Public Review Draft
CEQA INITIAL STUDY
PROPOSED MITIGATED NEGATIVE DECLARATION

MODJESKA CANYON ROAD BRIDGE (NO. 55C-0172) REPLACEMENT PROJECT
INITIAL STUDY NO. IP 22-0017

Prepared for:

Orange County
OC Public Works, OC Infrastructure Programs
601 North Ross Street
Santa Ana, CA 92703-4048
Contact: Sam Tieu, PE

Prepared by:

Dokken Engineering
110 Blue Ravine Road, #200
Folsom, CA 95630

February 2022

Table of Contents

List of Figures

List of Tables

Appendices

Chapter 1: Introduction

The purpose of this Initial Study is to evaluate the potentially significant environmental impacts associated with implementing the proposed 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 Measures and Project Design Features
- Chapter 6: References

1.1 Project Title

Modjeska Canyon Road Bridge (No. 55C-0172) Replacement Project

1.2 Lead Agency Name | Address

Orange County Public Works/OC Infrastructure Programs
601 N. Ross Street
Santa Ana, CA 92701

1.3 Lead Agency Contact Person | Telephone Number | Email

Sam Tieu, PE
Civil Engineer
OC Public Works/OC Infrastructure Programs
Telephone: (714) 647-3968
Email: Sam.Tieu@ocpw.ocgov.com

1.4 Project Location

The Modjeska Canyon Road Bridge Project is located on Modjeska Canyon Road where the road crosses Santiago Creek. Refer to Figure 1: Project Vicinity, Figure 2: Project Location, Figure 3: Project Features, and Figure 4: Site Photos below for Project context.

1.5 Project Sponsor's Name | Address

Orange County Public Works/OC Infrastructure Programs
601 N. Ross Street, Santa Ana, CA 92701

1.6 General Plan | Specific Plan Designation(s)

The land use designations at and near the Project site are Rural Residential (0.25 – 0.5 Dwelling Units (DU)/Acre) and Suburban Residential (0.5 – 18 DU/Acre) (County of Orange, 2015). The land use designations at and near the Project site in the Silverado- Modjeska Specific Plan are Rural Residential (1 DU/ 4 acre) and low density residential (1DU/acre) (County of Orange 1977).

1.7 Zoning District(s)

The Land Use Designation at and near the Project is 1A Rural Residential with 0.025 – 0.5 Dwelling Units (DU) per acre and 1B Suburban Residential with 0.5 – 18 DU per acre.

1.8 Description of Project

Orange County Public Works, in cooperation with the California Department of Transportation (Caltrans), is proposing to replace the Modjeska Bridge (Bridge No. 55C-0172) over Santiago Creek. The Modjeska Bridge is located in Modjeska Canyon near the Cleveland National Forest. The existing bridge is a single span and crosses over Santiago Creek. The Project will replace the existing substandard steel bridge; a portion of the construction funding is provided by the Highway Bridge Program (HBP).

The proposed replacement structure is a 65'-2" long and 43'-10" wide single span prestressed, precast concrete I girder bridge. The bridge will be raised approximately one foot to increase hydraulic conveyance. Tall abutment walls, similar to the existing condition, will be set on spread footing foundations. Tall wing walls will be required at all corners. The replacement bridge will have 12-foot-wide lanes and will include 8-foot minimum width shoulders. Bridge barriers will be deck mounted concrete barrier Type 836.

There are no nearby pedestrian facilities or future plans to place sidewalks along Modjeska Canyon Road. To keep with the rural setting, there will not be sidewalks on the bridge. The bridge is on a 155' horizontal curve. The precast girder construction limits the radius the outside edge of the bridge can be curved. Therefore, the shoulders will vary from 8 feet up to 10.8 feet, for a minimum total barrier to barrier width of 43'-10". The bridge will be wider at the north end to accommodate vehicles turning off the bridge onto Markuson Road to the east.

Santiago Creek is an intermittent stream that flows west under the existing bridge. The location of the stream is well defined and is currently not adjacent to the abutments during low flows. Construction will likely occur when the stream is dry and not require stream diversion. A drainage ditch runs along the southwest approach. The wider bridge may require the ditch to be realigned, and trees at bridge corners will need to be removed. The ditch will be moved slightly west in the immediate vicinity of the bridge and will quickly transition back to its current location south of the bridge.

The narrow road and limited extent of existing right of way requires the replacement structure be placed in the same location as the existing structure. There is a detour approximately 4 miles in length but includes a steep winding road on Modjeska Grade Road. Because of the steep, winding nature of the Modjeska Grade detour and the desire to provide suitable emergency ingress and egress, the new bridge will be stage constructed to allow one lane of alternating traffic during construction. The alternating one-way traffic will be controlled by signal.

During the first stage, a temporary bridge approximately 80 feet long will be placed within the footprint of the new bridge, reducing environmental and right of way impacts to the same as needed for only the new bridge. The temporary bridge will contain both directions of travel on one lane, utilizing a temporary traffic signal, while the existing bridge is removed for the second construction stage, one lane of alternating traffic is shifted to the new bridge, the temporary bridge is removed, and the remaining half of the new bridge is constructed.

Contractor staging areas are anticipated to be situated on the closed portion of the existing road approaches and potentially on property just west of the north abutment. Temporary easements and partial parcel acquisition will be necessary but are anticipated to be minimal. Exact amounts will be determined during final design.

Utilities include a waterline attached to the west side of the bridge and overhead electrical and communication lines just to the north of the north abutment. The overhead lines will not need to be relocated for construction. The waterline will need to be relocated to the new bridge.

Typical equipment for roadway construction would include heavy construction earthmoving equipment, dump trucks and pavers. Typical bridge construction equipment would include cranes, excavators, rock hammers, generators, and concrete pumps.

Refer to Section 3, Project Description, for a comprehensive discussion of the proposed project.

1.9 Surrounding Land Uses and Setting

The Project is adjacent to the Cleveland National Forest and the unincorporated portions of Orange County. The land use designations at and near the Project site are Rural Residential and Suburban Residential as defined by the Orange County General Plan.

1.10 Other public agencies whose approval is required

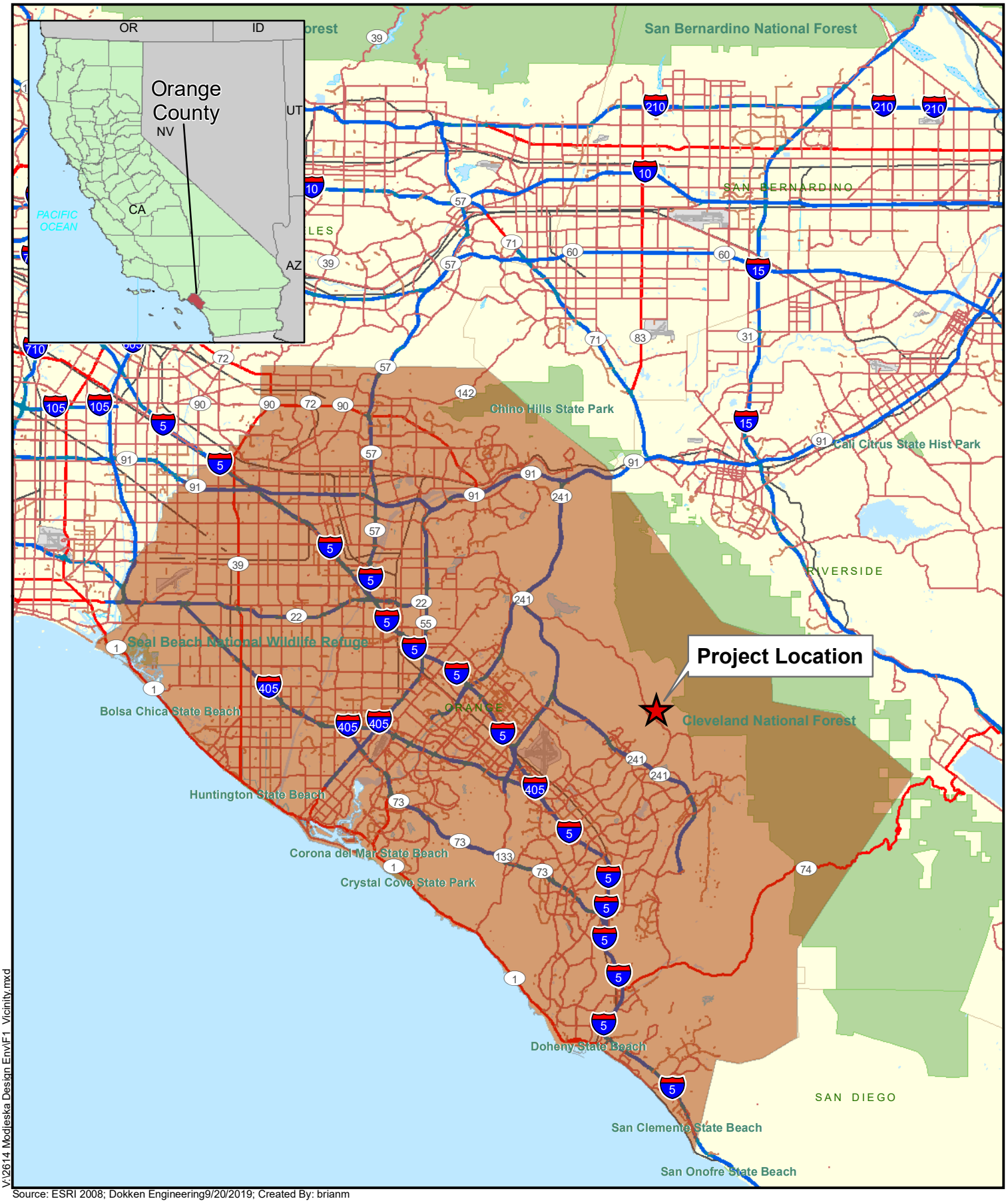
Table 1 below provides a list of required and anticipated public agency approvals that are associated with the Project.

Table 1: Public Agency Approvals

Body	Action
Orange County Board of Supervisors	Adoption of the California Environmental Quality Act (CEQA) Final Initial Study with Mitigated Negative Declaration (IS/MND)
Caltrans District 12	National Environmental Policy Act (NEPA) Categorical Exclusion (CE)
California Department of Fish & Wildlife (CDFW)	Section 1602 Streambed Alteration Agreement
Santa Ana Regional Water Quality Control Board (RWQCB)	Section 401 Water Quality Certification
U.S. Army Corps of Engineers (USACE)	Section 404 Nationwide Permit Authorization

1.11 California Native American consultation

Pursuant to Public Resources Code section 21080.3.1, Orange County initiated consultation per Assembly Bill 52 on July 8, 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.

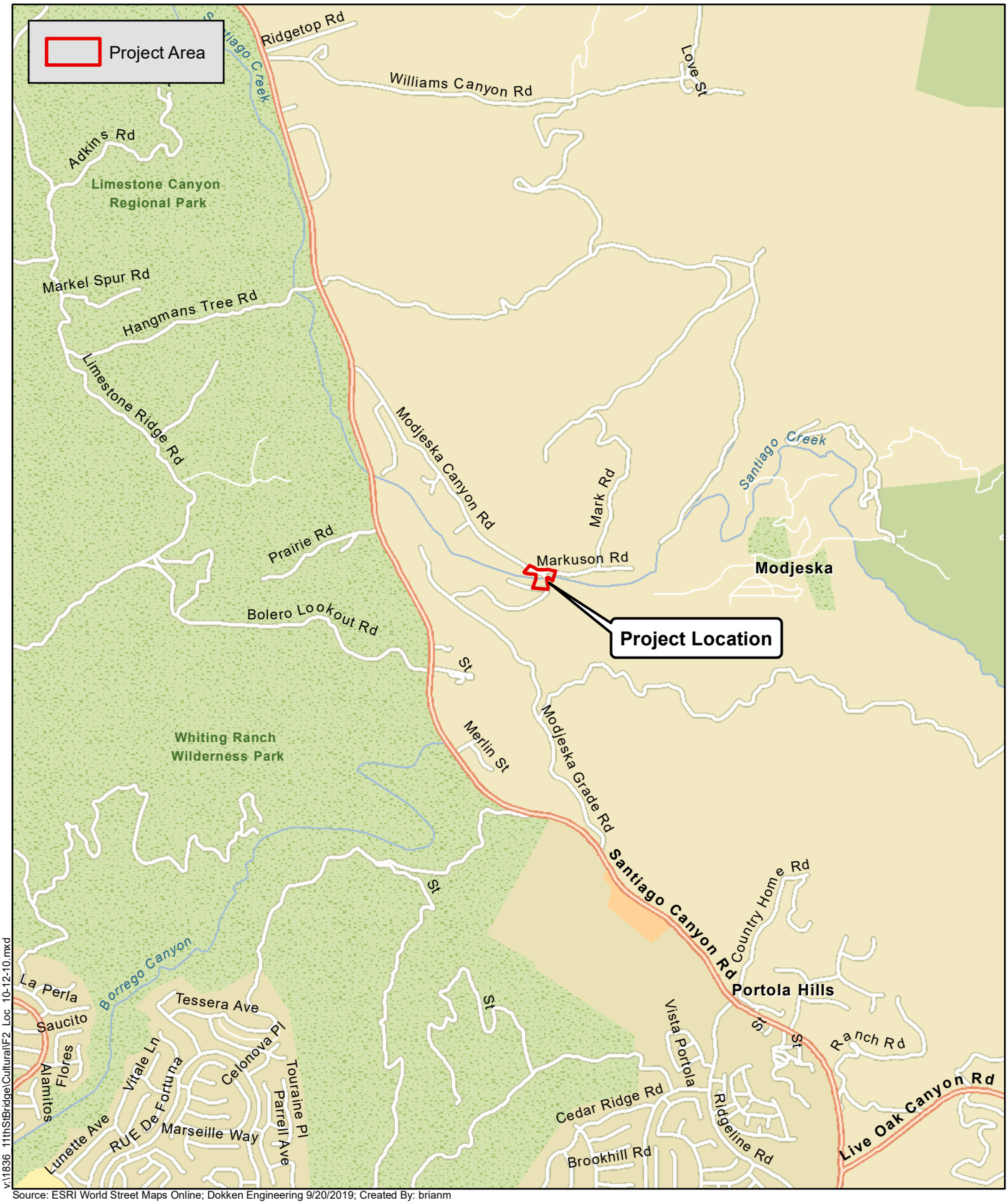


V:\2614 Modjeska Design Env\F1_Vicinity.mxd

Source: ESRI 2008; Dokken Engineering9/20/2019; Created By: brianm

0 5 10 15 20 Miles

FIGURE 1
Project Vicinity
BRLO-5955(094)
Modjeska Canyon Road Bridge Replacement Project
Modjeska Canyon, Orange County, California



v:\1836 11thStBridge\Cultural\F2 Loc 10-12-10.mxd

Source: ESRI World Street Maps Online; Dokken Engineering 9/20/2019; Created By: brianm

0 0.25 0.5 0.75 1 Miles

FIGURE 2
Project Location
BRLO-5955(094)
Modjeska Canyon Road Bridge Replacement Project
Modjeska Canyon, Orange County, California

v:\1836_11thStBridge\Cultural\F2_Loc_10-12-10.mxd

Source: ESRI World Street Maps Online; Dokken Engineering 4/24/2020; Created By: hsheldon

1 inch = 100 feet

0 50 100 150 200 Feet

FIGURE 3
Project Features
BRLO-5955(094)
Modjeska Canyon Road Bridge Replacement Project
Modjeska Canyon, Orange County, California

Figure 4: Site Photos

Facing south

Facing northeast

Facing east (upstream)

Facing west (downstream)

Chapter 2: Environmental Determination

Based on the analysis conducted in this Initial Study, Orange County, OC Public Works, as the Lead Agency, has made the following determination:

Table 2: Environmental 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.	☐

Joe Nguyen, PE, PMP
Signature

01/27/2022
Date

Joe Nguyen, PE, PMP
Printed Name

Chapter 3: Project Description

3.1 Introduction

Purpose

The purpose of the Project is to replace the existing deteriorated steel bridge with a new bridge in conformance with current environmental and design standards and to provide a useful life expectancy of 75 years minimum. Portions of the roadway connecting to the bridge will require widening and re-profiling to provide for a smooth transition to the new bridge.

Need

This road is the main access for residents of Modjeska Canyon; therefore, it is critical to keep it in service and avoid potential deficiencies that would take the bridge out of service. Seasonal floods and wildfires occur in the Santa Ana Mountains that affect this community and quick access from the Canyon is necessary during such events.

The existing 2-lane bridge was classified as functionally obsolete through Caltrans Bridge Inspection Report on May 10, 2018 due to the very narrow road width. The bridge must be widened to meet current standards and traffic volumes.

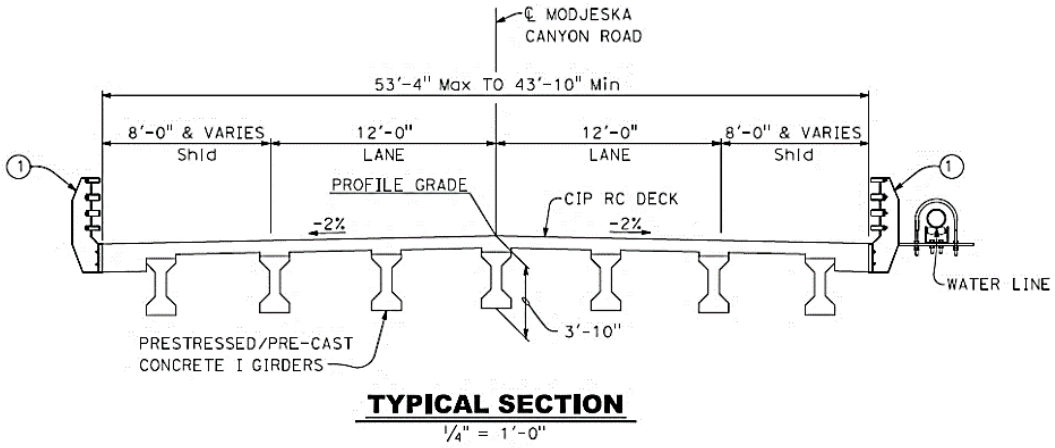
The bridge live load capacity does not meet current American Association of State Highway and Transportation Officials (AASHTO) standards due to structural deficiencies. The soffit has several spalls with exposed and rusted rebar; the total defected area was estimated to be 15 feet long and 1 foot wide. Pitted rust is at the bottom flange of the main exterior girder and the bottom flange and web of the floor beams are rusted in many locations. In addition, the non-redundant riveted steel through girders and riveted steel floor beams require the bridge to undergo biennial inspection per the Caltrans Fracture Critical Member Inspection Plan. Replacing the bridge will eliminate the intensive bridge inspection maintenance efforts and cost.

A new bridge structure is needed to provide a facility that will meet current federal standards.

Project Description

Orange County Public Works, in cooperation with the California Department of Transportation (Caltrans), is proposing to replace the Modjeska Bridge (Bridge No. 55C0172) over Santiago Creek. The Modjeska Bridge is located in Modjeska Canyon near the Cleveland National Forest. The existing bridge is a single span and crosses over Santiago Creek. The Project will replace the existing substandard steel bridge; a portion of construction funding is provided by the Highway Bridge Program (HBP).

Temporary construction easements (TCE) and acquisitions will affect several parcels in the Project area. Total TCEs are approximately 0.08 of an acre and approximately 0.086 of an acre of permanent acquisitions. The figure below is a cross section of the proposed bridge (the ‘1’ in the circle indicates post and beam bridge railing).



3.2 Environmental Setting and Surrounding Land Uses

The surrounding land uses are described in the following table.

Table 3: Surrounding Land Uses

Direction	Land Use(s)
North	Rural Residential and Open Space
East	Cleveland National Forest
West	Rural Residential and Open Space
South	Rural Residential

Source: County of Orange, General Plan Land Use Element Map - 2015.

Project Site Environmental Setting

Modjeska Bridge is located in the eastern part of Orange County near the Cleveland National Forest. Santiago Creek is an intermittent creek that flows under the bridge with western sycamore, the occasional white alder, and smaller vegetation along the stream. The average elevation of the Project area is 1,272 feet (ft) above mean sea level and is sloped moderately to the southwest. See Figure 1: Project Vicinity, Figure 2: Project Location, Figure 3: Project Features, and Figure 4: Site Photos above.

Site Vicinity Environmental Setting

Modjeska Canyon is on the western slope of the Santa Ana Mountains with several hundred residents within the canyon. The elevation rises to the north and east within the Cleveland National Forest that surrounds the canyon. Modjeska Canyon is also bordered by foothills to the west and south with the Pacific Ocean over 15 miles away in the distance. The Project site is located within marine sedimentary and metasedimentary rocks, described as Upper Cretaceous sandstone, shale, and conglomerate (Ku). The subsurface conditions encountered at the Project site consist of a mixture of coarse-grained soils, sands, and mostly silty clay from the Riverwash, Cieneba, and Sorrento series. These soils extend approximately 6 feet below the ground surface.

Site Regional Environmental Setting

The Project is in the Peninsular Ranges Geomorphic Province, which is a group of mountain ranges that run from southern California to the southern tip of the Baja California peninsula. This province is characterized by a series of ranges separated by longitudinal valleys, trending northwest to southeast,

subparallel to faults branching from the San Andreas Fault. The trend of topography is similar to the Coast Ranges, but the geology is similar to that of the Sierra Nevada with granitic rock intruding the older metamorphic rocks. The Peninsular Ranges (PR) extend into lower California and are bound on the east by the Colorado Desert Geomorphic Province and the Transverse Ranges to the north. The Los Angeles Basin and the island group (Santa Catalina, Santa Barbara, and the distinctly terraced San Clemente and San Nicolas islands), together with the surrounding continental shelf (cut by deep submarine fault troughs), are included in this province (CGS, 2002).

3.3 Construction Activities

The recommended proposed replacement structure is a 65'-2" long single span prestressed, precast concrete I-Girder bridge. The bridge will be raised approximately one foot to increase hydraulic conveyance. Raising the bridge higher will begin to impact the Markuson Road intersection and the residential driveway southeast of the bridge. The abutments, similar to the existing bridge, will be set on spread footing foundations. Bridge barriers will be side mounted open metal railing, Type ST-70SM.

The replacement bridge will have 12-foot-wide lanes with minimum 8-foot shoulders. The proposed road alignment is curved which varies the width of the shoulders, for a minimum total barrier to barrier width of 43'-10" as shown in the image below. There are no nearby pedestrian facilities or future plans to place sidewalks along Modjeska Canyon Road, but portions of Modjeska Canyon Road have sufficient dirt shoulders to provide room for pedestrians. To keep with the rural setting there will not be sidewalks on the bridge.

The new bridge will be stage constructed to maintain a single lane of alternating traffic through the site during construction. The first stage of construction consists of the installation of a temporary bridge that will be placed adjacent to the existing bridge and within the footprint of the new wider bridge. The temporary bridge will contain both directions of travel on one lane. A temporary traffic signal system with one portable traffic signal on a trailer will be used for traffic control. As the staged construction progresses the trailer will be moved to account for the changing traffic lanes. The temporary traffic signal will be used to control traffic for approximately 7 – 8 months.

The existing bridge and bridge abutments will be removed. Heavy equipment consisting of an excavator with a jackhammer attachment will need to enter the creek invert in order to chip away the existing concrete abutments although some of the removal of the concrete abutments can be accomplished with an excavator working from the roadway outside of Waters of the United States (WOUS) and Waters of California. Then the new concrete abutments will be formed and cast in place. The new abutments will be cast in the same footprint as the existing abutments. After the concrete abutments have cured, the one-half of the precast bridge structure will be installed by a crane.

The second stage of construction consists of shifting both directions of travel onto the newly constructed one-half of the bridge width. A temporary traffic signal system will be used to control traffic for one lane of alternating direction of travel on the new bridge. Then, the temporary bridge will be removed. Then, the second half of the bridge abutments will be formed and cast in place. After the concrete abutments have cured, the final one-half of the precast bridge structure will be installed by a crane. Then west bound traffic will be shifted to the newly constructed portion of the bridge and the project will be complete.
One residential driveway southeast of the bridge will be impacted. The residence driveway immediately southeast of the bridge and Markuson Road, northwest of the bridge, will need to be modified to accommodate the new road grade. A crash cushion will be placed at the southeast end of the bridge

barrier. Due to the limited space for driveway access, a QuadGuard crash cushion, which meets 20 mph design speed and is only 9 feet long, will be used.

Much of the existing bridge is currently within private property with the roadway approaches on each side of the bridge on public property. Temporary construction easements of 0.08 of an acre will be required for on-site staging.

Overhead utilities and underground waterlines are located along the existing road alignment north of the existing bridge. The overhead utilities branch off to Markuson Road about 100-ft west of the Modjeska Canyon Road and Markuson Road intersection. The overheard utilities continue over the Modjeska Canyon Road and Markuson Road intersection as well as jump over Santiago Creek roughly 100-ft west of the existing bridge. The preliminary road alignment is not in conflict with existing utility poles. The underground waterline attached to the west side of the bridge will need to be relocated and reattached to the new bridge.

3.4 Site Improvement Characteristics

- Figure 5 below provides the bridge dimensions and construction stages.

The replacement bridge will utilize a side mounted open railing system, the California ST-70SM railing, to give the replacement bridge a rustic and open feel reminiscent of the existing bridge. For the rural setting with low traffic and exposure to the public, no bridge lighting or landscaping (other than re vegetation) is anticipated.

3.5 Building Characteristics

The new profile will raise the road by approximately 1-foot in order to clear the 100-year storm event. The proposed vertical alignment places the bridge on a 150’ vertical curve, with approximately 3.5% approach grades. To meet the 20 mile per hour (mph) design speed, the north approach is 87-feet long and the south approach is 99- feet. The northbound and southbound bridge approaches are on a 155-foot radius curve. Since the bridge is a precast concrete I-Girder bridge the girders cannot be curved. Therefore, the deck will be parallel to the girders and the 8-foot shoulders will vary slightly to accommodate the curve. Guardrail will be placed along the southbound approach; transitioning to a bridge barrier attached to the west side of the bridge.

3.6 Infrastructure Characteristics

As described in the Draft Report Hydrologic and Hydraulic Basis of Design dated January 2019, the Project is being analyzed using the 100-year Expected Value (EV) of the Santiago Creek at the Project site. Hydraulic modeling performed by Michael Baker International revealed that the existing bridge has enough capacity to pass the 100-year EV. As stated in the Draft Report the OCFCD Design manual minimum freeboard criteria is 1.5 feet above the 100-year water surface elevation for non-leveed channels. The existing bridge soffit elevation is 1272.22 and the 100-year water surface elevation based on the draft report is 1270.31 feet. Therefore, the freeboard meets the 1.5

ft freeboard requirement with a 1.91 ft of freeboard. The preliminary hydraulics for the existing structure are summarized in **Table 4** below.

Table 4: Modjeska Canyon Road Bridge Hydraulics Summary

	100-Year EV	200-Year EV	500-Year EV
Water Surface Elevation	1270.31 ft	1271.29 ft	1274.88 ft

Open bridge rails are anticipated, which will allow surface runoff to flow off the sides of the bridge. Currently surface runoff is collected as it flows along the existing curb and discharges into the creek by overside drains immediately beyond the existing curb. Existing drainage patterns will be maintained along the approach roadway.

Overhead utilities and underground waterlines are located along the existing road alignment north of the existing bridge. The overhead utilities branch off to Markuson Road about 100-ft west of the Modjeska Canyon Road and Markuson Road intersection. The overheard utilities continue over the Modjeska Canyon Road and Markuson Road intersection as well as jump over Santiago Creek roughly 100-ft west of the existing bridge. The preliminary road alignment is not in conflict with existing utility poles. The underground waterline attached to the west side of the bridge will need to be relocated and reattached to the new bridge.

There is an existing gauge station at the northeast corner of the bridge. The existing gauge station appears to be operational and still transmitting data to the OC Public Works website www.ocwatersheds.com. The OC Public Works website displays rain fall data along with water surface elevations. Therefore, the existing gauge station and electrical feed will need to be removed with construction of the new bridge. A new gauge station will be installed on the same side of the creek approximately 40 feet east of the current location with exact placement determined during final design.

3.7 Project Design Features

Design of the bridge superstructure, abutments, and foundations will be in conformance with American Association of State Highway and Transportation Officials (AASHTO) Load and Resistance Factor Design (LRFD) Bridge Design Specifications (Customary U.S. Units 8th Edition 2017) with Interims and Caltrans Amendments. The seismic analysis will be based on Caltrans Seismic Design Criteria (April 2019, Version 2.0).

3.8 Offsite Improvements

No offsite improvements will be necessary to complete the Project.

3.9 Project Schedule and Phases

Overall construction is anticipated to take 8 months and estimated to begin in 2023. The new bridge will be constructed in phases with a temporary bridge placed within the footprint of the new bridge. The construction sequence will be as follows.

1. Construct supports for temporary bridge while existing bridge is in service. This may require traffic to be restricted to one alternating lane.
2. Close road and remove existing bridge in one day.

3. Erect temporary bridge in one day. Restore traffic within approximately 56 hours of road closure. The closure can be performed over a weekend to minimize commute and school traffic interruptions.
4. Construct a portion of the new bridge wide enough to support one lane of alternating traffic.
5. Shift traffic to new bridge and remove temporary bridge.
6. Construct remaining width of new bridge.

3.10 Change in Land Use Controls

Existing land use and zoning in and around the Project area will remain the same.

3.11 Related Projects

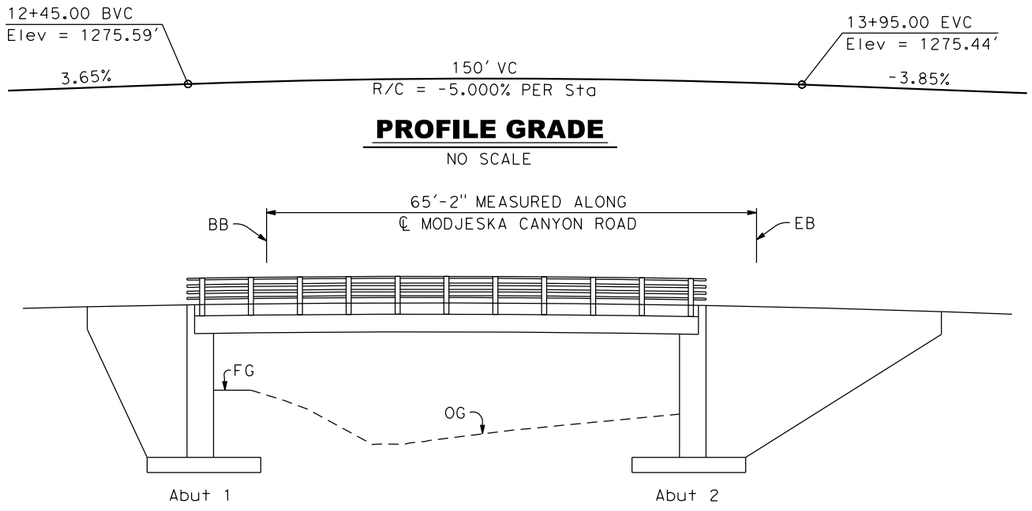
There are three other bridges north and northeast of the Project on Silverado Canyon Road; 55C-0177 and 55C-0174 are in the process of environmental documentation and clearance and 55C-0175 has acquired Project approval and environmental clearance.

Table 5: Related Projects

Map ID	Project Name	Land Use	Statistical Data	Status
	Silverado Canyon Road Bridge 55C-0177	Suburban and Rural Residential	Replacement over Silverado Creek due to structural deficiency	In the process of acquiring PA&ED Anticipated construction 2023
	Silverado Canyon Road Bridge 55C-0174	Suburban and Rural Residential	Replacement over Silverado Canyon Creek due to structural deficiency	In the process of acquiring PA&ED Anticipated construction 2023
	Silverado Canyon Road Bridge 55C-0175	Suburban and Rural Residential	Replacement over Ladd Creek due to structural deficiency	PA&ED acquired Anticipated construction 2022

Source: OC Public Works, Development Services/Planning (2021).

Figure 5: Site Plan

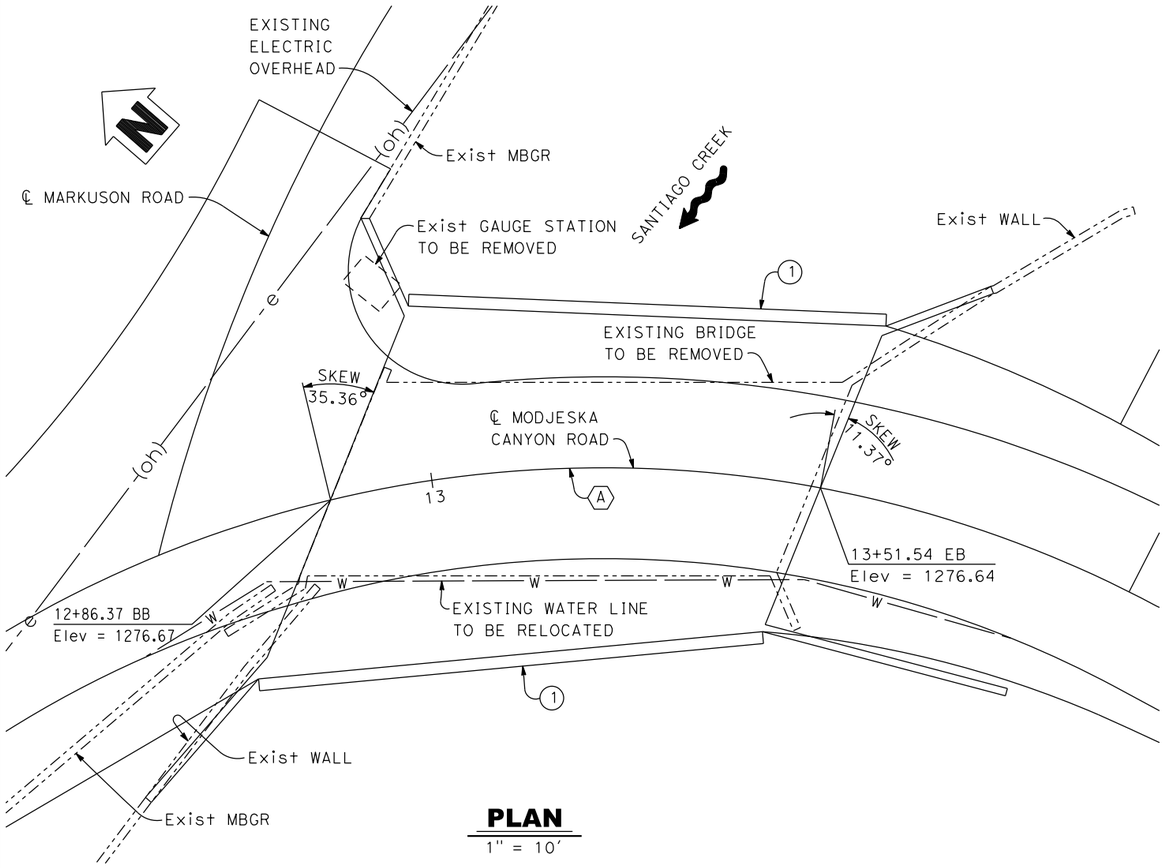


PROFILE GRADE

NO SCALE

ELEVATION

1" = 10'

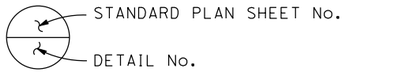


PLAN

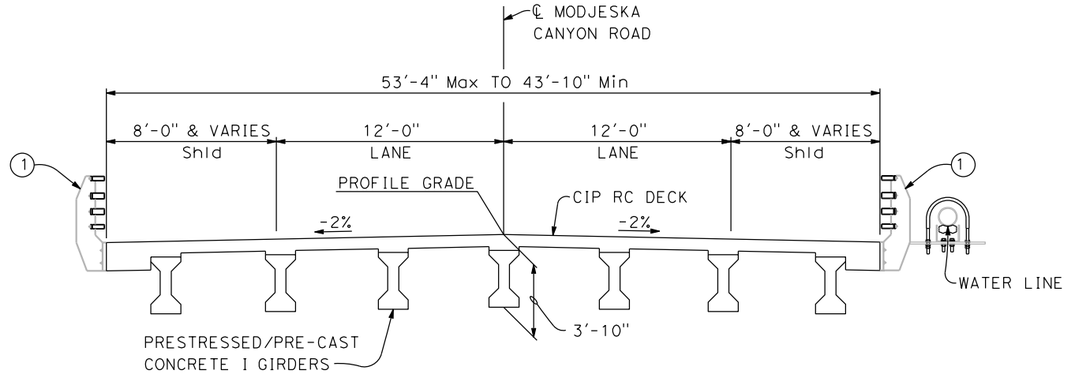
1" = 10'

STANDARD PLANS DATED 2018

Sheet No.	Title
A3A	ABBREVIATIONS (SHEET 1 OF 3)
A3B	ABBREVIATIONS (SHEET 2 OF 3)
A3C	ABBREVIATIONS (SHEET 3 OF 3)
A10A	LEGEND - LINES AND SYMBOLS (SHEET 1 OF 5)
A10B	LEGEND - LINES AND SYMBOLS (SHEET 2 OF 5)
A10C	LEGEND - LINES AND SYMBOLS (SHEET 3 OF 5)
A10D	LEGEND - LINES AND SYMBOLS (SHEET 4 OF 5)
A10E	LEGEND - LINES AND SYMBOLS (SHEET 5 OF 5)
A10F	LEGEND - SOIL (SHEET 1 OF 2)
A10G	LEGEND - SOIL (SHEET 2 OF 2)
A10H	LEGEND - ROCK
A62C	LIMITS OF PAYMENT FOR EXCAVATION AND BACKFILL BRIDGE
B0-1	BRIDGE DETAILS
B0-3	BRIDGE DETAILS

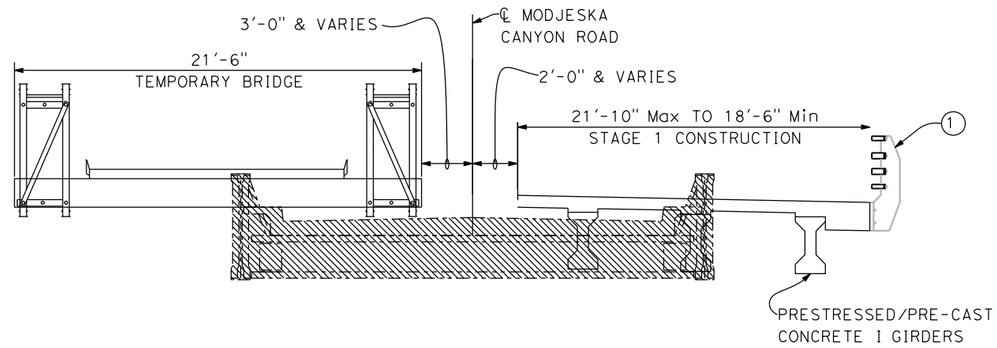


INDEX TO PLANS



TYPICAL SECTION

1/4" = 1'-0"



STAGE 1 CONSTRUCTION

1/4" = 1'-0"

CURVE DATA

(A)

R = 155.00'
△ = 65°54'37"
T = 100.49'
L = 178.30'

LEGEND

(1) CALIFORNIA ST-70SM BARRIER

Denotes remove exist bridge

---- Denotes existing structure

MARK	DESCRIPTION	DATE	APPR.

PREPARED UNDER THE RESPONSIBLE CHARGE OF:
DOKKEN ENGINEERING
110 BLUE RAVINE ROAD, SUITE 200
FOLSOM, CA 95630
TEL 916 858-0642
FAX 916 858-0643
FORTUNATO ENRIQUEZ, P.E.,
DOKKEN ENGINEERING
DATE 12-3-2018

DESIGNED BY: FORTUNATO ENRIQUEZ
DRAWN BY: ANTHONY DANG
CHECKED BY:
DRAWING NUMBER: -
W.O. NO.
FILE NAME: -
SCALE: 1:1 (0 SHEET)
PLOT DATE: AUGUST 13, 2018

County of Orange
OC Public Works

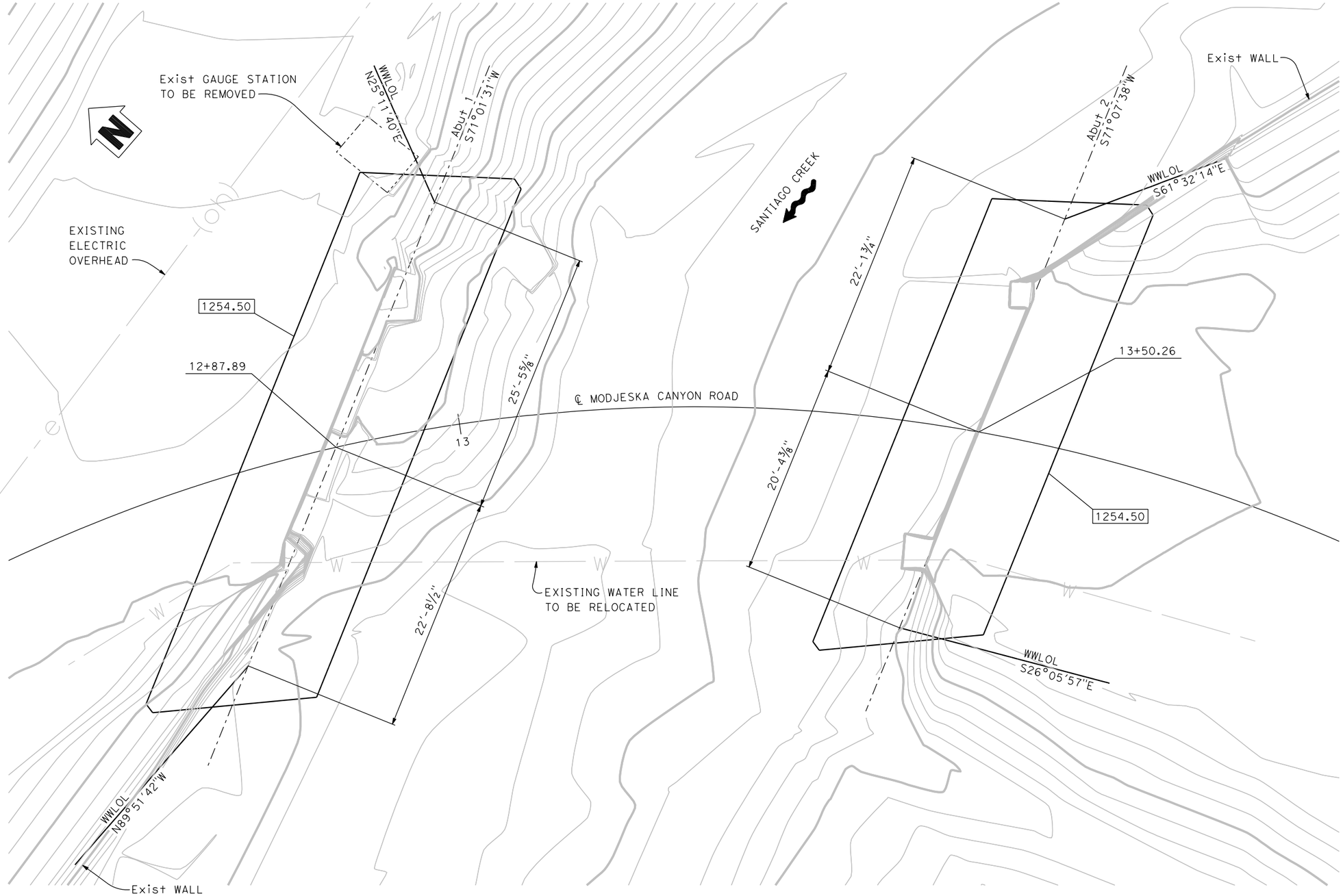
PREPARED BY:
DOKKEN ENGINEERING
110 BLUE RAVINE ROAD, SUITE 200
FOLSOM, CA 95630
TEL 916 858-0642
FAX 916 858-0643

MODJESKA CANYON ROAD BRIDGE OVER SANTIAGO CREEK PROJECT

GENERAL PLAN

SHEET

INDEX: 1 OF 3



PLAN

1" = 5'

LEGEND

Denotes bottom of footing elev

COUNTY OF ORANGE CALIFORNIA

MARK	DESCRIPTION	DATE	APPR.

PREPARED UNDER THE RESPONSIBLE CHARGE OF:

DOKKEN ENGINEERING

110 BLUE RAVINE ROAD, SUITE 200
FOLSOM, CA 95630
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FORTUNATO ENRIQUEZ, P.E.,
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DATE 12-3-2018

DESIGNED BY: FORTUNATO ENRIQUEZ
DRAWN BY: ANTHONY DANG
CHECKED BY:
DRAWING NUMBER: -
W.O. NO.
FILE NAME: -
SCALE: 1:1 (D SHEET)
PLOT DATE: AUGUST 13, 2018

County of Orange
OC Public Works

PREPARED BY:
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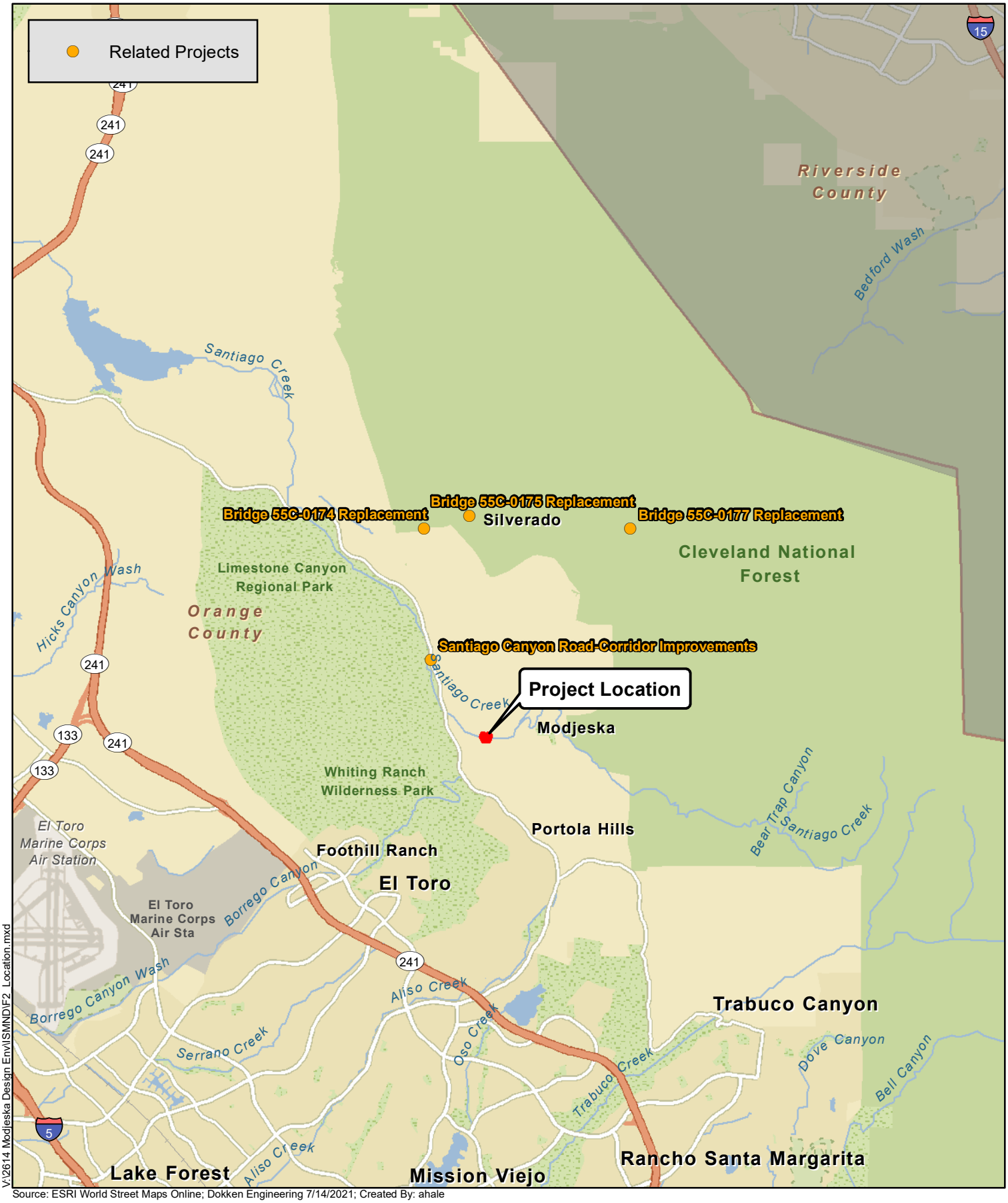
MODJESKA CANYON ROAD BRIDGE OVER SANTIAGO CREEK PROJECT

FOUNDATION PLAN

SHEET

INDEX: 3 OF 3



V:\2614 Modjeska Design Env\SMND\F2_Location.mxd

Source: ESRI World Street Maps Online; Dokken Engineering 7/14/2021; Created By: ahale

0 1 2 3 4 Miles

FIGURE 6
Related Projects
BRLO-5955(094)
Modjeska Canyon Road Bridge Replacement Project
Modjeska Canyon, Orange County, California

Chapter 4: Environmental Evaluation

4.1 Analysis Methodology

Analysis of potentially significant impacts of each of the environmental factors identified in Table 6 below is based on the Project site environmental setting, Project description, and the sample questions/thresholds of significance. Potentially significant impacts that are reduced below the level of significance by sample questions/thresholds of significance will detail how the potentially significant impact is reduced. Potentially significant impacts that are unable to be reduced below the level of significance will detain the various mitigation options applied and why none would reduce the impact.

The analysis will consider the whole of the actions and include the following:

- Onsite impacts
- Offsite impacts
- Short-term construction impacts
- Long-term operational impacts
- Direct impacts
- Indirect impacts
- Cumulative impacts

4.2 Environmental Factors Potentially Affected

This document incorporates the Environmental Checklist Form from Appendix G of the 2021 CEQA Guidelines as referenced in Section 3.3 of the Orange County 2020 Local CEQA Procedures Manual.

Table 6 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 6: Environmental Factors Potentially Affected

☐ Aesthetics (4.5)	☐ Mineral Resources (4.16)
☐ Agriculture & Forestry Resources (4.6)	☐ Noise (4.17)
☐ Air Quality (4.7)	☐ Population & Housing (4.18)
☐ Biological Resources (4.8)	☐ Public Services (4.19)
☐ Cultural Resources (4.9)	☐ Recreation (4.20)
☐ Energy (4.10)	☐ Transportation (4.21)
☐ Geology and Soils (4.11)	☐ Tribal Cultural Resources (4.22)
☐ Greenhouse Gas Emissions (4.12)	☐ Utilities & Service Systems (4.23)
☐ Hazards & Hazardous Materials (4.13)	☐ Wildfire (4.24)
☐ Hydrology & Water Quality (4.14)	☐ Mandatory Findings of Significance (4.25)

☐ Land Use & Planning (4.15)	

4.3 Thresholds of Significance

Thresholds of significance are identifiable quantitative, qualitative or performance level standards of 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 (Guidelines §15064.7(a)).

With the exception of Transportation Vehicle Miles Travelled (VMT), the County has not adopted specific thresholds of significance and rather relies upon the specific questions relating to the topical environmental factors listed in Appendix G of the State CEQA Guidelines to assist in the determination of a potentially significant impact. The Orange County Board of Supervisors adopted County VMT guidelines at its November 17, 2020 meeting pursuant to SB743 to include VMT analysis methodology and thresholds. 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.

4.4 Environmental Baseline

To adequately determine the significance of a potential environmental impact, the environmental baseline must be established. Guidelines Section 15125(a) states in pertinent part that the existing environmental setting will normally constitute the baseline physical conditions that will assist the County in a determining if an impact is significant.

Therefore, the environmental baseline for this Project constitutes the existing physical conditions as they exist at the time that the environmental process commenced.

4.5 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. The Project area is in the community of Modjeska, Orange County, California in unincorporated Orange County. Modjeska is primarily a residential use community. The Silverado-Modjeska Specific Plan was created with the purpose of promoting planned development that least disturbs natural contours and vegetation and preserves areas of scenic beauty (County of Orange 1977). The Resources Element in the County of Orange General Plan and the Silverado-Modjeska Specific Plan do not specifically identify Modjeska Canyon as a scenic vista.

The scenic vistas surrounding the Project area include mountains, creeks, trees, and ridges. The new Modjeska Canyon Bridge would not affect a scenic vista within the canyon due to the limited exposure and narrow views from within the canyon and the Project area. Additionally, the narrow road and limited right of way requires the replacement structure be placed in the same location as the existing structure. No impacts are anticipated.

Response to Question b): No Impact. The Project would not damage scenic resources within a state scenic highway since the existing bridge is not a scenic resource and the surrounding landscape will not be permanently altered. The replacement structure will also be placed in the same location as the existing structure. Additionally, the Modjeska Canyon Bridge is not designated as a State Scenic Highway. No impacts are anticipated.

Response to Question c): Less than Significant Impact. The Project site is within Modjeska Canyon with a hillside just north of the bridge and contiguous vegetation surrounding the bridge and within the riparian habitat along Santiago creek that flows under. Due to the curve of the roads from the north and south approach, the bridge is not visible until one is upon it. From the bridge itself, a brief glimpse of the creek can be seen as it travels to the west. The Project is not anticipated to degrade the existing visual character or quality of public views of the site and surroundings. Approximately 16 trees (see Table 11. Anticipated Tree Removal), within the riparian woodland are anticipated to be removed to allow for construction access and constructability of the Project. However, all tree resources will be evaluated to determine where trees may remain protected in place without damaging essential root systems within the tree drip lines. Additionally, with compensatory measure **BIO-9,** any temporary and permanent effects from tree removal would be compensated. Ultimately, the Project would not have any long-term impacts to the visual character of the area. Less than Significant Impacts are anticipated.

Response to Question d): Less than Significant Impact. For the rural setting, no bridge light or landscaping is anticipated. No new light sources would occur as a result of the new bridge. The contractor will not be permitted to work during the night and no construction lighting will be allowed. Therefore, the Project would result in no impact to light and glare.

4.6 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 51004(g))?	☐	☐	☐	☒
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?	☐	☐	☐	☒

Affected Environment
The land use designation in the Project area is Suburban Residential with Rural Residential surrounding the immediate area. The Cleveland National Forest surrounds the residential use to the north, south, and east of the Project.

Response to Question a): No Impact. The California Department of Conservation's California Important Farmland Finder identified the Project area as "Urban and Built-Up Land" and the surrounding area as "Other Land" (CDC 2016). Additionally, the proposed bridge replacement is not within or near Prime Farmland, Farmland of Statewide Importance, or Unique Farmland. Therefore, no impacts are anticipated.

Response to Question b): No Impact. The proposed bridge replacement would not conflict with any agricultural zoning or a Williamson Act contract. The closest parcels identified under a Williamson Act are approximately 4 miles southeast of the Project area. The Project will not impact these parcels.

Response to Question c): No Impact. The Project area is at the boundary of the Cleveland National Forest; however, it is not located within the National Forest. The project area is not zoned as timberland, forest land, or for timberland production. The proposed bridge replacement would not conflict with existing zoning for, or cause zoning of, timberland or timberland zone Timberland Production.

Response to Question d): No Impact. As previously addressed, the proposed bridge would replace an existing bridge, and while the proposed bridge would be wider than the existing bridge, it would not significantly alter the existing land use. The project area is not zoned for, nor does it include forest land. Specifically, the Project does not involve forest land and would replace an existing bridge. The Cleveland National Forest is not in the immediate vicinity of the Project. Therefore, the Project would not result in the loss of forest land or convert forest land to non-forest use.

Response to Question e): No Impact. The Project area is not located on or adjacent to any lands identified as Important Farmland. The site is near the Cleveland National Forest, but not in the immediate vicinity. The proposed bridge replacement would result in neither a significant alteration of current use nor conversion of existing or adjacent Important Farmland and forest land. Therefore, no conversion of Important Farmland or forest land uses would occur.

4.7 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?	☐	☒	☐	☐

Affected Environment

The Project is located within Orange County, an area within the South Coast Air Basin (SCAB). Air regulation in the SCAB is administered by the South Coast Air Quality Management District (SCAQMD). The SCAQMD is the agency responsible for monitoring and regulating air pollutant emissions from stationary, area, and indirect sources within the SCAB. The SCAQMD also has responsibility for monitoring air quality and setting and enforcing limits for source emissions. California Air Resources Board (CARB) is the agency with the legal responsibility for regulating mobile source emissions. The SCAQMD is precluded from such activities under State law. The SCAQMD is the agency responsible for preparing regional air quality plans under the state and federal Clean Air Act.

Existing air quality conditions in the Project area can be characterized in terms of the ambient air quality standards that the state of California (California Ambient Air Quality Standards [CAAQS]) and the federal government NAAQS have established for several different pollutants. For some pollutants, separate standards have been set for different measurement periods. Most standards have been set to protect public health. For some pollutants, standards have been based on other values (such as protection of crops, protection of materials, or avoidance of nuisance conditions). Table 7 shows the state and federal standards for a variety of pollutants. Ambient air pollutant concentrations are measured at 39 permanent monitoring stations throughout the Basin. The federal and state governments have established ambient air quality standards for six criteria pollutants: ozone, CO, NO_2, SO_2, particulate matter ($PM_{2.5}$ and PM_{10}), and lead. Within the SCAQMD, ozone and $PM_{2.5}$ and PM_{10} are considered pollutants of concern.

SCAQMD prepares an Air Quality Management Plan (AQMP) to describe air pollution control strategies to be implemented by counties or regions classified as nonattainment areas in order to bring the area into compliance with the requirements of federal and State air quality standards. The AQMP utilizes local planning agencies future Projections identified in their General Plans to determine control strategies for regional compliance status, and identifies Projects potentially causing a significant impact on air quality which would impede fulfilling compliance of the federal and State air quality standards. Projects consistent with the local General Plan are generally considered consistent with the AQMP, as the AQMP is based on Projections from local General Plans. Additionally, the estimated pollutants emitted from any Project must not exceed any significance threshold set by the SCAQMD or cause a significant impact on air quality for any individual Project to be determined consistent with the AQMP. If significance thresholds are exceeded, the Project can be considered consistent with the AQMP by implementing feasible mitigation measures to reduce a Project's impact level from significant to less than significant under CEQA.

Under NAAQS, the Project is located in an area that is in non-attainment for 8-hour ozone, 1-hour ozone, $PM_{2.5}$, and partial non-attainment for lead. It is in attainment or unclassified for other Federal criteria pollutants. Under CAAQS, the Project is located in an area that is in non-attainment for 8-hour ozone, 1-hour ozone, PM_{10}, and $PM_{2.5}$. It is in attainment or unclassified for other State criteria pollutants. Table 7 shows Ambient Air Quality Standards. Table 8 summarizes the ambient air quality classifications for the Project location.

The SCAB has a hot, dry, desert climate. Precipitation is approximately 14 inches annually and occurs mostly in the winter months from active frontal systems and occasionally in summer months from thunderstorms. The Project site is at an elevation of approximately 1,275 feet above sea level. The average maximum temperature annually is 83 degrees Fahrenheit and the average minimum temperature annually is 47 degrees Fahrenheit (U.S. Climate Data, 2021). The average temperature overall is 63.5 degrees Fahrenheit.

Table 7: Ambient Air Quality Standards

Ambient Air Quality Standards						
Pollutant	**Averaging Time**	**California Standards** [1]		**National Standards** [2]		
		Concentration [3]	**Method** [4]	**Primary** [3,5]	**Secondary** [3,6]	**Method** [7]
Ozone (O_3) [8]	1 Hour	0.09 ppm (180 µg/m^3)	Ultraviolet Photometry	—	Same as Primary Standard	Ultraviolet Photometry
	8 Hour	0.070 ppm (137 µg/m^3)		0.070 ppm (137 µg/m^3)		
Respirable Particulate Matter (PM10) [9]	24 Hour	50 µg/m^3	Gravimetric or Beta Attenuation	150 µg/m^3	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	20 µg/m^3		—		
Fine Particulate Matter (PM2.5) [9]	24 Hour	—	—	35 µg/m^3	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	12 µg/m^3	Gravimetric or Beta Attenuation	12.0 µg/m^3	15 µg/m^3	
Carbon Monoxide (CO)	1 Hour	20 ppm (23 mg/m^3)	Non-Dispersive Infrared Photometry (NDIR)	35 ppm (40 mg/m^3)	—	Non-Dispersive Infrared Photometry (NDIR)
	8 Hour	9.0 ppm (10 mg/m^3)		9 ppm (10 mg/m^3)	—	
	8 Hour (Lake Tahoe)	6 ppm (7 mg/m^3)		—	—	
Nitrogen Dioxide (NO_2) [10]	1 Hour	0.18 ppm (339 µg/m^3)	Gas Phase Chemiluminescence	100 ppb (188 µg/m^3)	—	Gas Phase Chemiluminescence
	Annual Arithmetic Mean	0.030 ppm (57 µg/m^3)		0.053 ppm (100 µg/m^3)	Same as Primary Standard	
Sulfur Dioxide (SO_2) [11]	1 Hour	0.25 ppm (655 µg/m^3)	Ultraviolet Fluorescence	75 ppb (196 µg/m^3)	—	Ultraviolet Flourescence; Spectrophotometry (Pararosaniline Method)
	3 Hour	—		—	0.5 ppm (1300 µg/m^3)	
	24 Hour	0.04 ppm (105 µg/m^3)		0.14 ppm (for certain areas) [11]	—	
	Annual Arithmetic Mean	—		0.030 ppm (for certain areas) [11]	—	
Lead [12,13]	30 Day Average	1.5 µg/m^3	Atomic Absorption	—	—	High Volume Sampler and Atomic Absorption
	Calendar Quarter	—		1.5 µg/m^3 (for certain areas) [12]	Same as Primary Standard	
	Rolling 3-Month Average	—		0.15 µg/m^3		
Visibility Reducing Particles [14]	8 Hour	See footnote 14	Beta Attenuation and Transmittance through Filter Tape	**No National Standards**		
Sulfates	24 Hour	25 µg/m^3	Ion Chromatography			
Hydrogen Sulfide	1 Hour	0.03 ppm (42 µg/m^3)	Ultraviolet Fluorescence			
Vinyl Chloride [12]	24 Hour	0.01 ppm (26 µg/m^3)	Gas Chromatography			

See footnotes on next page ...

For more information please call ARB-PIO at (916) 322-2990 California Air Resources Board (5/4/16)

(Table 7 continued)

1. California standards for ozone, carbon monoxide (except 8-hour Lake Tahoe), sulfur dioxide (1 and 24 hour), nitrogen dioxide, and particulate matter (PM10, PM2.5, and visibility reducing particles), are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.

2. National standards (other than ozone, particulate matter, and those based on annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest 8-hour concentration measured at each site in a year, averaged over three years, is equal to or less than the standard. For PM10, the 24 hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 $\mu g/m^3$ is equal to or less than one. For PM2.5, the 24 hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. Contact the U.S. EPA for further clarification and current national policies.

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

4. Any equivalent measurement method which can be shown to the satisfaction of the ARB to give equivalent results at or near the level of the air quality standard may be used.

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

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

7. Reference method as described by the U.S. EPA. An "equivalent method" of measurement may be used but must have a "consistent relationship to the reference method" and must be approved by the U.S. EPA.

8. On October 1, 2015, the national 8-hour ozone primary and secondary standards were lowered from 0.075 to 0.070 ppm.

9. On December 14, 2012, the national annual PM2.5 primary standard was lowered from 15 $\mu g/m^3$ to 12.0 $\mu g/m^3$. The existing national 24-hour PM2.5 standards (primary and secondary) were retained at 35 $\mu g/m^3$, as was the annual secondary standard of 15 $\mu g/m^3$. The existing 24-hour PM10 standards (primary and secondary) of 150 $\mu g/m^3$ also were retained. The form of the annual primary and secondary standards is the annual mean, averaged over 3 years.

10. To attain the 1-hour national standard, the 3-year average of the annual 98th percentile of the 1-hour daily maximum concentrations at each site must not exceed 100 ppb. Note that the national 1-hour standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the national 1-hour standard to the California standards the units can be converted from ppb to ppm. In this case, the national standard of 100 ppb is identical to 0.100 ppm.

11. On June 2, 2010, a new 1-hour SO_2 standard was established and the existing 24-hour and annual primary standards were revoked. To attain the 1-hour national standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 ppb. The 1971 SO_2 national standards (24-hour and annual) remain in effect until one year after an area is designated for the 2010 standard, except that in areas designated nonattainment for the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved.

    Note that the 1-hour national standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the 1-hour national standard to the California standard the units can be converted to ppm. In this case, the national standard of 75 ppb is identical to 0.075 ppm.

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

13. The national standard for lead was revised on October 15, 2008 to a rolling 3-month average. The 1978 lead standard (1.5 $\mu g/m^3$ as a quarterly average) remains in effect until one year after an area is designated for the 2008 standard, except that in areas designated nonattainment for the 1978 standard, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standard are approved.

14. In 1989, the ARB converted both the general statewide 10-mile visibility standard and the Lake Tahoe 30-mile visibility standard to instrumental equivalents, which are "extinction of 0.23 per kilometer" and "extinction of 0.07 per kilometer" for the statewide and Lake Tahoe Air Basin standards, respectively.

For more information please call ARB-PIO at (916) 322-2990 **California Air Resources Board (5/4/16)**

Table 8: Attainment for the South Coast Air Basin

Pollutant	Attainment Status	
	Federal	State
O_3 –8-hour	Nonattainment (Extreme)	Nonattainment
O_3 –1-hour	Nonattainment (Extreme)	Nonattainment
PM_{10}	Attainment (Maintenance)	Nonattainment
$PM_{2.5}$	Nonattainment (Serious)	Nonattainment
CO	Attainment (Maintenance)	Attainment
NO_2	Attainment (Maintenance)	Attainment
SO_2	Unclassifiable/Attainment	Not Available
Sulfates	No Federal Standard	Attainment
Lead	Nonattainment (Partial)	Not Available
Hydrogen Sulfide	No Federal Standard	Attainment
Sources: National Ambient Air Quality Standards (NAAQS) and California Ambient Air Quality, SCAQMD February 2016, http://www.aqmd.gov/docs/default-source/clean-air-plans/air-quality-management-plans/naaqs-caaqs-feb2016.pdf?sfvrsn=14		

Standards (CAAQS) Attainment Status for South Coast Air Basin

The State CEQA Guidelines further state that the significance criteria established by the applicable air quality management or air pollution control district may be relied on to make the determinations above. The SCAQMD has specified significance thresholds (SCAQMD 2016) to determine whether mitigation is needed for Project-related air quality impacts. The SCAQMD's thresholds of significance for construction- and operation-related emissions are presented in Table 9.

Table 9: South Coast Air Quality Management District Thresholds of Significance

Thresholds of Significance		
Pollutant	**Construction (pounds per day)**	**Operation (pounds per day)**
NO_x	100 lbs/day	55 lbs/day (0.0275 tons/day)
VOC	75 lbs/day	55 lbs/day (0.0275 tons/day)
PM_{10}	150 lbs/day	150 lbs/day (0.075 tons/day)
$PM_{2.5}$	55 lbs/day	55 lbs/day (0.0275 tons/day)
SO_x	150 lbs/day	150 lbs/day (0.075 tons/day)
CO	550 lbs/day	550 lbs/day (0.275 tons/day)
Lead	3 lbs/day	3 lbs/day (0.001 tons/day)
Source: SCAQMD 2019, http://www.aqmd.gov/docs/default-source/ceqa/handbook/scaqmd-air-quality-significance-thresholds.pdf?sfvrsn=2		

Asbestos

Exposure and disturbance of rock and soil that contains asbestos can result in the release of fibers to the air and consequent exposure to the public. Asbestos most commonly occurs in ultramafic rock that has undergone partial or complete alteration to serpentine rock (proper rock name serpentinite) and often contains chrysotile asbestos. In addition, another form of asbestos, tremolite, can be found associated with ultramafic rock, particularly near faults. Sources of asbestos emissions include: unpaved roads or driveways surfaced with ultramafic rock, construction activities in ultramafic rock deposits, or rock quarrying activities where ultramafic rock is present. Based on the map of naturally-occurring asbestos

locations contained in *A General Location Guide for Ultramafic Rocks in California – Areas More Likely to Contain Naturally Occurring Asbestos* (California Department of Conservation, Division of Mines and Geology 2000), major ultramafic rock formations are not found within proximity to the proposed Project site.

Response to Question a): Less than Significant Impact.

The SCAQMD is required to produce air quality management plans directing how the SCAB's air quality will be brought into attainment with the national and state ambient air quality standards. The most recent air quality management plan is *2016 Air Quality Management Plan* and it is applicable to Orange County. The purpose of the *2016 Air Quality Management Plan* is to achieve and maintain both the national and state ambient air quality standards described above.

In order to determine if a Project is consistent with the *2016 Air Quality Management Plan*, the SCAQMD has established consistency criterion which are defined in Chapter 12, Sections 12.2 and 12.3 of the SCAQMD's *CEQA Air Quality Handbook* and are discussed below.

Consistency Criterion No. 1: *The proposed Project will not result in an increase in the frequency or severity of existing air quality violations or cause or contribute to new violations, or delay the timely attainment of air quality standards or the interim emissions reductions specified in the 2016 Air Quality Management Plan.*

Consistency Criterion No. 1 refers to violations of the CAAQS and NAAQS. As evaluated under Issue (b) below, the Project would not exceed regional or localized significance thresholds for any criteria pollutant during construction or during long-term operation. Accordingly, the Project's regional and localized emissions would not contribute substantially to an existing or potential future air quality violation or delay the attainment of air quality standards.

Consistency Criterion No. 2: *The proposed Project will not exceed the assumptions in the 2016 Air Quality Management Plan.*

The *2016 Air Quality Management Plan* demonstrates that the applicable ambient air quality standards can be achieved within the timeframes required under federal law. Growth Projections from local general plans adopted by cities in the district are provided to the Southern California Association of Governments (SCAG), which develops regional growth forecasts, which are then used to develop future air quality forecasts for the AQMP.

The bridge would serve the same average daily traffic with or without the bridge widening; therefore, the proposed Project would not change the number of vehicle trips or their operational characteristics, no change in the volume of vehicular emissions would occur; therefore, the Project would not substantially contribute to or cause deterioration of existing air quality. Further, the proposed Project would not increase emissions nor would the proposed Project prevent the goals outlined in Orange County's General Plan from being reached. It is determined that the Project is consistent with the AQMP; therefore, the Project would not conflict with or obstruct implementation of the AQMP.

Response to Question b): Less than Significant Impact. Construction of the Project would result in short-term and intermittent increases in criteria pollutants; however, no long-term operational impacts to net

increases of criteria pollutants would occur. According to results of the Project's Roadway Construction Emission Model (RCEM), construction effects would not result in an exceedance of the SCAQMD construction emission thresholds. Specifically, the RCEM determined that short-term local nuisance of increased criteria pollutants would be under the daily maximum pounds (lbs) per day SCAQMD thresholds (see Table 10). Therefore, the Project's effects to air quality would be considered less than significant with Best Management Practices. Discussion of the short-term construction and operational significance thresholds, as applicable to the proposed Project, are discussed below.

Construction Emissions

Temporary construction activities would include site preparation and bridge construction that will involve excavation, grading, constructing new shoulders, and other construction activities. During construction, short-term air quality effects are expected from the release of particulate emissions (airborne dust) generated by excavation, grading, hauling, and other activities related to construction. However, adherence to standard dust control and construction best management practices (BMPs) would be required as part of the Project's Construction Management Plan.

Emission from construction equipment powered by gasoline and diesel engines are also anticipated. The RCEM model (Appendix A) estimates construction equipment effects of criteria pollutants including CO, NOX, VOCs, directly emitted PM10 and PM2.5, and toxic air contaminants (TACs) such as diesel exhaust particulate matter. These emissions would be temporary and limited to the immediate area surrounding the construction site. The RCEM Version 9.0.0 model was calculated with the Project's construction anticipated to take approximately 8 months. The Project's construction emissions were modeled using the RCEM developed by Sacramento Metropolitan Air Quality Management District (SMAQMD 2020), which is the accepted model for all CEQA roadway Projects throughout California. According to SCAQMD air quality modeling guidance, the RCEM can be used to assist roadway project proponents with determining the emissions impacts of their projects (SCAQMD 2021). The RCEM results were then compared with the SCAQMD Air Quality Significance Thresholds to determine if the Project would exceed any regional thresholds of significance. As summarized in Table 10 below, due to the limited scale/intensity of the Project's construction activities, construction related emissions will not exceed SCAQMD threshold criteria for significant air quality impacts. Therefore, the Project would not result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is non-attainment, and the Project's air quality effects would be considered less than significant.

Table 10: RCEM Emissions Estimates

Pollutant	Maximum Daily Construction Emissions Model Result (lbs/day)	SCAQMD Emissions Threshold (lbs/day)	
	Construction Only	Construction	Operation
Respirable Particulate Matter (PM10)	0.05	150	150
Fine Particulate Matter (PM2.5)	0.03	55	55
Oxides of Nitrogen (NOX)	1.20	100	55
Oxides of Sulfur (SOX)	0.01	150	150
Carbon Monoxide (CO)	0.59	550	550
Volatile Organic Compounds (VOC)	0.08	75	55
Source: SCAQMD 2019, http://www.aqmd.gov/docs/default-source/ceqa/handbook/scaqmd-air-quality-significance-thresholds.pdf?sfvrsn=2			

Operational Emissions

The proposed Project would replace the existing two-lane bridge, and there would be no additional travel lanes constructed. Currently, the average daily traffic for the existing bridge is 696, according to the County's most recent traffic count, which was conducted in March 2021. Since there will be no additional travel lanes added on the proposed bridge, there is no significant increase in vehicles anticipated. As a result, the Project is not anticipated to result in an increase of operational emissions.

Response to Question c): Less than Significant with Mitigation Incorporated. The Project would have less than significant impact on exposing sensitive receptors to substantial pollutant concentrations. Although the closest sensitive receptors are residences located approximately 160 feet southwest and approximately 90 feet southeast of the bridge, construction would be temporary. In addition, with the incorporation of Caltrans' Construction Site Best Management Practices, these impacts are not considered to be significant.

Response to Question d): Less than Significant with Mitigation Incorporated. The Project would have less than significant impact on creating objectionable odors. Some phases of construction, particularly asphalt paving, would result in short-term odors in the immediate area of each paving site(s). Such odors would be quickly dispersed below detectable thresholds as distance from the site(s) increases. Although the closest sensitive receptors are residences located approximately 90 feet of the bridge, construction would be temporary in nature and with the inclusion of Caltrans' Construction Site Best Management Practices, these impacts are not considered to be significant.

Avoidance, Minimization, and /or Mitigation Measures

All of the construction impacts to air quality are short-term in duration and, therefore, will not result in adverse or long-term impacts. In addition, implementation of Caltrans' Construction Site Best Management Practices will reduce any air quality impacts resulting from construction activities.

4.8 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 or U.S. Fish and Wildlife Service?	☐	☒	☐	☐
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?	☐	☐	☒	☐

Regulatory Setting

"Special status species" include any species that has been afforded special recognition by federal, state or local resources agencies (e.g., U.S. Fish and Wildlife Service [USFWS], California Department of Fish and Wildlife [CDFW], etc.), and/or resource conservation organizations (e.g., California Native Plant Society [CNPS]). The term "special-status species" excludes those avian species solely identified under Section 10 of the Migratory Bird Treaty Act (MBTA) for federal protection. MBTA Section 10 protected species are afforded avoidance and minimization measures per state and federal requirements.

Affected Environment

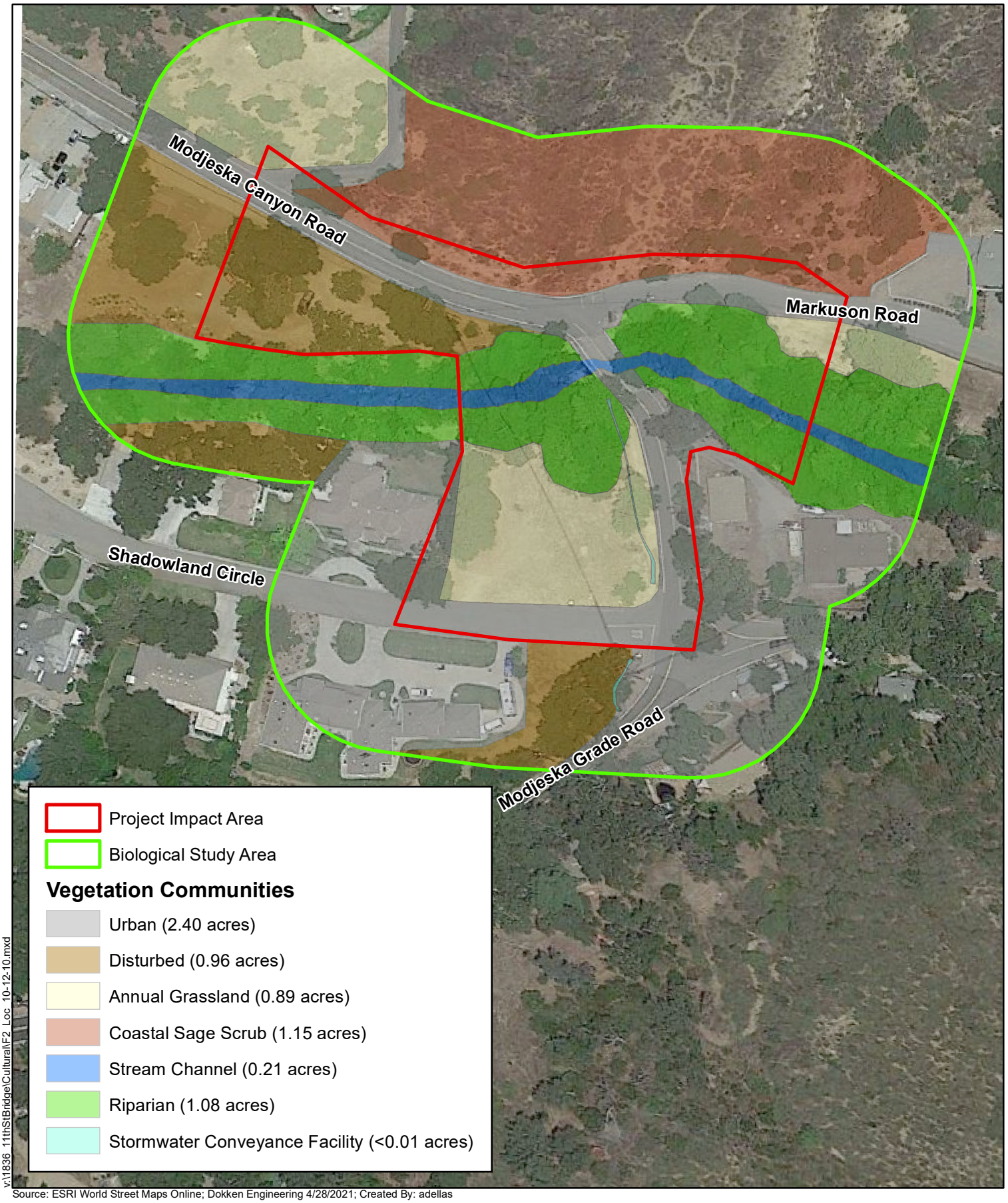
Physical Conditions

The Biological Study Area (BSA) is defined as the proposed Project Impact Area (PIA), plus a 100-foot buffer including potential staging areas and access routes. The BSA is approximately 6.70 acres. The elevation within the BSA is approximately 1,275 feet above mean sea level. In the vicinity of the BSA, annual temperatures range from a high of 76 degrees Fahrenheit to a low of 50 degrees Fahrenheit, and the average annual rainfall is 13 inches (U.S. Climate Data 2020). The topography within the BSA is generally flat. Soil within the BSA consists of Riverwash (63.7% of the BSA) and Sorrento loam, 2 to 9 percent slopes, warm MAAT, MLRA 19 (36.3% of the BSA) (NRCS 2020).

Biological Conditions

Field surveys were conducted on September 27, 2019 and included walking meandering transects through the entire BSA, observing vegetation communities, compiling notes on observed flora and fauna, and assessing the potential for existing habitat to support sensitive plants and wildlife. Based on field survey results, United States Geological Survey (USGS) Redding 7½ minute quadrangle topographic map, the USFWS National Wetland Inventory, and the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) (Appendix F), the only water feature within the BSA is Santiago Creek. Santiago Creek is an intermittent creek that drains most of the northern Santa Ana Mountains and is a tributary to the Santa Ana River. Within the BSA, Santiago Creek maintains flows during rain events throughout the fall, winter and spring, with complete drying in late spring through early fall. The creek bed has gravelly sand alluvium substrate from 0 to 6 inches and stratified gravelly coarse sand to sandy loam from 6 to 60 inches (NRCS 2020). Within the BSA, a stormwater conveyance facility begins along Modjeska Grade Road, continues through the BSA, and ends as a discharge point above the ordinary high water mark (OHWM) of Santiago Creek.

Dominant vegetation communities within the BSA include urban, disturbed, annual grassland, stream channel, stormwater conveyance facility, coastal sage scrub, and riparian woodland (Figure 7. Vegetation Communities within the Biological Study Area).



v:\1836 11thStBridge\Cultural\F2 Loc 10-12-10.mxd

Source: ESRI World Street Maps Online; Dokken Engineering 4/28/2021; Created By: adellas

1 inch = 100 feet

0 50 100 150 200 Feet

FIGURE 7
Vegetation Communities within the BSA
BRLO-5955(094)
Modjeska Canyon Road Bridge Replacement Project
Modjeska Canyon, Orange County, California

Urban

Urban habitat is man-made infrastructures, defined by the absence of any vegetation, and is constructed with gravel, compacted soil, and/or asphalt. Urban areas within the BSA are categorized as roadway (Modjeska Canyon Road) and associated pullouts and driveways along the road. No residences are within the BSA but are adjacent to the BSA within approximately 20 feet of proposed Project activities.
This habitat type is categorized as highly disturbed. Within the BSA, approximately 2.40 acres is classified as urban.

Disturbed

Disturbed habitat occurs as unpaved landscaped areas. Disturbed habitat within the BSA consists of a graveled driveway parking area west of the bridge. Vegetation consists of sparse forbs and grasses, ornamental plantings, and coast live oak (*Quercus agrifolia*). Approximately 0.96 acres of the BSA is classified as disturbed.

Annual Grassland

Annual grassland habitat within the BSA exhibits a composition of non-native grasses including, smilo grass (*Stipa miliacea*), wild oat (*Avena fatua*), red brome (*Bromus madritensis ssp. rubens*), and non-native forbs including, black mustard (*Brassica nigra*), prostrate sandmat (*Euphorbia prostrata*), sow-thistle (*Sonchus oleraceus*), and white sweet clover (*Melilotus albus*). Approximately 0.89 acres of the BSA is classified as annual grassland.

Coastal Sage Scrub

Coastal sage scrub (CSS) habitats are typified by low to moderate-sized shrubs with mesophytic leaves, flexible branches, semi-woody stems growing from a woody base, and a shallow root system. Coastal scrub within the BSA is generally composed of California sagebrush (*Artemisia californica*) and California buckwheat (*Eriogonum fasciculatum*). Within the BSA, approximately 1.15 acres is classified as CSS habitat.

Stream Channel – Santiago Creek

Within the BSA, the Santiago Creek stream channel was delineated using primary indicators of OHWM as described in the USACE OHWM delineation manual. The stream channel is dominated by run and riffle areas with cobble, gravel, and sand substrates. Within the stream channel habitat, a composition of vegetation accustomed to wet conditions exists including, watercress (*Nasturtium officinale*), field horsetail (*Equisetum arvense*), California mugwort (*Artemisia douglasiana*), tall flatsedge (*Cyperus eragrostis*), and umbrella plant (*Cyperus involucratus*). Delineation results determined that approximately 0.21 acres of Santiago Creek are within the BSA.

Stormwater Conveyance Facility

Within the BSA, a stormwater conveyance facility begins along Modjeska Grade Road, continues through the BSA, and ends as a discharge point above the OHWM of Santiago Creek. The stormwater conveyance facility consists of asphalt paving and confluences with native soils at the western toe of slope for Modjeska Canyon Road. The system is considered a man-made roadside drainage feature designed to convey seasonal rainwater flows through the Project site. The stormwater conveyance facility ranges in width from approximately 1 ft. to 5 ft. Vegetation within the system was composed of ruderal and invasive species consistent with the annual grassland habitat type. Less than 0.01 acres of stormwater conveyance facility are within the BSA.

Riparian Woodland

Riparian Woodland is a tall deciduous streamside woodland that is dominated by western sycamore (*Platanus racemosa*) and occasional white alders (*Alnus rhombifolia*). These woodland stands seldom form closed canopies and may even appear as trees scattered in a shrubby thicket. The community is associated with rocky stream beds, such as Santiago Creek, that are subject to high intensity flooding. The intermittent nature of these drainages favors western sycamore as the dominant species, but white alder increases in abundance on more perennial streams. Within the BSA, the riparian woodland is dominated by western sycamore and white alder, with additional vegetation accustomed to generally wet conditions including Pacific willow (*Salix lasiandra*) and mule fat (*Baccharis salicifolia*). Approximately 1.08 acres of the BSA is classified as riparian woodland.

Wildlife

Minimal wildlife species were observed during the biological surveys. In conjunction with literature research and habitat assessments conducted during the biological surveys, wildlife anticipated to occur within the BSA is limited to common wildlife species typically found in the temperate climate of a southern California riverine and riparian ecosystem. Adjacent habitats within the BSA are highly disturbed through residential activity, and the mixed urban landscape.

Habitat Connectivity

Santiago Creek runs east to west through the BSA. The Santiago Creek corridor may supply habitat connectivity for terrestrial and aquatic species; however, Santiago Creek is not identified as an Essential Connectivity Area by CDFW. The Project area is listed as Rank 3 on the CDFW Terrestrial Connectivity Dataset, which is one of four key components of the overall CDFW Area of Conservation Emphasis suite for terrestrial conservation information along with Terrestrial Biodiversity, Significant Habitats, and Climate Resilience. Rank 3 identifies areas that have connectivity importance, but have not been identified as channelized areas, specific species corridors, or habitat linkages at this time (CDFW 2020).

Response to Question a): Less than Significant with Mitigation Incorporated. The Project would have a less than significant impact on special status species with mitigation incorporated. Based on the results of the September 27, 2019 biological surveys, 12 special status wildlife species were determined to have potential to occur within the BSA and are discussed in detail below. Arroyo Toad (ARTO) is presumed absent, however, is also discussed below (in addition to the other 12 species) due to their prevalence in the broader vicinity.

Special Status Amphibian Species

Arroyo Toad (ARTO)

According to the USFWS Critical Habitat Mapper (see Figure 9), the BSA falls within Unit 8 of ARTO critical habitat; however, in order to allow Orange County Public Works (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 habitat 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 according to personal communication with Giles Matthews with OCPW.

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. 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. In June 2019, protocol ARTO presence/absence surveys were also conducted within specific reaches of these streams. 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.

Despite 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, the results concluded that ARTO are currently absent from the survey area including the portion of Santiago Creek within the BSA. Combining these findings with the results of the ARTO habitat suitability assessment, and Forest Service findings that no suitable ARTO habitat is present within any of these creeks within the Cleveland National Forest, no suitable ARTO habitat would be considered present within the BSA or PIA.

Coast Range Newt

Coast Range Newt (*Taricha torosa*) is not listed under FESA or CESA as a threatened or endangered species. Also known as the California newt, the species occurs commonly in the Coast Ranges from central Mendocino County south to northern San Diego County. The species is considered a species of special concern (SSC) from Monterey County south, whereas the species has no protection status north of Monterey County. The species occurs primarily in valley-foothill hardwood, valley-foothill hardwood-conifer, coastal scrub and mixed chaparral, but is also known from annual grassland and mixed conifer types in elevation ranges from near sea level to about 6,000 ft. Breeding and egg-laying occur from fall through late spring in intermittent streams and rivers, permanent and semi-permanent ponds, lakes and reservoirs. In the spring, adults return to subterranean summer aestivating sites (CWHR 2018).

No coast range newts were identified during the September 27, 2019 biological survey. The BSA does contain hardwood sycamore/alder riparian woodland habitat and is adjacent to sloped chaparral habitat. Santiago Creek, which runs through the BSA, is an intermittent stream and could serve as breeding habitat for the species. The nearest historic (1999) CNDDB occurrence of the species is within the general area of the USGS 7.5-minute quadrangle of Black Star Canyon, which is approximately 3 miles north of the Project area. Additionally, a recent (2018) iNaturalist research grade observation was documented within the BSA. Due to the presence of potentially suitable habitat and recent local occurrences, the species is considered to have a low to moderate potential to occur within the BSA.

Western Spadefoot

The western spadefoot (*Spea hammondii)* is not a state or federally listed species but is a CDFW SSC. In California, the species is distributed throughout the Central Valley; along the Coast Ranges in Monterey, San Luis Obispo, and Santa Barbara counties; and in Southern California south of the Transverse Mountains and west of the Peninsular Mountains. Western spadefoot inhabits woodlands and grasslands and is almost entirely terrestrial, only entering water to breed in vernal pools from January through May after which the female deposits eggs on emergent vegetation before returning to land. Their diet consists

of a variety of insects and earthworms. Western spadefoot estivates through the dry season underground and remain dormant until winter rains soften soils and refill vernal pools (CWHR 2000).

No western spadefoots were identified during the September 27, 2019 biological survey. The BSA does contain potentially suitable sandy or gravelly soils in mixed riparian woodland. There are 2 recent CNDDB occurrences of the species within approximately 2.5 miles of the Project area to the north and south (2017 and 2003). Due to the presence of potentially suitable habitat and recent nearby occurrences, the species is considered to have a low to moderate potential to occur within the BSA.

Project Impacts

Construction activities within Santiago Creek would contribute to temporary impacts to the creek and temporary and permanent impacts to the adjacent riparian woodland habitat that may be utilized by coast range newt and western spadefoot. Temporary impacts to the creek channel would be limited to approximately 0.04 acres (120 linear feet) of temporary ground disturbance associated with construction activities. Additionally, the Project will have approximately 0.12 acres of temporary impacts and approximately 0.04 acres of permanent impacts to riparian woodland habitat.

Special Status Avian Species

Coastal California Gnatcatcher

Coastal California gnatcatcher (CAGN) (*Polioptila californica californica*) is a federal listed threated species under the FESA and listed as a CDFW SSC. This species is a small, non-migratory songbird that occurs along the Pacific coastal regions of southern California and northern Baja California, Mexico (Zink, 2000). The range and distribution of the gnatcatcher is closely aligned with coastal scrub vegetation, but the species is known to use adjacent habitats for foraging and dispersal. The breeding season of the coastal California gnatcatcher extends from about February 1 through September 1, with the peak of nesting activity occurring from mid-March through mid-May. Among the threats contributing to the coastal California gnatcatcher's decline are habitat destruction due to housing development, shopping malls, and farmlands. In addition, nesting attempts often fail, partly because of brown-headed cowbird (*Molothurs ater*) parasitism, wildfire, and grazing.

No coastal California gnatcatcher were visually or audibly identified during the September 27, 2019 biological survey. A small portion of the BSA contains CSS communities; however, this habitat type is outside of the PIA and no effects to CSS habitat would occur. The BSA does contain potentially suitable riparian woodland adjacent to sloped chaparral habitat. Furthermore, the nearest CNDDB occurrence of the species is approximately 4 miles northwest of the Project area (2002). Due to the presence of marginally suitable habitat and nearby occurrences, the species is considered to have a low to moderate potential to occur within the BSA.

Least Bell's Vireo

The least Bell's Vireo (LBVI) (*Vireo bellii pusillus*) is a federal and state listed endangered species under the FESA and CESA. The species is one of four subspecies of Bell's Vireo recognized by the American Ornithologist's Union (AOU 1957). They are only 11.5-12.5 centimeters long (about 4.5 to 5.0 inches). It is the western-most subspecies, breeding entirely within California and northern Baja California (Kus, 2008). By the time the species was listed by the USFWS in 1986, it had been extirpated from most of its historic

range and numbered just 300 pairs statewide. In 1998, the population size was estimated at 2,000 pairs. Among the threats contributing to the Least Bell's vireo's decline are habitat destruction due to urban development, golf courses, agriculture conversion, and livestock grazing. In addition, traffic noise, feral pets, and recreational use of habitat contribute to disturbances.

The County has coordinated with the appropriate Caltrans and USFWS liaison for discussions regarding the LBVI and CAGN effect determination. 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 LBVI and CAGN with proposed avoidance and minimization measures, due to the lack of suitable habitat within the BSA. On April 13, 2020, Mr. Snyder responded and stated that with appropriate conservation measures, a "not likely to adversely affect" determination would be appropriate for the Project's effects to LBVI and CAGN. Additionally, Mr. Snyder confirmed that the NES document would be suitable to present potential effects and conservation measures for LBVI and CAGN, rather than a separate document (i.e. Biological Assessment).

No least Bell's vireo were visually or audibly identified during the September 27, 2019 biological surveys. The BSA does contain potentially suitable riparian woodland in the vicinity of water and dry river bottoms such as the intermittent Santiago Creek within the BSA. The nearest presumed extant CNDDB occurrence of the species is approximately 3 miles south of the Project area (2017). Due to the presence of marginally suitable habitat and nearby occurrences, the species is considered to have a low to moderate to occur within the BSA.

Project Impacts

No direct impacts to special status nesting birds are anticipated. Furthermore, no CSS habitat would be impacted by the proposed Project. However, the proposed Project does anticipate temporary and permanent impacts to riparian woodland habitat, which may serve as potentially suitable foraging and dispersal habitat. The Project will have approximately 0.12 acres of temporary impacts and approximately 0.04 acres of permanent impacts to riparian woodland habitat, including the anticipated removal of approximately 16 large diameter trees (see Table 11 below). Species specific avoidance, minimization and mitigation measures **BIO-15** and **BIO-17** have been incorporated into the Project design to avoid impacts to special status avian species and protected migratory birds to the greatest extent practicable. These measures will ensure no special status avian species or protected migratory birds are nesting within or directly adjacent to the Project vicinity during vegetation removal and will mitigate for impacts to suitable habitats. Furthermore, due to a lack of suitable habitat in conjunction with the proposed Project design, these avian species have been determined to have a very low potential to occur within the BSA. Therefore, with the Project's proposed avoidance and minimization measures, USFWS has concurred that a "may affect, but not likely to adversely affect" determination for least Bell's vireo and coastal California gnatcatcher would be appropriate.

With the implementation of avoidance and minimization measures **BIO-1** through **BIO-7** impacts to potentially suitable habitat for special status avian species would be reduced to the greatest extent practicable. Additionally, with compensatory mitigation measures **BIO-8** and **BIO-9** any temporary and permanent effects to potentially suitable habitat would be compensated. Furthermore, with implementation of the species-specific avoidance and minimization measures **BIO-14** through **BIO-16**, direct impacts to California coastal gnatcatcher and least Bell's vireo are not anticipated and additional compensatory mitigation specific to these species is not proposed at this time.

Orange County has coordinated with the appropriate Caltrans and USFWS liaison for discussions regarding the LBVI and CAGN effect determination. 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 LBVI and CAGN with proposed avoidance and minimization measures, due to the lack of suitable habitat within the PIA. On April 13, 2020, Mr. Snyder responded and stated that with appropriate conservation measures, a "not likely to adversely affect" determination would be appropriate for the Project's effects to LBVI and CAGN. Additionally, Mr. Snyder confirmed that the NES document would be suitable to present potential effects and conservation measures for LBVI and CAGN, rather than a separate document, i.e. Biological Assessment.

Special Status Reptile Species

Coast Horned Lizard

The coast horned lizard (*Phrynosoma coronatum*) is not a State or Federally listed species but is a CDFW SSC. It inhabits valley-foothill hardwood, conifer forest, and riparian woodland habitats, as well as pine-cypress, juniper woodland, and annual grasslands with sandy areas, washes or flood plains. The species occurs in the Sierra Nevada foothills from Butte County to Kern County and throughout the central and southern California coast. Frequently found near ant hills. Egg laying occurs from May to June, and some females may lay two clutches per year. The species elevation range is sea level to 8,000 ft. but are found chiefly below 900 meters (3,000 ft. in southern California (CWHR 2000).

No coast horned lizard was observed during the September 27, 2019 biological survey. The BSA does contain potentially suitable riparian woodland habitat and sandy soils. Additionally, the nearest CNDDB occurrence of the species is approximately 1 mile south of the Project area (2017). Due to the presence of suitable habitat and recent, nearby occurrences, the species is considered to have a high potential to occur within the BSA.

Coast Patch-Nosed Snake

The coast patch-nosed snake (*Salvadora hexaelepis virgultea*) is not a State or Federally listed species but is a CDFW SSC. It is widely distributed throughout southern California from the coast to the eastern border, and as far north as Owens Valley in desert habitats. The species is most commonly found in coastal chaparral, desert scrub, washes, sandy flats, and rocky areas. The species is an active diurnal forager and is susceptible to high levels of vehicle mortality and requires small mammal burrows for refuge and overwintering sites. Mating generally takes place between April and June with egg laying occurring between May and August. The species occurs from below sea level to approximately 7,000 ft. (CWHR 2008).

No coast patch-nosed snake was observed during the September 27, 2019 biological survey. The BSA does not contain brush or shrubby chaparral, rock hillslopes or plains suitable for the species. However, the species may use the Santiago creek habitat as a wildlife corridor. One historic (1999) presumed extant CNDDB occurrence of the species is approximately 3.7 miles northwest of the BSA (1999). Additionally, a recent (2019) iNaturalist research grade observation was documented less than 0.5 mile east of the BSA. Due to the potential for the species to use the BSA as a wildlife corridor and the recent local occurrence, the species is considered to have a low to moderate potential to occur within the BSA.

Coastal Whiptail

The coastal whiptail (*Aspidoscelis tigris stejnegeri*) is not a State or Federally listed species but is a CDFW SSC. The species is widely distributed but uncommon over much of its range in California, except in desert regions where it is abundant in suitable habitats. The species is found throughout the state except in the humid northwest, along the humid outer Coast Ranges, or mountainous regions. The species is primarily diurnal and can be found in a variety of habitats including valley-foothill hardwood, valley-foothill hardwood-conifer, valley-foothill riparian, mixed conifer, pine-juniper, chamise-redshank chaparral, mixed chaparral, desert scrub, desert wash, alkali scrub, and annual grassland. Reproductive season for the species varies geographically and from year to year depending on local conditions. The species occurs from below sea level to approximately 7,500 ft. (Zeiner et al. 1988-1990).

No coastal whiptail was observed during the September 27, 2019 biological survey. The BSA contains riparian woodland habitat suitable for the species. The nearest recent (2008) presumed extant CNDDB occurrence of the species is approximately 4.5 miles southwest of the BSA. Additionally, a recent (2019) iNaturalist research grade observation was documented approximately 1 mile east of the BSA. Due to the presence of potentially suitable habitat, and local recent occurrences, the species has a low to moderate potential to occur.

Orange-Throated Whiptail

The orange-throated whiptail (*Aspidoscelis hyperythra*) is not a State or Federally listed species but is a CDFW SSC. It is uncommon to fairly common over much of its range in Orange, Riverside, and San Diego counties west of the crest of the Peninsular Ranges. The species prefers washes and other sandy areas with patches of brush and rocks (Stebbins 1972). The species is active diurnal from early spring to mid- or late summer. The species has an extensive home range and is likely not territorial. Breeding activities begin in April and egg laying continues to mid-July. In California the species elevation range extends from near sea level to approximately 3,410 ft. (Zeiner et al. 1988-1990).

No orange-throated whiptail was observed during the September 27, 2019 biological survey. The Project does contain potentially suitable hardwood riparian woodland habitat. In addition, the nearest CNDDB occurrence of the species is approximately 1 mile south of the Project area (2016). Due to the presence of suitable habitat adjacent to the Project area and nearby, recent occurrences, the species has a low to moderate potential to occur.

Red-Diamondback Rattlesnake

The red-diamondback rattlesnake (*Crotalus ruber*) is not a State or Federally listed species but is a CDFW SSC. It is distributed along coastal San Diego County to the eastern slope of the mountains and north through western Riverside County into southernmost San Bernardino County. The species prefers chaparral, woodland, and arid desert habitats in rocky areas and dense vegetation. The species is active from spring to fall, but the period of greatest activity is from March to June. Young are live born from mid-August to October, and thus require a diet and safe place for birth, likely in burrows or under substantial cover objects such as dense vegetation or large rocks. The species elevation range occurs from sea level to approximately 3,000 ft. (Zeiner et al. 1988-1990).

No red-diamondback rattlesnake was observed during the September 27, 2019 biological survey. The Project area does contain potentially suitable rocky areas through the Santiago Creek corridor. The

nearest recent CNDDB occurrence of the species is approximately 4 miles southeast of the Project area (2001), and a recent (2017) iNaturalist research grade observation is approximately 1 mile from the BSA. Due to the presence of potentially suitable habitat and local recent occurrences, the species has a low to moderate potential to occur within the BSA.

Southern California Legless Lizard

The southern California legless lizard (*Anniella stebbinsi*) is not a State or Federally listed species but is a CDFW SSC. It is a secretive fossorial lizard common in suitable habitat in the Coast Ranges from Contra Costa County south to the Mexican border. The species is common in several habitats, but especially in coastal dune, valley-foothill riparian, chaparral and coastal scrub types. Little is known regarding the specific habitat requirements for reproduction; however, mating activities are known to occur in late spring or early summer with live young born in September, October or even November. The species elevation range occurs from near sea level to approximately 6,000 ft. in the Sierra (Zeiner et al. 1988-1990).

No southern California legless lizard was observed during the September 27, 2019, biological survey. The BSA contains Santiago Creek, and the stream surroundings may provide suitable moist habitat with sandy soils and cover objects such as leaf litter from oaks, sycamores, willow and alder. The nearest historic (1970) CNDDB occurrence of the species is approximately 2.7 miles northwest of the Project area, and a recent (2019) iNaturalist research grade observation is approximately 6.2 miles east of the BSA. Due to the presence of potentially suitable habitat, with historic and recent presumed extant occurrences, the species is considered to have a low to moderate potential to occur within the BSA.

Two-Striped Gartersnake

The two-striped gartersnake (*Thamnophis hammondii*) is not a State or Federally listed species but is a CDFW SSC. It is distributed from the southeastern slope of the Diablo Range and the Salinas Valley south along the South Coast and Transverse ranges to the Mexican border, and on Santa Catalina Island. The species is highly aquatic, foraging primarily in and along streams. The species is diurnal, using mammal burrows, crevices, and surface objects for nocturnal retreats. Mating typically occurs soon after spring emergence and young are live born in late summer in secluded sites. The species elevation range occurs from sea level to approximately 8,000 ft. (Zeiner et al. 1988-1990).

No two-striped gartersnake was observed during the September 27, 2019, biological survey. The BSA contains Santiago Creek, and the stream surroundings may provide suitable habitat for the species. The nearest CNDDB occurrence of the species is approximately 0.5-mile northwest of the Project area (2003), and a recent (2018) iNaturalist research grade observation is approximately 3.5 miles northeast of the BSA. Due to the presence of potentially suitable habitat and recent presumed extant occurrences, the species is considered to have a low to moderate potential to occur within the BSA.

Western Pond Turtle

The western pond turtle (WPT) is not a State or Federally listed species but is a CDFW SSC. WPTs are native to the west coast and are found from Baja California, Mexico north through Klickitat County, Washington. The WPT is a fully aquatic turtle, inhabiting ponds, marshes, rivers, streams and irrigation ditches with aquatic vegetation. The species requires suitable basking sites such as logs, rocks and exposed banks and associated upland habitat consisting of sandy banks or grassy open fields for reproduction. The species is

omnivorous, consuming aquatic wildlife and vegetation. The WPT is known to hibernate underwater beneath a muddy bottom in colder climates and reproduce from March to August Nests are generally found in flat areas with low vegetation and dry, hard soil (Zeiner et al. 1988-1990).

No western pond turtle was observed during the September 27, 2019 biological survey. The BSA contains Santiago Creek, an intermittent stream which does not provide permanent aquatic habitat for the species. However, the stream may provide habitat from fall to spring when the stream does carry water. There are multiple presumed extant occurrences within 5 miles of the BSA. Due to the presence of potentially suitable habitat and presumed extant occurrences, the species is considered to have a low to moderate potential to occur within the BSA.

Project Impacts

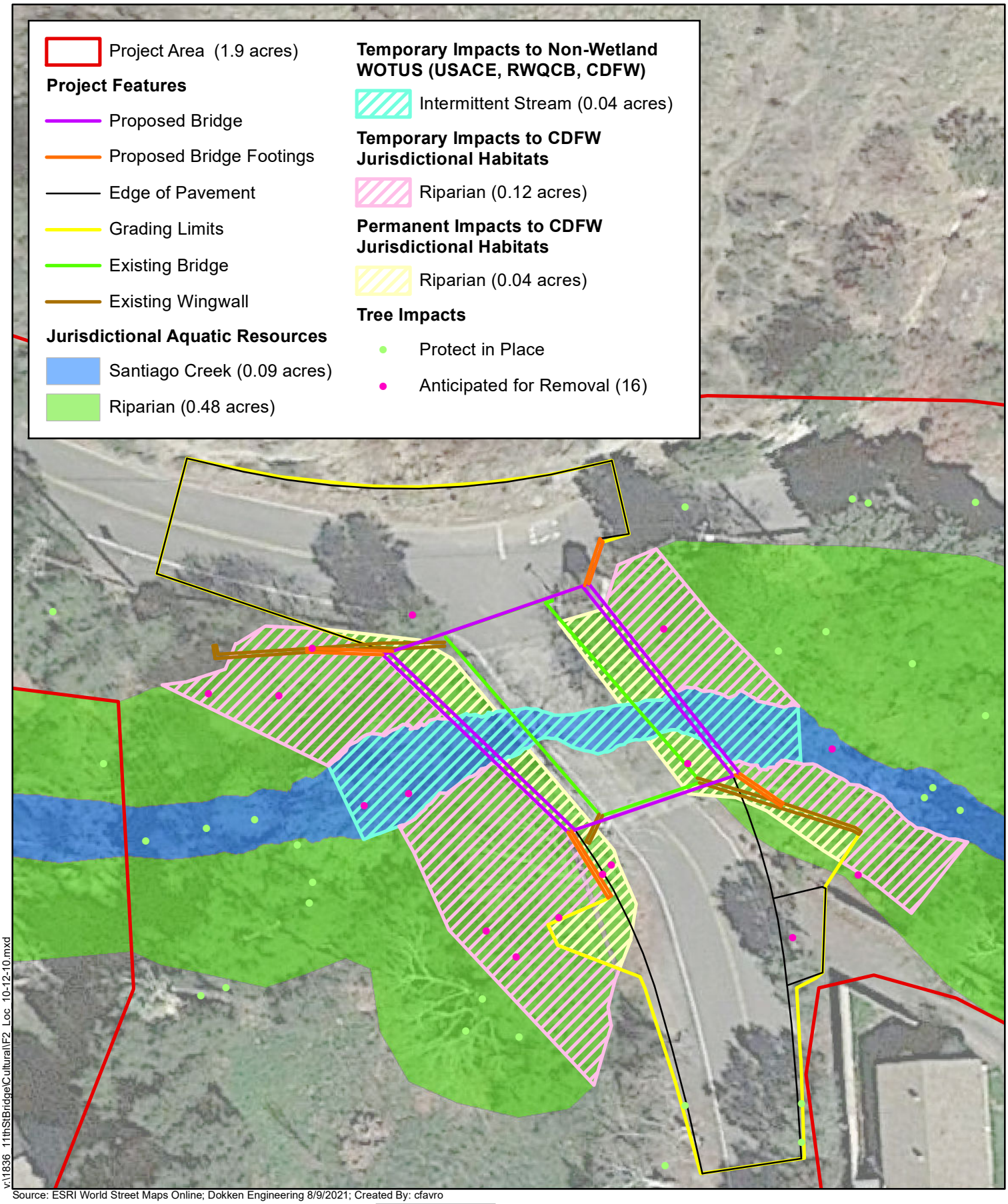
Construction activities within Santiago Creek would contribute to temporary impacts to the creek and temporary and permanent impacts to the adjacent riparian woodland habitat that may be utilized by special-status reptile species. Temporary impacts would be limited to temporary ground disturbance associated with construction activities. The Project will have approximately 0.04 acres (120 linear feet) of temporary impacts to Santiago Creek and approximately 0.12 acres of temporary impacts and approximately 0.04 acres of permanent impacts to riparian woodland habitat. Minimization and mitigation measures **BIO-1** through **BIO-8** have been incorporated into the Project design to avoid impacts to special reptile species.

Response to Question b): Less than Significant with Mitigation Incorporated. The Project would have less than significant impact with mitigation incorporated on riparian habitat or other sensitive natural communities (Figure 8. Sensitive Natural Habitat). Approximately 16 trees, within the riparian woodland are anticipated to be removed to allow for construction access and constructability of the Project. However, all tree resources will be evaluated to determine where trees may remain protected in place without damaging essential root systems within the tree drip lines. The Project has been designed to minimize temporary and permanent impacts to riparian woodland habitat within the Project impact area to the maximum extent practicable. Prior to construction, regulatory permits will be obtained from USACE, RWQCB, and CDFW. Compensatory mitigation will be implemented in accordance with regulatory permits. In addition to all avoidance and minimization measures specified in regulatory permits, BMPs and measures **BIO-1** through **BIO-7** will be incorporated into the design to minimize construction impacts to riparian woodland within the Project's impact area. Additionally, compensatory measures **BIO-8** and **BIO-9** will be implemented to compensate for temporary and permanent impacts to natural communities of special concern.

Table 11: Anticipated Tree Removal

Species	# of Stems	DBH
Black walnut (*Juglans nigra)*	1	9
California sycamore (*Platanus racemosa)*	1	30
California sycamore (*Platanus racemosa)*	4	8, 7, 6, 4
Coast live oak (*Quercus agrifolia)*	1	15
Coast live oak (*Quercus agrifolia)*	1	22
Coast live oak (*Quercus agrifolia)*	1	34
Coast live oak (*Quercus agrifolia)*	1	34
Eucalyptus (*Eucalyptus globulus)*	2	26,14

Species	# of Stems	DBH
Olive (*Olea europaea*)	1	20
Pacific willow (*Salix lucida)*	1	6
White alder (*Alnus rhombifolia)*	4	8,7,10,10
White alder (*Alnus rhombifolia)*	1	16
White alder (*Alnus rhombifolia)*	2	11,13
White alder (*Alnus rhombifolia)*	2	13, 21
White ash (*Fraxinus americana)*	3	4,4,2
White ash (*Fraxinus americana)*	1	8



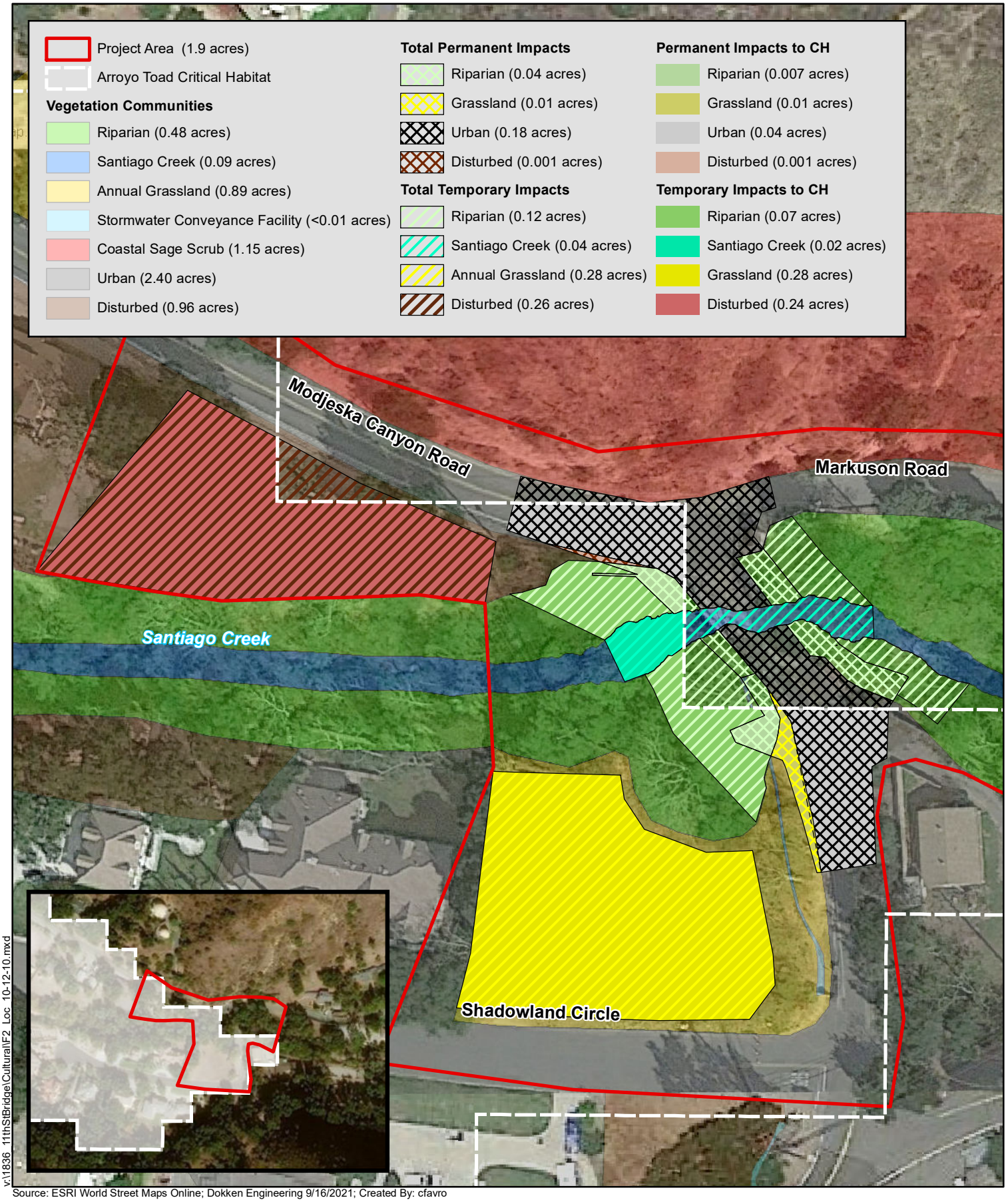
v:\1836_11thStBridge\Cultural\F2_Loc_10-12-10.mxd

Source: ESRI World Street Maps Online; Dokken Engineering 8/9/2021; Created By: cfavro

1 inch = 33.33 feet

0 20 40 60 80 Feet

FIGURE 8
Impacts to Sensitive Natural Habitats
BRLO-5955(094)
Modjeska Canyon Road Bridge Replacement Project
Modjeska Canyon, Orange County, California



v:\1836 11thStBridge\Cultural\F2 Loc 10-12-10.mxd

Source: ESRI World Street Maps Online; Dokken Engineering 9/16/2021; Created By: cfavro

1 inch = 58 feet

0 40 80 120 160 Feet

FIGURE 9
Impacts to Arroyo Toad Critical Habitat
BRLO-5955(094)
Modjeska Canyon Road Bridge Replacement Project
Modjeska Canyon, Orange County, California

Response to Question c): Less than Significant with Mitigation Incorporated. The Project would have less than a significant impact with mitigation incorporated on state or federally protected wetlands. During aquatic resource delineation efforts, no seasonal wetlands were identified within the BSA. The only aquatic features present within the BSA include Santiago Creek and the stormwater conveyance facility. Construction activities within Santiago Creek would be limited to temporary ground disturbance associated with construction on the new bridge structure, and any diversion or dewatering activities necessary to avoid work occurring within flowing waters. Due to these temporary construction activities, the Project is anticipated to have approximately 0.04 acres of temporary impacts to the Santiago Creek channel, a water of the U.S. and State, and CDFW jurisdictional habitat. Permanent impacts to Santiago Creek, as a result of the proposed Project, are not anticipated. Additionally, the implementation of BMPs and measures **BIO-1** through **BIO-5**, **BIO-7**, and **BIO-8** would serve to minimize construction impacts within Santiago Creek as well as mitigate for the anticipated temporary impacts at the appropriate ratio. Permits will also be obtained from CDFW and RWQCB due to the temporary impacts to the creek.

Response to Question d): Less than Significant Impact. The Project would have less than a significant impact on movement of native fish and wildlife species and would not impede wildlife corridors or nursery sites. Santiago Creek runs east to west through the BSA. The Santiago Creek corridor may provide habitat connectivity for terrestrial and aquatic species; however, Santiago Creek is not identified as an Essential Connectivity Area by CDFW. The Project area is listed as Rank 3 on the CDFW Terrestrial Connectivity Dataset, which is one of four key components of the overall CDFW Area of Conservation Emphasis suite for terrestrial conservation information along with Terrestrial Biodiversity, Significant Habitats, and Climate Resilience. Rank 3 identifies areas that have connectivity importance, but have not been identified as channelized areas, specific species corridors, or habitat linkages at this time (CDFW 2020). Construction of the proposed Project is not anticipated to impact the habitat connectivity of this area and existing essential wildlife corridors will be maintained.

Response to Question e): Less than Significant with Mitigation Incorporated. The Project would have less than a significant impact on local policies and ordinances that protect biological resources. The Project is consistent with local regulations involving the County of Orange General Plan. To protect the wide variety of plants, animals and their habitats, the County has enacted a series of policies with the goal of addressing the preservation, management, and utilization of Orange County's natural resources during the planning process, including fish and wildlife habitat protections, open space and recreation conservation, water and air resources and water quality objectives, and regulations for vegetation removal in areas within the General Plan Resource Element (Orange County 2013). The riparian woodland present within the BSA is considered a sensitive natural community by CDFW and Orange County General Plan. Approximately 16 trees within the riparian woodland are anticipated to be removed to allow for construction access and constructability of the Project. However, all tree resources will be evaluated to determine where trees may remain protected in place without damaging essential root systems within the tree drip lines. The Project has been designed to minimize temporary and permanent impacts to riparian woodland habitat within the Project impact area to the maximum extent practicable. Prior to construction, regulatory permits will be obtained from USACE, RWQCB, and CDFW. Compensatory mitigation will be implemented in accordance with regulatory permits. In addition to all avoidance and minimization measures specified in regulatory permits, BMPs and measures **BIO-1** through **BIO-7** will be incorporated into the design to minimize construction impacts to riparian woodland within the Project impact area. Additionally, compensatory measures **BIO-8** and **BIO-9** will be implemented to compensate for temporary and permanent impacts to natural communities of special concern.

Response to Question f): Less than Significant Impact. The Project would have less than a significant impact on adopted Habitat Conservation Plans, Natural Community Conservation Plans and other approved conservation plans. The Central/Coastal Natural Community Conservation Plan and Habitat Conservation Plan (NCCP/HCP) (County of Orange 1996a) was prepared by the Orange County in cooperation with California Department of Fish and Game (CDFG, now CDFW) and USFWS. The NCCP/HCP focuses on creating a multiple-species, multiple habitat subregional Reserve System and implementing a long-term "adaptive management" program that will protect coastal sage scrub and other habitats and species located within the coastal sage scrub habitat mosaic, while providing for economic uses that will meet the social and economic needs of the people of the subregion.

The Project falls within the NCCP/HCP Non-Reserve Open Space. The Non-Reserve Open Space designate regional open spaces that were in public ownership prior to adoption of the NCCP/HCP. These open spaces are not subject to the development requirements associated with the Reserve system, but they are recognized as integral components of the overall subregional conservation strategy. According to Section 4.4.3.1 of the NCCP/HCP Plan, future proposals to convert coastal sage scrub of "Take" covered species within the permanent non-reserve open space are not authorized by the NCCP/HCP and are not mitigated by the NCCP/HCP Project. Any proposed impacts involving incidental take will require separate review by CDFW and USFWS in the same manner as provided for in "Existing Use Areas" to determine compliance with the applicable state and federal species protection laws/regulation (County of Orange 1996). Overall, although potential Project impacts to biological resources and special-status species is not covered under the NCCP/HCP separate consultation with wildlife agencies will be initiated and appropriate mitigation will be implemented.

Avoidance, Minimization, and/or Mitigation Measures

BIO-1: Prior to the start of construction activities, the Project limits in the vicinity of Santiago Creek and associated riparian areas shall be marked with high visibility Environmentally Sensitive Area (ESA) fencing or staking to ensure construction will not further encroach into waters. Plans for the ESA fencing including maps of the project area and fencing limits shall be provided to the Carlsbad Fish & Wildlife Office (CFWO) at least 5 days prior to initiating project impacts. The fencing shall be inspected by the Contractor before the start of each workday and maintained by the Contractor until completion of the Project. The Project biologist will periodically inspect the ESA to ensure sensitive locations remain undisturbed.

BIO-2: Every individual working on the Project must attend a biological awareness training session delivered by a qualified biologist. This training program shall include information regarding special-status species (including pertinent bird, amphibian, mammal, and reptile species along with photographs), sensitivity of the species to human activities, penalties for violations of Federal and State laws, and the importance of avoiding impacts to wildlife species individuals and associated habitat.

The training shall include species identification characteristics, BMPs to be implemented, Project-specific avoidance measures that must be followed, and the steps necessary if the species is encountered at any time. Personnel would attend biological awareness training prior to working within the Project area. The biological awareness training would include a description of special-status species and sensitive habitats and identify mitigation measures that must be complied with.

BIO-3: Contract specifications will include the following best management practices (BMPs), where applicable, to reduce erosion during construction:

- Implementation of the Project shall require approval of a site-specific Storm Water Pollution Prevention Plan (SWPPP) or Water Pollution Control Program (WPCP) that would implement effective measures to protect water quality, which may include a hazardous spill prevention plan and additional erosion prevention techniques.
- Existing vegetation will be protected in place where feasible to provide an effective form of erosion and sediment control.
- Roughening and terracing will be implemented to create unevenness on bare soil through the construction of furrows running across a slope, creation of stair steps, or by utilization of construction equipment to track the soil surface. Surface roughening or terracing reduces erosion potential by decreasing runoff velocities, trapping sediment, and increasing infiltration of water into the soil, and aiding in the establishment of vegetative cover from seed.
- Soil exposure must be minimized through the use of temporary BMPs, groundcover, and stabilization measures.
- The contractor must conduct periodic maintenance of erosion and sediment-control measures.

BIO-4: To conform to water quality requirements, the Project must implement the following:

- Vehicle maintenance, staging and storing equipment, materials, fuels, lubricants, solvents, and other possible contaminants must be a minimum of 50 feet from surface waters. Any necessary equipment washing must occur where the water cannot flow into surface waters. The Project specifications will require the contractor to operate under an approved spill prevention and clean-up plan;
- Construction equipment will not be operated in flowing water;
- Construction work must be conducted according to site-specific construction plans that minimize the potential for sediment input to surface waters;
- Raw cement, concrete or concrete washings, asphalt, paint or other coating material, oil or other petroleum products, or any other substances that could be hazardous to aquatic life shall be prevented from contaminating the soil or entering surface waters;
- Equipment used in and around surface waters must be in good working order and free of dripping or leaking contaminants; and,
- Any concrete rubble, asphalt, or other debris from construction must be taken to an approved disposal site.

BIO-5: During construction, water diversion measures (e.g., sheet piles, sandbags or coffer dams) will be utilized to prevent water from entering the work area when conducting debris removal activities within the stream channel.

No work activities shall occur within flowing water within the OHWM of Santiago Creek. Once debris removal activities have occurred the creek channel will be graded back to pre-Project conditions.

Immediately upon completion of in-channel work, temporary fills (as needed), and any water diversion materials will be removed in a manner that minimizes disturbance to downstream flows and water quality.

BIO-6: Where feasible, riparian vegetation within temporary construction zones would be cleanly cut to ground level and then covered with a layer of clean gravel or topsoil as necessary to protect plant viability and prevent damage to remaining root structures during construction.

BIO-7: The Project Biologist must be approved by the Carlsbad Fish and Wildlife Office (CFWO) and will be on site: (a) during all vegetation clearing, and (b) weekly during project construction within 500 feet of gnatcatcher and vireo habitat and arroyo toad critical habitat to monitor compliance with conservation measures. The biologist's name, contact information, and work schedule on the project must be submitted to the CFWO at least 15 working days prior to initiating project impacts. The Project Biologist will be available during pre-construction and construction phases to address protection of sensitive biological resources, monitor ongoing work, and maintain communications with construction personnel to facilitate the appropriate and lawful management of issues relating to biological resources.

The Project biologist shall submit a final report to the CFWO within 120 days of project completion including photographs of impact areas and adjacent habitat and documentation that general compliance with conservation measures was achieved. The report will list the number and location of listed species observed, observed listed species behavior, and remedial measures employed to avoid and minimize impacts to listed species. Raw field notes should be available upon request by the CFWO.

BIO-8: All temporary impacts to federal and state jurisdictional waters, riparian woodland and ARTO Critical Habitat during Project construction will be restored at a 1:1 ratio and will be re-contoured to preconstruction conditions and seeded with a native seed mix. Where possible, vegetation will be trimmed rather than fully removed with the guidance of the Project biologist. A restoration plan will be developed and submitted to the Carlsbad Fish & Wildlife Office. The plan will be implemented for a minimum of 5 years unless success criteria are met earlier.

If maintenance of a riparian area occupied by vireo occurs within the nesting season, a qualified biologist will survey for vireos. Surveys will consist of three visits separated by 2 weeks. Restoration work will be allowed to continue during surveys. However, if vireos are found during visits, a qualified biologist will notify the Carlsbad Fish & Wildlife Office to identify measures to avoid and/or minimize effects.

BIO-9: The County shall replant any mature native and non-native trees removed from within natural communities of special concern at a 2:1 ratio on-site or within the Santa Ana River watershed, due to the extent of existing development and minimal impact to native habitats resulting from the proposed Project.

BIO-10: A pre-construction clearance survey for special status amphibian and reptile species shall be conducted 24-hours prior to vegetation clearing and/or initiation of construction activities. If any special status wildlife species or wildlife is found, the Project biologist shall relocate the wildlife

downstream in the appropriate habitat. If a lapse in Project-related work of 15 days or longer occurs, another focused survey shall occur.

BIO-11: As a first order of construction, the Project contractor shall install wildlife exclusion fencing (WEF) along the Project boundaries within suitable habitat prior to commencement of construction activities or staging of equipment, in order to prevent special status amphibian and reptile species individuals from entering the Project area during construction activities.

- WEF shall consist of taught silt fencing supported by wooden stakes on the Project side only.
- WEF shall be buried a minimum of six (6) inches below ground and soil shall be compacted against the sides of the fence for its entire length to prevent special status species from passing under the fence.
- WEF shall extend 12 to 18 inches above the ground.
- The contractor shall inspect the WEF daily, and WEF shall be maintained, and repaired where necessary, throughout construction to ensure that it is functional and without defects, that the fencing material is taught and that the bottom edge of the fencing material remains buried.
- The Project biologist will periodically inspect the WEF to ensure it remains functional and appropriately maintained throughout construction.

BIO-12: Prior to installation of WEF, the Project biologist shall inspect the Project area for wildlife to prevent entrapment within the Project area. If any special status wildlife species or wildlife is found, the Project biologist shall relocate the wildlife downstream in the appropriate habitat. If a lapse in Project-related work of 15 days or longer occurs, another focused survey shall occur.

BIO-13: All construction pipes, culverts, or similar structures that are stored in the Project area for one or more overnight periods shall be either securely capped prior to storage or thoroughly inspected by the contractor and/or the Project biologist for special status wildlife species or other animals before the pipe is subsequently buried, capped, or otherwise used or moved in any way. If any special status wildlife species or wildlife is found within WEF, construction activities in the vicinity shall cease and the Project biologist shall be notified to relocate the wildlife to suitable habitat outside of the Project area. Only the approved Project biologist shall handle or relocate special status wildlife.

BIO-14: To prevent inadvertent entrapment of the special status wildlife species or other animals during construction, the Project biologist and/or construction foreman/manager shall 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 shall be thoroughly inspected for trapped animals by the Project biologist and/or construction foreman/manager.

BIO-15: Vegetation removal and clearing and grubbing of native habitats shall occur outside of the coastal California gnatcatcher and least Bell's vireo nesting season (February 1 to September 1).

BIO-16: If vegetation removal is required during the migratory bird nesting season (February 1 to September 1), a pre-construction nesting bird survey must be conducted within 7 days prior to

vegetation removal. Within 2 weeks of the nesting bird survey, all vegetation cleared by the Project biologist will be removed by the contractor.

A minimum 300-foot no-disturbance buffer will be established around any active nest of migratory birds and a minimum 500-foot no-disturbance buffer will be established around any nesting raptor or CESA/FESA listed species. The contractor must immediately stop work in the buffer area until the appropriate buffer is established and is prohibited from conducting work that could disturb the birds (as determined by the Project biologist who is approved by the wildlife agencies) in the buffer area until a qualified biologist determines the young have fledged. A reduced buffer can be established if determined appropriate by the Project biologist who is approved by the wildlife agencies.

BIO-17: If any noise generating construction activities above the typical background noise levels within the Project area are required during the migratory bird nesting season (February 1 to September 1), the Project biologist will monitor construction activities and any known identified nest sites within or adjacent to the Project area to minimize disturbance of nesting migratory birds. If the Project biologist suspects that these measures are ineffective, culpable activities within 500 feet of active nesting territories until nesting activity is completed and fledglings are no longer in the area or until effective avoidance and minimization measures can be implemented.

BIO-18: Prior to arrival at the Project site and prior to leaving the Project site, construction equipment that may contain invasive plants and/or seeds will be cleaned to reduce the spreading of noxious weeds. Special care will be taken during transport, use, and disposal of soils containing invasive weed seeds, and weedy vegetation removed during construction will be properly disposed of to prevent spread into areas outside of the construction area.

BIO-19: All hydroseed and plant mixes must consist of a Project biologist approved plant palette seed mix of native species sourced locally to the Project area.

4.9 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?	☐	☒	☐	☐

Regulatory Setting

CEQA established statutory requirements for establishing the significance of historical resources in Public Resources Code (PRC) Section 21084.1. The CEQA Guidelines (Section 10564.5[c]) also require consideration of potential Project impacts to "unique" archaeological sites that do not qualify as historical resources. The statutory requirements for unique archaeological sites that do not qualify as historical resources are established in PRC Section 21083.2. These two PRC sections operate independently to ensure that significant potential effects on historical and archaeological resources are considered as part of a Project's environmental analysis. Historical resources, as defined in Section 15064.5 as defined in the CEQA regulations, include 1) cultural resources listed in or eligible for listing in the California Register of Historical Resources (California Register); 2) cultural resources included in a local register of historical resources; 3) any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant or significant in one of several historic themes important to California history and development.

Under CEQA, a Project may have a significant effect on the environment if the Project could result in a substantial adverse change in the significance of a historical resource, meaning the physical demolition, destruction, relocation, or alteration of the resource would be materially impaired. This would include any action that would demolish or adversely alter the physical characteristics of an historical resource that convey its historic significance and qualify it for inclusion in the California Register or in a local register or survey that meets the requirements of PRC Section 5020.1(l) and 5024.1(g). PRC Section 5024 also requires state agencies to identify and protect sate-owned resources that meet National Register of Historic Place (National Register) listing criteria. Sections 5024(f) and 5024.5 require state agencies to provide notice to and consult with the State Historic Preservation Officer (SHPO) before altering, transferring, relocation, or demolishing state-owned historical resources that are listed on or are eligible for inclusion in the National Register or are registered or eligible for registration as California Historical Landmarks.

CEQA and the CEQA Guidelines also recommend provisions be made for the accidental discovery of archaeological sites, historical resources, or Native American human remains during construction (PRC Section 21083.2(i) CCR Section 15064.5[d and f]).

Affected Environment

The Area of Potential Effect (APE) was established as the area of direct and indirect effects which encompasses the 2.0-acre APE (see Figure 3. Project Features). The APE includes potential staging areas, construction areas, vegetation/tree removal, temporary construction easements, and utility relocation. The approximate limits of the APE include a 230-foot-long segment of Modjeska Canyon Road west of the existing limits of the Modjeska Canyon Road Bridge, a 200-foot-long segment of Markuson Road east of the existing Modjeska Canyon Road Bridge, a 190-foot-long segment of Modjeska Canyon Road south of the existing Modjeska Canyon Road Bridge, a 220-foot-long segment of Shadowland Circle, and approximately 300 feet of Santiago Creek.

A record search for the APE and a one-mile radius surrounding the APE was obtained from the South Central Coastal Information Center (SCCIC), California State University, Fullerton on September 26, 2019. The search examined the OHP Historic Properties Directory, OHP Determinations of Eligibility, *California Inventory of Historical Resources*, Historical Literature and Maps, Caltrans Bridge Inventory, GLO Maps, Local Inventories, and Soil Survey Maps. The record search revealed 15 resources within the one-mile record search boundary, but no resources within the APE. Two surveys in the past had occurred within the APE: one was a large overarching inventory that encompassed thousands of acres and did not detail surveys within the APE, and the second was a linear survey of a power line that ran through the APE. Fifty eight surveys have occurred within the one-mile search radius. An archaeological field survey of the APE was conducted on September 27, 2019. The pedestrian survey was conducted at roughly 5-meter transect intervals. Visibility varied in areas with vegetation coverage. No cultural resources were identified within or immediately adjacent to the APE. The Archaeological Survey and Historic Property Survey Reports (May 2020) document the findings of the research.

Response to Question a): Less than Significant Impact. An Area of Potential Effect (APE) was established which encompasses 2.0 acres. The approximate limits include a 230-foot-long segment of Modjeska Canyon Road west of the existing limits of the bridge, a 200-foot-long segment of Markuson Road east of the existing bridge, a 190-foot-long segment of Modjeska Canyon Road south of the existing bridge, a 220-foot-long segment of Shadowland Circle, and approximately 300 feet of Santiago Creek. The vertical APE extends approximately 3 feet deep for road reconstruction and approximately 10 feet deep for excavation of the bridge abutments.

A record search and pedestrian survey revealed no resources within the APE and, therefore, a Finding of No Historic Properties Affected has been determined.

Response to Question b): Less than Significant with Mitigation Incorporated. A pedestrian survey was conducted at roughly 5-meter transect intervals; no cultural resources were identified within or immediately adjacent to the APE. A record search conducted at the South-Central Coastal Information Center (SCCIC) and the Native American Heritage Commission returned negative results for the presence of known cultural resources within the APE. Measures **CUL-1** and **CUL-2** will be implemented to minimize impact should an archaeological resource be encountered.

Response to Question c): Less than Significant with Mitigation Incorporated. The Project does not anticipate any disturbance of human remains. If human remains are encountered, work would halt, and

the County coroner would be notified immediately. An archaeologist would also be contacted to evaluate the situation. If the human remains are of Native American origin, the coroner must notify the Native American Heritage Commission within 24 hours of such identification.

Avoidance, Minimization, and/or Mitigation Measures

CUL-1: Prior to construction, environmental awareness training shall be provided to all construction workers onsite regarding the possibility of encountering subsurface cultural resources.

CUL-2: If previously unidentified cultural materials are unearthed during construction, work shall be halted in that area until a qualified archaeologist can assess the significance of the find and develop a plan for documentation and removal of resources, if necessary. Additional archaeological survey will be needed if Project limits are extended beyond the present survey limits.

CUL-3: Section 5097.94 of the Public Resources Code and Section 7050.5 of the California Health and Safety Code protect Native American burials, skeletal remains and grave goods, regardless of age and provide method and means for the appropriate handling of such remains. If human remains are encountered, California Law requires that work shall halt in that vicinity and the Orange County Coroner shall be notified immediately to assess the remains. If the coroner determines the human remains to be of Native American origin, the coroner must notify the Native American Heritage Commission (NAHC) within twenty-four hours of such identification. The NAHC shall then determine the Most Likely Descendant (MLD) of the human remains and contact the MLD immediately. The County, the MLD, and a professional archaeologist retained by the County shall then consult to determine the appropriate plans for treatment and assessment of the human remains and any associated grave goods.

4.10 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. The Project would replace the existing bridge with a 65'-2" long single span prestressed, precast concrete I girder bridge. The Project would not permanently alter energy use, as it would not increase the number of vehicle travel lanes or increase carbon emissions; therefore, direct energy use would involve the short-term use of energy for construction activities.

Construction activities include land clearing, grading, activities for drainage and utilities, and paving (See Section 3.9 for construction phases). Construction of the Project would induce short-term consumption of energy resources in the form of combustion of fossil fuels in construction vehicles, worker commuter vehicles, and construction equipment. There are limitations on idling vehicles, which if left unchecked, would be a large contributor to wasting energy resources. California regulation (13 CCR 2449[d][3], 2485) will limit idling of diesel-powered equipment. Since the cost of fuel is high, contractors are incentivized to be as energy efficient as possible. Construction is estimated to result in a short-term consumption of energy, representing a small demand on local and regional fuel supplies that would be easily accommodated and would be temporary. The Project would not result in an inefficient, wasteful, and unnecessary consumption of energy, and the Project's impact on energy would be less than significant.

Response to Impact Question b): No Impact. The Project is a bridge replacement and, due to the nature of the Project, will not conflict with or obstruct any state or local plan for renewable energy or energy efficiency. Fuel consumption from construction vehicles and equipment for the Project would be temporary and would represent a negligible increase in regional energy consumption. Once operational, the energy requirements for the Project would be similar to existing energy usage. Therefore, the Project would result in no impact local plans for renewable energy or energy efficiency.

4.11 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 wastewater disposal system where sewers are not available for the disposal of wastewater?	☐	☐	☐	☒
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☒	☐	☐

Affected Environment

The Project area is located near several Pre-Quaternary faults (older than 1.6 million years) or faults without recognized Quaternary displacement.

Response to Impact Question a (*i*): Less than Significant Impact. According to the Department of Conservation California Earthquake Hazards Zone Application map, no fault zone crosses or occurs within the Project area. The nearest fault line is the Glen Ivy South Fault approximately 9 miles northeast of the Project. Due to the distance between the Project area and the Eagle Fault, impacts will be less than significant.

Response to Question a(ii): Less than Significant Impact. The existing Modjeska Canyon Bridge was built in 1935 and is considered Functionally Obsolete due to narrow road width. Since the proposed Project will replace the existing bridge, this would improve safety conditions for vehicular traffic. The Project would adhere to Caltrans' seismic design criteria and construction standards. Therefore, impacts due to seismic forces and displacements are avoided or minimized to the extent feasible. Impacts are less than significant.

Response to Question a(iii): Less than Significant Impact. According to the Department of Conservation California Earthquake Hazards Zone Application map, the Project is within a liquefaction zone. The proposed Project would be required to comply with local, state, and federal regulations intended to minimize the impacts of liquefaction to the extent feasible. Additionally, the Project will adhere to Caltrans' seismic design criteria and construction standards. Impacts associated with seismic-related ground failure, including liquefaction, are less than significant.

Response to Question a(iv): Less than Significant Impact. According to the Department of Conservation California Earthquake Hazards Zone Application map, Project location falls within a landslide zone. However, with adherence to Caltrans' seismic design criteria and construction standards, impacts from landslides would be less than significant.

Response to Impact Question b): Less than Significant Impact. The National Resources Conservation Service (NRCS) identifies within the BSA consists of Riverwash (63.7% of the BSA) and Sorrento loam, 2 to 9 percent slopes, warm MAAT, MLRA 19 (36.3% of the BSA) (NRCS 2020). The erodibility factor for this soil is K=0.32, indicating that it is moderately susceptible to detachment and may produce moderate runoff (Water Quality Planning Tool, 2021). Demolition and construction activities would disturb top soil that could be exacerbated by stormwater, wind, and/or other construction activities. However, due to the

limited footprint of the Project area and measures within the Stormwater Pollution Prevention Plan (SWPPP), erosion due to surface runoff and topsoil loss is not expected in paved and/or properly slope areas with controlled surface drainage facilities. Grading and earthwork during construction may result in erosion and sedimentation. Erosion and loss of top soil would be a less than significant impact with mitigation. This impact will be mitigated with applicable BMPs contained in the Orange County Stormwater Program's Construction Runoff Guidance Manual and measures listed in 4.14 Hydrology and Water Quality.

Response to Impact Question c): Less than Significant Impact. The topography within the Project area is generally flat. Soils within the Project area consist of Riverwash and Sorrento loam, 2 to 9 percent slopes, warm MAAT, MLRA 19 (NRCS 2020). Geology is comprised of marine sedimentary and metasedimentary, described as Upper Cretaceous sandstone, shale, and conglomerate. According to the Department of Conservation California Earthquake Hazards Zone Application map, the Project area is within a liquefaction zone. With adherence to Caltrans' seismic design criteria and construction standards, impacts from on-or off-site landslide, lateral spreading, subsidence, liquefaction or collapse is not anticipated.

Response to Impact Question d): No Impact. The Uniform Building Code (1994) defines expansive soils to understand how such soils can affect structures and foundations. Expansive soils contain significant amounts of clay particles that have the ability to give up water (shrink) or take on water (swell). When these soils swell, the change in volume can exert significant pressures on loads that are placed on them and can result in structural distress and/or damage. According to the NRCS Soil Report and the Caltrans Water Quality Planning Tool, soils within the Project area are classified as Hydraulic Group C and D (USDA, 2014). Group C soils have slow infiltration rates and Group D are clay soils with a low infiltration rate and high runoff potential. The proposed 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. Therefore, impacts would be less than significant.

Response to Impact Question e): No Impact. The proposed Project involves replacement of an existing bridge and does not include septic tanks or an alternative wastewater disposal system on the site. 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 with Mitigation Incorporated. Paleontological sites are abundant in South Orange County, along the coast, and in creek areas. According to Figure VI-9 in the Orange County General Plan Resources Element, the Project area falls within three sensitivity areas – El Toro District, Plano Trabuco (Southern Santa Ana Mountains), Northern Santa Ana Mountains. These sensitivity areas are predicated primarily on the underlying geological formations. The Project is within Rural/ Suburban Residential use; however, it is possible that intact fossil deposits are present at subsurface levels and could be uncovered during ground-disturbing activities. Measures **GEO-1** and **GEO-2** will be implemented to mitigate any unanticipated discoveries during construction. Therefore, impacts related to paleontological resources are anticipated to be Less than Significant with Mitigation Incorporated.

Avoidance, Minimization, and/or Mitigation Measures

GEO-1: Paleontological Monitoring. A qualified paleontologist (the "Project Paleontologist"), as defined by the Society of Vertebrate Paleontology's 2010 guidelines, shall be retained by the Contractor prior to the issuance of a grading permit. The Project Paleontologist will be on-call to monitor ground-disturbing activities and excavations on the Project site following identification of potential paleontological resources by Project personnel. If paleontological resources are encountered during implementation of the Project, ground-disturbing activities will be temporarily redirected from the vicinity of the find. The Project Paleontologist will be allowed to temporarily divert or redirect grading or excavation activities in the vicinity in order to make an evaluation of the find. If the resource is significant, Mitigation Measure GEO-2 shall apply.

GEO-2: Paleontological Treatment Plan. If a significant paleontological resource(s) is discovered, the qualified paleontologist shall develop a plan of mitigation which shall include salvage excavation and removal of the find, removal of sediment from around the specimen (in the laboratory), research to identify and categorize the find, curation in the find a local qualified repository, and preparation of a report summarizing the find. All recommendations will be made in accordance with the Society of Vertebrate Paleontology's 2010 guidelines and shall be subject to review and approval by the County of Orange.

4.12 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?	☐	☐	☒	☐

Regulatory Setting

While climate change has been a concern since at least 1988, as evidenced by the establishment of the United Nations and World Meteorological Organization's Intergovernmental Panel on Climate Change (IPCC), the efforts devoted to greenhouse gas (GHG) emissions reduction and climate change research and policy have increased dramatically in recent years. These efforts are primarily concerned with the emissions of GHG related to human activity that include CO_2, CH_4, NO_X, nitrous oxide, tetrafluoromethane, hexafluoroethane, sulfur hexafluoride, HFC-23 (fluoroform), HFC-134a (s, s, s, 2 –tetrafluoroethane), and HFC-152a (difluoroethane).

On June 1, 2005, Governor Arnold Schwarzenegger signed Executive Order S-3-05. The goal of this Executive Order is to reduce California's GHG emissions to: 1) 2000 levels by 2010, 2) 1990 levels by the 2020 and 3) 80 percent below the 1990 levels by the year 2050. In 2006, this goal was further reinforced with the passage of Assembly Bill 32 (AB 32), the Global Warming Solutions Act of 2006. AB 32 sets the same overall GHG emissions reduction goals while further mandating that CARB create a plan, which includes market mechanisms, and implement rules to achieve "real, quantifiable, cost-effective reductions of greenhouse gases." Executive Order S-20-06 further directs state agencies to begin implementing AB 32, including the recommendations made by the state's Climate Action Team.

With Executive Order S-01-07, Governor Schwarzenegger set forth the low carbon fuel standard for California. Under this executive order, the carbon intensity of California's transportation fuels is to be reduced by at least 10 percent by 2020.

Climate change and GHG reduction is also a concern at the federal level; however, at this time, no legislation or regulations have been enacted specifically addressing GHG emissions reductions and climate change. California, in conjunction with several environmental organizations and several other states, sued to force the EPA to regulate GHG as a pollutant under the Clean Air Act (Massachusetts vs. [EPA] et al., 549 U.S. 497 (2007). The court ruled that GHG does fit within the Clean Air Act's definition of a pollutant, and that the EPA does have the authority to regulate GHG. Despite the Supreme Court ruling, there are no promulgated federal regulations to date limiting GHG emissions. [1]

[1] http://www.epa.gov/climatechange/endangerment.html

According to Recommendations by the Association of Environmental Professionals on How to Analyze GHG Emissions and Global Climate Change in CEQA Documents (March 5, 2007), an individual Project does not generate enough GHG emissions to significantly influence global climate change. Rather, global climate change is a cumulative impact. This means that a Project may participate in a potential impact through its incremental contribution combined with the contributions of all other sources of GHG. In assessing cumulative impacts, it must be determined if a Project's incremental effect is "cumulatively considerable." See CEQA Guidelines sections 15064(i)(1) and 15130. To make this determination the incremental impacts of the Project must be compared with the effects of past, current, and probable future Projects. To gather sufficient information on a global scale of all past, current, and future Projects in order to make this determination is a difficult if not impossible task.

The Project would build a new bridge that eliminates the one-lane bridge that currently causes vehicles to idle while waiting for other travelers to cross the bridge. The Project does not make improvements to the rural road to and from the bridge, thus does not increasing traffic on the road.

Response to Impact Question a): Less than Significant Impact. GHG emissions for transportation projects can be divided into those produced during construction and those produced during operations. Construction GHG emissions include emissions produced as a result of material processing, emissions produced by on-site construction equipment, and emissions arising from traffic delays due to construction. GHG emissions produced during operations are those that result from potentially increased traffic volumes or changes in automobile speeds. Construction activities are expected to generate CO2 in quantities that would not individually or cumulatively contribute to a significant impact on the environment.

Short-Term Construction Emissions

Short-term construction emissions from the Project are anticipated. Emissions from construction equipment would include all equipment powered by gasoline and diesel engines. The RCEM model (Appendix A) estimates construction equipment effects of criteria pollutants including CO, NOX, VOCs, directly emitted PM10 and PM2.5, and toxic air contaminants (TACs) such as diesel exhaust particulate matter. The RCEM also estimates the amount of greenhouse gas emissions that would result from construction equipment. These emissions would be temporary and limited to the immediate area surrounding the construction site and would not exceed SCAQMD construction emission thresholds. The RCEM model was calculated with the Project's construction anticipated to take approximately 8 months. The estimated amount of greenhouse gas emissions generated by construction of the Project are shown on Table 12 below.

Table 12: Estimated Construction Greenhouse Gas Emissions

	CO_2 (Tons)	CH_4 (Tons)	N_2O (Tons)	MT CO_2e (Metric Tons)
2023	27.29	0.00	0.00	25.58

Operational Emissions

The Project would not result in any operational increases in the number of automobiles in the traffic system, therefore, long-term operational emissions are not anticipated. The Project would not add any

additional travel lanes and its vehicle capacity would not change. Potential future maintenance or repair of the bridge may be necessary, but it would be short-term and temporary, and it would not result in a substantial source of greenhouse gas emissions.

Response to Impact Question b): Less Than Significant Impact. The Project would not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing GHG emission. Currently, the County of Orange and SCAQMD have not adopted any GHG reduction measures that would apply to GHG emissions associated with the Project. No mandatory GHG regulations or finalized agency guidelines would apply to the Project. Therefore, impacts would be less than significant.

4.13 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?	☐	☒	☐	☐

Regulatory Setting

Hazardous materials and hazardous wastes are regulated by many state and federal laws. These include not only specific statutes governing hazardous waste, but also a variety of laws regulating air and water quality, human health, and land use.

Hazardous waste in California is regulated primarily under the authority of the federal Resource Conservation and Recovery Act of 1976 and the California Health and Safety Code. Other California laws that affect hazardous waste are specific to handling, storage, transportation, disposal, treatment, reduction, cleanup, and emergency planning.

Worker health and safety and public safety are key issues when dealing with hazardous materials that may affect human health and the environment. Proper disposal of hazardous material is vital if it is disturbed during project construction.

Affected Environment

An Initial Site Assessment (ISA) was prepared in April 2021 by WRECO (Appendix G). During the site investigation, the proposed Project area was evaluated for the presence of Recognized Environmental Conditions (RECs) and/or Activity and Use Limitations (AULs), which are:

REC: "…the presence or the likely presence of any hazardous substances or petroleum hydrocarbons on the (Subject Property) that indicate an existing release, a past release, or a material threat of a release of any hazardous substances or petroleum hydrocarbons into structures or into the ground, groundwater, or surface water of the subject property."

AUL: "…an explicit recognition by a federal, tribal, state, or local agency that residual levels of hazardous substances or petroleum hydrocarbons may be present on the property, and that unrestricted use of the property may not be acceptable."

The site is a rural area that has been used as grazing, wooded areas, residential use, and minor agriculture. The area remains predominantly comprised of dense natural forest areas, despite an increase in residential homes.

The ISA identified the following potential recognized environmental conditions (REC) including:

- Potential polychlorinated biphenyls (PCB) and heavy metals from pole-mounted transformers on wooden utility poles (potential arsenic, chromium, creosote, and pentachlorophenol) along Markuson Road to the northeast;
- Potential aerially deposited lead (ADL) in exposed soil south of the bridge, from historical vehicle emissions during the leaded gasoline era;
- Potential lead-based paint (LBP) on the metal railings on both sides of the bridge, and the yellow traffic striping;
- Potential asbestos-containing materials (ACM) within the bridge materials; and
- Potential for pesticides and heavy metals from the agricultural field to the southwest, within soil along Santiago Creek.

Table 13: Summary of RECs and Recommendations

Description	Evidence of REC Found	Recommended Actions
Agricultural Fields	Due to agricultural use of the land to the southwest, organochlorine pesticides (OCP), organophosphorous pesticides (OPP), and heavy metals may be present within soil in Santiago Creek.	Preliminary Site Investigation (PSI): -Soil sampling for OCP, OPP and heavy metals.
Aerially deposited lead (ADL)	There is potential for elevated levels of lead in exposed soil from historical vehicle emissions, since leaded gasoline was used through the 1970s and the shoulders of the roadway, south of the bridge, may contain ADL.	PSI: - Soil sampling for total lead
Utility Poles and Pole-mounted Transformers	Treated wood poles (utility poles) along the side of the road may contain a variety of chemicals (arsenic, chromium, copper, creosote, and pentachlorophenol (PAHs) that can runoff and impact soil. Pole-mounted transformers, located to the northeast of the bridge, may leach these constituents of concern into the soil and water.	PSI: - Soil sampling for polychlorinated biphenyls (PCBs), PAHs, and heavy metals. (If utility poles will be moved or replaced, abate transformers prior to construction)
Existing bridge structure may contain LBP and ACM.	Due to the age of the bridge, there is potential for LBP and ACM within the structure.	PSI: - Structural elements sampling for LBP and ACM

Response to Impact Question a): Less than Significant with Mitigation Incorporated. The Project would involve the use of heavy equipment for grading, hauling, and materials handling. Use of this equipment may require the use of fuels and other common materials that have hazardous properties (e.g., fuels are flammable). These materials would be used in accordance with all applicable laws and regulations and, if used properly, would not pose a hazard to people, animals, or plants. All refueling of construction vehicles and equipment would occur within the designated staging area for the Project. The use of hazardous materials would be temporary, and the Project would not include a permanent use or source of hazardous materials. Implementation of measure **BIO-4** will ensure that impacts will be less than significant with that mitigation incorporated.

Response to Impact Question b): Less than Significant with Mitigation Incorporated. According to the Initial Site Assessment (Appendix G), the following potential RECs, shown in Table 13, were observed. It is recommended that a PSI be conducted to test bridge materials for ACM and LBP and to test soils around the Project area. Upset and accident conditions involving the release of hazardous materials into the environment would not be significant based on background research of hazardous materials in the Project

vicinity and implementation of avoidance and minimization measures, such as the PSI. With the implementation of measures **HAZ-1** and **HAZ-2**, impacts will be less than significant.

Additionally, minor operations, maintenance activities, and minor roadway improvements such as repaving and restriping may be required during the life of proposed bridge. These activities could result in the release of hazardous materials. However, these activities would occur under the guidance of experienced professionals, who, in compliance with federal, state, and local regulations, would properly handle and dispose of hazardous materials.

Response to Impact Question c): No Impact. The Project is not located within 0.25 miles of an existing or proposed school. The closest school (Portola Hills Elementary School) is approximately 2 miles southeast of the Project area. No impacts are anticipated. Because there is no school located within a quarter mile of the project area, the Project would inherently have no hazardous material impact to the school. 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 EnviroStor Database (2020), GeoTracker Database (2020), and Environmental Data Resources (2020) search, the proposed Project is not on a site included in the list of hazardous materials sites compiled pursuant to Government Code Section 65962.5, which is also known as the Cortese List. No sites in the Cortese List are in this area of Orange County. Therefore, the Project would result in no impact related to a hazardous waste site.

Response to Impact Question e): No Impact. The Project is not within an airport land use plan or within the vicinity of a privately-owned airport or airstrip. The closest public airport to the project site is Corona Municipal Airport located in Riverside County approximately 12.0 miles northeast of the Project site. No impacts to safety or noise within an airport land use planning area are anticipated.

Response to Impact Question f): Less than Significant with Mitigation Incorporated. The Project will eliminate vehicular access across this bridge during the short-term construction phase that would affect north/south and south/north connectivity. During the first stage of construction, a temporary bridge approximately 80 feet long will be placed within the footprint of the new bridge, reducing environmental and right of way impacts to the same as needed for only the new bridge. This will require the road to be closed to traffic for approximately 2 days while the existing bridge is removed and the temporary bridge is erected. Modjeska Grade Road will be utilized for traffic during this short road closure. For the second construction stage, one lane of alternating traffic is shifted to the new bridge, the temporary bridge is removed, and the remaining half of the new bridge is constructed. The proposed Project would have a less than significant impact during Project construction with the incorporation of an Emergency Plan and Traffic Management Plan; local fire response personnel will be informed of any transportation constraints of the bridge due to construction. See mitigation measures **WF-1** through **WF-6** under Section 4.24 Wildfire.

Response to Impact Question g): Less Than Significant Impact with Mitigation Incorporated. According to the California Fire Hazard Severity Zone Viewer Map, the Project is in a Very High Fire Hazard Severity Zone. The County General Plan Safety Element sets forth fire safety policies for the County. The following is related to the Proposed Project:

- **Goal 1:** Provide a safe living environment, ensuring adequate fire protection facilities and resources to prevent and minimize the loss of life and property fire.
    - **Policy 2:** Establish improved development standards for location of new construction, structural design, emergency vehicular access, and detection hardware.
    - **Policy 3:** To improve building code regulations to provide increased built-in fire protection.
    - **Policy 6:** To provide technical and policy information regarding structural and wildland fire hazards to developers, interested parties and the general public through all available media.

The proposed Project involves the replacement of the existing Modjeska Canyon Bridge. The Project would involve the use of heavy equipment for grading, hauling, and materials handling. Use of this equipment may require the use of fuels and other common materials that have hazardous properties (e.g., fuels are flammable). Also, should a wildland fire occur in the vicinity of the Project site the evacuation across the bridge due to a single travel lane could be affected during the construction phase. With the implementation of measures **WF-1** through **WF-6**, less than significant impacts would occur.

Avoidance, Minimization, and/or Mitigation Measures

See Biological Resources mitigation measure **BIO-4** and Wildfire mitigation measures **WF-1** through **WF-6.**

HAZ-1: A PSI is recommended to test for ADL, OCP, OPP, and heavy metals in soils and for LBP and ACM in the existing bridge structure prior to construction.

HAZ-2: Any leaking transformers observed during the course of the Project should be considered a potential polychlorinated biphenyl (PCB) hazard. A detailed inspection of individual electrical transformers was not conducted for this Phase I Environmental Site Assessment. However, should leaks from electrical transformers (that will either remain within the construction limits or will require removal and/or relocation) be encountered during construction, the transformer fluid should be sampled and analyzed by qualified personnel for detectable levels of PCB's. Should PCBs be detected, the transformer should be removed and disposed of in accordance with Title 22, Division 4.5 of the California Code of Regulations and any other appropriate regulatory agency. Any stained soil encountered below electrical transformers with detectable levels of PCB's should also be handled and disposed of in accordance with Title 22, Division 4.5 of the California Code of Regulations and any other appropriate regulatory agency.

4.14 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?	☐	☒	☐	☐
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?	☐	☐	☐	☒

Regulatory Setting

Section 401 of the Clean Water Act (CWA) requires water quality certification from the State Water Resources Control Board (SWRCB) or from a Regional Water Quality Control Board (RWQCB) when the project requires a CWA Section 404 permit. Section 404 of the CWA requires a permit from the U.S. Army Corps of Engineers to discharge dredged or fill material into waters of the United States.

Along with CWA Section 401, CWA Section 402 establishes the National Pollutant Discharge Elimination System (NPDES) permit for the discharge of any pollutant into waters of the United States. The federal Environmental Protection Agency has delegated administration of the NPDES program to the SWRCB and nine RWQCBs. The SWRCB and RWQCB also regulate other waste discharges to land within California through the issuance of waste discharge requirements under authority of the Porter-Cologne Water Quality Act.

Affected Environment

The Project area is not located in any defined basin or subbasin according to the Department of Water Resources (DWR). The Project site is bounded by the Coastal Plain of Orange County (8-001) basin on the west, and the Elsinore-Bedford Coldwater subbasin (8-004.02) to the east (DWR, 2020). Much of the water within the Project area is derived from surface water or channeled from other areas.

Based on a review of GeoTracker, the closest site near the Project area is the USA Station #824 (26731 Portola) in Lake Forest, which is approximately 2.5 miles southwest of the Project site. Boring logs from the site indicated depth to groundwater during drilling ranged from 34 feet below ground surface (ft bgs). Monitoring well information indicated depth to groundwater in the wells ranged from 9-19 ft bgs, and flow direction was to the southeast (Montrose Environmental, 2019). The EDR report with the GeoCheck® Physical Setting Source Summary did not identify any state well within a 1-mile radius of the Project site.

The Project site is located within the Santa Ana River - Lower Santa Ana River – Santiago Watershed (801.12). The Santa Ana River is the largest watershed drainage south of the Sierra and is located largely in a highly urbanized and regulated setting. The watershed is approximately 100- miles-long and has more than 50 tributary rivers and creeks. The Santa Ana watershed spans parts of San Bernardino, Riverside, and Orange counties, draining approximately 2,840 square miles (Water Education Foundation, 2020).

The river is divided geographically into upper and lower watersheds that are delineated by the 60-year old Prado Dam, which is a flood-controlled facility located where the river cuts through the Santa Ana Mountains section of the Coast Ranges (Water Education Foundation, 2020).

The Santa Ana watershed drains the Santa Ana River that begins in San Bernardino County and flows west into the Pacific Ocean. The largest tributary rivers include Lytle, Temescal, and Santiago Creeks. Like multiple rivers in this area, the Santa Ana River's stream bed is lined with concrete. Much of the area relies on the Santa Ana River and its tributaries due to the climate in Southern California (Water Education Foundation, 2020).

Response to Question a): Less than Significant with Mitigation Incorporated. A Construction Storm Water General Permit is required, consistent with Construction General Permit Order No. 2009-0009-DWQ, issued by the SWRCB, to address storm water runoff, as well as a Section 401 Water Quality Certification permit. The permits would address grading, clearing, grubbing, and disturbances to the ground, such as stockpiling, or excavation. This Project would also require the preparation and implementation of a SWPPP with the intent of keeping all products of erosion from moving off site into receiving waters. The SWPPP includes BMPs to prevent construction pollutants from entering storm water runoff. By preparing and following the stormwater BMPs provided in the SWPPP, the Project impacts to water quality would be less than significant per implementation of measures **WQ-1** and **WQ-4**.

Response to Question b): No Impact. The proposed Project does not propose activities requiring permanent increases in groundwater use. No new buildings that will increase water usage are proposed. The proposed project would involve the replacement of an existing bridge. The Project does not have the potential to impede sustainable groundwater management of the basin.

Response to Question c): No impact. The proposed Project would involve temporary construction activities within Santiago Creek, and they would be limited to temporary ground disturbance associated with construction on the new bridge structure, and any diversion or dewatering activities necessary to avoid work occurring within flowing waters. Due to these temporary construction activities, the Project is anticipated to have temporary impacts to the Santiago Creek channel. However, these temporary impacts would cease after construction, and conditions would be restored to pre-Project conditions. There are no permanent impacts anticipated. The Project does not require any alteration of Santiago Creek and would not alter the existing drainage pattern of the area.

Response to Question ci): Less than Significant with Mitigation Incorporated. The proposed Project will be built in the same place as the existing structure, and no substantial erosion is expected from development. Additionally, **BIO-3** would be implemented during Project development to reduce erosion during construction.

Response to Question cii): Less than Significant with Mitigation Incorporated. The proposed Project will not result in a discernable increase in the volume of storm water runoff into the waterways within the Project area. There would be an increase of impervious surface area, due to the proposed bridge being longer and wider than the existing bridge. However, the bridge and roadway replacement would be on the same alignment and would have a minimal increase in impervious area on the Project site relative to the watershed area. Best Management Practices (BMP) **WQ-1** will be implemented during construction.

A Floodplain Evaluation Report (October 2021) was prepared that concluded that the Project would not negatively affect the floodplain since the majority of improvements are within the existing impervious area and the widened roadway would not significantly increase the fill in the floodplain.

Response to Question ciii): Less than Significant with Mitigation Incorporated. The proposed Project will not create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems. Additionally, the inclusion of a SWPPP or WPCP in **BIO-3** would prevent erosion and protect water quality during construction.

Response to Question d): Less than Significant Impact. The proposed Project is located within a community that experiences seasonal floods and in a Special Flood Hazard Area Subject to Inundation by

the 1% Annual Chance Flood (FIRM, Orange County, Panel 309 of 539) (Appendix F). Due to construction constraints, the proposed bridge will only be able to pass approximately the 5-year storm event. In the event of inundation, pollutants resulting from standard roadway traffic may be released into the local waterways.
The Project is located approximately 15 miles northeast of the Pacific Ocean and is not subject to tsunamis. Furthermore, the Project site is not subject to seiche or mudflow.

Response to Question e): No Impact. As discussed in Response to Impact Question b), implementation of the proposed Project would not interfere with groundwater recharge in the groundwater basin and would not affect the local groundwater table. The proposed Project would involve the replacement of a bridge. Thus, there would be no loss of land available for groundwater recharge as the Project would not significantly decrease pervious surfaces. The construction of the proposed Project would require minimal amounts of water for concrete mixing and dust abatement. Operation of the proposed Project would not require the use of potable water, with the exception of occasional maintenance. The Project would not conflict or obstruct a water quality control plan or sustainable groundwater management plan. No impacts are anticipated.

Avoidance, Minimization, and/or Mitigation Measures

See section 4.8 Biological Resources for biological measures.

To conform to water quality requirements, the Project would implement the following BMPs.

WQ-1: BMPs will be incorporated into Project design and Project construction to minimize impacts on the environment:

- The area of construction and disturbance shall be limited to as small an area as feasible to reduce erosion and sedimentation.
- Measures shall be implemented during land-disturbing activities to reduce erosion and sedimentation. These measures may include mulches, soil binders and erosion control blankets, silt fencing, fiber rolls, temporary berms, sediment desilting basins, sediment traps, and check dams.
- Existing vegetation shall be protected where feasible to reduce erosion and sedimentation. Vegetation shall be preserved by installing temporary fencing, or other protection devices, around areas to be protected.
- Exposed soils shall be covered by loose bulk materials or other materials to reduce erosion and runoff during rainfall events.
- All construction roadway areas shall be properly protected to prevent excess erosion, sedimentation, and water pollution.
- All concrete curing activities shall be conducted to minimize spray drift and prevent curing compounds from entering the waterway directly or indirectly.
- All construction materials, vehicles, stockpiles, and staging areas shall be situated outside of the creek channel. All stockpiles must be covered, as feasible.
- All erosion control measures and stormwater control measures shall be properly maintained until the site has returned to a pre-construction state.
- All construction materials shall be hauled off-site after completion of construction.

WQ-2: Any requirements for additional avoidance, minimization, and/or mitigation measures will be contained in the permits obtained from required regulatory agencies.

WQ-3: The proposed Project will require a National Pollution Discharge Elimination System (NPDES) General Construction Permit for Discharges of stormwater associated with construction activities. A SWPPP or Water Pollution Control Plan (WPCP) will also be developed and implemented as part of the Construction General Permit.

WQ-4: The construction contractor shall adhere to the SWRCB Order No. 2012-0006-DWQ NPDES Permit pursuant to Section 402 of the CWA. This permit authorizes stormwater and non-stormwater discharges from construction activities. As part of this Permit requirement, an SWPPP or WPCP will be prepared prior to construction consistent with the requirements of the RWQCB. This SWPPP shall incorporate all applicable BMPs to ensure that adequate measures are taken during construction to minimize impacts to water quality.

4.15 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?	☐	☐	☒	☐

Affected Environment

The Project area is located in a rural setting surrounded by residential homes on large parcels of undeveloped land. The Project site is located in the eastern central part of Orange County. The proposed bridge replacement staging areas are located to the northwest and southwest of the bridge with corresponding Assessor Parcel Numbers (APN) 105-221-09 and 105-221-26, respectively.

Response to Question a): Less Than Significant Impact with Mitigation Incorporated. The physical division of an established community typically refers to the construction of a linear feature (such as a major highway or railroad tracks) or removal of a means of access (such as a local road or bridge) that would impair mobility within an existing community or between a community and outlying area. The Modjeska Bridge No. 55C-0172 connects Modjeska Canyon Road and Markuson Road and is used to connect rural residential area to more urbanized areas to the west. During the first stage of construction, the road will be closed to traffic for temporarily two days while a temporary bridge is constructed. Modjeska Grade Road will be utilized for traffic during this road closure. During the second stage of construction, one lane of alternating traffic will be shifted to the new bridge, with the temporary bridge removed and the remaining half of the new bridge constructed. The Project will not physically divide an established community permanently. A two-day road closure will cause temporary impacts; Modjeska Grade Road will be utilized for traffic during this road closure. The Project would not result in the construction of any new barriers that could potentially divide an established community. With the implementation of a Traffic Management Plan (**WF-1**) and providing notification of changes to residents prior to construction (**WF-6**), impacts will be minimized.

Response to Question b): Less than Significant Impact. The Project is a bridge replacement and will not include high cut and fill banks or have permanent impacts that would destroy the beauty and integrity of the natural terrain and vegetation. Tree removal will follow tree preservation guidelines by replanting mature trees that have been removed (**BIO-9**). The Project will also follow geologic hazards guidelines by implementing Caltrans' seismic design criteria and construction standards. The proposed Project does not involve change in land use designation nor require an amendment to the Silverado-Modjeska Specific Plan. The proposed Project would not cause a significant environmental impact due to conflicts with applicable land use plans, policies, and regulations and impacts would result in no impact The Project will not change land use in the area, therefore abiding by floodplain guidelines in the Silverado-Modjeska

Specific Plan. The Project is consistent with the Silverado-Modjeska Specific Plan and would not conflict with development guidelines.

Avoidance, Minimization, and/or Mitigation Measures

See section 4.24 Wildfire for wildfire measures, specifically **WF-1** and **WF-6** that pertain to a Traffic Management Plan and community notifications.

4.16 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?	☐	☐	☐	☒

Affected Environment

Orange County has significant amounts of mineral resources, which has been utilized to meet development needs in the form of construction aggregate. The mineral land classification in the Modjeska Bridge Project area is Portland Cement Concrete Aggregate.

Response to Question a): No Impact. The Orange County General Plan indicates that the Project area is not located in an area with mineral resources (Orange County Public Works, General Plan, Chapter VI. Resources Element, 2015). The nearest mineral resource area is in Trabuco Canyon, approximately 4 miles southeast from the Project area. Due to the distance between the closest mineral resource no impacts are anticipated.

Response to Question b): No Impact. The Project is not located in an area with mineral resources. The proposed project would involve the replacement of an existing bridge and would not result in the loss of availability of a locally important mineral resource site or have any other impacts to mineral resources. Therefore, the Project would not result in impacts to mineral resources.

4.17 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?	☐	☐	☐	☒

Regulatory Setting

In accordance with State guidelines, noise is defined as unwanted sound with different thresholds depending on specific areas. Sound levels usually are measured and expressed in decibels (dB), with 0 dB being the threshold of hearing. Decibel levels range from 0 to 140: 50 dB for light traffic is considered a low decibel level, whereas 120 dB for a jet takeoff at 200 feet (ft.) is considered a high decibel level.

State Standards

According to Caltrans Traffic Noise Analysis Protocol for New Highway Construction, Reconstruction, and Retrofit Barrier Projects (Caltrans 2020a), construction noise is regulated by Caltrans Standard Specifications 14-8.02, Noise control, which states the following:

- Do not exceed 86 A-weighted decibels (dBA) at 50 feet from the job site activities from 9:00 p.m. to 6:00 a.m.
- Equip an internal combustion engine with the manufacturer-recommended muffler. Do not operate an internal combustion engine on the job site without the appropriate muffler.

Local Standards

Orange County General Plan

The County's General Plan Noise Element contains noise guidelines for determining land use. As detailed in the Noise Element's Major Noise Policy 6 (Noise Sensitive Land Uses), all new residential units are

required to "have an interior noise level in living areas that is not greater than 45 decibels CNEL [Community Noise Equivalent Level] with it being understood that standard construction practices reduce the noise level by 12 decibels CNEL with the windows open and 20 decibels CNEL with the windows closed. Higher attenuation than listed above may be claimed if adequate field monitoring or acoustical studies are provided to and approved by the County (Policy 6.3 in Orange County General Plan)." In addition, Policy 6.5 states, "All outdoor living areas associated with new residential uses shall be attenuated to less than 65 decibels CNEL."

Orange County Noise Ordinance

Under the Orange County Code of Ordinances, Division 6 – Noise Control, Sec. 4-6-7. Special provisions; the following activities shall be exempt from the provisions of this article: (e) 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.

Affected Environment
The Project area is located in a rural setting, surrounded by the Cleveland National Forest with residential homes on large parcels of land.

Response to Question a): Less than Significant with Mitigation Incorporated. The broad, noise-related goal of the Orange County is to: Protect the health, safety, and general welfare of County residents by reducing noise levels and establishing compatible land uses in noise-impacted areas (Orange County General Plan, Chapter VIII. Noise Element 2012). The Project will generate temporary increases in noise due to construction activities, but a permanent increase in ambient noise will not occur. Table 14 below lists typical noise levels associated with construction equipment.

Table 14: Typical Construction Equipment Noise Levels

Type of Equipment	Typical Noise Level (dBA) 50 feet from Source
Dozer	85
Excavator	88
Concrete Mixer	85
Compactor	82
Loader	85
Backhoe	80
Grader	85
Crane	83
Generator	81
Truck	88

Short-Term Construction Noise

During construction, noise from equipment would cause short-term localized increases in ambient noise levels. Residential homes are generally within 150 feet of construction activities with the highest possible noise level from construction being 88 dBA. The actual noise levels at any particular location would

depend on a variety of factors, including the type of construction equipment or activity involved, distance to the source of the noise, obstacles to noise that exist between the receptor and the source, time of day, and similar factors. Construction of the proposed Project would result in a temporary, periodic increase in ambient noise levels. However, this increase would be temporary, intermittent, and limited to daytime hours.

Long-Term Operational Noise

The completed Project would have a similar noise environment to existing conditions, as there would be no additional travel lanes added. Therefore, operation of the completed facility would not be in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies, and impacts would be less than significant with mitigation. The Project will comply with the County of Orange Noise Control Ordinance and will not conduct activities that would exceed exterior noise standards during hours defined in Sec. 4-6-7. Special provisions. (e). Measure **NOI-1** will be implemented to reduce impacts to a less than significant level.

Response to Question b): Less than Significant Impact. Temporary groundborne vibration and noise would be associated with the dismantling of the existing bridge and replacement with the new bridge. However, the nearest residential structure to the bridge is approximately 90 feet southeast and the next nearest residential structure is approximately 160 feet away from the bridge. Caltrans has collected ground-borne vibration information related to construction/heavy equipment activities. Information from Caltrans indicates that transient vibrations (such as from demolition activity) with a peak particle velocity of approximately 0.035 inches per second may be characterized as barely perceptible, and vibration levels of 0.24 inches per second may be characterized as distinctly perceptible (Caltrans 2020b). The heavier pieces of construction equipment, such as large bulldozers or hoe rams, would have peak particle velocities of up to approximately 0.089 inches per second at a distance of 25 feet, and a clam shovel drop would have peak particle velocities of up to approximately 0.202 inches per second at a distance of 25 feet (DOT 2018). Ground-borne vibration is typically attenuated over short distances. The Project does not anticipate the generation of excessive groundborne vibration or groundborne noise levels to residents to be excessive.

Response to Question c): No Impact. The Project is not located within the vicinity of an airstrip, an airport land use plan, or an airport. The closest public airport to the project site is Corona Municipal Airport located in Riverside County approximately 12.0 miles northeast of the Project site. Therefore, the Project would result in no impact to creating excessive noise for people residing or working within an airport land use plan.

Avoidance, Minimization, and/or Mitigation Measures

NOI-1: To minimize construction-related noise in the area, the following Best Management Practices (BMP) shall be followed:

- Construction activities will not occur between the hours of 8:00pm and 7:00am on weekdays, including Saturdays, or any time on Sunday or a Federal holiday.
- Ensure all internal combustion engine equipment is equipped with the manufacturer recommended muffler.

4.18 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 have no direct impact on population growth since it does not propose new homes or businesses. Construction workers would likely be hired from the local area and commute to the job site on a daily basis. 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. The current bridge is on an existing road surrounded by existing infrastructure. Furthermore, the Project is a bridge replacement Project that would serve existing and planned population growth and reduce traffic. No impacts are anticipated.

Response to Question b): No Impact. The proposed Project would replace an existing bridge. Temporary easements and partial parcel acquisition will be necessary but are anticipated to be minimal and would not displace any people or housing. No displacement of people on the Project site or surrounding area would occur. No Impacts are anticipated.

4.19 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. The Project does not propose a new housing or commercial development requiring additional fire services. The proposed Project will replace the existing facilities in the same location. During the first stage of construction, a temporary bridge approximately 80 feet long will be placed within the footprint of the new bridge, reducing environmental and right of way impacts to the same as needed for only the new bridge. This will require the road to be closed to traffic for approximately 2 days while the existing bridge is removed and the temporary bridge is erected. Modjeska Grade Road will be utilized for traffic during this short road closure. For the second construction stage, one lane of alternating traffic is shifted to the new bridge, the temporary bridge is removed, and the remaining half of the new bridge is constructed. The proposed Project would have a less than significant impact on emergency fire access during Project construction with the incorporation of an Emergency Plan and Traffic Management Plan; local fire response personnel will be informed of any transportation constraints of the bridge due to construction. See mitigation measures **WF-1** through **WF-6** under Section 4.24 Wildfire.

Response to Question a-ii): Less than Significant with Mitigation Incorporated. The Project does not propose a new housing or commercial development requiring additional police services. During the first stage of construction, a temporary bridge will be erected which will cause a two day road closure. Modjeska Grade Road will be utilized for traffic during this short road closure. For the second construction stage, one lane of alternating traffic is shifted to the new bridge, the temporary bridge is removed, and the remaining half of the new bridge is constructed. The proposed Project would have a less than significant impact on emergency fire access during Project construction with the incorporation of an Emergency Plan and Traffic Management Plan; local fire response personnel will be informed of any transportation constraints of the bridge due to construction. See mitigation measures **WF-1** through **WF-6** under Section 4.24 Wildfire.

Response to Question a-iii): No Impact. The Project does not include a residential component; therefore, no direct increase in population would occur requiring additional school facilities. It will allow for safer

transport to local schools with the closest public school, Portola Hills Elementary School (19422 Saddleback Ranch Rd), approximately 2 miles to the south.

Response to Question a-iv): No Impact. The Project is located in the community of Modjeska, Orange County, California within unincorporated Orange County. Modjeska is bounded by the Cleveland National Forest to the east and the Limestone Canyon Regional Park to the west. The Project area is surrounded by rural residential uses that utilize these parks for recreation. The Project would not introduce residents that would increase the use of these parks. No impacts are anticipated.

Response to Question a-v): No Impact. The proposed Project involves replacement of an existing bridge. The Project would not generate new permanent residents nor increase demand in the surrounding area. The Project will not have an impact on other public facilities.

Avoidance, Minimization, and/or Mitigation Measures
See Wildfire mitigation measures **WF-1** through **WF-6** in Section 4.24 Wildfire.

4.20 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?	☐	☐	☐	☒

Affected Environment
The Project area is located on the western slope of the Santa Ana Mountains and adjacent to the Cleveland National Forest. Residents and visitors enjoy the forest and trails and the recreational opportunities they provide.

Response to Question a): No Impact. As addressed in Impact Question a-iv) in Section 4.19, The Project is located in the community of Modjeska, Orange County, California, within unincorporated Orange County. Modjeska is bounded by the Cleveland National Forest to the east and the Limestone Canyon Regional Park to the west. The Project area is surrounded by rural residential uses that utilize these parks for recreation. The Project would not residents that would increase the use of these existing parks or other recreational facilities such that substantial physical deterioration would occur. No impacts are anticipated.

Response to Question b): No Impact. The Project is a bridge replacement and does not require the construction or expansion of recreational facilities which would have an adverse effect on the environment. The Project would not induce substantial population growth indirectly through the expansion of infrastructure. Therefore, there would be no impacts to recreational facilities. Therefore, there would be no impacts to recreational facilities.

4.21 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): No Impact. The Project area is located within suburban residential land use area in the unincorporated community of Modjeska Canyon. No Traffic impact analysis report was done for this project because the proposed Project is not anticipated to increase traffic on Modjeska Canyon Road or nearby roadways. The Project will not conflict or hinder the circulation system in any way nor conflict with Orange County's General Plan Transportation Element or Circulation Plan.

Vehicle miles traveled (VMT) replaces level of service (LOS) as the metric for impact determination. The replacement bridge will not increase VMT on Modjeska Canyon Road.

Response to Impact Question b): Less than Significant 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 should be presumed to cause a less-than-significant transportation impact. The Office of Planning and Research 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 (Orange County 2020). 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. Impacts would be less than significant and would not require mitigation.

Response to Impact Question c): No Impact. The proposed Project is not expected to substantially increase hazards due to its design. The proposed bridge will be constructed in the same place as the existing facilities and would meet current safety and geometric standards. The bridge is situated on a curve; however, the proposed bridge deck cannot be curved. Instead, the 4- and 6-foot shoulders will vary slightly to accommodate the curve, match the approaches, and meet the 25 mph design speed.

Response to Impact Question d): Less than Significant with Mitigation Incorporated. The proposed Project will replace the existing facilities in the same location. Construction will occur in stages with a brief road closure of approximately 2 days; Modjeska Grade Road will be utilized as a detour (approximately 4 miles in length) for traffic during this short road closure. Part of the first stage of construction consists of the installation of a temporary bridge that will be placed adjacent to the existing bridge and within the footprint of the new wider bridge. The temporary bridge will contain both directions of travel on one lane. A temporary traffic signal system will be used for traffic control. With the implementation of measure **WF-5** (see Section 4.24), the proposed Project would have a less than significant impact on emergency fire access during Project construction; local fire response personnel will be informed of any transportation constraints of the bridge due to construction.

Avoidance, Minimization, and/or Mitigation Measures

See Section 4.24 Wildfire mitigation measure **WF-5** that includes the implementation of an Emergency Plan.

4.22 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.	☐	☒	☐	☐

Regulatory Setting

Effective July 1, 2015, CEQA was revised to include early consultation with California Native American tribes and consideration of tribal cultural resources (TCRs). These changes were enacted through Assembly Bill 52 (AB 52). By including TCRs early in the CEQA process, AB 52 intends to ensure that local and Tribal governments, public agencies, and Project proponents would have information available, early in the Project planning process, to identify and address potential adverse impacts to TCRs. CEQA now establishes that a "Project with an effect that may cause a substantial adverse change in the significance of a TCR is a Project that may have a significant effect on the environment" (PRC § 21084.2).

To help determine whether a Project may have such an adverse effect, the PRC requires a lead agency to consult with any California Native American tribe that requests consultation and is traditionally and culturally affiliated with the geographic area of a proposed Project. The consultation must take place prior

to the determination of whether a negative declaration, mitigated negative declaration, or environmental impact report is required for a Project (PRC § 21080.3.1). Consultation must consist of the lead agency providing formal notification, in writing, to the tribes that have requested notification or proposed Projects within their traditionally and culturally affiliated area. AB 52 stipulates that the NAHC shall assist the lead agency in identifying the California Native American tribes that are traditionally and culturally affiliated within the Project area. If the tribe wishes to engage in consultation on the Project, the tribe must respond to the lead agency within 30 days of receipt of the formal notification. Once the lead agency receives the tribe's request to consult, the lead agency must then begin the consultation process within 30 days. If a lead agency determines that a Project may cause a substantial adverse change to TCRs, the lead agency must consider measures to mitigate that impact. Consultation concludes when either: 1) the parties agree to measures to mitigate or avoid a significant effect, if a significant effect exists, on a TCR, or 2) a party, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached (PRC § 21080.3.2). Under existing law, environmental documents must not include information about the locations of an archaeological site or sacred lands or any other information that is exempt from public disclosure pursuant to the Public Records act. TCRs are also exempt from disclosure. The term "tribal cultural resource" refers to either of the following:

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

- Included or determined to be eligible for inclusion in the California Register of Historical Resources
- Included in a local register of historical resources as defined in subdivision (k) of California Public Resources Code (PRC) Section 5020.1
- A resource determined by a California lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of the PRC Section 5024.1.

Affected Environment
The Area of Potential Effect (APE) was established as the area of direct and indirect effects which encompasses the 2.0-acre APE. The APE includes potential staging areas, construction areas, vegetation/tree removal, temporary construction easements, and utility relocation. The approximate limits of the APE include a 230-foot-long segment of Modjeska Canyon Road west of the existing limits of the Modjeska Canyon Road Bridge, a 200-foot-long segment of Markuson Road east of the existing Modjeska Canyon Road Bridge, a 190-foot-long segment of Modjeska Canyon Road south of the existing Modjeska Canyon Road Bridge, a 220-foot-long segment of Shadowland Circle, and approximately 300 feet of Santiago Creek.

The vertical APE extends approximately 3 feet deep for road reconstruction, and approximately 10 feet deep for excavation of the two bridge abutments. The proposed staging areas should have less than 6 inches of ground disturbance from the movement of heavy machinery.

Native American Consultation Per Assembly Bill 52, 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 were sent an AB 52 Initial Consultation Letter on July 8, 2021. No responses were received from any of the Native American Tribes.

Response to Question a): Less than Significant Impact. An Area of Potential Effect (APE) was established which encompasses 2.0 acres. The approximate limits include a 230-foot-long segment of Modjeska

Canyon Road west of the existing limits of the bridge, a 200-foot-long segment of Markuson Road east of the existing bridge, a 190-foot-long segment of Modjeska Canyon Road south of the existing bridge, a 220-foot-long segment of Shadowland Circle, and approximately 300 feet of Santiago Creek. The vertical APE extends approximately 3 feet deep for road reconstruction and approximately 10 feet deep for excavation of the bridge abutments. A record search revealed no resources within the APE and, therefore, a Finding of No Historic Properties Affected has been determined.

Response to Question b): Less than Significant with Mitigation Incorporated. Background research consisted of a record search, literature and map review, and consultation with the Native American Heritage Commission (NAHC) and Native American groups. A records search of previously recorded resources within the APE and a one-mile radius was obtained from the South Central Coastal Information Center (SCCIC), which disclosed 15 cultural resources within the one-mile radius, but no resources within the APE. The documented resources consist of nine lithic scatters, two prehistoric isolates, and four historic-era sites. If buried cultural materials are encountered during construction, work will stop in that area until a qualified archaeologist can evaluate the nature and significance of the find in compliance with measures **CUL-2** and **CUL-3**.

Avoidance, Minimization, and/or Mitigation Measures
Mitigation Measures **CUL-2** through **CUL-3** within Section 4.9 will be implemented for any impacts relating to Tribal Cultural Resources.

4.23 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. A water line would be temporarily relocated, but still fully functional during construction and then relocated on the new bridge, which would not cause significant environmental effects. The water line relocation would take no more than two days with water transmission restored within that time. A stormwater conveyance facility begins along Modjeska Grade Road, continues through the Project area, and ends as a discharge point above the OHWM of Santiago Creek. The Project will not be impacting this stormwater conveyance facility.

The Project is a bridge replacement and would not require or necessitate any new or expanded water, wastewater treatment, storm water drainage, natural gas, or telecommunications facilities. Therefore, the Project would not necessitate relocation of the aforementioned utilities.

Response to Question b): Less than Significant Impact. Project construction would temporarily require the use of water resources for dust control. However, water usage would be negligible respective to long term water supply. Water would not be required for Project operation. Therefore, the Project would result in a less than significant impact on having sufficient water supplies available to serve the Project and reasonably foreseeable future.

Response to Question c): No Impact. The Project would not include the construction of any wastewater-generating uses nor would it generate a new or expanded use that would need wastewater treatment. Therefore, no impacts are anticipated.

Response to Question d): Less than Significant with Mitigation. Solid waste associated with the removal of the existing bridge that includes broken up concrete and steel girders will occur with Best Management Practices incorporated by the construction contractor, which would dispose or recycle waste at an appropriate waste disposal or recycling facility.

There are three active landfills operated by the County's Waste & Recycling. The landfills are Olinda Alpha, Frank R. Bowerman, and Prima Deshecha. Each have different requirements, for example, the Frank R. Bowerman Landfill is one of the largest in the state and is permitted for 11,500 tons per day (TPD). Solid waste from the demolition of the existing bridge would be taken to one of the landfills or approved facilities identified by the County's Construction & Demolition (C&D) Program. The Project would result in a less than significant impact to solid waste generation with **UTL-1** incorporated.

Response to Question e): Less than Significant Impact. Project construction would require minimal, short-term solid waste disposal, which would be conducted in compliance with federal, state, and local statutes and regulations related to solid waste. Waste would be generated during construction activities, which include the removal of the existing bridge. Therefore, the Project would result in less than significant impact related to solid waste.

Avoidance, Minimization, and/or Mitigation Measures

UTL-1: OC Public Works shall complete and submit a construction and demolition program application to County of Orange Waste & Recycling. The application will identify and estimate the material to be recycled and demolished during construction. Compliance with the plan will be required within construction contracts. OC Public Works shall prepare a tonnage report for County of Orange Waste & Recycling.

4.24 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?	☐	☐	☒	☐

Affected Environment
The proposed Project is located in a State Responsibility Area in a "very high fire hazard severity" zone (FHSZ 2021).

Response to Question a): Less than Significant with Mitigation Incorporated. The proposed Project will replace the existing facilities in the same location. During construction, the road will be closed for approximately two days while the temporary bridge is erected. Modjeska Grade Road will be utilized as a detour (approximately 4 miles in length) for traffic during this short road closure. The proposed Project would have a less than significant impact with mitigation measures stated under measure **WF-1** on emergency fire access during Project construction.

Similarly, the proposed Project would regulate transportation over the bridge replacement during phased construction. Because the Project is open to traffic during construction, the Project would have a less than

significant impact with mitigation stated under Public Services to inform the community what to do in the event of an emergency evacuation during active construction.

Response to Question b): Less than Significant with Mitigation Incorporated. The Project will remove the existing bridge and replace it with a new one in the same location. The Project is not anticipated to exacerbate existing wildfire conditions. However, the area is located in a "very high fire hazard severity" zone and would implement mitigation measures **WF-3** and **WF-4** to prevent risk of wildfire and uncontrolled spread of a wildfire. 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 impact with mitigation measures incorporated for wildfire pollutant exposure.

Response to Question c): Less Than Significant with Mitigation Incorporated. The Project involves replacement of the existing Modjeska Canyon Bridge. A temporary staging area near the bridge will be used for equipment storage and vehicle parking. The construction phase has the potential to exacerbate fire risk. With the implementation of **WF-1** through **WF-6**, temporary impacts to the environment would be less than significant with mitigation measures incorporated.

Response to Question d): Less than Significant Impact. The Project would remove the existing bridge and replace it with a new bridge with new abutments that require impacts to riparian habitat that would have a localized impact on flow characteristics. However, the extent of those localized flow changes on Santiago Creek, an intermittent stream, is less than significant and will not expose people or structures to downslope or downstream flooding or landslides.

Avoidance, Minimization, and/or Mitigation Measures

WF-1: The contractor shall prepare a Traffic Management Plan that includes a Project schedule with specific information on the staged construction and when only one lane will be available, vehicle restrictions during construction including if/when limitation to fire equipment access would occur, location of signage, and a map of work zone limits.

WF-2: The contractor shall prepare a Construction Fire Prevention Plan approved by the Orange County Fire Authority Fire Chief. The Construction Fire Prevention Plan shall implement fire safety measures during construction activities in compliance with the National Fire Protection Association Standard 51B and California Public Resources Code Section 4442.

- The Construction Fire Prevention Plan shall be approved by the Orange County Fire Authority Fire Chief 20 days prior to the start of construction activities.
- The Construction Fire Prevention Plan shall include a details schedule of construction activities, temporary light signal hours of operation, and after work hours emergency contact information.
- The Construction Fire Prevention Plan shall include emergency operational procedures for the following.
    - Wildland fires
    - Structural fires
    - Red flag days
    - Emergency medical services emergencies
    - Flood emergencies

WF-3: Hot work shall cease during Red Flag Warning periods declared by the National Weather Service.

WF-4: In the event of a fire on the Project site, all construction activities will immediately stop, the construction crew should use the onsite fire extinguishers to extinguish the fire and dial 911 to inform fire services that a fire has occurred.

WF-5: The contractor shall prepare an Emergency Plan with a Project schedule, including start and end dates for construction phases. The Emergency Plan shall include emergency operational procedures for:

- Flood emergencies
- Wildland Fires
- EMS emergencies
- Red Flag Days
- Loss of power

The Emergency Plan shall be provided to the Orange County Fire Authority, Orange County Sheriff, and Orange County Public Works.

WF-6: Two weeks prior to initiation of construction activities, the contractor shall post on the community bulletin board adjacent to the Modjeska Community Center located at 28890 Modjeska Canyon Road, and mail to the homes and PO Boxes in Modjeska Canyon the following:

- Information on Orange County Fire Authority's Ready, Set, Go! safety program
- An emergency evacuation route map
- The direct phone number of Orange County Fire Station number 16 and 42

4.25 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. Implementation of the Project would have the potential to impact the quality of the existing environment. Potential impacts have been identified related to Air Quality, Biological Resources, Cultural Resources, Geology and Soils, Hazards and Hazardous Materials, Hydrology and Water Quality, Noise, Public Services, Transportation, Tribal Cultural Resources, and Wildfire. Mitigation measures and BMP have been defined within this document related to individual resource-specific impacts to reduce impacts to the greatest extent possible.

Therefore, the Project would not substantially degrade the quality of 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.

Response to Question b): Less than Significant with Mitigation Incorporated. The Project would have less than significant environmental impacts with mitigation incorporated. Past and current Projects, for example the Silverado Bridge Replacement Project, in the Project vicinity have been or will be cleared through the CEQA process and potentially significant impacts from those previous or future Projects would have been or will be mitigated. The Silverado Bridges are in a separate canyon and impacts from the Modjeska Canyon Bridge Project, especially biological impacts, are not cumulatively considerable when assessed with the impacts from the other respective Projects. Cumulative effects are not anticipated as this is a standalone Project and nearby Projects and their impacts would be localized and of limited extent.

The following table provides a summary of related Projects in the vicinity of the Project site, which is used in the cumulative impact analysis. Figure 6 provides a visual representation of the related Projects.

Table 15: Related Projects

Project	Location	Description
Orange County		
Silverado Canyon Road Bridge Replacement 55C-0177	Bridge approximately 4.5 miles northeast of the Project on Silverado Canyon Road.	Replacement bridge over Silverado Creek due to structural deficiency Anticipated construction year: 2023
Silverado Canyon Road Bridge 55C-0174	Bridge approximately 4 miles north of the Project on Silverado Canyon Road.	Replacement bridge over Silverado Canyon Creek due to structural deficiency. Anticipated construction year: 2023
Silverado Canyon Road Bridge 55C-0175	Bridge approximately 4 miles north of the Project on Silverado Canyon Road.	Replacement bridge over Ladd Creek due to structural deficiency Anticipated construction year: 2022

Source: OC Public Works, Development Services/Planning (2021).

The discussion below provides environmental impacts of the Project, highlighting specific factors that could potentially be cumulatively considerable, but are not anticipated to be due to the incorporated mitigation for this individual Project; it is presumed the other projects above will also incorporate a mitigation and monitoring plan thus avoiding cumulatively considerable impacts.

Biological Resources

Dominant vegetation communities within the BSA consists of urban, disturbed, annual grassland, stream channel, stormwater conveyance facility, coastal sage scrub, and riparian woodland. Based on biological surveys and database research and inquiries, 12 special status wildlife species were determined to have potential to occur within the BSA. Additionally, designated ARTO critical habitat does occur within the Project area. Santiago Creek runs east to west through the BSA, but is not identified as an Essential Connectivity Area by CDFW.

Of the 12 species within the BSA, ten species have a low to moderate potential to occur, those are the *Coastal range newt; Western Spadefoot; Coastal California gnatcatcher; Least Bell's vireo; coastal whiptail; Red-diamondback rattlesnake; Southern California legless lizard; Western pond turtle*. The *coast horned lizard; Coast patch-nosed snake; Orange-throated whiptail and Two-striped gartersnake* are considered to have a high potential to occur. As stated above, there is also critical habitat for the arroyo toad (ARTO).

Section 7 Consultation with USFWS will determine mitigation for special status avian species (coastal California gnatcatcher and least Bell's vireo). The Project is anticipated to have a "may affect, not likely to adversely affect" impact on these species and critical habitat. Implementation of measures **BIO-1** through **BIO-9** and species-specific measures **BIO-14** through **BIO-16** would reduce impacts to less than significant.

Cultural and Tribal Cultural Resources

There is always potential to impact cultural or tribal cultural resources when ground disturbance occurs. However, through field surveys, record searches, and database inquiries there were no resources identified that would be significantly impacted. Avoidance, minimization, and mitigation measures identify protocols should any cultural or tribal cultural resources be unearthed during construction.

Hydrology and Water Quality

The Project site is located within the Santa Ana River - Lower Santa Ana River – Santiago Watershed (801.12). The Santa Ana River Watershed is the largest watershed drainage south of the Sierra and is located largely in a highly urbanized and regulated setting. The watershed is approximately 100 miles long and has more than 50 tributary rivers and creeks. The Santa Ana River Watershed spans part of San Bernardino, Riverside, and Orange counties, draining approximately 2,840 square miles (Water Education Foundation, 2020).

The Santa Ana watershed drains the Santa Ana River that begins in San Bernardino County and flows west into the Pacific Ocean. The largest tributary rivers include Lytle, Temescal, and Santiago creeks. Like multiple rivers in this area the stream bed is lined with concrete. Much of the area relies on the Santa Ana River and its tributaries due to the climate in Southern California (Water Education Foundation, 2020).

Impacts to hydrology and water quality would be less than significant with mitigation incorporated. A Construction Storm Water General Permit is required, consistent with Construction General Permit Order No. 2009-009-DWQ, issued by the SWRCB, to address storm water runoff, as well as a Section 401 Water

Quality Certification permit. The permits would address grading, clearing, grubbing, and disturbances to the ground, such as stockpiling, or excavation. This Project would also require the preparation and implementation of a Stormwater Pollution Prevention Plan (SWPPP) with the intent of keeping all products of erosion from moving off site into receiving waters. The SWPPP includes BMPs to prevent construction pollutants from entering storm water runoff. By preparing and following the stormwater BMPs provided in the SWPPP, the Project impacts to water quality would be less than significant per implementation of measures **WQ-1** and **WQ-4**.

The proposed Project will be built in the same place as the existing structure, and no substantial erosion is expected from development nor would the Project create runoff water which would exceed the capacity of existing or planned stormwater drainage systems. Additionally, **BIO-3** would be implemented during Project development to reduce erosion during construction.

Wildfire

The proposed Project is located in a State Responsibility Area in a "very high fire hazard severity" zone (FHSZ 2021). In light of current and foreseeable fire risks and extreme wildfire behavior, projects near or within heavily vegetated areas should include specific avoidance, minimization, and mitigation measures relevant to the area. This Project has identified measures to assure impacts to emergency and evacuation plans are reduced to a less than significant level.

During the first stage of construction, the road will be closed to traffic for temporarily two days while a temporary bridge is constructed. Modjeska Grade Road will be utilized for traffic during this road closure. During the second stage of construction, one lane of alternating traffic will be shifted to the new bridge, with the temporary bridge removed and the remaining half of the new bridge constructed. The proposed Project would have a less than significant impact emergency and public services during Project construction with the incorporation of an Emergency Plan and Traffic Management Plan (**WF-1**); local fire response personnel will be informed of any transportation constraints of the bridge due to construction (**WF-6**).

WF-1 through **WF-6** would be implemented to reduce the risk of wildfire to the greatest extent possible and assure protocols are understood and in place should an emergency caused by wildfire occur.

Response to Question c): Less than Significant Impact. The Project would have no adverse effects, directly or indirectly, on humans. The 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, Hazards and Hazardous Materials, Hydrology and Water Quality, Noise, Public Services, Transportation, Tribal Cultural Resources, and Wildfire would all be reduced to a less than significant level with implementation of avoidance, minimization, and/or mitigation measures.

Chapter 5: Summary of Mitigation Measures and Project Design Features

MITIGATION MONITORING AND REPORTING PROGRAM FOR THE MODJESKA CANYON BRIDGE REPLACEMENT PROJECT

Mitigation Measure	Reporting Milestone	Reporting / Responsible Party	VERIFICATION OF COMPLIANCE	
			Initials	Date
AIR QUALITY Implementation of Caltrans' Construction Site Best Management Practices	Prior to and During Construction	Construction Contractor		
BIOLOGICAL RESOURCES **BIO-1:** Prior to the start of construction activities, the Project limits in the vicinity of Santiago Creek and associated riparian areas shall be marked with high visibility Environmentally Sensitive Area (ESA) fencing or staking to ensure construction will not further encroach into waters. Plans for the ESA fencing including maps of the project area and fencing limits shall be provided to the Carlsbad Fish & Wildlife Office (CFWO) at least 5 days prior to initiating project impacts. The fencing shall be inspected by the Contractor before the start of each workday and maintained by the Contractor until completion of the Project. The Project biologist will periodically inspect the ESA to ensure sensitive locations remain undisturbed.	Prior to Construction	Construction Contractor		
BIO-2: Every individual working on the Project must attend a biological awareness training session delivered by a qualified biologist. This training program shall include information regarding special-status species (including pertinent bird, amphibian, mammal, and reptile species along with photographs), sensitivity of the species to human activities, penalties for violations of Federal and State laws, and the importance of avoiding impacts to wildlife species individuals and associated habitat. The training shall include species identification characteristics, BMPs to be implemented, Project-specific avoidance measures that must be followed, and the steps necessary if the species is encountered at any time. Personnel would attend biological awareness training prior to working within the Project area. The biological awareness training would include a description of special-status species and sensitive habitats and identify mitigation measures that must be complied with.	During Construction	Lead Agency		

BIO-3:	Contract specifications will include the following best management practices (BMPs), where applicable, to reduce erosion during construction: • Implementation of the Project shall require approval of a site-specific Storm Water Pollution Prevention Plan (SWPPP) or Water Pollution Control Program (WPCP) that would implement effective measures to protect water quality, which may include a hazardous spill prevention plan and additional erosion prevention techniques. • Existing vegetation will be protected in place where feasible to provide an effective form of erosion and sediment control. • Roughening and terracing will be implemented to create unevenness on bare soil through the construction of furrows running across a slope, creation of stair steps, or by utilization of construction equipment to track the soil surface. Surface roughening or terracing reduces erosion potential by decreasing runoff velocities, trapping sediment, and increasing infiltration of water into the soil, and aiding in the establishment of vegetative cover from seed. • Soil exposure must be minimized through the use of temporary BMPs, groundcover, and stabilization measures. • The contractor must conduct periodic maintenance of erosion and sediment-control measures.	During Construction	Construction Contractor		

BIO-4: To conform to water quality requirements, the Project must implement the following: • Vehicle maintenance, staging and storing equipment, materials, fuels, lubricants, solvents, and other possible contaminants must be a minimum of 50 ft. from surface waters. Any necessary equipment washing must occur where the water cannot flow into surface waters. The Project specifications will require the contractor to operate under an approved spill prevention and clean-up plan; • Construction equipment will not be operated in flowing water; • Construction work must be conducted according to site-specific construction plans that minimize the potential for sediment input to surface waters; • Raw cement, concrete or concrete washings, asphalt, paint or other coating material, oil or other petroleum products, or any other substances that could be hazardous to aquatic life shall be prevented from contaminating the soil or entering surface waters; • Equipment used in and around surface waters must be in good working order and free of dripping or leaking contaminants; and, • Any concrete rubble, asphalt, or other debris from construction must be taken to an approved disposal site.	During Construction	Construction Contractor		
BIO-5: During construction, water diversion measures (e.g., sheet piles, sandbags or coffer dams) will be utilized to prevent water from entering the work area when conducting debris removal activities within the stream channel. No work activities shall occur within flowing water within the OHWM of Santiago Creek. Once debris removal activities have occurred the creek channel will be graded back to pre-project conditions. Immediately upon completion of in-channel work, temporary fills (as needed), and any water diversion materials will be removed in a manner that minimizes disturbance to downstream flows and water quality.	During Construction	Construction Contractor		
BIO-6: Where feasible, riparian vegetation within temporary construction zones would be cleanly cut to ground level and then covered with a layer of clean gravel or topsoil as necessary to protect plant viability and prevent damage to remaining root structures during construction.	Prior to Construction	Construction Contractor		

BIO-7:	The Project Biologist must be approved by the Carlsbad Fish and Wildlife Office (CFWO) and will be on site: (a) during all vegetation clearing, and (b) weekly during project construction within 500 feet of gnatcatcher and vireo habitat and arroyo toad critical habitat to monitor compliance with conservation measures. The biologist's name, contact information, and work schedule on the project must be submitted to the CFWO at least 15 working days prior to initiating project impacts. The Project Biologist will be available during pre-construction and construction phases to address protection of sensitive biological resources, monitor ongoing work, and maintain communications with construction personnel to facilitate the appropriate and lawful management of issues relating to biological resources. The Project biologist shall submit a final report to the CFWO within 120 days of project completion including photographs of impact areas and adjacent habitat and documentation that general compliance with conservation measures was achieved. The report will list the number and location of listed species observed, observed listed species behavior, and remedial measures employed to avoid and minimize impacts to listed species. Raw field notes should be available upon request by the CFWO.	During Construction	Construction Contractor		
BIO-8:	All temporary impacts to federal and state jurisdictional waters, riparian woodland and ARTO Critical Habitat during Project construction will be restored at a 1:1 ratio and will be re-contoured to preconstruction conditions and seeded with a native seed mix. Where possible, vegetation will be trimmed rather than fully removed with the guidance of the Project biologist. A restoration plan will be developed and submitted to the Carlsbad Fish & Wildlife Office. The plan will be implemented for a minimum of 5 years unless success criteria are met earlier. If maintenance of a riparian area occupied by vireo occurs within the nesting season, a qualified biologist will survey for vireos. Surveys will consist of three visits separated by 2 weeks. Restoration work will be allowed to continue during surveys. However, if vireos are found during visits, a qualified biologist will notify the Carlsbad Fish & Wildlife Office to identify measures to avoid and/or minimize effects.	During and Post Construction	Construction Contractor		
BIO-9:	The County shall replant any mature native and non-native trees removed from within natural communities of special concern at a 2:1 ratio on-site or within the Santa Ana River watershed, due to the extent of existing development and minimal impact to native habitats resulting from the proposed Project.	Post Construction	Lead Agency		

BIO-10: A pre-construction clearance survey for special status amphibian and reptile species shall be conducted 24-hours prior to vegetation clearing and/or initiation of construction activities. If any special status wildlife species or wildlife is found, the Project biologist shall relocate the wildlife downstream in the appropriate habitat. If a lapse in Project-related work of 15 days or longer occurs, another focused survey shall occur.	Prior to Construction	Lead Agency		
BIO-11: As a first order of construction, the Project contractor shall install wildlife exclusion fencing (WEF) along the Project boundaries within suitable habitat prior to commencement of construction activities or staging of equipment, in order to prevent special status amphibian and reptile species individuals from entering the Project area during construction activities. • WEF shall consist of taught silt fencing supported by wooden stakes on the Project side only. • WEF shall be buried a minimum of six (6) inches below ground and soil shall be compacted against the sides of the fence for its entire length to prevent special status species from passing under the fence. • WEF shall extend 12 to 18 inches above the ground. • The contractor shall inspect the WEF daily, and WEF shall be maintained, and repaired where necessary, throughout construction to ensure that it is functional and without defects, that the fencing material is taught and that the bottom edge of the fencing material remains buried. • The Project biologist will periodically inspect the WEF to ensure it remains functional and appropriately maintained throughout construction.	Prior to and During Construction	Construction Contractor		
BIO-12: Prior to installation of WEF, the Project biologist shall inspect the Project area for wildlife to prevent entrapment within the Project area. If any special status wildlife species or wildlife is found, the Project biologist shall relocate the wildlife downstream in the appropriate habitat. If a lapse in Project-related work of 15 days or longer occurs, another clearance survey shall occur.	Prior to Construction	Lead Agency		

BIO-13: All construction pipes, culverts, or similar structures that are stored in the Project area for one or more overnight periods shall be either securely capped prior to storage or thoroughly inspected by the contractor and/or the Project biologist for special status wildlife species or other animals before the pipe is subsequently buried, capped, or otherwise used or moved in any way. If any special status wildlife species or wildlife is found within WEF, construction activities in the vicinity shall cease and the Project biologist shall be notified to relocate the wildlife to suitable habitat outside of the Project area. Only the approved Project biologist shall handle or relocate special status wildlife.	During Construction	Lead Agency		
BIO-14: To prevent inadvertent entrapment of the special status wildlife species or other animals during construction, the Project biologist and/or construction foreman/manager shall 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 shall be thoroughly inspected for trapped animals by the Project biologist and/or construction foreman/manager.	During Construction	Lead Agency		
BIO-15: Vegetation removal and clearing and grubbing of native habitats shall occur outside of the coastal California gnatcatcher and least Bell's vireo nesting season (February 1 to September 1).	Prior to and During Construction	Construction Contractor		
BIO-16: If vegetation removal is required during the migratory bird nesting season (February 1 to September 1), a pre-construction nesting bird survey must be conducted within 7 days prior to vegetation removal. Within 2 weeks of the nesting bird survey, all vegetation cleared by the Project biologist will be removed by the contractor. A minimum 300-foot no-disturbance buffer will be established around any active nest of migratory birds and a minimum 500-foot no-disturbance buffer will be established around any nesting raptor or CESA/FESA listed species. The contractor must immediately stop work in the buffer area until the appropriate buffer is established and is prohibited from conducting work that could disturb the birds (as determined by the Project biologist who is approved by the wildlife agencies) in the buffer area until a qualified biologist determines the young have fledged. A reduced buffer can be established if determined appropriate by the Project biologist who is approved by the wildlife agencies.	Prior to Construction	Construction Contractor		

BIO-17: If any noise generating construction activities above the typical background noise levels within the Project area are required during the migratory bird nesting season (February 1 to September 1), the Project biologist will monitor construction activities and any known identified nest sites within or adjacent to the Project area to minimize disturbance of nesting migratory birds. If the Project biologist suspects that these measures are ineffective, culpable activities within 500 feet of active nesting territories until nesting activity is completed and fledglings are no longer in the area or until effective avoidance and minimization measures can be implemented.	During Construction	Construction Contractor		
BIO-18: Prior to arrival at the Project site and prior to leaving the Project site, construction equipment that may contain invasive plants and/or seeds will be cleaned to reduce the spreading of noxious weeds. Special care will be taken during transport, use, and disposal of soils containing invasive weed seeds, and weedy vegetation removed during construction will be properly disposed of to prevent spread into areas outside of the construction area.	Prior to Construction	Lead Agency		
BIO-19: All hydroseed and plant mixes must consist of a Project biologist approved plant palette seed mix of native species sourced locally to the Project area.	Prior to and During Construction	Lead Agency and Construction Contractor		
CULTURAL RESOURCES **CUL-1:** Prior to construction, environmental awareness training shall be provided to all construction workers onsite regarding the possibility of encountering subsurface cultural resources.	During Construction	Lead Agency		
CUL-2: If previously unidentified cultural materials are unearthed during construction, work shall be halted in that area until a qualified archaeologist can assess the significance of the find and develop a plan for documentation and removal of resources, if necessary. Additional archaeological survey will be needed if project limits are extended beyond the present survey limits.	During Construction	Construction Contractor		

CUL-3: Section 5097.94 of the Public Resources Code and Section 7050.5 of the California Health and Safety Code protect Native American burials, skeletal remains and grave goods, regardless of age and provide method and means for the appropriate handling of such remains. If human remains are encountered, California Law requires that work shall halt in that vicinity and the Orange County Coroner shall be notified immediately to assess the remains. If the coroner determines the human remains to be of Native American origin, the coroner must notify the Native American Heritage Commission (NAHC) within twenty-four hours of such identification. The NAHC shall then determine the Most Likely Descendant (MLD) of the human remains and contact the MLD immediately. The County, the MLD, and a professional archaeologist retained by the County shall then consult to determine the appropriate plans for treatment and assessment of the human remains and any associated grave goods.	During Construction	Lead Agency and Construction Contractor		
GEOLOGY AND SOILS **GEO-1:** Paleontological Monitoring. A qualified paleontologist (the "Project Paleontologist"), as defined by the Society of Vertebrate Paleontology's 2010 guidelines, shall be retained by the Contractor prior to the issuance of a grading permit. The Project Paleontologist will be on-call to monitor ground-disturbing activities and excavations on the Project site following identification of potential paleontological resources by Project personnel. If paleontological resources are encountered during implementation of the Project, ground-disturbing activities will be temporarily redirected from the vicinity of the find. The Project Paleontologist will be allowed to temporarily divert or redirect grading or excavation activities in the vicinity in order to make an evaluation of the find. If the resource is significant, Mitigation Measure GEO-2 shall apply.	Prior to and During Construction	Construction Contractor		
GEO-2: Paleontological Treatment Plan. If a significant paleontological resource(s) is discovered, the qualified paleontologist shall develop a plan of mitigation which shall include salvage excavation and removal of the find, removal of sediment from around the specimen (in the laboratory), research to identify and categorize the find, curation in the find a local qualified repository, and preparation of a report summarizing the find. All recommendations will be made in accordance with the Society of Vertebrate Paleontology's 2010 guidelines and shall be subject to review and approval by the County of Orange.	During Construction	Lead Agency and Construction Contractor		
HAZARDS AND HAZARDOUS WASTE **HAZ-1:** A PSI is recommended to test for ADL, OCP, OPP, and heavy metals in soils and for LBP and ACM in the existing bridge structure prior to construction.	Prior to Construction	Lead Agency		

HAZ-2: Any leaking transformers observed during the course of the Project should be considered a potential polychlorinated biphenyl (PCB) hazard. A detailed inspection of individual electrical transformers was not conducted for this Phase I Environmental Site Assessment. However, should leaks from electrical transformers (that will either remain within the construction limits or will require removal and/or relocation) be encountered during construction, the transformer fluid should be sampled and analyzed by qualified personnel for detectable levels of PCB's. Should PCBs be detected, the transformer should be removed and disposed of in accordance with Title 22, Division 4.5 of the California Code of Regulations and any other appropriate regulatory agency. Any stained soil encountered below electrical transformers with detectable levels of PCB's should also be handled and disposed of in accordance with Title 22, Division 4.5 of the California Code of Regulations and any other appropriate regulatory agency.	During Construction	Construction Contractor		
HYDROLOGY AND WATER QUALITY **WQ-1:** BMPs will be incorporated into project design and project construction to minimize impacts on the environment: • The area of construction and disturbance shall be limited to as small an area as feasible to reduce erosion and sedimentation. • Measures shall be implemented during land-disturbing activities to reduce erosion and sedimentation. These measures may include mulches, soil binders and erosion control blankets, silt fencing, fiber rolls, temporary berms, sediment desilting basins, sediment traps, and check dams. • Existing vegetation shall be protected where feasible to reduce erosion and sedimentation. Vegetation shall be preserved by installing temporary fencing, or other protection devices, around areas to be protected. • Exposed soils shall be covered by loose bulk materials or other materials to reduce erosion and runoff during rainfall events. • All construction roadway areas shall be properly protected to prevent excess erosion, sedimentation, and water pollution. • All concrete curing activities shall be conducted to minimize spray drift and prevent curing compounds from entering the waterway directly or indirectly. • All construction materials, vehicles, stockpiles, and staging areas shall be situated outside of the creek channel. All stockpiles must be covered, as feasible. • All erosion control measures and stormwater control measures shall be properly maintained until the site has returned to a pre-construction state. • All construction materials shall be hauled off-site after completion of construction.	During Construction	Construction Contractor		

WQ-2: Any requirements for additional avoidance, minimization, and/or mitigation measures will be contained in the permits obtained from required regulatory agencies.	Prior to Construction	Lead Agency		
WQ-3: The proposed Project will require a National Pollution Discharge Elimination System (NPDES) General Construction Permit for Discharges of stormwater associated with construction activities. A SWPPP or Water Pollution Control Plan (WPCP) will also be developed and implemented as part of the Construction General Permit.	During Construction	Lead Agency and Construction Contractor		
WQ-4: The construction contractor shall adhere to the SWRCB Order No. 2012-0006-DWQ NPDES Permit pursuant to Section 402 of the CWA. This permit authorizes stormwater and non-stormwater discharges from construction activities. As part of this Permit requirement, an SWPPP or WPCP will be prepared prior to construction consistent with the requirements of the RWQCB. This SWPPP shall incorporate all applicable BMPs to ensure that adequate measures are taken during construction to minimize impacts to water quality.	During Construction	Construction Contractor		
NOISE **NOI-1:** To minimize construction-related noise in the area, the following Best Management Practices (BMP) shall be followed: • Construction activities will not occur between the hours of 8:00pm and 7:00am on weekdays, including Saturdays, or any time on Sunday or a Federal holiday. • Ensure all internal combustion engine equipment is equipped with the manufacturer recommended muffler.	During Construction	Construction Contractor		
TRIBAL CULTURAL RESOURCES Follow **CUL-1 – CUL-3** under Cultural Resources above.	During Construction	Lead Agency and Construction Contractor		

UTILITIES and SERVICE SYSTEMS **UTL-1:** OC Public Works shall complete and submit a construction and demolition program application to County of Orange Waste & Recycling. The application will identify and estimate the material to be recycled and demolished during construction. Compliance with the plan will be required within construction contracts. OC Public Works shall prepare a tonnage report for County of Orange Waste & Recycling.	Prior to and During Construction	Lead Agency		
WILDFIRE **WF-1:** The contractor shall prepare a Traffic Management Plan that includes a Project schedule with specific information on the staged construction and when only one lane will be available, vehicle restrictions during construction including if/when limitation to fire equipment access would occur, location of signage, and a map of work zone limits.	Prior to and During Construction	Lead Agency and Construction Contractor		
WF-2: The contractor shall prepare a Construction Fire Prevention Plan approved by the Orange County Fire Authority Fire Chief. The Construction Fire Prevention Plan shall implement fire safety measures during construction activities in compliance with the National Fire Protection Association Standard 51B and California Public Resources Code Section 4442. • The Construction Fire Prevention Plan shall be approved by the Orange County Fire Authority Fire Chief 20 days prior to the start of construction activities. • The Construction Fire Prevention Plan shall include a details schedule of construction activities, temporary light signal hours of operation, and after work hours emergency contact information. • The Construction Fire Prevention Plan shall include emergency operational procedures for the following. o Wildland fires o Structural fires o Red flag days o Emergency medical services emergencies o Flood emergencies	During Construction	Construction Contractor		
WF-3: Hot work shall cease during Red Flag Warning periods declared by the National Weather Service.	During Construction	Construction Contractor		

WF-4: In the event of a fire on the Project site, all construction activities will immediately stop, the construction crew should use the onsite fire extinguishers to extinguish the fire and dial 911 to inform fire services that a fire has occurred.	During Construction	Construction Contractor		
WF-5: The contractor shall prepare an Emergency Plan with a Project schedule, including start and end dates for construction phases. The Emergency Plan shall include emergency operational procedures for: • Flood emergencies • Wildland Fires • EMS emergencies • Red Flag Days • Loss of power The Emergency Plan shall be provided to the Orange County Fire Authority, Orange County Sherriff, and Orange County Public Works.	During Construction	Construction Contractor		
WF-6: Two weeks prior to initiation of construction activities, the contractor shall post on the community bulletin board adjacent to the Modjeska Community Center located at 28890 Modjeska Canyon Road, and mail to the homes and PO Boxes in Modjeska Canyon the following: • Information on Orange County Fire Authority's Ready, Set, Go! safety program • An emergency evacuation route map • The direct phone number of Orange County Fire Station number 16 and 42	Prior to Construction	Lead Agency and Construction Contractor		

Chapter 6: References

American Ornithological Society. 1957. Available at: http://checklist.aou.org/ Accessed: February 2020

Association of Environmental Professionals. 2021. California Environmental Quality Act. Statute & Guidelines. Available at: https://www.califaep.org/docs/CEQA_Handbook_2021.pdf Accessed: July 2021

California Department of Conservation. California Important Farmland Finder. Available at: https://maps.conservation.ca.gov/DLRP/CIFF/ Accessed: June 2021

California Department of Conservation. Mineral Land Classification. Available at: https://maps.conservation.ca.gov/cgs/informationwarehouse/mlc/ Accessed: June 2021

California Department of Fish and Wildlife. NCCP Plan Summary – Orange County Transportation Authority NCCP/HCP. Available at: https://wildlife.ca.gov/Conservation/Planning/NCCP/Plans/OCTA Accessed: July 2021

California Department of Fish and Wildlife. 2020. CWHR Life History Accounts and Range Maps. Available at: http://www.dfg.ca.gov/biogeodata/cwhr/cawildlife.aspx Accessed: February 2020

California Environmental Quality Act. 2021. Statute & Guidelines. Association of Environmental Professionals. Available at: https://www.califaep.org/docs/CEQA_Handbook_2021.pdf Accessed: July 2021

California Wildlife Habitat Relationship System. 2018. California Newt. Available at: https://wildlife.ca.gov/Data/CWHR Accessed: April 2020

California Wildlife Habitat Relationship System. 2000. California Wildlife Habitat Relationship System. Western Spadefoot. Available at: https://wildlife.ca.gov/Data/CWHR Accessed: April 2020

California Wildlife Habitat Relationship System. 2000. California Wildlife Habitat Relationship System. Coast Horned Lizard. Available at: https://wildlife.ca.gov/Data/CWHR Accessed: April 2020

California Wildlife Habitat Relationship System. 2008. California Wildlife Habitat Relationship System. Coast Patch-nosed Snake. Available at: https://wildlife.ca.gov/Data/CWHR Accessed: April 2020

Caltrans. May 2020. Archaeological Survey Report for the Modjeska Canyon Road Bridge Replacement Project. Orange County, California. Dokken Engineering.

Caltrans. May 2020. Historic Property Survey Report. BRLO-5955(094). Modjeska Canyon Road. Dokken Engineering.

Caltrans. April 2021. Initial Site Assessment. Modjeska Canyon Road Bridge (No. 55C-0172) Replacement Project. Prepared by: WRECO.

Caltrans. June 2021. Modjeska Canyon Bridge Replacement Project. Natural Environment Study. Discussion of Biological Assessments, Habitat Impacts, & Project Mitigation. Dokken Engineering.

Caltrans. October 2021. Floodplain Evaluation Report. Modjeska Canyon Road Bridge Replacement Project. Prepared by: WRECO.

Caltrans. 2020a. Traffic Noise Analysis Protocol for New Highway Construction, Reconstruction, and Retrofit Barrier Projects. Available at: https://dot.ca.gov/-/media/dot-media/programs/environmental-analysis/documents/env/traffic-noise-protocol-april-2020-a11y.pdf Accessed August 2021

Caltrans. 2020b. Transportation and Construction Vibration Guidance Manual. Available at: https://dot.ca.gov/-/media/dot-media/programs/environmental-analysis/documents/env/tcvgm-apr2020-a11y.pdf Accessed: August 2021

Caltrans. 2020c. Water Quality Planning Tool. Available at: http://svctenvims.dot.ca.gov/wqpt/wqpt.aspx Accessed: July 2021

County of Orange. 1996. Orange County Central and Coastal Subregion Natural Community Conservation Plan and Habitat Conservation Plan.

County of Orange. 1977. Silverado-Modjeska Specific Plan. Adopted August 31, 1977.

DOT (U.S. Department of Transportation). 2018. Transit Noise and Vibration Impact Assessment Manual. Available at: https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/research-innovation/118131/transit-noise-and-vibration-impact-assessment-manual-fta-report-no-0123_0.pdf Accessed: August 2021

Fire Hazard Severity Zone Viewer. Available at: https://osfm.fire.ca.gov/divisions/wildfire-planning-engineering/wildfire-prevention-engineering/fire-hazard-severity-zones/ Accessed: July 2021
iNaturalist. 2020. Available at: https://www.inaturalist.org/ Accessed: April 2020

International Conference of Building Officials. 1994. Uniform Building Code. Volume 2. Structural Engineering Design Provisions.

Kus, B. E., Petersoni, B. L., & DEUTSCHMAN, D. H. (2008). A Multiscale Analysis of Nest Predation on Least Bell's Vireos (Vireo Bellii Pusillus). Auk (University of California Press), 125(2), 277–284.

NRCS. 2020. Custom Soil Resources Report for Orange County and Part of Riverside County, California Modjeska Bridge Replacement. Available at https://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm Accessed: March 2020

Orange County. Originally Adopted August 31, 1977. Silverado-Modjeska Specific Plan. Available at: https://www.intercanyonleague.org/uploads/2/4/0/0/24004182/silmod_specific_plan_final.pdf Accessed: June 2021

Orange County General Plan. Amended 2012. Available at: https://www.ocpublicworks.com/ds/planning/generalplan Accessed: June 2021

Orange County Public Works. Codes and Regulations. Division 6 Noise Control. Available at: https://www.ocpublicworks.com/civicax/filebank/blobdload.aspx?BlobID=8876 Accessed: June 2021

Orange County Public Works. General Plan. Available at: https://www.ocpublicworks.com/ds/planning/generalplan Accessed: July 2021

Orange County Public Works. 2013. Chapter VI. Resource Element. Available at: https://www.ocgov.com/civicax/filebank/blobdload.aspx?blobid=40235 Accessed: February 2020

Orange County Public Works. 2020. Updated Transportation Implementation Manual – Chapter 8. Available at: https://ocds.ocpublicworks.com/sites/ocpwocds/files/2020-12/Transportation%20Implementation%20Manual%20-%202020.pdf Accessed: August 2021

Orange County Waste & Recycling. Construction & Demolition (C&D) Program. Available at: https://www.oclandfills.com/CD Accessed: September 2021

Sacramento Metropolitan Air Quality Management District. 2020. Roadway Construction Emissions Model, Version 9.0.0.

South Coast Air Quality Management District. Air Quality Modeling. 2021. Available at: http://www.aqmd.gov/home/rules-compliance/ceqa/air-quality-modeling. Accessed: August 2021

South Coast Air Quality Management District. 2016. National Ambient Air Quality Standards (NAAQS) and California Ambient Air Quality Standards (CAAQS) Attainment Status for South Coast Air Basin. Available at: http://www.aqmd.gov/docs/default-source/clean-air-plans/air-quality-management-plans/naaqs-caaqs-feb2016.pdf Accessed: July 2021

South Coast Air Quality Management District. Significance Thresholds. Revised April 2019. Available at: http://www.aqmd.gov/docs/default-source/ceqa/handbook/scaqmd-air-quality-significance-thresholds.pdf?sfvrsn=2 Accessed: July 2021

Stebbins, R. C. 1972. California amphibians and reptiles. University of California Press, Berkeley.

United States Environmental Protection Agency. Climate Change. Available at: https://www.epa.gov/climate-change Accessed: June 2021

US Climate Data. Available at: https://www.usclimatedata.com/climate/santa-ana/california/united-states/usca1016 Accessed: February 2020

Zeiner, D.C., W.F.Laudenslayer, Jr., K.E. Mayer, and M. White, eds. 1988-1990. California's Wildlife. Vol. I-III. California Depart. of Fish and Game, Sacramento, California.

Zink, R. M., Barrowclough, G. F., Atwood, J. L., & Blackwell, R. R. C. 2000. Genetics, Taxonomy, and Conservation of the Threatened California Gnatcatcher. Conservation Biology, 14(5), 1394–1405.