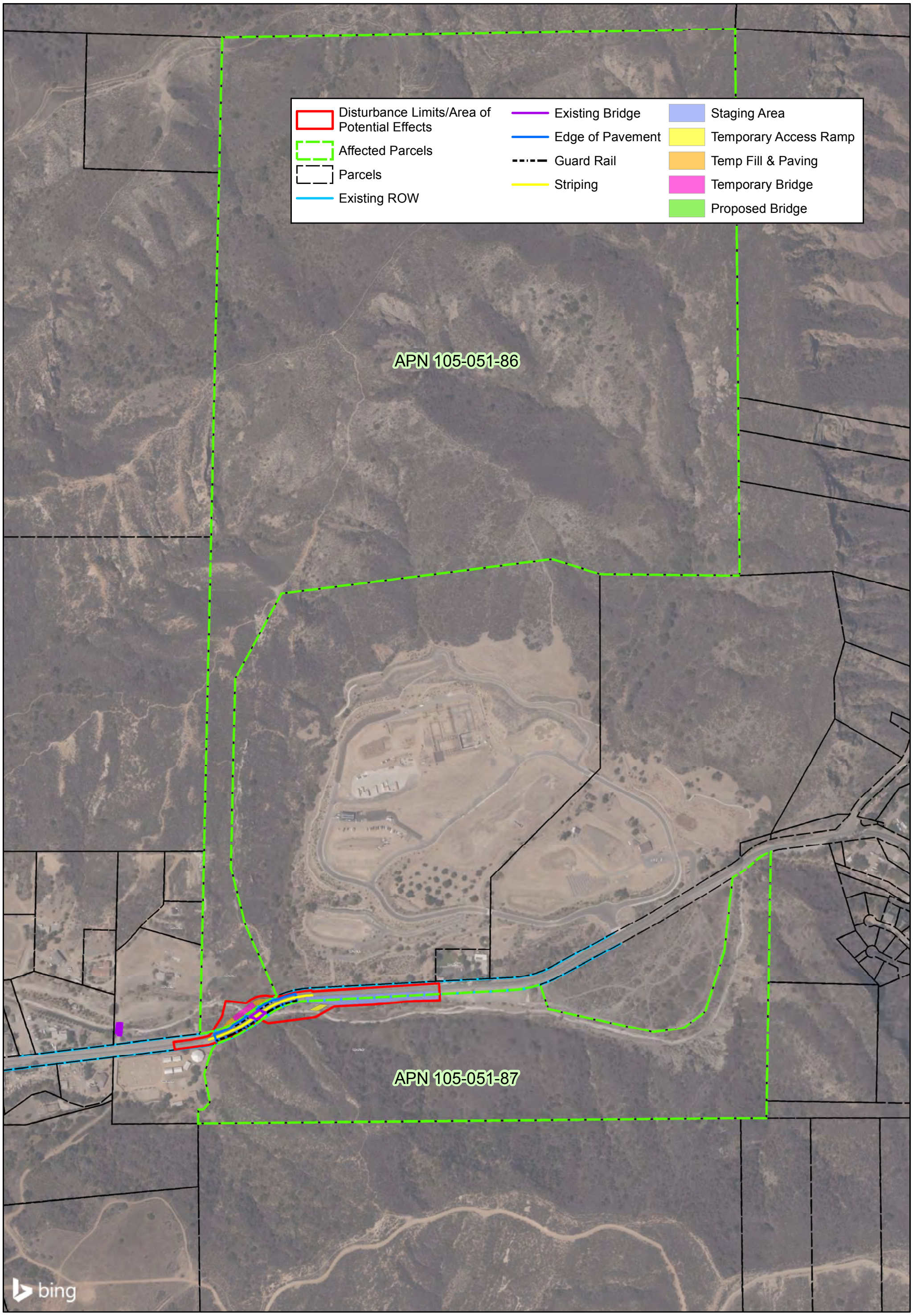
Charles Baker
Environmental Branch Chief
Caltrans District 12
1750 East 4th Street, Suite 100
Santa Ana, CA 92705
Phone: (657) 328-6139
Email: charles.baker@dot.ca.gov

Sincerely,

Charles Baker

CHARLES BAKER
Environmental Branch Chief
Caltrans District 12

Enclosure



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Project Study Area Map
Federal Project # BRLO-5955 (095)
Silverado Canyon Road Bridge over Silverado Creek (Bridge No. 55C-0174) Replacement Project
Orange County

Gmail

Liz Denniston <liz@paleosolutions.com>

Silverado Canyon Bridge Replacement Section 106 Consultation Request

1 message

Liz Denniston <liz@paleosolutions.com> Tue, Apr 6, 2021 at 11:55 AM
To: tromero@juaneno.com

Dear Chairperson Romero,

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- PQS District Archeologist
- Caltrans District 12
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or

Charles Baker

- Environmental Branch Chief
- Caltrans District 12
- 1750 East 4th Street, Suite 100
- Santa Ana, CA 92705
- Phone: (657) 328-6139
- Email: charles.baker@dot.ca.gov

Thank you,

Liz Denniston, MA, RPA Archaeological Principal Investigator, Paleo Solutions, Inc.
Phone: (626) 205-5444
Website: www.paleosolutions.com
Address: 911 S. Primrose Ave., Unit N., Monrovia, CA 91016
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Certifications: DBE • SBE • WBE • SDB • WOSB • EDWOSB

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DEPARTMENT OF TRANSPORTATION
DISTRICT 12, DIVISION OF ENVIRONMENTAL PLANNING
1750 East 4th Street, Suite 100
Santa Ana CA 92705
PHONE (657) 328-6000
TTY 711
www.dot.ca.gov

Making Conservation a California Way of Life.

March 19, 2021

Andrew Salas, Chairperson
Gabrieleno Band of Mission Indians - Kizh Nation
P.O. Box 393
Gabrieleno Covina, CA, 91723

Dear Chairperson Salas:

The County of Orange Public Works (County), in cooperation with the California Department of Transportation (Caltrans) and the Federal Highway Administration (FHWA) proposes to replace the Silverado Canyon Road Bridge over Silverado Creek (Bridge No. 55C-0174) (project). The project would utilize federal funding from the Federal Highway Administration (FHWA) for the proposed improvements; as a result, Caltrans must comply with Section 106 of the National Historic Preservation Act (36 CFR §800) on FHWA's behalf. The County is the lead agency under the California Environmental Quality Act (CEQA), and Caltrans is the lead agency under the National Environmental Policy Act (NEPA). This notification is intended to ensure compliance with requirements in Section 106.

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Project Location: The bridge replacement project is located at Silverado Canyon Road over Silverado Creek in Unincorporated Orange County. Please see enclosed maps.

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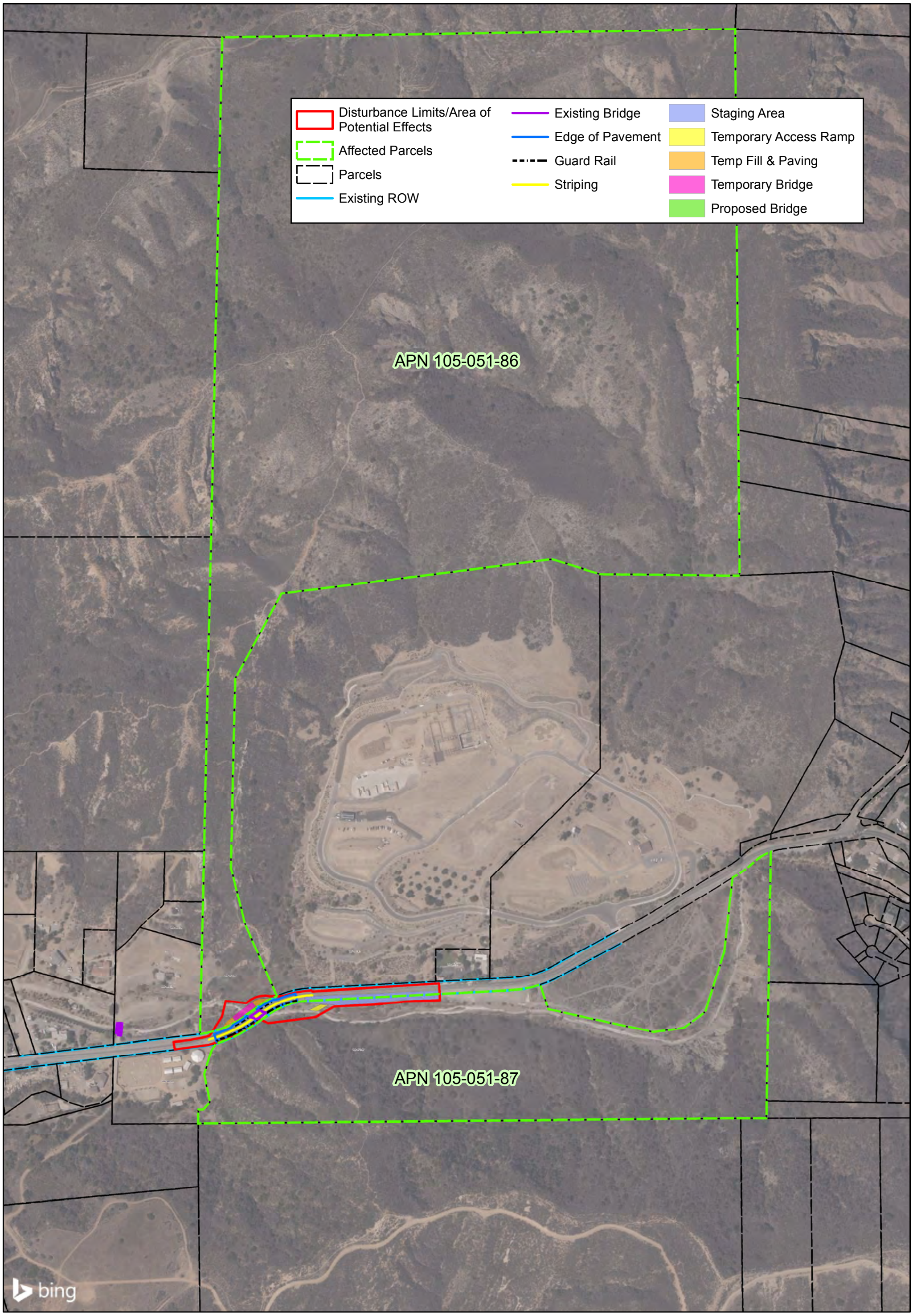
Charles Baker
Environmental Branch Chief
Caltrans District 12
1750 East 4th Street, Suite 100
Santa Ana, CA 92705
Phone: (657) 328-6139
Email: charles.baker@dot.ca.gov

Sincerely,

CHARLES BAKER
Environmental Branch Chief
Caltrans District 12

Enclosure



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Project Study Area Map
Federal Project # BRLO-5955 (095)
Silverado Canyon Road Bridge over Silverado Creek (Bridge No. 55C-0174) Replacement Project
Orange County

Gmail

Liz Denniston <liz@paleosolutions.com>

Silverado Canyon Bridge Replacement Section 106 Consultation Request

1 message

Liz Denniston <liz@paleosolutions.com> Tue, Apr 6, 2021 at 11:41 AM
To: Andy Salas <andysalas07@yahoo.com>, KNRM ADMIN <admin@knrm-nsn.us>, Administration Gabrieleno Indians <admin@gabrielenoindians.org>

Dear Chairperson Salas,

You were recently mailed a consultation request letter from California Department of Transportation (Caltrans) regarding the Silverado Canyon Bridge Replacement Project [FID: BRLO-5955 (095)] (Project). On behalf of Caltrans, I am reaching out to ask if you had any questions, comments, or concerns regarding the Project. I have attached a copy of the letter sent for your convenience.

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Charles Baker

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Thank you,

Liz Denniston, MA, RPA Archaeological Principal Investigator, Paleo Solutions, Inc.
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Silverado Canyon Section 106_Salas.pdf
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DEPARTMENT OF TRANSPORTATION
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1750 East 4th Street, Suite 100
Santa Ana CA 92705
PHONE (657) 328-6000
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Making Conservation a California Way of Life.

March 19, 2021

John Valenzuela, Chairperson
San Fernando Band of Mission Indians
P.O. Box 221838
Newhall, CA, 91322

Dear Chairperson Valenzuela:

The County of Orange Public Works (County), in cooperation with the California Department of Transportation (Caltrans) and the Federal Highway Administration (FHWA) proposes to replace the Silverado Canyon Road Bridge over Silverado Creek (Bridge No. 55C-0174) (project). The project would utilize federal funding from the Federal Highway Administration (FHWA) for the proposed improvements; as a result, Caltrans must comply with Section 106 of the National Historic Preservation Act (36 CFR §800) on FHWA's behalf. The County is the lead agency under the California Environmental Quality Act (CEQA), and Caltrans is the lead agency under the National Environmental Policy Act (NEPA). This notification is intended to ensure compliance with requirements in Section 106.

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Charles Baker
Environmental Branch Chief
Caltrans District 12
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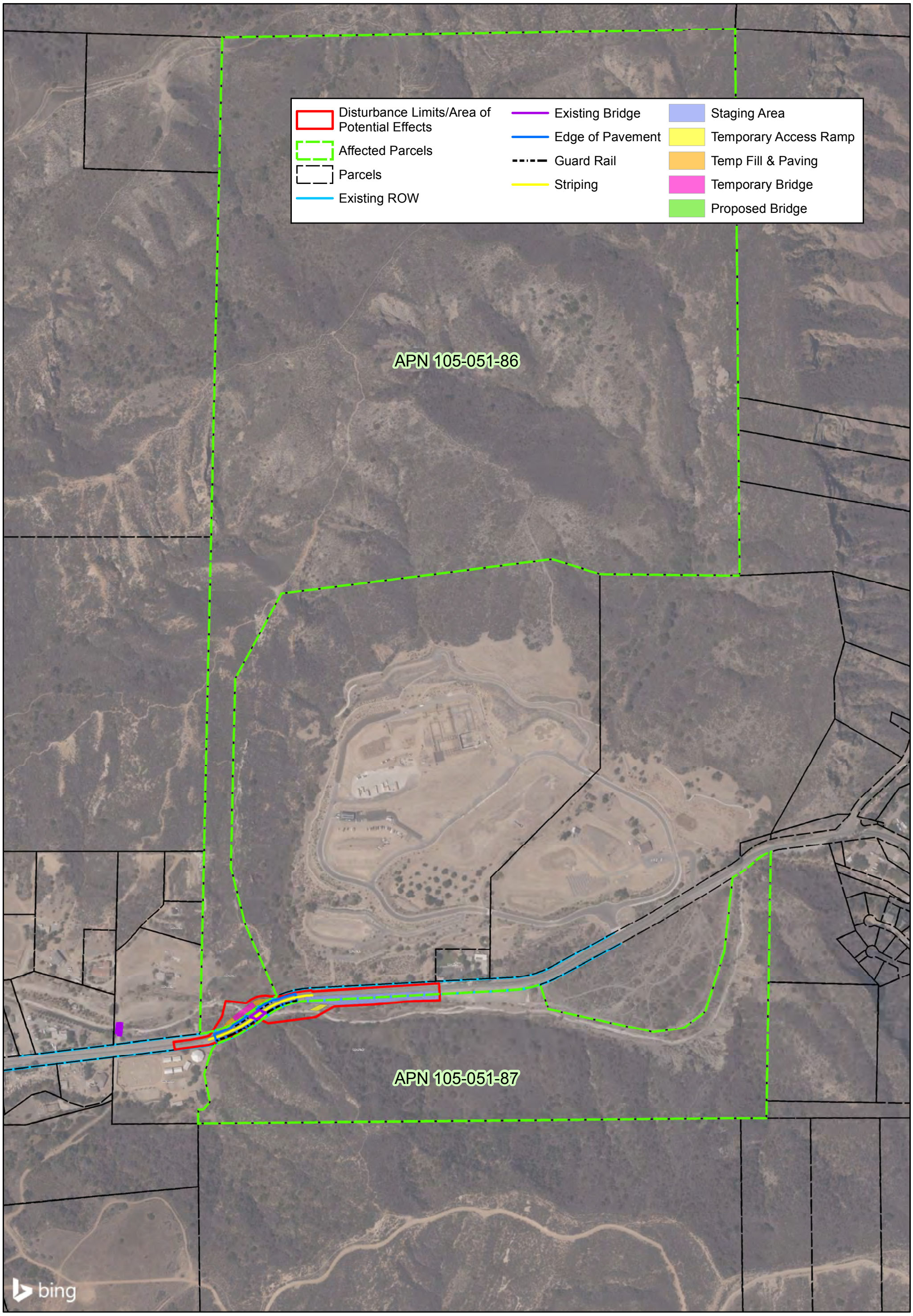
Santa Ana, CA 92705
Phone: (657) 328-6139
Email: charles.baker@dot.ca.gov

Sincerely,

Charles Baker

CHARLES BAKER
Environmental Branch Chief
Caltrans District 12

Enclosure



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Project Study Area Map
Federal Project # BRLO-5955 (095)
Silverado Canyon Road Bridge over Silverado Creek (Bridge No. 55C-0174) Replacement Project
Orange County

Gmail

Liz Denniston <liz@paleosolutions.com>

Silverado Canyon Bridge Replacement Section 106 Consultation Request

1 message

Liz Denniston <liz@paleosolutions.com> Tue, Apr 6, 2021 at 12:01 PM
To: tsen2u@hotmail.com

Dear Chairperson Valenzuela,

You were recently mailed a consultation request letter from California Department of Transportation (Caltrans) regarding the Silverado Canyon Bridge Replacement Project [FID: BRLO-5955 (095)] (Project). On behalf of Caltrans, I am reaching out to ask if you had any questions, comments, or concerns regarding the Project. I have attached a copy of the letter sent for your convenience.

If you would like to share information about known or potential historic properties that could be affected by the Project, please direct your response to:

Jonathan Wright

- PQS District Archeologist
- Caltrans District 12
- 1750 East 4th Street, Suite 100
- Santa Ana, CA 92705
- Phone: (657) 328-6167
- Email: jonathan.wright@dot.ca.gov

or

Charles Baker

- Environmental Branch Chief
- Caltrans District 12
- 1750 East 4th Street, Suite 100
- Santa Ana, CA 92705
- Phone: (657) 328-6139
- Email: charles.baker@dot.ca.gov

Thank you,

Liz Denniston, MA, RPA Archaeological Principal Investigator, Paleo Solutions, Inc.
Phone: (626) 205-5444
Website: www.paleosolutions.com
Address: 911 S. Primrose Ave., Unit N., Monrovia, CA 91016
Branches: Denver, CO; Redlands, CA; Oceanside, CA; Bend, OR
Certifications: DBE • SBE • WBE • SDB • WOSB • EDWOSB

Silverado Canyon Section 106_Valenzuela.pdf
593K

DEPARTMENT OF TRANSPORTATION
DISTRICT 12, DIVISION OF ENVIRONMENTAL PLANNING
1750 East 4th Street, Suite 100
Santa Ana CA 92705
PHONE (657) 328-6000
TTY 711
www.dot.ca.gov

Making Conservation a California Way of Life.

March 19, 2021

Robert Welch, Chairperson
Viejas Band of Kumeyaay Indians
1 Viejas Grade Road
Alpine, CA, 91901

Dear Chairperson Welch:

The County of Orange Public Works (County), in cooperation with the California Department of Transportation (Caltrans) and the Federal Highway Administration (FHWA) proposes to replace the Silverado Canyon Road Bridge over Silverado Creek (Bridge No. 55C-0174) (project). The project would utilize federal funding from the Federal Highway Administration (FHWA) for the proposed improvements; as a result, Caltrans must comply with Section 106 of the National Historic Preservation Act (36 CFR §800) on FHWA's behalf. The County is the lead agency under the California Environmental Quality Act (CEQA), and Caltrans is the lead agency under the National Environmental Policy Act (NEPA). This notification is intended to ensure compliance with requirements in Section 106.

Project Name: Silverado Canyon Road Bridge over Silverado Creek (Bridge No. 55C-0174) Replacement Project, County of Orange, California (Federal Project Number BRLO-5955 (095))

Project Location: The bridge replacement project is located at Silverado Canyon Road over Silverado Creek in Unincorporated Orange County. Please see enclosed maps.

Project Description: Demolish and replace the existing single-span riveted steel through plate girder bridge over Silverado Creek. The proposed construction would involve removing the existing steel bridge in two separate stages; the full or partial removal of the existing abutments and wingwalls; the construction of a wider concrete bridge, abutments, wingwalls, and retaining walls; the replacement of the existing metal beam guardrails; the widening of the roadway at both ends of the bridge approaches; regrading of the existing creek banks at the bridge; construction of a temporary construction access ramp into the creek; and the construction of scour countermeasures at the bridge foundations.

The proposed bridge would be approximately 58 feet long and 44 feet wide consisting of two 12-foot wide traffic lanes, two 5-foot shoulders, two traffic barriers, and a 5-foot sidewalk with railing (north side). The maximum depth of ground disturbance would be approximately 25 feet below the lowest point of the streambed and approximately 38 feet 6 inches below the roadway. The tallest proposed permanent feature would be roadway signage with a maximum height of approximately 10 feet.
In order to minimize construction activities within the creek, portions of the existing abutments may be reused and both sides widened in order to support the new bridge. The new abutments are expected to be supported on concrete spread

footings, similar to the existing foundations. Half of the existing steel bridge would be removed during the first construction phase while the remaining half is expected to be supported on temporary falsework in order to maintain one lane of traffic open during construction. The falsework supports are anticipated to be supported on spread footings within the creek. Construction is anticipated to start in May 2022 and last for approximately 1 year.

The proposed project would correct existing bridge deficiencies and enhance vehicular safety on the bridge. The project is being proposed because the existing bridge received a low Sufficiency Rating of 46.5 (out of 100) on the most recent Caltrans bridge inspection report. In addition to its advanced age and noticeable signs of deterioration, it has also been classified as functionally obsolete, which means that the bridge deck is too narrow for the current and anticipated traffic needs.

Caltrans is consulting with potentially interested parties for Section 106 and would appreciate any information you may provide regarding the presence of known or potential archaeological resources within the project location and/or immediate vicinity.

If you would like to share information about known or potential historic properties that could be affected by the project, Caltrans would greatly appreciate your response by March 26, 2021. If no response is received by this date, you will be contacted as a follow-up. Please direct your response to:

Jonathan Wright
PQS District Archeologist
Caltrans District 12
1750 East 4th Street, Suite 100
Santa Ana, CA 92705
Phone: (657) 328-6167
Email: jonathan.wright@dot.ca.gov

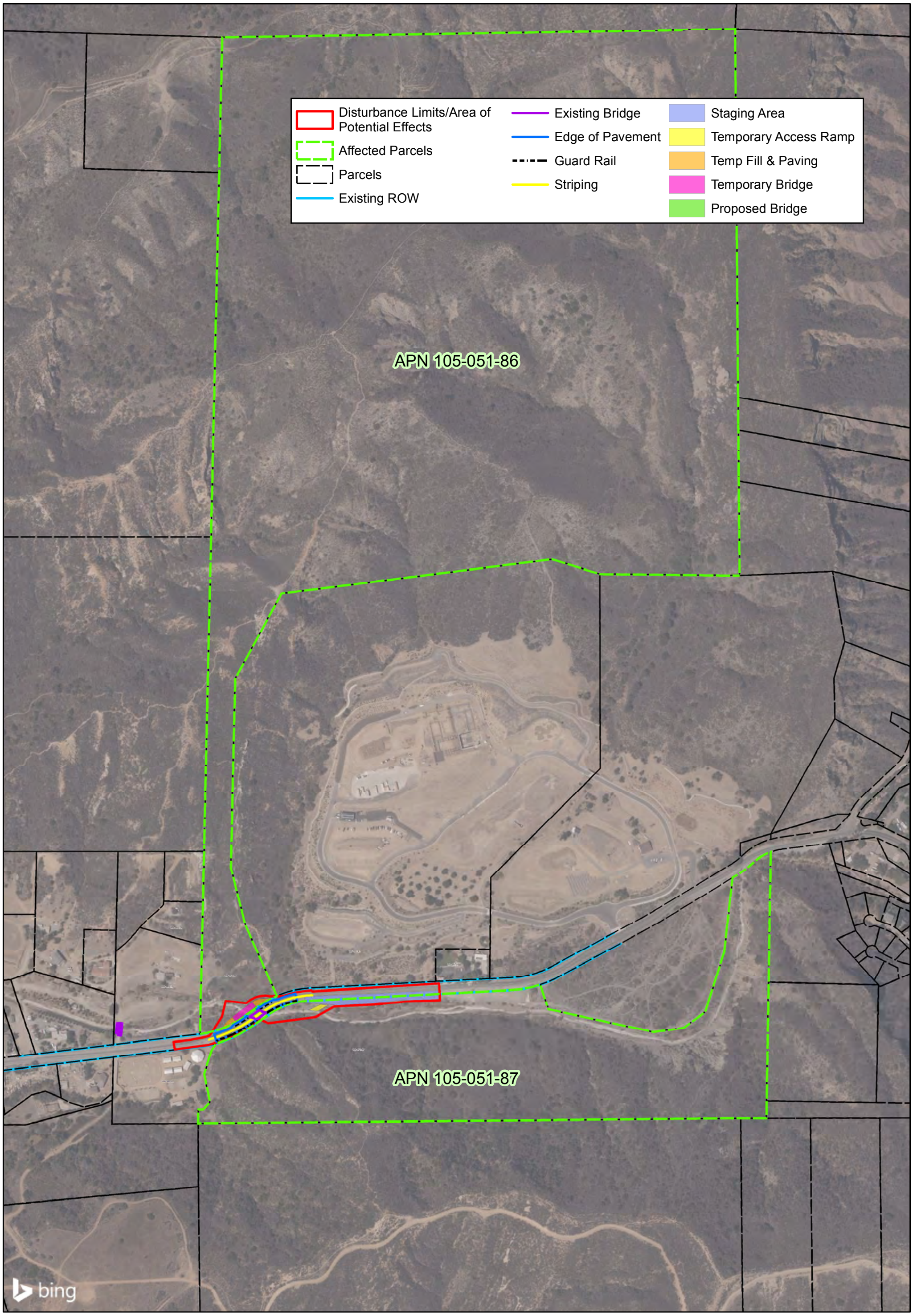
Charles Baker
Environmental Branch Chief
Caltrans District 12
1750 East 4th Street, Suite 100
Santa Ana, CA 92705
Phone: (657) 328-6139
Email: charles.baker@dot.ca.gov

Sincerely,

Charles Baker

CHARLES BAKER
Environmental Branch Chief
Caltrans District 12

Enclosure



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Project Study Area Map
Federal Project # BRLO-5955 (095)
Silverado Canyon Road Bridge over Silverado Creek (Bridge No. 55C-0174) Replacement Project
Orange County

Gmail

Liz Denniston <liz@paleosolutions.com>

Silverado Canyon Bridge Replacement Section 106 Consultation Request

1 message

Liz Denniston <liz@paleosolutions.com> Tue, Apr 6, 2021 at 12:08 PM
To: jhagen@viejas-nsn.gov

Dear Chairperson Welch,

You were recently mailed a consultation request letter from California Department of Transportation (Caltrans) regarding the Silverado Canyon Bridge Replacement Project [FID: BRLO-5955 (095)] (Project). On behalf of Caltrans, I am reaching out to ask if you had any questions, comments, or concerns regarding the Project. I have attached a copy of the letter sent for your convenience.

If you would like to share information about known or potential historic properties that could be affected by the Project, please direct your response to:

Jonathan Wright

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or

Charles Baker

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- Caltrans District 12
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Thank you,

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Branches: Denver, CO; Redlands, CA; Oceanside, CA; Bend, OR
Certifications: DBE • SBE • WBE • SDB • WOSB • EDWOSB

Silverado Canyon Section 106_Welch.pdf
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Appendix D: Survey Photographs



Photograph 1. Project Area Overview From Southwest Corner. View East.



Photograph 2. Project Area Overview From Northwest Corner. View South.



Photograph 3. Project Area Overview From Northeast Corner. View West.



Photograph 4. Project Area Overview From Southeast Corner. View West.

Attachment B
Potentially Interested Parties Correspondence

CORRESPONDENCE LOG: SILVERADO CANYON ROAD BRIDGE OVER SILVERADO CREEK, ORANGE COUNTY, CA		
INTERESTED PARTY	CONTACT DATE	RESPONSE
Orange County Planning Division County Administration South Building 601 N. Ross Street Santa Ana, CA 92701	Letter mailed September 23, 2020. Follow up email sent October 26, 2020.	No response received to date.
Orange County Planning Commission ATTN: Sharon Gilliam Orange County Public Works – Orange County Development Services County Administration South Building 601 N. Ross Street Santa Ana, CA 92701 Phone: (714) 667-9658	Letter mailed September 23, 2020. Follow up email sent October 26, 2020.	No response received to date.
Orange County Historical Commission ATTN: Dennis Shaffer Orange County Community Resources – Orange County Parks Hall of Administration 211 West Santa Ana Boulevard Santa Ana, CA 92701 Phone: (714) 973-6606	Letter mailed September 23, 2020. Follow up email sent October 26, 2020.	No response received to date.
Orange County Archives ATTN: Susan Berumen, County Archivist 211 W. Santa Ana Boulevard, Room 108 Santa Ana, CA 92701 Phone: (714) 834-2536 Email: archives@rec.ocgov.com; susan.berumen@rec.ocgov.com	Letter mailed September 23, 2020. Follow up email sent October 26, 2020.	An email response was received from the Susan Berumen at the Orange County Archives on October 26, 2020. In response to confusion generated by another project with a similar name, a follow up email was sent on October 27, 2020. Ms. Berumen responded, stating that "Other than what is available online, I have no additional information on Bridge 5C-0174. OC Public Works may be able to help you as they worked on a repair project for the bridge in 2013." A copy of this correspondence is included in this attachment.

CORRESPONDENCE LOG: SILVERADO CANYON ROAD BRIDGE OVER SILVERADO CREEK, ORANGE COUNTY, CA		
INTERESTED PARTY	CONTACT DATE	RESPONSE
Library of the Canyons/Silverado 7531 East Santiago Canyon Road Silverado, CA 92676 Phone: (714) 649-2216 Email: ocpl.lotc@occr.ocgov.com	Letter mailed September 23, 2020. Follow up email sent October 26, 2020.	No response received to date.
Orange County Historical Society 3101 W Harvard Street Santa Ana, CA 92704 Phone: (714) 540-0404 ext. 226 Email: historian@orangecountyhistory.org	Letter mailed September 23, 2020. Follow up email sent October 26, 2020.	No response received to date.
Preserve Orange County 206 W 4th Street, Suite 439 Santa Ana, CA 92701 949-482-0125 preserveoc@gmail.com	Letter mailed September 23, 2020. Follow up email sent October 26, 2020.	Email responses from Krista Nicholds with Preserve Orange County on October 26 and 27, 2020. Ms. Nicholds had several follow up questions regarding the bridge, which were answered. A copy of this correspondence is included in this attachment.

DEPARTMENT OF TRANSPORTATION
DISTRICT 12, DIVISION OF ENVIRONMENTAL PLANNING
1750 East 4th Street, Suite 100
Santa Ana CA 92705
PHONE (657) 328-6000
charles.baker@dot.ca.gov
TTY 711
www.dot.ca.gov

Making Conservation a California Way of Life.

September 16, 2020

Library of the Canyons/Silverado
7531 East Santiago Canyon Road
Silverado, CA 92676

Dear Sir or Madam:

The County of Orange Public Works (County), in cooperation with the California Department of Transportation (Caltrans) and the Federal Highway Administration (FHWA) proposes to replace the Silverado Canyon Road Bridge over Silverado Creek (Bridge No. 55C-0174) (project). The project would utilize federal funding from the Federal Highway Administration (FHWA) for the proposed improvements; as a result, Caltrans must comply with Section 106 of the National Historic Preservation Act (36 CFR §800) on FHWA's behalf. The County is the lead agency under the California Environmental Quality Act (CEQA), and Caltrans is the lead agency under the National Environmental Policy Act (NEPA). This notification is intended to ensure compliance with requirements in Section 106.

Project Name: Silverado Canyon Road Bridge over Silverado Creek (Bridge No. 55C-0174) Replacement Project, County of Orange, California (Federal Project Number BRLO-5955 (095))

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bridge. The new abutments are expected to be supported on concrete spread footings, similar to the existing foundations. Half of the existing steel bridge would be removed during the first construction phase while the remaining half is expected to be supported on temporary falsework in order to maintain one lane of traffic open during construction. The falsework supports are anticipated to be supported on spread footings within the creek. Construction is anticipated to start in May 2022 and last for approximately 1 year

The proposed project would correct existing bridge deficiencies and enhance vehicular safety on the bridge. The project is being proposed because the existing bridge received a low Sufficiency Rating of 46.5 (out of 100) on the most recent Caltrans bridge inspection report. In addition to its advanced age and noticeable signs of deterioration, it has also been classified as functionally obsolete, which means that the bridge deck is too narrow for the current and anticipated traffic needs.

Caltrans is consulting with potentially interested parties for Section 106 and would appreciate any information you may provide regarding the presence of known or potential historic properties within the project location and/or immediate vicinity. Early identification of historic properties will ensure their consideration and protection to the maximum extent feasible.

If you would like to share information about known or potential historic properties that could be affected by the project, Caltrans would greatly appreciate your response by October 14, 2020. If no response is received by this date, you will be contacted as a follow-up. Please direct your response to:

Jonathan Wright
PQS District Archeologist
Caltrans District 12
1750 East 4th Street, Suite 100
Santa Ana, CA 92705
Phone: (657) 328-6167
Email: jonathan.wright@dot.ca.gov

Charles Baker
Environmental Branch Chief
Caltrans District 12
1750 East 4th Street, Suite 100
Santa Ana, CA 92705
Phone: (657) 328-6139
Email: charles.baker@dot.ca.gov

Sincerely,

Charles Baker

CHARLES BAKER
Environmental Branch Chief
Caltrans District 12

Enclosure

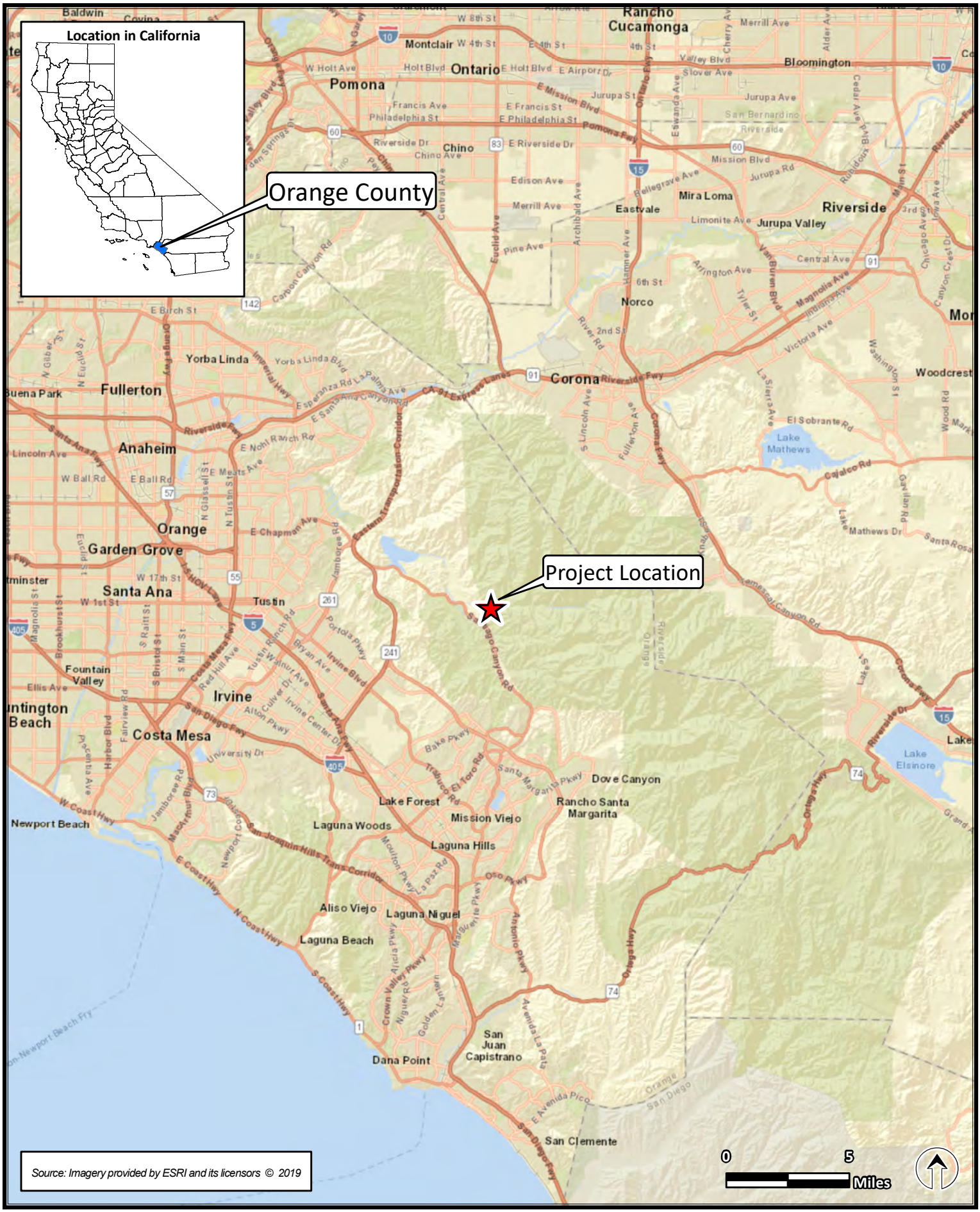

FIGURE 1. REGIONAL LOCATION
Silverado Canyon Road Bridge over Silverado Creek
(Bridge No. 55C-0174) Replacement Project

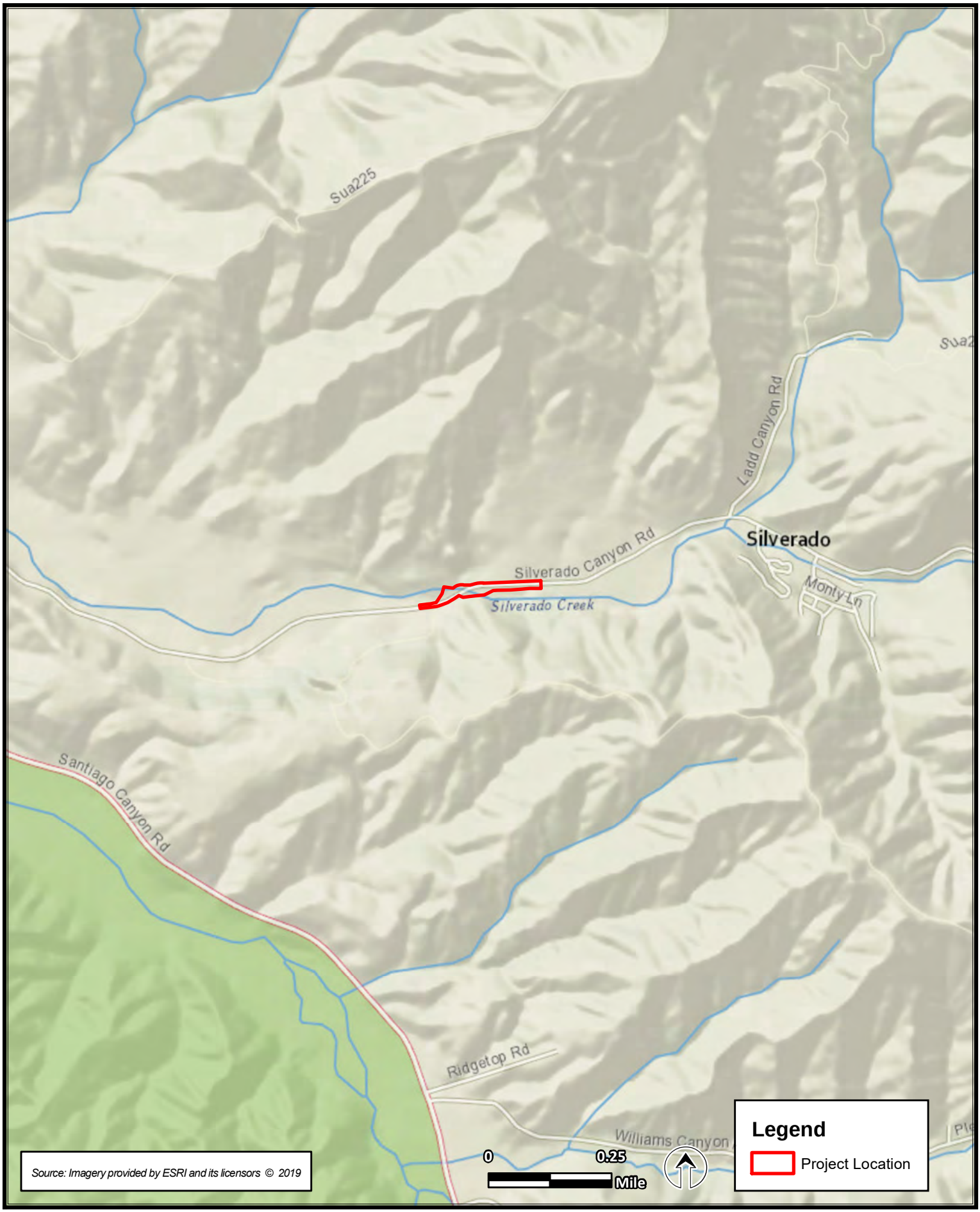

FIGURE 2. PROJECT LOCATION
Silverado Canyon Road Bridge over Silverado Creek
(Bridge No. 55C-0174) Replacement Project

From:	Berumen, Susan
To:	Elysha Paluszek
Cc:	Jenna Kachour
Subject:	RE: Proposed Bridge Replacement Project at Silverado Canyon Road Bridge
Date:	Tuesday, October 27, 2020 10:52:07 AM
Attachments:	image001.png image003.png image004.png image005.png image006.png image007.png

Dear Elysha Paluszek,

Thank you for clarifying matters as I was unaware of two bridge projects.

Other than what is available online, I have no additional information on Bridge 5C-0174. OC Public Works may be able to help you as they worked on a repair project for the bridge in 2013.

Kind regards,

Susan Berumen
County Archivist
Orange County Archives
Old Orange County Courthouse
211 W. Santa Ana Blvd., Rm. 108
Santa Ana, CA 92701
Tel: 714-834-2536

From: Elysha Paluszek <elysha@gpaconsulting-us.com>
Sent: Tuesday, October 27, 2020 9:13 AM
To: Berumen, Susan <susan.berumen@rec.ocgov.com>
Cc: Jenna Kachour <jenna@gpaconsulting-us.com>
Subject: RE: Proposed Bridge Replacement Project at Silverado Canyon Road Bridge

Dear Ms. Berumen,

I apologize for the confusion; our firm is working on two separate projects involving two different bridges over Silverado Creek in the area. Ms. Lyons did indeed reach out about a separate bridge replacement project. I have attached a map which identifies the location of the project I emailed you about yesterday. Please let me know if you have any further questions or if you have any input regarding potential historic properties. We appreciate your assistance.

Sincerely,

ELYSHA PALUSZEK
Associate Architectural Historian | elysha@gpaconsulting-us.com | (310) 792-2690 x144
GPA CONSULTING | www.gpaconsulting-us.com

From: Berumen, Susan <susan.berumen@rec.ocgov.com>
Sent: Monday, October 26, 2020 4:26 PM
To: Elysha Paluszek <elysha@gpaconsulting-us.com>
Cc: Jenna Kachour <jenna@gpaconsulting-us.com>
Subject: RE: Proposed Bridge Replacement Project at Silverado Canyon Road Bridge

Dear Elysha Paluszek,

My response was sent to Allison Lyons of GPA Consulting on 09/21/2020. Additionally, I responded to Jonathan Wright and Charles Baker of the California Department of Transportation on 10/13/2020.

Kind regards,

Susan Berumen
County Archivist
Orange County Archives
Old Orange County Courthouse
211 W. Santa Ana Blvd., Rm. 108
Santa Ana, CA 92701
Tel: 714-834-2536

From: Elysha Paluszek <elysha@gpaconsulting-us.com>
Sent: Monday, October 26, 2020 3:05 PM
To: Berumen, Susan <susan.berumen@rec.ocgov.com>
Cc: Jenna Kachour <jenna@gpaconsulting-us.com>
Subject: Proposed Bridge Replacement Project at Silverado Canyon Road Bridge

Good afternoon Ms. Berumen,

The County of Orange Public Works, in cooperation with Caltrans and the Federal Highway Administration, proposes to replace the Silverado Canyon Road Bridge over Silverado Creek. Caltrans is currently conducting a study of potential impacts to historic properties as a result of the proposed project, as required under Section 106 of the National Historic Preservation Act. GPA Consulting is part of the consultant team preparing the environmental documentation on behalf of Caltrans.

Letters were mailed on September 23, 2020 to provide information to potentially interested parties, such as your organization. We realize in light of the current global COVID-19 pandemic, you may not have access to mail sent to your organization's business address. Therefore, GPA Consulting is conducting follow-up on behalf of Caltrans electronically. I have attached the original letter to this email.

If you would like to comment on the proposed project as it relates to historic properties or if you would like additional information, please contact me at elysha@gpaconsulting-us.com or at (310) 792-2690 ext. 144.

Sincerely,

ELYSHA PALUSZEK
Associate Architectural Historian | elysha@gpaconsulting-us.com
617 S. Olive Street
Suite 910
Los Angeles, CA 90014
(310) 792-2690 x144
www.gpaconsulting-us.com
El Segundo • Los Angeles
Sacramento • Ventura • Tustin

From: Elysha Paluszek
To: Krista Nicholds
Subject: RE: Proposed Bridge Replacement Project at Silverado Canyon Road Bridge
Date: Wednesday, November 11, 2020 11:17:00 AM
Attachments: Project Study Area Map 09172020.pdf
Silverado Bridge_Fig 2_Project Location Map.pdf
Attachment A Figures 1-3_Maps.pdf

Good morning Krista,

My sincere apologies for the extremely delayed reply. It was not intentional. There are buildings in the vicinity of the bridge, but they are largely removed from the bridge's immediate vicinity. I have attached a map of the project area that shows the relative location of the surrounding buildings (first attachment – "Project study Area Map"). Please note that this is only a study area map, and the area of potential effects map will be a smaller area defined after further consultation with Caltrans and after further surveys. I have also attached the project location map to give a wider context.

I have also attached the information about the other Silverado Canyon Bridge project referenced earlier that our firm is working on (third attachment – "Attachment A Figures"). I hope this helps clarify between the two projects and different locations.

Sincerely,

ELYSHA PALUSZEK
Associate Architectural Historian | elysha@gpaconsulting-us.com | (310) 792-2690 x144
GPA CONSULTING | www.gpaconsulting-us.com

From: Krista Nicholds <knicholds@preserveoc.org>
Sent: Thursday, October 29, 2020 1:58 PM
To: Elysha Paluszek <elysha@gpaconsulting-us.com>
Subject: Re: Proposed Bridge Replacement Project at Silverado Canyon Road Bridge

Hi Elysha,

Our contacts in the area of the project have been evacuated because of the wildfires there so I can't get more detailed information at this time. Can you tell me if there are any buildings, structures, etc. in the project area that you know of?

Would you mind resending me the information about the other bridge project in Silverado Canyon that you referenced in your Oct 27 email?

Sincerely,

Krista Nicholds

Preserve Orange County
206 W Fourth Street
Santa Ana, California 92701

> On Oct 27, 2020, at 2:11 PM, Elysha Paluszek <elysha@gpaconsulting-us.com> wrote:
>
> Hi Krista,
>
> Caltrans evaluated the bridge as part of a statewide bridge inventory program conducted in 1986 and updated most recently in 2015. The bridge was evaluated as ineligible for the National Register, and we are not re-evaluating it as part of this effort.
>
> I hope this helps.
>
> Sincerely,
>
> **ELYSHA PALUSZEK**

Associate Architectural Historian | elysha@gpaconsulting-us.com | (310) 792-2690 x144
GPA CONSULTING | www.gpaconsulting-us.com

From: Krista Nicholds <knicholds@preserveoc.org>
Sent: Tuesday, October 27, 2020 11:56 AM
To: Elysha Paluszek <elysha@gpaconsulting-us.com>
Subject: Re: Proposed Bridge Replacement Project at Silverado Canyon Road Bridge

In that case, is Caltrans doing a historical evaluation of the bridge, or bridges?

Preserve Orange County
Help us build a community of preservationists by following us on Facebook

On Oct 27, 2020, at 9:17 AM, Elysha Paluszek <elysha@gpaconsulting-us.com> wrote:

Hello Krista,

Yes, the bridge itself was constructed in 1935. I realize that our firm is conducting outreach for two separate projects involving two different bridges over Silverado Creek in the area. I apologize if this caused any confusion. I have attached a map which identifies the location of the project I emailed you about yesterday. Please let me know if you have any further questions or if you have any input regarding potential historic properties. We appreciate your assistance.

Sincerely,

ELYSHA PALUSZEK
Associate Architectural Historian | elysha@gpaconsulting-us.com | (310) 792-2690 x144
GPA CONSULTING | www.gpaconsulting-us.com

From: Krista Nicholds <knicholds@preserveoc.org>
Sent: Monday, October 26, 2020 3:49 PM
To: Elysha Paluszek <elysha@gpaconsulting-us.com>
Subject: Re: Proposed Bridge Replacement Project at Silverado Canyon Road Bridge

Hi Elysha,

Thank you for following up by email.

Do you know how old the bridge itself is?

Krista Nicholds

On Mon, Oct 26, 2020 at 3:23 PM Elysha Paluszek <elysha@gpaconsulting-us.com> wrote:

> Good afternoon,
>
> The County of Orange Public Works, in cooperation with Caltrans and the Federal Highway Administration, proposes to replace the Silverado Canyon Road Bridge over Silverado Creek. Caltrans is currently conducting a study of potential impacts to historic properties as a result of the proposed project, as required under Section 106 of the National Historic Preservation Act. GPA Consulting is part of the consultant team preparing the environmental documentation on behalf of Caltrans.
>
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If you would like to comment on the proposed project as it relates to historic properties or if you would like additional information, please contact me at elysha@gpaconsulting-us.com or at (310) 792-2690 ext. 144.

Sincerely,

<image001.png> **<image002.jpg>** **ELYSHA PALUSZEK**
Associate Architectural Historian I elysha@gpaconsulting-us.com
617 S. Olive Street
Suite 910
Los Angeles, CA 90014
(310) 792-2690 x144
www.gpaconsulting-us.com
El Segundo • Los Angeles
Sacramento • Ventura • Tustin
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<image005.png>
<image006.png>
<image007.png>

Preserve Orange County
206 W Fourth Street
Santa Ana, California 92701
<Silverado Bridge_Fig 2_Project Location Map.pdf>

Preserve Orange County
206 W Fourth Street
Santa Ana, California 92701

Preserve Orange County
206 W Fourth Street
Santa Ana, California 92701

Attachment C

Previous Determinations

Caltrans Historic Bridge Inventory Sheet

Structure Maintenance & Investigations



Historical Significance - Local Agency Bridges

March 2019

District 12

Orange County

Bridge Number	Bridge Name	Location	Historical Significance	Year Built	Year Wid/Ext
55C0147	FULLERTON CREEK CHANNEL	0.1 MI N/O VALENCIA DR	5. Bridge not eligible for NRHP	1958	1976
55C0148	SANTA ANA RIVER CHANNEL (WARNER AVE)	0.1 MI W/O HARBOR BLVD	5. Bridge not eligible for NRHP	1961	1969
55C0149L	SAN DIEGO CREEK CHANNEL	0.3 MI. S/O BRISTOL ST.	5. Bridge not eligible for NRHP	1965	1978
55C0149R	SAN DIEGO CREEK CHANNEL	0.3 MI. S/O BRISTOL ST.	5. Bridge not eligible for NRHP	1968	1978
55C0151	BAYSIDE DRIVE POC	1.3 MI SE OF S.R.1	5. Bridge not eligible for NRHP	1928	
55C0154	SANTA ANA RIVER CHANNEL (EDINGER AVE)	0.3 MI. E/O HARBOR BLVD	5. Bridge not eligible for NRHP	1959	2014
55C0155	ALISO CREEK	0.35 MI. S/O TORO ROAD	5. Bridge not eligible for NRHP	1974	
55C0156	SUNSET CHANNEL	0.4 MI S/O EDINGER AVE	5. Bridge not eligible for NRHP	1966	
55C0157	ANAHEIM BARBER CITY CH	0.6 MI S/O WESTMINISTER	5. Bridge not eligible for NRHP	1976	
55C0158	MOODY CREEK CHANNEL	0.4 MI. W/O MOODY STREET	5. Bridge not eligible for NRHP	1957	1977
55C0159	SANTA ANA RIVER CHANNEL	0.3 M E/O FWY 57	5. Bridge not eligible for NRHP	1967	1977
55C0160	BOLSA CHICA CHANNEL	0.8 MI W/O VALLEY VIEW	5. Bridge not eligible for NRHP	1966	
55C0161	ANAHEIM-BARBER CITY CHANNEL	0.3 MI W/O ROUTE 39	5. Bridge not eligible for NRHP	1966	
55C0162	ANAHEIM-BARBER CITY CHANNEL	AT RANCH RD	5. Bridge not eligible for NRHP	1976	
55C0163	SANTA ANA RIVER	0.4 MI W/O FAIRVIEW ST	5. Bridge not eligible for NRHP	1964	1977
55C0164	SANTA ANA SANTA FE CHANNEL	0.5 MI W/O ROUTE 55 FWY	5. Bridge not eligible for NRHP	1965	
55C0166	CROWN VALLEY PARKWAY OH	100 FT W/O ROUTE 5	5. Bridge not eligible for NRHP	1970	2013
55C0168	HANDY CREEK	0.2 MI E/O ORANGE PK BLVD	5. Bridge not eligible for NRHP	1937	
55C0172	SANTIAGO CREEK	0.1 MI N/O MODJESKA GR RD	5. Bridge not eligible for NRHP	1935	
55C0173	SANTIAGO CREEK	.4 MI. E/O MODJESKA G RD	5. Bridge not eligible for NRHP	1947	
55C0174	SILVERADO CANYON CREEK	1.6 MI E/O SANTIAGO ROAD	5. Bridge not eligible for NRHP	1935	
55C0175	LADD CANYON	2.2 MI. E/O SANTIAGO ROAD	5. Bridge not eligible for NRHP	1947	
55C0176	SILVERADO CANYON CREEK	0.1 MI. S/O SLVRDO CYN RD	5. Bridge not eligible for NRHP	1970	1983
55C0177	SILVERADO CANYON CREEK	4.4 MI. E/O SANTIAGO ROAD	5. Bridge not eligible for NRHP	1947	
55C0178	SILVERADO CANYON CREEK	4.9 MI. E/O SANTIAGO ROAD	5. Bridge not eligible for NRHP	1947	
55C0179	SILVERADO CANYON CREEK	5.4 MI E/O SANTIAGO CYN	5. Bridge not eligible for NRHP	1947	
55C0180	SILVERADO CANYON CREEK	2.7 MI E/O SANTIAGO ROAD	5. Bridge not eligible for NRHP	1971	
55C0181	SILVERADO CANYON CREEK	3.1 MI E/O SANTIAGO ROAD	5. Bridge not eligible for NRHP	1970	
55C0182	SILVERADO CANYON CREEK	3.6 MI. E/O SANTIAGO ROAD	5. Bridge not eligible for NRHP	1970	
55C0183	SILVERADO CANYON CREEK	50' N/O SILVERADO CYN RD.	5. Bridge not eligible for NRHP	1963	
55C0184	SANTIAGO CREEK CHANNEL	.2 MI. N/O SANTIAGO C RD	5. Bridge not eligible for NRHP	1970	1998
55C0185	SANTIAGO CREEK	50' S/O MODJESKA CYN RD	5. Bridge not eligible for NRHP	1970	
55C0186	ENGLISH CANYON CHANNEL	300' W/O LOS ALISOS BLVD	5. Bridge not eligible for NRHP	1976	
55C0187	ENGLISH CANYON CHANNEL	300' W/O LOS ALISOS BLVD	5. Bridge not eligible for NRHP	1976	
55C0188	SILVERADO CANYON CREEK	200' S/O SILVERADO CYN RD	5. Bridge not eligible for NRHP	1965	
55C0189	SILVERADO CANYON CREEK	50' N/O SILVERADO CYN RD	5. Bridge not eligible for NRHP	1957	
55C0190	ENGLISH CANYON CHANNEL	300' W/O LOS ALISOS BLVD	5. Bridge not eligible for NRHP	1976	
55C0191	CANADA CHANNEL	0.2 MI S OF LAKE FOREST	5. Bridge not eligible for NRHP	1976	
55C0192	CARBON CANYON CHANNEL	0.2 MI W/O ROSE DRIVE	5. Bridge not eligible for NRHP	1934	
55C0193	FULLERTON CREEK CHANNEL	0.2 MI. N/O ORANGETHORPE	5. Bridge not eligible for NRHP	1958	1967
55C0194	FULLERTON CREEK CHANNEL	0.15 MI. S/O WHITAKER ST.	5. Bridge not eligible for NRHP	1958	1964
55C0196	BREA CREEK CHANNEL	0.3 M N/O ARTESIA BLVD	5. Bridge not eligible for NRHP	1960	
55C0197	BREA CREEK CHANNEL	100' N/O FRANKLIN STREET	5. Bridge not eligible for NRHP	1950	

Appendix D Initial Site Assessment



INITIAL SITE ASSESSMENT

SILVERADO CANYON ROAD BRIDGE NO. 55C-0174 REPLACEMENT PROJECT PROJECT NO. BRLO-5955 (095) SILVERADO, ORANGE COUNTY, CALIFORNIA

PREPARED FOR:
GPA CONSULTING
201 NEVADA STREET, SUITE B
EL SEGUNDO, CALIFORNIA 90245

AND

COUNTY OF ORANGE PUBLIC WORKS
601 N. ROSS STREET
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PREPARED BY:
GEOCON WEST, INC.
3303 N. SAN FERNANDO BOULEVARD
BURBANK, CA 91504-2531

GEOCON PROJECT NO. W1078-77-01

May 20, 2021

GEOCON

GEOCON
WEST, INC.
GEOTECHNICAL ■ ENVIRONMENTAL ■ MATERIALS

Project No. W1078-77-01
May 20, 2021

Richard Galvin
GPA Consulting
201 Nevada Street, Suite B
El Segundo, California 90245

Subject: INITIAL SITE ASSESSMENT REPORT
SILVERADO CANYON ROAD BRIDGE NO. 55C-174
REPLACEMENT PROJECT
PROJECT NO. BRLO-5955 (095)
SILVERADO, ORANGECOUNTY, CALIFORNIA

Dear Mr. Galvin:

At the request of GPA Consulting, on behalf of the County of Orange, Geocon West, Inc. has performed an Initial Site Assessment (ISA) of the Silverado Canyon Road Bridge No. 55C-0174 in Silverado, California, The replacement of the Silverado Canyon Road Bridge will improve safety through the construction of a new bridge that will provide increased sufficiency for this single crucial access point into Silverado Canyon.

The accompanying report presents the details of the ISA conducted to support the design of the project. The report summarizes our findings relative to potential recognized environmental conditions identified within the project boundaries that may impact construction of the proposed bridge replacement project.

We appreciate the opportunity to provide our services on this project. Please contact us if you have any questions concerning this ISA Report or if we may be of further service.

Very truly yours,

GEOCON WEST, INC.

Adrian Escobar
Staff Geologist

Michael Conkle, PG
Senior Geologist

(EMAIL) Addressee

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2 Site Plan

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A. EDR Historical Topographic Maps
B. EDR Aerial Photographs
C. EDR Sanborn Map Report
D. EDR City Directory Report
E. EDR Radius Map™ Report with GeoCheck®
F. Caltrans ISA Checklist

ACRONYMS AND ABBREVIATIONS

ADL	Aerially deposited lead
APN	Assessor's Parcel Number
ASTM	American Society for Testing and Materials
Caltrans	California Department of Transportation
CalGEM	California Geologic Energy Management Division
CERCLA	Comprehensive Environmental Response Compensation and Liability Act
CFR	Code of Federal Regulations
COC	Contaminants of concern
DTSC	California Department of Toxic Substances Control
EDR	Environmental Data Resources Inc.
ISA	Initial Site Assessment
LCP	Lead-containing Paint
PCB	Polychlorinated biphenyls
REC	Recognized Environmental Condition
SGMA	Sustainable Groundwater Management Act
SSP	Standard special provision
TCE	Temporary construction easement
USGS	United States Geological Survey
UST	Underground storage tank

EXECUTIVE SUMMARY

Geocon West, Inc. performed an Initial Site Assessment (ISA) of the Silverado Canyon Road Bridge No. 55C-0174 in Silverado, California for the Bridge Replacement Project (Project No. BRLO-5955 (095).

The ISA was performed in accordance with our Proposal No. LP-2018-289 executed October 10, 2019, and included site reconnaissance and review of historical topographic maps, aerial photographs, regulatory databases, and other site-related sources for indications of Recognized Environmental Conditions that might be encountered during construction. A California Department of Transportation (Caltrans) ISA Checklist summarizing the findings, conclusions, and recommendations is presented in the ISA report.

The project limits include the existing bridge and approximately 1/4 mile of Silverado Canyon Road. The project consists of removal and replacement of the existing Silverado Canyon Road Bridge over Silverado Creek. The proposed replacement structure would be a concrete bridge approximately 58 feet long and 44 feet wide. The bridge would support two 12-foot wide traffic lanes, two 5-foot shoulders, two traffic barriers, and a 5-foot sidewalk with railing on the north side. The project would require relocation of the existing waterline and coordination with adjacent power and communication line pole owners to protect in place the poles and overhead lines. The project will be completed within existing right-of-way; however, temporary construction easements (TCEs) would be required.

Historical records indicate that Silverado Canyon Road has been a thoroughfare in the region since at least the early 1900s, which includes use during periods when lead was an ingredient in gasoline. Aerially deposited lead (ADL) therefore, is potentially present in soil within the project limits.

There is a potential for asbestos containing materials (ACM) and lead containing paint (LCP) to be present within or on the existing bridge structure. Yellow and white thermoplastic striping paint observed within the project limits generally has the potential to contain lead or chromium.

Pole-mounted and pad-mounted transformers have the potential to contain fluid that contains polychlorinated biphenyls (PCBs). Removal of electrical equipment may generate hazardous waste. Utility owners maintain responsibility for transformers and other electrical equipment that may contain hazardous substances.

Relocation or replacement of guard rails, power poles, and roadside signs on wooden posts may generate treated wood waste if the wooden posts are unable to be reused.

The site reconnaissance and database records review did not indicate additional specific hazardous waste impacts due to the current use of the Site that would have the potential to affect the construction or end result of the proposed improvement project.

Due to the projects inclusion of an automotive thoroughfare that was in use when lead was an ingredient in gasoline, an ADL survey is recommended to evaluate the potential presence of lead in surface and shallow soil within the construction areas of the project. The recommended areas are the shoulders of the thoroughfare within the construction area where soil disturbance is anticipated.

An ACM and LCP survey of the bridge structure will be required prior to the demolition work in order to obtain permits from South Coast Air Quality Management District. If present, removal and disposal of ACM and LCP should be performed prior to the start of the demolition/renovation.

Pole-type transformers have the potential to contain fluids that contain PCBs. As the owner, Southern California Edison maintains responsibility for the transformers. Evidence of a release was not observed in the vicinity of the electrical equipment during the site reconnaissance, therefore further evaluation is unwarranted at this time. However, if leaking transformers are identified during construction, the utility owner should be contacted to test for PCBs or other hazardous substances, service, replace and/or relocate the equipment.

Traffic striping and treated wood waste generated for this project should be managed during construction under project standard special provisions.

INITIAL SITE ASSESSMENT REPORT

1.0 INTRODUCTION

This report presents the results of our Initial Site Assessment (ISA) of the Silverado Canyon Road Bridge No. 55C-0174 Replacement Project in Silverado, California. Geocon West, Inc. conducted the ISA at the request of GPA Consulting, on behalf of the County of Orange Public Works (County). We performed the ISA in accordance with the scope of services provided in our Proposal No. LP-2018-289 dated April 30, 2018.

The County of Orange Public Works, together with the California Department of Transportation (Caltrans) Local Assistance Program is proposing the removal and replacement of the existing Silverado Canyon Road Bridge No. 55C-0174 over Silverado Creek. The proposed replacement structure would be a concrete bridge approximately 58 feet long and 44 feet wide. The bridge would support two 12-foot wide traffic lanes, two 5-foot shoulders, two traffic barriers, and a 5-foot sidewalk with railing on the north side.

The project would require relocation of the existing waterline and coordination with adjacent power and communication line pole owners to protect in place the poles and overhead lines. The project will be completed within existing right-of-way; however, a temporary construction easement (TCE) would be required. The limits of the proposed project area (hereafter referred to as "the Site") includes approximately 1/4 mile of Silverado Canyon Road, between TipToe Ranch and the Silverado Community Center, the existing bridge structure, and portions of Orange County Assessor's Parcel Numbers (APN) 105-051-086 and 105-051-087 which will be used for the TCE. The Site location is depicted on the Vicinity Map, Figure 1, and the approximate project limits are depicted on the Site Plan, Figure 2.

1.1 Purpose and Scope of Services

As part of the environmental due diligence for the Project, Geocon West Inc., a subcontractor to the County, has completed an ISA to determine the potential presence of contaminants of concern (COCs) within the limits of the project that may impact construction of the proposed road improvement project. The ISA was performed in general accordance with the American Society for Testing and Materials (ASTM) Designation E 1527-13 Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process and Caltrans Guidelines for Initial Site Assessments.

The primary goal of the ISA was to determine the potential presence of "recognized environmental conditions" (RECs) as defined by the American Society for Testing and Materials (ASTM) *Designation E 1527-13 Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process.* Section 1.1.1 of the ASTM *Designation E 1527-13* defines the term "recognized environmental conditions" as "the presence or likely presence of any hazardous substances or petroleum products in, on, or at a property: (1) due to release to the environment; (2) under conditions indicative of a release to the environment; or (3) under conditions that pose a material threat of a future release to the environment. De minimis conditions are not recognized environmental conditions." De minimis conditions are those that generally do not present a threat to human health or the environment and that generally would not be the subject of the enforcement action if brought to the attention of appropriate governmental agencies. ASTM *Designation E 1527-13* also defines 'Historical' and 'Controlled' RECs. They define an 'Historical REC' as "A past release of any hazardous substances or petroleum products that has occurred in connection with the property and has been addressed to the satisfaction of the applicable regulatory authority or meeting unrestricted use criteria established by a regulatory authority, without subjecting the property to any required controls (for example, property use restrictions, activity and use limitations, institutional controls, or engineering controls)." ASTM defines a 'Controlled REC' as "a recognized environmental condition resulting from a past release of hazardous substances or petroleum products that has been addressed to the satisfaction of the applicable regulatory authority (for example, as evidenced by the issuance of a no further action letter or equivalent, or meeting risk-based criteria established by regulatory authority), with hazardous substances or petroleum products allowed to remain in place subject to the implementation of required controls (for example, property use restrictions, activity and use limitations, institutional controls, or engineering controls)." An HREC is not a REC if the property meets current standards for unrestricted residential use. A CREC remains a REC by definition when the property does not meet the unrestricted residential use requirement unconditionally.

We also conducted the ISA in general accordance with the requirements of 40 Code of Federal Regulations (CFR) Part 312 titled *Standards and Practices for All Appropriate Inquiries*, as required under Sections 101(35)(B)(ii) and (iii) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). The purpose of conducting an all appropriate inquiries investigation into the previous ownership and uses of a property is to meet the provisions necessary for the landowner, contiguous property owner, and/or bona fide prospective purchaser to qualify for certain landowner liability protections under CERCLA.

The following principles are an integral part of ASTM Designation E1527-13:

- **"Uncertainty Not Eliminated** - No environmental site assessment can wholly eliminate uncertainty regarding the potential for recognized environmental conditions in connection with a property. Performance of this practice is intended to reduce, but not eliminate, uncertainty regarding the potential for recognized environmental conditions in connection with a property, and this practice recognizes reasonable limits of time and cost."

- **"Not Exhaustive -** All Appropriate Inquiries does not mean an exhaustive assessment of a property. There is a point at which the cost of information obtained or the time required to gather it outweighs the usefulness of the information and, in fact, may be a material detriment to the orderly completion of transactions. One of the purposes of this practice is to identify a balance between the competing goals of limiting the costs and time demands inherent in performing an environmental site assessment and the reduction of uncertainty about unknown conditions resulting from additional information."
- **"Level of Inquiry is Variable** – Not every property will warrant the same level of assessment. Consistent with good commercial and customary practice, the appropriate level of environmental site assessment will be guided by the type of property subject to assessment, the expertise and risk tolerance of the user, and the information developed in the course of the inquiry."

1.2 Scope of Services

Our Proposal No. LP-2018-289 dated April 30, 2018 describes the scope of services for this ISA. We performed the scope of services outlined in the proposal with the exception that we did not review Sanborn Fire Insurance Maps (Sanborn maps). Environmental Data Resources, Inc. (EDR) confirmed that Sanborn map coverage does not exist for the Site.

The main components of this report, as specified by the Caltrans ISA Guidance and ASTM Standards include the following:

- **Physical Setting:** Physical setting references were reviewed and observations made to obtain information concerning the topographic, geologic, and hydrogeologic characteristics of the Site and vicinity. Such information may be indicative of the direction and/or extent that a contaminant could migrate in the event of a spill or release.
- **Site Reconnaissance:** The objective of the site reconnaissance is to observe conditions and activities for indications of evidence of recognized environmental conditions. The site reconnaissance was performed by making observations from public thoroughfares.
- **Site History:** The purpose of consulting historical references is to develop a history of the previous uses of the Site in order to identify if past uses have led to recognized environmental conditions in connection with the improvement project. Historical sources reviewed included Sanborn Maps, aerial photographs and topographic maps.
- **Records Review:** The objective of the records review is to obtain and review records that will help identify recognized environmental conditions at or potentially affecting the improvement project. We reviewed publicly available Federal, State, and local regulatory agency records for facilities located within the Site area.

1.3 Report Limitations

This ISA report has been prepared exclusively for GPA Consulting for submittal to the County of Orange Public Works Department. The information obtained is only relevant for the dates of the records reviewed or as of the date of the latest site visit. Therefore, the information contained herein is valid as of the date of the report and will require an update to reflect recent records and site observations.

This report is not a comprehensive site characterization and should not be construed as such. The findings and conclusions presented in this report are predicated on the site reconnaissance, a review of the historical usage of land in the Site area, and a review of the specified regulatory records as presented in this report.

Therefore, the report should only be deemed conclusive with respect to the information obtained. No guarantee or warranty of the results of the ISA is implied within the intent of this report or any subsequent reports, correspondence or consultation, either express or implied. We strived to conduct the services summarized herein in accordance with the local standard of care in the geographic region at the time the services were rendered.

1.4 Data Gaps

ASTM Designation E 1527-13 defines a data gap as "a lack of or inability to obtain information required by this practice despite good faith efforts by the environmental professional to gather such information." Data gaps could include such things as insufficient historical information, the inability to interview persons with direct site knowledge or the lack of access to all parts of a site during the site reconnaissance. Although owner interviews were not conducted, it was determined that data gaps did not result in the inability to identify RECs. No significant data gaps were identified during the performance of this ISA.

As described in Section 1.2, we did not review Sanborn Fire Insurance Maps for the Site since they are not available for the Site and vicinity. However, based on our review of other historical information, we do not consider the lack of Sanborn map coverage a data gap.

2.0 PHYSICAL SETTING

This section provides a brief description of the physical setting of the Site area and surrounding vicinity including topography, geologic and hydrogeologic conditions. Observations of onsite conditions are described in Section 3.0.

2.1 Existing Conditions and Improvements

The limits of the Silverado Canyon Bridge Replacement Project include the Silverado Canyon Bridge, an approximately 54-foot-long structure that supports two 12 feet wide traffic lanes and a 5-foot wide sidewalk on the north side that includes a railing, approximately 400 feet of Silverado Canyon Road to the west, approximately 850 feet of Silverado Canyon Road to the east, and portions of APN 105-051-086 and 105-051-087 which consist of undeveloped land and a section of the Silverado Canyon Creek.

Overhead power and communication lines are present north and south of Silverado Canyon Road.

2.2 Proposed Improvements

The purpose of the project is to provide improved safety through the construction of a new bridge structure that is the single crucial access point into Silverado Canyon.

The project would include removal and replacement of the existing Silverado Canyon Road Bridge over Silverado Canyon Creek. The proposed replacement bridge would be a concrete bridge approximately 58 feet long and 44 feet wide. The bridge would support two 12-foot wide traffic lanes, two 5-foot shoulders, two traffic barriers, and a 5-foot sidewalk with railing (north side). The project would require relocation of the existing waterline and coordination with adjacent power pole owner to protect in place the poles and overhead lines electrical and communication lines.

2.3 Topography and Drainage Patterns

The Silverado Canyon Bridge within the site area is generally flat lying. The *USGS Lake Forest, 7.5-minute Topographic Maps* (USGS, 2018) show the site elevation at approximately 1,150 feet above mean sea level. The overall topographic gradient in the Site area is gently sloping toward the west. Drainage patterns in the region are toward the west.

2.4 Geologic Conditions

The Site is located within Silverado Canyon in the Cleveland National Forest within the northern portion of the Peninsular Ranges geomorphic province of Southern California. The Peninsular Ranges extend 900 miles from their northern terminus against the Transverse ranges, north of the Los Angeles Basin, southward to the tip of Baja California. The province varies in width from approximately 30 to 100 miles and is traversed by a group of faults and fault zones trending roughly northwest-southeast. In general, the province consists of rugged northwest-southeast trending mountain ranges with intervening valleys. The ranges are composed extensively of Cretaceous-age rocks with lesser amounts of Jurassic-age rocks. Post-Cretaceous marine sedimentary formations up to 40,000 feet in thickness can be found in the northernmost portion of the ranges (Norris and Webb, 1990).

2.5 Regional Groundwater Occurrence

The Site is situated within the regional subbasin 5987 within the Santa Ana River Watershed.

Data on the Sustainable Groundwater Management Act's (SGMA) Data Viewer Application pertaining to the installation of a domestic water supply well at 28311 Silverado Canyon Road, approximately 2,900 feet east of the Site, indicates that the depth to groundwater was approximately 250 feet in December 2018. The distance to this well from the Site suggests that it is unlikely to represent conditions at the Site.

3.0 USER-PROVIDED INFORMATION

The Client provided site plans delineating the project area and designs for the proposed improvements.

4.0 SITE RECONNAISSANCE

Adrian Escobar, Staff Geologist with Geocon, performed a reconnaissance of the Site on August 7, 2020, by walking the Site to observe site features and conditions. The Site and surrounding properties were observed from public thoroughfares and adjacent properties. The reconnaissance was conducted to survey the Site and nearby properties for visual indicators of RECs. Figure 2 depicts the project boundaries and approximate photo locations and directions. Photographs of the Site are attached.

4.1 Project Area Conditions

The Site is generally surrounded by residential and recreational properties. The Site is developed with Silverado Canyon Road orientated east to west and the Silverado Canyon Road Bridge No. 55C-0174 (photos 1 through 3). Four pole mounted electrical transformers were observed throughout the Site (photos 4 and 5). A water line was observed mounted to south side of the Silverado Canyon Road Bridge No. 55C-0174 (Photo 6). Wood treated poles are present along the northern and southern sides of the alignment (photos 1 through 8). Other improvements observed within the project limits includes pole mounted signage and treated lumber guardrails (photos 7 and 8).

Surrounding developed properties include the Silverado Community Center to the northeast of the Site, and the Tiptoe Ranch equestrian center to the southwest of the Site (photos 9 and 10).

4.2 Potential Hazardous Waste impacts

No evidence of surficial hazardous waste or materials (e.g., odors, pools of liquid, drums, containers of hazardous substances or petroleum products, unidentified substance containers, pits, ponds, lagoons, stained soil or pavement, or stressed vegetation) was observed within or on properties adjacent to the project area during the site survey.

Adjacent businesses with names or functions (such as service stations or dry cleaners) that are suggestive of the use or storage of petroleum hydrocarbons or hazardous substances other than those identified and discussed in Section 6.1 were not observed within the project area.

Electrical transformers (Figure 2) have the potential to contain fluid that contains (polychlorinated biphenyls) PCBs. As the owner, Southern California Edison maintains responsibility for the transformers. Evidence of a release was not observed in the vicinity of the electrical equipment during the site reconnaissance.

Asbestos containing materials (ACM) such as concrete, asphalt, guard rail shims, adhesives/mastic, and joint compound may be present on the bridge structure. Additionally, lead-containing paint (LCP) may be present on painted portions of the bridge.

Yellow and white thermoplastic striping paint observed at the Site generally has the potential to contain lead or chromium.

Relocation or replacement of guard rails, power poles, and roadside signs on wooden posts may generate treated wood waste if the wooden posts are unable to be reused.

5.0 PROJECT AREA HISTORY

This section summarizes information we obtained from a variety of sources regarding the historical uses of the Site and identifies historical uses that could have led to RECs. The sources of information included historical aerial photographs, historical topographic maps, and city directories provided by EDR.

5.1 Historical Topographic Maps

We reviewed historical topographic maps for the years 1902, 1942/1947, 1949, 1950/1954, 1967/1968, 1973/1978, 1981, 1982, 1988, 1997, and 2012 (Appendix A). The following summarizes our observations of the Site and adjacent properties on the historical topographic maps.

Year	Observations	
	Site	Adjacent Properties
1902 (1:125,000)	The Site is depicted as medium duty road oriented east to west.	Medium- and light-duty roads and structures are depicted to the east and west of the Site. Two structures are depicted adjacent to the north of the Site.
1942/1947 (1:50,000)	Conditions depicted are similar to those on the 1902 topographic map.	Additional structures being depicted to the east and west of the Site. Agricultural use is depicted adjacent to the northeast.
1949 1950/1954 (1:24,000)	Conditions depicted are similar to those on the 1942 topographic map.	Conditions depicted are similar to those on the 1942 topographic map with the exception of additional structures being depicted to the east of the Site and an inactive coal mine being depicted to the northwest of the Site.
1967/1968 (1:24,000)	Conditions depicted are similar to those on the 1949 and 1950 topographic maps.	Conditions depicted are similar to those on the 1949 and 1950 topographic maps with the exception of the mine no longer being depicted as inactive and property to the northeast no longer being depicted as agriculture.
1973/1978 1981 1982 (1:24,000)	Conditions are similar to those depicted on the 1967 topographic map.	Conditions are similar to those depicted on the 1967 topographic map.
1988 (1:24,000)	The Site is unmapped.	The map begins approximately 1/4 mile north of the Site and the conditions depicted are similar to those on the 1973 though 1982 topographic maps.
1997 (1:24,000)	Conditions are similar to those depicted on the 1973 through 1982 topographic maps.	Conditions are similar to those depicted on the 1973 through 1982 topographic maps.
2012 (1:24,000)	Conditions are similar to those depicted on the 1997 topographic map.	Conditions are similar to those depicted on the 1997 topographic map with the exception of no structures being depicted.

The presence of an automotive thoroughfare through the site vicinity represents a potential for ADL in shallow onsite soil. There is a potential for residual pesticides and/or arsenic in shallow onsite soils due to the historical use of the adjoining properties for agricultural purposes.

5.2 Historical Aerial Photographs

We reviewed historical aerial photographs for the years 1938, 1946, 1948, 1952, 1967, 1974, 1988, 1990, 1994, 2005, 2009, 2012 and 2016 (Appendix B) and publically available Google Earth aerial imagery dated 1994-2020 (http://www.google.com/earth/index.html). The following summarizes our observations of the Site and vicinity on the aerial photographs.

Year	Observations	
	Site	Adjacent Properties
1938 (1" = 500')	The Site was developed with a road and bridge.	The properties to the northeast and southwest were developed with agricultural use (orchards), although the limits of the orchards are not immediately adjacent to the site limits. The road continues to the east and west from the Site.
1946 (1" = 500')	Conditions are similar to those observed on the 1938 photograph.	Conditions are similar to those observed on the 1938 photograph with the exception of a structure having been present adjoining to the northeast and additional structures having been present to the east, west, and northwest of the Site.
1948 (1" = 500')	Conditions are similar to those observed on the 1946 photograph.	Conditions are similar to those observed on the 1946 photograph.
1952 (1" = 500')	Conditions are similar to those observed on the 1948 photograph.	Conditions are similar to those observed on the 1948 photograph with the exception that the southeast adjoining property appears to have been no longer used for agricultural use.
1967 (1" = 500')	Conditions are similar to those observed on the 1952 photograph.	Conditions are similar to those observed on the 1952 photograph.
1974 (1" = 500')	The quality of the photo is poor and does not cover approximately 150 feet of the western most portion of the Site. Conditions appear to have been similar to those observed on the 1967 photograph.	The quality of the photo is poor and does not cover approximately 150 feet of the western most portion of the Site. Conditions appear to have been similar to those observed on the 1967 photograph.
1988 (1" = 500')	Conditions are similar to those observed on the 1974 photograph.	Conditions are similar to those observed on the 1974 photograph with the exception of a structure having been present adjoining to the north on the western portion of the Site.
1990 (1" = 500')	Conditions are similar to those observed on the 1988 photograph.	Conditions are similar to those observed on the 1988 photograph.
1994, 2005, 2009, 2012, 2016 (1" = 500')	Conditions are similar to those observed on the 1990 photograph.	Conditions are similar to those observed on the 1990 photograph.
1994-2016 (variable)	The general development and land use of the Site was similar to those observed on	The general development and land use of the Site appears was similar to those observed on

Year	Observations	
	Site	Adjacent Properties
	the 1990 photograph.	the 1990 photograph.
2017-2019 (variable)	The general development and land use of the Site was similar to existing conditions.	The general development and land use of the adjacent and nearby properties was similar to existing conditions.

The presence of an automotive thoroughfare through the site vicinity represents a potential for ADL in shallow onsite soil. The apparent limits of the orchards on adjacent properties to the northeast and southwest do not extend to areas within or immediately adjacent to the site limits. Therefore, the potential for residual pesticides and/or arsenic in shallow onsite soils due to the historical use of the adjacent properties for agricultural purposes is considered to be low.

5.3 Historical Sanborn Maps

EDR's Sanborn Map Report, dated July 28, 2020, indicates that Sanborn maps do not exist for the Site or vicinity (Appendix C).

5.4 City Directories

EDR prepared a city directory abstract report of cross-referenced directories reviewed at approximately five-year intervals from 1973 through 2014 for addresses listed along Silverado Canyon Road within the Site (Appendix D). No addresses associated with the Site are listed in the city directory. Adjoining and adjacent property addresses listed in the City Directories consist of various individual residents and commercial businesses including Sil Mod Propane Inc. listed at 27411 Silverado Canyon Road for the year 2015. This business name suggests the use, storage, and possible releases of hazardous substances or petroleum products, however based on the type of chemical (propane gase) and the distance of this facility from the Site, this facility does not represent an REC to the Site.

5.5 California Geologic Energy Management Division

We reviewed the California Department of Conservation CalGEM wellfinder database (http://www.consrv.ca.gov/doggr/wellfinder) for oil or gas wells within the vicinity of the Site. CalGEM maps show that the nearest well is a plugged dry hole well located approximately 1,100 feet west of the western boundary of the Site. The distance to the well and its dry status suggest that the well is unlikely to have caused an REC at the Site.

5.6 Potential Hazardous Waste Impacts

In summary, historical sources indicate that the Site has been a thoroughfare in the region since at least the early 1900s and that this has been its primary use since that time.

The potential for ADL in shallow soil in the shoulder and TCE areas due to the historical use as an automotive thoroughfare represents a possible hazardous waste impact for the project.

6.0 REGULATORY AGENCY RECORDS

This section summarizes information we obtained from review of readily available agency records for the Site and properties in the surrounding vicinity. Parcels identified in the site vicinity are labeled on Figure 2.

6.1 Database Review

EDR searched Federal, State, and local databases for the Site and surrounding areas. A copy of the *EDR Radius Map™ Report, with GeoCheck®*, dated July 28, 2020, is in Appendix E. The databases EDR searched listed one property/facility from the Historical UST Properties/Facilities database.

6.1.1 Identified Facilities

One address within 1/4 mile of the Site was identified on a regulatory database. The property is listed on a non-release related database[1] and therefore is unlikely to have caused an REC at the Site.
No other properties were identified within the *Radius Map™ Report, with GeoCheck®*.

6.2 Case File Review

We reviewed environmental record sources including files available on the California State Water Resources Control Board GeoTracker webpage (http://geotracker.waterboards.ca.gov/) and the California Department of Toxic Substances Control (DTSC) EnviroStor webpage (http://www.envirostor.dtsc.ca.gov/public/) for information regarding adjacent properties/facilities of concern. No information for the Site or offsite properties within 1/4 mile of the site is available on either EnviroStor or Geotracker.

6.3 Orphan Properties

The EDR *Orphan Summary* identifies properties that have incomplete address information and could not be specifically plotted. The EDR *Orphan Summary* included three entries that were over 1 mile from the Site and therefore are unlikely to have caused an REC at the Site.

[1] "Release" refers to an unauthorized release of a petroleum product or hazardous substance to the environment - i.e. the ground surface, soil, soil vapor, groundwater, or surface water on a property. "Release-related database" refers to those which provide information regarding an unauthorized release. "Non-release-related database" refers to those that may report use, storage, or disposal of hazardous substances and/or petroleum products or other environmental conditions, but do not report releases of such.

7.0 CONCLUSIONS AND RECOMMENDATIONS

Geocon West, Inc. performed an ISA of the Silverado Canyon Road Bridge No. 55C-0174 Replacement Project based on the scope of services in our Proposal No. LP-2018-289 dated April 30, 2018. A Caltrans ISA Checklist summarizing the findings, conclusions, and recommendations of this ISA is in Appendix F.

7.1 Conclusions

Historical records indicate that Silverado Canyon Road Bridge No. 55C-0174 has been a thoroughfare in the region since at least the early 1900s, which includes use during periods when lead was an ingredient in gasoline. ADL therefore, is potentially present in soil within the project limits.

There is a potential for asbestos ACM and LCP to be present within or on the existing bridge structure. Yellow and white thermoplastic striping paint observed within the project limits generally has the potential to contain lead or chromium.

Pole-mounted and pad-mounted transformers have the potential to contain fluid that contains polychlorinated biphenyls (PCBs). Removal of electrical equipment may generate hazardous waste. Utility owners maintain responsibility for transformers and other electrical equipment that may contain hazardous substances.

Relocation or replacement of guard rails, power poles, and roadside signs on wooden posts may generate treated wood waste if the wooden posts are unable to be reused.

The results of the ISA indicate no specific additional hazardous waste impacts due to the current use of the adjacent and surrounding properties that would have the potential to affect the construction or end result of the proposed improvement project.

7.2 Recommendations for Preliminary Site Investigations

Due to the proximity of the project alignment to an automotive thoroughfare that was in use when lead was an ingredient in gasoline, an ADL survey is recommended to evaluate the potential presence of lead in surface and shallow soil within the project areas where soil disturbance is anticipated.

An ACM and LCP survey of the existing bridge structure will be required prior to the demolition work in order to obtain permits from South Coast Air Quality Management District (SCAQMD). If present, removal and disposal of ACM and LCP should be performed prior to the start of the demolition/renovation.

Traffic striping and treated wood waste generated for this project should be managed during construction under project SSPs.

8.0 REFERENCES

American Society for Testing and Materials, *Designation E 1527-13 Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process*, 2013.

State of California Department of Conservation, California Geologic Energy Management Division – CalGEM Home Page, http://www.conservation.ca.gov/ accessed August 2020.

California Department of Transportation, *Standard Environmental Reference, Volume 1, Chapter 10 – Hazardous Materials, Hazardous Waste, and Contamination,* 2016.

California Department of Toxic Substances, *EnviroStor website*, (https://www.envirostor.dtsc.ca.gov), accessed August 2020.

California State Water Resources Control Board, *GeoTracker website*, (http://geotracker.waterboards.ca.gov), accessed August 2020.

Norris, R.M.; Webb, R. W., Geology of California: 2nd Edition, 1990

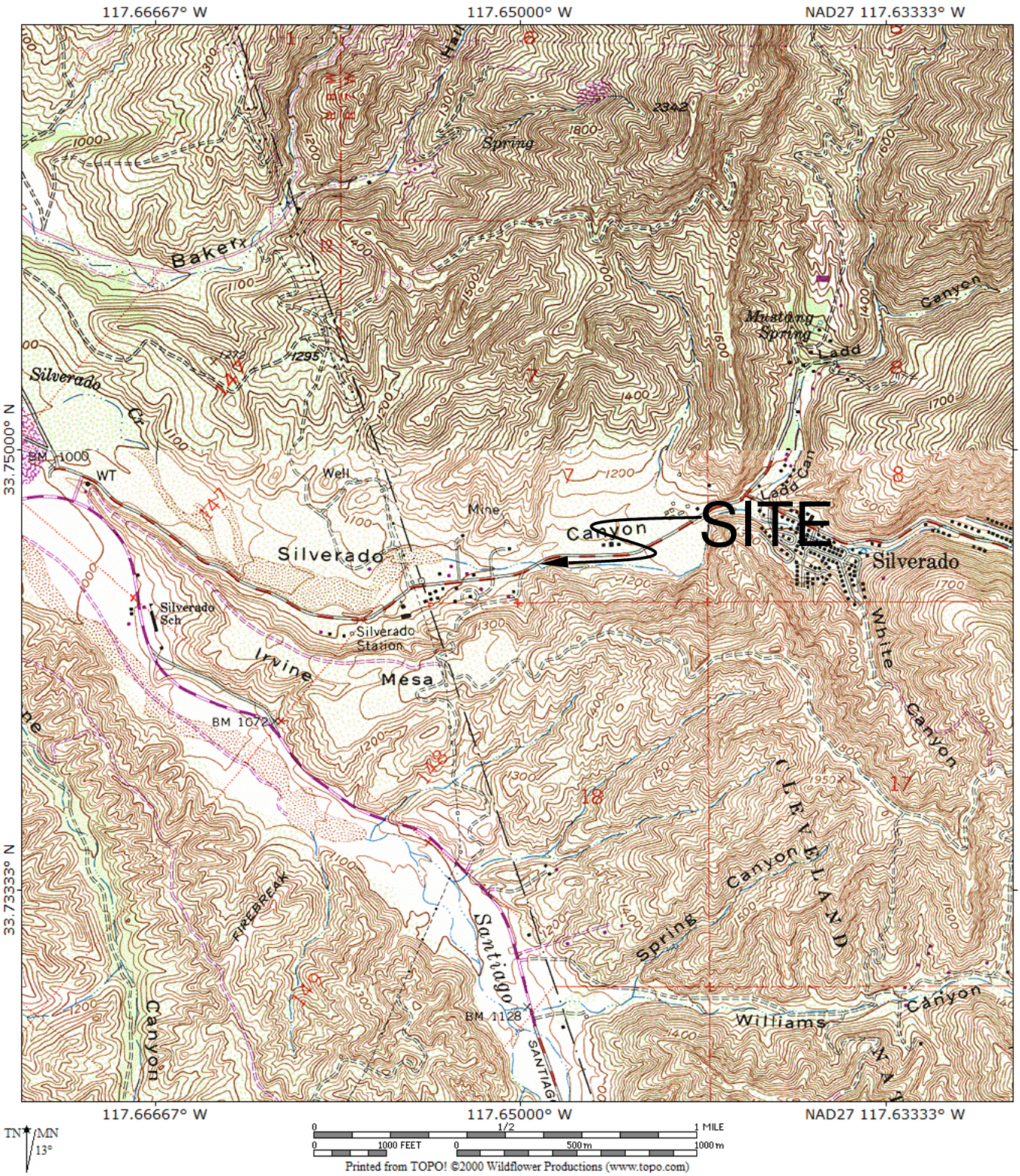
United States Geological Survey, *Lake Forest 7.5-minute Topographic Maps*, 2018.

9.0 QUALIFICATIONS

This ISA report was prepared by Adrian Escobar, with oversight by Mike Conkle, PG.

We declare that, to the best of our professional knowledge and belief, we meet the definition of Environmental Professional as defined in Section 312.10 of 40 CFR Part 312. We have the specific qualifications based on education, training, and experience, to assess a property of the nature, history, and setting of the subject property. We have developed and performed the all appropriate inquiries in conformance with the standards and practices set forth in 40 CFR Part 312.

Mr. Conkle has over 25 years of experience in the environmental and geotechnical consulting industry in California. Mr. Conkle is Professional Geologist a with a BS degree in geology. His personal experience includes the performance of hundreds of environmental projects including Phase I and Phase II site assessments, remedial investigations and feasibility studies, and corrective action programs. His primary expertise includes hazardous waste evaluations of transportation corridors, industrial, commercial and residential properties.



REFERENCE: U.S.G.S. TOPOGRAPHIC MAPS, 7.5 MINUTE SERIES, EL TORO & BLACK STAR CANYON, CA QUADRANGLE

GEOCON
W E S T, I N C.

ENVIRONMENTAL GEOTECHNICAL MATERIALS
3303 N. SAN FERNANDO BLVD. - SUITE 100 - BURBANK, CA 91504
PHONE (818) 841-8388 - FAX (818) 841-1704

VICINITY MAP

SILVERADO CANYON BRIDGE NO. 55C-0174
REPLACEMENT PROJECT
SILVERADO, CALIFORNIA

DRAFTED BY: AE	CHECKED BY: MPC

MAY 2021	PROJECT NO. W1078-77-01	FIG. 1

105-060-32

105-051-83

105-051-10

105-051-86

105-060-33

105-051-87

105-060-02

LEGEND

Site

Parcel

ROW

Approximate Photo Location and Direction

Transformer

TCE

0 100 200 ft

N

GEOCON WEST, INC.

ENVIRONMENTAL GEOTECHNICAL MATERIALS

3303 N. SAN FERNANDO BLVD. - SUITE 100 - BURBANK, CA 91504

PHONE (818) 841-8388 - FAX (818) 841-1704

SITE PLAN

SILVERADO CANYON BRIDGE NO. 55C-0174
REPLACEMENT PROJECT
SILVERADO, CALIFORNIA

DRAFTED BY: ARE	CHECKED BY: MPC	MAY 2021	PROJECT NO. W1078-77-01	FIG. 2



Photo 1—View to the west of the eastern portion of the Site.



Photo 2—View to the west of the western site boundary.

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PHONE 818 841-8388 – FAX 818 841-1704

SITE PHOTOGRAPHS

SILVERADO CANYON BRIDGE NO. 55C-0174
REPLACEMENT PROJECT
SILVERADO, CALIFORNIA



Photo 3—View to the northwest of the Silverado Canyon Bridge.



Photo 4—View to the northeast of pole-mounted transformers and the eastern site boundary.

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SITE PHOTOGRAPHS

SILVERADO CANYON BRIDGE NO. 55C-0174
REPLACEMENT PROJECT
SILVERADO, CALIFORNIA



Photo 5—View to the east of a pole-mounted transformer and the western portion of the Site.



Photo 6—View to the northeast of the waterline tied to the bridge.

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SITE PHOTOGRAPHS

SILVERADO CANYON BRIDGE NO. 55C-0174
REPLACEMENT PROJECT
SILVERADO, CALIFORNIA



Photo 7—View to the northwest of treated lumber guardrails and signage.



Photo 8— View to the northeast of treated lumber guardrails and signage.



Photo 9—View to the northeast of the community center on the adjoining property.



Photo 10— View to the south of TipToe Ranch on the adjoining property.

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SITE PHOTOGRAPHS

SILVERADO CANYON BRIDGE NO. 55C-0174
REPLACEMENT PROJECT
SILVERADO, CALIFORNIA

APPENDIX A

Silverado Canyon Bridge

Silverado Canyon Bridge

Silverado, CA 92676

Inquiry Number: 6135774.4

July 28, 2020

EDR Historical Topo Map Report

with QuadMatch™

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

EDR Historical Topo Map Report

07/28/20

Site Name:

Silverado Canyon Bridge
Silverado Canyon Bridge
Silverado, CA 92676
EDR Inquiry # 6135774.4

Client Name:

Geocon Geotechnical & Env
3303 North San Fernando Blvd.
Burbank, CA 91504
Contact: Adrian Escobar

EDR Topographic Map Library has been searched by EDR and maps covering the target property location as provided by Geocon Geotechnical & Env were identified for the years listed below. EDR's Historical Topo Map Report is designed to assist professionals in evaluating potential liability on a target property resulting from past activities. EDRs Historical Topo Map Report includes a search of a collection of public and private color historical topographic maps, dating back to the late 1800s.

Search Results:

P.O.# NA
Project: W1078-77-01 Silverado Bridge

Coordinates:

Latitude: 33.745707 33° 44' 45" North
Longitude: -117.650169 -117° 39' 1" West
UTM Zone: Zone 11 North
UTM X Meters: 439779.48
UTM Y Meters: 3734150.87
Elevation: 1114.43' above sea level

Maps Provided:

2012
1997
1988
1982
1981
1973, 1978
1967, 1968
1950, 1954
1949
1942, 1947
1935
1902

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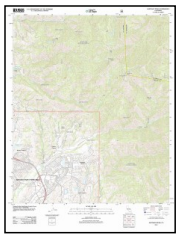
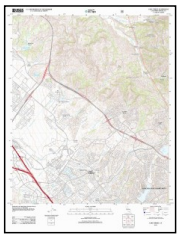
Topo Sheet Key

This EDR Topo Map Report is based upon the following USGS topographic map sheets.

2012 Source Sheets



Santiago Peak
2012
7.5-minute, 24000



Lake Forest
2012
7.5-minute, 24000



Corona South
2012
7.5-minute, 24000

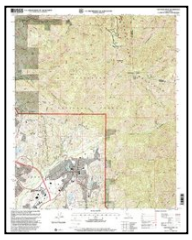


Black Star Canyon
2012
7.5-minute, 24000

1997 Source Sheets



Corona South
1997
7.5-minute, 24000
Aerial Photo Revised 1994



Santiago Peak
1997
7.5-minute, 24000
Aerial Photo Revised 1994



Black Star Canyon
1997
7.5-minute, 24000
Aerial Photo Revised 1994



El Toro
1997
7.5-minute, 24000
Aerial Photo Revised 1994

1988 Source Sheets



Santiago Peak
1988
7.5-minute, 24000
Aerial Photo Revised 1985



Corona South
1988
7.5-minute, 24000
Aerial Photo Revised 1987



Black Star Canyon
1988
7.5-minute, 24000
Aerial Photo Revised 1987

1982 Source Sheets



Santiago Peak
1982
7.5-minute, 24000
Aerial Photo Revised 1980



Black Star Canyon
1982
7.5-minute, 24000
Aerial Photo Revised 1980



Corona South
1982
7.5-minute, 24000
Aerial Photo Revised 1980



El Toro
1982
7.5-minute, 24000
Aerial Photo Revised 1980

Topo Sheet Key

This EDR Topo Map Report is based upon the following USGS topographic map sheets.

1981 Source Sheets



Black Star Canyon
1981
7.5-minute, 24000
Aerial Photo Revised 1978



El Toro
1981
7.5-minute, 24000
Aerial Photo Revised 1978

1973, 1978 Source Sheets



Santiago Peak
1973
7.5-minute, 24000
Aerial Photo Revised 1973



Black Star Canyon
1973
7.5-minute, 24000
Aerial Photo Revised 1966



Corona South
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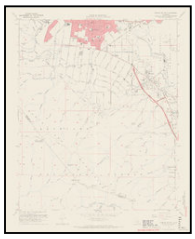
7.5-minute, 24000
Aerial Photo Revised 1973



El Toro
1978
7.5-minute, 24000
Aerial Photo Revised 1974

1967, 1968 Source Sheets



Corona South
1967
7.5-minute, 24000
Aerial Photo Revised 1966



Black Star Canyon
1967
7.5-minute, 24000
Aerial Photo Revised 1966



El Toro
1968
7.5-minute, 24000
Aerial Photo Revised 1967

1950, 1954 Source Sheets



El Toro
1950
7.5-minute, 24000
Aerial Photo Revised 1946



Black Star Canyon
1950
7.5-minute, 24000
Aerial Photo Revised 1946



Santiago Peak
1954
7.5-minute, 24000
Aerial Photo Revised 1949



Corona South
1954
7.5-minute, 24000
Aerial Photo Revised 1952

Topo Sheet Key

This EDR Topo Map Report is based upon the following USGS topographic map sheets.

1949 Source Sheets



El Toro
1949
7.5-minute, 24000
Aerial Photo Revised 1946



Black Star Canyon
1949
7.5-minute, 24000
Aerial Photo Revised 1946

1942, 1947 Source Sheets



SANTIAGO PEAK
1942
15-minute, 50000



CORONA
1947
15-minute, 50000

1935 Source Sheets



El Toro
1935
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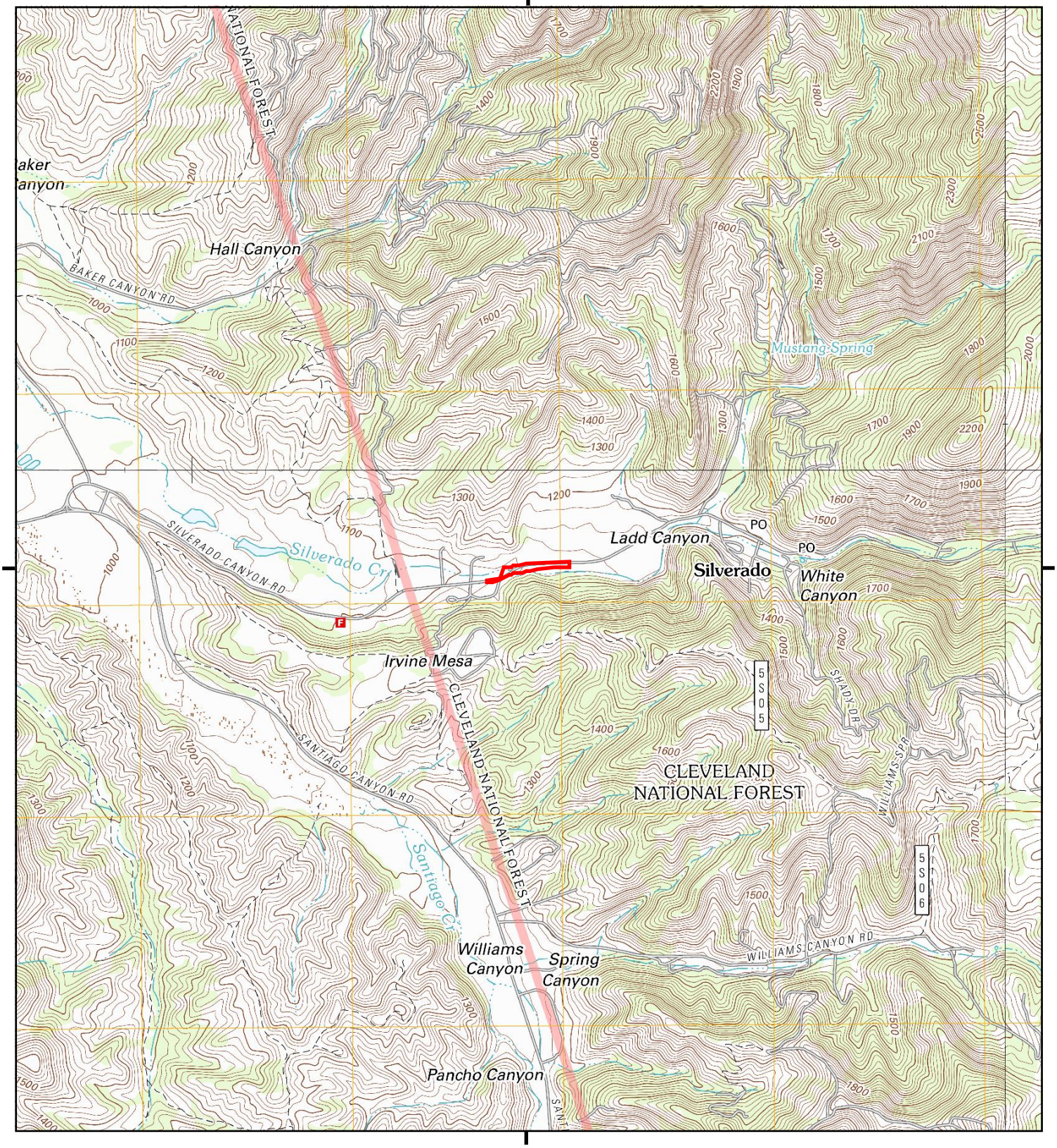
1902 Source Sheets



Corona
1902
30-minute, 125000



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W E
SW S SE

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NE, Corona South, 2012, 7.5-minute
SE, Santiago Peak, 2012, 7.5-minute
NW, Black Star Canyon, 2012, 7.5-minute

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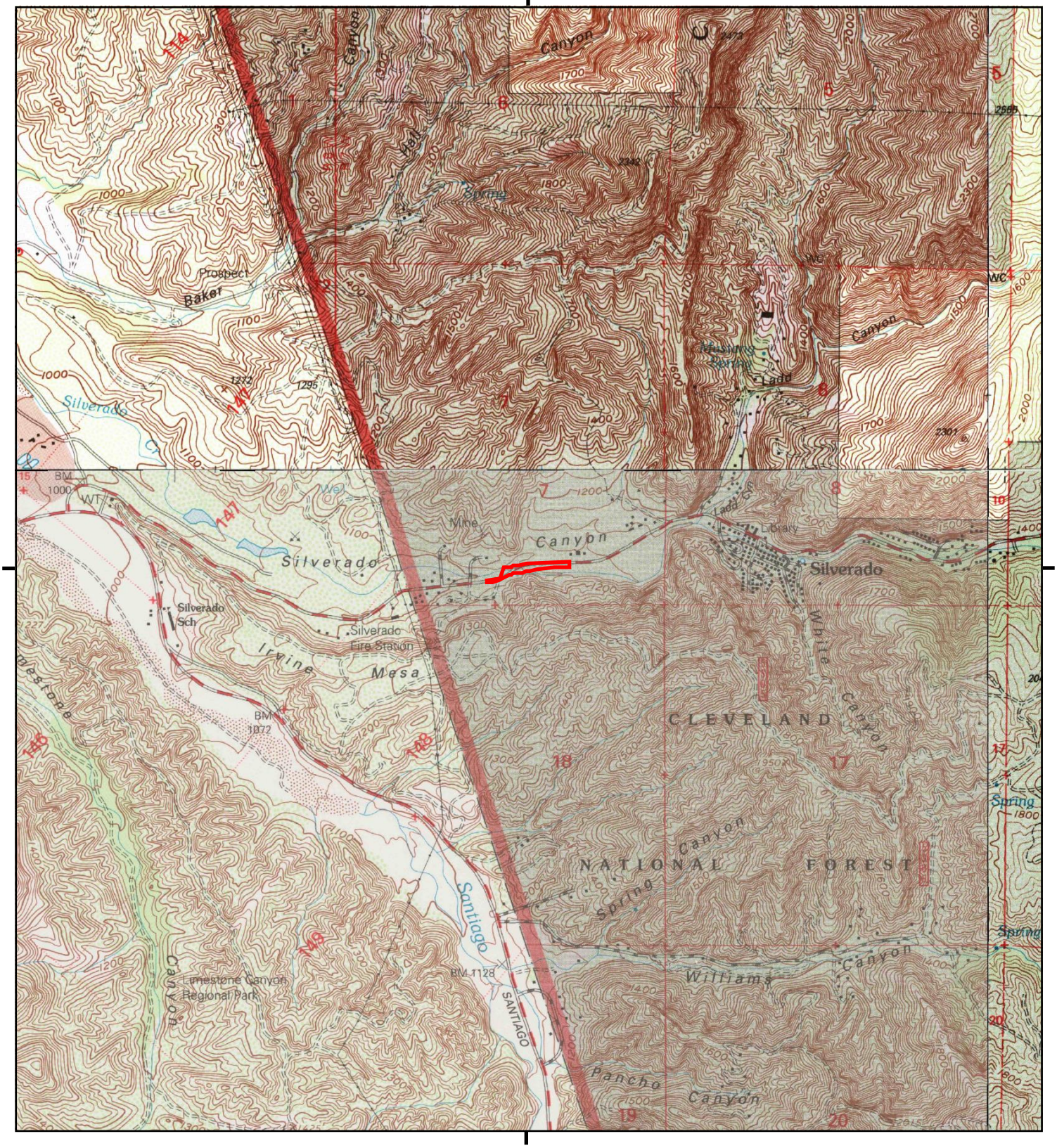
ADDRESS: Silverado Canyon Bridge
Silverado, CA 92676
CLIENT: Geocon Geotechnical & Env

N



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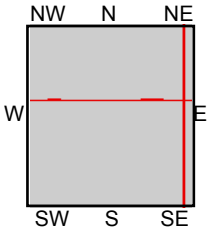
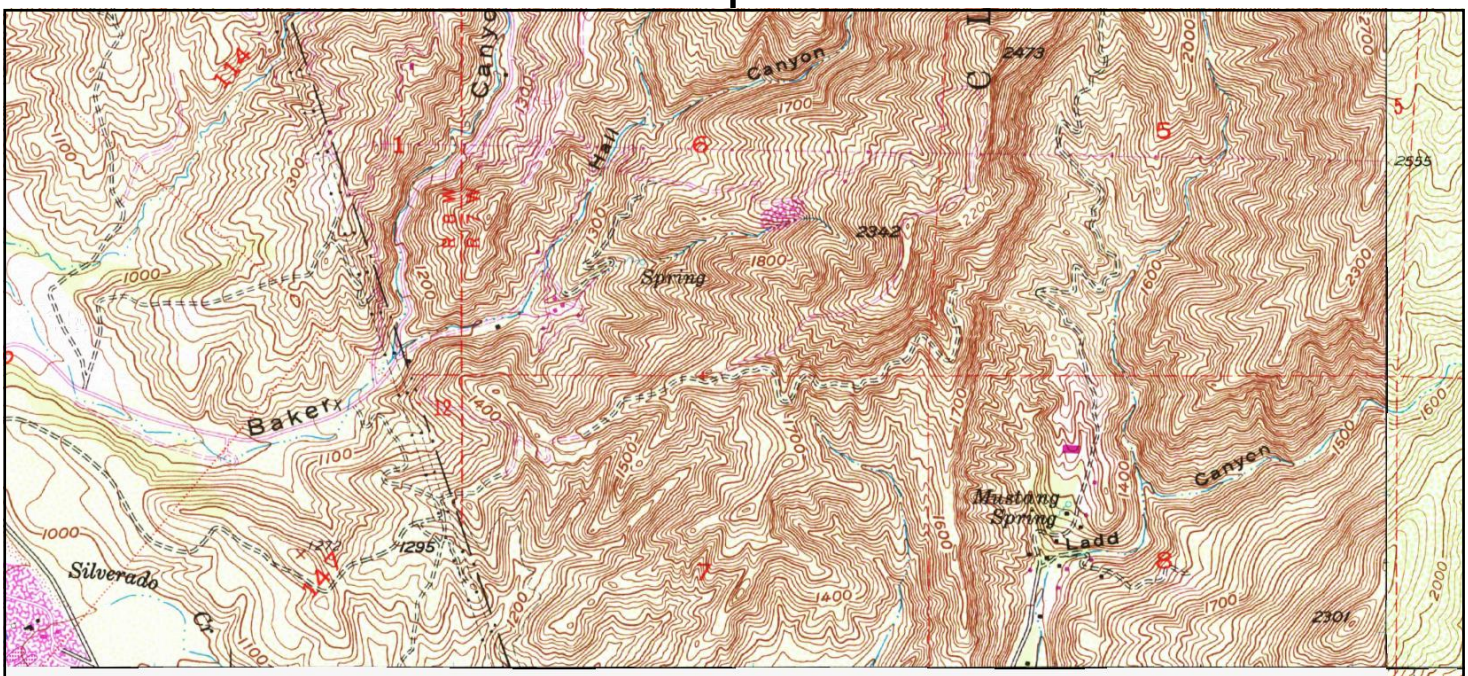


TP, El Toro, 1997, 7.5-minute
NE, Corona South, 1997, 7.5-minute
SE, Santiago Peak, 1997, 7.5-minute
NW, Black Star Canyon, 1997, 7.5-minute

SITE NAME: Silverado Canyon Bridge
ADDRESS: Silverado Canyon Bridge
Silverado, CA 92676
CLIENT: Geocon Geotechnical & Env

N



UNMAPPED

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W E
SW S SE

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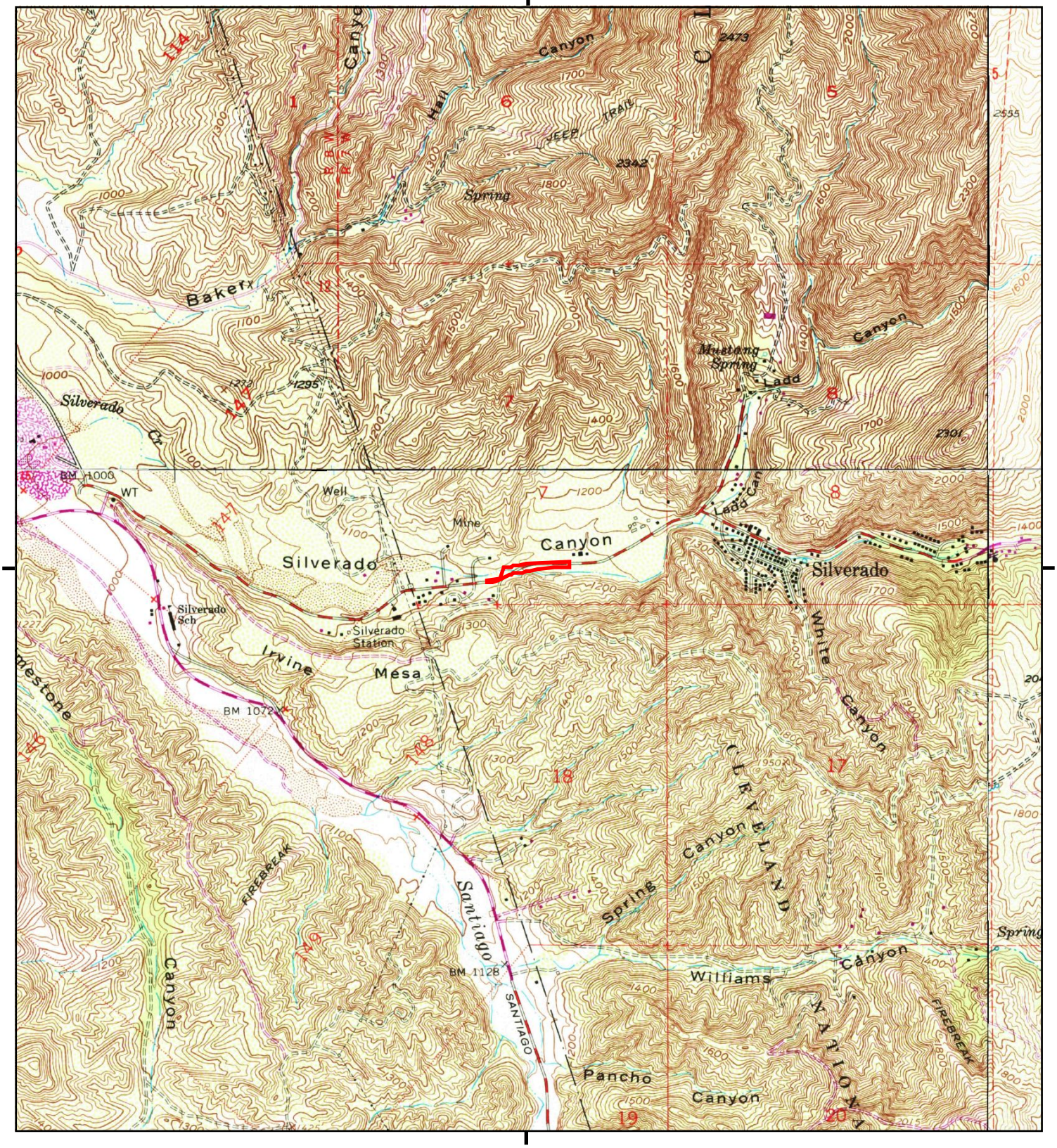
SE, Santiago Peak, 1988, 7.5-minute
NW, Black Star Canyon, 1988, 7.5-minute

SITE NAME: Silverado Canyon Bridge
ADDRESS: Silverado Canyon Bridge
Silverado, CA 92676
CLIENT: Geocon Geotechnical & Env

N



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W E
SW S SE

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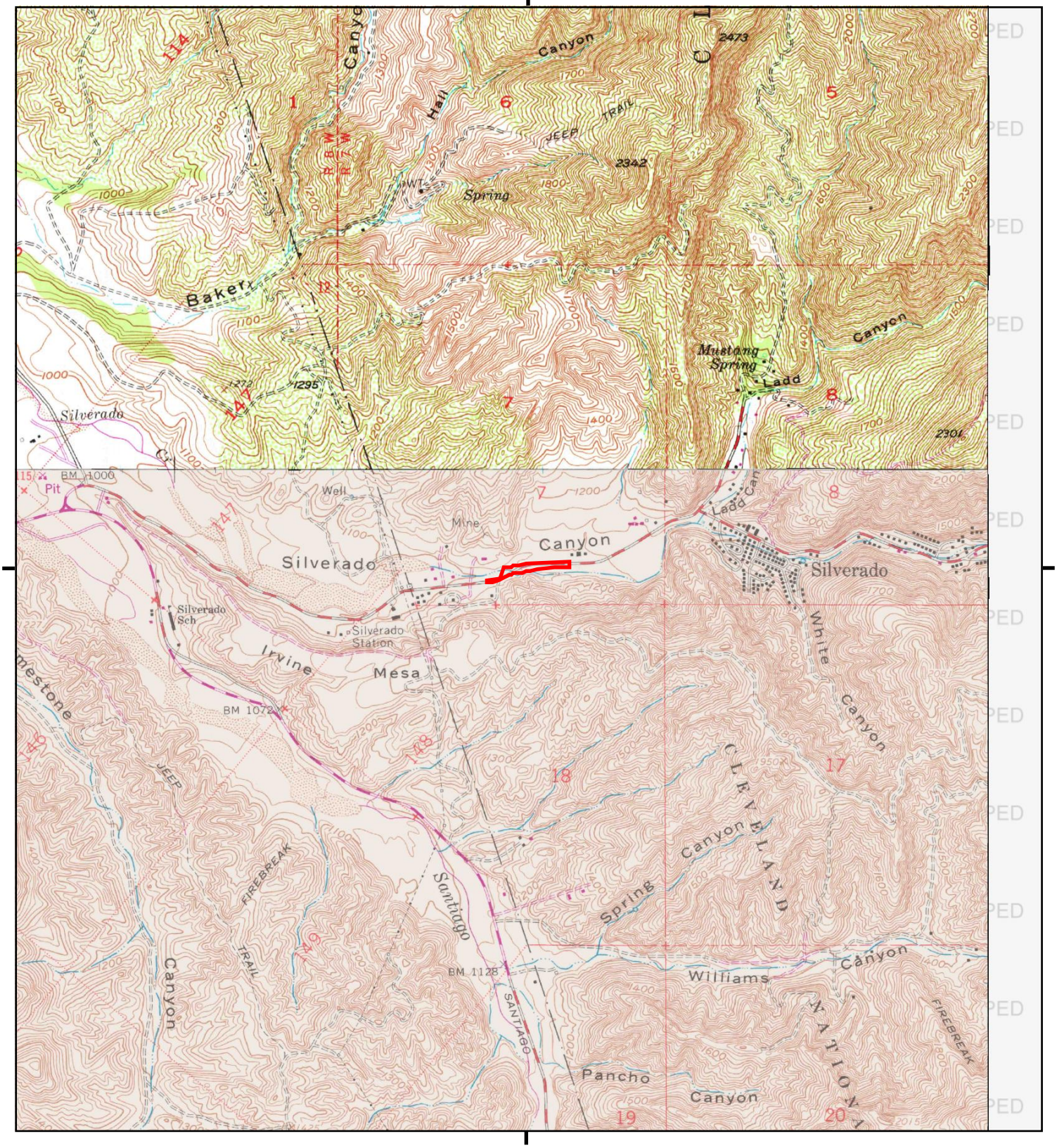
NE, Corona South, 1982, 7.5-minute
SE, Santiago Peak, 1982, 7.5-minute
NW, Black Star Canyon, 1982, 7.5-minute

SITE NAME: Silverado Canyon Bridge
ADDRESS: Silverado Canyon Bridge
Silverado, CA 92676
CLIENT: Geocon Geotechnical & Env

N



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W E
SW S SE

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NW, Black Star Canyon, 1981, 7.5-minute

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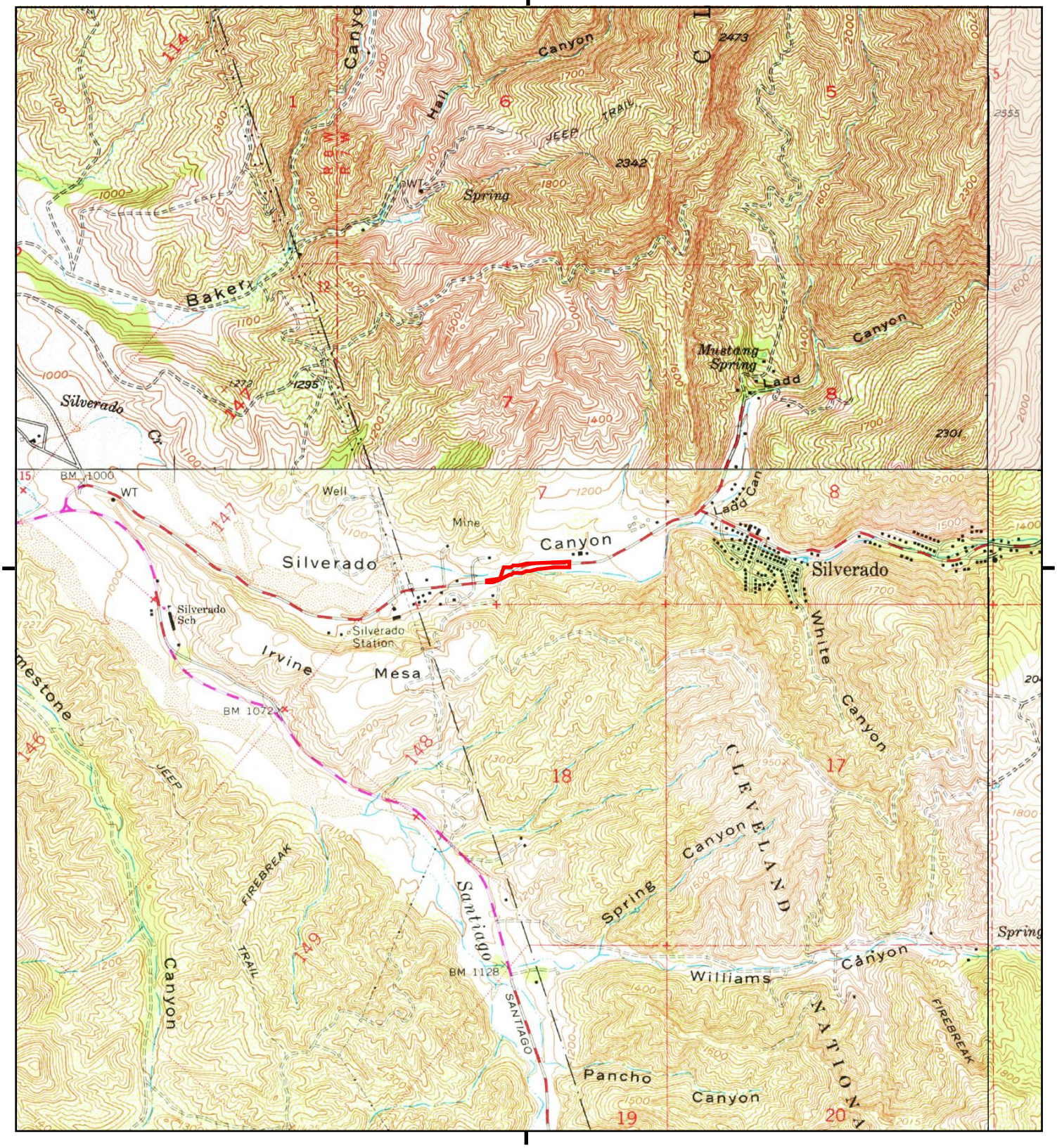
ADDRESS: Silverado Canyon Bridge
Silverado, CA 92676
CLIENT: Geocon Geotechnical & Env

N



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W E
SW S SE

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SE, Santiago Peak, 1973, 7.5-minute
NW, Black Star Canyon, 1973, 7.5-minute

SITE NAME: Silverado Canyon Bridge
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Silverado, CA 92676
CLIENT: Geocon Geotechnical & Env

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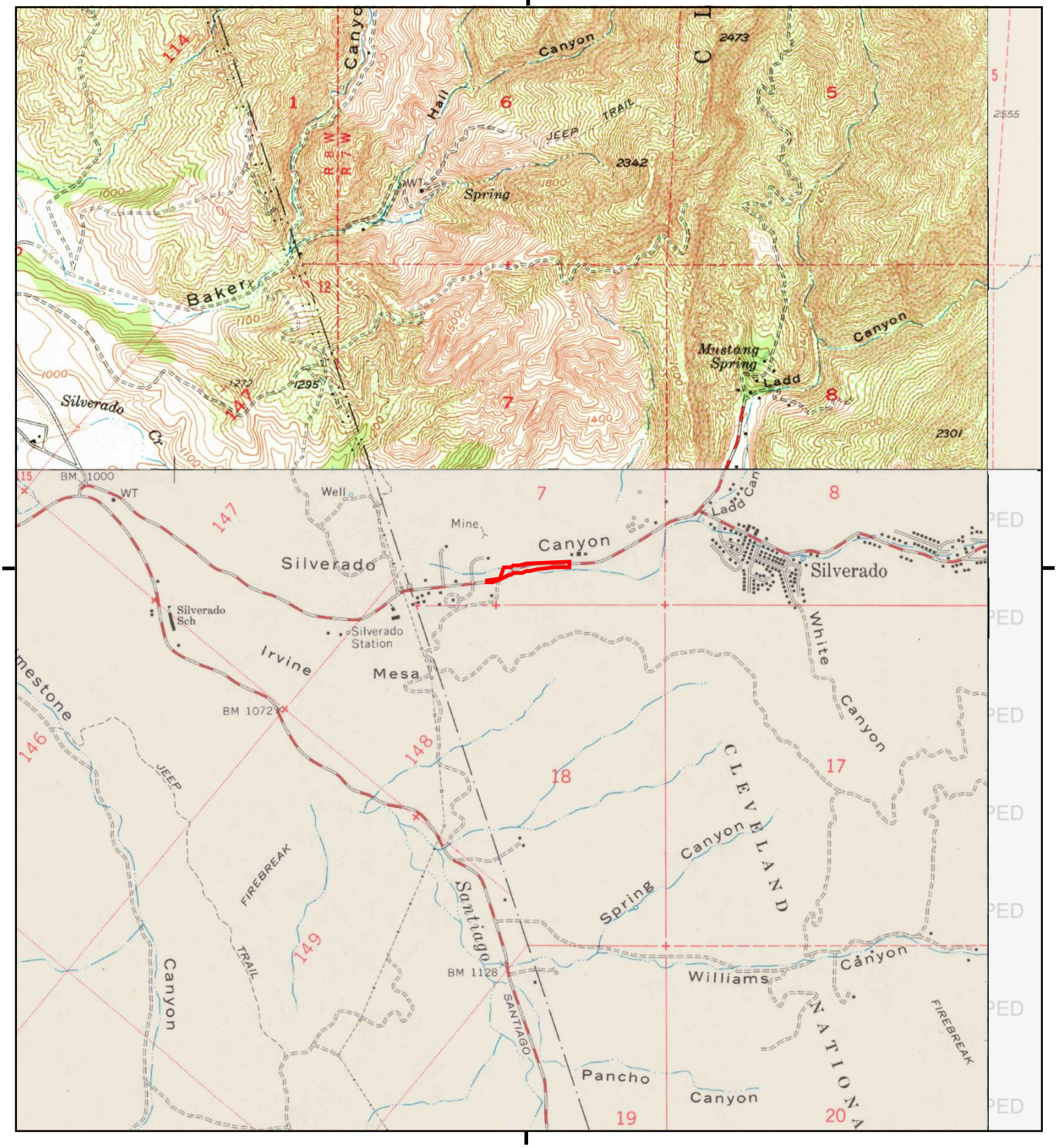

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W E
SW S SE

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SITE NAME: Silverado Canyon Bridge
ADDRESS: Silverado Canyon Bridge
Silverado, CA 92676
CLIENT: Geocon Geotechnical & Env

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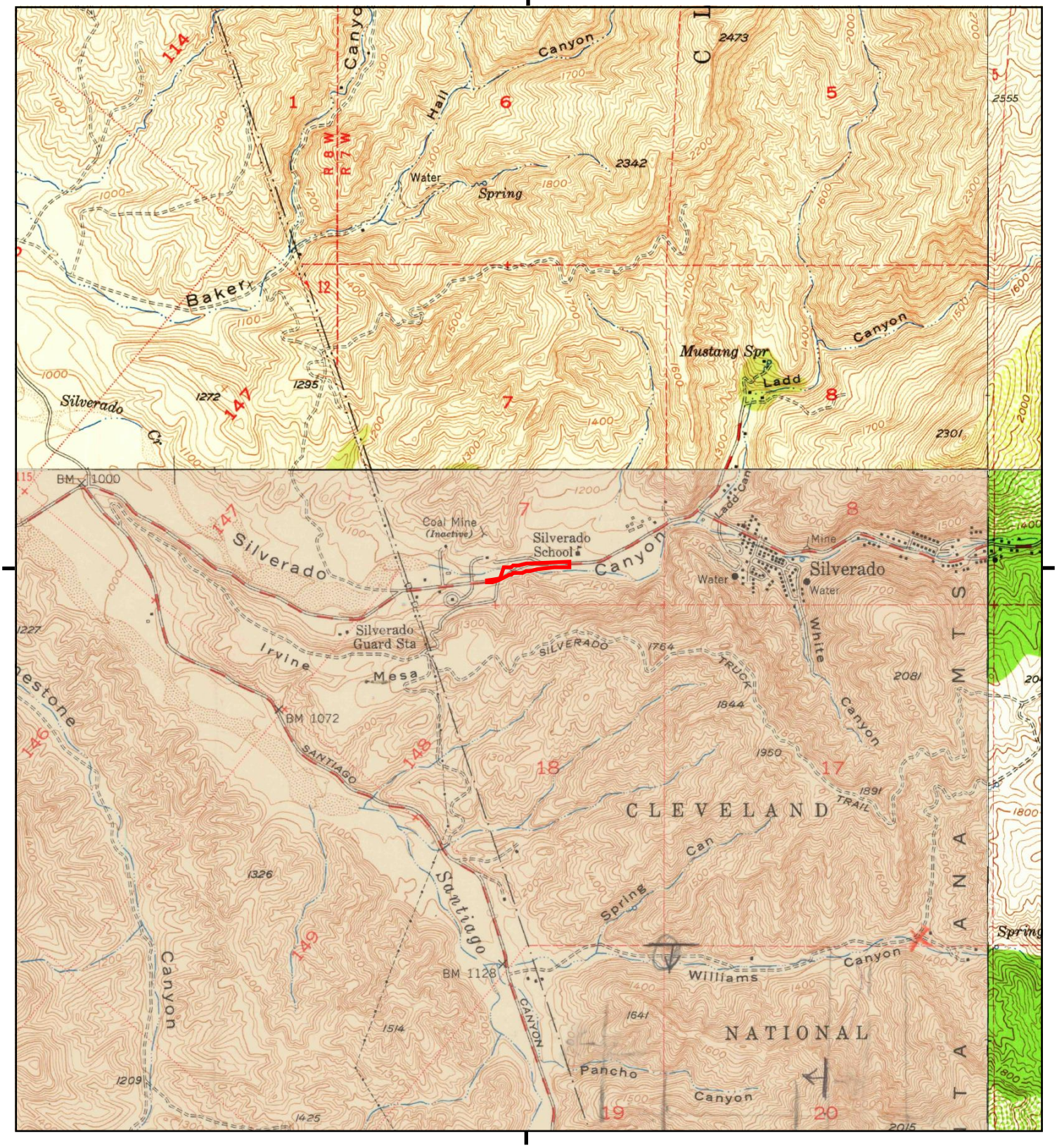

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W E
SW S SE

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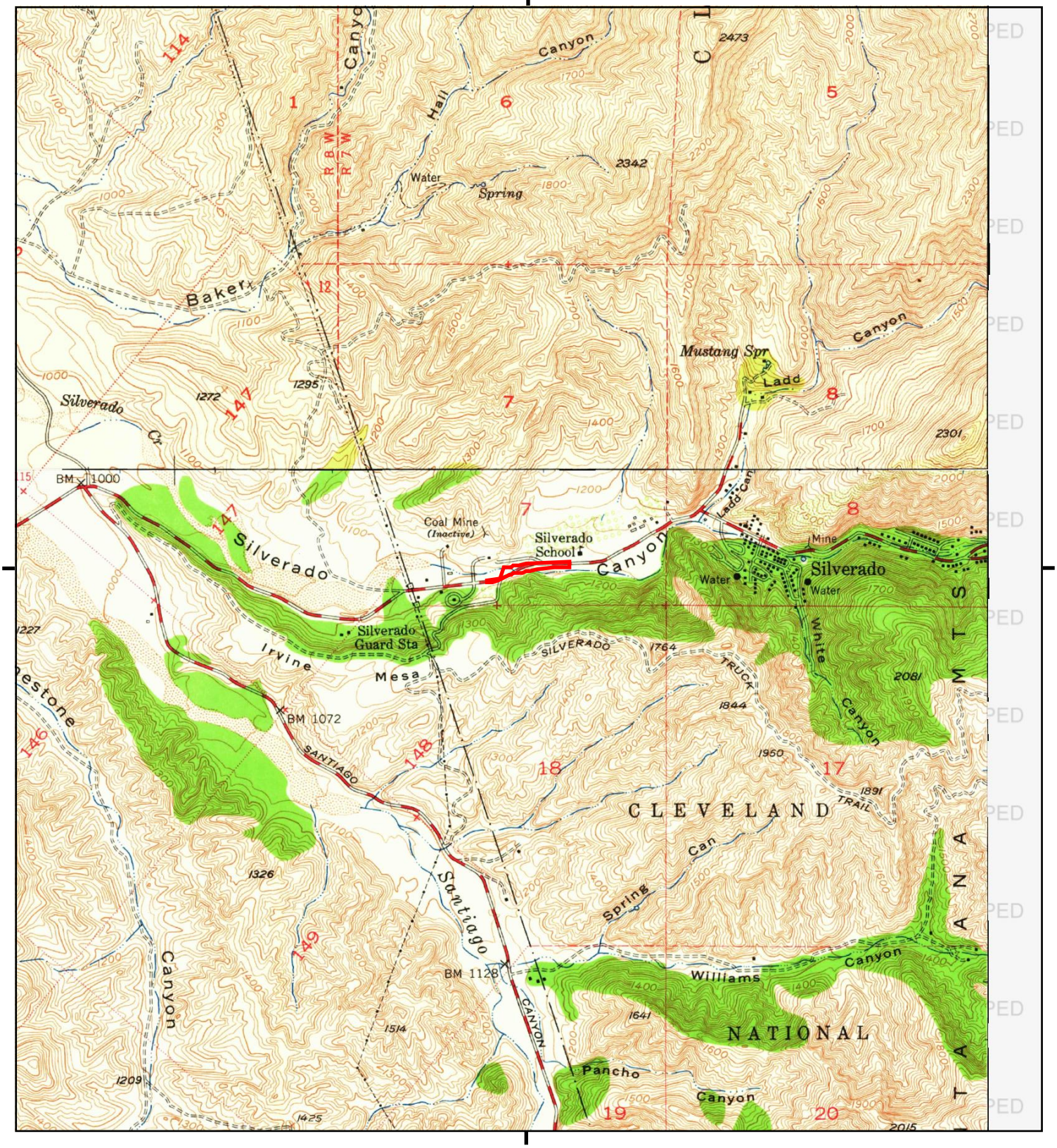
SE, Santiago Peak, 1954, 7.5-minute
NW, Black Star Canyon, 1950, 7.5-minute

SITE NAME: Silverado Canyon Bridge
ADDRESS: Silverado Canyon Bridge
Silverado, CA 92676
CLIENT: Geocon Geotechnical & Env

N



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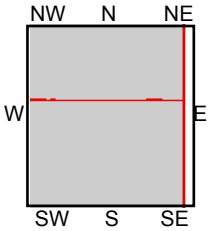

TP, El Toro, 1949, 7.5-minute
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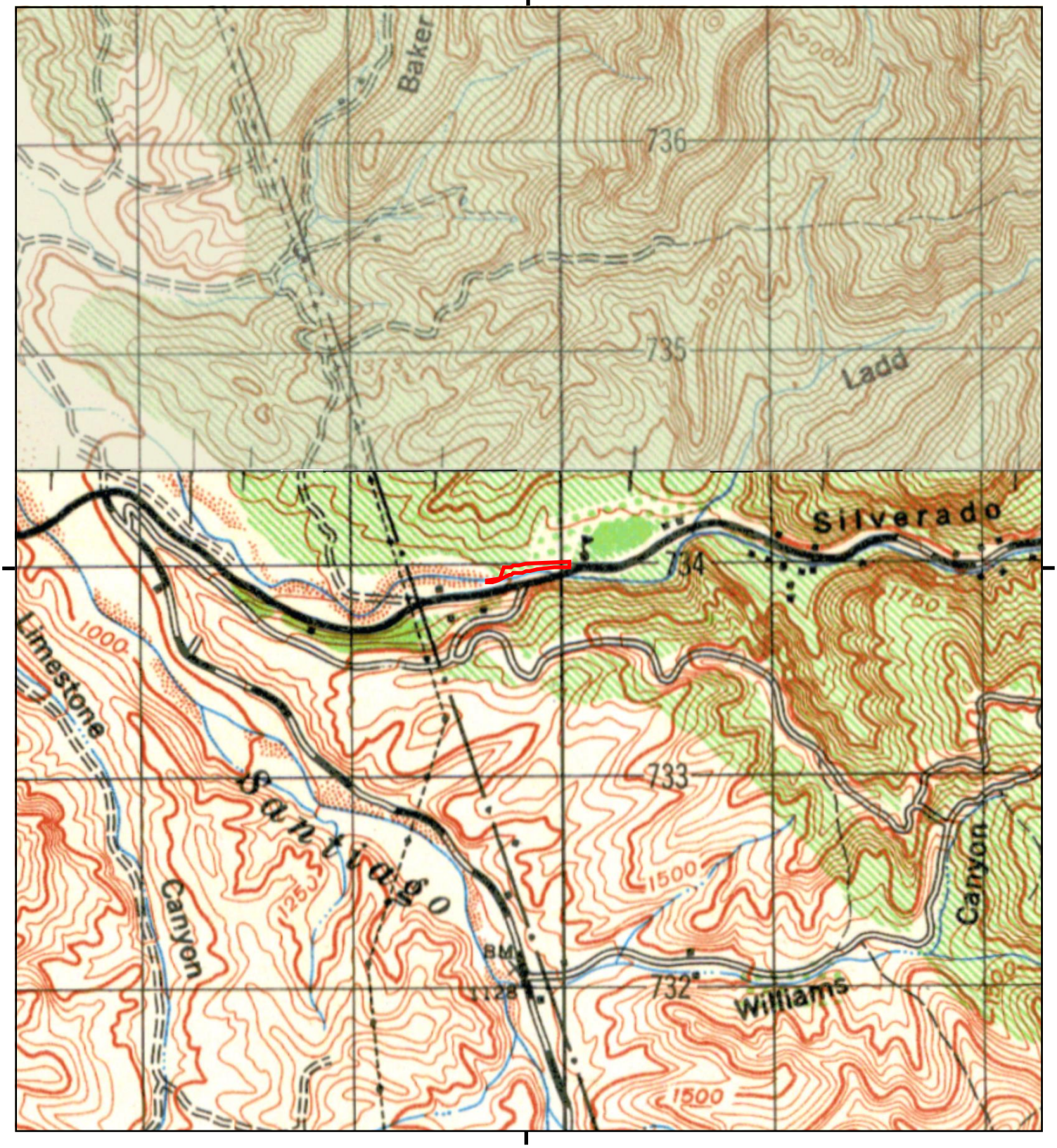
Silverado, CA 92676
CLIENT: Geocon Geotechnical & Env

N



This report includes information from the following map sheet(s).

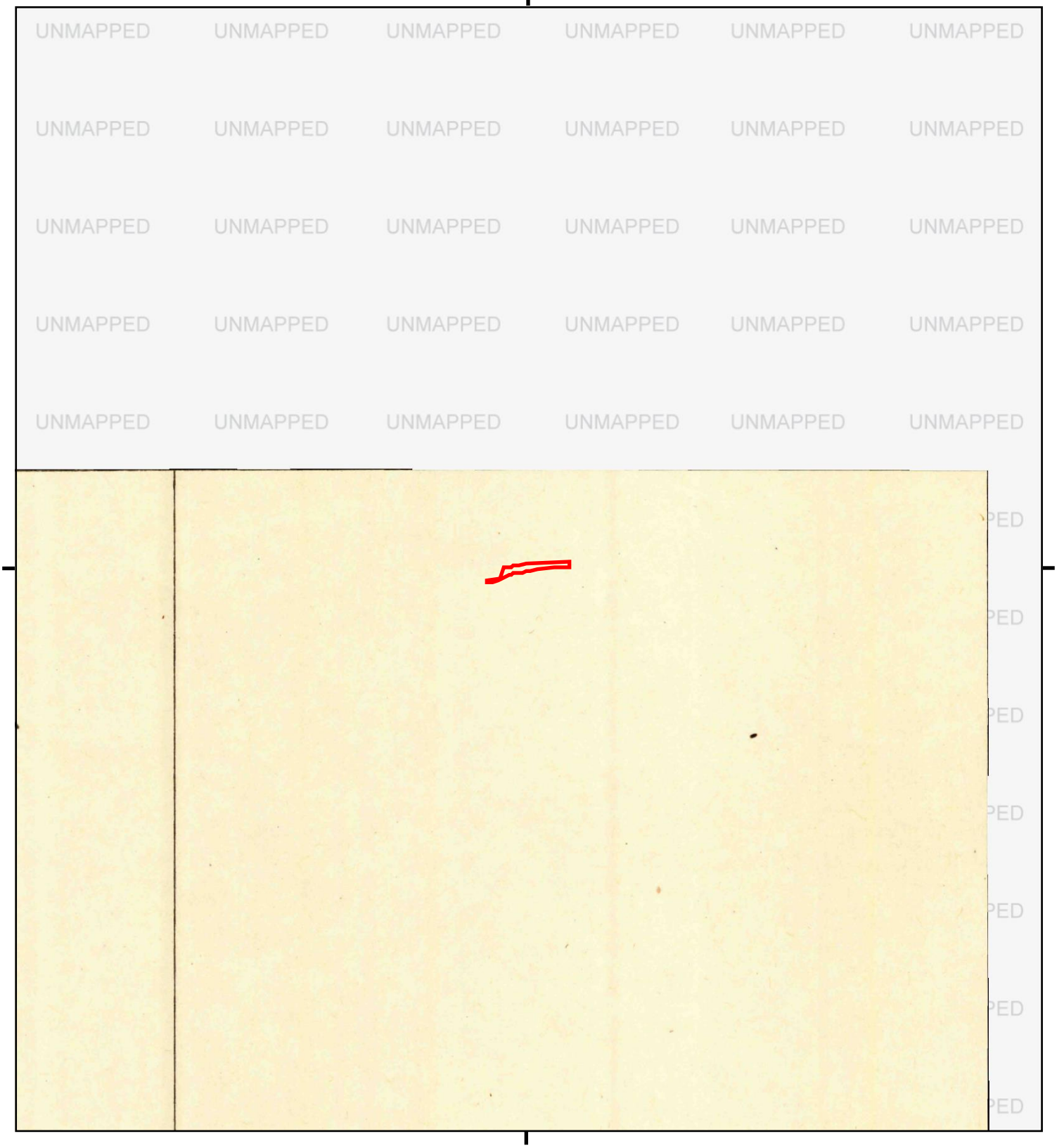
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, SANTIAGO PEAK, 1942, 15-minute
N, CORONA, 1947, 15-minute

SITE NAME: Silverado Canyon Bridge
ADDRESS: Silverado Canyon Bridge
Silverado, CA 92676
CLIENT: Geocon Geotechnical & Env

N



This report includes information from the following map sheet(s).

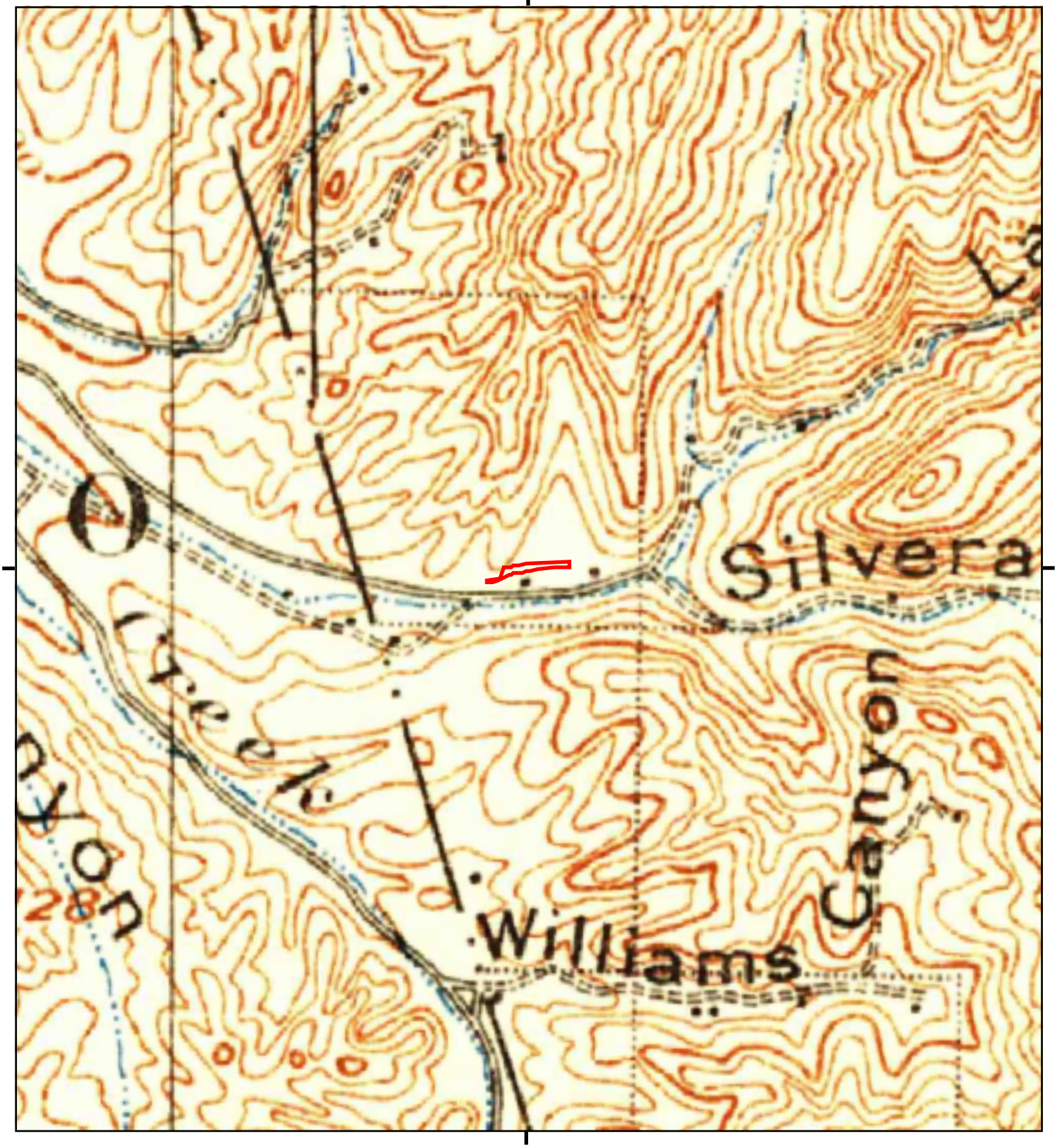
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, El Toro, 1935, 7.5-minute

SITE NAME: Silverado Canyon Bridge
ADDRESS: Silverado Canyon Bridge
Silverado, CA 92676
CLIENT: Geocon Geotechnical & Env

N



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Corona, 1902, 30-minute

SITE NAME: Silverado Canyon Bridge
ADDRESS: Silverado Canyon Bridge
Silverado, CA 92676
CLIENT: Geocon Geotechnical & Env

N

APPENDIX B

Silverado Canyon Bridge

Silverado Canyon Bridge

Silverado, CA 92676

Inquiry Number: 6135774.8

July 28, 2020

The EDR Aerial Photo Decade Package

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

EDR Aerial Photo Decade Package

07/28/20

Site Name:

Silverado Canyon Bridge
Silverado Canyon Bridge
Silverado, CA 92676
EDR Inquiry # 6135774.8

Client Name:

Geocon Geotechnical & Env
3303 North San Fernando Blvd.
Burbank, CA 91504
Contact: Adrian Escobar

Environmental Data Resources, Inc. (EDR) Aerial Photo Decade Package is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDR's professional researchers provide digitally reproduced historical aerial photographs, and when available, provide one photo per decade.

Search Results:

Year	Scale	Details	Source
2016	1"=500'	Flight Year: 2016	USDA/NAIP
2012	1"=500'	Flight Year: 2012	USDA/NAIP
2009	1"=500'	Flight Year: 2009	USDA/NAIP
2005	1"=500'	Flight Year: 2005	USDA/NAIP
1994	1"=500'	Acquisition Date: June 01, 1994	USGS/DOQQ
1990	1"=500'	Flight Date: August 30, 1990	USDA
1988	1"=500'	Flight Date: September 13, 1988	USDA
1974	1"=500'	Flight Date: November 06, 1974	USGS
1967	1"=500'	Flight Date: May 07, 1967	USGS
1952	1"=500'	Flight Date: December 12, 1952	USDA
1948	1"=500'	Flight Date: July 10, 1948	USGS
1946	1"=500'	Flight Date: December 29, 1946	USGS
1938	1"=500'	Flight Date: June 21, 1938	USDA

When delivered electronically by EDR, the aerial photo images included with this report are for ONE TIME USE ONLY. Further reproduction of these aerial photo images is prohibited without permission from EDR. For more information contact your EDR Account Executive.

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INQUIRY #: 6135774.8
YEAR: 2016
= 500'
N
EDR



INQUIRY #: 6135774.8

YEAR: 2012

= 500'

N

EDR



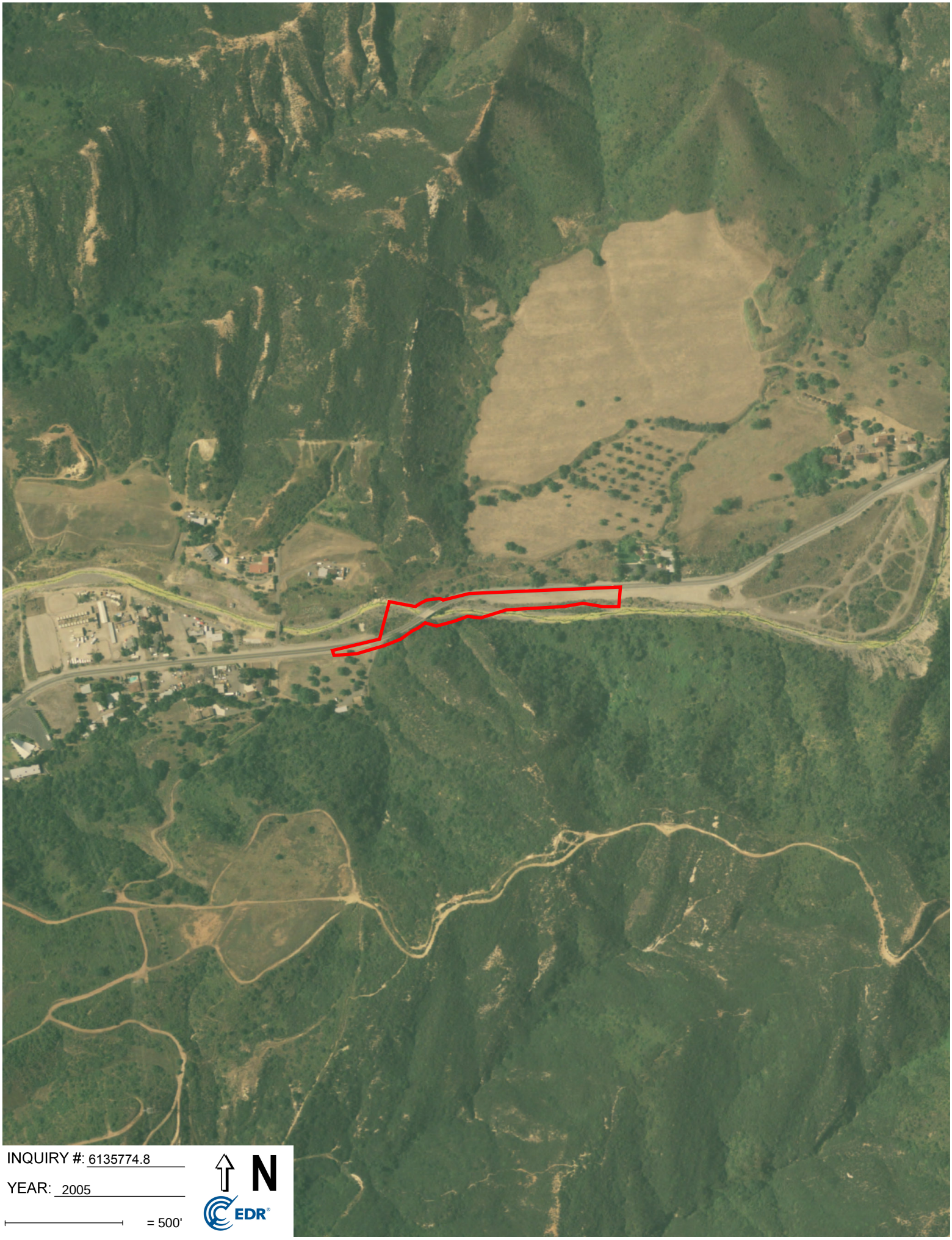
INQUIRY #: 6135774.8

YEAR: 2009

= 500'

N

EDR



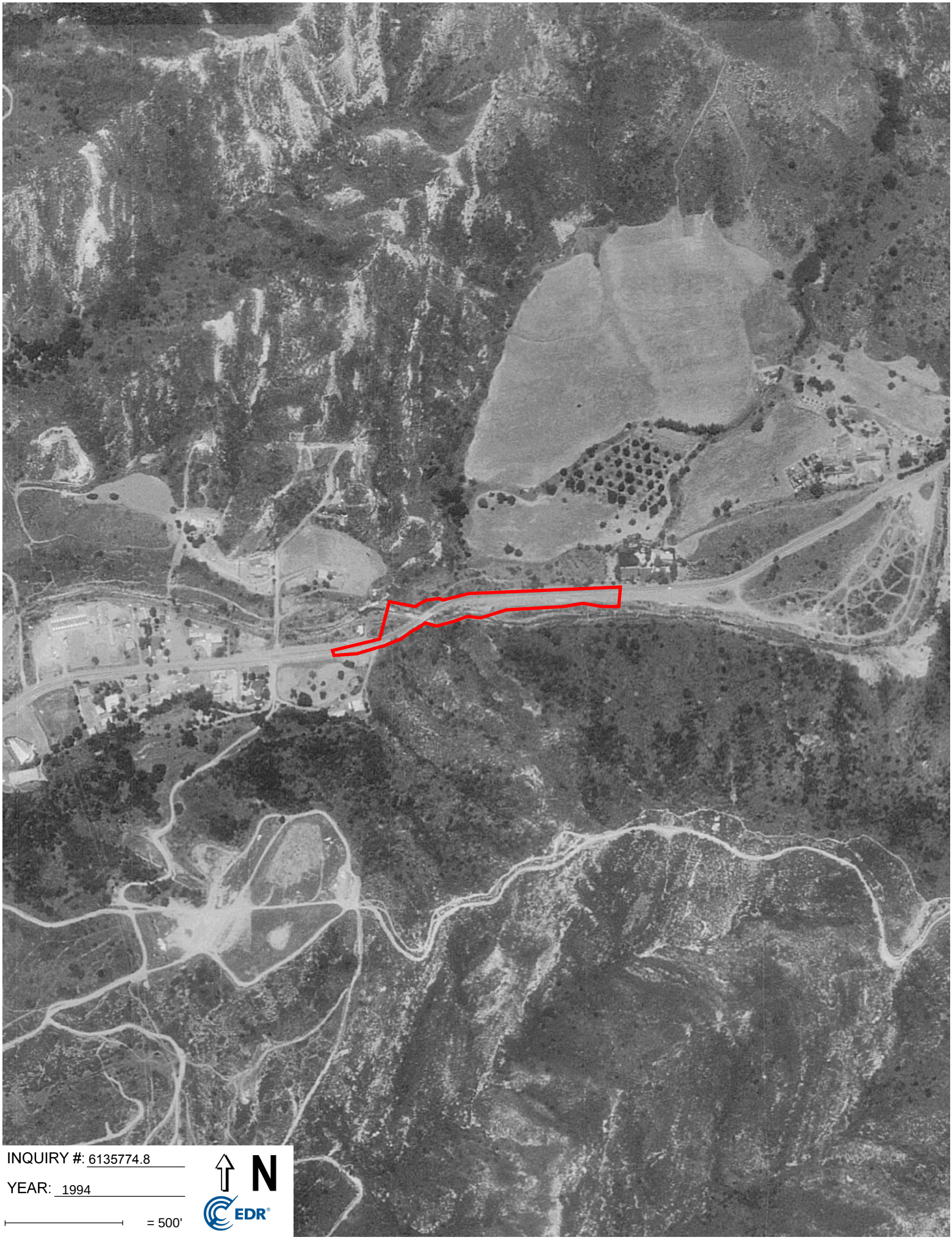
INQUIRY #: 6135774.8

YEAR: 2005

= 500'

N

EDR



INQUIRY #: 6135774.8

YEAR: 1994

= 500'

N

EDR



INQUIRY #: 6135774.8

YEAR: 1990

= 500'

N

EDR


INQUIRY #: 6135774.8
YEAR: 1988
= 500'
N
EDR



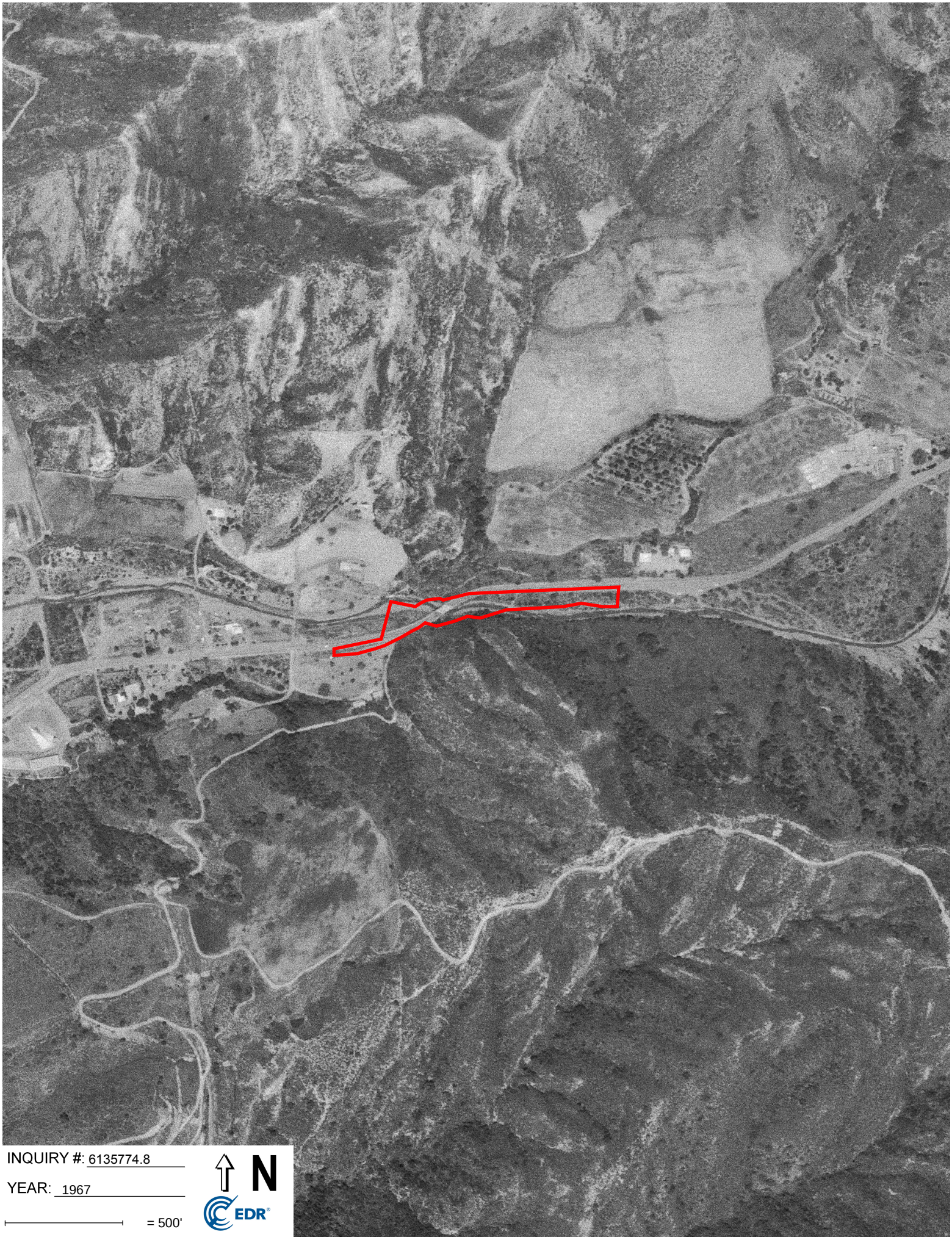
INQUIRY #: 6135774.8

YEAR: 1974

= 500'

N

EDR



INQUIRY #: 6135774.8

YEAR: 1967

= 500'

N

EDR


INQUIRY #: 6135774.8
YEAR: 1952
= 500'
N
EDR



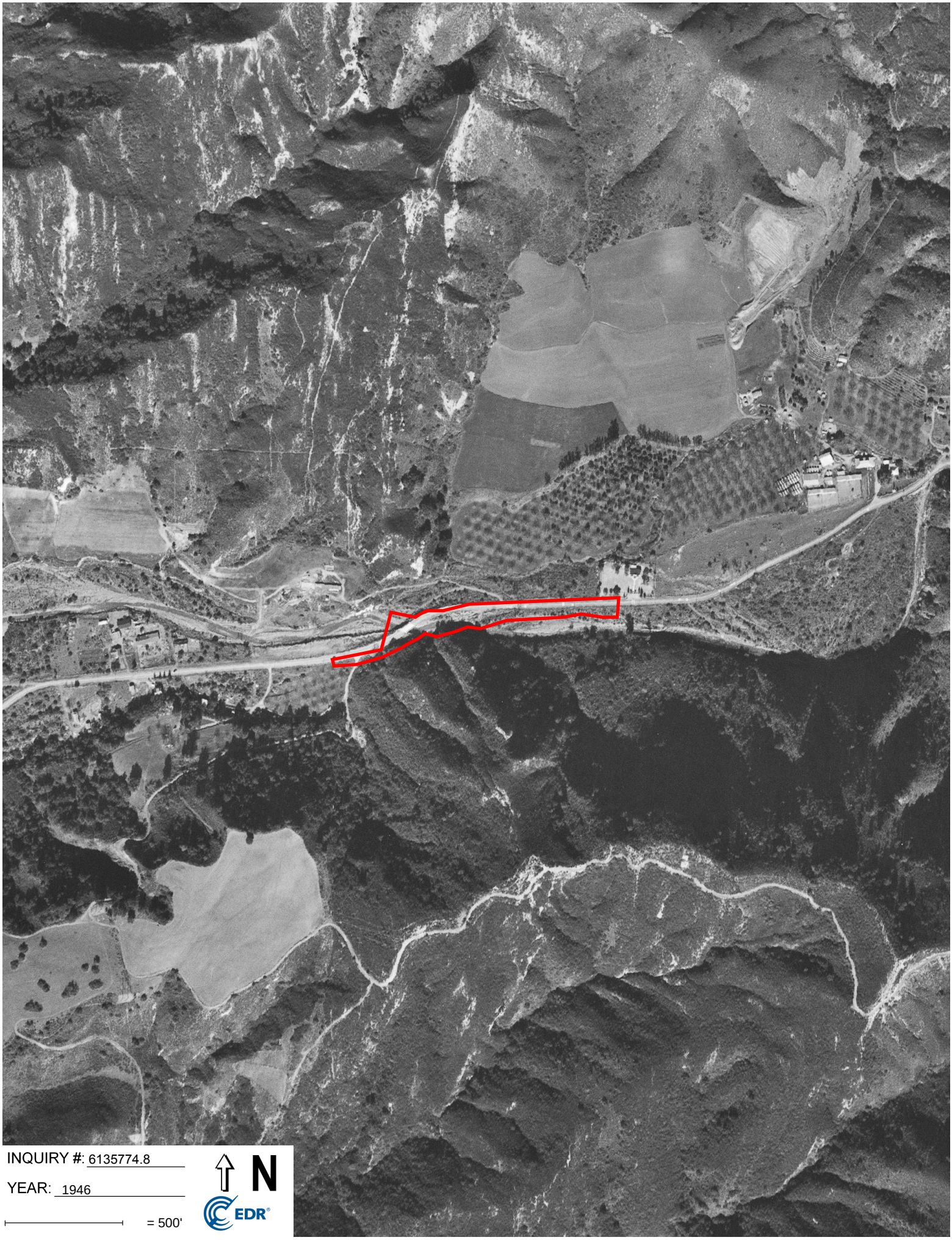
INQUIRY #: 6135774.8

YEAR: 1948

= 500'

N

EDR


INQUIRY #: 6135774.8
YEAR: 1946
= 500'
N
EDR



INQUIRY #: 6135774.8

YEAR: 1938

= 500'

N

EDR

APPENDIX C

Silverado Canyon Bridge

Silverado Canyon Bridge

Silverado, CA 92676

Inquiry Number: 6135774.3

July 28, 2020

Certified Sanborn® Map Report

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

Certified Sanborn® Map Report

07/28/20

Site Name:

Silverado Canyon Bridge
Silverado Canyon Bridge
Silverado, CA 92676
EDR Inquiry # 6135774.3

Client Name:

Geocon Geotechnical & Env
3303 North San Fernando Blvd.
Burbank, CA 91504
Contact: Adrian Escobar

The Sanborn Library has been searched by EDR and maps covering the target property location as provided by Geocon Geotechnical & Env were identified for the years listed below. The Sanborn Library is the largest, most complete collection of fire insurance maps. The collection includes maps from Sanborn, Bromley, Perris & Browne, Hopkins, Barlow, and others. Only Environmental Data Resources Inc. (EDR) is authorized to grant rights for commercial reproduction of maps by the Sanborn Library LLC, the copyright holder for the collection. Results can be authenticated by visiting www.edrnet.com/sanborn.

The Sanborn Library is continually enhanced with newly identified map archives. This report accesses all maps in the collection as of the day this report was generated.

Certified Sanborn Results:

Certification # C09D-4E26-91B4

PO # NA

Project W1078-77-01 Silverado Bridge

UNMAPPED PROPERTY

This report certifies that the complete holdings of the Sanborn Library, LLC collection have been searched based on client supplied target property information, and fire insurance maps covering the target property were not found.

Sanborn® Library search results

Certification #: C09D-4E26-91B4

The Sanborn Library includes more than 1.2 million fire insurance maps from Sanborn, Bromley, Perris & Browne, Hopkins, Barlow and others which track historical property usage in approximately 12,000 American cities and towns. Collections searched:

- ☑ Library of Congress
- ☑ University Publications of America
- ☑ EDR Private Collection

The Sanborn Library LLC Since 1866™

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APPENDIX D

Silverado Canyon Bridge
Silverado Canyon Bridge
Silverado, CA 92676

Inquiry Number: 6135774.5
July 31, 2020

The EDR-City Directory Image Report

Environmental Data Resources Inc

6 Armstrong Road
Shelton, CT 06484
800.352.0050
www.edrnet.com

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Executive Summary

Findings

City Directory Images

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

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EXECUTIVE SUMMARY

DESCRIPTION

Environmental Data Resources, Inc.'s (EDR) City Directory Report is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDR's City Directory Report includes a search of available city directory data at 5 year intervals.

RECORD SOURCES

EDR's Digital Archive combines historical directory listings from sources such as Cole Information and Dun & Bradstreet. These standard sources of property information complement and enhance each other to provide a more comprehensive report.

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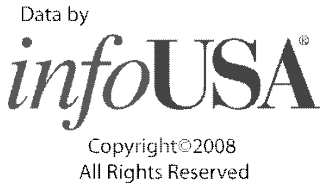

RESEARCH SUMMARY

The following research sources were consulted in the preparation of this report. A check mark indicates where information was identified in the source and provided in this report.

Year	Target Street	Cross Street	Source
2014	☑	☐	EDR Digital Archive
2010	☑	☐	EDR Digital Archive
2005	☑	☐	EDR Digital Archive
2000	☑	☐	EDR Digital Archive
1995	☑	☐	EDR Digital Archive
1992	☑	☐	EDR Digital Archive
1987	☑	☐	Haines Criss-Cross Directory
1982	☑	☐	Haines Criss-Cross Directory
1976	☑	☐	Haines Criss-Cross Directory
1973	☑	☐	Haines Criss-Cross Directory

FINDINGS

TARGET PROPERTY STREET

Silverado Canyon Bridge
Silverado, CA 92676

Year	*CD Image*	*Source*
SILVERADO CANYON RD		
2014	pg A1	EDR Digital Archive
2010	pg A2	EDR Digital Archive
2005	pg A3	EDR Digital Archive
2000	pg A4	EDR Digital Archive
1995	pg A5	EDR Digital Archive
1992	pg A6	EDR Digital Archive
1987	pg A10	Haines Criss-Cross Directory
1987	pg A7	Haines Criss-Cross Directory
1987	pg A8	Haines Criss-Cross Directory
1987	pg A9	Haines Criss-Cross Directory
1982	pg A11	Haines Criss-Cross Directory
1982	pg A12	Haines Criss-Cross Directory
1976	pg A13	Haines Criss-Cross Directory
1976	pg A14	Haines Criss-Cross Directory
1973	pg A15	Haines Criss-Cross Directory
1973	pg A16	Haines Criss-Cross Directory

FINDINGS

CROSS STREETS

No Cross Streets Identified

City Directory Images

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

SILVERADO CANYON RD 2014

27246	GODFIRNON, PATRICIA L
27271	JUDD, DANA A
27311	HADERLIE, JAN E
27331	PETERSON, STEVE J
27335	BROWN, RANDY P
27411	BROWN, LORRAINE C
	SIL MOD PROPANE INC
27452	VINCENT, DAVID W
27456	HROSSOWYC, DONALD R
27462	ANAHEIM SEWER CONSTRUCTION
	SILBERMANN, MICHAEL E
27471	PALOMINO, HENRY J
27641	HUNT, ROBERT
	SILVERADO COMMUNITY CENTER
28192	COUNTY OF ORANGE
	SILVERADO CANYON MARKET
28231	GRIFFIN, ROD
28251	OCCUPANT UNKNOWN,
	UNITED STATES GOVERNMENT
28261	GRANDPAS GARDEN
28271	FITZGERALD, STEVE R
	MYERS, MARY E
	ROSENBERG, BRENDA
28281	RENAUD, REG P
28346	VINCENT, MARK L

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

SILVERADO CANYON RD 2010

27172 US FORESTRY DEPT
27246 JUDE, DANA
27271 CARBONDALE RANCH
CURFMAN, TODD R
27311 HADERLIE, JAN E
27331 PETERSON, STEVE J
27335 BROWN, RANDY P
27352 WHITE LFNT EQUIPMENT RENTAL
27411 BROWN, LORRAINE C
27452 VINCENT, DAVID W
27456 GOTTLIEB, DONALD R
27462 EDNEY TREE SVC
EDNEY, WILLIAM L
27471 PALOMINO, HENRY J
27472 GIBSON, SCOTT E
27641 HUNT, ROBERT
SILVERADO COMMUNITY CTR

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

SILVERADO CANYON RD 2005

27246 ARAGON, AL
27271 BISHOP PERFORMANCE HORSES
CARBONDALE RANCH
JUDD, DANA A
27311 HADERLIE, JAN E
27331 OCCUPANT UNKNOWN,
27335 BROWN, RANDY P
27411 BROWN, LORRAINE C
27452 VINCENT, DAVID W
27456 GOTTLIEB, DONALD R
27462 EDNEY & SON
LAWRENCES TREE SERVICE
OCCUPANT UNKNOWN,
27471 FRANKS, FRED
27472 GIBSON, SCOTT E
28271 ISAAC, MIKE
MYERS, MARY E
WELCH, L J

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

SILVERADO CANYON RD 2000

27311	HADERLIE, JAN
27335	DIMAGGIO, JOE
27411	BROWN, DANNY E
27641	MADORE, STEVE P
28271	HENDRY, DAVON B
	MYERS, M
	WHITAKER, RANDELL A
28281	RENAUD, R P
28306	SCHAEFFER, RICHARD
28336	CURIEL, TONY

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

SILVERADO CANYON RD 1995

27172 MARTIN, GORDON
MCCLEMENTS, MATT
27246 ARAGON, AL
THAL, T E
27271 CARBONDALE RANCH
JUDD, DANA
27311 HADERLIE, JAN
JAN HADERLIE PHOTOGRAPHY
SUMMERSONG KENNELS
27335 BROWN, RANDY
27352 SOUTH COAST GRADING INC
WEISZ, FRED
27411 BROWN, DANNY E
27456 DEBOER, E
27472 COLLAR, WILLIAM
KING, DALE E
27641 SILVERADO COMMUNITY CTR
28192 CANYON MARKET
28222 Q TORTAS RESTAURANT
28231 CANYON REALTY
28251 US POST OFFICE
28272 PALI CAFE

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

SILVERADO CANYON RD 1992

27172 GORDON, GLYNN
MARTIN, GORDON
MCCLEMENTS, MATT
27271 CARBONDALE RANCH
EQUINE INDUSTRIES
HORSEPOWER
27311 HADERLIE, JAN
SUMMERSONG KENNELS
27335 BROWN, RANDY
27352 SOUTH CST GRDNG INC
WEISZ, FRED
27411 BROWN, DANNY E
27471 PENHALL, JOSEPH
27472 KING, DALE E

Target Street	Cross Street	Source
✓	-	Haines Criss-Cross Directory

SILVERADO CANYON RD 1987



SILVERADO CNYN RD
92676 SILVERADO

27172	BOURBEAU WM E	649-2762	5
	HERNANDEZ EDW A	649-2579	6
	WHITE SAMUEL A	649-2028	5
27189	XXXX	00	
27246	SHIRK DONALD A	649-2451	3
	THAL T E	649-2032	
27271	DAY RICHARD	649-2935	1
	*PORTERS EQUIP SERV	649-2840	5
27311	HADERLIE JAN	649-2511	
	*JAN HADERLIE PHOTO	649-2861	+7
27331	PEMBER CARLETON R	649-2567	
27335	BROWN DANNY E	649-2565	2
27352	*SOUTH CST GRDNG INC	649-2133	+7
	WEISZ FRED	649-2938	+7
	WEISZ PATRICIA	649-2938	+7
27445	XXXX	00	
27456	XXXX	00	
27482	XXXX	00	
27472	COLLAR WM	649-2477	
27541	*SILVERADO RCRTNSPK	649-2214	

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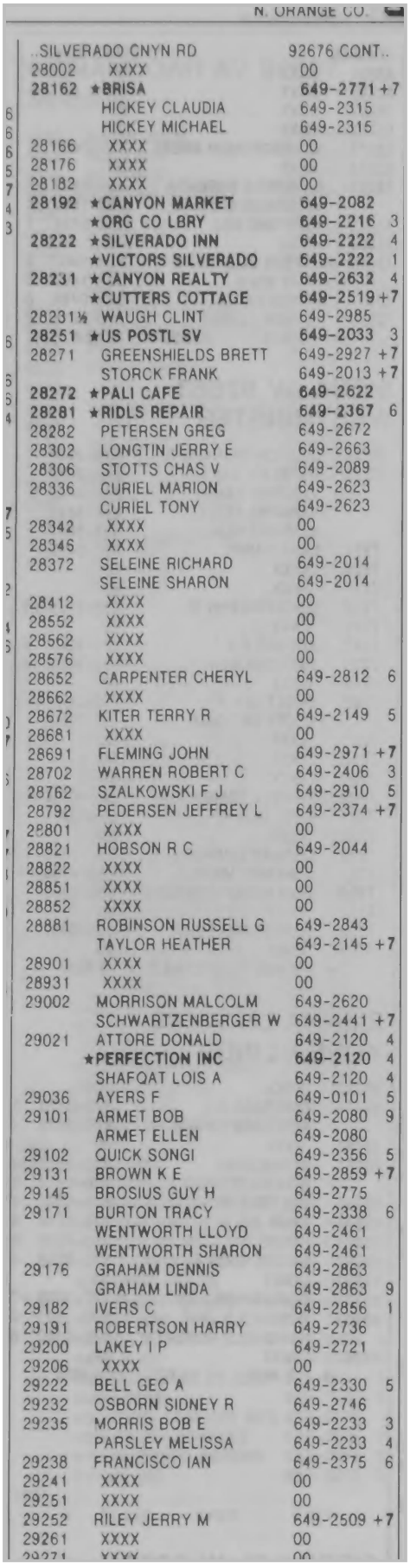
Target Street	Cross Street	Source
✓	-	Haines Criss-Cross Directory

SILVERADO CANYON RD 1987



N. ORANGE CO.

..SILVERADO CNYN RD 92676 CONT..

28002	XXXX	00	
28162	**★BRISA**	**649-2771**	**+7**
	HICKEY CLAUDIA	649-2315	
	HICKEY MICHAEL	649-2315	
28166	XXXX	00	
28176	XXXX	00	
28182	XXXX	00	
28192	**★CANYON MARKET**	**649-2082**	
	★ORG CO LBRY	**649-2216**	3
28222	**★SILVERADO INN**	**649-2222**	4
	★VICTORS SILVERADO	**649-2222**	1
28231	**★CANYON REALTY**	**649-2632**	4
	★CUTTERS COTTAGE	**649-2519**	**+7**
28231½	WAUGH CLINT	649-2985	
28251	**★US POSTL SV**	**649-2033**	3
28271	GREENSHIELDS BRETT	649-2927	+7
	STORCK FRANK	649-2013	+7
28272	**★PALI CAFE**	**649-2622**	
28281	**★RIDLS REPAIR**	**649-2367**	6
28282	PETERSEN GREG	649-2672	
28302	LONGTIN JERRY E	649-2663	
28306	STOTTS CHAS V	649-2089	
28336	CURIEL MARION	649-2623	
	CURIEL TONY	649-2623	
28342	XXXX	00	
28346	XXXX	00	
28372	SELEINE RICHARD	649-2014	
	SELEINE SHARON	649-2014	
28412	XXXX	00	
28552	XXXX	00	
28562	XXXX	00	
28576	XXXX	00	
28652	CARPENTER CHERYL	649-2812	6
28662	XXXX	00	
28672	KITER TERRY R	649-2149	5
28681	XXXX	00	
28691	FLEMING JOHN	649-2971	+7
28702	WARREN ROBERT C	649-2406	3
28762	SZALKOWSKI F J	649-2910	5
28792	PEDERSEN JEFFREY L	649-2374	+7
28801	XXXX	00	
28821	HOBSON R C	649-2044	
28822	XXXX	00	
28851	XXXX	00	
28852	XXXX	00	
28881	ROBINSON RUSSELL G	649-2843	
	TAYLOR HEATHER	649-2145	+7
28901	XXXX	00	
28931	XXXX	00	
29002	MORRISON MALCOLM	649-2620	
	SCHWARTZENBERGER W	649-2441	+7
29021	ATTORE DONALD	649-2120	4
	★PERFECTION INC	**649-2120**	4
	SHAFQAT LOIS A	649-2120	4
29036	AYERS F	649-0101	5
29101	ARMET BOB	649-2080	9
	ARMET ELLEN	649-2080	
29102	QUICK SONGI	649-2356	5
29131	BROWN K E	649-2859	+7
29145	BROSIUS GUY H	649-2775	
29171	BURTON TRACY	649-2338	6
	WENTWORTH LLOYD	649-2461	
	WENTWORTH SHARON	649-2461	
29176	GRAHAM DENNIS	649-2863	
	GRAHAM LINDA	649-2863	9
29182	IVERS C	649-2856	1
29191	ROBERTSON HARRY	649-2736	
29200	LAKEY I P	649-2721	
29206	XXXX	00	
29222	BELL GEO A	649-2330	5
29232	OSBORN SIDNEY R	649-2746	
29235	MORRIS BOB E	649-2233	3
	PARSLEY MELISSA	649-2233	4
29238	FRANCISCO IAN	649-2375	6
29241	XXXX	00	
29251	XXXX	00	
29252	RILEY JERRY M	649-2509	+7
29261	XXXX	00	
29271	XXXX	00	

Target Street	Cross Street	Source
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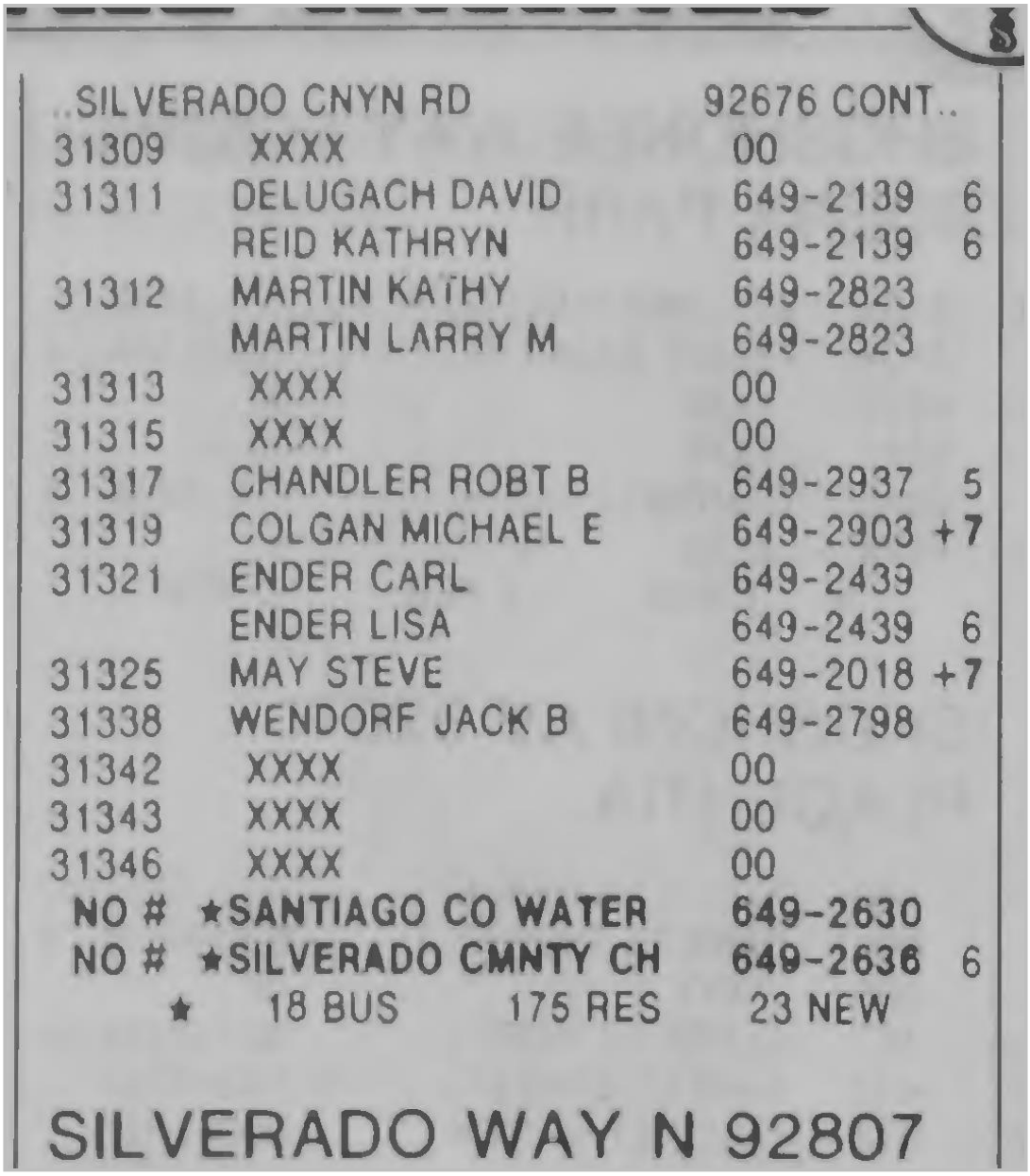
SILVERADO CANYON RD 1987

29261	XXXX	00	
29271	XXXX	00	
29282	ROMINEK JON P	649-2473	6
29291	BARNETT KEVIN	649-2276	6
29302	XXXX	00	
29312	NAGELIN GEO E	649-2212	
29322	SANFORD M	649-2776	
29341	GARRISON FRANCIS	649-2342	+7
29351	RUZIKA DONNA M	649-2922	
	RUZIKA THOS M	649-2922	
29412	XXXX	00	
29421	MINDERBINDER MILO	649-2966	0
29422	GORDON CAROL A	649-2729	6
29423	YOUNG LOUIS J	649-2788	
29432	STOUGHTON CHRIS	649-2267	3
	STOUGHTON SAM	649-2267	
29441	XXXX	00	
29442	CLARK DEL	649-9021	+7
29461	XXXX	00	
29462	★WATSON INVSTMT DVLP	649-2302	5
	WATSON RICHARD R	649-2153	5
29475	XXXX	00	
29482	THOMSEN DAVE	649-2476	2
	THOMSEN MARJI	649-2476	
29492	XXXX	00	
29501	CAMPBELL G A	649-2304	+7
29502	XXXX	00	
29521	GROUARD FRANKLIN	649-2796	
	GROUARD MABEL	649-2796	
29541	XXXX	00	
29552	FREY JANET	649-2280	5
29562	XXXX	00	
29582	SMITH BETTY ANN	649-2607	
29586	DAHMS CHARLES	649-2575	+7
29631	FAIRLEY TERRY W	649-2058	8
29641	JACKSON DALE W	649-2261	
29722	XXXX	00	
29731	CHERRY JOE J	649-2235	
29734	XXXX	00	
29736	CREWE ROBERT D	649-2940	+7
29741	XXXX	00	
29761	XXXX	00	
29762	SMITH IRA	649-2677	
	SMITH JEANNE	649-2677	
29772	XXXX	00	
29781	HAMILTON STEVE	649-2880	+7
29791	MCCORKLE HOWARD MD	649-2218	
29792	GILDEA BRUCE	649-2182	5
	GILDEA BRUCE B	649-2076	
29801	WARNER BRUCE	649-2691	
30031	REYNOLDS ROBERT J	649-2676	2
	REYNOLDS ROBT J	649-2564	1
30051	RICHARDS GRAHAM	649-2834	1
30061	XXXX	00	
30081	ROY MARLENE	649-2712	
	ROY MICHAEL	649-2712	
30111	XXXX	00	
30116	ANTRIM JAS W	649-2660	5
30131	LANGLEY GEORGE	649-2559	+7
30141	FRY JOHN S DR	649-2909	
30142	XXXX	00	
30144	YARUSS J	649-2244	
	YARUSS R	649-2244	6
30162	ROY ANNETTE	649-2525	
30182	XXXX	00	
30192	JONES RONALD E	649-2873	1
30502	ENGEL IRV	649-2551	
30531	BAKONIS TONY	649-2644	6
30601	XXXX	00	
30602	PHILLIPS ALAN	649-2357	6
30604	XXXX	00	
30622	LAFEVER HAROLD A	649-2793	
30641	BARBER R C	649-2204	2
30651	XXXX	00	
30661	XXXX	00	
30737	XXXX	00	
30811	WOODHOUSE JOHN 2D	649-2463	6
31301	MAJOR BRENT	649-2611	1

Target Street	Cross Street	Source
✓	-	Haines Criss-Cross Directory

SILVERADO CANYON RD 1987



..SILVERADO CNYN RD		92676 CONT..	
31309	XXXX	00	
31311	DELUGACH DAVID	649-2139	6
	REID KATHRYN	649-2139	6
31312	MARTIN KATHY	649-2823	
	MARTIN LARRY M	649-2823	
31313	XXXX	00	
31315	XXXX	00	
31317	CHANDLER ROBT B	649-2937	5
31319	COLGAN MICHAEL E	649-2903	+7
31321	ENDER CARL	649-2439	
	ENDER LISA	649-2439	6
31325	MAY STEVE	649-2018	+7
31338	WENDORF JACK B	649-2798	
31342	XXXX	00	
31343	XXXX	00	
31346	XXXX	00	
NO #	★SANTIAGO CO WATER	649-2630	
NO #	★SILVERADO CMNTY CH	649-2636	6
★	18 BUS 175 RES	23 NEW	

SILVERADO WAY N 92807

Target Street	Cross Street	Source
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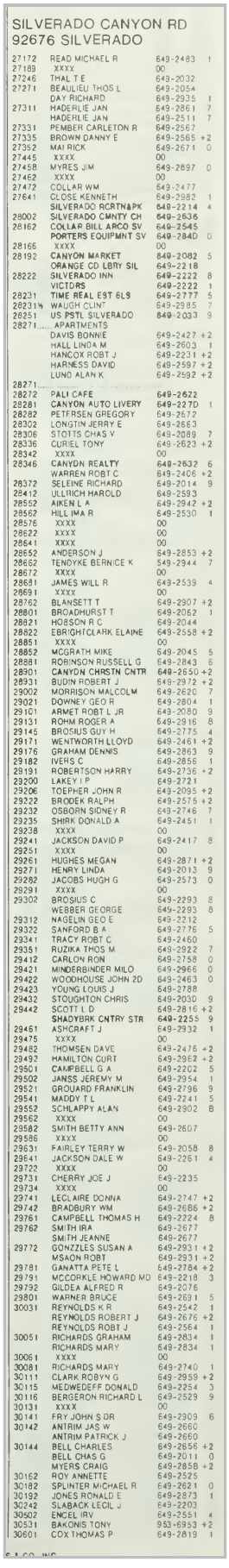
SILVERADO CANYON RD 1982



SILVERADO CANYON RD
92676 SILVERADO

27172	READ MICHAEL R	649-2483	1
27189	XXXX	00	
27246	THAL T E	649-2032	
27271	BEAULIEU THOS L	649-2054	
	DAY RICHARD	649-2935	1
27311	HADERLIE JAN	649-2861	7
	HADERLIE JAN	649-2511	7
27331	PEMBER CARLETON R	649-2567	
27335	BROWN DANNY E	649-2565	+2
27352	MAI RICK	649-2671	0
27445	XXXX	00	
27458	MYRES JIM	649-2897	0
27462	XXXX	00	
27472	COLLAR WM	649-2477	
27641	CLOSE KENNETH	649-2982	1
	SILVERADO RCRTN&PK	649-2214	4
28002	SILVERADO CMNTY CH	649-2636	
28162	COLLAR BILL ARCO SV	649-2545	
	PORTERS EQUIPMNT SV	649-2840	0
28165	XXXX	00	
28192	CANYON MARKET	649-2082	5
	ORANGE CO LBRY SIL	649-2218	
28222	SILVERADO INN	649-2222	8
	VICTORS	649-2222	1
28231	TIME REAL EST SLS	649-2777	5
28231½	WAUGH CLINT	649-2985	7
28251	US PSTL SILVERADO	649-2033	9
28271....	APARTMENTS		
	DAVIS BONNIE	649-2427	+2
	HALL LINDA M	649-2603	1
	HANCOX ROBT J	649-2231	+2
	HARNESS DAVID	649-2597	+2
	LUND ALAN K	649-2592	+2
28271....			
28272	PALI CAFE	649-2622	
28281	CANYON AUTO LIVERY	649-2270	1
28282	PETERSEN GREGORY	649-2672	
28302	LONGTIN JERRY E	649-2663	
28306	STOTTS CHAS V	649-2089	7
28336	CURIEL TONY	649-2623	+2
28342	XXXX	00	
28346	CANYON REALTY	649-2632	6
	WARREN ROBT C	649-2406	+2
28372	SELEINE RICHARD	649-2014	9
28412	ULLRICH HAROLD	649-2593	
28552	AIKEN L A	649-2942	+2
28562	HILL IMA R	649-2530	1
28576	XXXX	00	
28622	XXXX	00	
28641	XXXX	00	
28652	ANDERSON J	649-2853	+2
28662	TENDYKE BERNICE K	549-2944	7
28672	XXXX	00	
28681	JAMES WILL R	649-2539	4
28691	XXXX	00	
28762	BLANSETT T	649-2907	+2
28801	BROADHURST T	649-2062	1
28821	HOBSON R C	649-2044	
28822	EBRIGHTCLARK ELAINE	649-2558	+2
28851	XXXX	00	
28852	MCGRATH MIKE	649-2045	5
28881	ROBINSON RUSSELL G	649-2843	6
28901	CANYON CHRSTN CNTR	640-2650	+2
28931	BUDIN ROBERT J	649-2972	+2
29002	MORRISON MALCOLM	649-2620	7
29021	DOWNEY GEO R	649-2804	1
29101	ARMET ROBT L JR	649-2080	9
29131	ROHM ROGER A	649-2916	8
29145	BROSIUS GUY H	649-2775	4
29171	WENTWORTH LLOYD	649-2461	+2
29176	GRAHAM DENNIS	649-2863	9
29182	IVERS C	649-2856	1
29191	ROBERTSON HARRY	649-2736	+2
29200	LAKEY I P	649-2721	
29206	TOEPHER JOHN R	649-2095	+2
29222	BRODEK RALPH	649-2575	+2
29232	OSBORN SIDNEY R	649-2746	7
29235	SHIRK DONALD A	649-2451	1
29238	XXXX	00	
29241	JACKSON DAVID P	649-2417	8
29251	XXXX	00	
29261	HUGHES MEGAN	649-2871	+2
29271	HENRY LINDA	649-2013	9
29282	JACOBS HUGH G	649-2573	0
29291	XXXX	00	
29302	BROSIUS C	649-2293	8
	WEBBER GEORGE	649-2293	8
29312	NAGELIN GEO E	649-2212	
29322	SANFORD B A	649-2776	5
29341	TRACY ROBT C	649-2460	
29351	RUZIKA THOS M	649-2922	7
29412	CARLON RON	649-2758	0
29421	MINDERBINDER MILO	649-2966	0
29422	WOODHOUSE JOHN 2D	649-2463	0
29423	YOUNG LOUIS J	649-2788	
29432	STOUGHTON CHRIS	649-2030	9
29442	SCOTT L D	649-2816	+2
	SHADYBRK CNTRY STR	640-2255	9
29461	ASHCRAFT J	649-2932	1
29475	XXXX	00	
29482	THOMSEN DAVE	649-2476	+2
29492	HAMILTON CURT	649-2962	+2
29501	CAMPBELL G A	649-2202	5
29502	JANSS JEREMY M	649-2954	1
29521	GROUARD FRANKLIN	649-2796	9
29541	MADDY T L	649-2241	5
29552	SCHLAPPY ALAN	649-2902	8
29562	XXXX	00	
29582	SMITH BETTY ANN	649-2607	
29586	XXXX	00	
29631	FAIRLEY TERRY W	649-2058	8
29641	JACKSON DALE W	649-2261	4
29722	XXXX	00	
29731	CHERRY JOE J	649-2235	
29734	XXXX	00	
29741	LECLAIRE DONNA	649-2747	+2
29742	BRADBURY WM	649-2686	+2
29761	CAMPBELL THOMAS H	649-2224	8
29762	SMITH IRA	649-2677	
	SMITH JEANNE	649-2677	
29772	GONZALES SUSAN A	649-2931	+2
	MASON ROBT	649-2931	+2
29781	GANATTA PETE L	649-2784	+2
29791	MCCORKLE HOWARD MD	649-2218	3
29792	GILDEA ALFRED R	649-2076	
29801	WARNER BRUCE	649-2691	5
30031	REYNOLDS K R	649-2542	1
	REYNOLDS ROBERT J	649-2676	+2
	REYNOLDS ROBT J	649-2564	1
30051	RICHARDS GRAHAM	649-2834	1
	RICHARDS MARY	649-2834	1
30061	XXXX	00	
30081	RICHARDS MARY	649-2740	1
30111	CLARK ROBYN G	649-2959	+2
30115	MEDWEDEFF DONALD	649-2254	3
30116	BERGERON RICHARD L	649-2529	9
30131	XXXX	00	
30141	FRY JOHN S DR	649-2909	6
30142	ANTRIM JAS W	649-2660	
	ANTRIM PATRICK J	649-2660	
30144	BELL CHARLES	649-2656	+2
	BELL CHAS G	649-2011	0
	MYERS CRAIG	649-2858	+2
30162	ROY ANNETTE	649-2525	
30182	SPLINTER MICHAEL R	649-2621	0
30192	JONES RONALD E	649-2873	1
30242	SLABACK LECIL J	649-2203	
30502	ENCEL IRV	649-2551	4
30531	BAKONIS TONY	953-6953	+2
30601	COX THOMAS P	649-2819	1

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SILVERADO CANYON RD 1982

SILVERADO CANYON

SILVERADO CANYON RD		92676 CONT	
30602	XXXX	00	
30622	LAFEVER HAROLD A	649-2793	
30641	BARBER R C	649-2204	+2
30651	BUCKELL DAVID	649-2764	1
30661	XXXX	00	
30737	MEDINA DAVID J	649-2905	+2
31300	XXXX	00	
31301	MAJOR BRENT	649-2611	1
31309	XXXX	00	
31311	XXXX	00	
31312	MATTIA MICHAEL A	649-2207	9
31313	XXXX	00	
31315	MCFADDEN DON	649-2838	1
31317	XXXX	00	
31319	RAMSAY LINDA S	649-2833	+2
31321	HOWARD RALPH W	649-2084	+2
31325	XXXX	00	
31338	WENDORF JACK B	649-2798	
31342	CLARKE DOROTHY B	649-2584	
31343	GURMIN WM J	649-2437	
31346	HOLEY DAVID GEO	649-2026	9
NO #	MACPHERSON SANDY DR	649-2546	
NO #	SANTIAGO CO WATER	649-2630	
★	16 BUS 155 RES	35 NEW	

SILVERADO WAY 92807

Target Street	Cross Street	Source
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SILVERADO CANYON RD 1976

SILVERADO CNYN RD 92676 SLVRADO

8002*SILVERADO CMNTY CH 649-2636
27172 XXXX 00
27189*SILVERADO RFLE RNGE532-9011 2
27246 THAL T E 649-2032 2
27271 BEAULIEU THOS L 649-2054
27311 ALLCOTT LOUISA 649-2772+6
*FAIROANE KENNELS 649-2772
27331 PEMBER CARLETON R 649-2567
27335 ANTLE L E 649-2416 5
27445 GUIOOTTI OAN 649-2484
27456 MAYER HENRY J 649-2096
27462 EONEY LAWRENCE 649-2079
27472 COLLAR WM 649-2477
27641*SILVERADO RCRTN&PK 649-2214 4
28162*COLLAR BILL ARCO SV649-2545 2
28182 XXXX 00
28192*CANYON MARKET 649-2082 5
*ORANGE CO LIBRARY 649-2216
28222*SILVERADO INN REST 649-2222+6
*VICTORS SILVROO INN649-2222 4
28231 CAMPBELL TOM 649-2918+6
*TIME REAL EST SALES649-2777 5
28251*US POST OFFICE 649-2033
28271 LOCKHART SANORA A 649-2972+6
28272*PALI CAFE 649-2622
28281*FRANKS EXXON SV STA532-9943 5
28282 PETERSEN GREGDRY 649-2672 2
28302 LONGTIN JERRY E 649-2663
28306 STOTTS CHAS V 649-2237+6
28336 HANNIS B G 649-2609 5
28342 XXXX 00
28346*CANYON REALTY 649-2632+6
*LOBDELL REALTY 649-2632
*MOOJESKA CANYN RLTY649-2632 5
*SILVERADO CNYN RLTY649-2632 5
*TRABUCO CANYON RLTY649-2632 5
28372 MAYBERRY SIDNEY F 649-2055
28412 ULLRICH HAROLO 649-2593
28562 XXXX 00
28576 HUMKE STEVEN 649-2071+6
28622 SHEELY LLOYO G 649-2259
28641 XXXX 00
28652 KIRSCHER E P 649-2917+6
28672 WORTHINGTON R 649-2661+6
28681 JAMES WILL R 649-2539 4
28691 SEEFELOT WAYNE 649-2250 4
288D2 XXXX 00
28820 XXXX 00
28821 HOBSON R C 649-2044
28822 BUCKELL OAVID 649-2686+6
28851 XXXX 00
28852 MCGRATH MIKE 649-2045 5
28881 ROBINSON RUSSELL G 649-2843+6
29131 GAWLIK LARRY C 649-2800+6
LYNN KEITH 649-2471
29131½KLINE JULES M 649-2285 5

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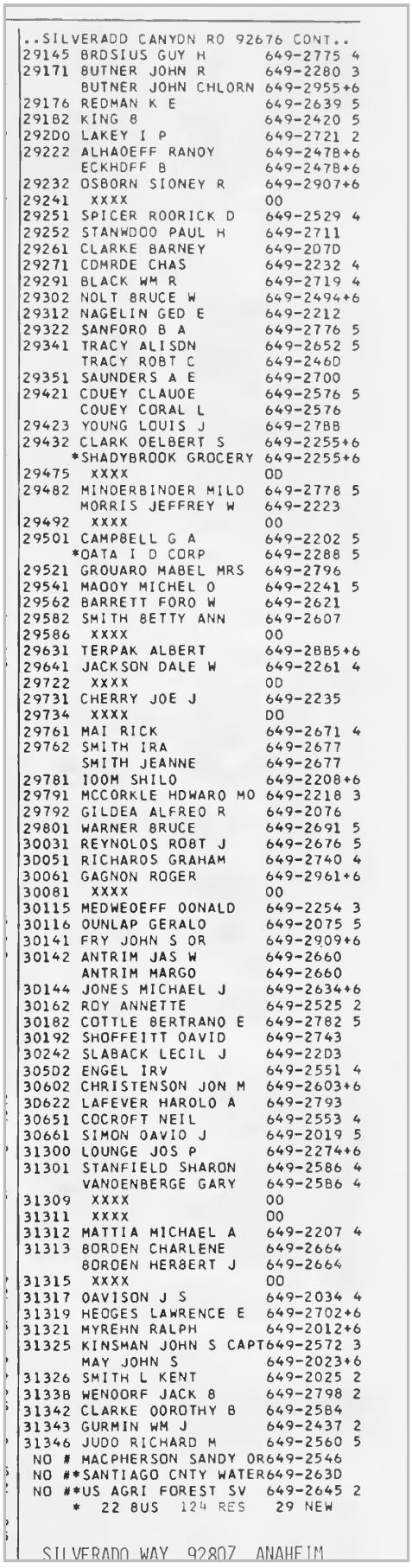
SILVERADO CANYON RD 1976



..SILVERADO CANYON RO 92676 CONT..
29145 BROSIUS GUY H 649-2775 4
29171 BUTNER JOHN R 649-2280 3
BUTNER JOHN CHLORN 649-2955+6
29176 REDMAN K E 649-2639 5
29182 KING B 649-2420 5
292D0 LAKEY I P 649-2721 2
29222 ALHAOEFF RANOY 649-247B+6
ECKHOFF B 649-247B+6
29232 OSBORN SIONEY R 649-2907+6
29241 XXXX OO
29251 SPICER ROORICK D 649-2529 4
29252 STANWDOO PAUL H 649-2711
29261 CLARKE BARNEY 649-2D7D
29271 CDMRDE CHAS 649-2232 4
29291 BLACK WM R 649-2719 4
29302 NOLT BRUCE W 649-2494+6
29312 NAGELIN GED E 649-2212
29322 SANFORO B A 649-2776 5
29341 TRACY ALISDN 649-2652 5
TRACY ROBT C 649-246D
29351 SAUNDERS A E 649-2700
29421 CDUEY CLAUOE 649-2576 5
COUEY CORAL L 649-2576
29423 YOUNG LOUIS J 649-278B
29432 CLARK OELBERT S 649-2255+6
*SHADYBROOK GROCERY 649-2255+6
29475 XXXX OD
29482 MINOERBINOER MILO 649-2778 5
MORRIS JEFFREY W 649-2223
29492 XXXX OO
29501 CAMPBELL G A 649-2202 5
*OATA I D CORP 649-2288 5
29521 GROUARO MABEL MRS 649-2796
29541 MAOOY MICHEL O 649-2241 5
29562 BARRETT FORO W 649-2621
29582 SMITH BETTY ANN 649-2607
29586 XXXX OO
29631 TERPAK ALBERT 649-2BB5+6
29641 JACKSON DALE W 649-2261 4
29722 XXXX OD
29731 CHERRY JOE J 649-2235
29734 XXXX DO
29761 MAI RICK 649-2671 4
29762 SMITH IRA 649-2677
SMITH JEANNE 649-2677
29781 IOOM SHILO 649-2208+6
29791 MCCORKLE HDWARO MO 649-2218 3
29792 GILDEA ALFREO R 649-2076
29801 WARNER BRUCE 649-2691 5
30031 REYNOLOS RO8T J 649-2676 5
3D051 RICHAROS GRAHAM 649-2740 4
30061 GAGNON ROGER 649-2961+6
30081 XXXX OO
30115 MEDWEOEFF OONALD 649-2254 3
30116 OUNLAP GERALO 649-2075 5
30141 FRY JOHN S OR 649-2909+6
30142 ANTRIM JAS W 649-2660
ANTRIM MARGO 649-2660
3D144 JONES MICHAEL J 649-2634+6
30162 ROY ANNETTE 649-2525 2
30182 COTTLE BERTRANO E 649-2782 5
30192 SHOFFEITT OAVID 649-2743
30242 SLABACK LECIL J 649-22D3
305D2 ENGEL IRV 649-2551 4
30602 CHRISTENSON JON M 649-2603+6
3D622 LAFEVER HAROLO A 649-2793
30651 COCROFT NEIL 649-2553 4
30661 SIMON OAVIO J 649-2019 5
31300 LOUNGE JOS P 649-2274+6
31301 STANFIELD SHARON 649-2586 4
VANOENBERGE GARY 649-25B6 4
31309 XXXX OO
31311 XXXX OO
31312 MATTIA MICHAEL A 649-2207 4
31313 BORDEN CHARLENE 649-2664
BORDEN HERBERT J 649-2664
31315 XXXX OO
31317 OAVISON J S 649-2034 4
31319 HEDGES LAWRENCE E 649-2702+6
31321 MYREHN RALPH 649-2012+6
31325 KINSMAN JOHN S CAPT 649-2572 3
MAY JOHN S 649-2023+6
31326 SMITH L KENT 649-2025 2
31338 WENOORF JACK B 649-2798 2
31342 CLARKE OOROTHY B 649-25B4
31343 GURMIN WM J 649-2437 2
31346 JUDO RICHARD M 649-2560 5
NO # MACPHERSON SANDY OR 649-2546
NO **SANTIAGO CNTY WATER 649-263D
NO **US AGRI FOREST SV 649-2645 2
* 22 BUS 124 RES 29 NEW

SILVERADO WAY 92807 ANAHEIM

Target Street	Cross Street	Source
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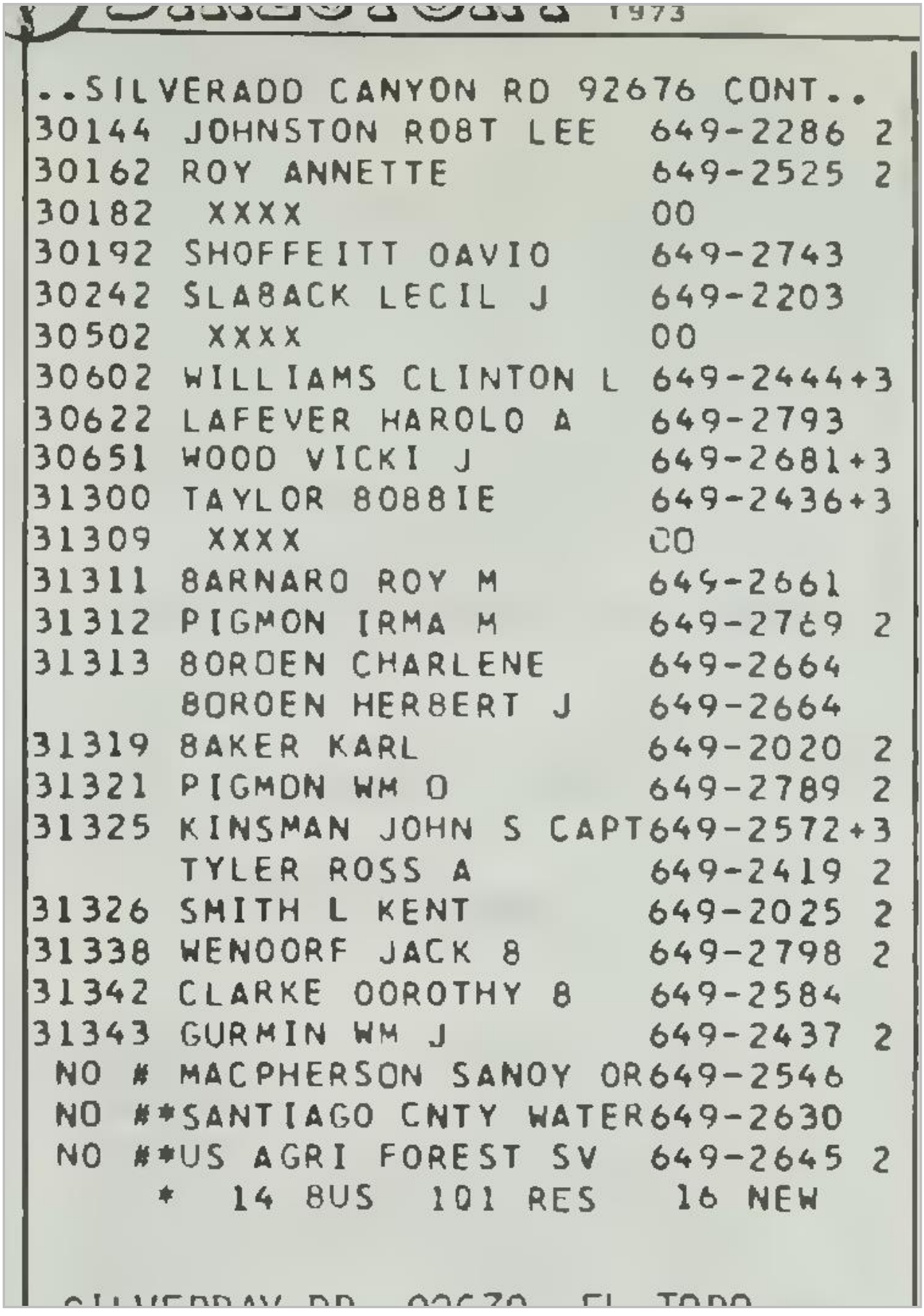
SILVERADO CANYON RD 1973

SILVERADO CNYN RD 92676 SLVRADO

8002	*SILVERADO CMNTY CH	649-2636	
27172	HILOITICH RALPH O	649-2075	2
27189	*SILVERADO RFLE RNGE	532-9011	2
27246	THAL T E	649-2032	2
27271	BEAULIEU THOS L	649-2054	
27311	ALLCOTT LOUISE	649-2772	
	*FAIROANE KENNELS	649-2772	
27331	PEMBER CARLETON R	649-2567	
27335	ANTLE GLEN R	649-2416	
27445	GUIOOTTI OAN	649-2484	
27456	MAYER HENRY J	649-2096	
27462	EONEY LAWRENCE	649-2079	
27472	COLLAR WM	649-2477	
27641	*SILVERAOO PARK OIST	532-9101	2
28162	*COLLAR BILL ARCO SV	649-2545	2
28182	XXXX	00	
28192	*ORANGE CO LIBRARY	649-2216	
28222	*VICTORS	649-2222	
28231	XXXX	00	
28251	*US POST OFFICE	649-2033	
28271	XXXX	00	
28272	*PALI CAFE	649-2622	
28281	XXXX	00	
28282	PETERSEN GREGORY	649-2672	2
28302	LONGTIN JERRY E	649-2663	
28306	STOTTS CHAS V	649-2089	
28336	KERNER ROBT F	649-2458	+3
28342	XXXX	00	
28346	*LOBOELL REALTY	649-2632	
28372	MAYBERRY SIONEY F	649-2055	
28412	ULLRICH HAROLO	649-2593	
28562	XXXX	00	
28622	SHEELY LLOYO G	649-2259	
28641	XXXX	00	
28652	LOY HENRY M	649-2208	
28662	TOMLINSON JOHN G	649-2548	+3
28691	XXXX	00	
28802	*TIME REAL ESTATE SL	649-2777	2
28820	XXXX	00	
28821	HOBSON R C	649-2044	
28851	ANOERSON SUSAN	649-2667	
29002	AYLSTOCK FRANK W	649-2501	2
29072	XXXX	00	
29131	LYNN KEITH	649-2471	
29131½	ALLAN THOS J	649-2762	+3
29145	XXXX	00	
29171	BUTNER JOHN R	649-2280	+3
29176	KNAPP MARYETTA	649-2588	+3
29182	ALORICH WM	649-2643	2
29200	LAKEY I P	649-2721	2
29222	SAMMON TERRENCE	649-2768	2
29232	XXXX	00	
29241	ANOERSON OALE	649-2716	2
29252	STANWOOO PAUL H	649-2711	
29261	CLARKE BARNEY	649-2070	
29302	TONKIN SHARON	649-2589	+3
29312	NAGELIN GEO E	649-2212	
29322	ROZEMA JAN	649-2091	
29341	TRACY ROBT C	649-2460	
29351	SAUNOERS A E	649-2700	
29421	COUEY CLAUOE	649-2576	
	COUEY CORAL L	649-2576	
29423	YOUNG LOUIS J	649-2788	
29432	*SHAOYBRK GRCRY&MKT	649-2412	2
29475	BRINKEMA JACK	649-2263	
29482	MORRIS JEFFREY W	649-2223	
29492	KIRBY LARI LEE	649-2217	+3
29501	XXXX	00	
29521	GROUARO MABEL MRS	649-2796	
29541	BRENNAN TOM	649-2241	+3
29562	BARRETT FORO W	649-2621	
29582	SMITH BETTY ANN	649-2607	
29586	CLARKE BARRY	649-2526	
29641	EVANS LARRY G	649-2685	
29722	XXXX	00	
29731	CHERRY JOE J	649-2235	
29734	XXXX	00	
29761	SHOOK RICHARO G	649-2712	
29762	SMITH IRA	649-2677	
	SMITH JEANNE	649-2677	
29791	MCCORKLE HOWARO MO	649-2218	+3
29792	GILOEA ALFREO R	649-2076	
30051	SWEET MARY	649-2062	+3
30061	ABBOTT THOS R	649-2549	+3
30081	XXXX	00	
30115	MEOWEOEFF OONALO	649-2254	+3
30141	MCINTYRE ROBT W	649-2072	
30142	ANTRIM JAS W	649-2660	
	ANTRIM MARGO	649-2660	

Target Street	Cross Street	Source
✓	-	Haines Criss-Cross Directory

SILVERADO CANYON RD 1973



1973

..SILVERADD CANYON RD 92676 CONT..

30144 JOHNSTON ROBT LEE 649-2286 2
30162 ROY ANNETTE 649-2525 2
30182 XXXX 00
30192 SHOFFEITT OAVIO 649-2743
30242 SLABACK LECIL J 649-2203
30502 XXXX 00
30602 WILLIAMS CLINTON L 649-2444+3
30622 LAFEVER HAROLO A 649-2793
30651 WOOD VICKI J 649-2681+3
31300 TAYLOR 8088IE 649-2436+3
31309 XXXX CO
31311 8ARNARO ROY M 649-2661
31312 PIGMON IRMA M 649-2769 2
31313 8OROEN CHARLENE 649-2664
8OROEN HERBERT J 649-2664
31319 8AKER KARL 649-2020 2
31321 PIGMON WM O 649-2789 2
31325 KINSMAN JOHN S CAPT 649-2572+3
TYLER ROSS A 649-2419 2
31326 SMITH L KENT 649-2025 2
31338 WENOORF JACK 8 649-2798 2
31342 CLARKE OOROTHY 8 649-2584
31343 GURMIN WM J 649-2437 2
NO # MACPHERSON SANOY OR 649-2546
NO #*SANTIAGO CNTY WATER 649-2630
NO #*US AGRI FOREST SV 649-2645 2
* 14 8US 101 RES 16 NEW

APPENDIX E

Silverado Canyon Bridge
Silverado Canyon Bridge
Silverado, CA 92676

Inquiry Number: 6135774.2s
July 28, 2020

The EDR Radius Map™ Report with GeoCheck®

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

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Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

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EXECUTIVE SUMMARY

A search of available environmental records was conducted by Environmental Data Resources, Inc (EDR). The report was designed to assist parties seeking to meet the search requirements of EPA's Standards and Practices for All Appropriate Inquiries (40 CFR Part 312), the ASTM Standard Practice for Environmental Site Assessments (E 1527-13), the ASTM Standard Practice for Environmental Site Assessments for Forestland or Rural Property (E 2247-16), the ASTM Standard Practice for Limited Environmental Due Diligence: Transaction Screen Process (E 1528-14) or custom requirements developed for the evaluation of environmental risk associated with a parcel of real estate.

TARGET PROPERTY INFORMATION

ADDRESS

SILVERADO CANYON BRIDGE
SILVERADO, CA 92676

COORDINATES

Latitude (North):	33.7457070 - 33° 44' 44.54''
Longitude (West):	117.6501690 - 117° 39' 0.60''
Universal Tranverse Mercator:	Zone 11
UTM X (Meters):	439778.1
UTM Y (Meters):	3733957.2
Elevation:	1114 ft. above sea level

USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property Map:	5636489 EL TORO, CA
Version Date:	2012
Northwest Map:	5636465 BLACK STAR CANYON, CA
Version Date:	2012

AERIAL PHOTOGRAPHY IN THIS REPORT

Portions of Photo from:	20140603
Source:	USDA

MAPPED SITES SUMMARY

Target Property Address:
SILVERADO CANYON BRIDGE
SILVERADO, CA 92676

Click on Map ID to see full detail.

MAP ID	SITE NAME	ADDRESS	DATABASE ACRONYMS	RELATIVE ELEVATION	DIST (ft. & mi.) DIRECTION
1	HOLTZ RANCH	27961 E SILVERADO CA	HIST UST	Higher	702, 0.133, ENE

EXECUTIVE SUMMARY

TARGET PROPERTY SEARCH RESULTS

The target property was not listed in any of the databases searched by EDR.

DATABASES WITH NO MAPPED SITES

No mapped sites were found in EDR's search of available ("reasonably ascertainable ") government records either on the target property or within the search radius around the target property for the following databases:

STANDARD ENVIRONMENTAL RECORDS

Federal NPL site list

NPL ---------- National Priority List
Proposed NPL ---------- Proposed National Priority List Sites
NPL LIENS ---------- Federal Superfund Liens

Federal Delisted NPL site list

Delisted NPL ---------- National Priority List Deletions

Federal CERCLIS list

FEDERAL FACILITY ---------- Federal Facility Site Information listing
SEMS ---------- Superfund Enterprise Management System

Federal CERCLIS NFRAP site list

SEMS-ARCHIVE ---------- Superfund Enterprise Management System Archive

Federal RCRA CORRACTS facilities list

CORRACTS ---------- Corrective Action Report

Federal RCRA non-CORRACTS TSD facilities list

RCRA-TSDF ---------- RCRA - Treatment, Storage and Disposal

Federal RCRA generators list

RCRA-LQG ---------- RCRA - Large Quantity Generators
RCRA-SQG ---------- RCRA - Small Quantity Generators
RCRA-VSQG ---------- RCRA - Very Small Quantity Generators (Formerly Conditionally Exempt Small Quantity Generators)

Federal institutional controls / engineering controls registries

LUCIS ---------- Land Use Control Information System

US ENG CONTROLS..... Engineering Controls Sites List
US INST CONTROLS..... Institutional Controls Sites List

Federal ERNS list

ERNS..... Emergency Response Notification System

State- and tribal - equivalent NPL

RESPONSE..... State Response Sites

State- and tribal - equivalent CERCLIS

ENVIROSTOR..... EnviroStor Database

State and tribal landfill and/or solid waste disposal site lists

SWF/LF..... Solid Waste Information System

State and tribal leaking storage tank lists

LUST..... Geotracker's Leaking Underground Fuel Tank Report
INDIAN LUST..... Leaking Underground Storage Tanks on Indian Land
CPS-SLIC..... Statewide SLIC Cases

State and tribal registered storage tank lists

FEMA UST..... Underground Storage Tank Listing
UST..... Active UST Facilities
AST..... Aboveground Petroleum Storage Tank Facilities
INDIAN UST..... Underground Storage Tanks on Indian Land

State and tribal voluntary cleanup sites

INDIAN VCP..... Voluntary Cleanup Priority Listing
VCP..... Voluntary Cleanup Program Properties

State and tribal Brownfields sites

BROWNFIELDS..... Considered Brownfieds Sites Listing

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS..... A Listing of Brownfields Sites

Local Lists of Landfill / Solid Waste Disposal Sites

WMUDS/SWAT..... Waste Management Unit Database
SWRCY..... Recycler Database
HAULERS..... Registered Waste Tire Haulers Listing
INDIAN ODI..... Report on the Status of Open Dumps on Indian Lands
ODI..... Open Dump Inventory

DEBRIS REGION 9 ..... Torres Martinez Reservation Illegal Dump Site Locations
IHS OPEN DUMPS ..... Open Dumps on Indian Land

Local Lists of Hazardous waste / Contaminated Sites

US HIST CDL ..... Delisted National Clandestine Laboratory Register
HIST Cal-Sites ..... Historical Calsites Database
SCH ..... School Property Evaluation Program
CDL ..... Clandestine Drug Labs
CERS HAZ WASTE ..... CERS HAZ WASTE
Toxic Pits ..... Toxic Pits Cleanup Act Sites
US CDL ..... National Clandestine Laboratory Register
PFAS ..... PFAS Contamination Site Location Listing

Local Lists of Registered Storage Tanks

SWEEPS UST ..... SWEEPS UST Listing
CA FID UST ..... Facility Inventory Database
CERS TANKS ..... California Environmental Reporting System (CERS) Tanks

Local Land Records

LIENS ..... Environmental Liens Listing
LIENS 2 ..... CERCLA Lien Information
DEED ..... Deed Restriction Listing

Records of Emergency Release Reports

HMIRS ..... Hazardous Materials Information Reporting System
CHMIRS ..... California Hazardous Material Incident Report System
LDS ..... Land Disposal Sites Listing
MCS ..... Military Cleanup Sites Listing
Orange Co. Industrial Site ..... List of Industrial Site Cleanups
SPILLS 90 ..... SPILLS 90 data from FirstSearch

Other Ascertainable Records

RCRA NonGen / NLR ..... RCRA - Non Generators / No Longer Regulated
FUDS ..... Formerly Used Defense Sites
DOD ..... Department of Defense Sites
SCRD DRYCLEANERS ..... State Coalition for Remediation of Drycleaners Listing
US FIN ASSUR ..... Financial Assurance Information
EPA WATCH LIST ..... EPA WATCH LIST
2020 COR ACTION ..... 2020 Corrective Action Program List
TSCA ..... Toxic Substances Control Act
TRIS ..... Toxic Chemical Release Inventory System
SSTS ..... Section 7 Tracking Systems
ROD ..... Records Of Decision
RMP ..... Risk Management Plans
RAATS ..... RCRA Administrative Action Tracking System
PRP ..... Potentially Responsible Parties
PADS ..... PCB Activity Database System
ICIS ..... Integrated Compliance Information System
FTTS ..... FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

EXECUTIVE SUMMARY

MLTS	Material Licensing Tracking System
COAL ASH DOE	Steam-Electric Plant Operation Data
COAL ASH EPA	Coal Combustion Residues Surface Impoundments List
PCB TRANSFORMER	PCB Transformer Registration Database
RADINFO	Radiation Information Database
HIST FTTS	FIFRA/TSCA Tracking System Administrative Case Listing
DOT OPS	Incident and Accident Data
CONSENT	Superfund (CERCLA) Consent Decrees
INDIAN RESERV	Indian Reservations
FUSRAP	Formerly Utilized Sites Remedial Action Program
UMTRA	Uranium Mill Tailings Sites
LEAD SMELTERS	Lead Smelter Sites
US AIRS	Aerometric Information Retrieval System Facility Subsystem
US MINES	Mines Master Index File
ABANDONED MINES	Abandoned Mines
FINDS	Facility Index System/Facility Registry System
UXO	Unexploded Ordnance Sites
ECHO	Enforcement & Compliance History Information
DOCKET HWC	Hazardous Waste Compliance Docket Listing
FUELS PROGRAM	EPA Fuels Program Registered Listing
CA BOND EXP. PLAN	Bond Expenditure Plan
Cortese	"Cortese" Hazardous Waste & Substances Sites List
CUPA Listings	CUPA Resources List
DRYCLEANERS	Cleaner Facilities
EMI	Emissions Inventory Data
ENF	Enforcement Action Listing
Financial Assurance	Financial Assurance Information Listing
HAZNET	Facility and Manifest Data
ICE	ICE
HIST CORTESE	Hazardous Waste & Substance Site List
HWP	EnviroStor Permitted Facilities Listing
HWT	Registered Hazardous Waste Transporter Database
MINES	Mines Site Location Listing
MWMP	Medical Waste Management Program Listing
NPDES	NPDES Permits Listing
PEST LIC	Pesticide Regulation Licenses Listing
PROC	Certified Processors Database
Notify 65	Proposition 65 Records
UIC	UIC Listing
UIC GEO	UIC GEO (GEOTRACKER)
WASTEWATER PITS	Oil Wastewater Pits Listing
WDS	Waste Discharge System
WIP	Well Investigation Program Case List
MILITARY PRIV SITES	MILITARY PRIV SITES (GEOTRACKER)
PROJECT	PROJECT (GEOTRACKER)
WDR	Waste Discharge Requirements Listing
CIWQS	California Integrated Water Quality System
CERS	CERS
NON-CASE INFO	NON-CASE INFO (GEOTRACKER)
OTHER OIL GAS	OTHER OIL & GAS (GEOTRACKER)
PROD WATER PONDS	PROD WATER PONDS (GEOTRACKER)
SAMPLING POINT	SAMPLING POINT (GEOTRACKER)
WELL STIM PROJ	Well Stimulation Project (GEOTRACKER)
MINES MRDS	Mineral Resources Data System
HWTS	Hazardous Waste Tracking System

EXECUTIVE SUMMARY

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR MGP---------- EDR Proprietary Manufactured Gas Plants
EDR Hist Auto---------- EDR Exclusive Historical Auto Stations
EDR Hist Cleaner---------- EDR Exclusive Historical Cleaners

EDR RECOVERED GOVERNMENT ARCHIVES

Exclusive Recovered Govt. Archives

RGA LF---------- Recovered Government Archive Solid Waste Facilities List
RGA LUST---------- Recovered Government Archive Leaking Underground Storage Tank

SURROUNDING SITES: SEARCH RESULTS

Surrounding sites were identified in the following databases.

Elevations have been determined from the USGS Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified. Sites with an elevation equal to or higher than the target property have been differentiated below from sites with an elevation lower than the target property.
Page numbers and map identification numbers refer to the EDR Radius Map report where detailed data on individual sites can be reviewed.

Sites listed in ***bold italics*** are in multiple databases.

Unmappable (orphan) sites are not considered in the foregoing analysis.

ADDITIONAL ENVIRONMENTAL RECORDS

Local Lists of Registered Storage Tanks

HIST UST: Historical UST Registered Database.

A review of the HIST UST list, as provided by EDR, and dated 10/15/1990 has revealed that there is 1 HIST UST site within approximately 0.25 miles of the target property.

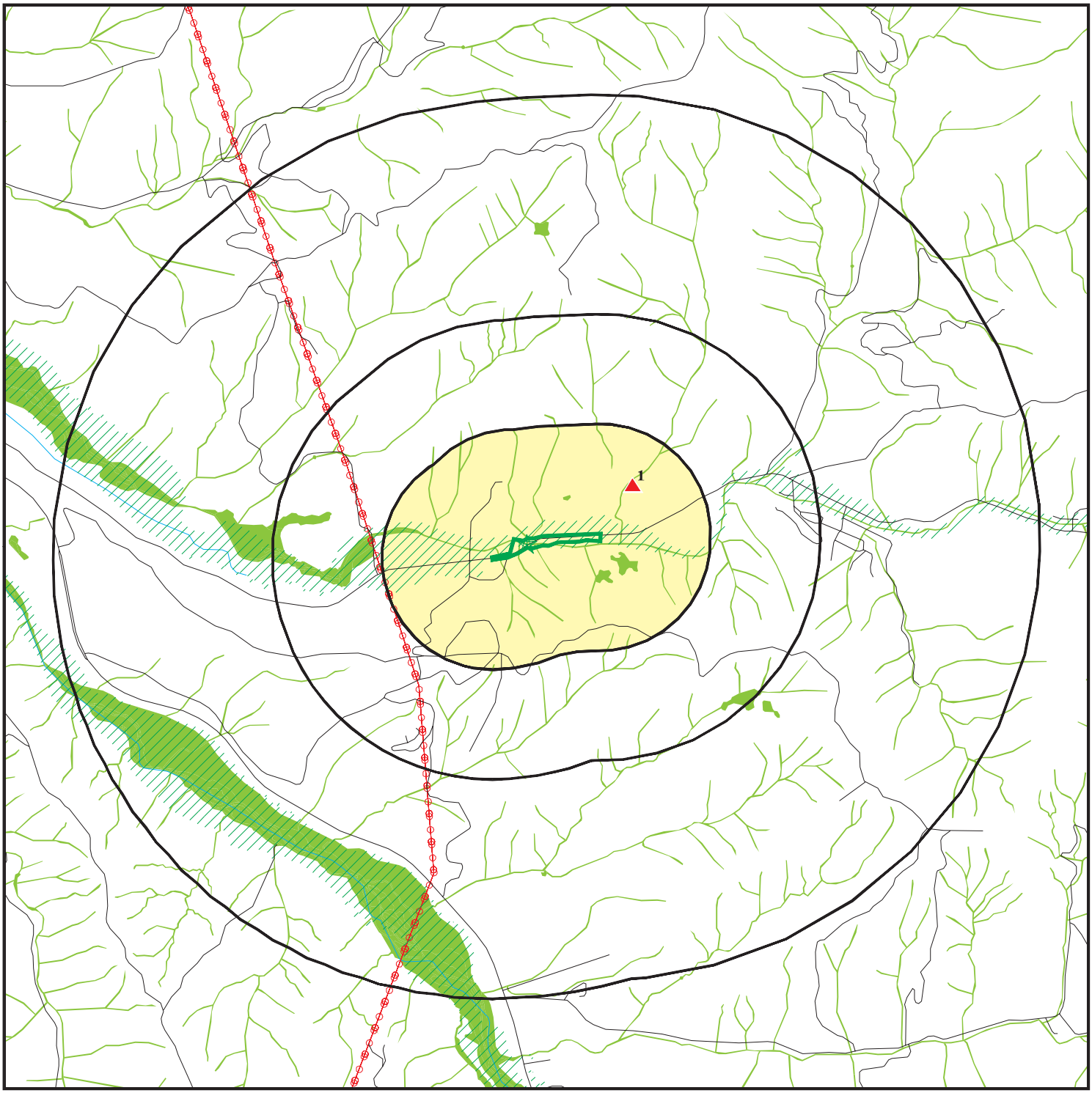
Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
HOLTZ RANCH Facility Id: 00000048786	27961 E SILVERADO CA	ENE 1/8 - 1/4 (0.133 mi.)	1	9

EXECUTIVE SUMMARY

Due to poor or inadequate address information, the following sites were not mapped. Count: 3 records.

Site Name	Database(s)
SILVERADO CANYON DIPOSAL STATION #	RGA LF
SILVERADO CANYON DIPOSAL STATION #	RGA LF
SILVERADO CANYON DIPOSAL STATION #	RGA LF

OVERVIEW MAP - 6135774.2S



Target Property

Sites at elevations higher than or equal to the target property

Sites at elevations lower than the target property

Manufactured Gas Plants

National Priority List Sites

Dept. Defense Sites

0 1/4 1/2 1 Miles

Indian Reservations BIA

Power transmission lines

Special Flood Hazard Area (1%)

0.2% Annual Chance Flood Hazard

National Wetland Inventory

State Wetlands

Areas of Concern

N

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME: Silverado Canyon Bridge	CLIENT: Geocon Geotechnical & Env
ADDRESS: Silverado Canyon Bridge Silverado CA 92676	CONTACT: Adrian Escobar
LAT/LONG: 33.745707 / 117.650169	INQUIRY #: 6135774.2s DATE: July 28, 2020 12:44 pm

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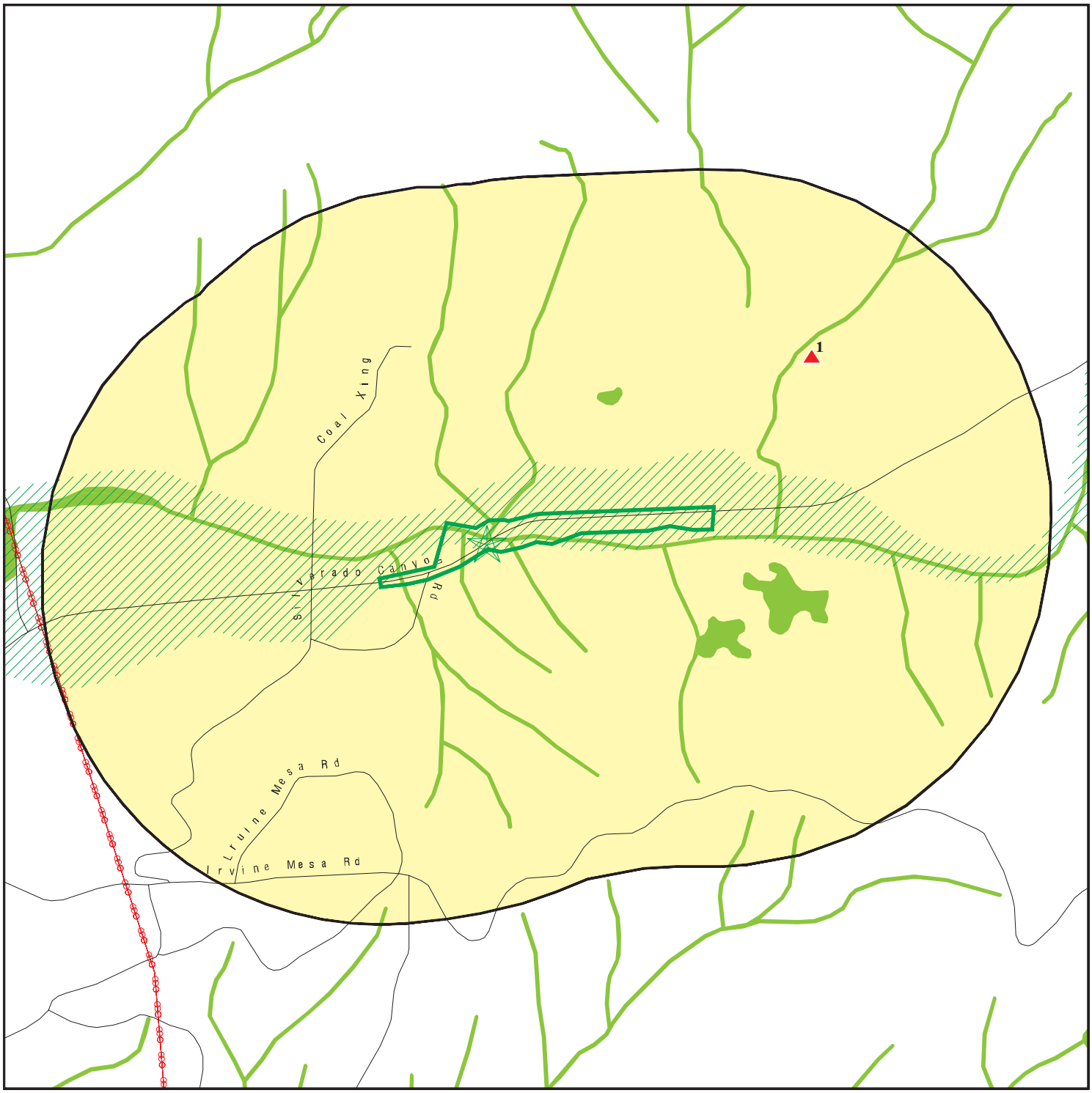
DETAIL MAP - 6135774.2S



0 1/16 1/8 1/4 Miles

- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- Sensitive Receptors
- National Priority List Sites
- Dept. Defense Sites
- Indian Reservations BIA
- Power transmission lines
- Special Flood Hazard Area (1%)
- 0.2% Annual Chance Flood Hazard
- National Wetland Inventory
- State Wetlands
- Areas of Concern

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

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ADDRESS: Silverado Canyon Bridge Silverado CA 92676	CONTACT: Adrian Escobar INQUIRY #: 6135774.2s
LAT/LONG: 33.745707 / 117.650169	DATE: July 28, 2020 12:44 pm

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MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
STANDARD ENVIRONMENTAL RECORDS								
Federal NPL site list								
NPL	1.000		0	0	0	0	NR	0
Proposed NPL	1.000		0	0	0	0	NR	0
NPL LIENS	1.000		0	0	0	0	NR	0
Federal Delisted NPL site list								
Delisted NPL	1.000		0	0	0	0	NR	0
Federal CERCLIS list								
FEDERAL FACILITY	0.500		0	0	0	NR	NR	0
SEMS	0.500		0	0	0	NR	NR	0
Federal CERCLIS NFRAP site list								
SEMS-ARCHIVE	0.500		0	0	0	NR	NR	0
Federal RCRA CORRACTS facilities list								
CORRACTS	1.000		0	0	0	0	NR	0
Federal RCRA non-CORRACTS TSD facilities list								
RCRA-TSDF	0.500		0	0	0	NR	NR	0
Federal RCRA generators list								
RCRA-LQG	0.250		0	0	NR	NR	NR	0
RCRA-SQG	0.250		0	0	NR	NR	NR	0
RCRA-VSQG	0.250		0	0	NR	NR	NR	0
Federal institutional controls / engineering controls registries								
LUCIS	0.500		0	0	0	NR	NR	0
US ENG CONTROLS	0.500		0	0	0	NR	NR	0
US INST CONTROLS	0.500		0	0	0	NR	NR	0
Federal ERNS list								
ERNS	0.001		0	NR	NR	NR	NR	0
State- and tribal - equivalent NPL								
RESPONSE	1.000		0	0	0	0	NR	0
State- and tribal - equivalent CERCLIS								
ENVIROSTOR	1.000		0	0	0	0	NR	0
State and tribal landfill and/or solid waste disposal site lists								
SWF/LF	0.500		0	0	0	NR	NR	0
State and tribal leaking storage tank lists								
LUST	0.500		0	0	0	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
INDIAN LUST	0.500		0	0	0	NR	NR	0
CPS-SLIC	0.500		0	0	0	NR	NR	0
State and tribal registered storage tank lists								
FEMA UST	0.250		0	0	NR	NR	NR	0
UST	0.250		0	0	NR	NR	NR	0
AST	0.250		0	0	NR	NR	NR	0
INDIAN UST	0.250		0	0	NR	NR	NR	0
State and tribal voluntary cleanup sites								
INDIAN VCP	0.500		0	0	0	NR	NR	0
VCP	0.500		0	0	0	NR	NR	0
State and tribal Brownfields sites								
BROWNFIELDS	0.500		0	0	0	NR	NR	0
ADDITIONAL ENVIRONMENTAL RECORDS								
Local Brownfield lists								
US BROWNFIELDS	0.500		0	0	0	NR	NR	0
Local Lists of Landfill / Solid Waste Disposal Sites								
WMUDS/SWAT	0.500		0	0	0	NR	NR	0
SWRCY	0.500		0	0	0	NR	NR	0
HAULERS	0.001		0	NR	NR	NR	NR	0
INDIAN ODI	0.500		0	0	0	NR	NR	0
ODI	0.500		0	0	0	NR	NR	0
DEBRIS REGION 9	0.500		0	0	0	NR	NR	0
IHS OPEN DUMPS	0.500		0	0	0	NR	NR	0
Local Lists of Hazardous waste / Contaminated Sites								
US HIST CDL	0.001		0	NR	NR	NR	NR	0
HIST Cal-Sites	1.000		0	0	0	0	NR	0
SCH	0.250		0	0	NR	NR	NR	0
CDL	0.001		0	NR	NR	NR	NR	0
CERS HAZ WASTE	0.250		0	0	NR	NR	NR	0
Toxic Pits	1.000		0	0	0	0	NR	0
US CDL	0.001		0	NR	NR	NR	NR	0
PFAS	0.500		0	0	0	NR	NR	0
Local Lists of Registered Storage Tanks								
SWEEPS UST	0.250		0	0	NR	NR	NR	0
HIST UST	0.250		0	1	NR	NR	NR	1
CA FID UST	0.250		0	0	NR	NR	NR	0
CERS TANKS	0.250		0	0	NR	NR	NR	0
Local Land Records								
LIENS	0.001		0	NR	NR	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
LIENS 2	0.001		0	NR	NR	NR	NR	0
DEED	0.500		0	0	0	NR	NR	0
Records of Emergency Release Reports								
HMIRS	0.001		0	NR	NR	NR	NR	0
CHMIRS	0.001		0	NR	NR	NR	NR	0
LDS	0.001		0	NR	NR	NR	NR	0
MCS	0.001		0	NR	NR	NR	NR	0
Orange Co. Industrial Site	0.001		0	NR	NR	NR	NR	0
SPILLS 90	0.001		0	NR	NR	NR	NR	0
Other Ascertainable Records								
RCRA NonGen / NLR	0.250		0	0	NR	NR	NR	0
FUDS	1.000		0	0	0	0	NR	0
DOD	1.000		0	0	0	0	NR	0
SCRD DRYCLEANERS	0.500		0	0	0	NR	NR	0
US FIN ASSUR	0.001		0	NR	NR	NR	NR	0
EPA WATCH LIST	0.001		0	NR	NR	NR	NR	0
2020 COR ACTION	0.250		0	0	NR	NR	NR	0
TSCA	0.001		0	NR	NR	NR	NR	0
TRIS	0.001		0	NR	NR	NR	NR	0
SSTS	0.001		0	NR	NR	NR	NR	0
ROD	1.000		0	0	0	0	NR	0
RMP	0.001		0	NR	NR	NR	NR	0
RAATS	0.001		0	NR	NR	NR	NR	0
PRP	0.001		0	NR	NR	NR	NR	0
PADS	0.001		0	NR	NR	NR	NR	0
ICIS	0.001		0	NR	NR	NR	NR	0
FTTS	0.001		0	NR	NR	NR	NR	0
MLTS	0.001		0	NR	NR	NR	NR	0
COAL ASH DOE	0.001		0	NR	NR	NR	NR	0
COAL ASH EPA	0.500		0	0	0	NR	NR	0
PCB TRANSFORMER	0.001		0	NR	NR	NR	NR	0
RADINFO	0.001		0	NR	NR	NR	NR	0
HIST FTTS	0.001		0	NR	NR	NR	NR	0
DOT OPS	0.001		0	NR	NR	NR	NR	0
CONSENT	1.000		0	0	0	0	NR	0
INDIAN RESERV	1.000		0	0	0	0	NR	0
FUSRAP	1.000		0	0	0	0	NR	0
UMTRA	0.500		0	0	0	NR	NR	0
LEAD SMELTERS	0.001		0	NR	NR	NR	NR	0
US AIRS	0.001		0	NR	NR	NR	NR	0
US MINES	0.250		0	0	NR	NR	NR	0
ABANDONED MINES	0.250		0	0	NR	NR	NR	0
FINDS	0.001		0	NR	NR	NR	NR	0
UXO	1.000		0	0	0	0	NR	0
ECHO	0.001		0	NR	NR	NR	NR	0
DOCKET HWC	0.001		0	NR	NR	NR	NR	0
FUELS PROGRAM	0.250		0	0	NR	NR	NR	0
CA BOND EXP. PLAN	1.000		0	0	0	0	NR	0
Cortese	0.500		0	0	0	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
CUPA Listings	0.250		0	0	NR	NR	NR	0
DRYCLEANERS	0.250		0	0	NR	NR	NR	0
EMI	0.001		0	NR	NR	NR	NR	0
ENF	0.001		0	NR	NR	NR	NR	0
Financial Assurance	0.001		0	NR	NR	NR	NR	0
HAZNET	0.001		0	NR	NR	NR	NR	0
ICE	0.001		0	NR	NR	NR	NR	0
HIST CORTESE	0.500		0	0	0	NR	NR	0
HWP	1.000		0	0	0	0	NR	0
HWT	0.250		0	0	NR	NR	NR	0
MINES	0.250		0	0	NR	NR	NR	0
MWMP	0.250		0	0	NR	NR	NR	0
NPDES	0.001		0	NR	NR	NR	NR	0
PEST LIC	0.001		0	NR	NR	NR	NR	0
PROC	0.500		0	0	0	NR	NR	0
Notify 65	1.000		0	0	0	0	NR	0
UIC	0.001		0	NR	NR	NR	NR	0
UIC GEO	0.001		0	NR	NR	NR	NR	0
WASTEWATER PITS	0.500		0	0	0	NR	NR	0
WDS	0.001		0	NR	NR	NR	NR	0
WIP	0.250		0	0	NR	NR	NR	0
MILITARY PRIV SITES	0.001		0	NR	NR	NR	NR	0
PROJECT	0.001		0	NR	NR	NR	NR	0
WDR	0.001		0	NR	NR	NR	NR	0
CIWQS	0.001		0	NR	NR	NR	NR	0
CERS	0.001		0	NR	NR	NR	NR	0
NON-CASE INFO	0.001		0	NR	NR	NR	NR	0
OTHER OIL GAS	0.001		0	NR	NR	NR	NR	0
PROD WATER PONDS	0.001		0	NR	NR	NR	NR	0
SAMPLING POINT	0.001		0	NR	NR	NR	NR	0
WELL STIM PROJ	0.001		0	NR	NR	NR	NR	0
MINES MRDS	0.001		0	NR	NR	NR	NR	0
HWTS	TP		NR	NR	NR	NR	NR	0
EDR HIGH RISK HISTORICAL RECORDS								
EDR Exclusive Records								
EDR MGP	1.000		0	0	0	0	NR	0
EDR Hist Auto	0.125		0	NR	NR	NR	NR	0
EDR Hist Cleaner	0.125		0	NR	NR	NR	NR	0
EDR RECOVERED GOVERNMENT ARCHIVES								
Exclusive Recovered Govt. Archives								
RGA LF	0.001		0	NR	NR	NR	NR	0
RGA LUST	0.001		0	NR	NR	NR	NR	0
- Totals --		0	0	1	0	0	0	1

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted

NOTES:

TP = Target Property

NR = Not Requested at this Search Distance

Sites may be listed in more than one database

1
ENE
1/8-1/4
0.133 mi.
702 ft.

HOLTZ RANCH
27961 E SILVERADO CANYON RD
ORANGE, CA 92669

HIST UST **U001577698**
N/A

Relative:
Higher

Actual:
1164 ft.

HIST UST:

Name:	HOLTZ RANCH
Address:	27961 E SILVERADO CANYON RD
City,State,Zip:	ORANGE, CA 92669
File Number:	0002E90E
URL:	http://geotracker.waterboards.ca.gov/ustpdfs/pdf/0002E90E.pdf
Region:	STATE
Facility ID:	00000048786
Facility Type:	Other
Other Type:	FARM
Contact Name:	HENRY HOLTZ
Telephone:	7147800471
Owner Name:	FIRST AMERICAN TRUST CO. TR.
Owner Address:	421 N. MAIN ST.
Owner City,St,Zip:	SANTA ANA, CA 92702
Total Tanks:	0003
Tank Num:	001
Container Num:	1
Year Installed:	1936
Tank Capacity:	00000550
Tank Used for:	PRODUCT
Type of Fuel:	REGULAR
Container Construction Thickness:	Not reported
Leak Detection:	None
Tank Num:	002
Container Num:	2
Year Installed:	1927
Tank Capacity:	00000550
Tank Used for:	PRODUCT
Type of Fuel:	REGULAR
Container Construction Thickness:	Not reported
Leak Detection:	Stock Inventor
Tank Num:	003
Container Num:	3
Year Installed:	1936
Tank Capacity:	00003000
Tank Used for:	PRODUCT
Type of Fuel:	REGULAR
Container Construction Thickness:	Not reported
Leak Detection:	None

Click here for Geo Tracker PDF:

Count: 3 records. ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
SILVERADO	S114732742	SILVERADO CANYON DIPOSAL STATION #	NW COR SANTIAGO CYN R & SILVER		RGA LF
SILVERADO	S114732741	SILVERADO CANYON DIPOSAL STATION #	NEAR SNATIAGO CYN & SILVERADO		RGA LF
SILVERADO	S114732738	SILVERADO CANYON DIPOSAL STATION #	NEAR SANTIAGO CYN & SILVERADO		RGA LF

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

To maintain currency of the following federal and state databases, EDR contacts the appropriate governmental agency on a monthly or quarterly basis, as required.

Number of Days to Update: Provides confirmation that EDR is reporting records that have been updated within 90 days from the date the government agency made the information available to the public.

STANDARD ENVIRONMENTAL RECORDS

Federal NPL site list

NPL: National Priority List

National Priorities List (Superfund). The NPL is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund Program. NPL sites may encompass relatively large areas. As such, EDR provides polygon coverage for over 1,000 NPL site boundaries produced by EPA's Environmental Photographic Interpretation Center (EPIC) and regional EPA offices.

Date of Government Version: 04/27/2020
Date Data Arrived at EDR: 05/06/2020
Date Made Active in Reports: 05/28/2020
Number of Days to Update: 22

Source: EPA
Telephone: N/A
Last EDR Contact: 06/30/2020
Next Scheduled EDR Contact: 10/12/2020
Data Release Frequency: Quarterly

NPL Site Boundaries

Sources:

EPA's Environmental Photographic Interpretation Center (EPIC)
Telephone: 202-564-7333

EPA Region 1
Telephone 617-918-1143

EPA Region 6
Telephone: 214-655-6659

EPA Region 3
Telephone 215-814-5418

EPA Region 7
Telephone: 913-551-7247

EPA Region 4
Telephone 404-562-8033

EPA Region 8
Telephone: 303-312-6774

EPA Region 5
Telephone 312-886-6686

EPA Region 9
Telephone: 415-947-4246

EPA Region 10
Telephone 206-553-8665

Proposed NPL: Proposed National Priority List Sites

A site that has been proposed for listing on the National Priorities List through the issuance of a proposed rule in the Federal Register. EPA then accepts public comments on the site, responds to the comments, and places on the NPL those sites that continue to meet the requirements for listing.

Date of Government Version: 04/27/2020
Date Data Arrived at EDR: 05/06/2020
Date Made Active in Reports: 05/28/2020
Number of Days to Update: 22

Source: EPA
Telephone: N/A
Last EDR Contact: 06/30/2020
Next Scheduled EDR Contact: 10/12/2020
Data Release Frequency: Quarterly

NPL LIENS: Federal Superfund Liens

Federal Superfund Liens. Under the authority granted the USEPA by CERCLA of 1980, the USEPA has the authority to file liens against real property in order to recover remedial action expenditures or when the property owner received notification of potential liability. USEPA compiles a listing of filed notices of Superfund Liens.

Date of Government Version: 10/15/1991
Date Data Arrived at EDR: 02/02/1994
Date Made Active in Reports: 03/30/1994
Number of Days to Update: 56

Source: EPA
Telephone: 202-564-4267
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

Federal Delisted NPL site list

Delisted NPL: National Priority List Deletions

The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate.

Date of Government Version: 04/27/2020
Date Data Arrived at EDR: 05/06/2020
Date Made Active in Reports: 05/28/2020
Number of Days to Update: 22

Source: EPA
Telephone: N/A
Last EDR Contact: 06/30/2020
Next Scheduled EDR Contact: 10/12/2020
Data Release Frequency: Quarterly

Federal CERCLIS list

FEDERAL FACILITY: Federal Facility Site Information listing

A listing of National Priority List (NPL) and Base Realignment and Closure (BRAC) sites found in the Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) Database where EPA Federal Facilities Restoration and Reuse Office is involved in cleanup activities.

Date of Government Version: 04/03/2019
Date Data Arrived at EDR: 04/05/2019
Date Made Active in Reports: 05/14/2019
Number of Days to Update: 39

Source: Environmental Protection Agency
Telephone: 703-603-8704
Last EDR Contact: 07/02/2020
Next Scheduled EDR Contact: 10/12/2020
Data Release Frequency: Varies

SEMS: Superfund Enterprise Management System

SEMS (Superfund Enterprise Management System) tracks hazardous waste sites, potentially hazardous waste sites, and remedial activities performed in support of EPA's Superfund Program across the United States. The list was formerly know as CERCLIS, renamed to SEMS by the EPA in 2015. The list contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). This dataset also contains sites which are either proposed to or on the National Priorities List (NPL) and the sites which are in the screening and assessment phase for possible inclusion on the NPL.

Date of Government Version: 04/27/2020
Date Data Arrived at EDR: 05/06/2020
Date Made Active in Reports: 05/28/2020
Number of Days to Update: 22

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 07/17/2020
Next Scheduled EDR Contact: 10/26/2020
Data Release Frequency: Quarterly

Federal CERCLIS NFRAP site list

SEMS-ARCHIVE: Superfund Enterprise Management System Archive

SEMS-ARCHIVE (Superfund Enterprise Management System Archive) tracks sites that have no further interest under the Federal Superfund Program based on available information. The list was formerly known as the CERCLIS-NFRAP, renamed to SEMS ARCHIVE by the EPA in 2015. EPA may perform a minimal level of assessment work at a site while it is archived if site conditions change and/or new information becomes available. Archived sites have been removed and archived from the inventory of SEMS sites. Archived status indicates that, to the best of EPA's knowledge, assessment at a site has been completed and that EPA has determined no further steps will be taken to list the site on the National Priorities List (NPL), unless information indicates this decision was not appropriate or other considerations require a recommendation for listing at a later time. The decision does not necessarily mean that there is no hazard associated with a given site; it only means that. based upon available information, the location is not judged to be potential NPL site.

Date of Government Version: 04/27/2020
Date Data Arrived at EDR: 05/06/2020
Date Made Active in Reports: 05/28/2020
Number of Days to Update: 22

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 07/17/2020
Next Scheduled EDR Contact: 10/26/2020
Data Release Frequency: Quarterly

Federal RCRA CORRACTS facilities list

CORRACTS: Corrective Action Report

CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

Date of Government Version: 03/23/2020
Date Data Arrived at EDR: 03/25/2020
Date Made Active in Reports: 05/21/2020
Number of Days to Update: 57

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 06/22/2020
Next Scheduled EDR Contact: 10/05/2020
Data Release Frequency: Quarterly

Federal RCRA non-CORRACTS TSD facilities list

RCRA-TSDF: RCRA - Treatment, Storage and Disposal

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Transporters are individuals or entities that move hazardous waste from the generator offsite to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste.

Date of Government Version: 03/23/2020
Date Data Arrived at EDR: 03/25/2020
Date Made Active in Reports: 05/21/2020
Number of Days to Update: 57

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 06/22/2020
Next Scheduled EDR Contact: 10/05/2020
Data Release Frequency: Quarterly

Federal RCRA generators list

RCRA-LQG: RCRA - Large Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Large quantity generators (LQGs) generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month.

Date of Government Version: 03/23/2020
Date Data Arrived at EDR: 03/25/2020
Date Made Active in Reports: 05/21/2020
Number of Days to Update: 57

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 06/22/2020
Next Scheduled EDR Contact: 10/05/2020
Data Release Frequency: Quarterly

RCRA-SQG: RCRA - Small Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month.

Date of Government Version: 03/23/2020
Date Data Arrived at EDR: 03/25/2020
Date Made Active in Reports: 05/21/2020
Number of Days to Update: 57

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 06/22/2020
Next Scheduled EDR Contact: 10/05/2020
Data Release Frequency: Quarterly

RCRA-VSQG: RCRA - Very Small Quantity Generators (Formerly Conditionally Exempt Small Quantity Generators)

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Very small quantity generators (VSQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month.

Date of Government Version: 03/23/2020
Date Data Arrived at EDR: 03/25/2020
Date Made Active in Reports: 05/21/2020
Number of Days to Update: 57

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 06/22/2020
Next Scheduled EDR Contact: 10/05/2020
Data Release Frequency: Quarterly

Federal institutional controls / engineering controls registries

LUCIS: Land Use Control Information System

LUCIS contains records of land use control information pertaining to the former Navy Base Realignment and Closure properties.

Date of Government Version: 05/15/2020
Date Data Arrived at EDR: 05/19/2020
Date Made Active in Reports: 06/18/2020
Number of Days to Update: 30

Source: Department of the Navy
Telephone: 843-820-7326
Last EDR Contact: 05/14/2020
Next Scheduled EDR Contact: 08/24/2020
Data Release Frequency: Varies

US ENG CONTROLS: Engineering Controls Sites List

A listing of sites with engineering controls in place. Engineering controls include various forms of caps, building foundations, liners, and treatment methods to create pathway elimination for regulated substances to enter environmental media or effect human health.

Date of Government Version: 02/13/2020
Date Data Arrived at EDR: 02/20/2020
Date Made Active in Reports: 05/15/2020
Number of Days to Update: 85

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 05/15/2020
Next Scheduled EDR Contact: 09/07/2020
Data Release Frequency: Varies

US INST CONTROLS: Institutional Controls Sites List

A listing of sites with institutional controls in place. Institutional controls include administrative measures, such as groundwater use restrictions, construction restrictions, property use restrictions, and post remediation care requirements intended to prevent exposure to contaminants remaining on site. Deed restrictions are generally required as part of the institutional controls.

Date of Government Version: 02/13/2020
Date Data Arrived at EDR: 02/20/2020
Date Made Active in Reports: 05/15/2020
Number of Days to Update: 85

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 05/15/2020
Next Scheduled EDR Contact: 09/07/2020
Data Release Frequency: Varies

Federal ERNS list

ERNS: Emergency Response Notification System

Emergency Response Notification System. ERNS records and stores information on reported releases of oil and hazardous substances.

Date of Government Version: 03/22/2020
Date Data Arrived at EDR: 03/24/2020
Date Made Active in Reports: 06/18/2020
Number of Days to Update: 86

Source: National Response Center, United States Coast Guard
Telephone: 202-267-2180
Last EDR Contact: 06/22/2020
Next Scheduled EDR Contact: 10/05/2020
Data Release Frequency: Quarterly

State- and tribal - equivalent NPL

RESPONSE: State Response Sites

Identifies confirmed release sites where DTSC is involved in remediation, either in a lead or oversight capacity. These confirmed release sites are generally high-priority and high potential risk.

Date of Government Version: 04/27/2020
Date Data Arrived at EDR: 04/28/2020
Date Made Active in Reports: 07/13/2020
Number of Days to Update: 76

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 07/27/2020
Next Scheduled EDR Contact: 11/09/2020
Data Release Frequency: Quarterly

State- and tribal - equivalent CERCLIS

ENVIROSTOR: EnviroStor Database

The Department of Toxic Substances Control's (DTSC's) Site Mitigation and Brownfields Reuse Program's (SMBRP's) EnviroStor database identifes sites that have known contamination or sites for which there may be reasons to investigate further. The database includes the following site types: Federal Superfund sites (National Priorities List (NPL)); State Response, including Military Facilities and State Superfund; Voluntary Cleanup; and School sites. EnviroStor provides similar information to the information that was available in CalSites, and provides additional site information, including, but not limited to, identification of formerly-contaminated properties that have been released for reuse, properties where environmental deed restrictions have been recorded to prevent inappropriate land uses, and risk characterization information that is used to assess potential impacts to public health and the environment at contaminated sites.

Date of Government Version: 04/27/2020
Date Data Arrived at EDR: 04/28/2020
Date Made Active in Reports: 07/13/2020
Number of Days to Update: 76

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 07/27/2020
Next Scheduled EDR Contact: 11/09/2020
Data Release Frequency: Quarterly

State and tribal landfill and/or solid waste disposal site lists

SWF/LF (SWIS): Solid Waste Information System

Active, Closed and Inactive Landfills. SWF/LF records typically contain an inve ntory of solid waste disposal facilities or landfills. These may be active or i nactive facilities or open dumps that failed to meet RCRA Section 4004 criteria for solid waste landfills or disposal sites.

Date of Government Version: 05/11/2020
Date Data Arrived at EDR: 05/12/2020
Date Made Active in Reports: 07/27/2020
Number of Days to Update: 76

Source: Department of Resources Recycling and Recovery
Telephone: 916-341-6320
Last EDR Contact: 05/12/2020
Next Scheduled EDR Contact: 08/24/2020
Data Release Frequency: Quarterly

State and tribal leaking storage tank lists

LUST REG 9: Leaking Underground Storage Tank Report
Orange, Riverside, San Diego counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 03/01/2001
Date Data Arrived at EDR: 04/23/2001
Date Made Active in Reports: 05/21/2001
Number of Days to Update: 28

Source: California Regional Water Quality Control Board San Diego Region (9)
Telephone: 858-637-5595
Last EDR Contact: 09/26/2011
Next Scheduled EDR Contact: 01/09/2012
Data Release Frequency: No Update Planned

LUST REG 4: Underground Storage Tank Leak List
Los Angeles, Ventura counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 09/07/2004
Date Data Arrived at EDR: 09/07/2004
Date Made Active in Reports: 10/12/2004
Number of Days to Update: 35

Source: California Regional Water Quality Control Board Los Angeles Region (4)
Telephone: 213-576-6710
Last EDR Contact: 09/06/2011
Next Scheduled EDR Contact: 12/19/2011
Data Release Frequency: No Update Planned

LUST REG 1: Active Toxic Site Investigation
Del Norte, Humboldt, Lake, Mendocino, Modoc, Siskiyou, Sonoma, Trinity counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 02/01/2001
Date Data Arrived at EDR: 02/28/2001
Date Made Active in Reports: 03/29/2001
Number of Days to Update: 29

Source: California Regional Water Quality Control Board North Coast (1)
Telephone: 707-570-3769
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

LUST REG 2: Fuel Leak List
Leaking Underground Storage Tank locations. Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano, Sonoma counties.

Date of Government Version: 09/30/2004
Date Data Arrived at EDR: 10/20/2004
Date Made Active in Reports: 11/19/2004
Number of Days to Update: 30

Source: California Regional Water Quality Control Board San Francisco Bay Region (2)
Telephone: 510-622-2433
Last EDR Contact: 09/19/2011
Next Scheduled EDR Contact: 01/02/2012
Data Release Frequency: No Update Planned

LUST REG 6L: Leaking Underground Storage Tank Case Listing
For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 09/09/2003
Date Data Arrived at EDR: 09/10/2003
Date Made Active in Reports: 10/07/2003
Number of Days to Update: 27

Source: California Regional Water Quality Control Board Lahontan Region (6)
Telephone: 530-542-5572
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: No Update Planned

LUST REG 3: Leaking Underground Storage Tank Database
Leaking Underground Storage Tank locations. Monterey, San Benito, San Luis Obispo, Santa Barbara, Santa Cruz counties.

Date of Government Version: 05/19/2003
Date Data Arrived at EDR: 05/19/2003
Date Made Active in Reports: 06/02/2003
Number of Days to Update: 14

Source: California Regional Water Quality Control Board Central Coast Region (3)
Telephone: 805-542-4786
Last EDR Contact: 07/18/2011
Next Scheduled EDR Contact: 10/31/2011
Data Release Frequency: No Update Planned

LUST: Leaking Underground Fuel Tank Report (GEOTRACKER)
Leaking Underground Storage Tank (LUST) Sites included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

Date of Government Version: 05/13/2020
Date Data Arrived at EDR: 05/13/2020
Date Made Active in Reports: 05/15/2020
Number of Days to Update: 2

Source: State Water Resources Control Board
Telephone: see region list
Last EDR Contact: 06/09/2020
Next Scheduled EDR Contact: 09/21/2020
Data Release Frequency: Quarterly

LUST REG 8: Leaking Underground Storage Tanks

California Regional Water Quality Control Board Santa Ana Region (8). For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 02/14/2005
Date Data Arrived at EDR: 02/15/2005
Date Made Active in Reports: 03/28/2005
Number of Days to Update: 41

Source: California Regional Water Quality Control Board Santa Ana Region (8)
Telephone: 909-782-4496
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

LUST REG 5: Leaking Underground Storage Tank Database

Leaking Underground Storage Tank locations. Alameda, Alpine, Amador, Butte, Colusa, Contra Costa, Calveras, El Dorado, Fresno, Glenn, Kern, Kings, Lake, Lassen, Madera, Mariposa, Merced, Modoc, Napa, Nevada, Placer, Plumas, Sacramento, San Joaquin, Shasta, Solano, Stanislaus, Sutter, Tehama, Tulare, Tuolumne, Yolo, Yuba counties.

Date of Government Version: 07/01/2008
Date Data Arrived at EDR: 07/22/2008
Date Made Active in Reports: 07/31/2008
Number of Days to Update: 9

Source: California Regional Water Quality Control Board Central Valley Region (5)
Telephone: 916-464-4834
Last EDR Contact: 07/01/2011
Next Scheduled EDR Contact: 10/17/2011
Data Release Frequency: No Update Planned

LUST REG 7: Leaking Underground Storage Tank Case Listing

Leaking Underground Storage Tank locations. Imperial, Riverside, San Diego, Santa Barbara counties.

Date of Government Version: 02/26/2004
Date Data Arrived at EDR: 02/26/2004
Date Made Active in Reports: 03/24/2004
Number of Days to Update: 27

Source: California Regional Water Quality Control Board Colorado River Basin Region (7)
Telephone: 760-776-8943
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

LUST REG 6V: Leaking Underground Storage Tank Case Listing

Leaking Underground Storage Tank locations. Inyo, Kern, Los Angeles, Mono, San Bernardino counties.

Date of Government Version: 06/07/2005
Date Data Arrived at EDR: 06/07/2005
Date Made Active in Reports: 06/29/2005
Number of Days to Update: 22

Source: California Regional Water Quality Control Board Victorville Branch Office (6)
Telephone: 760-241-7365
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: No Update Planned

INDIAN LUST R1: Leaking Underground Storage Tanks on Indian Land

A listing of leaking underground storage tank locations on Indian Land.

Date of Government Version: 10/01/2019
Date Data Arrived at EDR: 12/04/2019
Date Made Active in Reports: 02/10/2020
Number of Days to Update: 68

Source: EPA Region 1
Telephone: 617-918-1313
Last EDR Contact: 07/24/2020
Next Scheduled EDR Contact: 11/02/2020
Data Release Frequency: Varies

INDIAN LUST R6: Leaking Underground Storage Tanks on Indian Land

LUSTs on Indian land in New Mexico and Oklahoma.

Date of Government Version: 10/02/2019
Date Data Arrived at EDR: 12/04/2019
Date Made Active in Reports: 02/10/2020
Number of Days to Update: 68

Source: EPA Region 6
Telephone: 214-665-6597
Last EDR Contact: 07/24/2020
Next Scheduled EDR Contact: 11/02/2020
Data Release Frequency: Varies

INDIAN LUST R5: Leaking Underground Storage Tanks on Indian Land
Leaking underground storage tanks located on Indian Land in Michigan, Minnesota and Wisconsin.

Date of Government Version: 10/01/2019
Date Data Arrived at EDR: 12/04/2019
Date Made Active in Reports: 02/10/2020
Number of Days to Update: 68
Source: EPA, Region 5
Telephone: 312-886-7439
Last EDR Contact: 07/24/2020
Next Scheduled EDR Contact: 11/02/2020
Data Release Frequency: Varies

INDIAN LUST R7: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Iowa, Kansas, and Nebraska

Date of Government Version: 10/15/2019
Date Data Arrived at EDR: 12/17/2019
Date Made Active in Reports: 02/10/2020
Number of Days to Update: 55
Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 07/24/2020
Next Scheduled EDR Contact: 11/02/2020
Data Release Frequency: Varies

INDIAN LUST R4: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Florida, Mississippi and North Carolina.

Date of Government Version: 10/10/2019
Date Data Arrived at EDR: 12/05/2019
Date Made Active in Reports: 02/10/2020
Number of Days to Update: 67
Source: EPA Region 4
Telephone: 404-562-8677
Last EDR Contact: 07/24/2020
Next Scheduled EDR Contact: 11/02/2020
Data Release Frequency: Varies

INDIAN LUST R10: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Alaska, Idaho, Oregon and Washington.

Date of Government Version: 10/11/2019
Date Data Arrived at EDR: 12/04/2019
Date Made Active in Reports: 02/10/2020
Number of Days to Update: 68
Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 07/24/2020
Next Scheduled EDR Contact: 11/02/2020
Data Release Frequency: Varies

INDIAN LUST R8: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Colorado, Montana, North Dakota, South Dakota, Utah and Wyoming.

Date of Government Version: 10/03/2019
Date Data Arrived at EDR: 12/04/2019
Date Made Active in Reports: 02/14/2020
Number of Days to Update: 72
Source: EPA Region 8
Telephone: 303-312-6271
Last EDR Contact: 07/24/2020
Next Scheduled EDR Contact: 11/02/2020
Data Release Frequency: Varies

INDIAN LUST R9: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Arizona, California, New Mexico and Nevada

Date of Government Version: 10/04/2019
Date Data Arrived at EDR: 12/04/2019
Date Made Active in Reports: 02/27/2020
Number of Days to Update: 85
Source: Environmental Protection Agency
Telephone: 415-972-3372
Last EDR Contact: 07/24/2020
Next Scheduled EDR Contact: 11/02/2020
Data Release Frequency: Varies

CPS-SLIC: Statewide SLIC Cases (GEOTRACKER)
Cleanup Program Sites (CPS; also known as Site Cleanups [SC] and formerly known as Spills, Leaks, Investigations, and Cleanups [SLIC] sites) included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

Date of Government Version: 05/13/2020
Date Data Arrived at EDR: 05/13/2020
Date Made Active in Reports: 05/14/2020
Number of Days to Update: 1
Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 06/09/2020
Next Scheduled EDR Contact: 09/21/2020
Data Release Frequency: Varies

SLIC REG 1: Active Toxic Site Investigations
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/03/2003
Date Data Arrived at EDR: 04/07/2003
Date Made Active in Reports: 04/25/2003
Number of Days to Update: 18

Source: California Regional Water Quality Control Board, North Coast Region (1)
Telephone: 707-576-2220
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

SLIC REG 2: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/30/2004
Date Data Arrived at EDR: 10/20/2004
Date Made Active in Reports: 11/19/2004
Number of Days to Update: 30

Source: Regional Water Quality Control Board San Francisco Bay Region (2)
Telephone: 510-286-0457
Last EDR Contact: 09/19/2011
Next Scheduled EDR Contact: 01/02/2012
Data Release Frequency: No Update Planned

SLIC REG 3: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 05/18/2006
Date Data Arrived at EDR: 05/18/2006
Date Made Active in Reports: 06/15/2006
Number of Days to Update: 28

Source: California Regional Water Quality Control Board Central Coast Region (3)
Telephone: 805-549-3147
Last EDR Contact: 07/18/2011
Next Scheduled EDR Contact: 10/31/2011
Data Release Frequency: No Update Planned

SLIC REG 4: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 11/17/2004
Date Data Arrived at EDR: 11/18/2004
Date Made Active in Reports: 01/04/2005
Number of Days to Update: 47

Source: Region Water Quality Control Board Los Angeles Region (4)
Telephone: 213-576-6600
Last EDR Contact: 07/01/2011
Next Scheduled EDR Contact: 10/17/2011
Data Release Frequency: No Update Planned

SLIC REG 5: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/01/2005
Date Data Arrived at EDR: 04/05/2005
Date Made Active in Reports: 04/21/2005
Number of Days to Update: 16

Source: Regional Water Quality Control Board Central Valley Region (5)
Telephone: 916-464-3291
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: No Update Planned

SLIC REG 6V: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 05/24/2005
Date Data Arrived at EDR: 05/25/2005
Date Made Active in Reports: 06/16/2005
Number of Days to Update: 22

Source: Regional Water Quality Control Board, Victorville Branch
Telephone: 619-241-6583
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

SLIC REG 6L: SLIC Sites
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/07/2004
Date Data Arrived at EDR: 09/07/2004
Date Made Active in Reports: 10/12/2004
Number of Days to Update: 35
Source: California Regional Water Quality Control Board, Lahontan Region
Telephone: 530-542-5574
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

SLIC REG 7: SLIC List
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 11/24/2004
Date Data Arrived at EDR: 11/29/2004
Date Made Active in Reports: 01/04/2005
Number of Days to Update: 36
Source: California Regional Quality Control Board, Colorado River Basin Region
Telephone: 760-346-7491
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

SLIC REG 8: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/03/2008
Date Data Arrived at EDR: 04/03/2008
Date Made Active in Reports: 04/14/2008
Number of Days to Update: 11
Source: California Region Water Quality Control Board Santa Ana Region (8)
Telephone: 951-782-3298
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: No Update Planned

SLIC REG 9: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/10/2007
Date Data Arrived at EDR: 09/11/2007
Date Made Active in Reports: 09/28/2007
Number of Days to Update: 17
Source: California Regional Water Quality Control Board San Diego Region (9)
Telephone: 858-467-2980
Last EDR Contact: 08/08/2011
Next Scheduled EDR Contact: 11/21/2011
Data Release Frequency: No Update Planned

State and tribal registered storage tank lists

FEMA UST: Underground Storage Tank Listing
A listing of all FEMA owned underground storage tanks.

Date of Government Version: 02/01/2020
Date Data Arrived at EDR: 03/19/2020
Date Made Active in Reports: 06/09/2020
Number of Days to Update: 82
Source: FEMA
Telephone: 202-646-5797
Last EDR Contact: 07/06/2020
Next Scheduled EDR Contact: 10/19/2020
Data Release Frequency: Varies

UST: Active UST Facilities
Active UST facilities gathered from the local regulatory agencies

Date of Government Version: 03/09/2020
Date Data Arrived at EDR: 03/10/2020
Date Made Active in Reports: 05/20/2020
Number of Days to Update: 71
Source: SWRCB
Telephone: 916-341-5851
Last EDR Contact: 06/09/2020
Next Scheduled EDR Contact: 09/21/2020
Data Release Frequency: Semi-Annually

UST CLOSURE: Proposed Closure of Underground Storage Tank (UST) Cases

UST cases that are being considered for closure by either the State Water Resources Control Board or the Executive Director have been posted for a 60-day public comment period. UST Case Closures being proposed for consideration by the State Water Resources Control Board. These are primarily UST cases that meet closure criteria under the decisional framework in State Water Board Resolution No. 92-49 and other Board orders. UST Case Closures proposed for consideration by the Executive Director pursuant to State Water Board Resolution No. 2012-0061. These are cases that meet the criteria of the Low-Threat UST Case Closure Policy. UST Case Closure Review Denials and Approved Orders.

Date of Government Version: 03/09/2020
Date Data Arrived at EDR: 03/11/2020
Date Made Active in Reports: 05/26/2020
Number of Days to Update: 76

Source: State Water Resources Control Board
Telephone: 916-327-7844
Last EDR Contact: 06/09/2020
Next Scheduled EDR Contact: 09/21/2020
Data Release Frequency: Varies

MILITARY UST SITES: Military UST Sites (GEOTRACKER)

Military ust sites

Date of Government Version: 05/13/2020
Date Data Arrived at EDR: 05/13/2020
Date Made Active in Reports: 05/15/2020
Number of Days to Update: 2

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 06/09/2020
Next Scheduled EDR Contact: 09/21/2020
Data Release Frequency: Varies

AST: Aboveground Petroleum Storage Tank Facilities

A listing of aboveground storage tank petroleum storage tank locations.

Date of Government Version: 07/06/2016
Date Data Arrived at EDR: 07/12/2016
Date Made Active in Reports: 09/19/2016
Number of Days to Update: 69

Source: California Environmental Protection Agency
Telephone: 916-327-5092
Last EDR Contact: 06/10/2020
Next Scheduled EDR Contact: 09/28/2020
Data Release Frequency: Varies

INDIAN UST R7: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 7 (Iowa, Kansas, Missouri, Nebraska, and 9 Tribal Nations).

Date of Government Version: 10/11/2019
Date Data Arrived at EDR: 12/04/2019
Date Made Active in Reports: 02/10/2020
Number of Days to Update: 68

Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 07/24/2020
Next Scheduled EDR Contact: 11/02/2020
Data Release Frequency: Varies

INDIAN UST R5: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 5 (Michigan, Minnesota and Wisconsin and Tribal Nations).

Date of Government Version: 10/01/2019
Date Data Arrived at EDR: 12/04/2019
Date Made Active in Reports: 02/10/2020
Number of Days to Update: 68

Source: EPA Region 5
Telephone: 312-886-6136
Last EDR Contact: 07/24/2020
Next Scheduled EDR Contact: 11/02/2020
Data Release Frequency: Varies

INDIAN UST R9: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 9 (Arizona, California, Hawaii, Nevada, the Pacific Islands, and Tribal Nations).

Date of Government Version: 10/04/2019
Date Data Arrived at EDR: 12/04/2019
Date Made Active in Reports: 02/27/2020
Number of Days to Update: 85

Source: EPA Region 9
Telephone: 415-972-3368
Last EDR Contact: 07/23/2020
Next Scheduled EDR Contact: 11/01/2020
Data Release Frequency: Varies

INDIAN UST R10: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 10 (Alaska, Idaho, Oregon, Washington, and Tribal Nations).

Date of Government Version: 10/11/2019
Date Data Arrived at EDR: 12/04/2019
Date Made Active in Reports: 02/10/2020
Number of Days to Update: 68

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 07/24/2020
Next Scheduled EDR Contact: 11/02/2020
Data Release Frequency: Varies

INDIAN UST R1: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 1 (Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont and ten Tribal Nations).

Date of Government Version: 10/01/2019
Date Data Arrived at EDR: 12/04/2019
Date Made Active in Reports: 02/10/2020
Number of Days to Update: 68

Source: EPA, Region 1
Telephone: 617-918-1313
Last EDR Contact: 07/24/2020
Next Scheduled EDR Contact: 11/02/2020
Data Release Frequency: Varies

INDIAN UST R6: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 6 (Louisiana, Arkansas, Oklahoma, New Mexico, Texas and 65 Tribes).

Date of Government Version: 10/02/2019
Date Data Arrived at EDR: 12/04/2019
Date Made Active in Reports: 02/10/2020
Number of Days to Update: 68

Source: EPA Region 6
Telephone: 214-665-7591
Last EDR Contact: 07/24/2020
Next Scheduled EDR Contact: 11/02/2020
Data Release Frequency: Varies

INDIAN UST R8: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 8 (Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming and 27 Tribal Nations).

Date of Government Version: 10/03/2019
Date Data Arrived at EDR: 12/04/2019
Date Made Active in Reports: 02/14/2020
Number of Days to Update: 72

Source: EPA Region 8
Telephone: 303-312-6137
Last EDR Contact: 07/24/2020
Next Scheduled EDR Contact: 11/02/2020
Data Release Frequency: Varies

INDIAN UST R4: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 4 (Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee and Tribal Nations)

Date of Government Version: 10/10/2019
Date Data Arrived at EDR: 12/05/2019
Date Made Active in Reports: 02/10/2020
Number of Days to Update: 67

Source: EPA Region 4
Telephone: 404-562-9424
Last EDR Contact: 07/24/2020
Next Scheduled EDR Contact: 11/02/2020
Data Release Frequency: Varies

State and tribal voluntary cleanup sites

INDIAN VCP R1: Voluntary Cleanup Priority Listing

A listing of voluntary cleanup priority sites located on Indian Land located in Region 1.

Date of Government Version: 07/27/2015
Date Data Arrived at EDR: 09/29/2015
Date Made Active in Reports: 02/18/2016
Number of Days to Update: 142

Source: EPA, Region 1
Telephone: 617-918-1102
Last EDR Contact: 06/17/2020
Next Scheduled EDR Contact: 10/05/2020
Data Release Frequency: Varies

INDIAN VCP R7: Voluntary Cleanup Priority Lisitng
A listing of voluntary cleanup priority sites located on Indian Land located in Region 7.

Date of Government Version: 03/20/2008
Date Data Arrived at EDR: 04/22/2008
Date Made Active in Reports: 05/19/2008
Number of Days to Update: 27

Source: EPA, Region 7
Telephone: 913-551-7365
Last EDR Contact: 04/20/2009
Next Scheduled EDR Contact: 07/20/2009
Data Release Frequency: Varies

VCP: Voluntary Cleanup Program Properties
Contains low threat level properties with either confirmed or unconfirmed releases and the project proponents have request that DTSC oversee investigation and/or cleanup activities and have agreed to provide coverage for DTSC's costs.

Date of Government Version: 04/27/2020
Date Data Arrived at EDR: 04/28/2020
Date Made Active in Reports: 07/13/2020
Number of Days to Update: 76

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 07/27/2020
Next Scheduled EDR Contact: 11/09/2020
Data Release Frequency: Quarterly

State and tribal Brownfields sites

BROWNFIELDS: Considered Brownfieds Sites Listing
A listing of sites the SWRCB considers to be Brownfields since these are sites have come to them through the MOA Process.

Date of Government Version: 03/23/2020
Date Data Arrived at EDR: 03/24/2020
Date Made Active in Reports: 06/05/2020
Number of Days to Update: 73

Source: State Water Resources Control Board
Telephone: 916-323-7905
Last EDR Contact: 06/22/2020
Next Scheduled EDR Contact: 10/05/2020
Data Release Frequency: Quarterly

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS: A Listing of Brownfields Sites
Brownfields are real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. Cleaning up and reinvesting in these properties takes development pressures off of undeveloped, open land, and both improves and protects the environment. Assessment, Cleanup and Redevelopment Exchange System (ACRES) stores information reported by EPA Brownfields grant recipients on brownfields properties assessed or cleaned up with grant funding as well as information on Targeted Brownfields Assessments performed by EPA Regions. A listing of ACRES Brownfield sites is obtained from Cleanups in My Community. Cleanups in My Community provides information on Brownfields properties for which information is reported back to EPA, as well as areas served by Brownfields grant programs.

Date of Government Version: 06/01/2020
Date Data Arrived at EDR: 06/02/2020
Date Made Active in Reports: 06/09/2020
Number of Days to Update: 7

Source: Environmental Protection Agency
Telephone: 202-566-2777
Last EDR Contact: 06/02/2020
Next Scheduled EDR Contact: 09/28/2020
Data Release Frequency: Semi-Annually

Local Lists of Landfill / Solid Waste Disposal Sites

WMUDS/SWAT: Waste Management Unit Database
Waste Management Unit Database System. WMUDS is used by the State Water Resources Control Board staff and the Regional Water Quality Control Boards for program tracking and inventory of waste management units. WMUDS is composed of the following databases: Facility Information, Scheduled Inspections Information, Waste Management Unit Information, SWAT Program Information, SWAT Report Summary Information, SWAT Report Summary Data, Chapter 15 (formerly Subchapter 15) Information, Chapter 15 Monitoring Parameters, TPCA Program Information, RCRA Program Information, Closure Information, and Interested Parties Information.

Date of Government Version: 04/01/2000
Date Data Arrived at EDR: 04/10/2000
Date Made Active in Reports: 05/10/2000
Number of Days to Update: 30

Source: State Water Resources Control Board
Telephone: 916-227-4448
Last EDR Contact: 07/21/2020
Next Scheduled EDR Contact: 11/09/2020
Data Release Frequency: No Update Planned

SWRCY: Recycler Database
A listing of recycling facilities in California.

Date of Government Version: 03/09/2020
Date Data Arrived at EDR: 03/10/2020
Date Made Active in Reports: 05/19/2020
Number of Days to Update: 70

Source: Department of Conservation
Telephone: 916-323-3836
Last EDR Contact: 06/09/2020
Next Scheduled EDR Contact: 09/21/2020
Data Release Frequency: Quarterly

HAULERS: Registered Waste Tire Haulers Listing
A listing of registered waste tire haulers.

Date of Government Version: 11/15/2019
Date Data Arrived at EDR: 11/15/2019
Date Made Active in Reports: 01/23/2020
Number of Days to Update: 69

Source: Integrated Waste Management Board
Telephone: 916-341-6422
Last EDR Contact: 05/06/2020
Next Scheduled EDR Contact: 08/24/2020
Data Release Frequency: Varies

INDIAN ODI: Report on the Status of Open Dumps on Indian Lands
Location of open dumps on Indian land.

Date of Government Version: 12/31/1998
Date Data Arrived at EDR: 12/03/2007
Date Made Active in Reports: 01/24/2008
Number of Days to Update: 52

Source: Environmental Protection Agency
Telephone: 703-308-8245
Last EDR Contact: 07/21/2020
Next Scheduled EDR Contact: 11/09/2020
Data Release Frequency: Varies

ODI: Open Dump Inventory
An open dump is defined as a disposal facility that does not comply with one or more of the Part 257 or Part 258 Subtitle D Criteria.

Date of Government Version: 06/30/1985
Date Data Arrived at EDR: 08/09/2004
Date Made Active in Reports: 09/17/2004
Number of Days to Update: 39

Source: Environmental Protection Agency
Telephone: 800-424-9346
Last EDR Contact: 06/09/2004
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

DEBRIS REGION 9: Torres Martinez Reservation Illegal Dump Site Locations
A listing of illegal dump sites location on the Torres Martinez Indian Reservation located in eastern Riverside County and northern Imperial County, California.

Date of Government Version: 01/12/2009
Date Data Arrived at EDR: 05/07/2009
Date Made Active in Reports: 09/21/2009
Number of Days to Update: 137

Source: EPA, Region 9
Telephone: 415-947-4219
Last EDR Contact: 07/14/2020
Next Scheduled EDR Contact: 11/02/2020
Data Release Frequency: No Update Planned

IHS OPEN DUMPS: Open Dumps on Indian Land
A listing of all open dumps located on Indian Land in the United States.

Date of Government Version: 04/01/2014
Date Data Arrived at EDR: 08/06/2014
Date Made Active in Reports: 01/29/2015
Number of Days to Update: 176

Source: Department of Health & Human Serivces, Indian Health Service
Telephone: 301-443-1452
Last EDR Contact: 05/01/2020
Next Scheduled EDR Contact: 08/10/2020
Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Local Lists of Hazardous waste / Contaminated Sites

US HIST CDL: National Clandestine Laboratory Register

A listing of clandestine drug lab locations that have been removed from the DEAs National Clandestine Laboratory Register.

Date of Government Version: 03/18/2020
Date Data Arrived at EDR: 03/19/2020
Date Made Active in Reports: 06/09/2020
Number of Days to Update: 82

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 05/18/2020
Next Scheduled EDR Contact: 09/07/2020
Data Release Frequency: No Update Planned

HIST CAL-SITES: Calsites Database

The Calsites database contains potential or confirmed hazardous substance release properties. In 1996, California EPA reevaluated and significantly reduced the number of sites in the Calsites database. No longer updated by the state agency. It has been replaced by ENVIROSTOR.

Date of Government Version: 08/08/2005
Date Data Arrived at EDR: 08/03/2006
Date Made Active in Reports: 08/24/2006
Number of Days to Update: 21

Source: Department of Toxic Substance Control
Telephone: 916-323-3400
Last EDR Contact: 02/23/2009
Next Scheduled EDR Contact: 05/25/2009
Data Release Frequency: No Update Planned

SCH: School Property Evaluation Program

This category contains proposed and existing school sites that are being evaluated by DTSC for possible hazardous materials contamination. In some cases, these properties may be listed in the CalSites category depending on the level of threat to public health and safety or the environment they pose.

Date of Government Version: 04/27/2020
Date Data Arrived at EDR: 04/28/2020
Date Made Active in Reports: 07/13/2020
Number of Days to Update: 76

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 07/27/2020
Next Scheduled EDR Contact: 11/09/2020
Data Release Frequency: Quarterly

CDL: Clandestine Drug Labs

A listing of drug lab locations. Listing of a location in this database does not indicate that any illegal drug lab materials were or were not present there, and does not constitute a determination that the location either requires or does not require additional cleanup work.

Date of Government Version: 12/31/2018
Date Data Arrived at EDR: 02/05/2020
Date Made Active in Reports: 04/15/2020
Number of Days to Update: 70

Source: Department of Toxic Substances Control
Telephone: 916-255-6504
Last EDR Contact: 07/09/2020
Next Scheduled EDR Contact: 10/19/2020
Data Release Frequency: Varies

TOXIC PITS: Toxic Pits Cleanup Act Sites

Toxic PITS Cleanup Act Sites. TOXIC PITS identifies sites suspected of containing hazardous substances where cleanup has not yet been completed.

Date of Government Version: 07/01/1995
Date Data Arrived at EDR: 08/30/1995
Date Made Active in Reports: 09/26/1995
Number of Days to Update: 27

Source: State Water Resources Control Board
Telephone: 916-227-4364
Last EDR Contact: 01/26/2009
Next Scheduled EDR Contact: 04/27/2009
Data Release Frequency: No Update Planned

CERS HAZ WASTE: CERS HAZ WASTE

List of sites in the California Environmental Protection Agency (CalEPA) Regulated Site Portal which fall under the Hazardous Chemical Management, Hazardous Waste Onsite Treatment, Household Hazardous Waste Collection, Hazardous Waste Generator, and RCRA LQ HW Generator programs.

Date of Government Version: 04/20/2020
Date Data Arrived at EDR: 04/21/2020
Date Made Active in Reports: 07/13/2020
Number of Days to Update: 83

Source: CalEPA
Telephone: 916-323-2514
Last EDR Contact: 07/21/2020
Next Scheduled EDR Contact: 11/02/2020
Data Release Frequency: Quarterly

US CDL: Clandestine Drug Labs

A listing of clandestine drug lab locations. The U.S. Department of Justice ("the Department") provides this web site as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy. Members of the public must verify the accuracy of all entries by, for example, contacting local law enforcement and local health departments.

Date of Government Version: 03/18/2020
Date Data Arrived at EDR: 03/19/2020
Date Made Active in Reports: 06/09/2020
Number of Days to Update: 82

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 05/18/2020
Next Scheduled EDR Contact: 09/07/2020
Data Release Frequency: Quarterly

PFAS: PFAS Contamination Site Location Listing

A listing of PFAS contaminated sites included in the GeoTracker database.

Date of Government Version: 03/09/2020
Date Data Arrived at EDR: 03/10/2020
Date Made Active in Reports: 05/19/2020
Number of Days to Update: 70

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 06/09/2020
Next Scheduled EDR Contact: 09/21/2020
Data Release Frequency: Varies

Local Lists of Registered Storage Tanks

SWEEPS UST: SWEEPS UST Listing

Statewide Environmental Evaluation and Planning System. This underground storage tank listing was updated and maintained by a company contacted by the SWRCB in the early 1990's. The listing is no longer updated or maintained. The local agency is the contact for more information on a site on the SWEEPS list.

Date of Government Version: 06/01/1994
Date Data Arrived at EDR: 07/07/2005
Date Made Active in Reports: 08/11/2005
Number of Days to Update: 35

Source: State Water Resources Control Board
Telephone: N/A
Last EDR Contact: 06/03/2005
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

UST MENDOCINO: Mendocino County UST Database

A listing of underground storage tank locations in Mendocino County.

Date of Government Version: 12/19/2019
Date Data Arrived at EDR: 12/23/2019
Date Made Active in Reports: 02/21/2020
Number of Days to Update: 60

Source: Department of Public Health
Telephone: 707-463-4466
Last EDR Contact: 05/15/2020
Next Scheduled EDR Contact: 09/07/2020
Data Release Frequency: Annually

HIST UST: Hazardous Substance Storage Container Database

The Hazardous Substance Storage Container Database is a historical listing of UST sites. Refer to local/county source for current data.

Date of Government Version: 10/15/1990
Date Data Arrived at EDR: 01/25/1991
Date Made Active in Reports: 02/12/1991
Number of Days to Update: 18

Source: State Water Resources Control Board
Telephone: 916-341-5851
Last EDR Contact: 07/26/2001
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

SAN FRANCISCO AST: Aboveground Storage Tank Site Listing
Aboveground storage tank sites

Date of Government Version: 05/04/2020
Date Data Arrived at EDR: 05/06/2020
Date Made Active in Reports: 07/17/2020
Number of Days to Update: 72

Source: San Francisco County Department of Public Health
Telephone: 415-252-3896
Last EDR Contact: 04/23/2020
Next Scheduled EDR Contact: 08/17/2020
Data Release Frequency: Varies

CERS TANKS: California Environmental Reporting System (CERS) Tanks
List of sites in the California Environmental Protection Agency (CalEPA) Regulated Site Portal which fall under the Aboveground Petroleum Storage and Underground Storage Tank regulatory programs.

Date of Government Version: 04/20/2020
Date Data Arrived at EDR: 04/21/2020
Date Made Active in Reports: 07/09/2020
Number of Days to Update: 79

Source: California Environmental Protection Agency
Telephone: 916-323-2514
Last EDR Contact: 07/21/2020
Next Scheduled EDR Contact: 11/02/2020
Data Release Frequency: Quarterly

CA FID UST: Facility Inventory Database
The Facility Inventory Database (FID) contains a historical listing of active and inactive underground storage tank locations from the State Water Resource Control Board. Refer to local/county source for current data.

Date of Government Version: 10/31/1994
Date Data Arrived at EDR: 09/05/1995
Date Made Active in Reports: 09/29/1995
Number of Days to Update: 24

Source: California Environmental Protection Agency
Telephone: 916-341-5851
Last EDR Contact: 12/28/1998
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

Local Land Records

LIENS: Environmental Liens Listing
A listing of property locations with environmental liens for California where DTSC is a lien holder.

Date of Government Version: 03/03/2020
Date Data Arrived at EDR: 03/05/2020
Date Made Active in Reports: 05/14/2020
Number of Days to Update: 70

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 05/27/2020
Next Scheduled EDR Contact: 09/14/2020
Data Release Frequency: Varies

LIENS 2: CERCLA Lien Information
A Federal CERCLA ('Superfund') lien can exist by operation of law at any site or property at which EPA has spent Superfund monies. These monies are spent to investigate and address releases and threatened releases of contamination. CERCLIS provides information as to the identity of these sites and properties.

Date of Government Version: 04/27/2020
Date Data Arrived at EDR: 05/06/2020
Date Made Active in Reports: 05/28/2020
Number of Days to Update: 22

Source: Environmental Protection Agency
Telephone: 202-564-6023
Last EDR Contact: 06/30/2020
Next Scheduled EDR Contact: 10/12/2020
Data Release Frequency: Semi-Annually

DEED: Deed Restriction Listing

Site Mitigation and Brownfields Reuse Program Facility Sites with Deed Restrictions & Hazardous Waste Management Program Facility Sites with Deed / Land Use Restriction. The DTSC Site Mitigation and Brownfields Reuse Program (SMBRP) list includes sites cleaned up under the program's oversight and generally does not include current or former hazardous waste facilities that required a hazardous waste facility permit. The list represents deed restrictions that are active. Some sites have multiple deed restrictions. The DTSC Hazardous Waste Management Program (HWMP) has developed a list of current or former hazardous waste facilities that have a recorded land use restriction at the local county recorder's office. The land use restrictions on this list were required by the DTSC HWMP as a result of the presence of hazardous substances that remain on site after the facility (or part of the facility) has been closed or cleaned up. The types of land use restriction include deed notice, deed restriction, or a land use restriction that binds current and future owners.

Date of Government Version: 03/02/2020
Date Data Arrived at EDR: 03/03/2020
Date Made Active in Reports: 05/13/2020
Number of Days to Update: 71

Source: DTSC and SWRCB
Telephone: 916-323-3400
Last EDR Contact: 06/02/2020
Next Scheduled EDR Contact: 09/14/2020
Data Release Frequency: Semi-Annually

Records of Emergency Release Reports

HMIRS: Hazardous Materials Information Reporting System

Hazardous Materials Incident Report System. HMIRS contains hazardous material spill incidents reported to DOT.

Date of Government Version: 02/27/2020
Date Data Arrived at EDR: 03/24/2020
Date Made Active in Reports: 06/18/2020
Number of Days to Update: 86

Source: U.S. Department of Transportation
Telephone: 202-366-4555
Last EDR Contact: 06/23/2020
Next Scheduled EDR Contact: 10/05/2020
Data Release Frequency: Quarterly

CHMIRS: California Hazardous Material Incident Report System

California Hazardous Material Incident Reporting System. CHMIRS contains information on reported hazardous material incidents (accidental releases or spills).

Date of Government Version: 03/31/2020
Date Data Arrived at EDR: 04/21/2020
Date Made Active in Reports: 07/09/2020
Number of Days to Update: 79

Source: Office of Emergency Services
Telephone: 916-845-8400
Last EDR Contact: 07/21/2020
Next Scheduled EDR Contact: 11/02/2020
Data Release Frequency: Semi-Annually

LDS: Land Disposal Sites Listing (GEOTRACKER)

Land Disposal sites (Landfills) included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

Date of Government Version: 05/13/2020
Date Data Arrived at EDR: 05/13/2020
Date Made Active in Reports: 05/14/2020
Number of Days to Update: 1

Source: State Water Qualilty Control Board
Telephone: 866-480-1028
Last EDR Contact: 06/09/2020
Next Scheduled EDR Contact: 09/21/2020
Data Release Frequency: Quarterly

MCS: Military Cleanup Sites Listing (GEOTRACKER)

Military sites (consisting of: Military UST sites; Military Privatized sites; and Military Cleanup sites [formerly known as DoD non UST]) included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

Date of Government Version: 05/13/2020
Date Data Arrived at EDR: 05/13/2020
Date Made Active in Reports: 05/15/2020
Number of Days to Update: 2

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 06/09/2020
Next Scheduled EDR Contact: 09/21/2020
Data Release Frequency: Quarterly

SPILLS 90: SPILLS90 data from FirstSearch

Spills 90 includes those spill and release records available exclusively from FirstSearch databases. Typically, they may include chemical, oil and/or hazardous substance spills recorded after 1990. Duplicate records that are already included in EDR incident and release records are not included in Spills 90.

Date of Government Version: 06/06/2012
Date Data Arrived at EDR: 01/03/2013
Date Made Active in Reports: 02/22/2013
Number of Days to Update: 50

Source: FirstSearch
Telephone: N/A
Last EDR Contact: 01/03/2013
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

Other Ascertainable Records

RCRA NonGen / NLR: RCRA - Non Generators / No Longer Regulated

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Non-Generators do not presently generate hazardous waste.

Date of Government Version: 03/23/2020
Date Data Arrived at EDR: 03/25/2020
Date Made Active in Reports: 05/21/2020
Number of Days to Update: 57

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 06/22/2020
Next Scheduled EDR Contact: 10/05/2020
Data Release Frequency: Quarterly

FUDS: Formerly Used Defense Sites

The listing includes locations of Formerly Used Defense Sites properties where the US Army Corps of Engineers is actively working or will take necessary cleanup actions.

Date of Government Version: 01/28/2020
Date Data Arrived at EDR: 02/19/2020
Date Made Active in Reports: 05/14/2020
Number of Days to Update: 85

Source: U.S. Army Corps of Engineers
Telephone: 202-528-4285
Last EDR Contact: 05/18/2020
Next Scheduled EDR Contact: 08/31/2020
Data Release Frequency: Varies

DOD: Department of Defense Sites

This data set consists of federally owned or administered lands, administered by the Department of Defense, that have any area equal to or greater than 640 acres of the United States, Puerto Rico, and the U.S. Virgin Islands.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 11/10/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 62

Source: USGS
Telephone: 888-275-8747
Last EDR Contact: 07/09/2020
Next Scheduled EDR Contact: 10/19/2020
Data Release Frequency: Semi-Annually

FEDLAND: Federal and Indian Lands

Federally and Indian administrated lands of the United States. Lands included are administrated by: Army Corps of Engineers, Bureau of Reclamation, National Wild and Scenic River, National Wildlife Refuge, Public Domain Land, Wilderness, Wilderness Study Area, Wildlife Management Area, Bureau of Indian Affairs, Bureau of Land Management, Department of Justice, Forest Service, Fish and Wildlife Service, National Park Service.

Date of Government Version: 04/02/2018
Date Data Arrived at EDR: 04/11/2018
Date Made Active in Reports: 11/06/2019
Number of Days to Update: 574

Source: U.S. Geological Survey
Telephone: 888-275-8747
Last EDR Contact: 07/06/2020
Next Scheduled EDR Contact: 10/19/2020
Data Release Frequency: N/A

SCRD DRYCLEANERS: State Coalition for Remediation of Drycleaners Listing

The State Coalition for Remediation of Drycleaners was established in 1998, with support from the U.S. EPA Office of Superfund Remediation and Technology Innovation. It is comprised of representatives of states with established drycleaner remediation programs. Currently the member states are Alabama, Connecticut, Florida, Illinois, Kansas, Minnesota, Missouri, North Carolina, Oregon, South Carolina, Tennessee, Texas, and Wisconsin.

Date of Government Version: 01/01/2017
Date Data Arrived at EDR: 02/03/2017
Date Made Active in Reports: 04/07/2017
Number of Days to Update: 63

Source: Environmental Protection Agency
Telephone: 615-532-8599
Last EDR Contact: 05/15/2020
Next Scheduled EDR Contact: 08/24/2020
Data Release Frequency: Varies

US FIN ASSUR: Financial Assurance Information

All owners and operators of facilities that treat, store, or dispose of hazardous waste are required to provide proof that they will have sufficient funds to pay for the clean up, closure, and post-closure care of their facilities.

Date of Government Version: 03/23/2020
Date Data Arrived at EDR: 03/24/2020
Date Made Active in Reports: 06/18/2020
Number of Days to Update: 86

Source: Environmental Protection Agency
Telephone: 202-566-1917
Last EDR Contact: 06/22/2020
Next Scheduled EDR Contact: 10/05/2020
Data Release Frequency: Quarterly

EPA WATCH LIST: EPA WATCH LIST

EPA maintains a "Watch List" to facilitate dialogue between EPA, state and local environmental agencies on enforcement matters relating to facilities with alleged violations identified as either significant or high priority. Being on the Watch List does not mean that the facility has actually violated the law only that an investigation by EPA or a state or local environmental agency has led those organizations to allege that an unproven violation has in fact occurred. Being on the Watch List does not represent a higher level of concern regarding the alleged violations that were detected, but instead indicates cases requiring additional dialogue between EPA, state and local agencies - primarily because of the length of time the alleged violation has gone unaddressed or unresolved.

Date of Government Version: 08/30/2013
Date Data Arrived at EDR: 03/21/2014
Date Made Active in Reports: 06/17/2014
Number of Days to Update: 88

Source: Environmental Protection Agency
Telephone: 617-520-3000
Last EDR Contact: 05/04/2020
Next Scheduled EDR Contact: 08/17/2020
Data Release Frequency: Quarterly

2020 COR ACTION: 2020 Corrective Action Program List

The EPA has set ambitious goals for the RCRA Corrective Action program by creating the 2020 Corrective Action Universe. This RCRA cleanup baseline includes facilities expected to need corrective action. The 2020 universe contains a wide variety of sites. Some properties are heavily contaminated while others were contaminated but have since been cleaned up. Still others have not been fully investigated yet, and may require little or no remediation. Inclusion in the 2020 Universe does not necessarily imply failure on the part of a facility to meet its RCRA obligations.

Date of Government Version: 09/30/2017
Date Data Arrived at EDR: 05/08/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 73

Source: Environmental Protection Agency
Telephone: 703-308-4044
Last EDR Contact: 05/08/2020
Next Scheduled EDR Contact: 08/17/2020
Data Release Frequency: Varies

TSCA: Toxic Substances Control Act

Toxic Substances Control Act. TSCA identifies manufacturers and importers of chemical substances included on the TSCA Chemical Substance Inventory list. It includes data on the production volume of these substances by plant site.

Date of Government Version: 12/31/2016
Date Data Arrived at EDR: 06/21/2017
Date Made Active in Reports: 01/05/2018
Number of Days to Update: 198

Source: EPA
Telephone: 202-260-5521
Last EDR Contact: 06/17/2020
Next Scheduled EDR Contact: 09/28/2020
Data Release Frequency: Every 4 Years

TRIS: Toxic Chemical Release Inventory System

Toxic Release Inventory System. TRIS identifies facilities which release toxic chemicals to the air, water and land in reportable quantities under SARA Title III Section 313.

Date of Government Version: 12/31/2018
Date Data Arrived at EDR: 02/05/2020
Date Made Active in Reports: 04/24/2020
Number of Days to Update: 79

Source: EPA
Telephone: 202-566-0250
Last EDR Contact: 05/21/2020
Next Scheduled EDR Contact: 08/31/2020
Data Release Frequency: Annually

SSTS: Section 7 Tracking Systems

Section 7 of the Federal Insecticide, Fungicide and Rodenticide Act, as amended (92 Stat. 829) requires all registered pesticide-producing establishments to submit a report to the Environmental Protection Agency by March 1st each year. Each establishment must report the types and amounts of pesticides, active ingredients and devices being produced, and those having been produced and sold or distributed in the past year.

Date of Government Version: 03/01/2020
Date Data Arrived at EDR: 04/21/2020
Date Made Active in Reports: 07/15/2020
Number of Days to Update: 85

Source: EPA
Telephone: 202-564-4203
Last EDR Contact: 07/21/2020
Next Scheduled EDR Contact: 11/02/2020
Data Release Frequency: Annually

ROD: Records Of Decision

Record of Decision. ROD documents mandate a permanent remedy at an NPL (Superfund) site containing technical and health information to aid in the cleanup.

Date of Government Version: 04/27/2020
Date Data Arrived at EDR: 05/06/2020
Date Made Active in Reports: 05/28/2020
Number of Days to Update: 22

Source: EPA
Telephone: 703-416-0223
Last EDR Contact: 06/30/2020
Next Scheduled EDR Contact: 09/14/2020
Data Release Frequency: Annually

RMP: Risk Management Plans

When Congress passed the Clean Air Act Amendments of 1990, it required EPA to publish regulations and guidance for chemical accident prevention at facilities using extremely hazardous substances. The Risk Management Program Rule (RMP Rule) was written to implement Section 112(r) of these amendments. The rule, which built upon existing industry codes and standards, requires companies of all sizes that use certain flammable and toxic substances to develop a Risk Management Program, which includes a(n): Hazard assessment that details the potential effects of an accidental release, an accident history of the last five years, and an evaluation of worst-case and alternative accidental releases; Prevention program that includes safety precautions and maintenance, monitoring, and employee training measures; and Emergency response program that spells out emergency health care, employee training measures and procedures for informing the public and response agencies (e.g the fire department) should an accident occur.

Date of Government Version: 11/05/2019
Date Data Arrived at EDR: 11/20/2019
Date Made Active in Reports: 04/17/2020
Number of Days to Update: 149

Source: Environmental Protection Agency
Telephone: 202-564-8600
Last EDR Contact: 07/15/2020
Next Scheduled EDR Contact: 11/02/2020
Data Release Frequency: Varies

RAATS: RCRA Administrative Action Tracking System

RCRA Administration Action Tracking System. RAATS contains records based on enforcement actions issued under RCRA pertaining to major violators and includes administrative and civil actions brought by the EPA. For administration actions after September 30, 1995, data entry in the RAATS database was discontinued. EPA will retain a copy of the database for historical records. It was necessary to terminate RAATS because a decrease in agency resources made it impossible to continue to update the information contained in the database.

Date of Government Version: 04/17/1995
Date Data Arrived at EDR: 07/03/1995
Date Made Active in Reports: 08/07/1995
Number of Days to Update: 35

Source: EPA
Telephone: 202-564-4104
Last EDR Contact: 06/02/2008
Next Scheduled EDR Contact: 09/01/2008
Data Release Frequency: No Update Planned

PRP: Potentially Responsible Parties
A listing of verified Potentially Responsible Parties

Date of Government Version: 04/27/2020
Date Data Arrived at EDR: 05/06/2020
Date Made Active in Reports: 06/09/2020
Number of Days to Update: 34

Source: EPA
Telephone: 202-564-6023
Last EDR Contact: 06/30/2020
Next Scheduled EDR Contact: 08/17/2020
Data Release Frequency: Quarterly

PADS: PCB Activity Database System
PCB Activity Database. PADS Identifies generators, transporters, commercial storers and/or brokers and disposers of PCB's who are required to notify the EPA of such activities.

Date of Government Version: 10/09/2019
Date Data Arrived at EDR: 10/11/2019
Date Made Active in Reports: 12/20/2019
Number of Days to Update: 70

Source: EPA
Telephone: 202-566-0500
Last EDR Contact: 07/13/2020
Next Scheduled EDR Contact: 10/19/2020
Data Release Frequency: Annually

ICIS: Integrated Compliance Information System
The Integrated Compliance Information System (ICIS) supports the information needs of the national enforcement and compliance program as well as the unique needs of the National Pollutant Discharge Elimination System (NPDES) program.

Date of Government Version: 11/18/2016
Date Data Arrived at EDR: 11/23/2016
Date Made Active in Reports: 02/10/2017
Number of Days to Update: 79

Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 06/30/2020
Next Scheduled EDR Contact: 10/19/2020
Data Release Frequency: Quarterly

FTTS: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
FTTS tracks administrative cases and pesticide enforcement actions and compliance activities related to FIFRA, TSCA and EPCRA (Emergency Planning and Community Right-to-Know Act). To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 04/09/2009
Date Data Arrived at EDR: 04/16/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 25

Source: EPA/Office of Prevention, Pesticides and Toxic Substances
Telephone: 202-566-1667
Last EDR Contact: 08/18/2017
Next Scheduled EDR Contact: 12/04/2017
Data Release Frequency: No Update Planned

FTTS INSP: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
A listing of FIFRA/TSCA Tracking System (FTTS) inspections and enforcements.

Date of Government Version: 04/09/2009
Date Data Arrived at EDR: 04/16/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 25

Source: EPA
Telephone: 202-566-1667
Last EDR Contact: 08/18/2017
Next Scheduled EDR Contact: 12/04/2017
Data Release Frequency: No Update Planned

MLTS: Material Licensing Tracking System
MLTS is maintained by the Nuclear Regulatory Commission and contains a list of approximately 8,100 sites which possess or use radioactive materials and which are subject to NRC licensing requirements. To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 10/25/2019
Date Data Arrived at EDR: 10/25/2019
Date Made Active in Reports: 01/15/2020
Number of Days to Update: 82

Source: Nuclear Regulatory Commission
Telephone: 301-415-7169
Last EDR Contact: 07/20/2020
Next Scheduled EDR Contact: 11/02/2020
Data Release Frequency: Quarterly

COAL ASH DOE: Steam-Electric Plant Operation Data
A listing of power plants that store ash in surface ponds.

Date of Government Version: 12/31/2018
Date Data Arrived at EDR: 12/04/2019
Date Made Active in Reports: 01/15/2020
Number of Days to Update: 42
Source: Department of Energy
Telephone: 202-586-8719
Last EDR Contact: 06/05/2020
Next Scheduled EDR Contact: 09/14/2020
Data Release Frequency: Varies

COAL ASH EPA: Coal Combustion Residues Surface Impoundments List
A listing of coal combustion residues surface impoundments with high hazard potential ratings.

Date of Government Version: 01/12/2017
Date Data Arrived at EDR: 03/05/2019
Date Made Active in Reports: 11/11/2019
Number of Days to Update: 251
Source: Environmental Protection Agency
Telephone: N/A
Last EDR Contact: 06/01/2020
Next Scheduled EDR Contact: 09/14/2020
Data Release Frequency: Varies

PCB TRANSFORMER: PCB Transformer Registration Database
The database of PCB transformer registrations that includes all PCB registration submittals.

Date of Government Version: 09/13/2019
Date Data Arrived at EDR: 11/06/2019
Date Made Active in Reports: 02/10/2020
Number of Days to Update: 96
Source: Environmental Protection Agency
Telephone: 202-566-0517
Last EDR Contact: 05/08/2020
Next Scheduled EDR Contact: 08/17/2020
Data Release Frequency: Varies

RADINFO: Radiation Information Database
The Radiation Information Database (RADINFO) contains information about facilities that are regulated by U.S. Environmental Protection Agency (EPA) regulations for radiation and radioactivity.

Date of Government Version: 07/01/2019
Date Data Arrived at EDR: 07/01/2019
Date Made Active in Reports: 09/23/2019
Number of Days to Update: 84
Source: Environmental Protection Agency
Telephone: 202-343-9775
Last EDR Contact: 06/24/2020
Next Scheduled EDR Contact: 10/12/2020
Data Release Frequency: Quarterly

HIST FTTS: FIFRA/TSCA Tracking System Administrative Case Listing
A complete administrative case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40
Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2007
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

HIST FTTS INSP: FIFRA/TSCA Tracking System Inspection & Enforcement Case Listing
A complete inspection and enforcement case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2008
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

DOT OPS: Incident and Accident Data

Department of Transporation, Office of Pipeline Safety Incident and Accident data.

Date of Government Version: 01/02/2020
Date Data Arrived at EDR: 01/28/2020
Date Made Active in Reports: 04/17/2020
Number of Days to Update: 80

Source: Department of Transporation, Office of Pipeline Safety
Telephone: 202-366-4595
Last EDR Contact: 07/27/2020
Next Scheduled EDR Contact: 11/09/2020
Data Release Frequency: Quarterly

CONSENT: Superfund (CERCLA) Consent Decrees

Major legal settlements that establish responsibility and standards for cleanup at NPL (Superfund) sites. Released periodically by United States District Courts after settlement by parties to litigation matters.

Date of Government Version: 06/30/2020
Date Data Arrived at EDR: 07/15/2020
Date Made Active in Reports: 07/21/2020
Number of Days to Update: 6

Source: Department of Justice, Consent Decree Library
Telephone: Varies
Last EDR Contact: 07/06/2020
Next Scheduled EDR Contact: 10/19/2020
Data Release Frequency: Varies

BRS: Biennial Reporting System

The Biennial Reporting System is a national system administered by the EPA that collects data on the generation and management of hazardous waste. BRS captures detailed data from two groups: Large Quantity Generators (LQG) and Treatment, Storage, and Disposal Facilities.

Date of Government Version: 12/31/2015
Date Data Arrived at EDR: 02/22/2017
Date Made Active in Reports: 09/28/2017
Number of Days to Update: 218

Source: EPA/NTIS
Telephone: 800-424-9346
Last EDR Contact: 06/22/2020
Next Scheduled EDR Contact: 10/05/2020
Data Release Frequency: Biennially

INDIAN RESERV: Indian Reservations

This map layer portrays Indian administered lands of the United States that have any area equal to or greater than 640 acres.

Date of Government Version: 12/31/2014
Date Data Arrived at EDR: 07/14/2015
Date Made Active in Reports: 01/10/2017
Number of Days to Update: 546

Source: USGS
Telephone: 202-208-3710
Last EDR Contact: 07/07/2020
Next Scheduled EDR Contact: 10/19/2020
Data Release Frequency: Semi-Annually

FUSRAP: Formerly Utilized Sites Remedial Action Program

DOE established the Formerly Utilized Sites Remedial Action Program (FUSRAP) in 1974 to remediate sites where radioactive contamination remained from Manhattan Project and early U.S. Atomic Energy Commission (AEC) operations.

Date of Government Version: 08/08/2017
Date Data Arrived at EDR: 09/11/2018
Date Made Active in Reports: 09/14/2018
Number of Days to Update: 3

Source: Department of Energy
Telephone: 202-586-3559
Last EDR Contact: 04/29/2020
Next Scheduled EDR Contact: 08/17/2020
Data Release Frequency: Varies

UMTRA: Uranium Mill Tailings Sites

Uranium ore was mined by private companies for federal government use in national defense programs. When the mills shut down, large piles of the sand-like material (mill tailings) remain after uranium has been extracted from the ore. Levels of human exposure to radioactive materials from the piles are low; however, in some cases tailings were used as construction materials before the potential health hazards of the tailings were recognized.

Date of Government Version: 08/30/2019
Date Data Arrived at EDR: 11/15/2019
Date Made Active in Reports: 01/28/2020
Number of Days to Update: 74

Source: Department of Energy
Telephone: 505-845-0011
Last EDR Contact: 05/18/2020
Next Scheduled EDR Contact: 08/31/2020
Data Release Frequency: Varies

LEAD SMELTER 1: Lead Smelter Sites

A listing of former lead smelter site locations.

Date of Government Version: 04/27/2020
Date Data Arrived at EDR: 05/06/2020
Date Made Active in Reports: 05/28/2020
Number of Days to Update: 22

Source: Environmental Protection Agency
Telephone: 703-603-8787
Last EDR Contact: 06/30/2020
Next Scheduled EDR Contact: 10/12/2020
Data Release Frequency: Varies

LEAD SMELTER 2: Lead Smelter Sites

A list of several hundred sites in the U.S. where secondary lead smelting was done from 1931and 1964. These sites may pose a threat to public health through ingestion or inhalation of contaminated soil or dust

Date of Government Version: 04/05/2001
Date Data Arrived at EDR: 10/27/2010
Date Made Active in Reports: 12/02/2010
Number of Days to Update: 36

Source: American Journal of Public Health
Telephone: 703-305-6451
Last EDR Contact: 12/02/2009
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

US AIRS (AFS): Aerometric Information Retrieval System Facility Subsystem (AFS)

The database is a sub-system of Aerometric Information Retrieval System (AIRS). AFS contains compliance data on air pollution point sources regulated by the U.S. EPA and/or state and local air regulatory agencies. This information comes from source reports by various stationary sources of air pollution, such as electric power plants, steel mills, factories, and universities, and provides information about the air pollutants they produce. Action, air program, air program pollutant, and general level plant data. It is used to track emissions and compliance data from industrial plants.

Date of Government Version: 10/12/2016
Date Data Arrived at EDR: 10/26/2016
Date Made Active in Reports: 02/03/2017
Number of Days to Update: 100

Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 09/26/2017
Next Scheduled EDR Contact: 01/08/2018
Data Release Frequency: Annually

US AIRS MINOR: Air Facility System Data

A listing of minor source facilities.

Date of Government Version: 10/12/2016
Date Data Arrived at EDR: 10/26/2016
Date Made Active in Reports: 02/03/2017
Number of Days to Update: 100

Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 09/26/2017
Next Scheduled EDR Contact: 01/08/2018
Data Release Frequency: Annually

MINES VIOLATIONS: MSHA Violation Assessment Data

Mines violation and assessment information. Department of Labor, Mine Safety & Health Administration.

Date of Government Version: 03/31/2020
Date Data Arrived at EDR: 04/01/2020
Date Made Active in Reports: 05/21/2020
Number of Days to Update: 50

Source: DOL, Mine Safety & Health Admi
Telephone: 202-693-9424
Last EDR Contact: 05/27/2020
Next Scheduled EDR Contact: 09/14/2020
Data Release Frequency: Quarterly

US MINES: Mines Master Index File

Contains all mine identification numbers issued for mines active or opened since 1971. The data also includes violation information.

Date of Government Version: 02/11/2020
Date Data Arrived at EDR: 02/25/2020
Date Made Active in Reports: 05/21/2020
Number of Days to Update: 86

Source: Department of Labor, Mine Safety and Health Administration
Telephone: 303-231-5959
Last EDR Contact: 05/21/2020
Next Scheduled EDR Contact: 09/07/2020
Data Release Frequency: Semi-Annually

US MINES 2: Ferrous and Nonferrous Metal Mines Database Listing

This map layer includes ferrous (ferrous metal mines are facilities that extract ferrous metals, such as iron ore or molybdenum) and nonferrous (Nonferrous metal mines are facilities that extract nonferrous metals, such as gold, silver, copper, zinc, and lead) metal mines in the United States.

Date of Government Version: 01/16/2018
Date Data Arrived at EDR: 02/28/2020
Date Made Active in Reports: 05/22/2020
Number of Days to Update: 84

Source: USGS
Telephone: 703-648-7709
Last EDR Contact: 05/27/2020
Next Scheduled EDR Contact: 09/07/2020
Data Release Frequency: Varies

US MINES 3: Active Mines & Mineral Plants Database Listing

Active Mines and Mineral Processing Plant operations for commodities monitored by the Minerals Information Team of the USGS.

Date of Government Version: 04/14/2011
Date Data Arrived at EDR: 06/08/2011
Date Made Active in Reports: 09/13/2011
Number of Days to Update: 97

Source: USGS
Telephone: 703-648-7709
Last EDR Contact: 05/21/2020
Next Scheduled EDR Contact: 09/07/2020
Data Release Frequency: Varies

ABANDONED MINES: Abandoned Mines

An inventory of land and water impacted by past mining (primarily coal mining) is maintained by OSMRE to provide information needed to implement the Surface Mining Control and Reclamation Act of 1977 (SMCRA). The inventory contains information on the location, type, and extent of AML impacts, as well as, information on the cost associated with the reclamation of those problems. The inventory is based upon field surveys by State, Tribal, and OSMRE program officials. It is dynamic to the extent that it is modified as new problems are identified and existing problems are reclaimed.

Date of Government Version: 03/05/2020
Date Data Arrived at EDR: 03/06/2020
Date Made Active in Reports: 05/29/2020
Number of Days to Update: 84

Source: Department of Interior
Telephone: 202-208-2609
Last EDR Contact: 06/19/2020
Next Scheduled EDR Contact: 09/21/2020
Data Release Frequency: Quarterly

FINDS: Facility Index System/Facility Registry System

Facility Index System. FINDS contains both facility information and 'pointers' to other sources that contain more detail. EDR includes the following FINDS databases in this report: PCS (Permit Compliance System), AIRS (Aerometric Information Retrieval System), DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes), FURS (Federal Underground Injection Control), C-DOCKET (Criminal Docket System used to track criminal enforcement actions for all environmental statutes), FFIS (Federal Facilities Information System), STATE (State Environmental Laws and Statutes), and PADS (PCB Activity Data System).

Date of Government Version: 02/03/2020
Date Data Arrived at EDR: 03/03/2020
Date Made Active in Reports: 05/28/2020
Number of Days to Update: 86

Source: EPA
Telephone: (415) 947-8000
Last EDR Contact: 06/02/2020
Next Scheduled EDR Contact: 09/14/2020
Data Release Frequency: Quarterly

DOCKET HWC: Hazardous Waste Compliance Docket Listing

A complete list of the Federal Agency Hazardous Waste Compliance Docket Facilities.

Date of Government Version: 05/31/2018
Date Data Arrived at EDR: 07/26/2018
Date Made Active in Reports: 10/05/2018
Number of Days to Update: 71

Source: Environmental Protection Agency
Telephone: 202-564-0527
Last EDR Contact: 05/18/2020
Next Scheduled EDR Contact: 09/07/2020
Data Release Frequency: Varies

UXO: Unexploded Ordnance Sites
A listing of unexploded ordnance site locations

Date of Government Version: 12/31/2017
Date Data Arrived at EDR: 01/17/2019
Date Made Active in Reports: 04/01/2019
Number of Days to Update: 74
Source: Department of Defense
Telephone: 703-704-1564
Last EDR Contact: 07/09/2020
Next Scheduled EDR Contact: 10/26/2020
Data Release Frequency: Varies

ECHO: Enforcement & Compliance History Information
ECHO provides integrated compliance and enforcement information for about 800,000 regulated facilities nationwide.

Date of Government Version: 04/04/2020
Date Data Arrived at EDR: 04/07/2020
Date Made Active in Reports: 06/26/2020
Number of Days to Update: 80
Source: Environmental Protection Agency
Telephone: 202-564-2280
Last EDR Contact: 07/02/2020
Next Scheduled EDR Contact: 10/19/2020
Data Release Frequency: Quarterly

FUELS PROGRAM: EPA Fuels Program Registered Listing
This listing includes facilities that are registered under the Part 80 (Code of Federal Regulations) EPA Fuels Programs. All companies now are required to submit new and updated registrations.

Date of Government Version: 02/18/2020
Date Data Arrived at EDR: 02/19/2020
Date Made Active in Reports: 05/14/2020
Number of Days to Update: 85
Source: EPA
Telephone: 800-385-6164
Last EDR Contact: 05/19/2020
Next Scheduled EDR Contact: 08/31/2020
Data Release Frequency: Quarterly

CA BOND EXP. PLAN: Bond Expenditure Plan
Department of Health Services developed a site-specific expenditure plan as the basis for an appropriation of Hazardous Substance Cleanup Bond Act funds. It is not updated.

Date of Government Version: 01/01/1989
Date Data Arrived at EDR: 07/27/1994
Date Made Active in Reports: 08/02/1994
Number of Days to Update: 6
Source: Department of Health Services
Telephone: 916-255-2118
Last EDR Contact: 05/31/1994
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

CORTESE: "Cortese" Hazardous Waste & Substances Sites List
The sites for the list are designated by the State Water Resource Control Board (LUST), the Integrated Waste Board (SWF/LS), and the Department of Toxic Substances Control (Cal-Sites).

Date of Government Version: 03/23/2020
Date Data Arrived at EDR: 03/24/2020
Date Made Active in Reports: 06/05/2020
Number of Days to Update: 73
Source: CAL EPA/Office of Emergency Information
Telephone: 916-323-3400
Last EDR Contact: 06/22/2020
Next Scheduled EDR Contact: 10/05/2020
Data Release Frequency: Quarterly

CUPA LIVERMORE-PLEASANTON: CUPA Facility Listing
list of facilities associated with the various CUPA programs in Livermore-Pleasanton

Date of Government Version: 05/01/2019
Date Data Arrived at EDR: 05/14/2019
Date Made Active in Reports: 07/17/2019
Number of Days to Update: 64
Source: Livermore-Pleasanton Fire Department
Telephone: 925-454-2361
Last EDR Contact: 05/15/2020
Next Scheduled EDR Contact: 08/24/2020
Data Release Frequency: Varies

CUPA SAN FRANCISCO CO: CUPA Facility Listing
Cupa facilities

Date of Government Version: 05/04/2020
Date Data Arrived at EDR: 05/06/2020
Date Made Active in Reports: 07/17/2020
Number of Days to Update: 72
Source: San Francisco County Department of Environmental Health
Telephone: 415-252-3896
Last EDR Contact: 04/23/2020
Next Scheduled EDR Contact: 08/17/2020
Data Release Frequency: Varies

DRYCLEAN SOUTH COAST: South Coast Air Quality Management District Drycleaner Listing
A listing of dry cleaners in the South Coast Air Quality Management District

Date of Government Version: 03/25/2020
Date Data Arrived at EDR: 03/26/2020
Date Made Active in Reports: 06/15/2020
Number of Days to Update: 81
Source: South Coast Air Quality Management District
Telephone: 909-396-3211
Last EDR Contact: 05/15/2020
Next Scheduled EDR Contact: 09/07/2020
Data Release Frequency: Varies

DRYCLEAN AVAQMD: Antelope Valley Air Quality Management District Drycleaner Listing
A listing of dry cleaners in the Antelope Valley Air Quality Management District.

Date of Government Version: 02/27/2020
Date Data Arrived at EDR: 02/28/2020
Date Made Active in Reports: 05/07/2020
Number of Days to Update: 69
Source: Antelope Valley Air Quality Management District
Telephone: 661-723-8070
Last EDR Contact: 05/27/2020
Next Scheduled EDR Contact: 09/14/2020
Data Release Frequency: Varies

DRYCLEANERS: Cleaner Facilities
A list of drycleaner related facilities that have EPA ID numbers. These are facilities with certain SIC codes: power laundries, family and commercial; garment pressing and cleaner's agents; linen supply; coin-operated laundries and cleaning; drycleaning plants, except rugs; carpet and upholster cleaning; industrial launderers; laundry and garment services.

Date of Government Version: 12/04/2019
Date Data Arrived at EDR: 01/29/2020
Date Made Active in Reports: 04/09/2020
Number of Days to Update: 71
Source: Department of Toxic Substance Control
Telephone: 916-327-4498
Last EDR Contact: 05/27/2020
Next Scheduled EDR Contact: 09/14/2020
Data Release Frequency: Annually

EMI: Emissions Inventory Data
Toxics and criteria pollutant emissions data collected by the ARB and local air pollution agencies.

Date of Government Version: 12/31/2017
Date Data Arrived at EDR: 06/24/2019
Date Made Active in Reports: 08/22/2019
Number of Days to Update: 59
Source: California Air Resources Board
Telephone: 916-322-2990
Last EDR Contact: 06/16/2020
Next Scheduled EDR Contact: 09/28/2020
Data Release Frequency: Varies

ENF: Enforcement Action Listing
A listing of Water Board Enforcement Actions. Formal is everything except Oral/Verbal Communication, Notice of Violation, Expedited Payment Letter, and Staff Enforcement Letter.

Date of Government Version: 04/03/2020
Date Data Arrived at EDR: 04/07/2020
Date Made Active in Reports: 04/15/2020
Number of Days to Update: 8
Source: State Water Resoruces Control Board
Telephone: 916-445-9379
Last EDR Contact: 07/21/2020
Next Scheduled EDR Contact: 11/02/2020
Data Release Frequency: Varies

Financial Assurance 1: Financial Assurance Information Listing
Financial Assurance information

Date of Government Version: 04/09/2020
Date Data Arrived at EDR: 04/10/2020
Date Made Active in Reports: 07/01/2020
Number of Days to Update: 82
Source: Department of Toxic Substances Control
Telephone: 916-255-3628
Last EDR Contact: 07/14/2020
Next Scheduled EDR Contact: 11/02/2020
Data Release Frequency: Varies

Financial Assurance 2: Financial Assurance Information Listing

A listing of financial assurance information for solid waste facilities. Financial assurance is intended to ensure that resources are available to pay for the cost of closure, post-closure care, and corrective measures if the owner or operator of a regulated facility is unable or unwilling to pay.

Date of Government Version: 05/14/2020
Date Data Arrived at EDR: 05/15/2020
Date Made Active in Reports: 07/27/2020
Number of Days to Update: 73

Source: California Integrated Waste Management Board
Telephone: 916-341-6066
Last EDR Contact: 04/29/2020
Next Scheduled EDR Contact: 08/24/2020
Data Release Frequency: Varies

HAZNET: Facility and Manifest Data

Facility and Manifest Data. The data is extracted from the copies of hazardous waste manifests received each year by the DTSC. The annual volume of manifests is typically 700,000 - 1,000,000 annually, representing approximately 350,000 - 500,000 shipments. Data are from the manifests submitted without correction, and therefore many contain some invalid values for data elements such as generator ID, TSD ID, waste category, and disposal method. This database begins with calendar year 1993.

Date of Government Version: 12/31/2019
Date Data Arrived at EDR: 04/15/2020
Date Made Active in Reports: 07/02/2020
Number of Days to Update: 78

Source: California Environmental Protection Agency
Telephone: 916-255-1136
Last EDR Contact: 07/06/2020
Next Scheduled EDR Contact: 10/19/2020
Data Release Frequency: Annually

ICE: ICE

Contains data pertaining to the Permitted Facilities with Inspections / Enforcements sites tracked in Envirostor.

Date of Government Version: 02/18/2020
Date Data Arrived at EDR: 02/19/2020
Date Made Active in Reports: 04/24/2020
Number of Days to Update: 65

Source: Department of Toxic Subsances Control
Telephone: 877-786-9427
Last EDR Contact: 05/18/2020
Next Scheduled EDR Contact: 08/31/2020
Data Release Frequency: Quarterly

HIST CORTESE: Hazardous Waste & Substance Site List

The sites for the list are designated by the State Water Resource Control Board [LUST], the Integrated Waste Board [SWF/LS], and the Department of Toxic Substances Control [CALSITES]. This listing is no longer updated by the state agency.

Date of Government Version: 04/01/2001
Date Data Arrived at EDR: 01/22/2009
Date Made Active in Reports: 04/08/2009
Number of Days to Update: 76

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 01/22/2009
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

HWP: EnviroStor Permitted Facilities Listing

Detailed information on permitted hazardous waste facilities and corrective action ("cleanups") tracked in EnviroStor.

Date of Government Version: 02/18/2020
Date Data Arrived at EDR: 02/19/2020
Date Made Active in Reports: 04/24/2020
Number of Days to Update: 65

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 05/18/2020
Next Scheduled EDR Contact: 08/31/2020
Data Release Frequency: Quarterly

HWT: Registered Hazardous Waste Transporter Database

A listing of hazardous waste transporters. In California, unless specifically exempted, it is unlawful for any person to transport hazardous wastes unless the person holds a valid registration issued by DTSC. A hazardous waste transporter registration is valid for one year and is assigned a unique registration number.

Date of Government Version: 04/06/2020
Date Data Arrived at EDR: 04/08/2020
Date Made Active in Reports: 06/26/2020
Number of Days to Update: 79

Source: Department of Toxic Substances Control
Telephone: 916-440-7145
Last EDR Contact: 07/07/2020
Next Scheduled EDR Contact: 10/19/2020
Data Release Frequency: Quarterly

MINES: Mines Site Location Listing
A listing of mine site locations from the Office of Mine Reclamation.

Date of Government Version: 03/09/2020
Date Data Arrived at EDR: 03/10/2020
Date Made Active in Reports: 05/19/2020
Number of Days to Update: 70

Source: Department of Conservation
Telephone: 916-322-1080
Last EDR Contact: 06/09/2020
Next Scheduled EDR Contact: 09/21/2020
Data Release Frequency: Quarterly

MWMP: Medical Waste Management Program Listing
The Medical Waste Management Program (MWMP) ensures the proper handling and disposal of medical waste by permitting and inspecting medical waste Offsite Treatment Facilities (PDF) and Transfer Stations (PDF) throughout the state. MWMP also oversees all Medical Waste Transporters.

Date of Government Version: 02/12/2020
Date Data Arrived at EDR: 03/03/2020
Date Made Active in Reports: 05/14/2020
Number of Days to Update: 72

Source: Department of Public Health
Telephone: 916-558-1784
Last EDR Contact: 06/02/2020
Next Scheduled EDR Contact: 09/14/2020
Data Release Frequency: Varies

NPDES: NPDES Permits Listing
A listing of NPDES permits, including stormwater.

Date of Government Version: 02/10/2020
Date Data Arrived at EDR: 02/11/2020
Date Made Active in Reports: 04/20/2020
Number of Days to Update: 69

Source: State Water Resources Control Board
Telephone: 916-445-9379
Last EDR Contact: 05/12/2020
Next Scheduled EDR Contact: 08/24/2020
Data Release Frequency: Quarterly

PEST LIC: Pesticide Regulation Licenses Listing
A listing of licenses and certificates issued by the Department of Pesticide Regulation. The DPR issues licenses and/or certificates to: Persons and businesses that apply or sell pesticides; Pest control dealers and brokers; Persons who advise on agricultural pesticide applications.

Date of Government Version: 03/02/2020
Date Data Arrived at EDR: 03/03/2020
Date Made Active in Reports: 05/14/2020
Number of Days to Update: 72

Source: Department of Pesticide Regulation
Telephone: 916-445-4038
Last EDR Contact: 06/02/2020
Next Scheduled EDR Contact: 09/14/2020
Data Release Frequency: Quarterly

PROC: Certified Processors Database
A listing of certified processors.

Date of Government Version: 03/09/2020
Date Data Arrived at EDR: 03/10/2020
Date Made Active in Reports: 05/19/2020
Number of Days to Update: 70

Source: Department of Conservation
Telephone: 916-323-3836
Last EDR Contact: 06/09/2020
Next Scheduled EDR Contact: 09/21/2020
Data Release Frequency: Quarterly

NOTIFY 65: Proposition 65 Records
Listings of all Proposition 65 incidents reported to counties by the State Water Resources Control Board and the Regional Water Quality Control Board. This database is no longer updated by the reporting agency.

Date of Government Version: 03/12/2020
Date Data Arrived at EDR: 03/13/2020
Date Made Active in Reports: 05/21/2020
Number of Days to Update: 69

Source: State Water Resources Control Board
Telephone: 916-445-3846
Last EDR Contact: 06/10/2020
Next Scheduled EDR Contact: 09/28/2020
Data Release Frequency: No Update Planned

UIC: UIC Listing
A listing of wells identified as underground injection wells, in the California Oil and Gas Wells database.

Date of Government Version: 03/09/2020
Date Data Arrived at EDR: 03/10/2020
Date Made Active in Reports: 05/19/2020
Number of Days to Update: 70
Source: Deaprtment of Conservation
Telephone: 916-445-2408
Last EDR Contact: 06/09/2020
Next Scheduled EDR Contact: 09/21/2020
Data Release Frequency: Varies

UIC GEO: Underground Injection Control Sites (GEOTRACKER)
Underground control injection sites

Date of Government Version: 05/13/2020
Date Data Arrived at EDR: 05/13/2020
Date Made Active in Reports: 05/15/2020
Number of Days to Update: 2
Source: State Water Resource Control Board
Telephone: 866-480-1028
Last EDR Contact: 06/09/2020
Next Scheduled EDR Contact: 09/21/2020
Data Release Frequency: Varies

WASTEWATER PITS: Oil Wastewater Pits Listing
Water officials discovered that oil producers have been dumping chemical-laden wastewater into hundreds of unlined pits that are operating without proper permits. Inspections completed by the Central Valley Regional Water Quality Control Board revealed the existence of previously unidentified waste sites. The water boards review found that more than one-third of the region's active disposal pits are operating without permission.

Date of Government Version: 11/19/2019
Date Data Arrived at EDR: 01/07/2020
Date Made Active in Reports: 03/09/2020
Number of Days to Update: 62
Source: RWQCB, Central Valley Region
Telephone: 559-445-5577
Last EDR Contact: 07/09/2020
Next Scheduled EDR Contact: 10/19/2020
Data Release Frequency: Varies

WDS: Waste Discharge System
Sites which have been issued waste discharge requirements.

Date of Government Version: 06/19/2007
Date Data Arrived at EDR: 06/20/2007
Date Made Active in Reports: 06/29/2007
Number of Days to Update: 9
Source: State Water Resources Control Board
Telephone: 916-341-5227
Last EDR Contact: 05/07/2020
Next Scheduled EDR Contact: 08/31/2020
Data Release Frequency: No Update Planned

WIP: Well Investigation Program Case List
Well Investigation Program case in the San Gabriel and San Fernando Valley area.

Date of Government Version: 07/03/2009
Date Data Arrived at EDR: 07/21/2009
Date Made Active in Reports: 08/03/2009
Number of Days to Update: 13
Source: Los Angeles Water Quality Control Board
Telephone: 213-576-6726
Last EDR Contact: 06/17/2020
Next Scheduled EDR Contact: 10/05/2020
Data Release Frequency: No Update Planned

MILITARY PRIV SITES: Military Privatized Sites (GEOTRACKER)
Military privatized sites

Date of Government Version: 05/13/2020
Date Data Arrived at EDR: 05/13/2020
Date Made Active in Reports: 05/15/2020
Number of Days to Update: 2
Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 06/09/2020
Next Scheduled EDR Contact: 09/21/2020
Data Release Frequency: Varies

PROJECT: Project Sites (GEOTRACKER)
Projects sites

Date of Government Version: 05/13/2020
Date Data Arrived at EDR: 05/13/2020
Date Made Active in Reports: 05/15/2020
Number of Days to Update: 2

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 06/09/2020
Next Scheduled EDR Contact: 09/21/2020
Data Release Frequency: Varies

WDR: Waste Discharge Requirements Listing

In general, the Waste Discharge Requirements (WDRs) Program (sometimes also referred to as the "Non Chapter 15 (Non 15) Program") regulates point discharges that are exempt pursuant to Subsection 20090 of Title 27 and not subject to the Federal Water Pollution Control Act. Exemptions from Title 27 may be granted for nine categories of discharges (e.g., sewage, wastewater, etc.) that meet, and continue to meet, the preconditions listed for each specific exemption. The scope of the WDRs Program also includes the discharge of wastes classified as inert, pursuant to section 20230 of Title 27.

Date of Government Version: 03/09/2020
Date Data Arrived at EDR: 03/10/2020
Date Made Active in Reports: 05/19/2020
Number of Days to Update: 70

Source: State Water Resources Control Board
Telephone: 916-341-5810
Last EDR Contact: 06/09/2020
Next Scheduled EDR Contact: 09/21/2020
Data Release Frequency: Quarterly

CIWQS: California Integrated Water Quality System

The California Integrated Water Quality System (CIWQS) is a computer system used by the State and Regional Water Quality Control Boards to track information about places of environmental interest, manage permits and other orders, track inspections, and manage violations and enforcement activities.

Date of Government Version: 03/02/2020
Date Data Arrived at EDR: 03/03/2020
Date Made Active in Reports: 05/13/2020
Number of Days to Update: 71

Source: State Water Resources Control Board
Telephone: 866-794-4977
Last EDR Contact: 06/02/2020
Next Scheduled EDR Contact: 09/14/2020
Data Release Frequency: Varies

CERS: CalEPA Regulated Site Portal Data

The CalEPA Regulated Site Portal database combines data about environmentally regulated sites and facilities in California into a single database. It combines data from a variety of state and federal databases, and provides an overview of regulated activities across the spectrum of environmental programs for any given location in California. These activities include hazardous materials and waste, state and federal cleanups, impacted ground and surface waters, and toxic materials

Date of Government Version: 04/20/2020
Date Data Arrived at EDR: 04/21/2020
Date Made Active in Reports: 07/13/2020
Number of Days to Update: 83

Source: California Environmental Protection Agency
Telephone: 916-323-2514
Last EDR Contact: 07/21/2020
Next Scheduled EDR Contact: 11/02/2020
Data Release Frequency: Varies

NON-CASE INFO: Non-Case Information Sites (GEOTRACKER)

Non-Case Information sites

Date of Government Version: 05/13/2020
Date Data Arrived at EDR: 05/13/2020
Date Made Active in Reports: 05/15/2020
Number of Days to Update: 2

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 06/09/2020
Next Scheduled EDR Contact: 09/21/2020
Data Release Frequency: Varies

OTHER OIL GAS: Other Oil & Gas Projects Sites (GEOTRACKER)

Other Oil & Gas Projects sites

Date of Government Version: 05/13/2020
Date Data Arrived at EDR: 05/13/2020
Date Made Active in Reports: 05/15/2020
Number of Days to Update: 2

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 06/09/2020
Next Scheduled EDR Contact: 09/21/2020
Data Release Frequency: Varies

PROD WATER PONDS: Produced Water Ponds Sites (GEOTRACKER)
Produced water ponds sites

Date of Government Version: 05/13/2020
Date Data Arrived at EDR: 05/13/2020
Date Made Active in Reports: 05/15/2020
Number of Days to Update: 2

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 06/09/2020
Next Scheduled EDR Contact: 09/21/2020
Data Release Frequency: Varies

SAMPLING POINT: Sampling Point ? Public Sites (GEOTRACKER)
Sampling point - public sites

Date of Government Version: 05/13/2020
Date Data Arrived at EDR: 05/13/2020
Date Made Active in Reports: 05/15/2020
Number of Days to Update: 2

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 06/09/2020
Next Scheduled EDR Contact: 09/21/2020
Data Release Frequency: Varies

WELL STIM PROJ: Well Stimulation Project (GEOTRACKER)
Includes areas of groundwater monitoring plans, a depiction of the monitoring network, and the facilities, boundaries, and subsurface characteristics of the oilfield and the features (oil and gas wells, produced water ponds, UIC wells, water supply wells, etc?) being monitored

Date of Government Version: 05/13/2020
Date Data Arrived at EDR: 05/13/2020
Date Made Active in Reports: 05/15/2020
Number of Days to Update: 2

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 06/09/2020
Next Scheduled EDR Contact: 09/21/2020
Data Release Frequency: Varies

HWTS: Hazardous Waste Tracking System
DTSC maintains the Hazardous Waste Tracking System that stores ID number information since the early 1980s and manifest data since 1993. The system collects both manifest copies from the generator and destination facility.

Date of Government Version: 04/08/2020
Date Data Arrived at EDR: 04/09/2020
Date Made Active in Reports: 07/01/2020
Number of Days to Update: 83

Source: Department of Toxic Substances Control
Telephone: 916-324-2444
Last EDR Contact: 06/29/2020
Next Scheduled EDR Contact: 10/19/2020
Data Release Frequency: Varies

PCS: Permit Compliance System
PCS is a computerized management information system that contains data on National Pollutant Discharge Elimination System (NPDES) permit holding facilities. PCS tracks the permit, compliance, and enforcement status of NPDES facilities.

Date of Government Version: 07/14/2011
Date Data Arrived at EDR: 08/05/2011
Date Made Active in Reports: 09/29/2011
Number of Days to Update: 55

Source: EPA, Office of Water
Telephone: 202-564-2496
Last EDR Contact: 06/08/2020
Next Scheduled EDR Contact: 09/21/2020
Data Release Frequency: Semi-Annually

PCS INACTIVE: Listing of Inactive PCS Permits
An inactive permit is a facility that has shut down or is no longer discharging.

Date of Government Version: 11/05/2014
Date Data Arrived at EDR: 01/06/2015
Date Made Active in Reports: 05/06/2015
Number of Days to Update: 120

Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 07/09/2020
Next Scheduled EDR Contact: 10/19/2020
Data Release Frequency: Semi-Annually

PCS ENF: Enforcement data
No description is available for this data

Date of Government Version: 12/31/2014
Date Data Arrived at EDR: 02/05/2015
Date Made Active in Reports: 03/06/2015
Number of Days to Update: 29

Source: EPA
Telephone: 202-564-2497
Last EDR Contact: 07/01/2020
Next Scheduled EDR Contact: 10/19/2020
Data Release Frequency: Varies

MINES MRDS: Mineral Resources Data System
Mineral Resources Data System

Date of Government Version: 04/06/2018
Date Data Arrived at EDR: 10/21/2019
Date Made Active in Reports: 10/24/2019
Number of Days to Update: 3

Source: USGS
Telephone: 703-648-6533
Last EDR Contact: 05/21/2020
Next Scheduled EDR Contact: 09/07/2020
Data Release Frequency: Varies

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR MGP: EDR Proprietary Manufactured Gas Plants
The EDR Proprietary Manufactured Gas Plant Database includes records of coal gas plants (manufactured gas plants) compiled by EDR's researchers. Manufactured gas sites were used in the United States from the 1800's to 1950's to produce a gas that could be distributed and used as fuel. These plants used whale oil, rosin, coal, or a mixture of coal, oil, and water that also produced a significant amount of waste. Many of the byproducts of the gas production, such as coal tar (oily waste containing volatile and non-volatile chemicals), sludges, oils and other compounds are potentially hazardous to human health and the environment. The byproduct from this process was frequently disposed of directly at the plant site and can remain or spread slowly, serving as a continuous source of soil and groundwater contamination.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

EDR Hist Auto: EDR Exclusive Historical Auto Stations
EDR has searched selected national collections of business directories and has collected listings of potential gas station/filling station/service station sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include gas station/filling station/service station establishments. The categories reviewed included, but were not limited to gas, gas station, gasoline station, filling station, auto, automobile repair, auto service station, service station, etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

EDR Hist Cleaner: EDR Exclusive Historical Cleaners
EDR has searched selected national collections of business directories and has collected listings of potential dry cleaner sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include dry cleaning establishments. The categories reviewed included, but were not limited to dry cleaners, cleaners, laundry, laundromat, cleaning/laundry, wash & dry etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

EDR RECOVERED GOVERNMENT ARCHIVES

Exclusive Recovered Govt. Archives

RGA LF: Recovered Government Archive Solid Waste Facilities List

The EDR Recovered Government Archive Landfill database provides a list of landfills derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the Department of Resources Recycling and Recovery in California.

Date of Government Version: N/A
Date Data Arrived at EDR: 07/01/2013
Date Made Active in Reports: 01/13/2014
Number of Days to Update: 196

Source: Department of Resources Recycling and Recovery
Telephone: N/A
Last EDR Contact: 06/01/2012
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

RGA LUST: Recovered Government Archive Leaking Underground Storage Tank

The EDR Recovered Government Archive Leaking Underground Storage Tank database provides a list of LUST incidents derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the State Water Resources Control Board in California.

Date of Government Version: N/A
Date Data Arrived at EDR: 07/01/2013
Date Made Active in Reports: 12/30/2013
Number of Days to Update: 182

Source: State Water Resources Control Board
Telephone: N/A
Last EDR Contact: 06/01/2012
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

COUNTY RECORDS

ALAMEDA COUNTY:

CS ALAMEDA: Contaminated Sites

A listing of contaminated sites overseen by the Toxic Release Program (oil and groundwater contamination from chemical releases and spills) and the Leaking Underground Storage Tank Program (soil and ground water contamination from leaking petroleum USTs).

Date of Government Version: 01/09/2019
Date Data Arrived at EDR: 01/11/2019
Date Made Active in Reports: 03/05/2019
Number of Days to Update: 53

Source: Alameda County Environmental Health Services
Telephone: 510-567-6700
Last EDR Contact: 06/30/2020
Next Scheduled EDR Contact: 10/19/2020
Data Release Frequency: Semi-Annually

UST ALAMEDA: Underground Tanks

Underground storage tank sites located in Alameda county.

Date of Government Version: 06/30/2020
Date Data Arrived at EDR: 07/01/2020
Date Made Active in Reports: 07/17/2020
Number of Days to Update: 16

Source: Alameda County Environmental Health Services
Telephone: 510-567-6700
Last EDR Contact: 06/30/2020
Next Scheduled EDR Contact: 10/19/2020
Data Release Frequency: Semi-Annually

AMADOR COUNTY:

CUPA AMADOR: CUPA Facility List
Cupa Facility List

Date of Government Version: 05/18/2020
Date Data Arrived at EDR: 05/19/2020
Date Made Active in Reports: 06/01/2020
Number of Days to Update: 13

Source: Amador County Environmental Health
Telephone: 209-223-6439
Last EDR Contact: 05/18/2020
Next Scheduled EDR Contact: 08/17/2020
Data Release Frequency: Varies

BUTTE COUNTY:

CUPA BUTTE: CUPA Facility Listing
Cupa facility list.

Date of Government Version: 04/21/2017
Date Data Arrived at EDR: 04/25/2017
Date Made Active in Reports: 08/09/2017
Number of Days to Update: 106

Source: Public Health Department
Telephone: 530-538-7149
Last EDR Contact: 06/30/2020
Next Scheduled EDR Contact: 10/19/2020
Data Release Frequency: No Update Planned

CALVERAS COUNTY:

CUPA CALVERAS: CUPA Facility Listing
Cupa Facility Listing

Date of Government Version: 03/27/2020
Date Data Arrived at EDR: 03/31/2020
Date Made Active in Reports: 06/15/2020
Number of Days to Update: 76

Source: Calveras County Environmental Health
Telephone: 209-754-6399
Last EDR Contact: 06/17/2020
Next Scheduled EDR Contact: 10/05/2020
Data Release Frequency: Quarterly

COLUSA COUNTY:

CUPA COLUSA: CUPA Facility List
Cupa facility list.

Date of Government Version: 04/06/2020
Date Data Arrived at EDR: 04/23/2020
Date Made Active in Reports: 07/10/2020
Number of Days to Update: 78

Source: Health & Human Services
Telephone: 530-458-0396
Last EDR Contact: 04/06/2020
Next Scheduled EDR Contact: 08/17/2020
Data Release Frequency: Semi-Annually

CONTRA COSTA COUNTY:

SL CONTRA COSTA: Site List
List includes sites from the underground tank, hazardous waste generator and business plan/2185 programs.

Date of Government Version: 04/01/2020
Date Data Arrived at EDR: 04/20/2020
Date Made Active in Reports: 07/06/2020
Number of Days to Update: 77

Source: Contra Costa Health Services Department
Telephone: 925-646-2286
Last EDR Contact: 07/21/2020
Next Scheduled EDR Contact: 11/09/2020
Data Release Frequency: Semi-Annually

DEL NORTE COUNTY:

CUPA DEL NORTE: CUPA Facility List
Cupa Facility list

Date of Government Version: 04/16/2020
Date Data Arrived at EDR: 04/20/2020
Date Made Active in Reports: 07/08/2020
Number of Days to Update: 79

Source: Del Norte County Environmental Health Division
Telephone: 707-465-0426
Last EDR Contact: 07/21/2020
Next Scheduled EDR Contact: 11/09/2020
Data Release Frequency: Varies

EL DORADO COUNTY:

CUPA EL DORADO: CUPA Facility List
CUPA facility list.

Date of Government Version: 05/07/2020
Date Data Arrived at EDR: 05/07/2020
Date Made Active in Reports: 07/23/2020
Number of Days to Update: 77

Source: El Dorado County Environmental Management Department
Telephone: 530-621-6623
Last EDR Contact: 07/21/2020
Next Scheduled EDR Contact: 11/09/2020
Data Release Frequency: Varies

FRESNO COUNTY:

CUPA FRESNO: CUPA Resources List
Certified Unified Program Agency. CUPA's are responsible for implementing a unified hazardous materials and hazardous waste management regulatory program. The agency provides oversight of businesses that deal with hazardous materials, operate underground storage tanks or aboveground storage tanks.

Date of Government Version: 01/10/2020
Date Data Arrived at EDR: 03/31/2020
Date Made Active in Reports: 06/15/2020
Number of Days to Update: 76

Source: Dept. of Community Health
Telephone: 559-445-3271
Last EDR Contact: 06/30/2020
Next Scheduled EDR Contact: 10/12/2020
Data Release Frequency: Semi-Annually

GLENN COUNTY:

CUPA GLENN: CUPA Facility List
Cupa facility list

Date of Government Version: 01/22/2018
Date Data Arrived at EDR: 01/24/2018
Date Made Active in Reports: 03/14/2018
Number of Days to Update: 49

Source: Glenn County Air Pollution Control District
Telephone: 830-934-6500
Last EDR Contact: 07/14/2020
Next Scheduled EDR Contact: 11/02/2020
Data Release Frequency: No Update Planned

HUMBOLDT COUNTY:

CUPA HUMBOLDT: CUPA Facility List
CUPA facility list.

Date of Government Version: 05/19/2020
Date Data Arrived at EDR: 05/20/2020
Date Made Active in Reports: 06/15/2020
Number of Days to Update: 26

Source: Humboldt County Environmental Health
Telephone: N/A
Last EDR Contact: 05/14/2020
Next Scheduled EDR Contact: 08/31/2020
Data Release Frequency: Semi-Annually

IMPERIAL COUNTY:

CUPA IMPERIAL: CUPA Facility List
Cupa facility list.

Date of Government Version: 04/09/2020
Date Data Arrived at EDR: 04/10/2020
Date Made Active in Reports: 07/01/2020
Number of Days to Update: 82

Source: San Diego Border Field Office
Telephone: 760-339-2777
Last EDR Contact: 07/14/2020
Next Scheduled EDR Contact: 11/02/2020
Data Release Frequency: Varies

INYO COUNTY:

CUPA INYO: CUPA Facility List
Cupa facility list.

Date of Government Version: 04/02/2018
Date Data Arrived at EDR: 04/03/2018
Date Made Active in Reports: 06/14/2018
Number of Days to Update: 72

Source: Inyo County Environmental Health Services
Telephone: 760-878-0238
Last EDR Contact: 05/07/2020
Next Scheduled EDR Contact: 08/31/2020
Data Release Frequency: Varies

KERN COUNTY:

UST KERN: Underground Storage Tank Sites & Tank Listing
Kern County Sites and Tanks Listing.

Date of Government Version: 04/29/2020
Date Data Arrived at EDR: 05/05/2020
Date Made Active in Reports: 07/17/2020
Number of Days to Update: 73

Source: Kern County Environment Health Services Department
Telephone: 661-862-8700
Last EDR Contact: 04/23/2020
Next Scheduled EDR Contact: 08/17/2020
Data Release Frequency: Quarterly

KINGS COUNTY:

CUPA KINGS: CUPA Facility List
A listing of sites included in the county's Certified Unified Program Agency database. California's Secretary for Environmental Protection established the unified hazardous materials and hazardous waste regulatory program as required by chapter 6.11 of the California Health and Safety Code. The Unified Program consolidates the administration, permits, inspections, and enforcement activities.

Date of Government Version: 05/11/2020
Date Data Arrived at EDR: 05/12/2020
Date Made Active in Reports: 07/27/2020
Number of Days to Update: 76

Source: Kings County Department of Public Health
Telephone: 559-584-1411
Last EDR Contact: 05/07/2020
Next Scheduled EDR Contact: 08/31/2020
Data Release Frequency: Varies

LAKE COUNTY:

CUPA LAKE: CUPA Facility List
Cupa facility list

Date of Government Version: 04/20/2020
Date Data Arrived at EDR: 04/28/2020
Date Made Active in Reports: 07/14/2020
Number of Days to Update: 77

Source: Lake County Environmental Health
Telephone: 707-263-1164
Last EDR Contact: 07/08/2020
Next Scheduled EDR Contact: 10/26/2020
Data Release Frequency: Varies

LASSEN COUNTY:

CUPA LASSEN: CUPA Facility List
Cupa facility list

Date of Government Version: 01/30/2020
Date Data Arrived at EDR: 01/31/2020
Date Made Active in Reports: 04/09/2020
Number of Days to Update: 69

Source: Lassen County Environmental Health
Telephone: 530-251-8528
Last EDR Contact: 07/14/2020
Next Scheduled EDR Contact: 11/02/2020
Data Release Frequency: Varies

LOS ANGELES COUNTY:

AOCONCERN: Key Areas of Concerns in Los Angeles County
San Gabriel Valley areas where VOC contamination is at or above the MCL as designated by region 9 EPA office. Date of Government Version: 3/30/2009 Exide Site area is a cleanup plan of lead-impacted soil surrounding the former Exide Facility as designated by the DTSC. Date of Government Version: 7/17/2017

Date of Government Version: 03/30/2009
Date Data Arrived at EDR: 03/31/2009
Date Made Active in Reports: 10/23/2009
Number of Days to Update: 206

Source: N/A
Telephone: N/A
Last EDR Contact: 06/10/2020
Next Scheduled EDR Contact: 09/28/2020
Data Release Frequency: No Update Planned

HMS LOS ANGELES: HMS: Street Number List
Industrial Waste and Underground Storage Tank Sites.

Date of Government Version: 03/26/2020
Date Data Arrived at EDR: 03/26/2020
Date Made Active in Reports: 06/15/2020
Number of Days to Update: 81

Source: Department of Public Works
Telephone: 626-458-3517
Last EDR Contact: 06/30/2020
Next Scheduled EDR Contact: 10/19/2020
Data Release Frequency: Semi-Annually

LF LOS ANGELES: List of Solid Waste Facilities
Solid Waste Facilities in Los Angeles County.

Date of Government Version: 04/13/2020
Date Data Arrived at EDR: 04/14/2020
Date Made Active in Reports: 07/01/2020
Number of Days to Update: 78

Source: La County Department of Public Works
Telephone: 818-458-5185
Last EDR Contact: 07/13/2020
Next Scheduled EDR Contact: 10/26/2020
Data Release Frequency: Varies

LF LOS ANGELES CITY: City of Los Angeles Landfills
Landfills owned and maintained by the City of Los Angeles.

Date of Government Version: 01/01/2019
Date Data Arrived at EDR: 01/15/2019
Date Made Active in Reports: 03/07/2019
Number of Days to Update: 51

Source: Engineering & Construction Division
Telephone: 213-473-7869
Last EDR Contact: 07/08/2020
Next Scheduled EDR Contact: 10/26/2020
Data Release Frequency: Varies

LOS ANGELES AST: Active & Inactive AST Inventory
A listing of active & inactive above ground petroleum storage tank site locations, located in the City of Los Angeles.

Date of Government Version: 06/01/2019
Date Data Arrived at EDR: 06/25/2019
Date Made Active in Reports: 08/22/2019
Number of Days to Update: 58

Source: Los Angeles Fire Department
Telephone: 213-978-3800
Last EDR Contact: 06/25/2020
Next Scheduled EDR Contact: 10/05/2020
Data Release Frequency: Varies

LOS ANGELES CO LF METHANE: Methane Producing Landfills

This data was created on April 30, 2012 to represent known disposal sites in Los Angeles County that may produce and emanate methane gas. The shapefile contains disposal sites within Los Angeles County that once accepted degradable refuse material. Information used to create this data was extracted from a landfill survey performed by County Engineers (Major Waste System Map, 1973) as well as historical records from CalRecycle, Regional Water Quality Control Board, and Los Angeles County Department of Public Health

Date of Government Version: 04/30/2012
Date Data Arrived at EDR: 04/17/2019
Date Made Active in Reports: 05/29/2019
Number of Days to Update: 42

Source: Los Angeles County Department of Public Works
Telephone: 626-458-6973
Last EDR Contact: 07/13/2020
Next Scheduled EDR Contact: 10/26/2020
Data Release Frequency: No Update Planned

LOS ANGELES HM: Active & Inactive Hazardous Materials Inventory

A listing of active & inactive hazardous materials facility locations, located in the City of Los Angeles.

Date of Government Version: 06/01/2019
Date Data Arrived at EDR: 06/25/2019
Date Made Active in Reports: 08/22/2019
Number of Days to Update: 58

Source: Los Angeles Fire Department
Telephone: 213-978-3800
Last EDR Contact: 06/25/2020
Next Scheduled EDR Contact: 10/05/2020
Data Release Frequency: Varies

LOS ANGELES UST: Active & Inactive UST Inventory

A listing of active & inactive underground storage tank site locations and underground storage tank historical sites, located in the City of Los Angeles.

Date of Government Version: 06/01/2019
Date Data Arrived at EDR: 06/25/2019
Date Made Active in Reports: 08/22/2019
Number of Days to Update: 58

Source: Los Angeles Fire Department
Telephone: 213-978-3800
Last EDR Contact: 06/25/2020
Next Scheduled EDR Contact: 10/05/2020
Data Release Frequency: Varies

SITE MIT LOS ANGELES: Site Mitigation List

Industrial sites that have had some sort of spill or complaint.

Date of Government Version: 03/25/2020
Date Data Arrived at EDR: 04/14/2020
Date Made Active in Reports: 07/01/2020
Number of Days to Update: 78

Source: Community Health Services
Telephone: 323-890-7806
Last EDR Contact: 07/17/2020
Next Scheduled EDR Contact: 10/26/2020
Data Release Frequency: Annually

UST EL SEGUNDO: City of El Segundo Underground Storage Tank

Underground storage tank sites located in El Segundo city.

Date of Government Version: 01/21/2017
Date Data Arrived at EDR: 04/19/2017
Date Made Active in Reports: 05/10/2017
Number of Days to Update: 21

Source: City of El Segundo Fire Department
Telephone: 310-524-2236
Last EDR Contact: 07/08/2020
Next Scheduled EDR Contact: 10/26/2020
Data Release Frequency: No Update Planned

UST LONG BEACH: City of Long Beach Underground Storage Tank

Underground storage tank sites located in the city of Long Beach.

Date of Government Version: 04/22/2019
Date Data Arrived at EDR: 04/23/2019
Date Made Active in Reports: 06/27/2019
Number of Days to Update: 65

Source: City of Long Beach Fire Department
Telephone: 562-570-2563
Last EDR Contact: 07/14/2020
Next Scheduled EDR Contact: 11/02/2020
Data Release Frequency: Varies

UST TORRANCE: City of Torrance Underground Storage Tank
Underground storage tank sites located in the city of Torrance.

Date of Government Version: 06/27/2019
Date Data Arrived at EDR: 07/30/2019
Date Made Active in Reports: 10/02/2019
Number of Days to Update: 64

Source: City of Torrance Fire Department
Telephone: 310-618-2973
Last EDR Contact: 07/14/2020
Next Scheduled EDR Contact: 11/02/2020
Data Release Frequency: Semi-Annually

MADERA COUNTY:

CUPA MADERA: CUPA Facility List
A listing of sites included in the county's Certified Unified Program Agency database. California's Secretary for Environmental Protection established the unified hazardous materials and hazardous waste regulatory program as required by chapter 6.11 of the California Health and Safety Code. The Unified Program consolidates the administration, permits, inspections, and enforcement activities.

Date of Government Version: 02/24/2020
Date Data Arrived at EDR: 02/25/2020
Date Made Active in Reports: 05/07/2020
Number of Days to Update: 72

Source: Madera County Environmental Health
Telephone: 559-675-7823
Last EDR Contact: 05/07/2020
Next Scheduled EDR Contact: 08/31/2020
Data Release Frequency: Varies

MARIN COUNTY:

UST MARIN: Underground Storage Tank Sites
Currently permitted USTs in Marin County.

Date of Government Version: 09/26/2018
Date Data Arrived at EDR: 10/04/2018
Date Made Active in Reports: 11/02/2018
Number of Days to Update: 29

Source: Public Works Department Waste Management
Telephone: 415-473-6647
Last EDR Contact: 06/24/2020
Next Scheduled EDR Contact: 10/12/2020
Data Release Frequency: Semi-Annually

MERCED COUNTY:

CUPA MERCED: CUPA Facility List
CUPA facility list.

Date of Government Version: 11/18/2019
Date Data Arrived at EDR: 11/20/2019
Date Made Active in Reports: 01/03/2020
Number of Days to Update: 44

Source: Merced County Environmental Health
Telephone: 209-381-1094
Last EDR Contact: 05/06/2020
Next Scheduled EDR Contact: 08/17/2020
Data Release Frequency: Varies

MONO COUNTY:

CUPA MONO: CUPA Facility List
CUPA Facility List

Date of Government Version: 02/21/2020
Date Data Arrived at EDR: 03/05/2020
Date Made Active in Reports: 05/13/2020
Number of Days to Update: 69

Source: Mono County Health Department
Telephone: 760-932-5580
Last EDR Contact: 05/15/2020
Next Scheduled EDR Contact: 09/07/2020
Data Release Frequency: Varies

MONTEREY COUNTY:

CUPA MONTEREY: CUPA Facility Listing
CUPA Program listing from the Environmental Health Division.

Date of Government Version: 11/06/2019
Date Data Arrived at EDR: 11/07/2019
Date Made Active in Reports: 01/08/2020
Number of Days to Update: 62

Source: Monterey County Health Department
Telephone: 831-796-1297
Last EDR Contact: 07/08/2020
Next Scheduled EDR Contact: 10/12/2020
Data Release Frequency: Varies

NAPA COUNTY:

LUST NAPA: Sites With Reported Contamination
A listing of leaking underground storage tank sites located in Napa county.

Date of Government Version: 01/09/2017
Date Data Arrived at EDR: 01/11/2017
Date Made Active in Reports: 03/02/2017
Number of Days to Update: 50

Source: Napa County Department of Environmental Management
Telephone: 707-253-4269
Last EDR Contact: 05/15/2020
Next Scheduled EDR Contact: 09/07/2020
Data Release Frequency: No Update Planned

UST NAPA: Closed and Operating Underground Storage Tank Sites
Underground storage tank sites located in Napa county.

Date of Government Version: 09/05/2019
Date Data Arrived at EDR: 09/09/2019
Date Made Active in Reports: 10/31/2019
Number of Days to Update: 52

Source: Napa County Department of Environmental Management
Telephone: 707-253-4269
Last EDR Contact: 05/15/2020
Next Scheduled EDR Contact: 09/07/2020
Data Release Frequency: No Update Planned

NEVADA COUNTY:

CUPA NEVADA: CUPA Facility List
CUPA facility list.

Date of Government Version: 05/06/2020
Date Data Arrived at EDR: 05/07/2020
Date Made Active in Reports: 07/24/2020
Number of Days to Update: 78

Source: Community Development Agency
Telephone: 530-265-1467
Last EDR Contact: 07/21/2020
Next Scheduled EDR Contact: 11/09/2020
Data Release Frequency: Varies

ORANGE COUNTY:

IND_SITE ORANGE: List of Industrial Site Cleanups
Petroleum and non-petroleum spills.

Date of Government Version: 05/01/2020
Date Data Arrived at EDR: 05/08/2020
Date Made Active in Reports: 07/24/2020
Number of Days to Update: 77

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 05/04/2020
Next Scheduled EDR Contact: 08/17/2020
Data Release Frequency: Annually

LUST ORANGE: List of Underground Storage Tank Cleanups
Orange County Underground Storage Tank Cleanups (LUST).

Date of Government Version: 05/01/2020
Date Data Arrived at EDR: 05/08/2020
Date Made Active in Reports: 07/24/2020
Number of Days to Update: 77

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 05/04/2020
Next Scheduled EDR Contact: 08/17/2020
Data Release Frequency: Quarterly

UST ORANGE: List of Underground Storage Tank Facilities
Orange County Underground Storage Tank Facilities (UST).

Date of Government Version: 05/01/2020
Date Data Arrived at EDR: 05/05/2020
Date Made Active in Reports: 07/17/2020
Number of Days to Update: 73

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 05/05/2020
Next Scheduled EDR Contact: 08/17/2020
Data Release Frequency: Quarterly

PLACER COUNTY:

MS PLACER: Master List of Facilities
List includes aboveground tanks, underground tanks and cleanup sites.

Date of Government Version: 03/02/2020
Date Data Arrived at EDR: 03/03/2020
Date Made Active in Reports: 05/13/2020
Number of Days to Update: 71

Source: Placer County Health and Human Services
Telephone: 530-745-2363
Last EDR Contact: 05/27/2020
Next Scheduled EDR Contact: 09/14/2020
Data Release Frequency: Semi-Annually

PLUMAS COUNTY:

CUPA PLUMAS: CUPA Facility List
Plumas County CUPA Program facilities.

Date of Government Version: 03/31/2019
Date Data Arrived at EDR: 04/23/2019
Date Made Active in Reports: 06/26/2019
Number of Days to Update: 64

Source: Plumas County Environmental Health
Telephone: 530-283-6355
Last EDR Contact: 07/14/2020
Next Scheduled EDR Contact: 11/02/2020
Data Release Frequency: Varies

RIVERSIDE COUNTY:

LUST RIVERSIDE: Listing of Underground Tank Cleanup Sites
Riverside County Underground Storage Tank Cleanup Sites (LUST).

Date of Government Version: 03/10/2020
Date Data Arrived at EDR: 03/11/2020
Date Made Active in Reports: 05/20/2020
Number of Days to Update: 70

Source: Department of Environmental Health
Telephone: 951-358-5055
Last EDR Contact: 02/10/2020
Next Scheduled EDR Contact: 09/28/2020
Data Release Frequency: Quarterly

UST RIVERSIDE: Underground Storage Tank Tank List
Underground storage tank sites located in Riverside county.

Date of Government Version: 03/10/2020
Date Data Arrived at EDR: 03/11/2020
Date Made Active in Reports: 05/20/2020
Number of Days to Update: 70

Source: Department of Environmental Health
Telephone: 951-358-5055
Last EDR Contact: 06/10/2020
Next Scheduled EDR Contact: 09/28/2020
Data Release Frequency: Quarterly

SACRAMENTO COUNTY:

CS SACRAMENTO: Toxic Site Clean-Up List
List of sites where unauthorized releases of potentially hazardous materials have occurred.

Date of Government Version: 02/18/2020
Date Data Arrived at EDR: 03/31/2020
Date Made Active in Reports: 06/15/2020
Number of Days to Update: 76

Source: Sacramento County Environmental Management
Telephone: 916-875-8406
Last EDR Contact: 07/02/2020
Next Scheduled EDR Contact: 10/12/2020
Data Release Frequency: Quarterly

ML SACRAMENTO: Master Hazardous Materials Facility List

Any business that has hazardous materials on site - hazardous material storage sites, underground storage tanks, waste generators.

Date of Government Version: 02/24/2020
Date Data Arrived at EDR: 03/31/2020
Date Made Active in Reports: 06/17/2020
Number of Days to Update: 78

Source: Sacramento County Environmental Management
Telephone: 916-875-8406
Last EDR Contact: 07/02/2020
Next Scheduled EDR Contact: 10/12/2020
Data Release Frequency: Quarterly

SAN BENITO COUNTY:

CUPA SAN BENITO: CUPA Facility List

Cupa facility list

Date of Government Version: 04/24/2020
Date Data Arrived at EDR: 04/28/2020
Date Made Active in Reports: 07/13/2020
Number of Days to Update: 76

Source: San Benito County Environmental Health
Telephone: N/A
Last EDR Contact: 04/23/2020
Next Scheduled EDR Contact: 08/17/2020
Data Release Frequency: Varies

SAN BERNARDINO COUNTY:

PERMITS SAN BERNARDINO: Hazardous Material Permits

This listing includes underground storage tanks, medical waste handlers/generators, hazardous materials handlers, hazardous waste generators, and waste oil generators/handlers.

Date of Government Version: 02/25/2020
Date Data Arrived at EDR: 02/26/2020
Date Made Active in Reports: 05/07/2020
Number of Days to Update: 71

Source: San Bernardino County Fire Department Hazardous Materials Division
Telephone: 909-387-3041
Last EDR Contact: 04/23/2020
Next Scheduled EDR Contact: 08/17/2020
Data Release Frequency: Quarterly

SAN DIEGO COUNTY:

HMMD SAN DIEGO: Hazardous Materials Management Division Database

The database includes: HE58 - This report contains the business name, site address, business phone number, establishment 'H' permit number, type of permit, and the business status. HE17 - In addition to providing the same information provided in the HE58 listing, HE17 provides inspection dates, violations received by the establishment, hazardous waste generated, the quantity, method of storage, treatment/disposal of waste and the hauler, and information on underground storage tanks. Unauthorized Release List - Includes a summary of environmental contamination cases in San Diego County (underground tank cases, non-tank cases, groundwater contamination, and soil contamination are included.)

Date of Government Version: 03/02/2020
Date Data Arrived at EDR: 03/03/2020
Date Made Active in Reports: 05/13/2020
Number of Days to Update: 71

Source: Hazardous Materials Management Division
Telephone: 619-338-2268
Last EDR Contact: 06/02/2020
Next Scheduled EDR Contact: 09/14/2020
Data Release Frequency: Quarterly

LF SAN DIEGO: Solid Waste Facilities
San Diego County Solid Waste Facilities.

Date of Government Version: 04/18/2018
Date Data Arrived at EDR: 04/24/2018
Date Made Active in Reports: 06/19/2018
Number of Days to Update: 56
Source: Department of Health Services
Telephone: 619-338-2209
Last EDR Contact: 07/14/2020
Next Scheduled EDR Contact: 11/02/2020
Data Release Frequency: Varies

SAN DIEGO CO LOP: Local Oversight Program Listing
A listing of all LOP release sites that are or were under the County of San Diego's jurisdiction. Included are closed or transferred cases, open cases, and cases that did not have a case type indicated. The cases without a case type are mostly complaints; however, some of them could be LOP cases.

Date of Government Version: 04/09/2020
Date Data Arrived at EDR: 04/10/2020
Date Made Active in Reports: 06/26/2020
Number of Days to Update: 77
Source: Department of Environmental Health
Telephone: 858-505-6874
Last EDR Contact: 07/14/2020
Next Scheduled EDR Contact: 11/02/2020
Data Release Frequency: Varies

SAN DIEGO CO SAM: Environmental Case Listing
The listing contains all underground tank release cases and projects pertaining to properties contaminated with hazardous substances that are actively under review by the Site Assessment and Mitigation Program.

Date of Government Version: 03/23/2010
Date Data Arrived at EDR: 06/15/2010
Date Made Active in Reports: 07/09/2010
Number of Days to Update: 24
Source: San Diego County Department of Environmental Health
Telephone: 619-338-2371
Last EDR Contact: 05/27/2020
Next Scheduled EDR Contact: 09/14/2020
Data Release Frequency: No Update Planned

SAN FRANCISCO COUNTY:

LUST SAN FRANCISCO: Local Oversite Facilities
A listing of leaking underground storage tank sites located in San Francisco county.

Date of Government Version: 09/19/2008
Date Data Arrived at EDR: 09/19/2008
Date Made Active in Reports: 09/29/2008
Number of Days to Update: 10
Source: Department Of Public Health San Francisco County
Telephone: 415-252-3920
Last EDR Contact: 04/23/2020
Next Scheduled EDR Contact: 08/17/2020
Data Release Frequency: No Update Planned

UST SAN FRANCISCO: Underground Storage Tank Information
Underground storage tank sites located in San Francisco county.

Date of Government Version: 05/04/2020
Date Data Arrived at EDR: 05/06/2020
Date Made Active in Reports: 07/17/2020
Number of Days to Update: 72
Source: Department of Public Health
Telephone: 415-252-3920
Last EDR Contact: 04/23/2020
Next Scheduled EDR Contact: 08/17/2020
Data Release Frequency: Quarterly

SAN JOAQUIN COUNTY:

UST SAN JOAQUIN: San Joaquin Co. UST
A listing of underground storage tank locations in San Joaquin county.

Date of Government Version: 06/22/2018
Date Data Arrived at EDR: 06/26/2018
Date Made Active in Reports: 07/11/2018
Number of Days to Update: 15
Source: Environmental Health Department
Telephone: N/A
Last EDR Contact: 06/10/2020
Next Scheduled EDR Contact: 09/28/2020
Data Release Frequency: Semi-Annually

SAN LUIS OBISPO COUNTY:

CUPA SAN LUIS OBISPO: CUPA Facility List
Cupa Facility List.

Date of Government Version: 02/18/2020
Date Data Arrived at EDR: 02/20/2020
Date Made Active in Reports: 04/24/2020
Number of Days to Update: 64

Source: San Luis Obispo County Public Health Department
Telephone: 805-781-5596
Last EDR Contact: 05/07/2020
Next Scheduled EDR Contact: 08/31/2020
Data Release Frequency: Varies

SAN MATEO COUNTY:

BI SAN MATEO: Business Inventory
List includes Hazardous Materials Business Plan, hazardous waste generators, and underground storage tanks.

Date of Government Version: 02/20/2020
Date Data Arrived at EDR: 02/20/2020
Date Made Active in Reports: 04/24/2020
Number of Days to Update: 64

Source: San Mateo County Environmental Health Services Division
Telephone: 650-363-1921
Last EDR Contact: 06/12/2020
Next Scheduled EDR Contact: 09/21/2020
Data Release Frequency: Annually

LUST SAN MATEO: Fuel Leak List
A listing of leaking underground storage tank sites located in San Mateo county.

Date of Government Version: 03/29/2019
Date Data Arrived at EDR: 03/29/2019
Date Made Active in Reports: 05/29/2019
Number of Days to Update: 61

Source: San Mateo County Environmental Health Services Division
Telephone: 650-363-1921
Last EDR Contact: 06/03/2020
Next Scheduled EDR Contact: 09/21/2020
Data Release Frequency: Semi-Annually

SANTA BARBARA COUNTY:

CUPA SANTA BARBARA: CUPA Facility Listing
CUPA Program Listing from the Environmental Health Services division.

Date of Government Version: 09/08/2011
Date Data Arrived at EDR: 09/09/2011
Date Made Active in Reports: 10/07/2011
Number of Days to Update: 28

Source: Santa Barbara County Public Health Department
Telephone: 805-686-8167
Last EDR Contact: 05/07/2020
Next Scheduled EDR Contact: 08/31/2020
Data Release Frequency: No Update Planned

SANTA CLARA COUNTY:

CUPA SANTA CLARA: Cupa Facility List
Cupa facility list

Date of Government Version: 05/08/2020
Date Data Arrived at EDR: 05/12/2020
Date Made Active in Reports: 07/27/2020
Number of Days to Update: 76

Source: Department of Environmental Health
Telephone: 408-918-1973
Last EDR Contact: 05/07/2020
Next Scheduled EDR Contact: 08/31/2020
Data Release Frequency: Varies

HIST LUST SANTA CLARA: HIST LUST - Fuel Leak Site Activity Report
A listing of open and closed leaking underground storage tanks. This listing is no longer updated by the county. Leaking underground storage tanks are now handled by the Department of Environmental Health.

Date of Government Version: 03/29/2005
Date Data Arrived at EDR: 03/30/2005
Date Made Active in Reports: 04/21/2005
Number of Days to Update: 22

Source: Santa Clara Valley Water District
Telephone: 408-265-2600
Last EDR Contact: 03/23/2009
Next Scheduled EDR Contact: 06/22/2009
Data Release Frequency: No Update Planned

LUST SANTA CLARA: LOP Listing
A listing of leaking underground storage tanks located in Santa Clara county.

Date of Government Version: 03/03/2014
Date Data Arrived at EDR: 03/05/2014
Date Made Active in Reports: 03/18/2014
Number of Days to Update: 13
Source: Department of Environmental Health
Telephone: 408-918-3417
Last EDR Contact: 05/15/2020
Next Scheduled EDR Contact: 09/07/2020
Data Release Frequency: No Update Planned

SAN JOSE HAZMAT: Hazardous Material Facilities
Hazardous material facilities, including underground storage tank sites.

Date of Government Version: 04/22/2020
Date Data Arrived at EDR: 04/24/2020
Date Made Active in Reports: 05/07/2020
Number of Days to Update: 13
Source: City of San Jose Fire Department
Telephone: 408-535-7694
Last EDR Contact: 04/23/2020
Next Scheduled EDR Contact: 08/17/2020
Data Release Frequency: Annually

SANTA CRUZ COUNTY:

CUPA SANTA CRUZ: CUPA Facility List
CUPA facility listing.

Date of Government Version: 01/21/2017
Date Data Arrived at EDR: 02/22/2017
Date Made Active in Reports: 05/23/2017
Number of Days to Update: 90
Source: Santa Cruz County Environmental Health
Telephone: 831-464-2761
Last EDR Contact: 05/07/2020
Next Scheduled EDR Contact: 08/31/2020
Data Release Frequency: Varies

SHASTA COUNTY:

CUPA SHASTA: CUPA Facility List
Cupa Facility List.

Date of Government Version: 06/15/2017
Date Data Arrived at EDR: 06/19/2017
Date Made Active in Reports: 08/09/2017
Number of Days to Update: 51
Source: Shasta County Department of Resource Management
Telephone: 530-225-5789
Last EDR Contact: 05/07/2020
Next Scheduled EDR Contact: 08/31/2020
Data Release Frequency: Varies

SOLANO COUNTY:

LUST SOLANO: Leaking Underground Storage Tanks
A listing of leaking underground storage tank sites located in Solano county.

Date of Government Version: 06/04/2019
Date Data Arrived at EDR: 06/06/2019
Date Made Active in Reports: 08/13/2019
Number of Days to Update: 68
Source: Solano County Department of Environmental Management
Telephone: 707-784-6770
Last EDR Contact: 05/26/2020
Next Scheduled EDR Contact: 09/13/2020
Data Release Frequency: Quarterly

UST SOLANO: Underground Storage Tanks
Underground storage tank sites located in Solano county.

Date of Government Version: 03/02/2020
Date Data Arrived at EDR: 03/04/2020
Date Made Active in Reports: 05/14/2020
Number of Days to Update: 71
Source: Solano County Department of Environmental Management
Telephone: 707-784-6770
Last EDR Contact: 06/23/2020
Next Scheduled EDR Contact: 09/14/2020
Data Release Frequency: Quarterly

SONOMA COUNTY:

CUPA SONOMA: Cupa Facility List
Cupa Facility list

Date of Government Version: 02/25/2020
Date Data Arrived at EDR: 02/26/2020
Date Made Active in Reports: 03/11/2020
Number of Days to Update: 14

Source: County of Sonoma Fire & Emergency Services Department
Telephone: 707-565-1174
Last EDR Contact: 06/30/2020
Next Scheduled EDR Contact: 10/05/2020
Data Release Frequency: Varies

LUST SONOMA: Leaking Underground Storage Tank Sites
A listing of leaking underground storage tank sites located in Sonoma county.

Date of Government Version: 04/03/2020
Date Data Arrived at EDR: 04/08/2020
Date Made Active in Reports: 06/26/2020
Number of Days to Update: 79

Source: Department of Health Services
Telephone: 707-565-6565
Last EDR Contact: 06/17/2020
Next Scheduled EDR Contact: 10/05/2020
Data Release Frequency: Quarterly

STANISLAUS COUNTY:

CUPA STANISLAUS: CUPA Facility List
Cupa facility list

Date of Government Version: 02/04/2020
Date Data Arrived at EDR: 02/05/2020
Date Made Active in Reports: 04/15/2020
Number of Days to Update: 70

Source: Stanislaus County Department of Ennvironmental Protection
Telephone: 209-525-6751
Last EDR Contact: 07/06/2020
Next Scheduled EDR Contact: 10/26/2020
Data Release Frequency: Varies

SUTTER COUNTY:

UST SUTTER: Underground Storage Tanks
Underground storage tank sites located in Sutter county.

Date of Government Version: 01/23/2020
Date Data Arrived at EDR: 03/03/2020
Date Made Active in Reports: 05/08/2020
Number of Days to Update: 66

Source: Sutter County Environmental Health Services
Telephone: 530-822-7500
Last EDR Contact: 05/27/2020
Next Scheduled EDR Contact: 09/14/2020
Data Release Frequency: Semi-Annually

TEHAMA COUNTY:

CUPA TEHAMA: CUPA Facility List
Cupa facilities

Date of Government Version: 03/16/2020
Date Data Arrived at EDR: 03/17/2020
Date Made Active in Reports: 05/26/2020
Number of Days to Update: 70

Source: Tehama County Department of Environmental Health
Telephone: 530-527-8020
Last EDR Contact: 05/14/2020
Next Scheduled EDR Contact: 08/17/2020
Data Release Frequency: Varies

TRINITY COUNTY:

CUPA TRINITY: CUPA Facility List
Cupa facility list

Date of Government Version: 04/09/2020
Date Data Arrived at EDR: 04/10/2020
Date Made Active in Reports: 07/01/2020
Number of Days to Update: 82

Source: Department of Toxic Substances Control
Telephone: 760-352-0381
Last EDR Contact: 07/14/2020
Next Scheduled EDR Contact: 11/02/2020
Data Release Frequency: Varies

TULARE COUNTY:

CUPA TULARE: CUPA Facility List
Cupa program facilities

Date of Government Version: 05/14/2020
Date Data Arrived at EDR: 05/15/2020
Date Made Active in Reports: 07/27/2020
Number of Days to Update: 73

Source: Tulare County Environmental Health Services Division
Telephone: 559-624-7400
Last EDR Contact: 05/14/2020
Next Scheduled EDR Contact: 08/17/2020
Data Release Frequency: Varies

TUOLUMNE COUNTY:

CUPA TUOLUMNE: CUPA Facility List
Cupa facility list

Date of Government Version: 04/23/2018
Date Data Arrived at EDR: 04/25/2018
Date Made Active in Reports: 06/25/2018
Number of Days to Update: 61

Source: Divison of Environmental Health
Telephone: 209-533-5633
Last EDR Contact: 07/14/2020
Next Scheduled EDR Contact: 11/02/2020
Data Release Frequency: Varies

VENTURA COUNTY:

BWT VENTURA: Business Plan, Hazardous Waste Producers, and Operating Underground Tanks
The BWT list indicates by site address whether the Environmental Health Division has Business Plan (B), Waste Producer (W), and/or Underground Tank (T) information.

Date of Government Version: 03/26/2020
Date Data Arrived at EDR: 04/23/2020
Date Made Active in Reports: 07/09/2020
Number of Days to Update: 77

Source: Ventura County Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 07/20/2020
Next Scheduled EDR Contact: 11/02/2020
Data Release Frequency: Quarterly

LF VENTURA: Inventory of Illegal Abandoned and Inactive Sites
Ventura County Inventory of Closed, Illegal Abandoned, and Inactive Sites.

Date of Government Version: 12/01/2011
Date Data Arrived at EDR: 12/01/2011
Date Made Active in Reports: 01/19/2012
Number of Days to Update: 49

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 06/24/2020
Next Scheduled EDR Contact: 10/12/2020
Data Release Frequency: No Update Planned

LUST VENTURA: Listing of Underground Tank Cleanup Sites
Ventura County Underground Storage Tank Cleanup Sites (LUST).

Date of Government Version: 05/29/2008
Date Data Arrived at EDR: 06/24/2008
Date Made Active in Reports: 07/31/2008
Number of Days to Update: 37

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 04/29/2020
Next Scheduled EDR Contact: 08/24/2020
Data Release Frequency: No Update Planned

MED WASTE VENTURA: Medical Waste Program List
To protect public health and safety and the environment from potential exposure to disease causing agents, the Environmental Health Division Medical Waste Program regulates the generation, handling, storage, treatment and disposal of medical waste throughout the County.

Date of Government Version: 03/26/2020
Date Data Arrived at EDR: 04/23/2020
Date Made Active in Reports: 07/09/2020
Number of Days to Update: 77
Source: Ventura County Resource Management Agency
Telephone: 805-654-2813
Last EDR Contact: 07/20/2020
Next Scheduled EDR Contact: 11/02/2020
Data Release Frequency: Quarterly

UST VENTURA: Underground Tank Closed Sites List
Ventura County Operating Underground Storage Tank Sites (UST)/Underground Tank Closed Sites List.

Date of Government Version: 01/27/2020
Date Data Arrived at EDR: 03/10/2020
Date Made Active in Reports: 05/20/2020
Number of Days to Update: 71
Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 06/09/2020
Next Scheduled EDR Contact: 09/21/2020
Data Release Frequency: Quarterly

YOLO COUNTY:

UST YOLO: Underground Storage Tank Comprehensive Facility Report
Underground storage tank sites located in Yolo county.

Date of Government Version: 03/23/2020
Date Data Arrived at EDR: 04/01/2020
Date Made Active in Reports: 06/17/2020
Number of Days to Update: 77
Source: Yolo County Department of Health
Telephone: 530-666-8646
Last EDR Contact: 06/24/2020
Next Scheduled EDR Contact: 10/12/2020
Data Release Frequency: Annually

YUBA COUNTY:

CUPA YUBA: CUPA Facility List
CUPA facility listing for Yuba County.

Date of Government Version: 04/27/2020
Date Data Arrived at EDR: 04/29/2020
Date Made Active in Reports: 07/17/2020
Number of Days to Update: 79
Source: Yuba County Environmental Health Department
Telephone: 530-749-7523
Last EDR Contact: 07/21/2020
Next Scheduled EDR Contact: 11/09/2020
Data Release Frequency: Varies

OTHER DATABASE(S)

Depending on the geographic area covered by this report, the data provided in these specialty databases may or may not be complete. For example, the existence of wetlands information data in a specific report does not mean that all wetlands in the area covered by the report are included. Moreover, the absence of any reported wetlands information does not necessarily mean that wetlands do not exist in the area covered by the report.

CT MANIFEST: Hazardous Waste Manifest Data
Facility and manifest data. Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a tsd facility.

Date of Government Version: 05/12/2020
Date Data Arrived at EDR: 05/12/2020
Date Made Active in Reports: 07/27/2020
Number of Days to Update: 76
Source: Department of Energy & Environmental Protection
Telephone: 860-424-3375
Last EDR Contact: 05/12/2020
Next Scheduled EDR Contact: 08/24/2020
Data Release Frequency: No Update Planned

NJ MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2018
Date Data Arrived at EDR: 04/10/2019
Date Made Active in Reports: 05/16/2019
Number of Days to Update: 36

Source: Department of Environmental Protection
Telephone: N/A
Last EDR Contact: 07/09/2020
Next Scheduled EDR Contact: 10/19/2020
Data Release Frequency: Annually

NY MANIFEST: Facility and Manifest Data
Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a TSD facility.

Date of Government Version: 01/01/2019
Date Data Arrived at EDR: 04/29/2020
Date Made Active in Reports: 07/10/2020
Number of Days to Update: 72

Source: Department of Environmental Conservation
Telephone: 518-402-8651
Last EDR Contact: 04/29/2020
Next Scheduled EDR Contact: 08/10/2020
Data Release Frequency: Quarterly

PA MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 06/30/2018
Date Data Arrived at EDR: 07/19/2019
Date Made Active in Reports: 09/10/2019
Number of Days to Update: 53

Source: Department of Environmental Protection
Telephone: 717-783-8990
Last EDR Contact: 07/09/2020
Next Scheduled EDR Contact: 10/26/2020
Data Release Frequency: Annually

RI MANIFEST: Manifest information
Hazardous waste manifest information

Date of Government Version: 12/31/2018
Date Data Arrived at EDR: 10/02/2019
Date Made Active in Reports: 12/10/2019
Number of Days to Update: 69

Source: Department of Environmental Management
Telephone: 401-222-2797
Last EDR Contact: 05/14/2020
Next Scheduled EDR Contact: 08/31/2020
Data Release Frequency: Annually

WI MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 05/31/2018
Date Data Arrived at EDR: 06/19/2019
Date Made Active in Reports: 09/03/2019
Number of Days to Update: 76

Source: Department of Natural Resources
Telephone: N/A
Last EDR Contact: 06/04/2020
Next Scheduled EDR Contact: 09/21/2020
Data Release Frequency: Annually

Oil/Gas Pipelines
Source: Endeavor Business Media
Petroleum Bundle (Crude Oil, Refined Products, Petrochemicals, Gas Liquids (LPG/NGL), and Specialty Gases (Miscellaneous)) N = Natural Gas Bundle (Natural Gas, Gas Liquids (LPG/NGL), and Specialty Gases (Miscellaneous)). This map includes information copyrighted by Endeavor Business Media. This information is provided on a best effort basis and Endeavor Business Media does not guarantee its accuracy nor warrant its fitness for any particular purpose. Such information has been reprinted with the permission of Endeavor Business Media.

Electric Power Transmission Line Data
Source: Endeavor Business Media
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Sensitive Receptors: There are individuals deemed sensitive receptors due to their fragile immune systems and special sensitivity to environmental discharges. These sensitive receptors typically include the elderly, the sick, and children. While the location of all sensitive receptors cannot be determined, EDR indicates those buildings and facilities - schools, daycares, hospitals, medical centers, and nursing homes - where individuals who are sensitive receptors are likely to be located.

AHA Hospitals:
Source: American Hospital Association, Inc.
Telephone: 312-280-5991
The database includes a listing of hospitals based on the American Hospital Association's annual survey of hospitals.

Medical Centers: Provider of Services Listing
Source: Centers for Medicare & Medicaid Services
Telephone: 410-786-3000
A listing of hospitals with Medicare provider number, produced by Centers of Medicare & Medicaid Services, a federal agency within the U.S. Department of Health and Human Services.

Nursing Homes
Source: National Institutes of Health
Telephone: 301-594-6248
Information on Medicare and Medicaid certified nursing homes in the United States.

Public Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on elementary and secondary public education in the United States. It is a comprehensive, annual, national statistical database of all public elementary and secondary schools and school districts, which contains data that are comparable across all states.

Private Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on private school locations in the United States.

Daycare Centers: Licensed Facilities
Source: Department of Social Services
Telephone: 916-657-4041

Flood Zone Data: This data was obtained from the Federal Emergency Management Agency (FEMA). It depicts 100-year and 500-year flood zones as defined by FEMA. It includes the National Flood Hazard Layer (NFHL) which incorporates Flood Insurance Rate Map (FIRM) data and Q3 data from FEMA in areas not covered by NFHL.
Source: FEMA
Telephone: 877-336-2627
Date of Government Version: 2003, 2015

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005 and 2010 from the U.S. Fish and Wildlife Service.

State Wetlands Data: Wetland Inventory
Source: Department of Fish and Wildlife
Telephone: 916-445-0411

Current USGS 7.5 Minute Topographic Map
Source: U.S. Geological Survey

STREET AND ADDRESS INFORMATION

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GEOCHECK ®- PHYSICAL SETTING SOURCE ADDENDUM

TARGET PROPERTY ADDRESS

SILVERADO CANYON BRIDGE
SILVERADO CANYON BRIDGE
SILVERADO, CA 92676

TARGET PROPERTY COORDINATES

Latitude (North):	33.745707 - 33° 44' 44.55''
Longitude (West):	117.650169 - 117° 39' 0.61''
Universal Tranverse Mercator:	Zone 11
UTM X (Meters):	439778.1
UTM Y (Meters):	3733957.2
Elevation:	1114 ft. above sea level

USGS TOPOGRAPHIC MAP

Target Property Map:	5636489 EL TORO, CA
Version Date:	2012
Northwest Map:	5636465 BLACK STAR CANYON, CA
Version Date:	2012

EDR's GeoCheck Physical Setting Source Addendum is provided to assist the environmental professional in forming an opinion about the impact of potential contaminant migration.

Assessment of the impact of contaminant migration generally has two principle investigative components:

1. Groundwater flow direction, and
2. Groundwater flow velocity.

Groundwater flow direction may be impacted by surface topography, hydrology, hydrogeology, characteristics of the soil, and nearby wells. Groundwater flow velocity is generally impacted by the nature of the geologic strata.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW DIRECTION INFORMATION

Groundwater flow direction for a particular site is best determined by a qualified environmental professional using site-specific well data. If such data is not reasonably ascertainable, it may be necessary to rely on other sources of information, such as surface topographic information, hydrologic information, hydrogeologic data collected on nearby properties, and regional groundwater flow information (from deep aquifers).

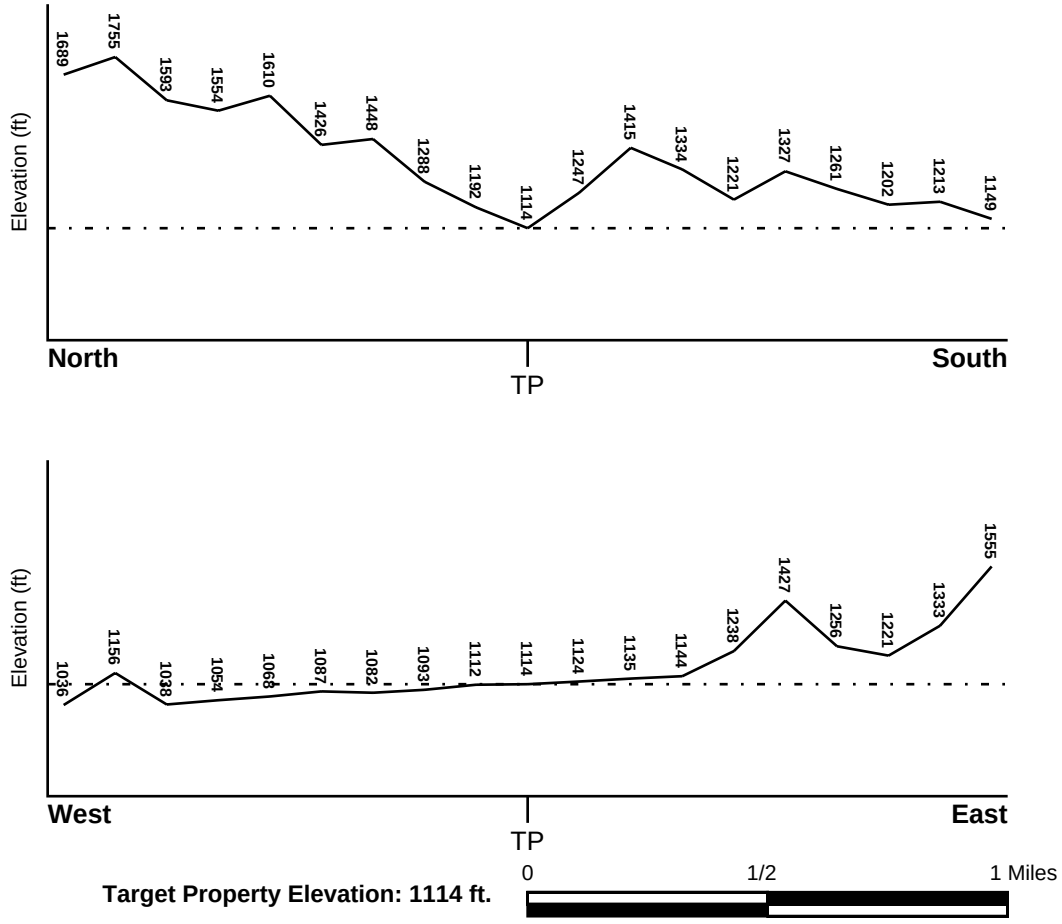
TOPOGRAPHIC INFORMATION

Surface topography may be indicative of the direction of surficial groundwater flow. This information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

TARGET PROPERTY TOPOGRAPHY

General Topographic Gradient: General NNW

SURROUNDING TOPOGRAPHY: ELEVATION PROFILES



Source: Topography has been determined from the USGS 7.5' Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

HYDROLOGIC INFORMATION

Surface water can act as a hydrologic barrier to groundwater flow. Such hydrologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Refer to the Physical Setting Source Map following this summary for hydrologic information (major waterways and bodies of water).

FEMA FLOOD ZONE

Flood Plain Panel at Target Property	FEMA Source Type
06059C0307J	FEMA FIRM Flood data

Additional Panels in search area:	FEMA Source Type
06059C0195J	FEMA FIRM Flood data
06059C0306J	FEMA FIRM Flood data

NATIONAL WETLAND INVENTORY

NWI Quad at Target Property	NWI Electronic Data Coverage
EL TORO	YES - refer to the Overview Map and Detail Map

HYDROGEOLOGIC INFORMATION

Hydrogeologic information obtained by installation of wells on a specific site can often be an indicator of groundwater flow direction in the immediate area. Such hydrogeologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Site-Specific Hydrogeological Data*:

Search Radius:	1.25 miles
Status:	Not found

AQUIFLOW®

Search Radius: 1.000 Mile.

EDR has developed the AQUIFLOW Information System to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted by environmental professionals to regulatory authorities at select sites and has extracted the date of the report, groundwater flow direction as determined hydrogeologically, and the depth to water table.

MAP ID	LOCATION FROM TP	GENERAL DIRECTION GROUNDWATER FLOW
Not Reported		

* ©1996 Site−specific hydrogeological data gathered by CERCLIS Alerts, Inc., Bainbridge Island, WA. All rights reserved. All of the information and opinions presented are those of the cited EPA report(s), which were completed under a Comprehensive Environmental Response Compensation and Liability Information System (CERCLIS) investigation.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW VELOCITY INFORMATION

Groundwater flow velocity information for a particular site is best determined by a qualified environmental professional using site specific geologic and soil strata data. If such data are not reasonably ascertainable, it may be necessary to rely on other sources of information, including geologic age identification, rock stratigraphic unit and soil characteristics data collected on nearby properties and regional soil information. In general, contaminant plumes move more quickly through sandy-gravelly types of soils than silty-clayey types of soils.

GEOLOGIC INFORMATION IN GENERAL AREA OF TARGET PROPERTY

Geologic information can be used by the environmental professional in forming an opinion about the relative speed at which contaminant migration may be occurring.

ROCK STRATIGRAPHIC UNIT

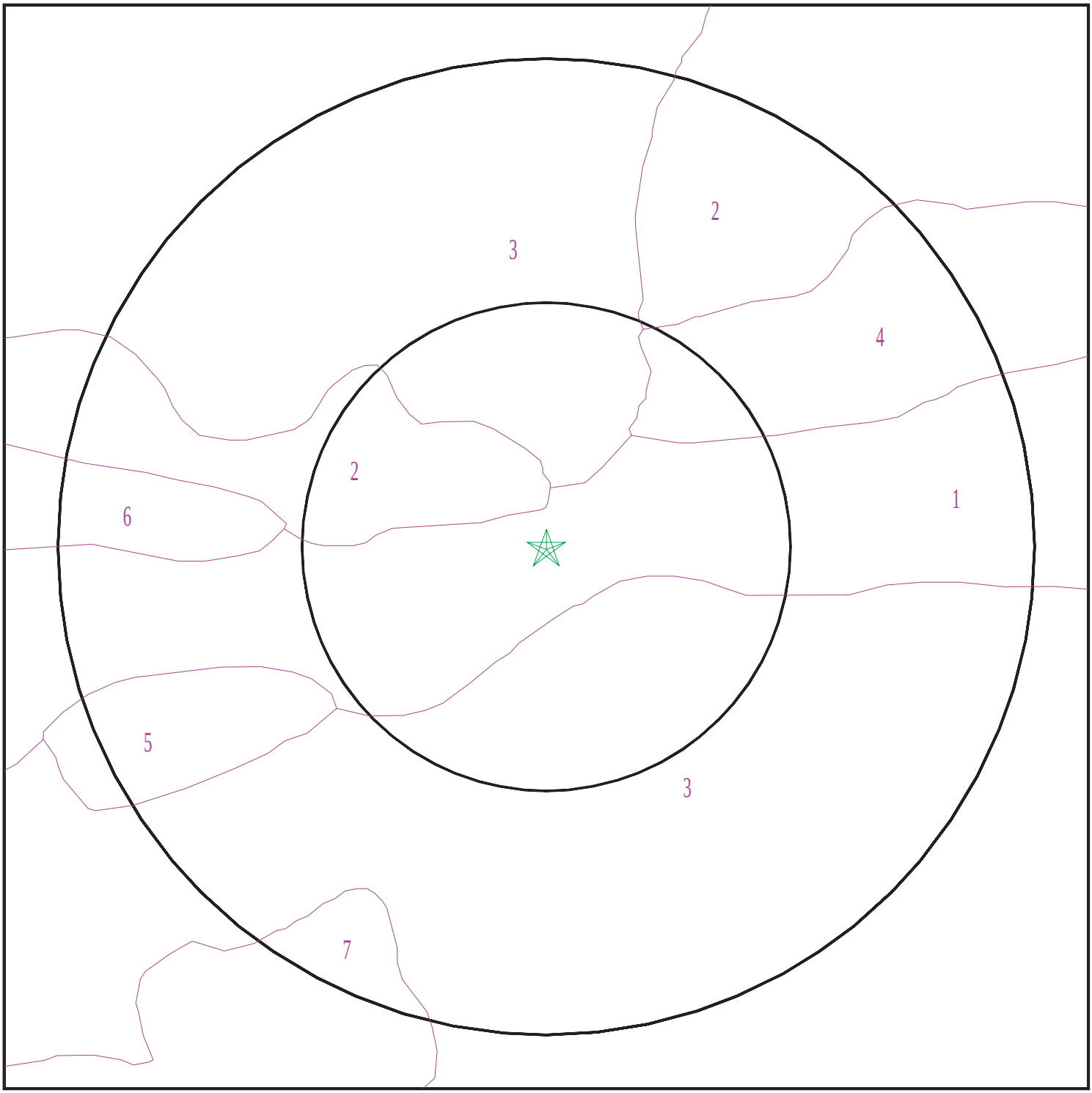
Era:	Mesozoic
System:	Cretaceous
Series:	Upper Cretaceous
Code:	uK *(decoded above as Era, System & Series)*

GEOLOGIC AGE IDENTIFICATION

Category: Stratified Sequence

Geologic Age and Rock Stratigraphic Unit Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - a digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

SSURGO SOIL MAP - 6135774.2s



Target Property
SSURGO Soil
Water

0 1/16 1/8 1/4 Miles

N

SITE NAME:	Silverado Canyon Bridge	CLIENT:	Geocon Geotechnical & Env
ADDRESS:	Silverado Canyon Bridge Silverado CA 92676	CONTACT:	Adrian Escobar
		INQUIRY #:	6135774.2s
LAT/LONG:	33.745707 / 117.650169	DATE:	July 28, 2020 12:44 pm

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GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

DOMINANT SOIL COMPOSITION IN GENERAL AREA OF TARGET PROPERTY

The U.S. Department of Agriculture's (USDA) Soil Conservation Service (SCS) leads the National Cooperative Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. The following information is based on Soil Conservation Service SSURGO data.

Soil Map ID: 1

Soil Component Name: SOBOBA

Soil Surface Texture: gravelly loamy sand

Hydrologic Group: Class A - High infiltration rates. Soils are deep, well drained to excessively drained sands and gravels.

Soil Drainage Class: Excessively drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Low

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	9 inches	gravelly loamy sand	Granular materials (35 pct. or less passing No. 200), Stone Fragments, Gravel and Sand.	COARSE-GRAINED SOILIS, Gravels, Clean Gravels, Well-graded gravel.	Max: 141 Min: 141	Max: 7.8 Min: 6.1
2	9 inches	59 inches	very gravelly sand	Granular materials (35 pct. or less passing No. 200), Stone Fragments, Gravel and Sand.	COARSE-GRAINED SOILIS, Gravels, Clean Gravels, Well-graded gravel.	Max: 141 Min: 141	Max: 7.8 Min: 6.1

Soil Map ID: 2

Soil Component Name: MYFORD

Soil Surface Texture: sandy loam

Hydrologic Group: Class D - Very slow infiltration rates. Soils are clayey, have a high water table, or are shallow to an impervious layer.

Soil Drainage Class: Moderately well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information

	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	11 inches	sandy loam	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay. FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), silt.	Max: 14 Min: 4	Max: 6.5 Min: 6.1
2	11 inches	18 inches	sandy clay	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay. FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), silt.	Max: 14 Min: 4	Max: 6.5 Min: 6.1
3	18 inches	27 inches	sandy clay loam	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay. FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), silt.	Max: 14 Min: 4	Max: 6.5 Min: 6.1

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
4	27 inches	70 inches	sandy clay loam	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay. FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), silt.	Max: 14 Min: 4	Max: 6.5 Min: 6.1
5	70 inches	79 inches	sandy loam	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay. FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), silt.	Max: 14 Min: 4	Max: 6.5 Min: 6.1

Soil Map ID: 3

Soil Component Name: CIENEBA

Soil Surface Texture: sandy loam

Hydrologic Group: Class C - Slow infiltration rates. Soils with layers impeding downward movement of water, or soils with moderately fine or fine textures.

Soil Drainage Class: Somewhat excessively drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Low

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	7 inches	sandy loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	Not reported	Max: 0.42 Min: 0	Max: Min:
2	7 inches	11 inches	weathered bedrock	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	Not reported	Max: 0.42 Min: 0	Max: Min:

Soil Map ID: 4

Soil Component Name: SORRENTO

Soil Surface Texture: clay loam

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	11 inches	clay loam	Not reported	Not reported	Max: 14 Min: 4	Max: 8.4 Min: 7.9
2	11 inches	61 inches	silty clay loam	Not reported	Not reported	Max: 14 Min: 4	Max: 8.4 Min: 7.9

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
3	61 inches	72 inches	stratified loamy fine sand to silt loam	Not reported	Not reported	Max: 14 Min: 4	Max: 8.4 Min: 7.9

Soil Map ID: 5

Soil Component Name: BOSANKO

Soil Surface Texture: clay

Hydrologic Group: Class D - Very slow infiltration rates. Soils are clayey, have a high water table, or are shallow to an impervious layer.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	25 inches	clay	Not reported	Not reported	Max: Min:	Max: Min:
2	25 inches	37 inches	clay	Not reported	Not reported	Max: Min:	Max: Min:
3	37 inches	40 inches	weathered bedrock	Not reported	Not reported	Max: Min:	Max: Min:

Soil Map ID: 6

Soil Component Name: RIVERWASH

Soil Surface Texture: sand

Hydrologic Group: Class D - Very slow infiltration rates. Soils are clayey, have a high water table, or are shallow to an impervious layer.

Soil Drainage Class:

Hydric Status: All hydric

Corrosion Potential - Uncoated Steel: Not Reported

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 31 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	5 inches	sand	Granular materials (35 pct. or less passing No. 200), Stone Fragments, Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 141 Min: 42	Max: Min:
2	5 inches	59 inches	stratified coarse sand to sandy loam	Granular materials (35 pct. or less passing No. 200), Stone Fragments, Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 141 Min: 42	Max: Min:

Soil Map ID: 7

Soil Component Name: YORBA

Soil Surface Texture: gravelly sandy loam

Hydrologic Group: Class D - Very slow infiltration rates. Soils are clayey, have a high water table, or are shallow to an impervious layer.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	11 inches	gravelly sandy loam	Granular materials (35 pct. or less passing No. 200), Stone Fragments, Gravel and Sand.	COARSE-GRAINED SOILS, Gravels, Gravels with fines, Silty Gravel	Max: 14 Min: 4	Max: 8.4 Min: 5.1
2	11 inches	40 inches	very gravelly sandy clay loam	Granular materials (35 pct. or less passing No. 200), Stone Fragments, Gravel and Sand.	COARSE-GRAINED SOILS, Gravels, Gravels with fines, Silty Gravel	Max: 14 Min: 4	Max: 8.4 Min: 5.1
3	40 inches	62 inches	very gravelly sandy loam	Granular materials (35 pct. or less passing No. 200), Stone Fragments, Gravel and Sand.	COARSE-GRAINED SOILS, Gravels, Gravels with fines, Silty Gravel	Max: 14 Min: 4	Max: 8.4 Min: 5.1

LOCAL / REGIONAL WATER AGENCY RECORDS

EDR Local/Regional Water Agency records provide water well information to assist the environmental professional in assessing sources that may impact ground water flow direction, and in forming an opinion about the impact of contaminant migration on nearby drinking water wells.

WELL SEARCH DISTANCE INFORMATION

DATABASE	SEARCH DISTANCE (miles)
Federal USGS	1.000
Federal FRDS PWS	Nearest PWS within 1 mile
State Database	1.000

FEDERAL USGS WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

FEDERAL USGS WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
No Wells Found		

FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
1	CA3000634	1/2 - 1 Mile East

Note: PWS System location is not always the same as well location.

STATE DATABASE WELL INFORMATION

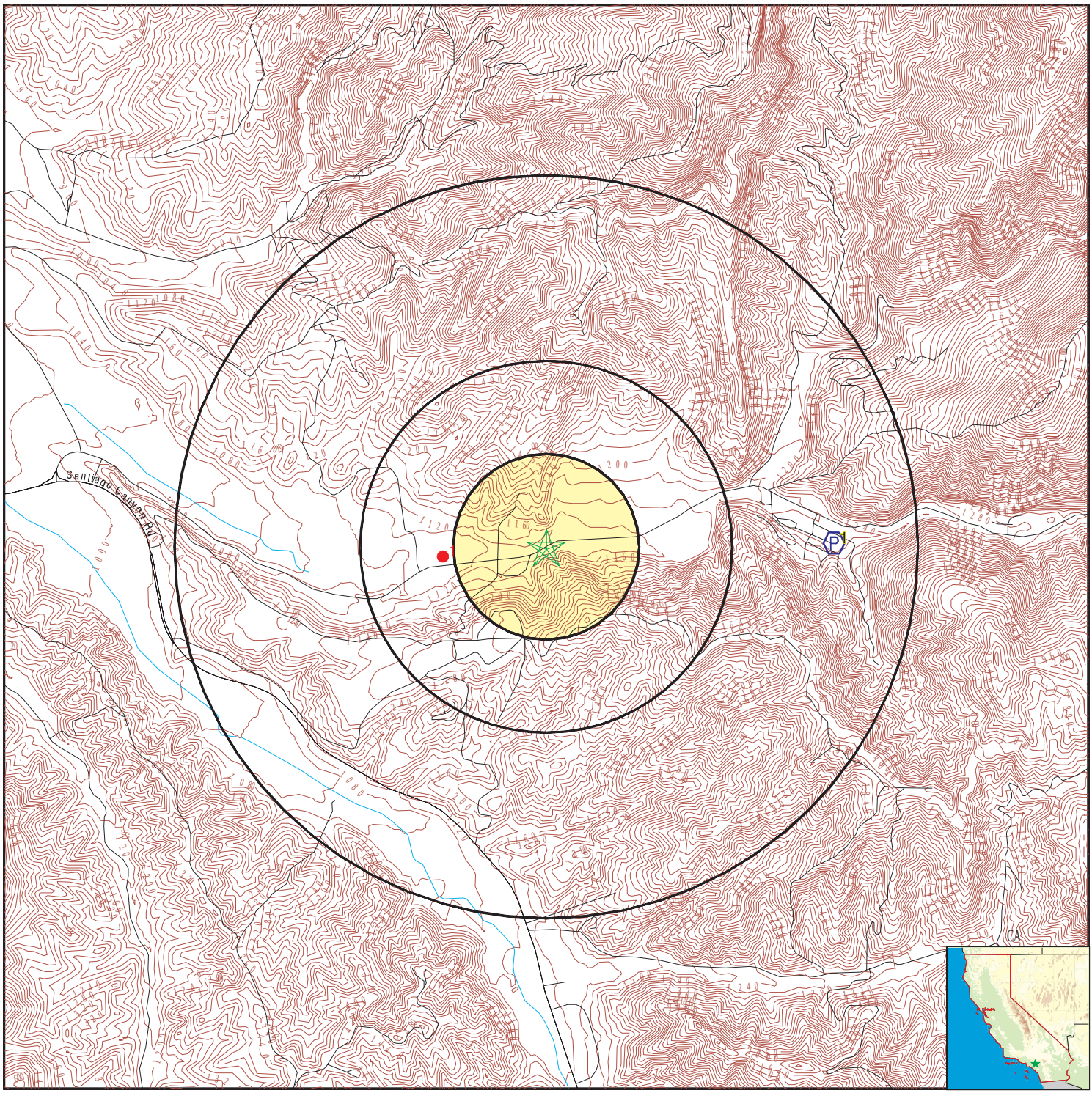
MAP ID	WELL ID	LOCATION FROM TP
No Wells Found		

OTHER STATE DATABASE INFORMATION

STATE OIL/GAS WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
1	CAOG13000006280	1/4 - 1/2 Mile West

PHYSICAL SETTING SOURCE MAP - 6135774.2s



- County Boundary
- Major Roads
- Contour Lines
- Earthquake Fault Lines
- Earthquake epicenter, Richter 5 or greater
- Water Wells
- Public Water Supply Wells
- Cluster of Multiple Icons

0 1/4 1/2 1 Miles

- Groundwater Flow Direction
- GI Indeterminate Groundwater Flow at Location
- GV Groundwater Flow Varies at Location
- HD Closest Hydrogeological Data
- Oil, gas or related wells

N

SITE NAME:	Silverado Canyon Bridge	CLIENT:	Geocon Geotechnical & Env
ADDRESS:	Silverado Canyon Bridge Silverado CA 92676	CONTACT:	Adrian Escobar
		INQUIRY #:	6135774.2s
LAT/LONG:	33.745707 / 117.650169	DATE:	July 28, 2020 12:44 pm

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GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation

	Database	EDR ID Number
1 **East** **1/2 - 1 Mile** **Higher**	**FRDS PWS**	**CA3000634**

Epa region:	09	State:	CA
Pwsid:	CA3000634	Pwsname:	MYSTIC OAKS CAMP
Cityserved:	Not Reported	Stateserved:	CA
Zipserved:	Not Reported	Fipscounty:	06059
Status:	Closed	Retpopsrvd:	50
Pwssvcconn:	40	Psource longname:	Groundwater
Pwstype:	TNCWS	Owner:	Private
Contact:	Jae W. Kim	Contactorgname:	Ortega Ark LLC
Contactphone:	9096782333	Contactaddress1:	2025 Alton Parkway
Contactaddress2:	Not Reported	Contactcity:	Irvine
Contactstate:	CA	Contactzip:	92606
Pwsactivitycode:	N		

PWS ID:	CA3000634	PWS type:	System Owner/Responsible Party
PWS name:	MC CONVILLE CAMP	PWS address:	Not Reported
PWS city:	ELSINORE	PWS state:	CA
PWS zip:	94234	PWS ID:	CA3000634
Activity status:	Active	Date system activated:	8404
Date system deactivated:	Not Reported	Retail population:	00000200
System name:	MCCONVILLE CAMP	System address:	MC CONVILLE CAMP
System address:	ORTEGA HWY	System city:	ELSINORE
System state:	CA	System zip:	92330
Population served:	101 - 500 Persons	Treatment:	Untreated
Latitude:	334445	Longitude:	1173809

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance

Database EDR ID Number

1
West
1/4 - 1/2 Mile

OIL_GAS **CAOG13000006280**

API #:	0405901276	Well #:	1
Well Status:	Plugged	Well Type:	DH
Operator Name:	Ray M. Uyeshima and H. T. Hoover		
Lease Name:	Susie M	Field Name:	Any Field
Area Name:	Any Area	GIS Source:	hud
Confidential Well:	N	Directionally Drilled:	N
SPUD Date:	Not Reported		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS
RADON

AREA RADON INFORMATION

State Database: CA Radon

Radon Test Results

Zipcode	Num Tests	> 4 pCi/L
92676	3	0

Federal EPA Radon Zone for ORANGE County: 3

Note: Zone 1 indoor average level > 4 pCi/L.
: Zone 2 indoor average level >= 2 pCi/L and <= 4 pCi/L.
: Zone 3 indoor average level < 2 pCi/L.

Federal Area Radon Information for ORANGE COUNTY, CA

Number of sites tested: 30

Area	Average Activity	% <4 pCi/L	% 4-20 pCi/L	% >20 pCi/L
Living Area - 1st Floor	0.763 pCi/L	100%	0%	0%
Living Area - 2nd Floor	Not Reported	Not Reported	Not Reported	Not Reported
Basement	Not Reported	Not Reported	Not Reported	Not Reported

PHYSICAL SETTING SOURCE RECORDS SEARCHED

TOPOGRAPHIC INFORMATION

USGS 7.5' Digital Elevation Model (DEM)
Source: United States Geologic Survey
EDR acquired the USGS 7.5' Digital Elevation Model in 2002 and updated it in 2006. The 7.5 minute DEM corresponds to the USGS 1:24,000- and 1:25,000-scale topographic quadrangle maps. The DEM provides elevation data with consistent elevation units and projection.

Current USGS 7.5 Minute Topographic Map
Source: U.S. Geological Survey

HYDROLOGIC INFORMATION

Flood Zone Data: This data was obtained from the Federal Emergency Management Agency (FEMA). It depicts 100-year and 500-year flood zones as defined by FEMA. It includes the National Flood Hazard Layer (NFHL) which incorporates Flood Insurance Rate Map (FIRM) data and Q3 data from FEMA in areas not covered by NFHL.
Source: FEMA
Telephone: 877-336-2627
Date of Government Version: 2003, 2015

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005 and 2010 from the U.S. Fish and Wildlife Service.

State Wetlands Data: Wetland Inventory
Source: Department of Fish and Wildlife
Telephone: 916-445-0411

HYDROGEOLOGIC INFORMATION

AQUIFLOW^{R} Information System
Source: EDR proprietary database of groundwater flow information
EDR has developed the AQUIFLOW Information System (AIS) to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted to regulatory authorities at select sites and has extracted the date of the report, hydrogeologically determined groundwater flow direction and depth to water table information.

GEOLOGIC INFORMATION

Geologic Age and Rock Stratigraphic Unit
Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - A digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

STATSGO: State Soil Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Service (NRCS)
The U.S. Department of Agriculture's (USDA) Natural Resources Conservation Service (NRCS) leads the national Conservation Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps.

SSURGO: Soil Survey Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Service (NRCS)
Telephone: 800-672-5559
SSURGO is the most detailed level of mapping done by the Natural Resources Conservation Service, mapping scales generally range from 1:12,000 to 1:63,360. Field mapping methods using national standards are used to construct the soil maps in the Soil Survey Geographic (SSURGO) database. SSURGO digitizing duplicates the original soil survey maps. This level of mapping is designed for use by landowners, townships and county natural resource planning and management.

PHYSICAL SETTING SOURCE RECORDS SEARCHED

LOCAL / REGIONAL WATER AGENCY RECORDS

FEDERAL WATER WELLS

PWS: Public Water Systems
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Public Water System data from the Federal Reporting Data System. A PWS is any water system which provides water to at least 25 people for at least 60 days annually. PWSs provide water from wells, rivers and other sources.

PWS ENF: Public Water Systems Violation and Enforcement Data
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Violation and Enforcement data for Public Water Systems from the Safe Drinking Water Information System (SDWIS) after August 1995. Prior to August 1995, the data came from the Federal Reporting Data System (FRDS).

USGS Water Wells: USGS National Water Inventory System (NWIS)
This database contains descriptive information on sites where the USGS collects or has collected data on surface water and/or groundwater. The groundwater data includes information on wells, springs, and other sources of groundwater.

STATE RECORDS

Water Well Database
Source: Department of Water Resources
Telephone: 916-651-9648

California Drinking Water Quality Database
Source: Department of Public Health
Telephone: 916-324-2319
The database includes all drinking water compliance and special studies monitoring for the state of California since 1984. It consists of over 3,200,000 individual analyses along with well and water system information.

OTHER STATE DATABASE INFORMATION

California Oil and Gas Well Locations
Source: Dept of Conservation, Geologic Energy Management Division
Telephone: 916-323-1779
Oil and Gas well locations in the state.

California Earthquake Fault Lines
Source: California Division of Mines and Geology
The fault lines displayed on EDR's Topographic map are digitized quaternary fault lines prepared in 1975 by the United State Geological Survey. Additional information (also from 1975) regarding activity at specific fault lines comes from California's Preliminary Fault Activity Map prepared by the California Division of Mines and Geology.

RADON

State Database: CA Radon
Source: Department of Public Health
Telephone: 916-210-8558
Radon Database for California

Area Radon Information
Source: USGS
Telephone: 703-356-4020
The National Radon Database has been developed by the U.S. Environmental Protection Agency (USEPA) and is a compilation of the EPA/State Residential Radon Survey and the National Residential Radon Survey. The study covers the years 1986 - 1992. Where necessary data has been supplemented by information collected at private sources such as universities and research institutions.

PHYSICAL SETTING SOURCE RECORDS SEARCHED

EPA Radon Zones
Source: EPA
Telephone: 703-356-4020
Sections 307 & 309 of IRAA directed EPA to list and identify areas of U.S. with the potential for elevated indoor radon levels.

OTHER

Airport Landing Facilities: Private and public use landing facilities
Source: Federal Aviation Administration, 800-457-6656

Epicenters: World earthquake epicenters, Richter 5 or greater
Source: Department of Commerce, National Oceanic and Atmospheric Administration

California Earthquake Fault Lines: The fault lines displayed on EDR's Topographic map are digitized quaternary fault lines, prepared in 1975 by the United State Geological Survey. Additional information (also from 1975) regarding activity at specific fault lines comes from California's Preliminary Fault Activity Map prepared by the California Division of Mines and Geology.

STREET AND ADDRESS INFORMATION

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APPENDIX F

Initial Site Assessment (ISA) Checklist

Project Information

District 12 County OC Route _____ Post Mile _____ EA _____

Description The project consists of removal and replacement of the existing Silverado Canyon Road Bridge over Silverado Canyon Creek

Is the project on the HW Study Minimal-Risk Projects List (HW1)? no

Project Manager _____ phone # _____

Project Engineer _____ phone # _____

Project Screening

Attach the project location map to this checklist to show location of all known and/or potential HW sites identified.

1. Project Features: New R/W? No Excavation? Yes Railroad Involvement? No

   Structure demolition/modification? YES Subsurface utility relocation? No

2. Project Setting _____

   Rural or Urban _____

   Current land uses _____

   Adjacent land uses Commercial, residential
   (industrial, light industry, commercial, agricultural, residential, etc.)

3. Check federal, State, and local environmental and health regulatory agency records as necessary, to see if any known hazardous waste site is in or near the project area. If a known site is identified, show its location on the attached map and attach additional sheets, as needed, to provide pertinent information for the proposed project.

4. Conduct Field Inspection. Date 8/7/2020 Use the attached map to locate potential or known HW sites.

   STORAGE STRUCTURES / PIPELINES:

   Underground tanks None observed Surface tanks None observed
   Sumps None observed Ponds None observed
   Drums None observed Basins None observed
   Transformers Pole-mounted Landfill None observed
   Other None observed

Initial Site Assessment (ISA) Checklist

(continued)

CONTAMINATION: (spills, leaks, illegal dumping, etc.)

Surface staining None observed Oil sheen None observed

Odors None detected Vegetation damage None observed

Other None

HAZARDOUS MATERIALS: (asbestos, lead, etc.)

Buildings N/A Spray-on fireproofing N/A

Pipe wrap N/A Friable tile N/A

Acoustical plaster N/A Serpentine N/A

Paint On Bridges and Ramps, road striping Other Potential ACM on bridge

5. Additional record search, as necessary, of subsequent land uses that could have resulted in a hazardous waste site. Use the attached map to show the location of potential hazardous waste sites.

6. Other comments and/or observations: ADL in soil and treated wood waste.

ISA Determination

Does the project have potential hazardous waste involvement? yes If there is known or potential hazardous waste involvement, is additional ISA work needed before task orders can be prepared for the Investigation? NO If "YES," explain; then give an estimate of additional time required: _____

A brief memo should be prepared to transmit the ISA conclusions to the Project Manager and Project Engineer.

ISA Conducted by Michael Conkle, PG **Date** _____

Appendix E Construction Noise Impact Analysis Technical Memorandum

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NOISE TECHNICAL MEMORANDUM

Date:	August 13, 2021
To:	Noeli Topete, Environmental Planner GPA Consulting, Inc.
From:	Kurt Legleiter, Principal, AMBIENT Air Quality & Noise Consulting
Subject:	**CONSTRUCTION NOISE IMPACT ANALYSIS FOR THE SILVERADO CANYON BRIDGE REPLACEMENT PROJECT, ORANGE COUNTY, CA**

INTRODUCTION

The County of Orange Public Works (County), in cooperation with the California Department of Transportation (Caltrans) and the Federal Highway Administration (FHWA), intends to replace the Silverado Canyon Road Bridge over Silverado Creek (Bridge Number [Br. No.] 55C-0174). The proposed project's location is depicted in Figure 1 and Figure 2. The proposed project's footprint is depicted in Figure 3. This memorandum provides a summary of short-term air quality and greenhouse gas (GHG) impacts associated with the proposed project.

EXISTING STRUCTURE

The existing structure was built in 1935 and is a single-span riveted steel through plate girder bridge with concrete deck on reinforced concrete abutments all supported on concrete spread footings. The bridge is 58 feet long and 32 feet wide and carries two lanes of traffic over the Silverado Creek. The bridge cross section consists of two 2-foot-wide combined curb and railing, a 4-foot-wide walkway (north side), as well as two 12-foot-wide traffic lanes. The tops of the steel girders are rusty and have been damaged by multiple vehicles impacts on both ends of the bridge.

PURPOSE AND NEED

The Silverado Canyon Road Bridge was constructed in 1935 and provides access to approximately 270 homes in the unincorporated community of Silverado, as well as to the local Silverado Fire Station, library, and post office. The bridge's function is critical to the surrounding community, and avoidance of potential failure or deficiencies is essential. The community is susceptible to risk of seasonal floods and wildfires that occur in the Santa Ana Mountains. Silverado Canyon Road Bridge serves as emergency access to and from the Canyon in the event of a community evacuation. In 2007, the Santiago Fire forced evacuation of Silverado Canyon residents, primarily using the Silverado Canyon Road Bridge. The fire burned for 31 days and the bridge provided access to firefighting vehicles and personnel during the official state of emergency.

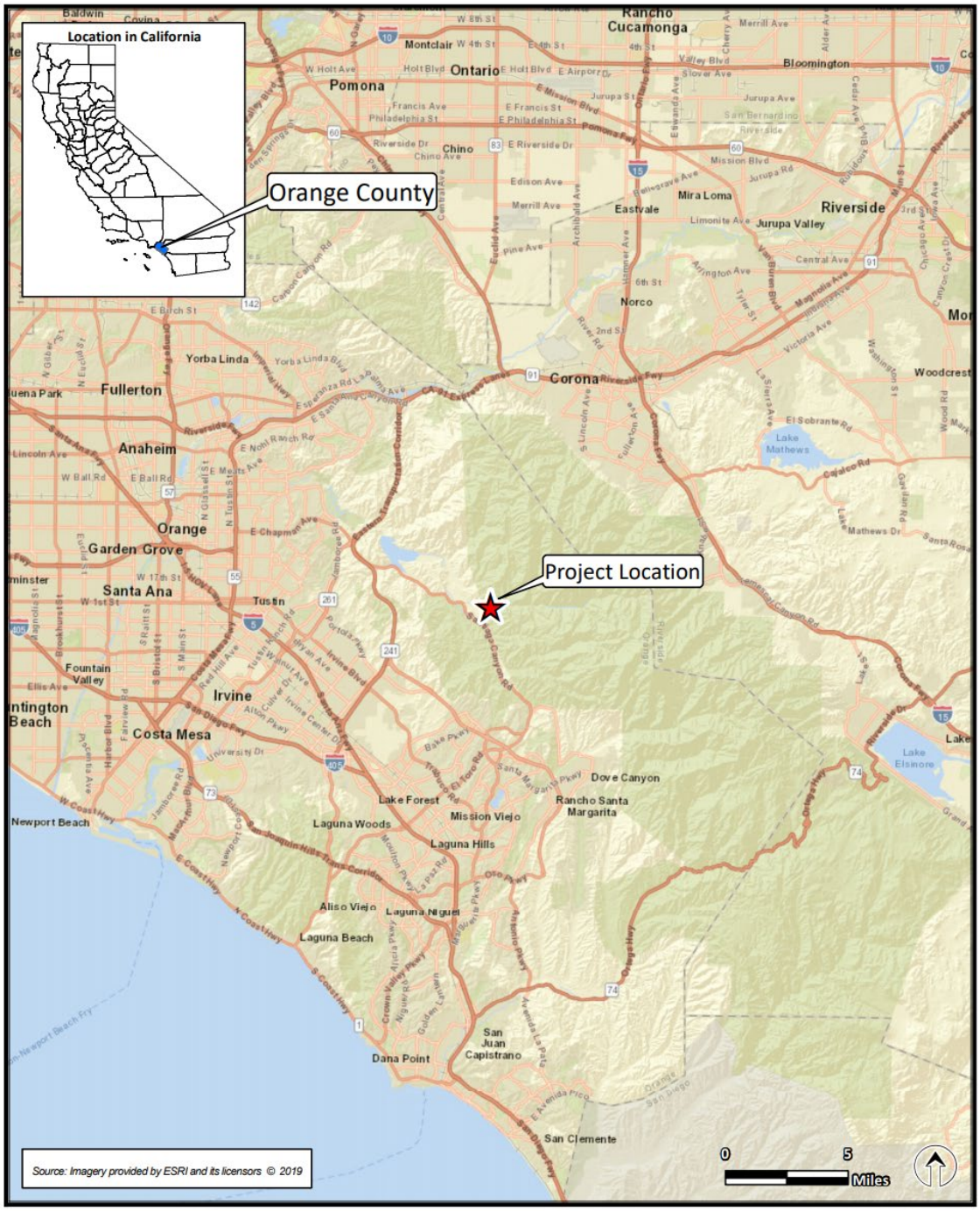

FIGURE 1. REGIONAL LOCATION
Silverado Bridge Replacement Project

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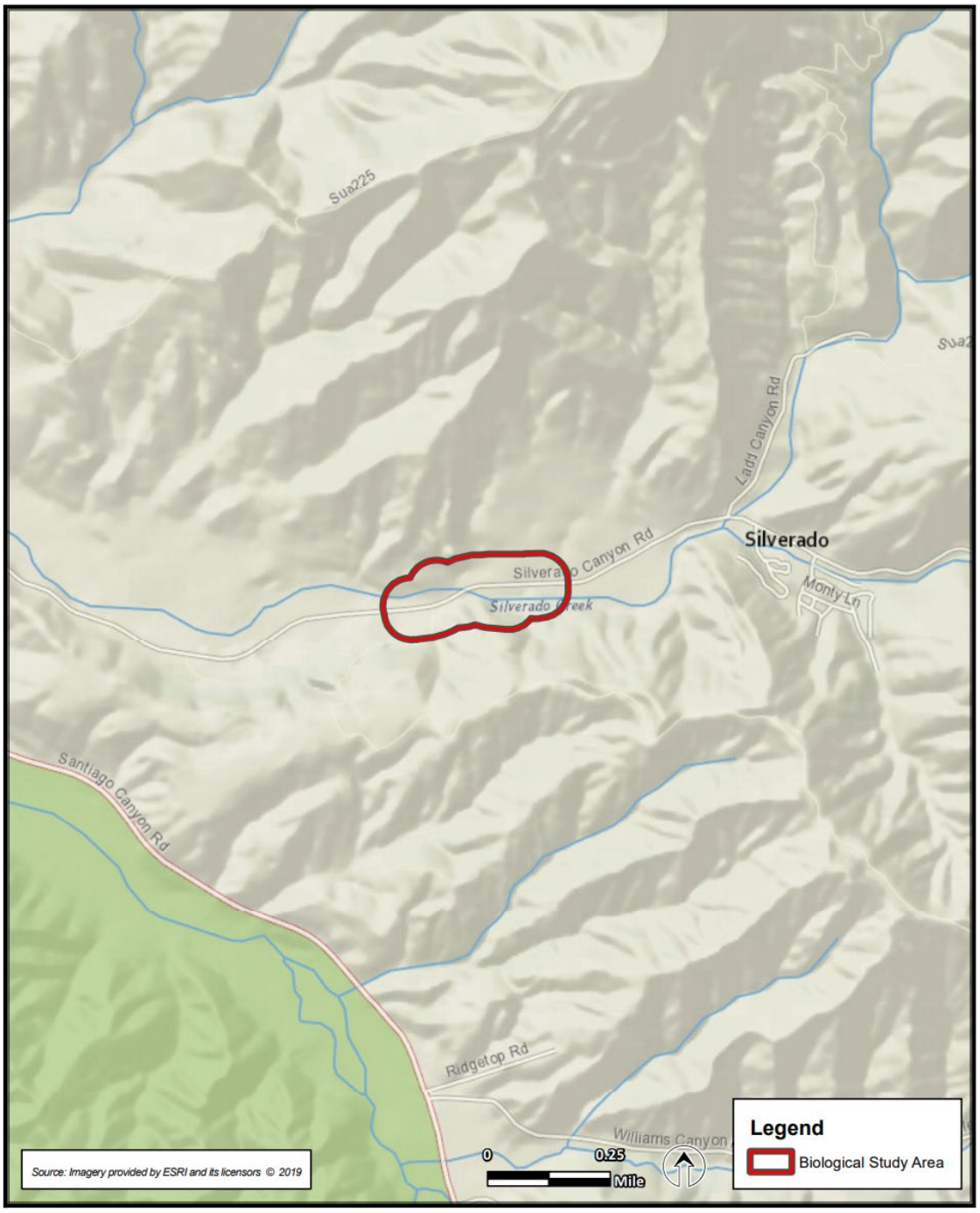

FIGURE 2. PROJECT LOCATION
Silverado Bridge Replacement Project

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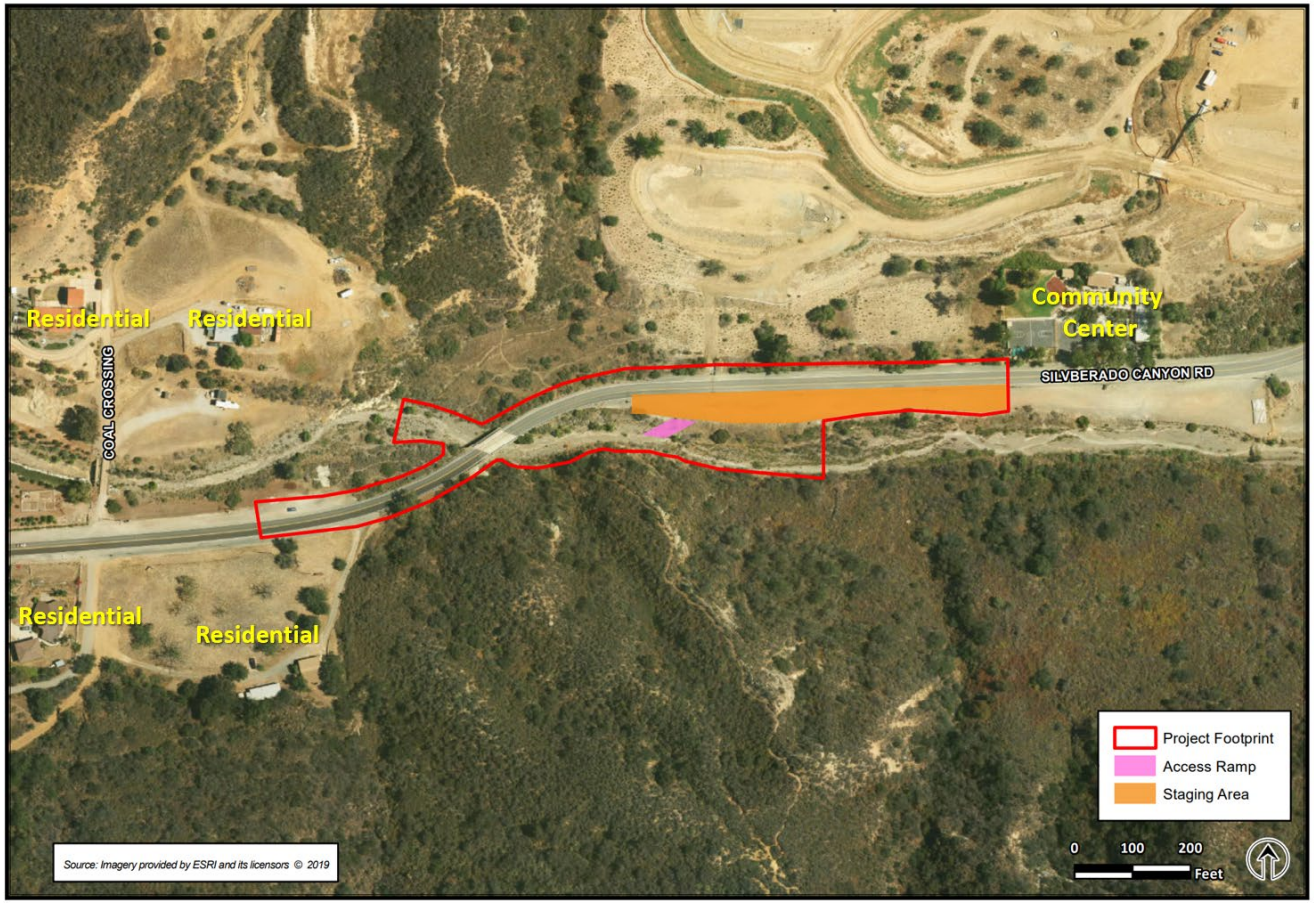

FIGURE 3. PROJECT FOOTPRINT
Silverado Bridge Replacement Project

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The Silverado Canyon Road Bridge received a low Sufficiency Rating of 46.5 (out of 100) on the most recent Caltrans bridge inspection report. In addition to its advanced age and noticeable signs of deterioration, the bridge is also classified as functionally obsolete, which means that the bridge deck is too narrow for current and future traffic needs.

PROJECT DESCRIPTION

The project would include removal and replacement of the existing Silverado Canyon Road Bridge over Silverado Creek. The proposed replacement bridge would be a concrete bridge approximately 58 feet long and 44 feet wide. The bridge would support two 12-foot-wide traffic lanes, two 5-foot shoulders, two traffic barriers, and a 5-foot sidewalk with railing (north side). The project would require relocation of the existing waterline and coordination with the adjacent power pole owner to protect in place the poles and overhead lines electrical and communication lines.

The proposed construction activities include removal of the existing steel bridge (in two separate stages); full or partial removal of the existing wingwalls; modification of the existing abutments; construction of a wider concrete bridge, abutments, wingwalls, and retaining walls; replacement of the existing metal beam guardrails; widening of the roadway at both ends of the bridge approaches; regrading of the existing creek banks at the bridge; construction of a temporary construction access ramp into the creek; and construction of scour countermeasures at the bridge foundations. Existing abutments would be modified to minimize construction activity in the creek. New abutments would be supported on concrete spread footings, similar to the existing foundations. In addition, 42 micropiles would be drilled up to 80 feet in length with a diameter of 12 inches, to further support the bridge. Grading in the Silverado Creek channel would be required during construction. There would be an approximate 270 cubic yards of cut and 57 cubic yards of fill. In addition, there would be approximately 213 cubic yards of export. Debris from demolition activities would be collected and removed from the site to prevent materials from entering the Silverado Creek channel. Drainage on the bridge would be treated prior to offsite discharge during construction. Tree removal would be required along the roadway at the southeast quadrant for sight distance requirements.

The existing bridge serves as the only access into and out of Silverado Canyon for rural residents, volunteer fire station, community center, branch library, and post office. It is important that access, for both residential and emergency vehicles, is maintained during construction. There is no detour available for the Silverado Canyon Road Bridge. Therefore, the project would require staged construction that always maintains one lane of traffic open during construction. Additional staging area would be provided on a vacant lot approximately 150 feet east of the bridge along the existing shoulder. Half of the existing steel bridge would be removed during the first construction phase while the remaining half would be supported on temporary falsework in order to maintain one lane of traffic open during construction. The falsework supports would be supported on spread footings within the creek. The project would be completed within existing right-of-way; however, a temporary construction easement (TCE) would be required. New abutments would be supported on concrete spread footings, similar to the existing foundations.

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REGULATORY FRAMEWORK

Construction Noise

Caltrans Standard Specifications

Caltrans Standard Specifications includes specifications for the control of noise and vibration associated with construction activities. Caltrans Standard Specifications, Section 14-8.02, Noise Control, requires that noise from construction activities not exceed 86 dBA L_{max} at 50 feet from the job site between the hours of 9:00 p.m. and 6:00 a.m. (Caltrans 2018).

Orange County Code of Ordinances

The Orange County Code of Ordinances, Title 4, Division 6, Noise Control, includes provisions for the control of non-transportation noise that affects residential property. The ordinance establishes exterior noise standards of 55 dBA and 50 dBA for daytime (7:00 a.m. to 10:00 p.m.) and nighttime (10:00 p.m. to 7:00 a.m.) hours, respectively. The ordinance also establishes interior noise standards of 55 and 45 dBA for these same periods, respectively. Noise associated with construction-related activities are exempt, provided that such activities do not take place between 8:00 p.m. and 7 a.m. on weekdays, including Saturdays, or at any time on Sunday or a Federal holiday (Orange County 2021).

Construction Vibration

There are no federal, state, or local regulatory standards for groundborne vibration. However, Caltrans has developed vibration criteria based on potential structural damage risks and human annoyance. Caltrans-recommended criteria for the evaluation of groundborne vibration levels, with regard to structural damage and human annoyance, are summarized in Table 1. The criteria apply to continuous vibration sources, which includes vehicle traffic and most construction activities. All damage criteria for buildings are in terms of ground motion at the buildings' foundations. No allowance is included for the amplifying effects of structural components (Caltrans 2020).

As shown in Table 1, the threshold for architectural damage commonly applied to construction activities is a peak particle velocity (ppv) of 0.3 inches per second (in/sec) for fragile structures and 0.5 in/sec ppv for newer structures. Levels above 0.2 in/sec ppv may result in increased levels of annoyance for people in buildings (Caltrans 2020).

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Table 1. Summary of Groundborne Vibration Levels and Potential Effects

Vibration Level (in/sec ppv)	Human Reaction	Effect on Buildings
0.006-0.019	Threshold of perception; possibility of intrusion.	Vibrations unlikely to cause damage of any type.
0.08	Vibrations readily perceptible.	Recommended upper level of the vibration to which ruins and ancient monuments should be subjected.
0.10	Level at which continuous vibrations begin to annoy people.	Virtually no risk of "architectural" damage to normal buildings.
0.20	Vibrations annoying to people in buildings (this agrees with the levels established for people standing on bridges and subjected to relative short periods of vibrations).	Threshold at which there is a risk of "architectural" damage to fragile buildings.
0.4-0.6	Vibrations considered unpleasant by people subjected to continuous vibrations and unacceptable to some people walking on bridges.	Potential risk of "architectural" damage may occur at levels above 0.3 in/sec ppv for older residential structures and above 0.5 in/sec ppv for newer structures.

The vibration levels are based on peak particle velocity in the vertical direction for continuous vibration sources, which includes most construction activities.
Source: Caltrans 2020

EXISTING SETTING

The areas adjacent to the project area consist predominantly of a mix of agricultural and rural-residential land uses. The nearest residential dwellings are located approximately 395 feet northwest of the bridge and approximately 440 feet to the southwest. In addition, the Silverado Community Center is located approximately 860 feet to the northeast of the bridge. Nearby land uses are depicted in Figure 3. No fragile or historic structures were identified in the project vicinity.

CONSTRUCTION NOISE & GROUNDBORNE VIBRATION IMPACT ANALYSIS

Construction Noise

During construction of the project, noise from construction activities may intermittently dominate the noise environment in the immediate area of construction. Table 2 summarizes noise levels produced by construction equipment commonly used on roadway and bridge construction projects.

Based on the levels depicted in Table 2, individual pieces of construction equipment can be expected to generate intermittent noise levels ranging from approximately 76 to 90 dBA L_{max} at 50 feet. Average-hourly noise levels associated with the operation of individual pieces of construction equipment can range from approximately 72 to 82 dBA L_{eq} at 50 feet. Predicted exterior construction noise levels at nearby land uses are summarized in Table 3.

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Table 2. Typical Construction Equipment Noise Levels

Equipment	Noise Level (dBA at 50 feet)	
	L_{max}	L_{eq}
Backhoes	78	74
Bulldozers	82	78
Compressors	78	74
Cranes	81	73
Concrete Pump Truck	81	74
Drill Rigs	79	72
Dump Trucks	77	73
Hydraulic Break Rams	90	80
Front End Loaders	79	75
Pneumatic Tools	85	82
Pumps	81	78
Rollers	80	73
Scrapers	84	80

Based on measured instantaneous noise levels (L_{max}), average equipment usage rates, and calculated average-hourly (L_{eq}) noise levels derived from the FHWA Road Construction Noise Model (FHWA 2008)

Noise produced by construction equipment decreases at a rate of about 6 dB per doubling of distance from the source. Based on this attenuation rate, the distances to the nearest dwellings, the equipment noise levels identified in Table 2, and assuming multiple pieces of equipment operating simultaneously, the highest predicted exterior average-hourly noise levels at the nearest residential dwellings would range from approximately 58 to 77 dBA L_{eq}. Predicted exterior average-hourly noise levels at the outdoor activity areas located at the Silverado Community Center would range from approximately 51 to 77 dBA L_{eq}. Predicted exterior average-hourly noise levels at the nearby horse stables and outdoor arena located southwest of the project site would range from approximately 63 to 80 dBA L_{eq}. Predicted noise levels would be short term, with the highest predicted noise levels occurring when off-road construction equipment is located nearest these land uses. Actual noise levels will vary depending on various factors, including the type and number of pieces of equipment used and duration of use.

In comparison to ambient daytime noise levels, construction-generated noise levels at the nearest residential dwellings would be detectable. With regard to residential dwellings, activities occurring during the more noise-sensitive nighttime hours would be of particular concern given the potential for increased levels of annoyance and sleep disruption to building occupants. The project would be constructed in compliance with the County's noise standards and Caltrans Standard Specifications Section 14-8.02. However, if uncontrolled, construction noise may result in increased disturbance to occupants of nearby land uses.

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Table 3. Summary of Predicted Construction Noise Levels at Nearby Residences & Outdoor Activity Areas

Activity	Typical Equipment	Distance to Structure (Feet)	Noise Level (dBA)	
			L_{eq}	L_{max}
Pile (CIDH) Install	Drill Rig, Concrete Pump, Concrete Truck			
	Residence Northwest of Bridge	395	63	58
	Residence Southwest of Bridge	440	62	57
	Silverado Community Center Outdoor Activity Area Northeast of Bridge	860	56	51
	Horse Arena Southwest of Bridge	295	66	61
	Horse Stables Southwest of Bridge	375	63	58
Bridge Excavation/Construction	Excavator, Dump Truck, Pumps			
	Residence Northwest of Bridge	395	63	60
	Residence Southwest of Bridge	440	62	59
	Silverado Community Center Outdoor Activity Area Northeast of Bridge	860	56	53
	Horse Arena Southwest of Bridge	295	66	63
	Horse Stables Southwest of Bridge	375	63	60
Bridge Demolition	Excavator, Hydraulic Breaker, Pumps			
	Residence Northwest of Bridge	395	72	64
	Residence Southwest of Bridge	440	71	63
	Silverado Community Center Outdoor Activity Area Northeast of Bridge	860	65	57
	Horse Arena Southwest of Bridge	295	75	67
	Horse Stables Southwest of Bridge	375	72	64
Road Construction/Paving	Grader, Roller, Paver			
	Silverado Community Center Outdoor Activity Area/Horse Stables/Arena	50	80	77

Noise levels were calculated using the FHWA Roadway Construction Noise Model, Version 1.1 (2008). Assumes the two loudest pieces of equipment operating simultaneously. Distances are approximate based on aerial photo interpretation.

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Construction Noise-Abatement Measures

- Construction activities shall conform to the provisions in Section 14-8.02, "Noise Control," of the Caltrans Standard Specifications. Caltrans Standard Specifications Section 14-8.02 requires the following mandatory noise abatement measures:
- Per Section 14-8.02 Noise Control, do not exceed 86 dBA L_{max} at 50 feet from the job site activities from 9 p.m. to 6 a.m.

In addition to the abatement measures listed above, implementing the following recommended measure would help minimize temporary construction noise impacts:

- To the extent possible and in accordance with Orange County noise-control requirements, construction activities, excluding activities required to occur without interruption or activities that would pose a significant safety risk to workers or citizens, shall be limited to between the daytime hours of 7:00 a.m. and 8:00 p.m. on weekdays, including Saturdays, and prohibited on Sundays and national holidays.
- Internal combustion engines shall be equipped with a muffler of a type recommended by the manufacturer.
- Portable/stationary equipment (e.g., generators, compressors) shall be located at the furthest distance from the nearest residential dwelling.
- Construction equipment and vehicles shall not idle for more than five minutes when not in use.
- A County permit shall be obtained for construction activities that occur during the nighttime hours of 8:00 p.m. to 7:00 a.m., or on Sundays or national holidays.
- As directed by the County resident engineer, the contractor shall implement appropriate additional noise abatement measures including, but not limited to, siting the location of stationary construction equipment away from sensitive noise receptors to the greatest extent feasible, use of temporary barriers, and rescheduling construction activity to avoid noise-sensitive days or times.

Compliance with Caltrans' Standard Specifications would limit construction noise levels to 86 dBA L_{max} at 50 feet during the nighttime hours of 9:00 p.m. to 6:00 a.m. The use of mufflers would further reduce equipment noise levels by as much as approximately 10 dBA. Other noise-reduction measures, such as idling limitations for construction equipment, would further reduce overall construction noise levels. In addition, a County permit would be required for construction activities that occur during the nighttime hours of 8:00 p.m. to 7:00 a.m., or on Sundays or national holidays. As noted earlier in this report, construction activities occurring between the hours of 7:00 a.m. and 8:00 p.m. on weekdays are exempt from the County's noise control ordinance. With implementation of the above construction noise-abatement measures, as well as enforcement of the County's noise control requirements, noise impacts

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associated with short-term construction activities would not be anticipated to result in a significant impact to occupants of nearby residential dwellings.

Construction Vibration

Construction related groundborne vibration levels associated with the proposed project would be largely associated with the operation of off-road equipment (e.g., vibratory rollers, hoe rams, bulldozers, trucks, and jackhammers). The use of pile drivers is not anticipated to be required for this project. Groundborne vibration levels commonly associated with off-road equipment used on roadway and bridge construction projects are summarized in Table 4. As indicated, groundborne vibration levels associated with construction equipment generally range from approximately 0.003 to 0.210 in/sec ppv at 25 feet.

Table 4. Representative Vibration Levels for Construction Equipment

Equipment	Peak Particle Velocity at 25 Feet (in/sec)
Vibratory Roller	0.210
Hoe Ram	0.089
Large Bulldozers	0.089
Caisson Drilling	0.089
Loaded Trucks	0.076
Jackhammer	0.035
Small Bulldozers	0.003

Source: Caltrans 2020

Predicted groundborne vibration levels at the nearest residential structure were quantified based on the reference noise levels identified in Table 4. Predicted groundborne vibration levels are summarized in Table 5. Refer to Appendix B for groundborne vibration modeling assumptions and results.

As depicted in Table 6, groundborne vibration levels at the nearest residence would range from approximately 0.002 in/sec ppv to 0.098 in/sec ppv. Groundborne vibration levels at the nearest residence would not exceed the commonly applied criteria for structural damage of 0.5 in/sec ppv or the commonly applied threshold for human annoyance of 0.2 in/sec ppv. Furthermore, with implementation of the previously noted construction noise-abatement measures, construction activities would be largely limited to between the daytime hours of 7:00 a.m. and 7:00 p.m. With implementation of these measures and given that construction activities would be short-term, potential increases in annoyance associated with groundborne vibration would be considered to have a less-than-significant impact.

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Table 5. Predicted Construction Vibration Levels at the Nearest Structure

Activity	Peak Particle Velocity (in/sec)
Bridge Demolition	0.004
Bridge Excavation/Construction	0.004
Pile (CIDH) Drilling	0.002
Road Construction & Paving	0.098

Groundborne vibration levels were calculated based on representative equipment levels noted in Table 5. Based on distances of 91 feet from the bridge to the nearest residence for bridge demolition, bridge construction, and pile drilling activities, and 42 feet from road construction and paving activities.

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REFERENCES

California Department of Transportation (Caltrans). April 2020. *Transportation and Construction Vibration Guidance Manual.* Available at website url: *https://dot.ca.gov/-/media/dot-media/programs/environmental-analysis/documents/env/tcvgm-apr2020-a11y.pdf*

California Department of Transportation (Caltrans). 2018. *Standard Specifications.* Available at website url: https://dot.ca.gov/programs/design/ccs-standard-plans-and-standard-specifications.

Federal Highway Administration (FHWA). 2008. *Roadway Construction Noise Model (RCNM), Version 1.1.*

Orange County. Accessed: August 10, 2021. Orange County Code of Ordinances, Title 4, Division 6, Noise Control. Website url: https://library.municode.com/ca/orange_county/codes/code_of_ordinances.

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APPENDIX A
Acoustic Fundamentals

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ACOUSTIC FUNDAMENTALS

Sound, Noise, and Acoustics

Sound can be described as the mechanical energy of a vibrating object transmitted by pressure waves through a liquid or gaseous medium (e.g., air) to a hearing organ, such as a human ear. Noise is defined as loud, unexpected, or annoying sound.

In the science of acoustics, the fundamental model consists of a sound (or noise) source, a receiver, and the propagation path between the two. The loudness of the noise source and obstructions or atmospheric factors affecting the propagation path to the receiver determines the sound level and characteristics of the noise perceived by the receiver. The field of acoustics deals primarily with the propagation and control of sound.

Frequency

Continuous sound can be described by frequency (pitch) and amplitude (loudness). A low-frequency sound is perceived as low in pitch. Frequency is expressed in terms of cycles per second, or Hertz (Hz) (e.g., a frequency of 250 cycles per second is referred to as 250 Hz). High frequencies are sometimes more conveniently expressed in kilohertz (kHz), or thousands of Hertz. The audible frequency range for humans is generally between 20 Hz and 20,000 Hz.

Sound Pressure Levels and Decibels

The amplitude of pressure waves generated by a sound source determines the loudness of that source. Sound pressure amplitude is measured in micro-Pascals (mPa). One mPa is approximately one hundred billionth (0.00000000001) of normal atmospheric pressure. Sound pressure amplitudes for different kinds of noise environments can range from less than 100 to 100,000,000 mPa. Because of this huge range of values, sound is rarely expressed in terms of mPa. Instead, a logarithmic scale is used to describe sound pressure level in terms of decibels (dB). The threshold of hearing for young people is about 0 dB, which corresponds to 20 mPa.

Addition of Decibels

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

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Geometric Spreading

Sound from a localized source (i.e., a point source) propagates uniformly outward in a spherical pattern. The sound level attenuates (or decreases) at a rate of 6 decibels for each doubling of distance from a point source. Highways consist of several localized noise sources on a defined path, and hence can be treated as a line source, which approximates the effect of several point sources. Noise from a line source propagates outward in a cylindrical pattern, often referred to as cylindrical spreading. Sound levels attenuate at a rate of 3 decibels for each doubling of distance from a line source.

A-Weighted Decibels

The decibel scale alone does not adequately characterize how humans perceive noise. The dominant frequencies of a sound have a substantial effect on the human response to that sound. Although the intensity (energy per unit area) of the sound is a purely physical quantity, the loudness or human response is determined by the characteristics of the human ear.

Human hearing is limited in the range of audible frequencies as well as in the way it perceives the SPL in that range. In general, people are most sensitive to the frequency range of 1,000–8,000 Hz and perceive sounds within that range better than sounds of the same amplitude in higher or lower frequencies. To approximate the response of the human ear, sound levels of individual frequency bands are weighted, depending on the human sensitivity to those frequencies. Then, an "A-weighted" sound level (expressed in units of dBA) can be computed based on this information.

The A-weighting network approximates the frequency response of the average young ear when listening to most ordinary sounds. When people make judgments of the relative loudness or annoyance of a sound, their judgments correlate well with the A-scale sound levels of those sounds. Common A-weighted noise levels are depicted in Figure A-1.

Human Response to Changes in Noise Levels

As discussed above, doubling sound energy results in a 3-dB increase in sound. However, given a sound level change measured with precise instrumentation, the subjective human perception of a doubling of loudness will usually be different than what is measured.

Under controlled conditions in an acoustical laboratory, the trained, healthy human ear is able to discern 1-dB changes in sound levels, when exposed to steady, single-frequency ("pure-tone") signals in the midfrequency (1,000 Hz–8,000 Hz) range. In typical noisy environments, changes in noise of 1 to 2 dB are generally not perceptible. However, it is widely accepted that people are able to begin to detect sound level increases of 3 dB in typical noisy environments. Further, a 5-dB increase is generally perceived as a distinctly noticeable increase, and a 10-dB increase is generally perceived as a doubling of loudness. Therefore, a doubling of sound energy (e.g., doubling the volume of traffic on a highway) that would result in a 3-dB increase in sound, would generally be perceived as barely detectable.

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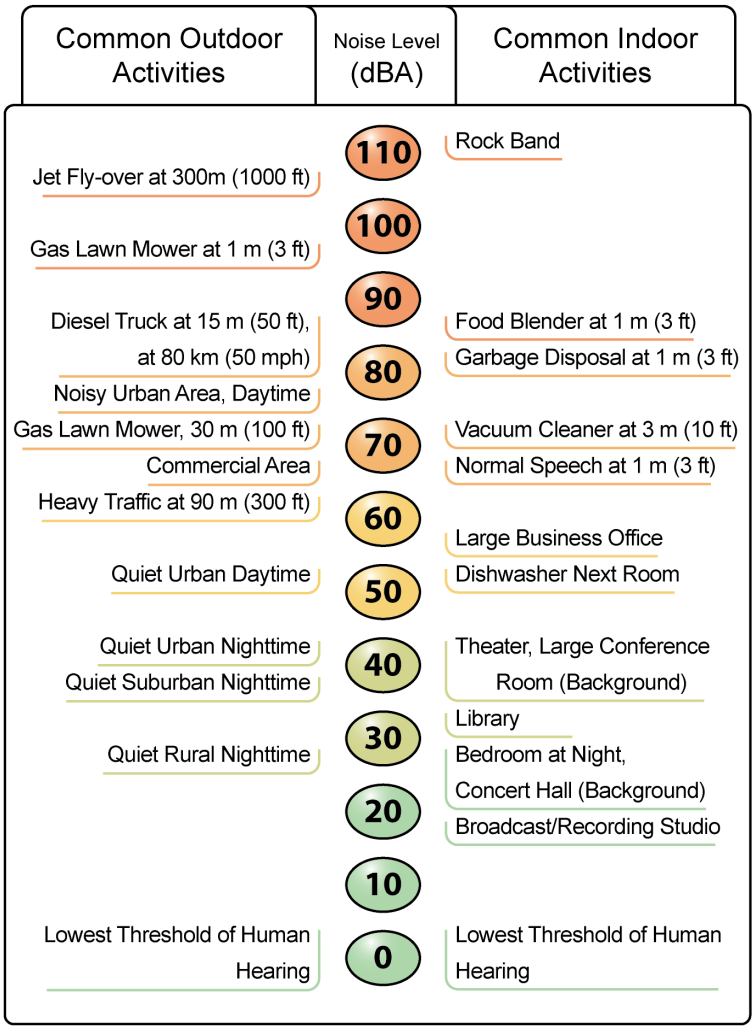
Table A-1. Common A-Weighted Noise Levels



Source: Caltrans 2019

Common Noise Descriptors

Various noise descriptors have been developed to describe time-varying noise levels. The following are the noise descriptors most commonly used for the analysis of construction-generated noise:

- **Equivalent Sound Level (L_{eq}):** L_{eq} represents an average of the sound energy occurring over a specified period. The 1-hour A-weighted equivalent sound level ($L_{eq}^{[h]}$) is the energy average of A-weighted sound levels occurring during a one-hour period.
- **Maximum Sound Level (L_{max}):** L_{max} is the highest instantaneous sound level measured.

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APPENDIX B
Construction Noise & Groundborne Vibration Modeling

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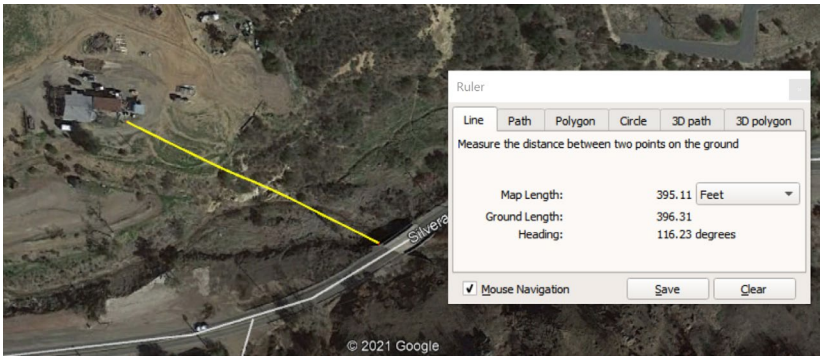
Distances to Nearby Occupied Structures/Outdoor Activity Areas









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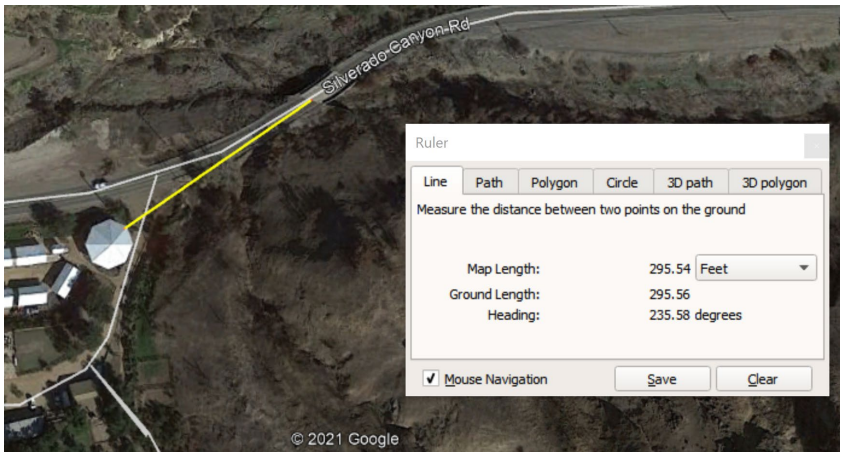

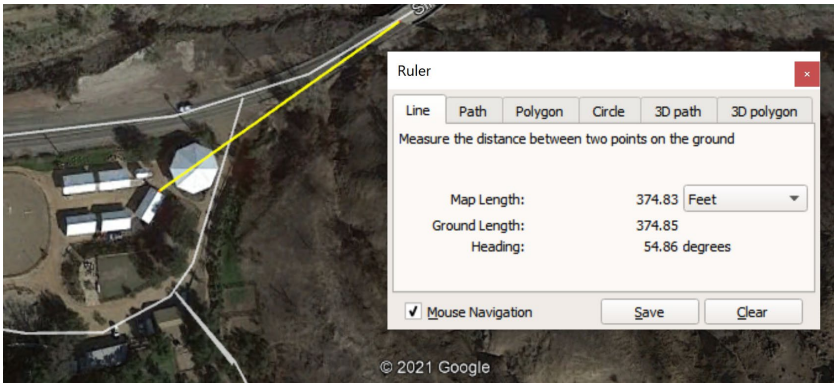

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Construction Noise Calculations

Summary of Predicted Construction Noise Levels at Nearby Residences & Outdoor Activity Areas				
Activity	**Typical Equipment**	**Distance to Structure (Feet)**	**Noise Level (dBA)**	
			L_{eq}	L_{max}
Pile (CIDH) Install	Drill Rig, Concrete Pump, Concrete Truck			
Residence Northwest of Bridge		395	63	58
Residence Southwest of Bridge		440	62	57
Silverado Community Center Outdoor Activity Area Northeast of Bridge		860	56	51
Horse Arena Southwest of Bridge		295	66	61
Horse Stables Southwest of Bridge		375	63	58
Bridge Excavation/Construction	Excavator, Dump Truck, Pumps			
Residence Northwest of Bridge		395	63	60
Residence Southwest of Bridge		440	62	59
Silverado Community Center Outdoor Activity Area Northeast of Bridge		860	56	53
Horse Arena Southwest of Bridge		295	66	63
Horse Stables Southwest of Bridge		375	63	60
Bridge Demolition	Excavator, Hydraulic Breaker, Pumps			
Residence Northwest of Bridge		395	72	64
Residence Southwest of Bridge		440	71	63
Silverado Community Center Outdoor Activity Area Northeast of Bridge		860	65	57
Horse Arena Southwest of Bridge		295	75	67
Horse Stables Southwest of Bridge		375	72	64
Road Construction/Paving	Grader, Roller, Paver			
Silverado Community Center Outdoor Activity Area/Horse Stables/Arena		50	80	77

Noise levels were calculated using the FHWA Roadway Construction Noise Model, Version 1.1 (2008). Assumes the two loudest pieces of equipment operating simultaneously.
Distances are approximate based on aerial photo interpretation.

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Pile (CIDH)Drilling Noise Calculation

		Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
				Day		Evening		Night		Day		Evening		Night	
	Equipment	Lmax*	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
	Total	81.4	76.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1	Drill Rig Truck	79.1	72.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2	Concrete Pump Truck	81.4	74.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3															
4															
5															

*Total Lmax is the value for the loudest piece of equipment.

	Distance	Lmax	Leq
Residence Northwest of Bridge	395	63	58
Residence Southwest of Bridge	440	62	57
Silverado Community Center Outdoor Activity Area Northeast of Bridge	860	56	51
Horse Arena Southwest of Bridge	295	66	61
Horse Stables Southwest of Bridge	375	63	58

Calculated using the FHWA Road Construction Noise Model. V1.1 (2008)

Bridge Construction/Excavation Noise Calculation

		Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
				Day		Evening		Night		Day		Evening		Night	
	Equipment	Lmax*	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
	Total	80.7	78.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1	Dump Truck	76.5	72.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2	Excavator	80.7	76.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3															
4															
5															

*Total Lmax is the value for the loudest piece of equipment.

	Distance	Lmax	Leq
Residence Northwest of Bridge	395	63	60
Residence Southwest of Bridge	440	62	59
Silverado Community Center Outdoor Activity Area Northeast of Bridge	860	56	53
Horse Arena Southwest of Bridge	295	66	63
Horse Stables Southwest of Bridge	375	63	60

Calculated using the FHWA Road Construction Noise Model. V1.1 (2008)

Bridge Demolition Noise Calculation

		Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
				Day		Evening		Night		Day		Evening		Night	
	Equipment	Lmax*	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
	Total	90.0	81.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1	Hydra Break Ram	90.0	80.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2	Excavator	80.7	76.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3															
4															
5															

*Total Lmax is the value for the loudest piece of equipment.

	Distance	Lmax	Leq
Residence Northwest of Bridge	395	72	64
Residence Southwest of Bridge	440	71	63

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Silverado Community Center Outdoor Activity Area Northeast of Bridge	860	65	57
Horse Arena Southwest of Bridge	295	75	67
Horse Stables Southwest of Bridge	375	72	64

Calculated using the FHWA Road Construction Noise Model. V1.1 (2008)

Road Construction Noise Calculation

		Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
				Day		Evening		Night		Day		Evening		Night	
	Equipment	Lmax*	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
	Total	80.0	76.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1	Paver	77.2	74.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2	Roller	80.0	73.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3															
4															
5															

*Total Lmax is the value for the loudest piece of equipment.

	Distance	Lmax	Leq
Silverado Community Center Outdoor Activity Area/Horse Stables/Arena	50	80	77

Calculated using the FHWA Road Construction Noise Model. V1.1 (2008)

Construction Groundborne Vibration Calculation

REFERENCE VIBRATION LEVELS	
VIBRATORY ROLLER	0.21
HOE RAM	0.089
LARGE BULLDOZER	0.089
CAISSON DRILLING	0.089
LOADED TRUCKS	0.076
JACKHAMMER	0.035
SMALL BULLDOZER	0.003

SOURCE:	BRIDGE DEMOLITION
REFERENCE LEVEL:	0.089
ATTENUATION RATE*:	1.1
DISTANCE	395
PREDICTED GROUND-BORNE VIBRATION LEVEL:	0.004

SOURCE:	BRIDGE EXCAVATION
REFERENCE LEVEL:	0.089
ATTENUATION RATE*:	1.1
DISTANCE	395
PREDICTED GROUND-BORNE VIBRATION LEVEL:	0.004

SOURCE:	PILE DRILLING
REFERENCE LEVEL:	0.089
ATTENUATION RATE*:	1.3
DISTANCE	395
PREDICTED GROUND-BORNE VIBRATION LEVEL:	0.002

SOURCE:	ROAD CONSTRUCTION & PAVING
REFERENCE LEVEL:	0.21
ATTENUATION RATE*:	1.1
DISTANCE	50
PREDICTED GROUND-BORNE VIBRATION LEVEL:	0.098

*USE 1.1 FOR MORE CONSERVATIVE ANALYSIS WHEN SOIL CONDITIONS ARE UNKNOWN; UP TO 1.4 DEPENDING ON SOIL TYPE.