SANTA GERTRUDIS CREEK TRAIL PHASE II UNDERCROSSING AT MARGARITA ROAD PROJECT

Draft Initial Study/Mitigated Negative Declaration

Prepared for
City of Temecula

February 2022

ESA

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Acronyms and Abbreviations

Acronym/Abbreviation	Definition
ALUCP	Airport Land Use Compatibility Plan
APE	Area of Potential Effects
AQMP	Air Quality Management Plan
AR4	Fourth Assessment Report
ARDR	Aquatic Resources Delineation Report
ASML	above mean sea level
BC3	Business Council on Climate Change
BMP	best management practice
BTR	Biological Technical Report
CAAQS	California Ambient Air Quality Standards
CALFIRE	California Department of Forestry and Fire Protection
CARB	California Air Resources Board
CBC	California Building Code
CDFW	California Department of Fish and Wildlife
CDMG	California Division of Mines and Geology
CEQA	California Environmental Quality Act
CGS	California Geologic Survey
CH_4	methane
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalent
CWA	Clean Water Act
CY	cubic yards
DBESP	Determination of Biologically Equivalent or Superior Preservation
DOC	California Department of Conservation
DPM	diesel particulate matter
DPW	Temecula Department of Public Works
DTSC	California Department of Toxic Substances Control
EIC	Eastern Information Center
EMWD	Eastern Municipal Water District
FMMP	Farmland Mapping and Monitoring Program
GAW	ground anchor wall
GHG	greenhouse gas
GWP	global warming potential
HAP	hazardous air pollutants
HFC	hydrofluorocarbon
HHD	heavy-heavy-duty
IPCC	Intergovernmental Panel on Climate Change

Acronym/Abbreviation	Definition
JRMP	Jurisdictional Runoff Management Plan
LOS	Level of Service
LST	Localized Significance Thresholds
MLD	a Most Likely Descendent
MMT	million metric tons
MSHCP	Western Riverside Multiple Species Habitat Conservation Plan
MT	metric ton
MWD	Metropolitan Water District
N_2O	nitrous oxide
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission
NPDES	National Permit Discharge Elimination System
OPR	Governor's Office of Planning and Research
OS-C	Open Space Conservation
PFC	perfluorocarbon
PM10	coarse particulate matter
RCFCD	Riverside County Flood Control District
RCFD	Riverside County Fire Department
RCFWCD	Riverside County Flood and Water Conservation District
RCWD	Rancho California Water District
RTA	Riverside Transit Authority
RWQCB	Regional Water Quality Control Board
SB	Senate Bill
SCAG	Southern California Association of Governments
SCAQMD	South Coast Air Quality Management District
SF_6	sulfur hexafluoride
SGCT	Santa Gertrudis Creek Trail
SLF	Sacred Lands File
SO_X	sulfur oxides
SR	State Route
SSRE	Source Reduction and Recycling Element
SWPPP	Stormwater Pollution Prevention Plan
SWRCB	State Water Resource Control Board
TAC	toxic air contaminant
TACM	Airborne Toxic Control Measures
TPD	Temecula Police Department
USACE	U.S. Army Corps of Engineers
USEPA	U.S. Environmental Protection Agency
USGS	U.S. Geological Survey
VHFHSZ	Very High Fire Hazard Severity Zone
VMT	vehicle miles traveled
VOC	volatile organic compounds

Acronym/Abbreviation	Definition
WEAP	Workers Environmental Awareness Program
WQMP	Water Quality Management Plan

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ENVIRONMENTAL CHECKLIST

Initial Study/Mitigated Negative Declaration

1. Project Title:	Santa Gertrudis Creek Trail Phase II Undercrossing at Margarita Road
2. Lead Agency Name and Address:	City of Temecula Planning Department, 41000 Main Street, Temecula CA, 92590
3. Contact Person and Phone Number:	Will Becerra Jr. (951) 693-3963
4. Project Location:	The Project Site is beneath and perpendicular to Margarita Road, along the south side of Santa Gertrudis Creek, and is adjacent to and extending the Santa Gertrudis Bicycle Trail, in the City of Temecula, CA.
5. Project Sponsor's Name and Address:	City of Temecula, CA
6. General Plan Designation(s):	Open Space
7. Zoning:	Open Space Conservation (OS-C)

8. Description of Project:

Overview

The City of Temecula, as the lead agency under the California Environmental Quality Act (CEQA), has identified the need for the Santa Gertrudis Creek Trail Phase II Undercrossing at Margarita Road (Proposed Project or Project). The Project would design and construct a bicycle/multi-use trail undercrossing for the existing Santa Gertrudis Creek Trail (SGCT). The existing trail crosses Margarita Road in the City of Temecula, which is a heavily traveled four-lane divided collector roadway. The proposed undercrossing would improve safety at this location by removing the need for existing at-grade roadway crossing for the trail.

Environmental Setting

The Project Site is located at Margarita Road and the south side of Santa Gertrudis Creek, in the City of Temecula, CA, as shown in **Figure 1** and **Figure 2**. The existing SGCT is a 3-mile paved trail, which traverses from northeast to southwest in the City of Temecula and serves as both a recreational amenity and an active transportation alternative. The northeastern terminus of SGCT is located at Nakayama Park, near the intersection Joseph Road and Nicolas Road. The trail is adjacent to the south side of Santa Gertrudis Creek, meanders to the north and

passes under State Route 79 (SR-79), before reaching the southwestern terminus at Ynez Road near Winchester Road.

The existing crossing of the SGCT is located at Margarita Road, which is a 100-foot wide, four-lane divided collector street in the City of Temecula, with a posted speed limit of 45 miles per hour. At the crossing of the Santa Gertrudis Creek, Margarita road narrows to 88 feet in width. Within the Project limits, Margarita Road has two lanes of traffic in each direction, with a partially-landscaped median varying in width from 13 feet to 22 feet, 7-foot northbound and 5-foot southbound Class II bike lanes, and 6-foot sidewalks on both sides. The roadway grade varies from approximately 2 percent to 3 percent.

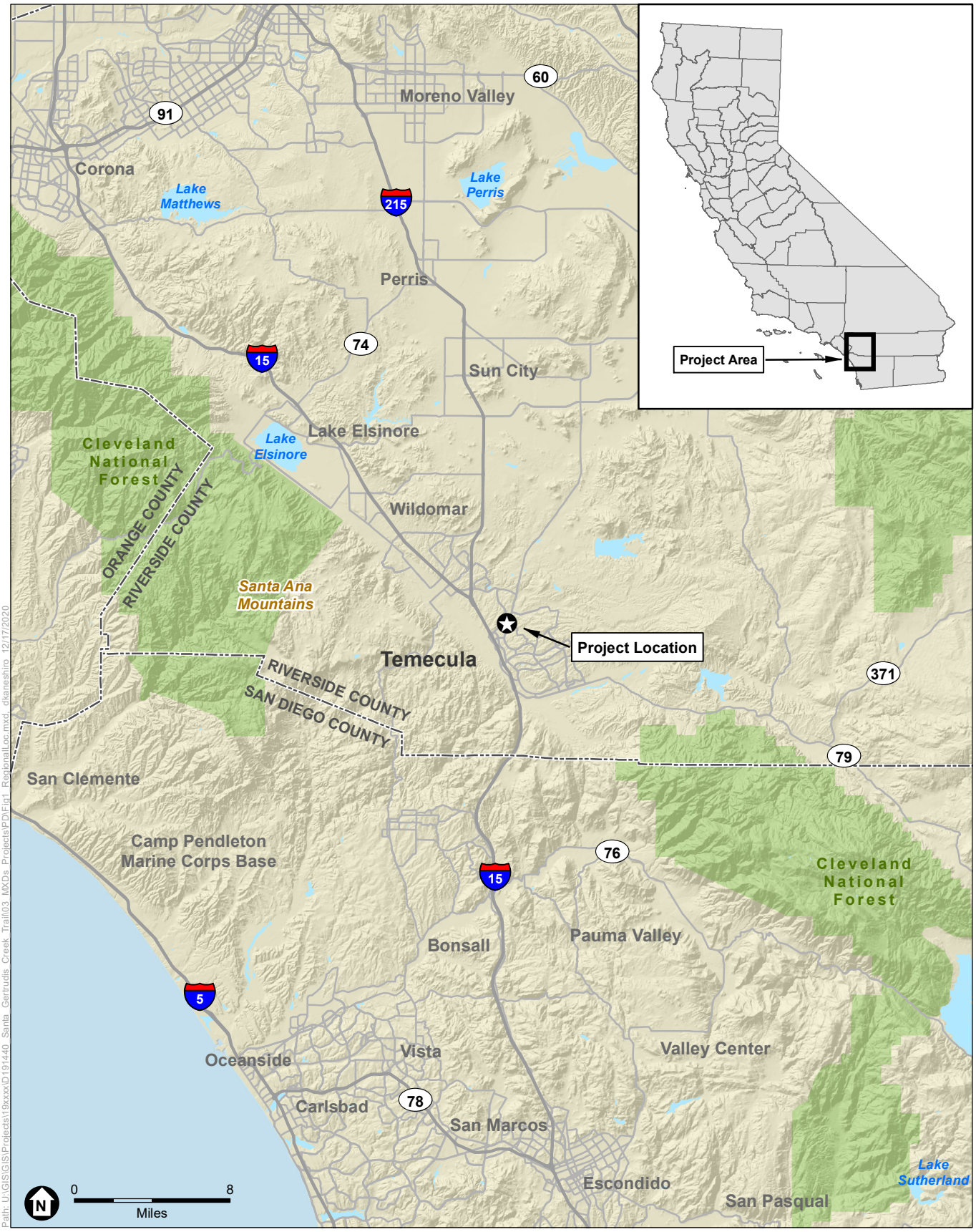
The Project Site ranges in elevation, with the westernmost extent at 1,070 feet above mean sea level (ASML), with the easternmost extent at 1,072 ASML.

Project Components

The Proposed Project consists of a total of approximately 610 feet of a shared bicycle/trail undercrossing beneath the overpass of Margarita Road. The proposed off-street paved undercrossing would begin where the existing grade of the SGCT ramps begin to elevate to meet the grade of the overcrossing of Margarita Road at the east and west sides, which is slightly north of the existing overcrossing site, as shown in **Figure 3** and **Figure 4.** The Project would include the removal of existing pavements and soils to bring the proposed SCGT to five percent grade, utility improvements, and the construction of the SGCT in a new location beneath Margarita Road.

Proposed Trail Connection

Implementation of the Proposed Project would include the demolition of the existing SGCT along the east and western sides of Margarita Road, which includes the removal of one-foot minimum of existing aggregated concrete pavement and the compaction of existing soils to bring to grade the proposed trail. The proposed juncture of the existing trail and proposed undercrossing would be brought to a median elevation of 1,064.3 feet AMSL, which results in a five percent grade change to the lowest extent of the proposed trail on each side. The trail would adjoin the existing grade of 1,069 feet AMSL at the western extent and 1,071.98 feet AMSL at the eastern extent as shown in Figure 4. The Project would include the reconstruction and/or replacement of the existing trail and infrastructure, such as the existing retaining wall and channel slope paving and cut-off wall. A ground anchor wall (GAW) is also proposed below the Margarita Road undercrossing, which would be used to retain the abutment end slope. Existing water valves and fixtures impacted by trenching of the soil to grade would be restored, which include utilities such as water valves and curb and gutter replacements. It is anticipated that all conflicting surface utilities facilities would either be protected in place or be relocated within the confines of the Project boundary (including a 20-inch waterline owned by Rancho California Water District (RCWD) that would be relocated a maximum of 23-feet to the east of the proposed anchor wall).



SOURCE: ESRI

Santa Gertrudis Creek Trail Phase II Undercrossing at Margarita Road

Figure 1
Regional Location

ESA

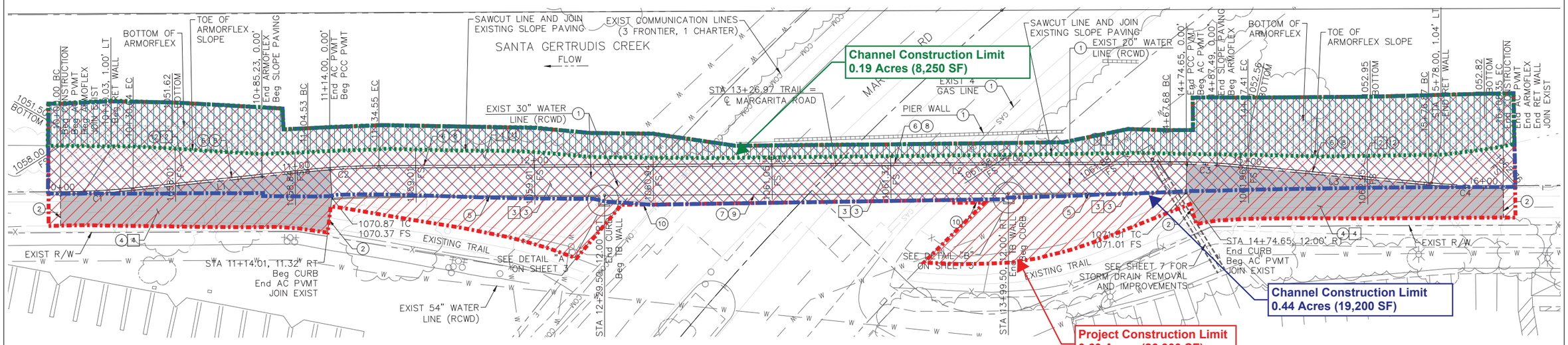
Path: U:\GIS\GIS\Projects\19xxxx\D191440_Santa_Gertrudis_Creek_Trail\03_MXDs_Projects\PD\Fig2_ProjectSite.mxd dkaneshiro 1/7/2021

SOURCE: ESRI, 2019

Santa Gertrudis Creek Trail Phase II Undercrossing at Margarita Road

Figure 2
Project Site

ESA



REMOVAL NOTES

1. REMOVE AND RECONSTRUCT CHANNEL SLOPE PAVING AND CUT-OFF WALL PER DETAIL ON SHT XX
2. REMOVE AND RECONSTRUCT ARMORFLEX IN KIND
3. REMOVE CHANNEL SLOPE PAVING
4. REMOVE AC PAVING

CONSTRUCTION NOTES

1. PROTECT IN PLACE
2. SAWCUT 1' MINIMUM
3. CONSTRUCT 6" PCC PAVEMENT ON COMPACTED SOIL
4. CONSTRUCT 4" AC PAVEMENT ON COMPACTED SOIL
5. CONSTRUCT 6" CURB PER APWA STD PLAN 120-2, CASE A1-6(150)
6. CONSTRUCT TYPE 5 RETAINING WALL PER RETAINING WALL PLAN
7. CONSTRUCT TIEBACK WALL PER TIEBACK WALL PLAN
8. CONSTRUCT 4' HIGH CHAIN LINK FENCE PER CALTRANS STD PLAN A85
9. CONSTRUCT CABLE RAILING PER CALTRANS STD PLAN B11-47
10. CONSTRUCT GUTTER PER CALTRANS STD PLAN B3-6
11. CONSTRUCT 6" CONCRETE SLOPE W/ #4 @ 18" EA. WAY W/ 3" WEEP HOLES (10' O.C. TYP.) AND JOIN EXISTING CONCRETE SLOPE PAVING PER DETAIL ON SHEET 3
12. INSTALL ARMORFLEX W/ GEOTEXTILE UNDERLAY OR APPROVED EQUAL PER DETAIL ON SHEET 3

Parcel Line and Curve Table

Line #/Curve #	Length	Bearing/Delta	Radius	TANGENT
C1	30.64	5.85	300.00	15.33
C2	30.02	5.73	300.00	15.02
C3	29.73	5.68	300.00	14.88
C4	31.48	6.01	300.00	15.76
L1	73.89			
L2	333.14			
L3	79.46			

0 40 Feet

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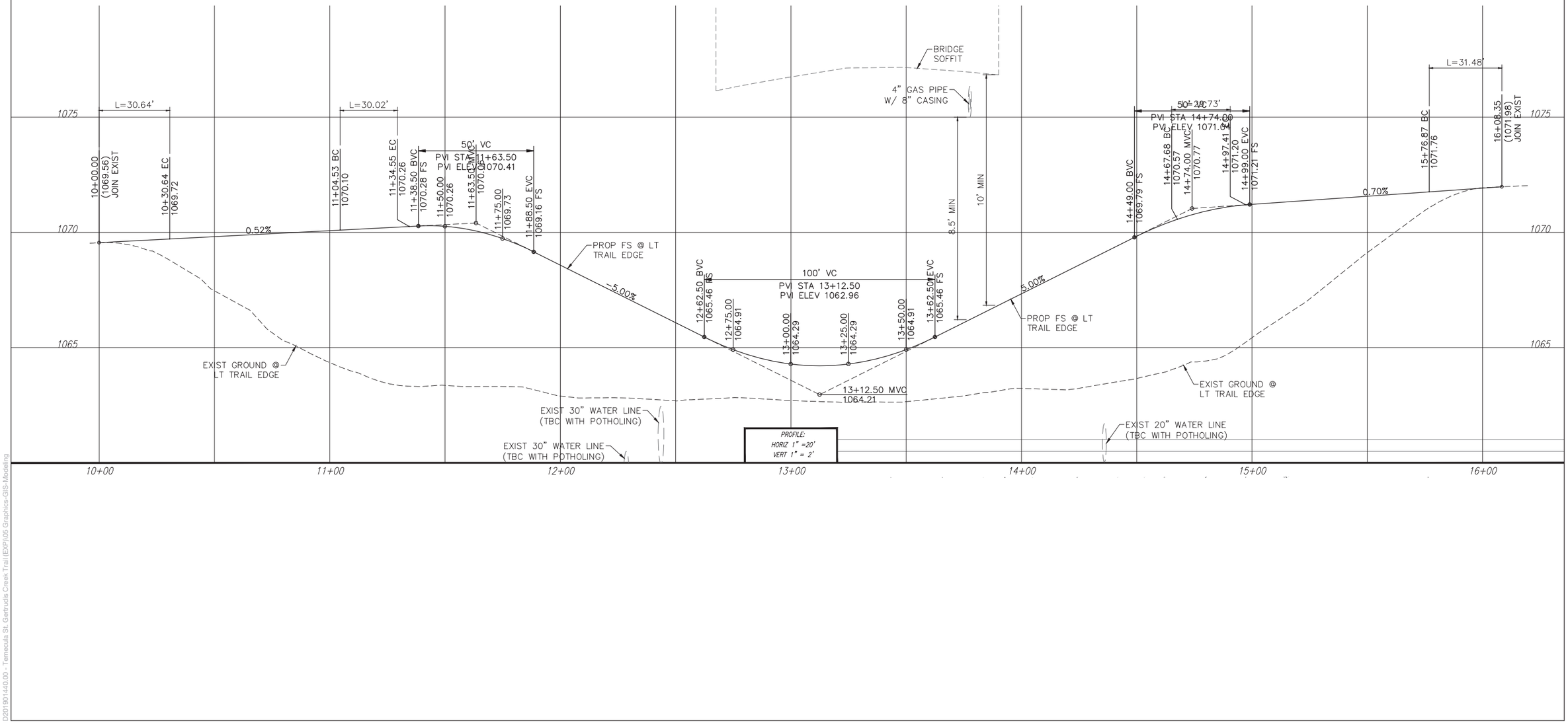
SOURCE: City of Temecula Department of Public Works, 2021

Santa Gertrudis Creek Trail Phase II Undercrossing at Margarita Road

Figure 3
Trail Improvement Plan

ESA



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SOURCE: City of Temecula Department of Public Works, 2021

Santa Gertrudis Creek Trail Phase II Undercrossing at Margarita Road

Figure 4
Trail Improvement Profile

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The proposed trail undercrossing will measure 610 feet long and 12 feet wide, and will be paved on compacted soil beneath Margarita Road, directly to the north of the existing overcrossing. A retaining wall would be constructed where the proposed shared-use path would encroach into the cut slopes of Santa Gertrudis Creek along the northern length of the existing SGCT. The proposed retaining wall would measure approximately 6 to 10 feet in height and would incorporate drainage V-ditches outside of the Margarita Road bridge. The existing pier wall near the Santa Gertrudis Creek and Flood Control facilities and posts beneath the Margarita Road overpass would be protected in place.

The existing channel wall slope paving would be removed and reconstructed. As part of this process, articulated concrete blocks that currently extend into the bed of the creek, from the toe of the existing retaining wall, will be replaced with a comparable material that will improve the stability of the new infrastructure; this replacement will result in the removal of a minimal quantity of vegetation present within the channel; however, the new material will allow for this vegetation to regrow and persist following Project completion. In addition, a tieback wall would be constructed to prevent erosion of the existing slopes, along the southern length of the proposed shared-use path.

The Project would include the installation of a 4-foot high, chain-link fence and a Type 5 retaining wall in accordance with Caltrans Standard Plans (B3-1) along the north side of the proposed undercrossing. The retaining wall would serve as a barrier between the proposed shared-use path and the existing Santa Gertrudis Creek edge due to the close proximity of the two facilities.

Other Improvements

Bike path signage would be installed throughout the Project Site to educate users of the SGCT on current laws and user responsibility. In addition, landscaping and slope improvements would be needed along the proposed shared-use path. It should be noted that the Project does not include any installation of trail lighting.

Construction and Operational Maintenance

Construction of the Project is estimated to occur over six (6) months, starting in late 2022. Sub-phases of construction would include clearing of existing vegetation, demolition of the existing SGCT and other concrete improvements within the Project Site, site excavation, grading, utility construction, concrete pathway construction, and signing and striping installations, as shown on **Table 1**. Grading of the Project Site would require approximately 264.85 cubic yards (CY) of cut materials and 440.57 CY of fill materials, for a net of 175.72 CY of materials to be imported.

Once construction is completed, routine maintenance (including mowing and disking) of the Santa Gertrudis Creek would be performed by the Riverside County Flood Control District (RCFCD), as necessary.

TABLE 1
CONSTRUCTION PHASING

Phase	Approximate Timeline	Description
Phase 1	1 month	Demolition and Site Preparation
Phase 2	4 months	Construction of Retaining Walls and Concrete Pathway
Phase 3	1 month	Installation of final striping, signs and landscaping.

9. Surrounding Land Uses and Setting.

The Project Site is located in an urbanized area, which is predominately surrounded by commercial land uses to the south, residential uses to the north and east, and industrial uses to the west. The Site is directly south of Santa Gertrudis Creek, and adjacent and extending to the Santa Gertrudis Creek Trail. Regional access to the Project Site is provided via Interstate (I) I-15 to the east and State Route (SR) SR-79, also recognized as Winchester Road, to the south.

10. Other public agencies whose approval is required.

U.S. Army Corps of Engineers (USACE)	Clean Water Act Section 404 Nationwide Permit Nationwide Permit 42 (Recreation Facilities)
Regional Water Quality Control Board (RWQCB)	Clean Water Act Section 401 Water Quality Certification
California Department of Fish and Wildlife (CDFW)	Streambed Alteration Agreement Pursuant to Section 1600 et seq.
Riverside County Flood and Water Conservation District (RCFWCD)	Encroachment and Construction Permits for the portions constructed by TPD within RCFWCD's right-of-way

11. Have California Native American tribes traditionally and culturally affiliated with the project area requested consultation pursuant to Public Resources Code section 21080.3.1? If so, is there a plan for consultation that includes, for example, the determination of significance of impacts to tribal cultural resources, procedures regarding confidentiality, etc.?

Note: Conducting consultation early in the CEQA process allows tribal governments, lead agencies, and project proponents to discuss the level of environmental review, identify and address potential adverse impacts to tribal cultural resources, and reduce the potential for delay and conflict in the environmental review process. (See Public Resources Code section 21080.3.2.) Information may also be available from the California Native American Heritage Commission's Sacred Lands File per Public Resources Code section 5097.96 and the California Historical Resources Information System administered by the California Office of Historic Preservation. Please also note that Public Resources Code section 21082.3(c) contains provisions specific to confidentiality.

Pursuant to Assembly Bill 52, the City contacted five California Native Tribes who have previously requested in writing to be informed by the City through formal notification of proposed projects within the geographic area in which the tribe is traditionally and culturally affiliated. Of the five tribes contacted, two, including the Pechanga Band of Mission Indians and the Rincon Band of Luiseno Indians requested formal consultation. Based on the results of the consultation held with both tribal groups, no tribal cultural resources were identified within the

project area. However, the Pechanga Band of Mission Indians expressed concern that subsurface cultural materials may be encountered during project implementation. As such, mitigation in the form of archaeological and Native American monitoring was included as part of cultural resources analysis.

Environmental Factors Potentially Affected

The environmental factors checked below would be potentially affected by this Project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages.

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

DETERMINATION: (To be completed by the Lead Agency)

On the basis of this initial study:

☐ 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 by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

☐ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☐ I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Signature _____ Date _____

Signature _____ Date _____

Environmental Checklist

Aesthetics

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
I. AESTHETICS — Except as provided in Public Resources Code Section 21099, would the project:				
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 daytime or nighttime views in the area?	☐	☐	☒	☐

Discussion

a) **Less than Significant Impact.** A scenic vista is generally defined as a view of undisturbed natural lands exhibiting a unique or unusual feature that comprises an important or dominant portion of the view shed. Scenic vistas may also be represented by a particular distant view that provides visual relief from less attractive views of nearby features. Other designated federal and State lands, as well as local open space or recreational areas, may also offer scenic vistas if they represent a valued aesthetic view within the surrounding landscape of nearby features.

Temecula's natural setting offers a variety of scenic vistas and viewsheds. The City of Temecula General Plan Community Design Element designates the southern, eastern, and western rolling hills surrounding the City, as well as Murrieta and Temecula Creeks, as significant natural features, and indicates that public views of these features should be protected and enhanced (City of Temecula 2005). The General Plan explains that all public or private development projects are subject to City review to ensure that they will not obstruct public views of scenic resources, and projects may be subject to redesign or height limitations if it is determined that development would block public views (City of Temecula 2005).

The Project Site is located near existing residential development, commercial uses, and is adjacent to open space consisting of the Santa Gertrudis Creek. The Project Site includes views of rolling distant hills to the west and south. Views of these hills are partially obscured in various locations because of the slope/grade of the existing terrain, existing commercial and industrial development, and ornamental landscaping. Murrieta and Temecula Creeks are located approximately four miles south of the Project Site, and

therefore the Project would not obstruct any views to these features. Construction of the Project would not block views surrounding the Project because the Project would be primarily constructed below the existing roadway grade beneath the undercrossing of Margarita Road. Any work above-grade would be temporary and limited to construction of retaining and tieback walls, resurfacing of the trail, and placement of fencing. All construction equipment would be removed from view once construction of above-grade work is complete, and therefore, any impacts to views during construction would be temporary. Operation of the Project would not have the potential to adversely impact views of the hillsides because the proposed trail components would be relatively flat and would not have the height or bulk to block area views. Therefore, the Project would not create a substantial adverse impact to a scenic vista and impacts are considered to be less than significant.

b) **No Impact.** According to the California Department of Transportation (Caltrans), the Project Site is not located within or near an officially designated state scenic highway. The nearest eligible scenic highway is I-15, which is located approximately 0.8 miles west of the Project Site. Views of I-15 are not afforded from the Project Site because views are blocked by existing development along Temecula Parkway and the topography of the land between the Project Site and I-15. Due to the absence of designated scenic highways in the vicinity of the Project Site, no impact would occur related to scenic resources within a state scenic highway.

c) **Less than Significant Impact.** The Community Design Element of the Temecula General Plan addresses physical aspects of the City that contribute to the image and character of natural and built environments (City of Temecula 2005). The Project Site is designated as Open Space and is located along a Major Arterial Roadway, near a Focal Intersection, which serves as a unifying design element (City of Temecula 2005).

Short-term visual impacts associated with Project construction activities would occur due to the presence of construction equipment and heavy-duty vehicles, materials and debris piles, and general construction activities; however, these impacts would be temporary and limited to the short-term construction duration of the Project, anticipated to be approximately 6 months.

Once construction of the Project is completed, the Project Site would involve revegetation along the sloped areas and portions of the Project Site that pavement was demolished. Furthermore, the Project would include the removal of the existing SGCT ramps, which connect to the Class II bicycle lanes along either side of Margarita Road, resulting in the elimination of two large area of concrete from the existing visual setting of the Project Site. In its place, would be relocated underground utilities, landscaping, and other visual improvements. Within the parameters of the undercrossing, limited permanent visual changes associated with concrete improvements, concrete pathway construction, utility construction, and signing and striping installations would occur. Implementation of the Project would not impact the visual character of the Project Site or surrounding area because the height and bulk of the materials are considered to be

minimal and the SGCT undercrossing would not be visible from any public roadways. Project implementation would not conflict with zoning or other applicable regulations governing scenic quality. Thus, impacts are considered less than significant.

d) **Less than Significant Impact.** Temporary glare from construction activities (including construction equipment and related materials) is possible. However, due to the location, nature of the Project and the short-term construction duration, it is anticipated that no new substantial sources of light or glare would result from the Project. Construction would occur during daylight hours in accordance with the City of Temecula Municipal Code (City of Temecula 2021). The Project does not propose any nighttime construction activities that would require the use of nighttime lighting. As such, substantial impacts related to light or glare are not anticipated during Project construction.

Operation of the Project would not include any construction of new/replaced trail or street lighting. The light sources proposed with the Project are not considered substantial and would be similar to the existing light sources along Margarita Road, and would be designed to minimize light spillage from the right-of-way to the adjacent properties. As such, the Project would not result in a new source of substantial light or glare and impacts would be less than significant.

References

California Department of Transportation (Caltrans). 2021. California State Scenic Highway System Map. Available https://caltrans.maps.arcgis.com/apps/webappviewer/index.html?id=2e921695c43643b1aaf7000dfcc19983, accessed February 1, 2021.

City of Temecula. 2005. General Plan – Community Design Element. Adopted 1993, updated 2005. Available at https://temeculaca.gov/DocumentCenter/View/279/Community-Design-PDF?bidId=, accessed February 1, 2021.

City of Temecula. 2021. Temecula Municipal Code Section 18.12.260 Time of Operations within public rights-of-way. Available at http://www.qcode.us/codes/temecula/, accessed February 1, 2021.

County of Riverside. 1988. Ordinance No. 655 – An Ordinance of the County of Riverside Regulating Light Pollution. Adopted June 7, 1988. Effective July 7, 1988. Available https://www.rivcocob.org/ords/600/655.htm, accessed February 1, 2021.

Agriculture and Forestry Resources

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
II. 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:				
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 section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	☐	☐	☐	☒
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☐	☒

Discussion

a) **No Impact.** According to the California Department of Conservation Farmland Mapping and Monitoring Program (FMMP), the Project Site is not located in an area identified as Prime Farmland, Farmland of Statewide Importance, or Farmland of Local Importance (DOC 2021a). As indicated in the Important Farmland Map for Western Riverside County, the Project Site and surrounding areas are designated as Urban and Built-Up Land and does not contain any existing agricultural resources (DOC 2021b). Therefore, the Project would not convert farmland to non-agricultural use. No impact would occur.

b) **No Impact.** As discussed above in Response II(a), the Project Site is classified as Urban and Built-Up land and does not contain any existing agricultural resources (DOC 2021b). Furthermore, the Project Site is designated as Open Space in the City's General Plan, which accommodates both public and private areas of permanent open space for such uses including parks, golf courses, recreation facilities, natural open spaces, recreation trails, greenbelts, lakes, utility easements, active fault zones, and undevelopable portions along floodplains along waterways (City of Temecula 2005). Furthermore, there are no Williamson Act or agriculturally zoned properties adjacent or near the Project Site. The majority of remaining agricultural land in the City is located in

the southern and eastern portions of the City's Planning Area (City of Temecula 2005). As such, no impact would occur.

c, d) **No Impact.** According to the CDFW, the Project Site does not contain any private timberlands or public lands with forests (CDFW 2015). The Project Site is located within an urban area and does not contain any trees. As discussed above, the Project Site is zoned as Open Space Conservation (OS-C), and does not permit timber harvesting activities (City of Temecula 2005). As such, the Project would not result in the loss of forests or forest land or conflict with any existing zoning for timberland or forestland. No impact would occur.

e) **No Impact.** As discussed in Responses II(a) and II(b), the Project Site does not contain any agricultural land, including farmland, which would be converted to non-agricultural use as a result of the Project. The Project Site is located in an urban area and no adjacent properties contain farmland. Consequently, the Project not result in the permanent loss of farmland. No impact would occur.

References

California Department of Conservation (DOC). 2021a. California Important Farmland Finder. Available at https://maps.conservation.ca.gov/DLRP/CIFF/, accessed February 1, 2021.

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California Department of Fish and Wildlife (CDFW). 2015. California Forests and Timberlands. Available at https://wildlife.ca.gov/conservation/timber, accessed February 1, 2021.

City of Temecula. 2005. General Plan – Land Use Element, Open Space and Conservation Element. Adopted 1993, updated 2005. Available https://temeculaca.gov/345/General-Plan, accessed February 1, 2021.

Air Quality

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
III. 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:				
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) adversely affecting a substantial number of people?	☐	☐	☒	☐

Discussion

a) **Less than Significant Impact.** The Project Site is located within the South Coast Air Basin (Basin). Air quality planning for the Basin is under the jurisdiction of the South Coast Air Quality Management District (SCAQMD). The Project would be subject to the SCAQMD's Air Quality Management Plan (AQMP), which contains a comprehensive list of pollution control strategies directed at reducing emissions and achieving ambient air quality standards. These strategies are developed, in part, based on regional population, housing, and employment projections prepared by the Southern California Association of Governments (SCAG).

The 2016 AQMP was prepared to accommodate growth, reduce the high levels of pollutants within the areas under the jurisdiction of SCAQMD, return clean air to the region, and minimize the impact on the economy (SCAQMD 2016). Projects that are consistent with the assumptions used in the AQMP do not interfere with attainment because the growth is included in the projections utilized in the formulation of the AQMP. Thus, projects, uses, and activities that are consistent with the applicable growth projections and control strategies used in the development of the AQMP would not jeopardize attainment of the air quality levels identified in the AQMP, even if it would individually exceed the SCAQMD's numeric indicators.

Construction

Construction activities associated with the Proposed Project have the potential to generate temporary criteria pollutant emissions through the use of heavy-duty construction equipment and through vehicle trips generated from worker trips, vendor and haul trucks traveling to and from the Project Site. In addition, fugitive dust emissions would result from site preparation, grading, and drainage/utilities installation. Construction emissions can vary substantially from day to day, depending on the level of activity, the specific

type of construction activity, and prevailing weather conditions. The assessment of construction air quality impacts considers each of these potential sources.

Under this criterion, the SCAQMD recommends that lead agencies demonstrate that a project would not directly obstruct implementation of an applicable air quality plan and that a project be consistent with the assumptions (typically land-use related) upon which the air quality plan is based. The Project would result in an increase in short-term employment compared to existing conditions. Being relatively small in number and temporary in nature, the number of construction jobs required for the Project would not conflict with the long-term employment projections upon which the AQMP is based. Control strategies in the AQMP, potentially applicable to control temporary emissions from construction activities, include ONRD-04 and OFFRD-01,[1] which are intended to reduce emissions from on-road and off-road heavy-duty vehicles and equipment by accelerating the replacement of older, emissions-prone engines with newer engines that meet more stringent emission standards. Descriptions of measures ONRD-04 and OFFRD-01 are provided below:

ONRD-04 – Accelerated Retirement of Older On-Road Heavy-Duty Vehicles: This measure seeks to replace up to 1,000 heavy-duty vehicles per year with newer or new vehicles that at a minimum, meet the 2010 on-road heavy-duty NO_X exhaust emissions standard of 0.2 grams per brake horsepower-hour (g/bhp-hr).

OFFRD-01 – Extension of the Soon Provision for Construction/Industrial Equipment: This measure continues the Surplus Off-Road Option for NO_X (SOON) provision of the statewide In-Use Off-Road Fleet Vehicle Regulation beyond 2014 through the 2023 timeframe.

As described in sections below, this Project would have less than significant construction emissions of criteria pollutants. Therefore, the Project would be consistent with the AQMP. Additionally, the Project would comply with California Air Resources Board (CARB) requirements to minimize short-term emissions from on-road and off-road diesel equipment. The Project would also comply with SCAQMD regulations for controlling fugitive dust pursuant to SCAQMD Rule 403, for example, apply water spray/mists or similar suppressant (e.g., SoilSeal) at least 3 times per day on active areas of disturbance and unpaved roads, and limit truck speed to 15 miles per hour or less on unpaved roads to minimize dust on unpaved roads at the construction site.

Compliance with these requirements is consistent with and meets or exceeds the AQMP requirements for control strategies intended to reduce emissions from construction

[1] AQMP measure ONRD-04 applies to on-road mobile sources and is the accelerated retirement of older on-road heavy-duty vehicles to reduce emissions of NO_X and particulate matter. AQMP measure OFFRD-01 applies to off-road mobile sources and is the extension of the Surplus Off-Road Opt-In for NO_X (SOON) provision for construction/industrial equipment to encourage the accelerated retirement of older off-road heavy-duty equipment to reduce emissions of NO_X. http://www.aqmd.gov/docs/default-source/clean-air-plans/air-quality-management-plans/2012-air-quality-management-plan/final-2012-aqmp-(february-2013)/chapter-4-final-2012.pdf, accessed February 2021.

equipment and activities. Because the Project would not conflict with the control strategies intended to reduce emissions from construction equipment, the Project would not conflict with or obstruct implementation of the AQMP. Impacts would be less than significant.

Operation

The Project consists of demolishing the existing overcrossing of the SGCT and construction of the proposed shared-use path and infrastructure under Margarita Road along the Santa Gertrudis Creek. Operation of the Project would not generate emissions as it would not accommodate or result in added trips from motor vehicles and would not result in the generation of new housing or employment. Overall, the Project would not conflict with the growth projects identified in the AQMP and would not conflict with or obstruct implementation of the AQMP's or any of the City's strategies and polices intended to reduce criteria pollutant emissions. Therefore, impacts would be less than significant.

The Project Site is located within the SCAB, which is characterized by relatively poor air quality. State and federal air quality standards are often exceeded in many parts of the Basin. The Project would contribute to local and regional air pollutant emissions during construction (short-term or temporary). However, based on the following analysis, construction of the Project would result in less than significant impacts relative to the daily significance thresholds for criteria air pollutant emissions established by the SCAQMD for construction.

Construction Impacts

Based on criteria set forth in the SCAQMD CEQA Air Quality Handbook (SCAQMD, 1993), a project would have the potential to violate an air quality standard or contribute substantially to an existing violation and result in a significant impact with regard to construction emissions if regional emissions from both direct and indirect sources would exceed any of the following SCAQMD prescribed threshold levels: (1) 75 pounds a day for volatile organic compounds (VOCs), (2) 100 pounds per day for (NO_X, (3) 550 pounds per day for carbon monoxide (CO), (4) 150 pounds per day for sulfur oxides (SO_X), (5) 150 pounds per day for respirable particulate matter (PM10), and (6) 55 pounds per day for fine particulate matter (PM2.5).

Daily regional emissions during construction are forecasted by assuming a conservative estimate of construction activities (i.e., assuming all construction occurs at the earliest feasible date) and applying the mobile source and fugitive dust emissions factors. The emissions have been estimated using the CalEEMod software (version 2016.3.2), an emissions inventory software program recommended by the SCAQMD, and the CARB on-road vehicle EMFAC2017 model. CalEEMod is based on outputs from OFFROAD and EMFAC, which are emissions estimation models developed by CARB and used to calculate emissions from construction activities, including on- and off-road vehicles. On-road emissions have been calculated outside of CalEEMod using the most recent version of EMFAC (2017). Model default construction equipment inputs were utilized. Input

values were adjusted to be project-specific based on the construction schedule and the amount of soil import and concrete required. These values were then applied to the construction phasing assumptions used in the criteria pollutant analysis to generate criteria pollutant emissions values for each construction activity. This emissions analysis for all construction activities includes compliance with mandatory SCAQMD Rule 403 measures regarding the control of fugitive dust.

Construction of the Project is tentatively scheduled to begin October 2022 and occur over six months. Construction duration by phase is provided in **Table 2**. The duration of construction activity and associated equipment represents a reasonable approximation of the expected construction fleet as required per CEQA guidelines. Site specific construction fleet may vary due to specific Project needs at the time of construction. The duration of construction activity and associated construction equipment was estimated based on consultation with the Project Applicant.

TABLE 2
ESTIMATED CONSTRUCTION SCHEDULE

Activity	Estimated Duration (Work Days)
Demolition	15
Grading	10
Trail and Retaining Wall Construction	90
Striping	20

SOURCE: ESA 2021

The maximum daily regional emissions from these activities are estimated by construction phase and compared to the SCAQMD significance thresholds. Maximum daily emissions are calculated for each criteria pollutant. As shown in **Table 3**, emissions resulting from Project construction would not exceed any criteria pollutant thresholds established by the SCAQMD. Therefore, impacts would be considered less than significant. No mitigation is required.

Operational Impacts

Operation of the Project would not generate emissions as it would not accommodate or result in added trips from motor vehicles. Therefore, Project operations would be less than significant. No mitigation is required.

TABLE 3
MAXIMUM REGIONAL CONSTRUCTION EMISSIONS – WITHOUT MITIGATION (POUNDS PER DAY)

Source	VOC	NO_X	CO	SO_2	PM10[a]	PM2.5[a]
Demolition	0.9	8.3	8.3	<1	0.9	0.5
Grading	0.9	8.5	8.3	<1	0.9	0.6
Trail and Retaining Wall Construction	0.8	8.5	8.0	<1	0.6	0.5
Striping	0.3	1.4	2.1	<1	0.2	0.1
Maximum Daily Emissions	**0.9**	**8.5**	**8.3**	**<1**	**0.9**	**0.6**
SCAQMD Regional Significance Thresholds[b]	**75**	**100**	**550**	**150**	**150**	**55**
Exceeds Threshold?	No	No	No	No	No	No

NOTES:
Totals may not add up exactly due to rounding in the modeling calculations. Detailed emissions calculations are provided in Appendix A.

[a] Emissions include fugitive dust control measures consistent with SCAQMD Rule 403.

SOURCE: ESA 2021

b) **Less than Significant Impact.** The Project would result in the emission of criteria pollutants both during construction and operation for which the Project area is in non-attainment. A significant impact may occur if a project would add a cumulatively considerable contribution of a federal or state non-attainment pollutant. The Basin is currently in non-attainment for ozone, PM10, and PM2.5 (SCAQMD 2016b).

The SCAQMD's approach for assessing cumulative impacts related to operations is based on attainment of ambient air quality standards in accordance with the requirements of the Federal and State Clean Air Acts. As discussed earlier, the SCAQMD has developed a comprehensive plan, the 2016 AQMP, which addresses the region's cumulative air quality condition.

A significant impact may occur if a project were to add a cumulatively considerable contribution of a federal or state non-attainment pollutant. The Basin is currently in non-attainment for ozone (federal and state standards), PM10 (state standards only) and PM2.5 (federal and state standards); therefore, related projects could cause ambient concentrations to exceed an air quality standard or contribute to an existing or projected air quality exceedance. Cumulative impacts to air quality are evaluated under two sets of thresholds for CEQA and SCAQMD.

In particular, CEQA Guidelines Section 15064(h)(3) provides guidance in determining the significance of cumulative impacts. Specifically, Section 15064(h)(3) states in part that:

> *"A lead agency may determine that a project's incremental contribution to a cumulative effect is not cumulatively considerable if the project will comply with the requirements in a previously approved plan or mitigation program which provides specific requirements that will avoid or substantially lessen the cumulative problem (e.g., water quality control plan, air quality*

plan, integrated waste management plan) within the geographic area in which the project is located. Such plans or programs must be specified in law or adopted by the public agency with jurisdiction over the affected resources through a public review process to implement, interpret, or make specific the law enforced or administered by the public agency …"

For purposes of the cumulative air quality analysis with respect to CEQA Guidelines Section 15064(h)(3), the Project's incremental contribution to cumulative air quality impacts is determined based on compliance with the SCAQMD adopted 2016 AQMP. As discussed previously under Response III(a), the Project would be consistent with the 2016 AQMP and would not have a cumulatively considerable air quality impact. The SCAG Regional Transportation Plan/Sustainable Communities Strategies (RTP/SCS) projects that employment in Riverside County would increase from 849,000 in 2020 to 1,112,000 in 2035, an increase of 263,000 jobs. Although the Project's employment would increase temporarily during construction compared to existing conditions, the Project would generate up to 10 jobs during each phase of construction. This temporary growth in employment would account for 0.00004 percent of the projected increase in employment and would be well within the employment projections for the County of Riverside.

As the Project is not part of an ongoing regulatory program, the SCAQMD also recommends that project-specific air quality impacts be used to determine the potential cumulative impacts to regional air quality. As discussed above under Response III(a), peak daily emissions of construction and operation-related pollutants would not exceed SCAQMD regional significance thresholds. By applying SCAQMD's cumulative air quality impact methodology, even though implementation of the Project would result in an addition of criteria pollutants, in conjunction with related projects in the region, cumulatively significant impacts would not occur. In addition, as discussed in Response III(c) below, construction of the Project is not expected to result in a cumulatively considerable net increase of any criteria pollutant for which the SCAQMD has established a localized impact threshold. Therefore, the emissions of non-attainment pollutants and precursors generated by the Project would be less than significant and would not result in a cumulatively considerable air quality impact. No mitigation is required.

c) **Less than Significant Impact.** Certain population groups are especially sensitive to air pollution and should be given special consideration when evaluating potential air quality impacts. These population groups include children, the elderly, persons with pre-existing respiratory or cardiovascular illness, and athletes and others who engage in frequent exercise. As defined in the SCAQMD CEQA Air Quality Handbook, a sensitive receptor to air quality is defined as any of the following land use categories: (1) long-term health care facilities; (2) rehabilitation centers; (3) convalescent centers; (4) retirement homes; (5) residences; (6) schools; (7) parks and playgrounds; (8) child care centers; and (9) athletic fields. Sensitive receptors within a quarter-mile radius of the Project Site include residential land uses to the west and east and Chaparral High School, which is 0.23 miles northeast of the Project Site.

The localized air quality analysis was conducted using the methodology described in the SCAQMD *Localized Significance Threshold Methodology* (June 2003, revised July 2008), which relies on on-site mass emission rate screening tables and project-specific dispersion modeling typically for sites greater than five acres, as appropriate (SCAQMD, 2008). The localized significance thresholds are applicable to NO_X, CO, PM_{10}, and $PM_{2.5}$. For NO_X and CO, the thresholds are based on the ambient air quality standards. For PM_{10} and $PM_{2.5}$, the thresholds are based on requirements in SCAQMD Rule 403 (Fugitive Dust) for construction and Rule 1303 (New Source Review Requirements) for operations. The SCAQMD has established screening criteria that can be used to determine the maximum allowable daily emissions that would satisfy the localized significance thresholds and therefore not cause or contribute to an exceedance of the applicable ambient air quality standards without project-specific dispersion modeling. The screening criteria depend on: (1) the area in which the project is located, (2) the size of the project area, and (3) the distance between the project area and the nearest sensitive receptor.

SCAQMD's Methodology clearly states that "off-site mobile emissions from the Project should not be included in the emissions compared to localized significance thresholds (LSTs)." Therefore, for purposes of the LST analysis, only emissions included in the CalEEMod "on-site" emissions outputs were considered, plus the truck idling emissions (e.g., haul trucks and vendor trucks) that were calculated separately using the EMFAC emission factors for heavy-heavy-duty (HHD) vehicles. The closest existing sensitive receptors to the Project are located to the west of the existing SGCT. The localized significance threshold used for the localized significance impact analysis were based on a one-acre site in the Temecula Valley Source-Receptor Area with sensitive receptors located adjacent to the Project Site (i.e., 25 meters).

Construction Emissions

Table 4 identifies the localized impacts at the nearest receptor location in the vicinity of the Project Site without mitigation. The localized emissions during construction activity would not exceed SCAQMD's localized significance thresholds. Therefore, impacts would be less than significant. No mitigation is required.

Operational Emissions

According to SCAQMD LST methodology, LSTs would apply to the operational phase of a proposed project if the project includes stationary sources or attracts mobile sources that may queue and idle at the site (e.g., warehouse or transfer facilities). With regard to on-site sources of emissions, the Project would not generate emissions resulting from sources such as natural combustion (on-site natural gas consumption for heating, such as natural gas combustion in broilers and water heaters). Therefore, impacts would be less than significant. No mitigation is required.

TABLE 4
MAXIMUM LOCALIZED CONSTRUCTION EMISSIONS – WITHOUT MITIGATION (POUNDS PER DAY)

Source	NO_x	CO	PM10[a]	PM2.5[a]
Demolition	7.3	7.6	0.7	0.4
Grading	7.4	7.7	0.7	0.6
Trail and Retaining Wall Construction	8.2	7.4	0.4	0.4
Striping	1.4	1.8	0.1	0.1
Maximum Daily Emissions	**8.2**	**7.7**	**0.7**	**0.6**
SCAQMD Localized Significance Thresholds[b]	**162**	**750**	**4**	**3**
Exceeds Threshold?	No	No	No	No

NOTES:

Totals may not add up exactly due to rounding in the modeling calculations. Detailed emissions calculations are provided in Appendix A.

[a] Emissions include fugitive dust control measures consistent with SCAQMD Rule 403.

[b] Localized Significance Thresholds (LST) were for a 1-acre project site with a 25-meter receptor distance.

SOURCE: ESA 2020

Carbon Monoxide Hotspot

A carbon monoxide (CO) hotspot is an area of localized CO pollution that is caused by severe vehicle congestion on major roadways, typically near intersections. Projects may worsen air quality if they increase the percentage of vehicles in cold start modes by two percent or more; significantly increase traffic volumes (by five percent or more) over existing volumes; or worsen traffic flow, defined for signalized intersections as increasing average delay at intersections operating at Level of Service (LOS) E or F or causing an intersection that would operate at LOS D or better without the Proposed Project, to operate at LOS E or F.

CO decreased dramatically in the Basin with the introduction of the automobile catalytic converter in 1975. No exceedances of CO have been recorded at monitoring stations in the Basin in recent years and the Basin is currently designated as a CO attainment area for both the California Ambient Air Quality Standards (CAAQS) and National Ambient Air Quality Standards (NAAQS). As discussed below, it is not expected that CO levels at project-impacted intersections would rise to such a degree as to cause an exceedance of these standards.

Construction

While construction-related traffic on the local roadways would increase the existing daily traffic volumes on local roadways, construction vehicle trips, would be limited to a maximum of 10 workers and 4 trucks per day. As discussed in Response XVII, Transportation, any delays due to construction trips would be temporary and not considered to be significant and would therefore not result in CO hotspots. Additionally, construction-related vehicle trips would only occur in the short-term and would cease once construction activities have been completed. Therefore, impacts related to CO

hotspots during Project construction would be less than significant. No mitigation is required.

Operation

Operation of the Project would not generate emissions as it would not accommodate or result in added trips from motor vehicles. Therefore, impacts related to CO hotspots during Project operation would be less than significant. No mitigation is required.

Toxic Air Contaminants

Concentrations of toxic air contaminants (TACs), or in federal parlance, hazardous air pollutants (HAPs), are also used as indicators of ambient air quality conditions. A TAC is defined as an air pollutant that may cause or contribute to an increase in mortality or in serious illness, or that may pose a hazard to human health. TACs are usually present in minute quantities in the ambient air; however, their high toxicity or health risk may pose a threat to public health even at low concentrations.

Sensitive receptors are located adjacent to the Project Site. SCAQMD recommends that construction health risk assessments be conducted for substantial sources of diesel particulate matter (DPM) emissions (e.g., earth-moving construction activities) in proximity to sensitive receptors and has provided guidance for analyzing mobile source diesel emissions. However, localized DPM emissions (strongly correlated with $PM_{2.5}$ emissions) are less than significant (as shown in Table 4, above). Although the localized analysis does not directly measure health risk impacts, it does provide data that can be used to evaluate the potential to cause health risk impacts. The low level of $PM_{2.5}$ emissions coupled with the short-term duration of construction activity resulted in an overall low level of DPM concentrations in the vicinity of the Project Site. Furthermore, compliance with the CARB Airborne Toxic Control Measures (TACM) anti-idling measure, which limits idling to no more than five minutes at any location for diesel-fueled commercial vehicles, further minimized DPM emissions in the vicinity of the Project Site. Sensitive receptors would be exposed to emissions below thresholds, and construction TAC impacts are less than significant.

SCAQMD recommends that operational health risk assessments be conducted for substantial sources of DPM emissions (e.g., truck stops and warehouse distribution facilities) in proximity to sensitive receptors and has provided guidance for analyzing mobile source diesel emissions. The Project would not generate truck trips. Therefore, based on the limited activity of TAC sources and TAC concentrations at off-site sensitive receptors, the Project would not warrant the need for a health risk assessment associated with on-site operational activities. Impacts related to TACs would be less than significant.

d) **Less than Significant Impact.** Potential activities that may emit odors during construction activities include the use of architectural coatings and solvents and the combustion of diesel fuel in on- and off-road equipment. SCAQMD Rule 1113 would limit the amount of VOCs in architectural coatings and solvents. In addition, the Project

would comply with the applicable provisions of the CARB Air Toxics Control Measure regarding idling limitations for diesel trucks. Furthermore, construction odor emissions would be temporary, short-term, and intermittent in nature and would cease upon completion of construction. Through adherence with mandatory compliance with SCAQMD Rules, no construction activities or materials are expected to create objectionable odors affecting a substantial number of people. Therefore, construction of the Project would result in less than significant impacts. No mitigation is required.

The Project consists of demolishing the existing overcrossing of the SGCT and construction of the proposed shared-use path and infrastructure under Margarita Road along the Santa Gertrudis Creek. Operation of the Project would not create objectionable odors. Impacts would be less than significant.

References

South Coast Air Quality Management District (SCAQMD). 2003, revised 2008. Localized Significance Thresholds. http://www.aqmd.gov/home/regulations/ceqa/air-quality-analysishandbook/localized-significance-thresholds, accessed October 2020.

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Biological Resources

Issues (and Supporting Information Sources):		*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
IV.	**BIOLOGICAL RESOURCES —** Would the project:				
a)	Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☒	☐	☐
b)	Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☒	☐	☐
c)	Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☒	☐	☐
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 the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☒	☐	☐

Discussion

A site reconnaissance was conducted in January of 2021, the results of which were compiled in a Biological Technical Report (BTR) (ESA 2021a) and an Aquatic Resources Delineation Report (ARDR) (ESA 2021b). The information included in this section is derived from the BTR (see Appendix B) and ARDR (see Appendix C). For the purposes of this section, the Survey Area will refer to the Project Site and a surrounding 500-foot buffer.

a) **Less than Significant Impact with Mitigation Incorporated.** The California Natural Diversity Database (CNDDB) and California Native Plant Society (CNPS) Online Inventory were queried for reported locations of special-status plant and wildlife species in the U.S. Geological Survey (USGS) Bachelor Mtn., Fallbrook, Lake Elsinore, Murrieta, Pechanga, Romoland, Temecula, Wildomar and Winchester, California 7.5-minute quadrangles, to determine the potential for these sensitive resources to occur within the general vicinity of the Survey Area. The USFWS Critical Habitat Portal was queried to identify whether critical habitat occurs within the vicinity of the Survey Area, as well.

Critical Habitat

The USFWS Critical Habitat Portal revealed that critical habitat does not occur within or adjacent to the Project Site; therefore, the Proposed Project is expected to have no impact on critical habitat.

Special-Status Plant Species

One special-status plant species, smooth tarplant, has a moderate to high potential to occur immediately adjacent to the Project site. However, this species is a criteria survey area plant species, as defined in Section 6.3.2 of the western Riverside County Multiple Species Habitat Conservation Plan (MSHCP), and the Project site is not situated within a criteria plant survey area. Therefore, surveys for this species are not required and the Proposed Project is expected to have no impact on special-status plant species.

Nesting Birds and Raptors

Numerous passerine and raptor species may utilize the habitats that occur within 500 feet of the Project Site to forage and breed. Activities associated with the Proposed Project may negatively affect nesting birds that are protected in accordance with the MBTA and Fish and Game Code. However, the implementation of **Mitigation Measure BIO-1** and **BIO-2** will ensure that impacts to nesting birds and raptors as a result of the Project are less than significant.

> **Mitigation Measure BIO-1: Nesting Birds and Raptors.** To avoid impacts to nesting birds, work activities within 500 feet of suitable nesting habitat shall be timed to avoid the season when nests may be active (January 15 to September 15).
>
> If work activities occur within the nesting season (generally defined as January 15 through September 15), a qualified biologist shall conduct a focused survey within 30 days of the anticipated start date, and no less than 3 days prior to ground disturbance, to identify any active nests within 500 feet of the development footprint. If an active nest is found, the nest should be avoided and a suitable buffer zone should be delineated in the field where no impacts should occur until the chicks have fledged the nest, or has otherwise been deemed inactive by a qualified biologist. Construction buffers should be 300 feet for passerines or up to 500 feet for raptors; however, avoidance buffers may be reduced at the discretion of the biologist, depending on the location of the nest and species tolerance to human presence and construction-related noises and vibrations.
>
> **Mitigation Measure BIO-2: General Minimization and Avoidance Measures.** The following measures shall be implemented to further prevent impact to sensitive wildlife during construction activities.
>
> - Prior to commencement of the Project, a Workers Environmental Awareness Program (WEAP) should be prepared and presented to construction crews. The WEAP should provide an overview of all sensitive resources that occur or may occur within the Survey Area, and the appropriate steps that should be taken, should such resources be observed during construction activities. The WEAP should concentrate

on the proper identification of sensitive resources while in the field, suggested strategies in avoiding impact to such resources, and the proper reporting methods for field crews in the event that such resources are observed during construction activities.

- Prior to the commencement of construction activities, construction personnel should check under stationary equipment to ensure no wildlife species are present.
- All project related trash should be collected daily and taken offsite for proper disposal.

Special-Status Wildlife Species

Based on the presence of suitable habitat, eight special-status wildlife species have a moderate to high potential to occur within 500 feet of the Proposed Project Site. These include the Cooper's hawk (*Accipiter cooperii*), coastal western whiptail (*Aspidoscelis tigris* ssp. *stejnegeri*), pallid bat (*Antrozous pallidus*), least Bell's vireo, yellow warbler (*Dendroica petechia* ssp. *brewsteri*), yellow-breasted chat (*Icteria virens*), Yuma myotis (*Myotis yumanensis*) and coast horned lizard (*Phrynosoma blainvillii*), which are discussed in further detail below.

Birds

Least Bell's Vireo

The least Bell's vireo is a covered species and is addressed in Section 6.1.2 of the MSHCP. If deemed present within 500 feet of the Project Site, direct impacts to occupied habitat through the temporary removal of the 0.024 acre of Goodding's willow-sandbar willow riparian woodland/forest; and/or the indirect disturbance to nesting individuals may occur as a result of the Proposed Project activities. However, with the implementation of **Mitigation Measures BIO-2** and **BIO-3**, impacts to least Bell's vireo would be less than significant.

> **Mitigation Measure BIO-3: Least Bell's Vireo**. Least Bell's vireo nesting season is from April 10 to July 31. If avoidance of work activities within this time period is not feasible, a pre-construction clearance survey for least Bell's vireo should be conducted (concurrent with the nesting bird survey described above, in Section 5.2) within suitable nesting habitat prior to initiation of work activities, to determine their presence or absence within 500 feet of proposed work limits. If the surveys do not result in the detection of the species within 500 feet of the proposed work limits, no further action is necessary. However, if:
>
> - Least Bell's vireo are detected within the Project Site during the survey, and work activities must occur during the nesting season, the removal of the 0.024 acre of Goodding's willow-sandbar willow riparian woodland forest would result in temporary impacts to occupied habitat. Such impacts are not consistent with the MSHCP provisions and avoidance measures such as postponing work activities would likely be necessary.
> - Least Bell's vireo are detected within the Survey Area, outside of the project site, and the nesting season cannot be avoided, steps should be

taken to reduce indirect effects to nesting activity by actively reducing construction noise (to no more than 3 decibels (dBA) above pre-construction ambient noise levels) within proximity to suitable habitat and/or installing temporary construction noise barriers. If the reduction of noise is not feasible, work activities should be postponed until the nest is deemed inactive and/or the breeding season has concluded.

Yellow-Breasted Chat and Yellow Warbler

There is a moderate potential for the yellow-breasted chat and yellow warbler to occur within the Survey Area, and both are covered species under the MSHCP. These two species are expected to benefit from the protection/preservation of riparian/riverine areas (i.e., least Bell's vireo habitat), they are not individually considered triggers for the implementation Section 6.1.2 of the MSHCP. The implementation of **Mitigation Measure BIO-1** and **BIO-2** would ensure that impacts to the yellow-breasted chat and yellow warbler as a result of the Project are less than significant.

Cooper's Hawk

Cooper's hawk is a covered species under the MSHCP and, assuming project activities do not result in an impact to an active nest, no further actions would be necessary. The implementation of **Mitigation Measure BIO-1** and **BIO-2** would ensure that impacts to Cooper's hawk as a result of the Project are less than significant.

Mammals

The pallid bat and the Yuma myotis may forage and roost within 500 feet of the Project Site and may be affected as a result of the proposed construction. However, with the implementation of **Mitigation Measures BIO-2** and **BIO-4**, impacts to mammals would be less than significant.

Mitigation Measure BIO-4: Bats. Prior to commencement of construction activities, within or outside of the bat maternity roosting season, a qualified biologist shall conduct a pre-construction clearance survey of suitable habitat for pallid bat and Yuma myotis, within 500 feet of the Project Site. If roosting bats are identified, the biologist will determine whether there is a day roost (non-breeding) or maternity roost (lactating females and dependent young).

- If a day roost is determined to be present, the biologist should ensure that direct mortality to roosting individuals will not occur; this may include the installation of exclusionary flagging or some other similar protective measure, for example, to prevent ingress. In general, disturbances to day roosts as a result of noise or other indirect impact is not generally considered significant, as it would not cause direct mortality of individuals and would not be expected to reduce populations to below self-sustaining levels. If removal of any trees supporting a day roost would occur, the biologist will ensure that all roosting individuals disperse from the location prior to removal of the vegetation to prevent direct mortality.

- If a maternity roost is observed, the biologist will determine whether construction activities are likely to disturb breeding activities. If it is determined that the vegetation or infrastructure supporting the roost must be removed/modified or the construction activities are expected to disturb breeding, a Bat Exclusion Plan should be prepared. At a minimum, the plan should include avoidance and minimization measures to reduce potential impacts to breeding bats during construction activities and prescribed methods to safely and humanely evict bats from the roost in order to minimize any potential impacts. Typically, avoidance measures require construction to occur outside of maternity season.

Reptiles

The coast horned lizard and coastal western whiptail may occur within 500 feet of the project site and may be affected as a result of the proposed construction; however, these two covered species are considered "adequately covered" under the MSHCP. Therefore, no further action is necessary.

b) **Less than Significant with Mitigation Incorporated.** Sensitive natural communities are defined by the California Department of Fish and Wildlife (CDFW) as those natural communities that have a reduced range and/or are imperiled as a result of residential and commercial development, agriculture, energy production, and mining, or an influx of invasive and other problematic species. Vegetation communities are evaluated using NatureServe's Heritage Methodology, which is based on the knowledge of range and distribution of a specific vegetation type and the proportion of occurrences that are of good ecological integrity. Evaluation is done at both a global (natural range within and outside of California [G]) and subnational (State level for California [S]) level, each ranked from 1 ("critically imperiled" or very rare and threatened) to 5 (demonstrably secure). Natural communities and habitats with state ranks of S1 through S3 are considered sensitive natural communities and may require review when evaluating environmental impacts.

Goodding's willow-sandbar willow riparian woodland/forest has a global and state evaluation of G4/S3 and Hardstem bulrush marsh an evaluation of GNR/S3; therefore, both are designated as sensitive natural communities. The Proposed Project would result in the temporary impact of approximately 0.024 acre of Goodding's willow-sandbar willow riparian woodland/forest and 0.038 acre of hardstem bulrush marsh (at total of 0.062 acre) during the replacement of articulated concrete blocks along the bed of Santa Gertrudis Creek. These temporary impacts could be mitigated via reseeding/supplemental planting efforts; however, because the Riverside County Flood Control and Water Conservation District conducts routine maintenance within the channel, this would likely not be feasible. Therefore, the incorporation of **Mitigation Measure BIO-5**, Preparation of a Determination of Biologically Equivalent or Superior Preservation (DBESP), would ensure that impacts to sensitive natural communities as a result of the Project, are less than significant.

Mitigation Measure BIO-5: Preparation of a DBESP. To mitigate for the temporary removal of 0.024 acre of Goodding's willow-sandbar willow riparian woodland/forest and 0.038 acre of hardstem bulrush (totaling 0.062 acre), a Determination of Biologically Equivalent or Superior Preservation (DBESP), as described in Section 6.1.2 of the Western Riverside Multiple Species Habitat Conservation Plan (MSHCP) shall be prepared. The DBESP shall include an overview of how impacts to the Goodding's willow-sandbar willow and hardstem bulrush marsh would be temporary and because reseeding/supplemental planting efforts are not feasible, would be mitigated through the purchase of credits from the Barry Jones (Skunk Hollow) Wetland Mitigation Bank.

c) **Less than Significant Impact with Mitigation Incorporated.** It is presumed that aquatic resources that fall under the jurisdiction of the United States Army Corps of Engineers (USACE), Regional Water Quality Control Board (RWQCB), and CDFW; and meet the criteria for a riparian/riverine area within the MSHCP, occur within the Proposed Project Site and would be impacted temporarily by construction activities. However, with the incorporation of **Mitigation Measure BIO-5**, the preparation of a DBESP, and the assumption that the Project Applicant would enter into the appropriate permit agreements with the USACE (CWA Section 404 permit), CDFW (Section 1602, Streambed Alteration Agreement) and RWQCB (CWA Section 401 permit), impacts to aquatic resources would be less than significant.

d) **Less than Significant Impact.** Wildlife movement corridors are pathways (i.e., habitat linkages) that connect discrete areas of natural open space otherwise separated or fragmented by topography, changes in vegetation, and other natural or human-induced factors, such as urbanization. Santa Gertrudis Creek provides suitable foraging and breeding habitat for wildlife within the Survey Area, as well as an opportunity for large-scale movement between contiguous habitat present both upstream and downstream of the Survey Area.

The installation of fencing between the proposed trail and the Santa Gertrudis Creek may prevent ingress/egress of wildlife within the Project Site; however, the large-scale movement of wildlife through the Survey Area (along Santa Gertrudis Creek), is not expected to be affected by the Proposed Project. Further, construction is expected to take place during the daytime hours, when movement throughout the Survey Area is less frequent and at a lesser scale. The impact to wildlife movement corridors as a result of the project would be less than significant.

e) **No Impact.** Pursuant to Riverside County Ordinance No. 559, "No person shall remove any living native tree on any parcel or property greater than one-half acre in size, located in an area above 5,000 feet in elevation and within the unincorporated area of the County of Riverside, without first obtaining a permit to do so, unless exempted by provisions of Section 4 of this ordinance." According to the BTR, numerous native trees (e.g., *Salix* spp.) occur within the Goodding's willow-sandbar willow riparian woodland/forest located within the Project Site. However, the elevation at the Project Site is under 2,000

feet; therefore, these native trees are not protected pursuant to Riverside County Ordinance No. 559.

As indicated by the City of Temecula Heritage Tree Ordinance Chapter 8.48 of the Municipal Code, oak (*Quercus agrifolia, Quercus dumosa, Quercus engelmannii, Quercus berberidifolia, Quercus lobata*), California bay laurel, California black walnut, California Holly, California Sycamore trees and other trees of special significance to the community are protected. However, no protected trees were identified within the Project Site. Therefore, no impact to protected trees would occur.

f) **Less than Significant Impact with Mitigation Incorporated.** The Project Site is located within the MSHCP and the City of Temecula is a plan participant; therefore, a demonstration of consistency is necessary. A portion of the Survey Area is situated within the Stephens' Kangaroo Rat Habitat Conservation Plan (SKR HCP) plan area, as well.

MSHCP Section 3.2.1 – Public/Quasi-Public Land

The Project Site is situated entirely within Public/Quasi-Public Lands (PQP Land), which includes Santa Gertrudis Creek and adjacent areas. This portion of Santa Gertrudis Creek has been heavily modified through flood control practices and currently consists of a partially earthen bed (articulated concrete blocks extend into the margins of the creek bed) that supports limited growth of riparian, marsh and miscellaneous herbaceous vegetation; and manufactured banks, on either side of the Margarita Road bridge. The Proposed Project would involve the grading and replacement of a portion of the east bank, with the proposed pedestrian/bicycle trail relocation and new retaining wall. In addition, a portion of this manufactured bank (i.e., articulated concrete blocks) that extends into the bed of the creek would be replaced with a similar, new material that would allow for vegetation to re-grow and persist, following completion of the Project.

The trail itself would function in a similar manner to the existing manufactured banks, in that the ability to convey hydrologic flows within Santa Gertrudis Creek would remain unchanged prior to and following completion of the construction. Further, the vegetation that currently exists (i.e., riparian/marsh and grass/forb vegetation) along the bed, within the articulated concrete blocks, would be allowed to re-grow naturally and would provide the same, or similar biological function that it currently does. Therefore, the Proposed Project activities are not expected to result in the loss/degradation of PQP Land or its function and would therefore result in no impact to PQP Land.

MSHCP Section 6.1.2 – Riparian/Riverine Areas, Protection of Species Associated with Riparian/Riverine Areas and Vernal Pools

Riparian/Riverine Areas

The bed and banks of Santa Gertrudis Creek meet the criteria for riparian/riverine, as defined in the MSHCP. The Proposed Project would result in a temporary direct impact to approximately 0.387 acre of riparian/riverine, 0.062 acre of which includes native riparian/riverine vegetation (Goodding's willow –sandbar willow riparian woodland

forest and hardstem bulrush marsh). As mentioned above regarding impacts to PQP Land, the resulting pedestrian/bicycle trail would continue to function in a similar manner to the existing manufactured bank and would count as in-kind replacement for this portion of the riparian/riverine impacts.

The temporary impacts to approximately 0.062 acre of native riparian/riverine vegetation, resulting from the replacement of the articulated concrete blocks and access/staging, could be mitigated via reseeding/supplemental planting; however, because the Riverside County Flood Control and Water Conservation District conducts routine maintenance within the channel, this would likely not be feasible. Therefore, the incorporation of **Mitigation Measure BIO-5**, Preparation of a DBESP, would ensure that the impacts to riparian/riverine areas as a result of the Project are less than significant.

Least Bell's vireo

This species was not observed during the biological resources assessment; however, suitable habitat for the least Bell's vireo occurs within the approximate 1.187 acre of Goodding's willow-sandbar willow riparian woodland forest present throughout the bed of Santa Gertrudis Creek. Approximately 0.024 acre of this vegetation type would be removed (temporarily) as a result of the Project. If pre-construction clearance surveys determine that the species does not occur within Survey Area, no further action, regarding least Bell's vireo, would be necessary.

If surveys result in the detection of vireo within the Survey Area, the proposed temporary removal of 0.024 acre of Goodding's willow-sandbar willow riparian woodland/forest may result in a temporary impact to occupied habitat. Because impacts would be temporary and the vegetation would be reestablished following Project completion, construction activities outside of the nesting season (April 10–July 31) would eliminate the need for additional action/compensation, regarding vireo. However, if activities must occur during the nesting season, adjacent to occupied habitat, indirect disturbance to nesting least Bell's vireo could occur. However, with the implementation of **Mitigation Measures BIO-2** and **BIO-3**, impacts to least Bell's vireo would be less than significant.

MSHCP Section 6.1.3 – Protection of Narrow Endemic Plant Species

According to the RCA MSHCP Information Map, the Survey Area is not located within a narrow endemic plant survey area; therefore, the Proposed Project activities are not expected to result in an impact to species covered under Section 6.1.3 of the MSHCP. No narrow endemic plant species were observed during the Project Site survey; therefore, the Proposed Project will result in no impact to Narrow Endemic Plant Species.

MSHCP Section 6.1.4 – Guidelines Pertaining to the Urban/Wildlands Interface

Section 6.1.4 of the MSHCP specifies that projects occurring within the urban/wildlands interface should implement appropriate storm water pollution prevention measures, prevent construction/operation noise and night lighting from entering the conservation area, prevent the spread of invasive plant species, install effective barriers to prevent trespass, and ensure that manufactured slopes do not extend into the conservation area,

wherever feasible. Each of these items are discussed in detail below. With the exception of Invasives, discussed in detail below, the Proposed Project will result in no impact to Section 6.1.4 of the MSHCP.

Drainage

The implementation of best management practices, as part of a Stormwater Pollution Prevention Plan (SWPPP) developed for the Project, would ensure that drainage and water quality on-site remains in compliance with the requirements outlined in Section 6.1.4 of the MSHCP. Further, once construction is complete, drainage within the Project Site is expected to return to pre-construction levels.

Toxics

The implementation of best management practices, as part of a SWPPP developed for the Project, would ensure that release of toxic chemicals that may affect wildlife and/or habitat/water quality would be prevented to the extent feasible, and would remain in compliance with the requirements outlined in Section 6.1.4 of the MSHCP. Further, once construction is complete, the Project is not expected to result in the release of any toxics.

Lighting

The Project would not include the installation of additional lighting; therefore, the Project would not result in lighting impacts to wildlife during or following completion of construction.

Noise

Ambient noise may increase temporarily during construction; however, once complete, the Project would not significantly alter current ambient noise levels within the Survey Area.

Invasives

The Project proposes to install landscaping within the Project Site. With the implementation of **Mitigation Measure BIO-6**, consideration of non-native plant species listed in Table 6-2 of the MSHCP, impacts associated with the Proposed Project would be less than significant.

> **Mitigation Measure BIO-6: Table 6-2, Plants that Should Be Avoided Adjacent to the MSHCP Conservation Area.** Prior to construction, Table 6-2, Plants that Should Be Avoided Adjacent to the MSHCP Conservation Area, as detailed in Section 6.1.4 of the MSHCP, shall be reviewed during the development of the landscape plan for the Project. Species identified in Table 6-2 shall be avoided and preference shall be given to locally indigenous species.

Barriers

The Project would include the installation of a 4-foot-high chain-link fence between the proposed modified pedestrian/bicycle trail and Santa Gertrudis Creek. The proposed fence is intended to prevent trespass and potential disturbance to wildlife and other

resources present within the creek. The installation of the fence would serve as a barrier between public areas and the Santa Gertrudis Creek and would ensure compliance with Section 6.1.4 of the MSHCP.

Grading/Land Development

The Project would not result in an increase to the footprint of the existing manufactured slopes, within the Project Site, nor would it result in newly graded areas. Therefore, the Project is not expected to result in a change in grading/land development as described in Section 6.1.4 of the MSHCP.

MSHCP Section 6.3.2 – Additional Survey Needs and Procedures

Burrowing Owl

The Survey Area is situated within a burrowing owl survey area, as indicated on the RCA MSHCP Information Map. As noted in Section 1.2, Methods, of the BTR (Appendix B), a burrowing owl habitat assessment was performed concurrent with the biological resources assessment survey. It was determined that while the Survey Area supports marginal foraging habitat for the species, no suitable burrows or other types of refuge (e.g., debris or rock piles) necessary to support burrowing owl nesting was observed. The Proposed Project would result in no impact to burrowing owl.

Smooth Tarplant

Suitable habitat for smooth tarplant occurs within and immediately adjacent to the Project Site, within the bed of Santa Gertrudis Creek. This is a covered species under the MSHCP. The Survey Area is not located within a criteria cell nor within a criteria plant survey area; therefore, surveys to determine presence/absence of this species are not required. In addition, this species was not observed during the Project Site survey. The Proposed Project would result in no impact to smooth tarplant.

MSHCP Section 7.4.2 – Conditionally Compatible Uses

The proposed trail connection would likely qualify as a regional trail under section 7.4.2 of the MSHCP, which would require that it not exceed 20 feet in width. The proposed width of the trail is expected to measure approximately 12 feet, and is therefore in compliance with this section of the MSHCP. The Proposed Project would result in no impact to Section 7.4.2 of the MSHCP.

MSHCP Section 7.5.3 – Construction Guidelines and Appendix C

The implementation of **Mitigation Measure BIO-7**, compliance with Section 7.5.3 of the MSHCP and Appendix C of the MSHCP, would ensure that impacts associated with the Proposed Project remain less than significant.

> **Mitigation Measure BIO-7: Section 7.5.3 and Appendix C of the MSHCP.** The City shall implement guidelines described under Section 7.5.3 and Appendix C of the MSHCP, prior to, during, and following the completion of Project activities.

Stephens' Kangaroo Rat Habitat Conservation Plan

The Survey Area north of Margarita Road extends partially into the SKR HCP plan area. However, suitable habitat for the Stephens' kangaroo rat was not identified during the site reconnaissance. Further, the Project would be exempt from payment into the SKR HCP because it involves the rehabilitation of an existing structure. The Proposed Project is expected to have no impact to resources associated with the SKR HCP.

References

ESA. 2021a. Biological Technical Report. Prepared February, 2021. Provided as Appendix B.

ESA. 2021b.Aquatic Resources Delineation Report. January, 2021. Provided as Appendix C.

Cultural Resources

Issues (and Supporting Information Sources):		*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
V.	**CULTURAL RESOURCES —** Would the project:				
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?	☐	☒	☐	☐

Discussion

The following discussion is based on *Santa Gertrudis Creek Trail Phase II Undercrossing at Margarita Road Project – Cultural Resources Assessment* (Vader, 2021), included as confidential Appendix D. The report includes a records search at the Eastern Information Center (EIC) housed at University of California, Riverside; a desktop subsurface archaeological sensitivity assessment; and a cultural resources survey of the Area of Potential Effects (APE), which includes the Project Site plus a 25-foot buffer.

a) **Less than Significant Impact with Mitigation Incorporated.** The EIC records search indicates six cultural resources have been previously recorded within a 1-mile radius of the Project Site. Of these six cultural resources, one is a prehistoric archaeological site consisting of a lithic and groundstone scatter (P-33-001730), and five are prehistoric isolates (P-33-012381, -012382, -012383, -012384, and -012385). None of these previously recorded resources are located within or immediately adjacent to the Project Site. A desktop review of geologic maps and soils data was conducted to assess the potential for subsurface archaeological deposits within the APE. The late Pleistocene to Holocene-age younger alluvial channel deposits mapped at surface in the APE are of appropriate age to contain subsurface archaeological deposits. However, given the degree of past disturbance associated with the construction of the Santa Gertrudis Creek Channel, the APE has moderate sensitivity for the presence of subsurface archaeological resources. The cultural resources survey found the Project area is largely comprised of paved surfaces and engineered slopes, and no cultural resources were identified as a result.

As a result of the archival research and cultural resources survey conducted for the Project, no cultural resources have been identified within APE. However, the likelihood for encountering subsurface archaeological deposits within the APE during Project construction is moderate. In the event that subsurface archaeological deposits are encountered during Project implementation, they may qualify as historical resources or unique archaeological resources pursant to CEQA and may subject to significant impacts. With the incorporation of **Mitigation Measures CUL-1 through CUL-4**, potential

impacts to unknown archaeological deposits that could qualify as historical resources would be reduced to less than significant.

Mitigation Measure CUL-1: Retention of a Qualified Archaeologist. Prior to the start of ground-disturbing activities, the City shall retain a qualified archaeologist meeting the Secretary of the Interior's Professional Qualifications Standards for archaeology (U.S. Department of the Interior, 2012) to carry out the following measures.

Mitigation Measure CUL-2: Sensitivity Training. Prior to the start of ground-disturbing activities, construction personnel shall be trained in the identification of cultural resources. Prior to earth moving activities, the qualified archaeologist shall conduct cultural resources sensitivity training for all construction personnel. Construction personnel shall be informed of the types of archaeological resources that may be encountered, and of the proper procedures to be enacted in the event of an inadvertent discovery of archaeological resources or human remains. The City shall ensure that construction personnel are made available for and attend the training and retain documentation demonstrating attendance.

Mitigation Measure CUL-3: Monitoring of Ground-Disturbing Activities. An archaeological monitor (working under the direction of the qualified archaeologist) shall observe all subsurface ground-disturbing activities. A Native American monitor from the Pechanga Band of Luiseño Indians shall also be present to observe subsurface ground-disturbing activities. The qualified archaeologist, in coordination with the City and Pechanga Band of Luiseño Indians, may reduce or discontinue monitoring if it is determined that the possibility of encountering buried archaeological deposits is low based on observations of soil stratigraphy or other factors. Construction monitoring shall be conducted by an archaeologist familiar with the types of archaeological resources that could be encountered within the project site. The archaeological monitor and Native American monitor, in coordination with the construction manager or resident engineer, shall be empowered to request the halting or redirecting of ground-disturbing activities away from the vicinity of a discovery until the qualified archaeologist has evaluated the discovery and determined appropriate treatment. The archaeological monitor shall keep daily logs detailing the types of activities and soils observed, and any discoveries. After monitoring has been completed, the qualified archaeologist shall prepare a monitoring report that details the results of monitoring. The report shall be submitted to the City, as well as the Pechanga Band of Luiseño Indians upon request. A copy of the final report shall be filed at the Eastern Information Center

Mitigation Measure CUL-4: Inadvertent Archaeological Find. If during ground disturbance activities, unique cultural resources are discovered that were not assessed by the archaeological report(s) and/or environmental assessment conducted prior to project approval, the following procedures shall be followed. Unique cultural resources are defined, for this condition only, as being multiple artifacts in close association with each other, but may include fewer artifacts if the area of the find is determined to be of significance due to its sacred

or cultural importance as determined in consultation with the Native American Tribe(s).

i. All ground disturbance activities within 100 feet of the discovered cultural resources shall be halted until a meeting is convened between the developer, the archaeologist, the tribal representative(s) and the Community Development Director to discuss the significance of the find.

ii. At the meeting, the significance of the discoveries shall be discussed and after consultation with the tribal representative(s) and the archaeologist, a decision shall be made, with the concurrence of the Community Development Director, as to the appropriate mitigation (documentation, recovery, avoidance, etc.) for the cultural resources.

iii. Grading of further ground disturbance shall not resume within the area of the discovery until an agreement has been reached by all parties as to the appropriate mitigation. Work shall be allowed to continue outside of the buffer area and will be monitored by additional Tribal monitors if needed.

iv. Treatment and avoidance of the newly discovered resources shall be consistent with the Cultural Resources Management Plan and Monitoring Agreements entered into with the appropriate tribes. This may include avoidance of the cultural resources through project design, in-place preservation of cultural resources located in native soils and/or re-burial on the Project property so they are not subject to further disturbance in perpetuity as identified in Non-Disclosure of Reburial Condition.

v. If the find is determined to be significant and avoidance of the site has not been achieved, a Phase III data recovery plan shall be prepared by the project archeologist, in consultation with the Tribe, and shall be submitted to the City for their review and approval prior to implementation of the said plan.

vi. Pursuant to Calif. Pub. Res. Code § 21083.2(b) avoidance is the preferred method of preservation for archaeological resources and cultural resources. If the landowner and the Tribe(s) cannot agree on the significance or the mitigation for the archaeological or cultural resources, these issues will be presented to the City Community Development Director for decision. The City Community Development Director shall make the determination based on the provisions of the California Environmental Quality Act with respect to archaeological resources, recommendations of the project archeologist and shall take into account the cultural and religious principles and practices of the Tribe. Notwithstanding any other rights available under the law, the decision of the City Community Development Director shall be appealable to the City Planning Commission and/or City Council.

b) **Less than Significant Impact with Mitigation Incorporated.** As noted above under Response V.(a), no known archaeological resources were identified within the Project area as a result of the cultural resources assessment report prepared for the Project. Further, the likelihood for encountering unknown subsurface archaeological deposits within the Project area during proposed construction is moderate. As such, there is

potential for Project implementation to impact unknown subsurface archaeological deposits that would qualify as unique archaeological resources. With the incorporation of **Mitigation Measures CUL-1 through CUL-4**, potential impacts to unknown archaeological deposits that could qualify as unique archaeological resources would be reduced to less than significant.

c) **Less than Significant Impact with Mitigation Incorporated.** No known formal or informal cemeteries or other burial places are known to exist within the Project area. However, because the Project would involve ground-disturbing activities, it is possible that such actions could unearth, expose, or disturb previously unknown human remains. Implementation of **Mitigation Measure CUL-5** would reduce potential impact to unknown human remains to less than significant.

> **Mitigation Measure CUL-5: Human Remains.** If human remains are encountered, the contractor shall halt work in the vicinity (within 100 feet) of the find and contact the Riverside County Coroner in accordance with PRC Section 5097.98 and Health and Safety Code Section 7050.5. If the County Coroner determines that the remains are Native American, the California Native American Heritage Commission (NAHC) will be notified in accordance with Health and Safety Code Section 7050.5, subdivision (c), and PRC Section 5097.98 (as amended by Assembly Bill 2641). The NAHC will designate a Most Likely Descendent (MLD) for the remains per PRC Section 5097.98. Until the landowner has conferred with the MLD, the contractor shall ensure that the immediate vicinity where the discovery occurred is not disturbed by further activity, is adequately protected according to generally accepted cultural or archaeological standards or practices, and that further activities take into account the possibility of multiple burials.

References

U.S. Department of the Interior, National Park Service. 2012. *Secretary of the Interior's Standards and Guidelines for Archaeology and Historic Preservation (As Amended and Annotated),* www.nps.gov/history/local- law/arch_stnds_0.htm, accessed November 4, 2014, 2008.

Vader, Michael. 2021. *Santa Gertrudis Creek Trail Phase II Undercrossing at Margarita Road Project – Cultural Resources Assessment*. Prepared for the City of Temecula by Environmental Science Associates, May 2021.

Energy

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
VI. ENERGY — Would the project:				
a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	☐	☐	☒	☐
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	☐	☐	☒	☐

Discussion

a) **Less than Significant Impact.** The Project would demolish the existing SGCT along the east and western sides of Margarita Road and construct the proposed shared-use path and infrastructure under Margarita Road along the Santa Gertrudis Creek. Therefore, the Project would not require energy resources during operations. The Project would improve an existing portion of the trail system, encouraging the use of bicycles while reducing the use of passenger vehicles and demand on transportation fuel. Therefore, impacts related to Project operations would be less than significant.

However, the Project would consume energy during construction activities primarily from on- and off-road vehicle fuel consumption in the form of diesel, gasoline, and electricity from water conveyance for dust control. The Project's construction contractors would comply with applicable CARB regulations governing the accelerated retrofitting, repowering, or replacement of heavy duty diesel on- and off-road equipment. CARB adopted an Airborne Toxic Control Measure to limit heavy-duty diesel motor vehicle idling time in order to reduce public exposure to diesel particulate matter and other toxic air contaminants. CARB approved the Truck and Bus regulation to reduce NO_X, PM_{10}, and $PM_{2.5}$ emissions from existing diesel vehicles operating in California. In addition to limiting exhaust from idling trucks, CARB recently promulgated emission standards for off-road diesel construction equipment of greater than 25 horsepower to reduce emissions by requiring the installation of diesel soot filters and encouraging the retirement, replacement, or repower of older, dirtier engines with newer emission-controlled models.

While intended to reduce construction criteria pollutant emissions, compliance with the above listed anti-idling and emissions regulations would also result in efficient use of construction-related energy and the minimization or elimination of wasteful and unnecessary consumption of energy. According to the CARB staff report that was prepared at the time the anti-idling ATCM was being proposed for adoption in late 2004/early 2005, the regulation was estimated to reduce non-essential idling and associated emissions of diesel particulate matter (DPM) and NO_X emissions by 64 and 78 percent respectively in analysis year 2009 (CARB 2004).

These reductions in emissions are directly attributable to overall reduced idling times and fuel combustion as a result of compliance with the regulation. Project compliance with

CARB regulations would result in energy savings, assuming a fuel reduction equivalent to the percent reduction of DPM or NO_X as estimated by CARB for 2009 (the lesser value, i.e., 64 percent, is used as a conservative assumption). Heavy-duty engines continue to become more efficient and reduction amounts may lessen in the future due to this. Although the energy savings cannot be accurately quantified, the Project would still reduce consumption of diesel fuel under the anti-idling measure. Construction electricity use would be temporary, sporadic, and would cease upon completion of the Project. Electricity for water conveyance would only be used when necessary to prevent fugitive dust and would decrease after completion of excavation and paving phases when the site is paved and has less dust to control. Thus, construction of the Proposed Project would use energy necessary to build the Project, but would not result in the wasteful, inefficient, and unnecessary use of energy and impacts would be less than significant.

b) **Less than Significant Impact.** Construction of the Project would result in a temporary increase in demand for gasoline, diesel and electricity. The Project's energy consumption primarily would result from on- and off-road fuel use from construction related vehicles totally approximately 6 gallons of gasoline and 5,988 gallons of diesel (see Appendix E for detailed calculations). The Project would require electricity from water conveyance for dust control totally approximately 0.1 megawatt hours. Natural gas would not be used during Project construction. These activities make up small percentages of total energy supplies and would cease after the construction period. Thus, construction would not cause a permanent increase in demand and impacts would be less than significant.

References

CARB. 2004. Staff Report: Initial Statement of Reasons for Proposed Rulemaking, Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling, Appendix F. July 2004. https://www.arb.ca.gov/regact/idling/idling.htm, Accessed February 2021.

Geology and Soils

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
VII. GEOLOGY AND SOILS — Would the project:				
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 on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?	☐	☐	☒	☐
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?	☐	☐	☒	☐
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	☐	☐	☐	☒
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☒	☐

Discussion

a.i) **Less than Significant Impact.** The City of Temecula, like the rest of Southern California, is located in a seismically active region as the result of being located near the active margin between the North American and Pacific tectonic plates. Several major faults exist in the region and have the potential to cause damage in the City. According to the Foundation Report for Retaining Walls (Foundation Report) prepared for the Project, no major faults traverse through the Project Site (Appendix F). Furthermore, the California Division of Mines and Geology (CDMG) has not identified any Alquist-Priolo Fault Zones through the Site. Therefore, the risk of ground surface rupture and related hazards at the Project Site are expected to be low.

Furthermore, the Project does not include habitable structures and is limited to the construction of trail improvements and associated facilities (i.e. storm drains sewer and water, retaining walls, utility replacements, and repaving activities). These improvements are not particularly at risk to earthquake-induced damage and would not substantially

increase the potential for human loss, injury, or death as a result of fault rupture because of required compliance with federal, state and local laws and regulations that protect the public from seismic hazards.

Development of the Proposed Project would include grading and/or other ground-disturbing activities to allow for the development of the Project. The Project would be required to comply with local seismic-related guidelines and policies during construction, which would reduce the potential for risk of loss due to fault rupture. The City has prepared the Engineering and Construction Manual (last amended December 2020) to define the administrative procedures and technical requirements necessary to implement the provisions of Temecula Municipal Code Title 18 (Construction, Grading, and Encroachment). The Engineering and Construction Manual provides detailed information to regulate construction, grading, and encroachment within public rights-of-way, including roadway design standards that would be applied to the Proposed Project. Project conformance with the design measures provided in the Engineering and Construction Manual, as well as any other applicable seismic-related requirements, would ensure that Project impacts relative to potential rupture of a known earthquake fault remain less than significant.

a.ii) **Less than Significant Impact.** According to the Public Safety Element of the City of Temecula General Plan, severe ground shaking is possible due to the presence of loosely consolidated alluvial soils (City of Temecula 2005). The County of Riverside has established Ground Shaking Zones indicating the relative level of risk based on the distance from faults and geographic characteristic of the area. The Project Site is located in Ground Shaking Zone II, where shaking is expected to vary from moderate to intense levels in the event of an earthquake, depending on the composition of underlying geologic formations, the earthquake's epicenter, and the order of magnitude of the seismic event (City of Temecula 2005).

The Proposed Project would be designed and constructed in accordance with all applicable City requirements in place to shield infrastructure from the effects of seismic ground shaking, including those identified under the City's Engineering and Construction Manual, as well as the goals and policies outlined in the Public Safety Element of the City's General Plan (City of Temecula 2005; 2020). Additionally, the Proposed Project would be constructed in compliance with the existing seismic safety regulations of the California Building Code (CBC). As described above, the Project does not involve the construction of aboveground habitable structures, and its implementation would not increase the potential for human loss, injury, or death. As such, impacts would be less than significant.

a.iii) **Less than Significant Impact.** Liquefaction and seismically-induced settlement or ground failure is generally related to strong seismic shaking events where the groundwater table occurs at a relatively shallow depth (generally within 50 feet below ground surface) or where lands are underlain by loose, cohesionless deposits. Liquefaction generally results in the loss of shear strength of a soil which occurs due to the increase of pore water pressure caused by the rearrangement of soil particles induced by shaking or vibration. During liquefaction, soil strata typically behave similar to a heavy fluid.

According to the Public Safety Element of the City's General Plan, the Project Site is located within an area that is susceptible to liquefaction (City of Temecula 2005). Construction of the Project would include grading, placement of fills soils, relocation and construction of underground utilities, and construction and/or replacement or retaining walls, which could increase the potential for liquefaction to occur within the Project Site. However, all placement and compaction of any fill material for the Proposed Project would be performed in accordance with the City's grading standards and to the satisfaction of a qualified geotechnical engineer. Earthwork for the roadway improvements would be performed in accordance with the City's Standard Drawings (2020).

Furthermore, as stated in the Foundation Report prepared for the Proposed Project (Appendix F), liquefiable soil layers were encountered about 45 to 50 feet below the existing ground surface of SCGT. However, the Project Site is immediately adjacent to the Santa Gertrudis Creek, which may result in sensitivities to groundwater fluctuations inside and outside of the creek and result in liquefiable conditions. As discussed in the Foundation Report, it is likely that some tilting of the retaining wall may occur due to liquefaction, however, no collapse is anticipated (Appendix F).

To reduce the potential for tilting or collapse of the retaining walls or other Project components, the Project would be required to comply with all applicable General Plan policies and local codes and regulations regulating the effects of liquefaction, including those identified under the California Building Code (CBC), Greenbook Standard Specifications for Public Works Construction, Caltrans Standard Plans, and the City's Engineering and Construction Manual. Due to the nature of the Project, implementation of the Project would not significantly expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving seismic ground failure. A less than significant impact would occur.

a.iv) **Less than Significant Impact.** According to the California Geologic Survey the Project Site is not listed as being in a known landslide zone (CGS 2020).

Construction of the Project includes the removal of existing pavements and bringing soils up to 5 percent grade, which would require approximately 175.72 CY of materials to be imported. In addition, the Project would construct a Caltrans Type 5 retaining wall on the channel slope. The retaining wall would be designed to be consistent with the safety parameters of the Caltrans 2018 Standard Specifications and Standard Special Provisions, which include seismic design parameters to limit effects of landslides (Caltrans 2018). A ground anchor wall (GAW) is also proposed below the Margarita Road undercrossing, which would be used to retain the abutment end slope. As discussed above in Response VII(a.iii), compliance with the CBC, City of Temecula requirements, and Caltrans requirements would reduce the potential for construction and operation of the Project to result in substantial risk due to landslides. As such, potential impacts related to landslides would be less than significant.

b) **Less than Significant Impact.** Soil erosion is most prevalent in unconsolidated alluvium and surficial soils and in areas that have slopes. According to the Foundation Report, the Project Site is underlain predominately by sandy soils; an upper layer consisting of clayey sand and silty sand, and a lower sand layer consisting of clayey sand (Appendix F).

Construction activity associated with the Proposed Project would result in disturbance to soils that could expose them to potential erosive forces, such as wind and water. All earth-disturbing activities associated with construction of the Project would be temporary, and erosion effects would depend largely on the characteristics of soils disturbed, the quantity of disturbance, and the length of time soils are subject to conditions that would be affected by erosion processes. All design and construction considerations would be in compliance with the Foundation Report and the City of Temecula's Grading, Erosion and Sediment Control Ordinances (Ordinance Nos. 04-04, 08-09, 13-01), California Code of Regulations Caltrans Standard Specifications and Standard Special Provisions, and Chapter 70 of the CBC, which regulates grading activities, including drainage and erosion control. Furthermore, as discussed in the Water Quality Management Plan (WQMP) for the Project, the Project would be required to apply standard best management practices (BMPs), such as site design BMPs and source control BMPs to reduce the potential for erosion or siltation (Appendix G). With incorporation of applicable codes, regulations, and policies, impacts regarding soil erosion and siltation would be less than significant.

Once construction activities are completed, the proposed shared-use trail would be paved and the remaining of the Project Site would be revegetated, which would reduce the potential for substantial erosion or loss of topsoil. Furthermore, as the Project would be constructed on the existing channel slope, the drainage patterns into the creek would remain the same where the potential for erosion and/or loss of topsoil would be similar to existing conditions. Operation of the Project would not include any additional ground disturbing activities and users of the Project would stay primarily on the paved shared-use path, which would reduce the potential for erosion or loss of topsoil. As such, impacts regarding soil erosion or loss of topsoil would be less than significant.

c) **Less than Significant Impact.** As discussed above in Responses VII(a.iii) and VII(a.iv), the Project would include the construction of retaining walls along the existing channel wall of Santa Gertrudis Creek, which may result in the potential for soil-stability issues during construction. However, BMPs included in the WQMP would include source control and site design measures to minimize construction-related impacts and maintain soil stability at less than significant levels.

Once construction activities are completed, the proposed shared-use trail would be paved, the remaining of the Project Site would be revegetated, and the retaining walls would support their respective slopes. Due to the nature of the proposed shared-use path, operation of the Project has a low potential to result in on- or off-site landslide, lateral spreading subsidence, liquefaction, or collapse. Operational impacts would be less than significant.

d) **Less than Significant Impact.** Expansive soils typically include fine-grained clay soils that have the potential to expand and retract according to changes in moisture content. Changes in the water content of an expansive soil can result in severe distress to structures constructed upon such soil. According to the Foundation Report, the Project Site is underlain predominately by sandy soils; an upper layer consisting of clayey sand and silty sand, and a lower sand layer consisting of clayey sand, which may have the potential to expand (Appendix F). Prior to commencement of grading operations, debris, organic material, and/or other unsuitable materials would be removed of and disposed of before receiving fill as recommended by the Foundation Report. All removals would be observed by qualified geotechnical personnel, ensuring all exposed subgrade contains competent materials. The recommendations included in the Foundation Report also include general construction considerations, which would reduce the potential for expansion pressures to risk loss of life and/or property. As such, the Project would not create substantial risks of loss to life or property due to expansive soils, and impacts would be less than significant.

e) **No Impact.** The Project does not include the installation of septic tanks or alternative wastewater disposal systems and wastewater disposal would not be required. No impact would occur.

f) **Less than Significant Impact.** Paleontological resources are the preserved fossilized remains of plants and animals. Fossils and traces of fossils are preserved in sedimentary rock units, particularly fine- to medium-grained marine, lake, and stream deposits, such as limestone, siltstone, sandstone, or shale, and in ancient soils (paleosols). Such resources are also found in coarse-grained sediments; such as conglomerates or coarse alluvium sediments. Additionally, fossils are rarely preserved in igneous or metamorphic rock units. Fossils may occur throughout a sedimentary unit and are more likely to be preserved subsurface, where they have not been damaged or destroyed by previous ground disturbance, amateur collecting, or natural causes such as erosion.

Implementation of the Project would demolish the existing SGCT along the east and western sides of Margarita Road and construct the proposed shared-use path and infrastructure under Margarita Road along the Santa Gertrudis Creek. Although it is unknown the full level of disturbance that occurred on the Project Site as a result of previous channel wall construction, any significant paleontological resources would have likely been unearthed during past grading of the Project Site during the construction of the Santa Gertrudis Creek channel walls.

Construction of the Project would include grading and removal of existing pavements along channel wall of Santa Gertrudis Creek, however, this grading would be similar in depths to that used to construct the channel walls and would not be anticipated to result in the discovery of paleontological resources. As a result, the Project would have a low potential to directly or indirectly destroy a paleontological resource, and, therefore, impacts would be less than significant.

References

California Geologic Survey (CGS). 2021. Earthquake Zones of Required Investigation – webpage. Available, accessed February 3, 2021.

California Department of Transportation (Caltrans). 2018. Standard Plans and Standard Specifications. Available https://dot.ca.gov/programs/design/ccs-standard-plans-and-standard-specifications, accessed January 2022.

City of Temecula. 2005. General Plan – Public Safety Element. Available at https://temeculaca.gov/DocumentCenter/View/288/Public-Safety-PDF?bidId=, accessed February 1, 2021.

City of Temecula. 2020. Engineering and Construction Manual. Available at https://temeculaca.gov/DocumentCenter/View/3083/Engineering-and-Construction-Manual, accessed February 1, 2021.

City of Temecula Department of Public Works (DPW). 2020. Standard Drawings 2020. Available at https://temeculaca.gov/DocumentCenter/Index/217, accessed February 3, 2021.

Greenhouse Gas Emissions

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
VIII. GREENHOUSE GAS EMISSIONS — Would the project:				
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☒	☐
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☒	☐

Discussion

a, b) **Less than Significant Impact.** Gases that trap heat in the atmosphere are called greenhouse gases (GHGs). The major concern with GHGs is that increases in their concentrations are causing global climate change. Global climate change is a change in the average weather on Earth that can be measured by wind patterns, storms, precipitation, and temperature. Although there is disagreement as to the rate of global climate change and the extent of the impacts attributable to human activities, most in the scientific community agree that there is a direct link between increased emissions of GHGs and long term global temperature increases.

The State of California defines GHGs as carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), sulfur hexafluoride (SF_6), perfluorocarbons (PFCs), and hydrofluorocarbons (HFCs). Because different GHGs have different global warming potentials (GWPs) and CO_2 is the most common reference gas for climate change, GHG emissions are often quantified and reported as CO_2 equivalents (CO_2e). For example, CH_4 has a GWP of 25 (over a 100-year period); therefore, 1 metric ton (MT) of CH_4 is equivalent to 25 MT of CO_2 equivalents ($MTCO_2e$). The State uses the GWP ratios available from the United Nations Intergovernmental Panel on Climate Change (IPCC) and published in the *Fourth Assessment Report* (AR4). By applying the GWP ratios, Project-related CO_2e emissions can be tabulated in metric tons (MT) per year. Large emission sources are reported in million metric tons (MMT) of CO_2e.

Some of the potential effects of global warming in California may include loss in snow pack, sea level rise, more extreme heat days per year, more high ozone days, more forest fires, and more drought years (CARB 2008). Globally, climate change has the potential to impact numerous environmental resources through potential, though uncertain, impacts related to future air temperatures and precipitation patterns. The projected effects of global warming on weather and climate are likely to vary regionally, but are expected to include the following direct effects (IPCC 2001):

- Higher maximum temperatures and more hot days over nearly all land areas;
- Higher minimum temperatures, fewer cold days and frost days over nearly all land areas;

- Reduced diurnal temperature range over most land areas;
- Increase of heat index over land areas; and
- More intense precipitation events.

Also, there are many secondary effects that are projected to result from global warming, including global rise in sea level, impacts to agriculture, changes in disease vectors, and changes in habitat and biodiversity. While the possible outcomes and the feedback mechanisms involved are not fully understood and much research remains to be done, the potential for substantial environmental, social, and economic consequences over the long term may be great.

California generated 429.4 $MMTCO_2e$ in 2016, the most recent year data are available. Combustion of fossil fuel in the transportation sector was the single largest source of California's GHG emissions in 2016, accounting for approximately 39 percent of total GHG emissions in the state. This sector was followed by the industrial sector (21 percent) and the electric power sector (including both in-state and out-of-state sources) (16 percent).

Impacts of GHGs are borne globally, as opposed to localized air quality effects of criteria air pollutants and toxic air contaminants. The quantity of GHGs that it takes to ultimately result in climate change is not precisely known; however, it is clear that the quantity is enormous, and no single project would measurably contribute to a noticeable incremental change in the global average temperature, or to global, local, or micro climates. From the standpoint of CEQA, GHG impacts to global climate change are inherently cumulative.

The City of Temecula has not adopted thresholds of significance for GHG emissions that would be applicable to this Project. CEQA Guidelines 15064.4 states that the lead agency has the discretion to rely on a qualitative analysis or performance based standards in determining the significance of a project's GHG emissions. Accordingly, the analysis herein examines the extent to which the Project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions, consistent with CEQA Guidelines 15064.4 (b)(3).

The Project would demolish the existing SGCT along the east and western sides of Margarita Road and construct the proposed shared-use path and infrastructure under Margarita Road along the Santa Gertrudis Creek. Therefore, the Project would not result in the generation of operational emissions. The Project would improve an existing portion of the SGCT system, encouraging the use of bicycles while reducing the use of passenger vehicles. The Project's highest GHG contributors are from off-road construction equipment sources. The Proposed Project would utilize construction contractors who demonstrate compliance with applicable CARB regulations restricting the idling of heavy-duty diesel motor vehicles and governing the accelerated retrofitting, repowering, or replacement of heavy-duty diesel on- and off-road equipment. CARB has adopted an Airborne Toxic Control Measure to limit heavy-duty diesel motor vehicle idling in order to reduce public exposure to diesel particulate matter and other toxic air contaminants.

CARB has also adopted emission standards for off-road diesel construction equipment of greater than 25 horsepower. The emissions standards are referred to as "tiers" with Tier 4 being the most stringent (i.e., less polluting). The requirements are phased in, with full implementation for large and medium fleets by 2023 and for small fleets by 2028.

Therefore, construction of the proposed Project would be consistent with applicable standards. As a result, impacts would be less than significant and no mitigation is required.

References

California Air Resources Board (ARB). 2020. Current California GHG Emission Inventory Data. Available at https://ww2.arb.ca.gov/ghg-inventory-data, access October 22, 2020.

_____. 2018. California Greenhouse Gas Emission Inventory 2018 Edition. Available: https://www.arb.ca.gov/cc/inventory/data/data.htm. Accessed October 2020.

Intergovernmental Panel on Climate Change (IPCC). 2007. Climate Change 2007: Synthesis Report. Contribution of Working Groups I, II, and III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change.

Hazards and Hazardous Materials

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
IX. HAZARDS AND HAZARDOUS MATERIALS — Would the project:				
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?	☐	☐	☐	☒

Discussion

a) **Less than Significant Impact.** The routine transport, use, and disposal of hazardous materials can result in hazards to the public through the potential for accidental release. Such hazards are typically associated with certain types of land uses, such as chemical manufacturing facilities, industrial processes, waste disposal, and storage and distribution facilities.

Construction of the Project may result in temporary hazards related to transport and use of hazardous materials, including those used for construction vehicle use and maintenance (i.e., diesel fuel, motor oil, etc.). During Project construction, contractors would be required to uphold standard BMPs to ensure that all hazardous materials are stored, transported, and disposed of in accordance with federal and State law. Conformance with these standards would effectively avoid and minimize significant hazards related to the transport, use, and disposal of hazardous materials and would reduce the Project's impacts to less than significant levels.

Project operation would not involve a land use creating a significant hazard to the environment due to the routine transport, use, or disposal of hazardous materials. Operation of the Project would be similar in handling of hazardous materials to what occurs under existing conditions. As such, the Project would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials. No significant operational impacts would occur.

b) **Less than Significant Impact.** Refer to Response IX(a), above. During the short-term excavation and construction period, there is the possibility of accidental release of hazardous substances such as spilling of petroleum-based fuels, lubricants, and other materials used for construction equipment. During construction of the Proposed Project, contractors would be required to use standard construction safety procedures and controls that would avoid and minimize the potential for accidental release of hazardous substances into the environment. Standard construction BMPs would be observed such that any hazardous materials released are appropriately contained and remediated as required by local, State, and federal law. Conformance with these standards would reduce impacts related to the accidental release of hazardous materials into the environment to a less than significant level.

The Proposed Project would not substantially alter any existing land uses on the Project Site, Margarita Road, or within Santa Gertrudis Creek. Therefore, following Project implementation, the trail would continue to operate as it presently does under current conditions, with exception of the new undercrossing beneath Margarita Road. The use of limited amounts of hazardous materials (i.e. maintenance equipment and hand tools, oil, gasoline, solvents, etc.) may be required during periodic maintenance activities, as needed; however, such activities would be temporary and typical of similar activities that currently occur along the trail corridor. The proposed improvements would not result in long-term operational effects related to hazardous materials release. No long-term impacts would occur in this regard.

c) **Less than Significant Impact.** The Project Site is located approximately 0.13 miles west of Big Future Preschool, and approximately 0.23 miles southwest of Chaparral High School. No other schools are located within one-quarter mile from the Site.

As stated in Response IX(a), minor quantities of hazardous materials used during Project construction would be subject to existing standard BMPs to ensure that all hazardous materials are stored, transported, used, and disposed of in accordance with federal and State law. Operation of the Project would not involve the routine use of hazardous materials, and periodic trail maintenance would only require the use of limited quantities of potentially hazardous materials on a short-term, temporary basis when needed. Therefore, a less than significant impact would occur.

d) **No impact.** According to both the State Water Resource Control Board (SWRCB) and the California Department of Toxic Substances Control (DTSC), the Project Site is not included on a list of hazardous materials sites, pursuant to Government Code Section 65962.5 (DTSC 2021; SWRCB 2021). As such, there would be no impact in this regard.

e) **No impact.** French Valley Airport is a Riverside County-owned public-use airport located on State Route (SR) 79, north of Temecula in its sphere of influence, and adjacent to the City of Murrieta's eastern boundary. The Riverside County Airport Land Use Compatibility Plan (ALUCP) establishes policies applicable to land use compatibility planning in the vicinity of airports throughout Riverside County. According to the Riverside County ALUCP, the northern portion of the Project Site is located approximately 2.75 miles southwest of French Valley Airport and is located in Airport Compatibility Zone E, which includes airspace review for objects over 100 feet tall (Riverside County 2004). As a trail improvement project, the Project does not propose the installation of aboveground structures, other than 4-foot high chain-link fencing and wayfinding signage, which are not elevated enough to represent a safety hazard to air traffic. Therefore, no impact would occur.

f) **Less than Significant Impact.** While the Proposed Project would minimally impact traffic flow during the temporary construction period, it would not conflict with or interfere with emergency evacuation of the Project area. Project construction would not substantially interfere with traffic circulation, as emergency access to Margarita Road would be maintained during Project construction. The users of the SGCT and Margarita Road would have improved safety and circulation with the proposed undercrossing. As such, the proposed improvements would enhance Margarita Road's roadway function as a potential emergency evacuation route. No revisions to an adopted emergency plan would be required as a result of the Proposed Project. Impacts in this regard would be less than significant.

g) **No impact.** According to the California Department of Forestry and Fire Protection (CalFire), the Project Site is not located within a Very High Fire Hazard Severity Zone (VHFHSZ) (CalFire 2009). The Project Site is located in an urbanized area with minimal potential for wildland fires. Furthermore, the Project would not construct any habitable structures or propose any uses in which would exacerbate wildfire risk. Consequently, there would be no impact regarding the potential for wildland fires.

References

California Department of Forestry and Fire Protection (CalFire). 2009. Very High Fire Hazard Severity Zones in LRA as Recommended by CAL FIRE. City of Temecula. December 21, 2009.

California Department of Toxic Substances Control (DTSC). 2021. EnviroStor Database Search. Available https://www.envirostor.dtsc.ca.gov/public/, accessed February 1, 2021.

California State Water Resources Control Board (SWRCB). 2021. Geotracker Database Search. Available https://geotracker.waterboards.ca.gov/, accessed February 1, 2021.

Riverside County Airport Land Use Commission (Riverside County). 2004. Riverside County Airport Land Use Compatibility Plan, Volume 1 Policy Document. Adopted October 14, 2004. Available http://www.rcaluc.org/Portals/13/PDFGeneral/plan/newplan/01-%20Cover%20&%20Title%20Page%20Vol%201.pdf. accessed February 1, 2021.

Hydrology and Water Quality

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
X. HYDROLOGY AND WATER QUALITY — Would the project:				
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 off-site;	☐	☐	☒	☐
ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;	☐	☐	☒	☐
iii) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or	☐	☐	☒	☐
iv) impede or redirect flood flows?	☐	☐	☒	☐
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?	☐	☐	☒	☐

Discussion

a) **Less than Significant Impact.** Surface water quality is subject to federal, State, and local water quality requirements administered and enforced by the U.S. Environmental Protection Agency (USEPA), the California State Water Resources Control Board (SWRCB), and the Regional Water Quality Control Board (RWQCB) with cooperation from each county. The principal law governing pollution of the nation's surface waters is the Clean Water Act (CWA) (formerly the Federal Water Pollution Control Act). Under the CWA, regulatory requirements for industrial and municipal dischargers were set, as well as requirements for states to adopt water quality standards.

Furthermore, the City implements its Jurisdictional Runoff Management Plan (JRMP), which describes the City's urban runoff management programs implemented to comply with the requirements of the National Permit Discharge Elimination System (NPDES) MS4 Permit. The City's Storm Water Ordinance (City of Temecula Municipal Code Title 8.28) is also implemented to address water quality and outlines the City's NPDES requirements in accordance with the NPDES MS4 Permit.

According to the Water Quality Management Plan (WQMP) that was prepared for the Project (Appendix G), runoff below Santa Margarita Road flows to the north towards Santa Gertrudis Creek. Margarita Road flows are contained in the roadway and directed to an existing catch basin approximately 700 feet north of the existing SGCT.

Project implementation would result in ground disturbance from excavation and grading activities, thereby loosening onsite soils and increasing the potential for erosion and sedimentation deposition, as well as polluted runoff from the site, to occur. Water discharge from Project construction may consist of oil and grease, trash, heavy metals, and pathogens, as well as other potential pollutants. These potential discharges can be of concern for development projects, as damage to downstream water bodies can occur. However, the majority of the Project would be constructed within the existing channel wall footprint, and the existing trail which would be removed would be revegetated. Additionally, the Proposed Project is required to comply with the latest adopted NPDES Permit. Compliance with federal, state, and local water quality standards, as well and the implementation of construction BMPs, would prevent impacts to water quality. As such, impacts related to the violation of water quality standards or waste discharge requirements would be less than significant

b) **Less than Significant Impact.** According to the Open Space/Conservation Element of the City's General Plan, the Rancho California Water District (RCWD) supplies most of the domestic and commercial water to Temecula, paid for by user fees (City of Temecula 2005). The City's water supply is drawn from the Murrieta-Temecula groundwater basin and supplemented with imported water from the Metropolitan Water District (MWD). This aquifer is recharged by underflow, surface flow from the creeks in the area, and by direct precipitation in the valley. The General Plan indicates that in 2005, local groundwater provided 35 percent of the City's water supplies, with 26 percent of supplies being provided by local groundwater under future buildout conditions (City of Temecula 2005). Other water sources include reclaimed water and untreated MWD water used for groundwater recharge.

Construction of the Project may include use of groundwater for soil compaction and landscaping activities. As such, a portion of the water supply to serve the Project Site would indirectly come from local groundwater reserves. Project implementation would not require an increase in RCWD water supplies that would severely impair groundwater recharge, as construction would only occur for six months. Long-term operation would not have the potential to interfere with groundwater recharge, as the Project would result in 7,241 square feet (sf) of impervious surfaces, which is a 0.72 percent increase from existing conditions (7,189 sf) (Appendix G). As such, groundwater recharge would not be affected as a result of the Proposed Project and impacts would be less than significant.

c.i) **Less than Significant Impact.** As indicated in the WQMP for the Project, existing drainage patterns would be maintained with the Project, and therefore, the Project Site would not disperse runoff to adjacent pervious areas.

Construction impacts that may result in on- or off-site erosion or siltation would be minimized to less than significant levels; refer also to Response VII(b), above. Operational impacts related to siltation or erosion would be minimized to less than significant levels by the development and use of standard stormwater drainage features. Therefore, the Proposed Project is not anticipated to alter the existing drainage pattern of the Project Site and would not result in substantial erosion or siltation on- or off-site. Impacts are considered to be less than significant in this regard.

c.ii) **Less than Significant Impact.** As discussed above in Response X(b) above, the Project would result in minimal alterations of the existing drainage pattern of the Project Site, and would not require the traversing of any streams or rivers. Furthermore, standard BMPs and construction considerations would be required during construction, which would further reduce the potential for flooding on- or off-site. The finished trail undercrossing would consist of a paved surface, and would continue to relay flows to Santa Gertrudis Creek. A less than significant impact related to on- or off-site flooding would occur.

c.iii) **Less than Significant Impact.** The Project Site is located directly south of Santa Gertrudis Creek, which is an ephemeral drainage channel which flows to the Santa Margarita River, which ultimately flows to the Pacific Ocean. Existing flows from the Project Site are conveyed into the channel, which continues to discharge downstream. The Project would be constructed along the channel creek walls, and would be gently sloped to continue to convey discharged flows into the creek. Furthermore, as the Project would only increase the amount of impervious surfaces on the Site by 0.72 percent, runoff into the Santa Gertrudis Creek is not expected to substantially increase. As such, the Project would not create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide additional sources of polluted runoff. Impacts would be less than significant in this regard.

c.iv) **Less than Significant Impact.** According to Figure PS-2, Flood Hazards and Dam Inundation Areas, of the City's General Plan Public Safety Element, the Project Site is located within a 100-year flood zone (City of Temecula 2005). As a trail improvement project, the Project would not involve the development of any new residential housing. Therefore, housing units would not be developed or placed within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map. No impact would occur

d) **Less than Significant Impact.** The Project Site is located approximately 25.3 miles inland from the Pacific Ocean and is divided by the Santa Ana Mountains/Santa Margarita Mountains, which are located to the west and northwest of the Project Site alignment and rise to an elevation of approximately 2,800 feet to 5,689 feet at Santiago Peak. Local large bodies of water, including Lake Skinner (located approximately 5.7 miles to the northeast), Diamond Valley Lake Dam (located approximately 10.0 miles to the northeast), and Vail Lake (located approximately 10.4 miles to the southeast), are also distanced from the Project Site.

According to Figure PS-2, Flood Hazards and Dam Inundation Areas, of the City's General Plan Public Safety Element, the Project Site is located within a Dam Inundation Area. While potential accidental release could impact the Project Site, as indicated in the City of Temecula General Plan EIR, incorporation of State and federal regulations, and in conjunction with the City of Temecula Multi-Hazard Functional Plan, such impacts are considered less than significant. As such, with conformance to such measures, Project impacts from flooding as a result of the failure of a levee or dam are considered to be less than significant.

e) **Less than Significant Impact.** As discussed above in Response X(b), the Project overlies the Murrieta-Temecula groundwater basin (Basin), which meets approximately 35 percent of water needs within the City (City of Temecula 2018). Regulating the Basin is the San Diego Regional Water Quality Control Board (RWQCB), which establishes water quality standards to protect waters in the region through implementation of NPDES permits which include waste discharge requirements and the control of point and non-point source pollutants. Under the Proposed Project, construction and operation would be required to conform with all applicable NPDES permits. Furthermore, the Proposed Project would not involve the direct extraction or depletion of groundwater and would not conflict with a sustainable groundwater management plan. As such, the Project would not conflict with or obstruct the implementation of any water quality control plan or groundwater management plan, and impacts would be less than significant.

References

City of Temecula. 2005. General Plan – Open Space and Conservation Element. Adopted 1993, updated 2005. Available at https://temeculaca.gov/DocumentCenter/View/287/Open-Space-Conservation-PDF?bidId=, accessed February 3, 2021.

City of Temecula. 2005. General Plan – Public Safety Element. Adopted 1993, updated 2005. Available at https://temeculaca.gov/DocumentCenter/View/288/Public-Safety-PDF?bidId=, accessed February 3, 2021.

City of Temecula. 2018. Temecula Jurisdictional Runoff Management Program: Santa Margarita Region. Adopted January 4, 2018. Available at https://temeculaca.gov/DocumentCenter/View/903/City-of-Temecula-Jurisdictional-Runoff-Management-Plan-2018JRMPPDF?bidId=, accessed February 3, 2021.

City of Temecula. 2020. Water Quality Management Plan for PW19-04. Prepared December 10, 2020. Included as Appendix G.

Earth Mechanics, Inc. 2021. Foundation Report for Retaining Walls: Santa Gertrudis Creek Phase II, Temecula, California, City Project No. PW19-04. Prepared January 20, 2021. Included as Appendix F.

Land Use and Planning

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
XI. LAND USE AND PLANNING — Would the project:				
a) Physically divide an established community?	☐	☐	☐	☒
b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☒	☐

Discussion

a) **No Impact.** The Project is located along Santa Gertrudis Creek, and consists of demolition of existing pavements, grading, and construction of a new multi-use path with accompanying structural infrastructure, vegetation, and wayfinding signage and striping. The Proposed Project would not result in changes to the Project Site's land use or any surrounding land use. In addition, Project implementation would not introduce a new use within the Project area that would physically divide existing residential uses or cause existing residential uses to be separated from the remaining community. Therefore, no impact would occur regarding the division of an established community.

b) **Less than Significant Impact.** As discussed in Response XI(a), the Project would not result in any land use changes. The Project would be consistent with the City of Temecula General Plan – Circulation Element Goal 5, in that the Project would provide safe and efficient alternatives to motorized travel throughout the City, by providing an undercrossing to the existing Santa Gertrudis Creek Trail which currently maintains a surface-level crossing along Margarita Road (City of Temecula 2005). In addition, the Project would be consistent with the City's Multi-Use Trails and Bikeways Master Plan Update (City of Temecula 2016), which is designed to meet the bicycle goals and policies of the General Plan. Project implementation would benefit alternative transportation opportunities for the community near Margarita Road by providing a trail undercrossing that would improve safety and traffic operations in both the eastbound and westbound directions and along Margarita Road. As discussed in Response IV(f), the Project Site is located outside of MSHCP conserved lands and is not within a criteria cell of the Western Riverside County MSHCP. Therefore, the Project is anticipated to result in a less than significant impact and would not conflict with any land use plan, policy, or regulation.

References

City of Temecula. 2005. General Plan – Circulation Element. Available at https://temeculaca.gov/DocumentCenter/View/278/Circulation-PDF?bidId=, accessed February 3, 2021.

City of Temecula. 2016. Multi-Use Trails and Bikeways Master Plan. March, 2016. Available at https://issuu.com/ktua/docs/temecula_tbmp_final_lores, accessed February 3, 2021.

Mineral Resources

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
XII. MINERAL RESOURCES — Would the project:				
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?	☐	☐	☐	☒

Discussion

a) **No Impact.** According to the City's General Plan Open Space/Conservation Element, the State has applied a classification of MRZ-3a in the Temecula Planning Area, which includes the Project Site. MRZ-3 areas contain sedimentary deposits that have the potential to supply sand and gravel for concrete and crushed stone for aggregate; however, based on available data, MRZ-3 areas are not considered to contain deposits of significant economic value (City of Temecula 2005). As a result, Project development would not result in the loss of availability of a known mineral resources that would be of economic value and no impact would occur.

b) **No Impact.** As discussed in Response XII(a), the Project Site does not contain any mineral resources that would be of significant value (City of Temecula 2005). Furthermore, the Project Site has been previously developed with concrete channel walls, which would reduce the potential to mine the Project Site for any locally-important mineral resources. Project implementation would result in additional impervious surfaces and would utilize the Project Site for recreational purposes, where no mineral resources extraction have been planned for the site. As the Project Site is not identified within the City's General Plan to contain known mineral resources of value or be used in the future for extraction of mineral resources, no impact would occur in this regard.

References

City of Temecula. 2005. General Plan – Open Space and Conservation Element. Adopted 1993, updated 2005. Available at https://temeculaca.gov/DocumentCenter/View/287/Open-Space-Conservation-PDF?bidId=, accessed February 3, 2021.

Noise

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
XIII. NOISE — Would the project result in:				
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?	☐	☐	☒	☐

Discussion

a) **Less than Significant Impact.** A project would have a significant effect on the environment related to noise if it would substantially increase the ambient noise levels for adjoining areas or conflict with adopted environmental plans and goals of the community in which it is located. The applicable noise standards governing the Project Site are detailed as follows:

Existing Regulations

City of Temecula General Plan Noise Element

In accordance with the Noise Element of the City's General Plan, a noise exposure of up to 65 dBA L_{dn} or CNEL exposure is considered to be the most desirable target for the exterior of noise-sensitive land uses or at sensitive receptors such as homes, schools, churches, libraries, hospitals, hotels, motels, etc. It is also recognized that such a level may not always be possible in areas of substantial traffic noise intrusion. In addition, all new residential development in the City would be required to comply with Title 24 standards of the State Health and Safety Code. These standards establish maximum interior noise levels for new residential development, requiring that sufficient insulation be provided to reduce interior ambient noise levels to 45 dBA L_{dn} or CNEL or less.

The City of Temecula General Plan Noise Element contains various goals and policies to address citywide noise issues. The following are relevant to the Project:

Goal 1: Separate significant noise generators from sensitive receptors.

Policy 1.2: Limit the hours of construction activity next to residential areas to reduce noise intrusion in the early morning, late evening, weekends and holidays.

City of Temecula Noise Control Ordinance

Section 9.20.060 of the City of Temecula Municipal Code specifies that no person shall engage in or conduct construction activity, when the construction site is within one-quarter mile of an occupied residence, between the hours of 6:30 PM and 7:00 AM, Monday through Friday, and shall only engage in or conduct construction activity between the hours of 7:00 AM and 6:30 PM on Saturday. Further, no construction activity shall be undertaken on Sunday and nationally recognized holidays. The City Council may, by formal action, exempt projects from the provisions of this chapter.

Sensitive Land Uses

Some land uses are considered more sensitive to noise than others due to the types of activities typically involved at the receptor location and effect that noise can have on those activities and the persons engaged in them. According to the City of Temecula General Plan Noise Element, sensitive receptors include residential uses and schools. The Project Site is located within a residential and commercial area. Sensitive land uses within one-quarter mile of the Project Site includes residential to the west and east and Chaparral High School to the northeast.

Construction

Project construction consists of demolition of existing pavements, grading, and construction of a new multi-use path with accompanying structural infrastructure, vegetation, and wayfinding signage and striping. Project construction would generate noise from the daytime operation of construction equipment.

A list of the construction equipment that would be used during each phase of construction is provided in **Table 5**. The noise from construction equipment would generate both steady-state and episodic noise that could be heard within and adjacent to the Project Site. Construction noise levels fluctuate throughout a given workday as construction equipment move from one location to another within a project site. When construction equipment would be in use further away from a sensitive receptor location, construction noise levels would be lower than the calculated values provided herein, which assumes construction equipment would be in use nearest to a sensitive receptor location. Exposure to fluctuating construction noise levels that would at times be lower than the noise levels shown in the analysis below would not rise to the level (greater than 120 dBA) that would result in hearing loss or adverse health impacts.

TABLE 5
CONSTRUCTION EQUIPMENT

Construction Phase	Equipment	No. of Pieces of Equipment
Demolition	Concrete/Industrial Saw	1
	Rubber Tired Dozers	1
	Tractors/Loaders/Backhoes	2
Grading	Concrete/Industrial Saw	1
	Rubber Tired Dozers	1
	Tractors/Loaders/Backhoes	2
Building Construction	Crane	1
	Forklift	2
	Tractors/Loaders/Backhoes	2
Striping	Air Compressors	1

SOURCE: CalEEMod 2021

Individual pieces of construction equipment that would be used for construction of the Project produce maximum noise levels of 75 dBA to 90 dBA at a reference distance of 50 feet from the noise source, as shown in **Table 6**. The construction equipment noise levels at 50 feet distance (Referenced Maximum Noise Levels) are based on the FHWA RCNM (Federal Highway Administration Roadway Construction Noise Model) User's Guide, which is a technical report containing actual measured noise data for construction equipment (FHWA 2006).

TABLE 6
CONSTRUCTION EQUIPMENT NOISE REFERENCE LEVELS AND USAGE FACTORS

Type of Equipment	Acoustical Usage Factor[a] (%)	Reference Maximum Noise Levels at 50 Feet,[a,b] Lmax (dBA)
Backhoe	40	78
Concrete Saw	20	90
Forklift	10	75
Crane	16	81
Dozer	40	82
Front End Loader	40	80
Air Compressor	50	78
Tractor	40	84

NOTES:

[a] The usage factor is the percentage of time during a construction noise operation that a piece of construction is operating at full power.

[b] Construction equipment noise levels are based on the FHWA RCNM.

SOURCE: FHWA, *Roadway Construction Noise Model User's Guide*, 2006, Table 1.

These maximum noise levels would occur when equipment is operating under full power conditions (i.e., the equipment engine at maximum speed). However, equipment used on construction sites often operates under less than full power conditions or part power. To more accurately characterize construction-period noise levels, the average (hourly Leq) noise level associated with each construction phase is calculated based on the quantity, type, and usage factors for each type of equipment that would be used during each construction phase.[2] These noise levels are typically associated with multiple pieces of equipment operating simultaneously. The nearest sensitive receptors are residential uses located approximately 200 feet west of the Project Site. **Table 7** lists the potential construction noise levels at 200 feet from the active construction sources, factoring in the number and type of construction equipment that would be in operation during the same period of time, and their individual utilization factors.

TABLE 7
CONSTRUCTION NOISE IN DIFFERENT PHASES

Construction Phase	Noise Level at 200 feet from Active Construction Area, dBA Leq
Demolition	75
Grading	75
Building Construction	72
Striping	63

SOURCE: ESA 2021.

Table 7 shows that during each construction phase, depending on the number of pieces of construction equipment and individual utilization factor, the noise level at a distance of 200 feet from an active construction area on the Project Site ranges from 63 to 75 dBA Leq. This scenario assumed that the equipment listed during each construction phase would be operating during the same period of time (with individual utilization factor included) and is located in close range that can be viewed as a point source from a distance of 200 feet. In reality, it is not practical to have all these pieces of equipment operating in a small area at the same time when considering the terrain variation. It is assumed this way to obtain the worst case possible noise exposure for receivers in the Project vicinity. If the equipment is spread out over the entire Project Site, even though some pieces of equipment may be closer to an adjacent receiver, other pieces of equipment would be located at a longer distance from the same receiver, and the overall combined noise level would not be greater than the one estimated using the worst case scenario.

Pursuant to Section 9.20.060 of the City of Temecula Municipal Code, construction activity within one-quarter mule of an occupied residence is prohibited between the hours

[2] Pursuant to the FHWA *Roadway Construction Noise Model User's Guide*, 2005, the usage factor is the percentage of time during a construction noise operation that a piece of construction is operating at full power.

of 6:30 p.m. and 7:00 a.m., Monday through Friday and 6:30 p.m. and 7:00 a.m. on Saturdays and during all ours on Sundays and nationally recognized holidays.

The Proposed Project would comply with the permitted construction hours as identified in the City of Temecula Municipal Code Section 9.20.060. In addition, standard construction best practices would occur related to equipment noise, including, but not limited to, the following:

- Equipment would use available noise suppression devices and properly maintained mufflers. Construction noise would be reduced by using quiet or "new technology," equipment, particularly the quieting of exhaust noises by use of improved mufflers where feasible. All internal combustion engines used at the Project Site would be equipped with the type of muffler recommended by the vehicle manufacturer. In addition, all equipment would be maintained in good mechanical condition so as to minimize noise created by faulty or poorly maintained engine, drive-train and other components.
- During all demolition, grading, and construction, contractors would minimize the staging of construction equipment and unnecessary idling of equipment in the vicinity of noise sensitive land uses.
- The equipment staging area would be situated so as to provide the greatest distance separation between construction-related noise sources and noise-sensitive receptors nearest the Project Site during all Project construction

Because construction of the Proposed Project would be temporary and short term, and construction noise would not rise to a level that would cause harm (120 dB), there would be no impacts related to significant construction noise.

Operation

Operation of the Proposed Project would not generate any substantial noise. The Proposed Project would realign the SGCT to use a new undercrossing below Margarita Road as well as construct associated infrastructure. Therefore, operational noise would be similar to what the existing trail generates. Long term operational noise impacts associated with the Proposed Project would be less than significant.

b) **Less than Significant Impact.** The amount of construction and demolition required for the Proposed Project is not anticipated to generate excessive groundborne vibrations or noise levels. Additionally, this Project does not include pile driving activities, therefore, ground borne vibration is not expected to occur. Due to the temporary nature of construction activities, impacts in this regard are considered to be less than significant.

c) **Less than Significant Impact.** The Project Site is not located within the vicinity of a private airstrip or an airport land use plan or within two miles of a public airport or public use airport. The Project would not expose people residing or working in the project area to excessive noise levels related to airports. Therefore, this impact is less than significant.

References

United States Department of Labor, Occupational Safety and Health Administration, Occupational Safety and Health Standards Part 1910, Standard 1910.95. Available Online: https://www.osha.gov/laws-regs/regulations/standardnumber/1910/1910.95, accessed October 2020.

City of Temecula General Plan Noise Element, 2005

City of Temecula Municipal Code, Chapter 9.20 Noise

Population and Housing

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
XIV. POPULATION AND HOUSING — Would the project:				
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?	☐	☐	☐	☒

Discussion

a, b) **No Impact.** Implementation the Proposed Project would not directly induce population growth as no housing or new businesses are proposed. In addition, the Proposed Project would not add a new road or expand roadway capacity, and would not indirectly induce population growth. Construction of the Project would occur beneath a currently developed roadway, which maintains an existing trail crossing, and would not require land acquisition of any residences or habitable structures. As such, the Project would not directly or indirectly induce population growth or result in the displacement of residents or housing. No impact to population and housing would occur.

Public Services

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
XV. PUBLIC SERVICES —				
a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the following public services:				
i) Fire protection?	☐	☐	☐	☒
ii) Police protection?	☐	☐	☐	☒
iii) Schools?	☐	☐	☐	☒
iv) Parks?	☐	☐	☐	☒
v) Other public facilities?	☐	☐	☐	☒

Discussion

a.i) **No Impact.** With Project implementation the Project Site would continue to be served by the Riverside County Fire Department (RCFD), which maintains a mutual service agreement with the City of Temecula (RCFD 2021). The nearest RCFD Station is located approximately 1.5 miles southwest of the Project Site at 27415 Enterprise Circle West.

The Proposed Project would be constructed in accordance with local and State fire codes. In addition, emergency access would continue to be provided during construction of the Project. The Project would not induce population growth, and thus demand for fire protection services would not increase. As such, no impacts would occur regarding the need for new or improved fire protection services.

a.ii) **No Impact.** Law enforcement and police protection are provided by the City of Temecula Police Department (TPD), which has two storefront police stations (Old Town Temecula and Promenade Mall). The closest TPD station to the Project Site is the Promenade Mall location, which is located approximately 0.6 miles southwest of the Project Site.

The Proposed Project would not induce population growth, and thus demand for police protection services would not increase. Additionally, the Project would not include any road closures in which may interfere with emergency access on local roadways. Existing emergency access would continue to be maintained. As such, no impact would occur related to police protection services as a result of the Proposed Project.

a.iii) **No Impact.** The Project would involve the construction of an undercrossing beneath Margarita Road, and would continue to serve the community as a shared-use trail. The Project would not result in the addition of any residential housing or employment

facilities that would increase the number of school-age children. Therefore, the Project would not result in the need for new or expanded schools, and no impact would occur.

a.iv) **No Impact.** Implementation of the Project would realign the SGCT to use a new undercrossing below Margarita Road as well as construct associated infrastructure. While these improvements would improve pedestrian and bicycle safety at the Project Site, implementation of the Project would not improve connectivity to nearby parks compared to existing conditions as the SGCT overall would remain relatively unchanged. The Proposed Project does not include any new connections to other pedestrian and/or bicycle lanes or facilities and would not cause an increase in park usage within the City. Moreover, the Project does not have the potential to induce population growth, either directly or indirectly, and as such would not require additional parkland or parks be provided in the community. For these reasons, no impact to parks and parklands would occur.

a.v) **No Impact.** Other public facilities would not be affected by the Project, as the Project would not directly or indirectly induce population growth. The Project would increase general circulation and bike access throughout the Project area. Therefore, the Project would have no impact associated with the provision of new or expanded public facilities.

References

City of Temecula Police Department (TPD). 2021. Temecula Police Department – webpage. Available at https://temeculaca.gov/196/Police, accessed February 3, 2021.

Riverside County Fire Department (RCFD). 2021. Riverside County Fire Department Service Area – webpage. Available at http://www.rvcfire.org/ourDepartment/ServiceArea/Pages/default.aspx, accessed February 3, 2021.

Recreation

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
XVI. RECREATION —				
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☒	☐
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?	☐	☐	☒	☐

Discussion

a) **Less than Significant Impact.** As shown in Figure 2, the Project Site is located near multiple parks in the City, including the Harveston Lake Park, which is 0.6 miles northwest of the Project Site. As stated in Response XV(a.iv), the Project would realign the SGCT to use a new undercrossing below Margarita Road as well as construct associated infrastructure. While these improvements would improve pedestrian and bicycle safety at the Project Site, implementation of the Project would not improve connectivity to nearby parks compared to existing conditions as the SGCT overall would remain relatively unchanged. The Proposed Project does not include any new connections to other pedestrian and/or bicycle lanes or facilities and would not cause an increase in park usage within the City. Additionally, the Project is intended to serve the surrounding local neighborhood, and is not anticipated to draw a substantial number of new park users to local parks near the Project Site from outside of the community. Therefore, the Proposed Project would not result in a substantial physical deterioration of existing parks or recreational facilities and impacts would be less than significant.

b) **Less than Significant Impact.** While the Project includes recreational facilities and related components such facilities are intended to increase multi-modal transportation, connectivity, and safety. Although the Project is considered an expansion of transportation infrastructure, the shared-use pathway improvements and undercrossing would also be used for recreational purposes. Since the Proposed Project would realign the existing SGCT to use the new undercrossing at Margarita Road, no new recreational facility would be created with Project implementation. Furthermore, the Project would not induce population growth in the City and therefore would not necessitate the need for new recreational facilities to be built. Since the Project would improve an existing recreational facility, construction and operational impacts associated with Project development have been considered throughout the discussion of environmental impacts in this document. Therefore, with implementation of the mitigation measures listed in this document, the Proposed Project would have a less than significant physical effect on the environment.

Transportation

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
XVII. TRANSPORTATION — Would the project:				
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 Guidelines 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?	☐	☐	☒	☐

Discussion

a) **Less than Significant Impact.** The Project Site extends for 610 feet beneath Margarita Road and parallel to the Santa Gertrudis Creek, near the intersection of the existing SGCT. Regional access to the Project Site is provided by SR-79. Local access to the Project Site is currently provided via ramps on either side of Margarita Road accessible by pedestrians, bicyclists, and equestrians only.

Construction is expected to occur from 7:00 a.m. to 4:30 p.m., Monday through Friday, and would comply with the City of Temecula Municipal Code (Section 9.20.060) limits regarding construction activity. No nighttime construction would occur. Construction of the Proposed Project is scheduled to begin in 2021 and would last approximately six months. Based on the assumptions for the Air Quality analysis (see Section III), maximum traffic loading conditions construction of the Proposed Project would generate a maximum of 4 round-trip construction haul trips and 10 round-trip worker trips. This peak would occur during the trail and retaining wall construction phase over the course of 90 days.

Local Roadways

During the construction period, construction vehicles would use the roadways that surround the Project Site to deliver materials and haul waste. Workers' vehicles and construction vehicles could access the site from the above-mentioned local streets. Roadway users could experience temporary delays from material deliveries, but these delays would be both brief and infrequent. Therefore, they would not affect overall traffic circulation in the Project vicinity. Construction staging would occur on-site and would not affect traffic operations on adjacent roadways. Construction of the Project would not impede on non-motorized travel or public transportation in the Project vicinity. The Proposed Project would, however, require temporary trail closures while the existing SGCT is being demolished and constructed, including temporary traffic control measures that would direct trail users to alternative routes. However, any delays would be temporary and not considered to be significant. Temporary traffic control during

construction would be implemented in accordance with encroachment and construction permits from the City of Temecula.

As proposed, the Project would not conflict with any applicable plans, ordinances, or policies establishing measures for the effectiveness of the performance of the circulation system, such as the Temecula General Plan and the Temecula Multi-Use Trails and Bikeways Master Plan, in that the Project would provide similar trail operations with increased multi-modal function within an identified transit corridor. Since the Proposed Project would construct new alternative transportation facilities and would not generate any new vehicle trips, a traffic impact analysis is not warranted. Therefore, the Proposed Project would not substantially degrade traffic operations or roadways in the Project vicinity, nor would it impede non-motorized travel or public transportation. As such, impacts would be less than significant.

Transit, Bicycle, and Pedestrian Facilities

Public transportation in the City of Temecula is provided by Riverside Transit Agency bus service and Greyhound bus service. RTA route 61 is located along Margarita Road from the Perris Station Transit Center to Promenade Mall. The nearest stop is 0.05 miles south of the Project Site (RTA 2021). Greyhound does not operate any bus lines near the Project Site.

Class II bike lanes are provided in both travel directions along Margarita Road. In addition, SGCT ramps on either side of Margarita Road accessible by pedestrians, bicyclists, and equestrians only are located south of the overpass along Margarita Road. The Proposed Project would replace the existing ramps south of the Margarita Road overpass, and would construct 610 feet of a shared bicycle/trail undercrossing beneath the overpass. Margarita Road is a heavily traveled four-lane divided collector roadway, and has two lanes of traffic in each direction, a partially-landscaped median, and Class II bike lanes and sidewalks on both sides.

The proposed undercrossing would begin where the ramps begin to elevate to meet the grade of the existing overcrossing. The proposed upgrades to the trail network would be consistent with the City of Temecula's Multi-Use Trails and Bikeways Master Plan, adopted March 2016, to guide the City's future trail and bicycle facility implementation and provide an enhanced connection through the SGCT. Furthermore, as shown on Figure 8 and Figure 9 of the City's Multi-Use Trails and Bikeways Master Plan Update, the existing overcrossing is a localized hotspot for both bicycle and pedestrian collisions. The undercrossing would improve safety at this location by removing the need for existing at-grade roadway crossing for the trail, which would reduce the occurrence of collisions at this trail segment.

Construction of the Project would be temporary and last for approximately six months. The Project would not alter any public or emergency access along Margarita Road, nor would the Project result in any alterations of the roadway design, in which may affect transit operations. The Proposed Project would not directly or indirectly eliminate

alternative transportation corridors or facilities (e.g., bus stops). In addition, the Proposed Project would not preclude increased alternative transportation services. Therefore, the Proposed Project would not conflict with adopted policies, plans, or programs supporting alternative transportation. As mentioned above, the Proposed Project would not impede non-motorized travel or public transportation in the Project vicinity; it would not decrease the performance or safety of such facilities. As a result, impacts would be less than significant.

b) **Less than Significant Impact.** Approved in 2013, Senate Bill (SB) 743 amended the CEQA Guidelines to provide an alternative to level of service (LOS) for evaluating transportation impacts. In accordance with Senate Bill (SB) 743, the new CEQA Guidelines Section 15064.3, subdivision (b) was adopted in December 2018 by the California Natural Resources Agency. These revisions to the CEQA Guidelines criteria for determining the significance of transportation impacts are primarily focused on projects within transit priority areas and shift the focus from automobile delay to reduction of greenhouse gas emissions, creation of multimodal networks, and promotion of a mix of land uses. Automobile delay, as measured by LOS and other similar metrics, generally no longer constitutes a significant environmental effect under CEQA. The Governor's Office of Planning and Research (OPR) has proposed changes to the CEQA Guidelines that identify vehicle miles traveled (VMT) as the most appropriate metric to evaluate a project's transportation impacts. VMT is a measure of the total number of miles driven to or from a development and is sometimes expressed as an average per trip or per person.

Section 15064.3, subdivision (b) states that transportation projects that reduce, or have no impact on, VMT should be presumed to cause a less-than-significant transportation impact. The City of Temecula City Council adopted the City's VMT Guidelines on May 26, 2020 (Resolution No. 2020-33). The City's VMT Guidelines includes OPR's CEQA Technical Advisory (pages 20-21), which is a complete list of transportation projects that:

> *"would likely not lead to a substantial or measurable increase in vehicle travel, and therefore generally should not require an induced travel analysis."*

Included in the list of exempt projects are the addition of Class I bike paths, trails, multi-use paths, or other off-road facilities that serve nonmotorized travel. Since the Proposed Project is an alternative transportation project that would not generate any new vehicle trips, there would be no increase in VMT. Therefore, impacts would be less than significant.

c) **Less than Significant Impact.** An impact would occur if the Project substantially increases roadway hazards due to a geometric design feature or the introduction of incompatible uses (i.e., farming equipment). The Proposed Project would not include any alterations of existing roadway features (e.g., road realignment) or introduce any new driveways that would create hazardous conditions. On the contrary, the Proposed Project would remove the existing pedestrian and bicycle overcrossing of Margarita Road and

construct a new undercrossing under Margarita Road to provide users of the SGCT a safer option to cross that roadway. Project implementation would create new visual and physical barriers separating pedestrians and bicyclists from vehicular traffic by removing the need to use the roadway and allowing users to use new shared-use pathway, thereby reducing hazards for bicyclists and vehicles. These facility improvements would be constructed without requiring any changes to vehicle travel lanes (i.e., number of lanes, lane widths, turn restrictions) that could affect hazardous conditions for drivers. Therefore, impacts would be less than significant.

d) **Less than Significant Impact.** A significant impact would occur if the design of the Proposed Project would not satisfy local emergency access requirements. The Proposed Project would not include any alterations of existing roadway features (e.g., road realignment) that would create a permanent change to access for emergency vehicles. During construction of the Project, heavy construction-related vehicles could interfere with emergency response (e.g., slowing vehicles traveling behind trucks) in the Project area. However, such delays would be infrequent and brief as truck drivers are required to pull over to allow an emergency vehicle on-call to pass, and contract specifications for the Proposed Project would ensure that emergency vehicle access on area roadways would be maintained at all times. As such, inadequate emergency access would not occur as a result of Project construction or operation, and impacts would be less than significant.

References

Riverside Transit Authority (RTA). 2021. Route 61 Perris Station Transit Center – Sun City – Menifee – Murrieta – Temecula: schedule and map. January 10, 2021.

Tribal Cultural Resources

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
XVIII. TRIBAL CULTURAL RESOURCES —				
a) Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:				
i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources. Code Section 5020.1(k), or	☐	☐	☐	☒
ii) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	☐	☐	☐	☒

Discussion

The following discussion is based on the results of a Sacred Lands File (SLF) search conducted by the California Native American Heritage Commission (NAHC), as well as the City's Assembly Bill 52 (AB 52) government-to-government consultation efforts.

a.i) **No Impact.** The NAHC maintains the confidential SLF, which contains sites of traditional, cultural, or religious value to the Native American community. The NAHC was contacted on December 8, 2020 to request a search of the SLF. The NAHC responded to the request in a letter dated December 28, 2020. The results of the SLF search conducted by the NAHC indicate that Native American cultural resources are located within the Project area or its vicinity. The NAHC did not provide further details regarding the resources, but recommended the Pechanga Band of Luiseño Indians be contacted for more information.

Pursuant to AB 52, the County contacted five California Native Tribes who have previously requested in writing to be informed by the City through formal notification of proposed projects within the geographic area in which the tribe is traditionally and culturally affiliated. The five tribes include the Agua Caliente Band of Cahuilla Indians, the Pechanga Band of Luiseño Indians, the Rincon Band of Luiseño Indians, the Soboba Band of Luiseño Indians, and the Torres Martinez Desert Cahuilla Indians. The City sent notification letters to individuals associated with the five tribes on February 24, 2021. The letters included a Project description as well as a figure depicting the Project's location.

Three tribal groups have responded to the City's outreach letters including the Agua Caliente Band of Cahuilla Indians, the Rincon Band of Luiseño Indians, and the Pechanga Band of Luiseño Indians. In an email dated March 11, 2021, Arysa Gonzalez Romero, Historic Preservation Technician for the Agua Caliente Band of Cahuilla Indians, stated the Project is outside Agua Caliente's Traditional Use Area and they defer to tribal groups in closer proximity to the Project area.

In a letter dated March 10, 2021, Cheryl Madrigal, Tribal Historic Preservation Officer for the Rincon Band of Luiseño Indians, stated the Project area is located within Rincon's Area of Historic Interest and requested documents pertaining to the Project such as the cultural resources assessment report, shape files, archaeological record search results, geotechnical reports, and grading plans. Ms. Madrigal also stated that Rincon would like to consult following review of the provided materials. On September 15, 2021, the cultural resources assessment report was provided to Ms. Madrigal for review and comment. In a letter dated November 15, 2021, Ms. Madrigal responded to the City stating that the provided documents were reviewed and that Rincon was in agreement with the proposed mitigation measures regarding cultural resources. In the letter, Ms. Madrigal stated that Rincon has no further comments on the Project and defers any future consultation regarding the mitigation measures to the Pechanga Band of Luiseño Indians.

In an email dated, March 19, 2021, Juan Ochoa, Assistant Tribal Historic Preservation Officer for the Pechanga Band of Luiseno Indians, requesting to engage with the City in AB 52 consultation regarding the Project. Mr. Ochoa also requested the Tribe be added to distribution lists for public notices and circulation of all documents, including environmental review documents, archaeological reports, development plans, conceptual grading plans if available, and all other applicable documents pertaining to this Project. Mr. Ochoa also requested Pechanga be directly notified of all public hearings and scheduled approvals concerning the Project, and that these comments be incorporated into the record of approval for the Project. On May 25, 2021, the City provided a draft of the cultural resources assessment report prepared for the Project to Mr. Ochoa. On August 26, 2021, the Mr. Ochoa returned the report with comments, that were addressed and incorporated into a second draft of the report. The City provided Mr. Ochoa with the second draft of the report September 8, 2021. Upon receipt of the report, Ebru Ozdil, cultural analyst for the Pechanga, requested that construction monitoring be incorporated as a mitigation measure based on the discovery or cultural resources along other segments of Santa Gertrudis Creek as part of other projects. Per Ms. Ozdil's request construction monitoring has been incorporated as **Mitigation Measure CUL-3** in Response V(a), Cultural Resources, of this document. In an email dated December 30, 2021, Molly Earp, Cultural Planning Specialist for the Pechanga Cultural Resources Department, requested that **Mitigation Measure CUL-4** regarding inadvertent discovery protocols be updated to include the wording preferred by Pechanga for such mitigation. Based on Ms. Earp's request, Mitigation Measure CUL-4 was updated accordingly. Ms. Earp also stated that aside from the requested changed to the mitigation measure, Pechanga has no further comments.

Based on the City's AB 52 consultation efforts with the Pechanga Band of Mission Indians and the Rincon Band of Luiseño Indians, no tribal cultural resources were identified within the Project area. Therefore, no tribal cultural resources that are listed in or eligible for listing in the California Register, or in a local register of historical resources as defined in PRC Section 5020.1(k) would be impacted by Project implementation. No impact would occur.

Although no tribal cultural resources were identified as a result of the consultation, the Pechanga Band of Mission Indians considers the Project area to be sensitive for the presence of subsurface cultural items. As such, **Mitigation Measures CUL-3,** which includes archaeological and Native American monitoring would be implemented during Project construction per Pechanga's request.

a.ii) **No Impact.** As noted above in Response XVIII(a.i), no tribal cultural resources were identified as a result of the consultation with the Pechanga Band of Mission Indians and the Rincon Band of Luiseño Indians. Therefore, no tribal cultural resources that have been 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 PRC Section 5024.1, would be impacted by Project implementation. No impact would occur.

Although no tribal cultural resources were identified as a result of the consultation, the Pechanga Band of Mission Indians considers the Project area to be sensitive for the presence of subsurface cultural items. As such, **Mitigation Measures CUL-3,** which includes archaeological and Native American monitoring would be implemented during Project construction per Pechanga's request.

Utilities and Service Systems

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
XIX. UTILITIES AND SERVICE SYSTEMS — Would the project:				
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?	☐	☐	☒	☐

Discussion

a) **Less than Significant Impact.** Water for construction along the affected segment of the Project Site would continue to be provided by RCWD and would be served by direct connection to existing water lines. Wastewater services for the Project area are currently provided by the Eastern Municipal Water District (EMWD). Due to the nature of the Project, implementation would not increase wastewater production or require the construction of new water or wastewater treatment facilities or the expansion of existing facilities. The Project would protect-in-place gas and water lines beneath the existing channel, and may require the relocation of utility lines (including a 20-inch waterline owned by RCWD that would be relocated a maximum of 23-feet to the east of the proposed anchor wall); however, these activities are considered minor and routine in scope. Ground disturbance associated with the relocation of utility lines (including the waterline relocation) is analyzed throughout this environmental document. With implementation of mitigation measures within this document, construction impacts associated with proposed utility relocation would be less than significant. Therefore, the Project would not result in the relocation of new or expanded utility or telecommunications facilities, the construction or relocation of which could cause significant environmental effects. Impacts would be less than significant.

b) **Less than Significant Impact.** As discussed in Response X, above, the Project would be served by RCWD, which encompasses approximately 99,000 acres. The City's water supply is drawn from the Murrieta-Temecula groundwater basin and supplemented with

imported water from the MWD. This aquifer is recharged by underflow, surface flow from the creeks in the area, and by direct precipitation in the valley (RCWD 2016). RCWD's Urban Water Management Plan indicates that approximately 25 to 40 percent of the RCWD's total water supply consists of groundwater, while imported water has supplied 60 to 70 percent of the RCWD's water. As documented in the UWMP, the RCWD supplied a total of 60,079 AFY. RCWD has anticipated that water supply is anticipated to increase to 106,986 AFY by 2040 (RCWD 2016). The available supplies and water demands for the RCWD's water service area were analyzed in the UWMP to assess the District's ability to satisfy demands during three hydrologic scenarios: a normal water year, single-dry water year, and multiple-dry water years. DWR has interpreted "multiple-dry years" to mean three dry years; however, the RCWD has elected to include a fourth dry year as well. It is expected that the RCWD will be able to meet 100% of its demand under every hydrologic scenario (RCWD 2016). Project activities that would require the use of water include use for dust control and irrigation. Project construction would not be anticipated to use substantial amounts of water which would affect water supplies for normal, dry, or multiple dry years. After construction, the Project would operate with similar conditions to existing conditions. As such, impacts regarding water supply would be less than significant.

c) **No Impact.** The Proposed Project would not result in the need for the construction of new or expanded wastewater treatment facilities because no wastewater would be generated. The Proposed Project is an alternative transportation project that would not generate sanitary sewer flows. As such, because the Project would not generate any wastewater, no impact would occur related to requiring additional wastewater treatment facilities.

d, e) **Less than Significant Impact.** Project construction may require some demolition/excavation of existing materials and soils, which would necessitate solid waste hauling. All excavation and construction debris would be required to demonstrate compliance with all federal, State, and local statutes and regulations related to solid waste, including the 50 percent diversion of solid waste requirement pursuant to the California Integrated Waste Management Act of 1989 (AB 939). Pursuant to AB 939, the City has prepared a Source Reduction and Recycling Element (SSRE) and implements the Element to ensure that the City's solid waste reduction goals continue to be met. The Project would be required to comply with such goals stipulated under the City's SRRE for diverting solid waste, as applicable. Project construction would also be subject to the solid waste disposal goals and policies identified under the General Plan Growth Management/Public Facilities Element. Project conformance with AB 939, along with the City's SRRE and General Plan goals and policies, would reduce the Project's potential to generate solid waste and ensure proper solid waste disposal. Therefore, a less than significant impact would occur in regard to solid waste.

References

City of Temecula. 2005. General Plan – Growth Management/Public Facilities Element. Adopted 1993, updated 2005. Available at https://temeculaca.gov/DocumentCenter/View/282/Growth-Management-Public-Facilities-PDF, accessed February 3, 2021.

Rancho California Water District (RCWD). 2016. 2015 Urban Water Management Plan. Adopted June 2016. Available at https://www.ranchowater.com/DocumentCenter/View/2023/2015-UWMP---June-2016?bidId=, accessed February 3, 2021.

Wildfire

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
XX. WILDFIRE — If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:				
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?	☐	☐	☒	☐

Discussion

a) **Less than Significant Impact.** As discussed in Response XVII(d) above, the Proposed Project would not include any alterations of existing roadway features (e.g., road realignment) that would create a permanent change to access for emergency vehicles. During construction of the Project, heavy construction-related vehicles could interfere with emergency response (e.g., slowing vehicles traveling behind trucks) in the Project area. However, such delays would be infrequent and brief as truck drivers are required to pull over to allow an emergency vehicle on-call to pass, and contract specifications for the Proposed Project would ensure that emergency vehicle access on area roadways would be maintained at all times. No revisions to an adopted emergency plan would be required as a result of the Project. Impacts in this regard would be less than significant.

b) **Less than Significant Impact.** While the Project Site is located in an urbanized area, construction activities have the potential to increase the risk of fire ignition due to presences of typical construction fuels and solvents. However, the Project is unlikely to exacerbate wildfire risks because vegetation along the Project Site is minimal and is limited to trees and landscaping. Additionally, according to CalFire, the Project Site is approximately 1.3 miles southeast of the nearest Very High Fire Hazard Severity Zone (CalFire 2021). The Project is located in an area of slope, but is below the surrounding ground surface, which would limit Santa Ana wind conditions. The Project would be required to comply with federal, State and local development regulations that minimize the risk of fire hazards. Implementation of the Proposed Project would not exacerbate wildfire risks and would not expose Project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire. Impacts are considered less than significant.

c) **Less than Significant Impact.** The Project is located within, and surrounded by, existing urban development. The Project would include installation and maintenance of a trail undercrossing, which would improve pedestrian and bicyclist safety near the intersection of Margarita Road. Construction activities have the potential to increase the risk of fire ignition, but the Project is unlikely to exacerbate wildfire risks because vegetation along the Project Site is minimal and is limited to trees and landscaping. During operation, the Project would receive scheduled inspections and maintenance. These activities would have minimal environmental impacts and are not expected to exacerbate fire risk in the area. Therefore, impacts would be less than significant.

d) **Less than Significant Impact.** The Proposed Project involves the construction of a shared-use pathway and undercrossing and would not involve the construction or operation of habitable structures. While workers would temporarily be present at the project site during construction, they would not be subject to undue risks associated with flooding or landslides. In addition, the long-term operation of project would not cause or exacerbate flooding or landslides hazards. Therefore, impacts involving the exposure of people or structures to significant risks from flooding or landslides as a result of runoff, post-fire slope instability, and/or drainage changes would be less than significant.

References

California Department of Forestry and Fire Protection (CalFire). 2021. California Fire Hazard Severity Zone Viewer – Webpage. Available at https://gis.data.ca.gov/datasets/789d5286736248f69c4515c04f58f414, accessed February 3, 2021.

Mandatory Findings of Significance

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
XXI. MANDATORY FINDINGS OF SIGNIFICANCE —				
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?	☐	☒	☐	☐

Discussion

a) **Less than Significant Impact with Mitigation Incorporated.** On the basis of the foregoing analysis, the Proposed Project does not have the potential to significantly degrade the quality of the environment with the exception to biological resources and cultural resources. The Project Site contains limited habitat for wildlife species that would be affected by the Project and is located in an urbanized setting. Project implementation has the potential to significantly affect biological resources; however, incorporation of **Mitigation Measures BIO-1** through **Mitigation Measure BIO-7** would reduce these impacts to a less than significant level. No historic or cultural resources that may contribute to California's history were observed at the Project Site. **Mitigation Measure CUL-1** through **Mitigation Measure CUL-5** would reduce impacts to less than significant in the event that a cultural or historical resource was found. Therefore, impacts to biological and cultural resources would be less than significant with Project implementation.

b) **Less than Significant Impact with Mitigation Incorporated.** Based on the analysis contained within this Initial Study, the Proposed Project would not have cumulatively considerable impacts with implementation of the mitigation measures established in this document (**Mitigation Measures BIO-1** through **BIO-7** and **Mitigation Measures CUL-1** through **CUL-5**). Implementation of mitigation measures would reduce the potential for the incremental effects of the Proposed Project to less than significant levels when viewed in connection with the effects of past projects, current projects, or probable future projects.

c) **Less than Significant Impact with Mitigation Incorporated.** There are no known substantial adverse effects on human beings that would be caused by the Proposed Project. Implementation of mitigation (**Mitigation Measures BIO-1** through **BIO-7** and **Mitigation Measures CUL-1** through **CUL-5**) would reduce potential human safety impacts to less than significant. The Project is consistent with the land uses in the Project area and the environmental evaluation has concluded that no adverse significant environmental impacts would result from the Project.

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Appendix A
Air Quality and GHG Calculations

ESA

Emissions Summary

Air Quality Construction Analysis

Unmitigated Construction Scenario

Regional	lbs/day					
	ROG	NOX	CO	SO2	PM10 Total	Total PM2.5
Demolition	0.9	8.3	8.3	0.0	0.9	0.5
Grading	0.9	8.5	8.3	0.0	0.9	0.6
Building Construction - 2021	0.8	8.5	8.0	0.0	0.6	0.5
Building Construction - 2022	0.7	7.4	7.7	0.0	0.5	0.4
Architectural Coating	0.3	1.4	2.1	0.0	0.2	0.1
Daily Maximum Emissions	**0.9**	**8.5**	**8.3**	**0.0**	**0.9**	**0.6**
SCAQMD Regional Threshold	75	100	550	150	150	55
Exceeds Threshold?	No	No	No	No	No	No

Air Quality Construction Analysis

Unmitigated Construction Scenario

Localized Emissions Summary	NOX	CO	PM10 Total	Total PM2.5
0	lb/hr			
Demolition	7.3	7.6	0.7	0.4
Grading	7.4	7.7	0.7	0.6
Building Construction - 2021	8.2	7.4	0.4	0.4
Building Construction - 2022	7.0	7.2	0.4	0.3
Architectural Coating	1.4	1.8	0.1	0.1
Daily Maximum Emissions	**8.2**	**7.7**	**0.7**	**0.6**
SCAQMDLocalized Threshold	162	750	4	3
Exceeds Threshold?	No	No	No	No

Air Quality Construction Analysis

summer	Onsite Construction Emissions (CalEEMod) + Onsite Idling (EMFAC2017)										Offsite Construction Emissions - Running (EMFAC2017)									
	ROG	NOX	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	Total PM2.5	ROG	NOX	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	Total PM2.5
	lb/day										lb/day									
Demolition	0.82	7.28	7.59	0.04	0.28	0.41	0.69	0.04	0.39	0.43	0.04	0.98	0.75	0.00	0.18	0.01	0.19	0.05	0.01	0.05
Grading	0.81	7.42	7.73	0.01	0.29	0.41	0.70	0.16	0.39	0.55	0.03	0.50	0.53	0.00	0.15	0.00	0.15	0.04	0.00	0.04
Building Construction - 2021	0.79	8.16	7.44	0.01	0.00	0.45	0.45	0.00	0.41	0.41	0.02	0.36	0.53	0.00	0.14	0.00	0.14	0.04	0.00	0.04
Building Construction - 2022	0.69	7.03	7.15	0.01	0.00	0.37	0.37	0.00	0.34	0.34	0.02	0.36	0.53	0.00	0.14	0.00	0.14	0.04	0.00	0.04
Architectural Coating	0.31	1.41	1.81	0.00	0.00	0.08	0.08	0.00	0.08	0.08	0.01	0.02	0.32	0.00	0.11	0.00	0.11	0.03	0.00	0.03

Regional Emissions - ALL	Regional Emissions (On-Site Construction + Worker + Visitors +Vendor+Haul)									
	ROG	NOX	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	Total PM2.5
Demolition	0.86	8.26	8.34	0.04	0.47	0.41	0.88	0.09	0.39	0.49
Grading	0.83	7.92	8.27	0.01	0.44	0.41	0.85	0.20	0.39	0.59
Building Construction - 2021	0.81	8.53	7.97	0.01	0.14	0.45	0.59	0.04	0.41	0.45
Building Construction - 2022	0.71	7.39	7.68	0.01	0.14	0.37	0.51	0.04	0.34	0.38
Architectural Coating	0.31	1.43	2.13	0.00	0.11	0.08	0.19	0.03	0.08	0.11
Maximum Daily Emissions	**0.86**	**8.53**	**8.34**	**0.04**	**0.47**	**0.45**	**0.88**	**0.20**	**0.41**	**0.59**

Air Quality Construction Analysis

summer	Onsite Construction Emissions (CalEEMod) + Onsite Idling (EMFAC2017)										Offsite Construction Emissions - Running (EMFAC2017)									
	ROG	NOX	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	Total PM2.5	ROG	NOX	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	Total PM2.5
	lb/day										lb/day									
Demolition	0.82	7.28	7.59	0.04	0.28	0.41	0.69	0.04	0.39	0.43	0.04	0.98	0.75	0.00	0.18	0.01	0.19	0.05	0.01	0.05
Grading	0.81	7.42	7.73	0.01	0.29	0.41	0.70	0.16	0.39	0.55	0.03	0.50	0.53	0.00	0.15	0.00	0.15	0.04	0.00	0.04
Building Construction - 2021	0.79	8.16	7.44	0.01	0.00	0.45	0.45	0.00	0.41	0.41	0.02	0.36	0.53	0.00	0.14	0.00	0.14	0.04	0.00	0.04
Building Construction - 2022	0.69	7.03	7.15	0.01	0.00	0.37	0.37	0.00	0.34	0.34	0.02	0.36	0.53	0.00	0.14	0.00	0.14	0.04	0.00	0.04
Architectural Coating	0.31	1.41	1.81	0.00	0.00	0.08	0.08	0.00	0.08	0.08	0.01	0.02	0.32	0.00	0.11	0.00	0.11	0.03	0.00	0.03

Regional Emissions - ALL	Regional Emissions (On-Site Construction + Worker + Visitors +Vendor+Haul)									
	ROG	NOX	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	Total PM2.5
Demolition	0.86	8.26	8.34	0.04	0.47	0.41	0.88	0.09	0.39	0.49
Grading	0.83	7.92	8.27	0.01	0.44	0.41	0.85	0.20	0.39	0.59
Building Construction - 2021	0.81	8.53	7.97	0.01	0.14	0.45	0.59	0.04	0.41	0.45
Building Construction - 2022	0.71	7.39	7.68	0.01	0.14	0.37	0.51	0.04	0.34	0.38
Architectural Coating	0.31	1.43	2.13	0.00	0.11	0.08	0.19	0.03	0.08	0.11
Maximum Daily Emissions	**0.86**	**8.53**	**8.34**	**0.04**	**0.47**	**0.45**	**0.88**	**0.20**	**0.41**	**0.59**

On-road Emissions Calculations

Total On-Road Emissions **Total On-Road Emissions**

260 Max construction days per year

	Construction Phase	Daily One-Way Trips	Days per Phase (days)	Work Hours per Day (hours/day)	One-Way Trip Distance per Day (miles)	Idling per Day (minutes)	Regional Emissions (pounds/day) ROG	NOX	CO	SO2	PM10 Dust	PM10 Exh	Total PM10	PM2.5 Dust	PM2.5 Exh	Total PM2.5	(MT/yr) Total CO2e
	Demolition	2021															
	Total Haul Trips	50															
Demolition	Hauling	4	15	8	20	15	0.04	0.96	0.43	0.00	0.07	0.01	0.08	0.02	0.00	0.02	2.29
2021Vendo	Vendor	0	15	8	6.9	15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2021Worke	Worker	10	15	8	14.7	0	0.01	0.02	0.32	0.00	0.11	0.00	0.11	0.03	0.00	0.03	0.67
					Onroad Emissions - Demolition		**0.04**	**0.98**	**0.75**	**0.00**	**0.18**	**0.01**	**0.19**	**0.05**	**0.01**	**0.05**	**2.96**
	Grading	2021															
	Total Haul Trips	18															
2021Haulin	Hauling	2	10	8	20	15	0.02	0.48	0.21	0.00	0.03	0.00	0.04	0.01	0.00	0.01	0.76
2021Vendo	Vendor	0	10	8	6.9	15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2021Worke	Worker	10	10	8	14.7	0	0.01	0.02	0.32	0.00	0.11	0.00	0.11	0.03	0.00	0.03	0.44
					Onroad Emissions - Grading		**0.03**	**0.50**	**0.53**	**0.00**	**0.15**	**0.00**	**0.15**	**0.04**	**0.00**	**0.04**	**1.21**
	Building Construction	2021															
	Total Haul Trips	0															
2021Haulin	Hauling	0	90	8	20	15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2021Vendo	Vendor	4	90	8	6.9	15	0.02	0.34	0.21	0.00	0.03	0.00	0.03	0.01	0.00	0.01	4.70
2021Worke	Worker	10	90	8	14.7	0	0.01	0.02	0.32	0.00	0.11	0.00	0.11	0.03	0.00	0.03	4.00
					Onroad Emissions - Building Construction		**0.02**	**0.36**	**0.53**	**0.00**	**0.14**	**0.00**	**0.14**	**0.04**	**0.00**	**0.04**	**8.70**
	Architectural Coating	2021															
	Total Haul Trips	0															
2021Haulin	Hauling	0	20	8	20	15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2021Vendo	Vendor	0	20	8	6.9	15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2021Worke	Worker	10	20	8	14.7	0	0.01	0.02	0.32	0.00	0.11	0.00	0.11	0.03	0.00	0.03	0.89
					Onroad Emissions - Architectural Coating		**0.01**	**0.02**	**0.32**	**0.00**	**0.11**	**0.00**	**0.11**	**0.03**	**0.00**	**0.03**	**0.89**

Running Emissions

		Running Emissions Factor (grams/mile)						Running Emissions Factor (grams/mile)		
		ROG	NOX	CO	SO2	PM10	PM2.5	CO2	CH4	N2O
2020Hauling	Hauling	0.12467436	4.127586075	0.70244559	0.01389473	0.04956172	0.04741766	1520.07529	0.08121693	0.2410944
2020Vendor	Vendor	0.12175156	3.217634225	0.70325362	0.01222293	0.05527116	0.05287672	1311.85371	0.04440854	0.18764154
2020Worker	Worker	0.02296702	0.083024116	1.08430473	0.00306823	0.00220351	0.002029	310.119284	0.00538825	0.00712331
2021Hauling	Hauling	0.08103572	3.571515626	0.57499969	0.01347655	0.0279869	0.02677616	1477.43548	0.08019506	0.23446951
2021Vendor	Vendor	0.0717977	2.602453214	0.52331731	0.01185125	0.02991351	0.02861613	1273.54109	0.04239589	0.18204996
2021Worker	Worker	0.01983596	0.07223241	0.98341812	0.00297251	0.00205695	0.00189393	300.448479	0.00471177	0.00646256
2022Hauling	Hauling	0.02463044	2.696920068	0.45130496	0.01267644	0.01843607	0.0176385	1394.21089	0.07850131	0.22145577
2022Vendor	Vendor	0.01991806	1.889760516	0.36497107	0.01125961	0.01227567	0.01174136	1211.83967	0.04029686	0.17274956
2022Worker	Worker	0.01716262	0.063167612	0.89784164	0.00287684	0.00193578	0.00178222	290.781675	0.00413135	0.00590029
2023Hauling	Hauling	0.02438513	2.70726027	0.46544535	0.01247986	0.01859168	0.01778737	1374.48104	0.07922973	0.21840565
2023Vendor	Vendor	0.01904515	1.897817151	0.35240371	0.01108069	0.01237071	0.01183229	1193.62946	0.0405116	0.17033183
2023Worker	Worker	0.01513169	0.055897597	0.83140276	0.00279565	0.00185735	0.00170978	282.578076	0.00368669	0.00544537
GWP		N/A	N/A	N/A	N/A	N/A	N/A	1	25	290

Construction Phase	Daily One-Way Trips	Haul Days per Phase (days)	Work Hours per Day (hours/day)	One-Way Trip Distance per Day (miles)	Regional Emissions (pounds/day) ROG	NOX	CO	SO2	PM10	PM2.5	Regional Emissions (MT/year) CO2	CH4	N2O	CO2e
Demolition	2021													
Total Haul Trips	50													
Hauling	4	15	8	20	0.01	0.63	0.10	0.00	0.00	0.00	1.77	0.00	0.08	1.86
Vendor	0	15	8	6.9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	10	15	8	14.7	0.01	0.02	0.32	0.00	0.00	0.00	0.66	0.00	0.00	0.67
					0.02	**0.65**	**0.42**	**0.00**	**0.01**	**0.01**	**2.44**	**0.00**	**0.09**	**2.52**
Grading	2021													
Total Haul Trips	18													
Hauling	2	10	8	20	0.01	0.31	0.05	0.00	0.00	0.00	0.59	0.00	0.03	0.62
Vendor	0	10	8	6.9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	10	10	8	14.7	0.01	0.02	0.32	0.00	0.00	0.00	0.44	0.00	0.00	0.44
					0.01	**0.34**	**0.37**	**0.00**	**0.00**	**0.00**	**1.03**	**0.00**	**0.03**	**1.06**
Building Construction	2021													
Total Haul Trips	0													
Hauling	0	90	8	20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	4	90	8	6.9	0.00	0.16	0.03	0.00	0.00	0.00	3.16	0.00	0.13	3.30
Worker	10	90	8	14.7	0.01	0.02	0.32	0.00	0.00	0.00	3.97	0.00	0.02	4.00
					0.01	**0.18**	**0.35**	**0.00**	**0.00**	**0.00**	**7.14**	**0.00**	**0.16**	**7.30**
Architectural Coating	2021													
Total Haul Trips	0													
Hauling	0	20	8	20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0	20	8	6.9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	10	20	8	14.7	0.01	0.02	0.32	0.00	0.00	0.00	0.88	0.00	0.01	0.89
					0.01	**0.02**	**0.32**	**0.00**	**0.00**	**0.00**	**0.88**	**0.00**	**0.01**	**0.89**

Idling Emissions

		Idling Emissions Factor (grams/minute)						Idling Emissions Factor (grams/minute)		
		ROG	NOX	CO	SO2	PM10	PM2.5	CO2	CH4	N2O
2020Hauling	Hauling	0.18203757	2.514257339	2.34424676	0.00425698	0.00364827	0.00349045	457.401286	0.01060122	0.07221486
2020Vendor	Vendor	0.09655158	1.389498887	1.26412887	0.00228127	0.00225118	0.00215379	244.777779	0.00633167	0.03834928
2020Worker	Worker	0	0	0	0	0	0	0	0	0
2021Hauling	Hauling	0.17992826	2.494221613	2.47137063	0.00431707	0.00153707	0.00147058	463.979458	0.01057258	0.07325903
2021Vendor	Vendor	0.09512038	1.358206146	1.32735389	0.00230801	0.00101987	0.00097575	247.718477	0.00631023	0.03882087
2021Worker	Worker	0	0	0	0	0	0	0	0	0
2022Hauling	Hauling	0.1794334	2.268893827	2.65540888	0.00413434	0.00124387	0.00119006	444.864297	0.01062746	0.07026495
2022Vendor	Vendor	0.09453686	1.21688302	1.42143188	0.00221115	0.00069792	0.00066773	237.578447	0.00634204	0.03723243
2022Worker	Worker	0	0	0	0	0	0	0	0	0
2023Hauling	Hauling	0.17974307	2.262044342	2.6647617	0.00409118	0.00119718	0.00114539	440.393976	0.01068902	0.06956683
2023Vendor	Vendor	0.09456838	1.210583463	1.42500372	0.00218695	0.00066414	0.00063541	235.070306	0.00635061	0.03685329
2023Worker	Worker	0	0	0	0	0	0	0	0	0
GWP		N/A	N/A	N/A	N/A	N/A	N/A	1	25	290

Construction Phase	Daily One-Way Trips	Haul Days per Phase (days)	Work Hours per Day (hours/day)	Idling minutes per Day (miles)	Regional Emissions (pounds/day) ROG	NOX	CO	SO2	PM10	PM2.5	Regional Emissions (MT/year) CO2	CH4	N2O	CO2e
Demolition	2021													
Total Haul Trips	50													
Hauling	4	15	8	15	0.02	0.33	0.33	0.00	0.00	0.00	0.42	0.00	0.02	0.44
Vendor	0	15	8	15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	10	15	8	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
					0.02	**0.33**	**0.33**	**0.00**	**0.00**	**0.00**	**0.42**	**0.00**	**0.02**	**0.44**
Grading	2021													
Total Haul Trips	18													
Hauling	2	10	8	15	0.01	0.16	0.16	0.00	0.00	0.00	0.14	0.00	0.01	0.15
Vendor	0	10	8	15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	10	10	8	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
					0.01	**0.16**	**0.16**	**0.00**	**0.00**	**0.00**	**0.14**	**0.00**	**0.01**	**0.15**
Building Construction	2021													
Total Haul Trips	0													
Hauling	0	90	8	15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	4	90	8	15	0.01	0.18	0.18	0.00	0.00	0.00	1.34	0.00	0.06	1.40
Worker	10	90	8	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
					0.01	**0.18**	**0.18**	**0.00**	**0.00**	**0.00**	**1.34**	**0.00**	**0.06**	**1.40**
Architectural Coating	2021													
Total Haul Trips	0													
Hauling	0	20	8	15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0	20	8	15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	10	20	8	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
					0.00	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Road Dust, Break Wear, and Tire wear Emissions

	Emission Factors (grams/mile)					
	PM10			PM2.5		
	RD	BW	TW	RD	BW	TW
2020Hauling Hauling	3.00E-01	0.061048007	0.03558331	7.36E-02	0.02616343	0.00889583
2020Vendor Vendor	3.00E-01	0.095694022	0.02379166	7.36E-02	0.04101172	0.00594791
2020Worker Worker	3.00E-01	0.036750011	0.008	7.36E-02	0.01575	0.002
2021Hauling Hauling	3.00E-01	0.061055751	0.0355879	7.36E-02	0.02616675	0.00889698
2021Vendor Vendor	3.00E-01	0.095697894	0.02379395	7.36E-02	0.04101338	0.00594849
2021Worker Worker	3.00E-01	0.036750011	0.008	7.36E-02	0.01575	0.002
2022Hauling Hauling	3.00E-01	0.061063462	0.03559233	7.36E-02	0.02617005	0.00889808
2022Vendor Vendor	3.00E-01	0.095701749	0.02379617	7.36E-02	0.04101504	0.00594904
2022Worker Worker	3.00E-01	0.036750011	0.008	7.36E-02	0.01575	0.002
2023Hauling Hauling	3.00E-01	0.06107028	0.03559616	7.36E-02	0.02617298	0.00889904
2023Vendor Vendor	3.00E-01	0.095705158	0.02379808	7.36E-02	0.0410165	0.00594952
2023Worker Worker	3.00E-01	0.036750011	0.008	7.36E-02	0.01575	0.002

Construction Phase	Daily One-Way Trips	Haul Days per Phase (days)	Work Hours per Day (hours/day)	One-Way Trip Distance per Day (miles)	Regional Emissions (pounds/day)					
					PM10			PM2.5		
					RD	BW	TW	RD	BW	TW
Demolition	2021									
Total Haul Trips	50									
Hauling	4	15	8	20	0.05	0.01	0.01	0.01	0.00	0.00
Vendor	0	15	8	6.9	0.00	0.00	0.00	0.00	0.00	0.00
Worker	10	15	8	14.7	0.10	0.01	0.00	0.02	0.01	0.00
Grading	2021									
Total Haul Trips	18									
Hauling	2	10	8	20	0.03	0.01	0.00	0.01	0.00	0.00
Vendor	0	10	8	6.9	0.00	0.00	0.00	0.00	0.00	0.00
Worker	10	10	8	14.7	0.10	0.01	0.00	0.02	0.01	0.00
Building Construction	2021									
Total Haul Trips	0									
Hauling	0	90	8	20	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	4	90	8	6.9	0.02	0.01	0.00	0.00	0.00	0.00
Worker	10	90	8	14.7	0.10	0.01	0.00	0.02	0.01	0.00
Architectural Coating	2021									
Total Haul Trips	0									
Hauling	0	20	8	20	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0	20	8	6.9	0.00	0.00	0.00	0.00	0.00	0.00
Worker	10	20	8	14.7	0.10	0.01	0.00	0.02	0.01	0.00

Total On-Road Emissions **Total On-Road Emissions**

260 Max construction days per year

Construction Phase	Daily One-Way Trips	Haul Days per Phase (days)	Work Hours per Day (hours/day)	One-Way Trip Distance per Day (miles)	Idling per Day (minutes)	Regional Emissions (Tons/year) ROG	NOX	CO	SO2	PM10 Dust	PM10 Exh	Total PM10	PM2.5 Dust	PM2.5 Exh	Total PM2.5	(MT/yr) Total CO2e
Demolition	2021															
Total Haul Trips	50															
Hauling	4	15	8	20	15	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.29
Vendor	0	15	8	6.9	15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	10	15	8	14.7	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.67
						0.00	**0.01**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**2.96**
Grading	2021															
Total Haul Trips	18															
Hauling	2	10	8	20	15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.76
Vendor	0	10	8	6.9	15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	10	10	8	14.7	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.44
						0.00	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**1.21**
Building Construction	2021															
Total Haul Trips	0															
Hauling	0	90	8	20	15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	4	90	8	6.9	15	0.00	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.70
Worker	10	90	8	14.7	0	0.00	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.00	0.00	4.00
						0.00	**0.02**	**0.02**	**0.00**	**0.01**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**8.70**
Architectural Coating	2021															
Total Haul Trips	0															
Hauling	0	20	8	20	15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0	20	8	6.9	15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	10	20	8	14.7	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.89
						0.00	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.89**

Total On-Road Emissions **Total On-Road Emissions**

260 Max construction days per year

Construction Phase	Daily One-Way Trips	Haul Days per Phase (days)	Work Hours per Day (hours/day)	One-Way Trip Distance per Day (miles)	Idling per Day (minutes)	Regional Emissions (Tons/year) ROG	NOX	CO	SO2	PM10 Dust	PM10 Exh	Total PM10	PM2.5 Dust	PM2.5 Exh	Total PM2.5	(MT/yr) Total CO2e
Demolition	2021															
Total Haul Trips	50															
Hauling	4	15	8	20	15	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.29
Vendor	0	15	8	6.9	15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	10	15	8	14.7	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.67
						0.00	**0.01**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**2.96**
Grading	2021															
Total Haul Trips	18															
Hauling	2	10	8	20	15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.76
Vendor	0	10	8	6.9	15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	10	10	8	14.7	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.44
						0.00	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**1.21**
Building Construction	2021															
Total Haul Trips	0															
Hauling	0	90	8	20	15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	4	90	8	6.9	15	0.00	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.70
Worker	10	90	8	14.7	0	0.00	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.00	0.00	4.00
						0.00	**0.02**	**0.02**	**0.00**	**0.01**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**8.70**
Architectural Coating	2021															
Total Haul Trips	0															
Hauling	0	20	8	20	15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0	20	8	6.9	15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	10	20	8	14.7	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.89
						0.00	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.89**

GHG Summary

GHG Emissions Summary

Construction Phase	Off-Road	On-Road	Total MTCO2e
Demolition	7.84	2.96	10.80
Grading	5.23	1.21	6.44
Building Construction	45.42	8.70	54.12
Architectural Coating	2.56	0.89	3.45
Total Construction Emissions			**74.81**

CalEEMod Outputs

Santa Gertrudis Creek Trail - South Coast Air Basin, Summer

Santa Gertrudis Creek Trail

South Coast Air Basin, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Non-Asphalt Surfaces	7.32	1000sqft	0.17	7,320.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	31
Climate Zone	10			**Operational Year**	2022
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - Project Schedule

Trips and VMT - Calculated outside of CalEEMod

Demolition - 260 CY concrete = 510 Tons

Grading - Import 176 CY Soil

Architectural Coating -

Energy Use -

Construction Off-road Equipment Mitigation -

Off-road Equipment -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	5.00	20.00
tblConstructionPhase	NumDays	100.00	90.00
tblConstructionPhase	NumDays	10.00	15.00
tblConstructionPhase	NumDays	2.00	10.00
tblConstructionPhase	NumDays	5.00	0.00
tblConstructionPhase	NumDays	1.00	0.00
tblGrading	MaterialImported	0.00	176.00
tblTripsAndVMT	HaulingTripNumber	50.00	0.00
tblTripsAndVMT	HaulingTripNumber	17.00	0.00
tblTripsAndVMT	VendorTripNumber	1.00	0.00
tblTripsAndVMT	VendorVehicleClass	HDT_Mix	HHDT
tblTripsAndVMT	WorkerTripNumber	10.00	0.00
tblTripsAndVMT	WorkerTripNumber	5.00	0.00
tblTripsAndVMT	WorkerTripNumber	10.00	0.00
tblTripsAndVMT	WorkerTripNumber	3.00	0.00
tblTripsAndVMT	WorkerTripNumber	18.00	0.00
tblTripsAndVMT	WorkerTripNumber	1.00	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e

Year	lb/day										lb/day					
2021	0.7965	7.9850	7.5691	0.0120	0.7528	0.4475	1.1601	0.4138	0.4117	0.8024	0.0000	1,147.4338	1,147.4338	0.3568	0.0000	1,152.7797
2022	0.6863	7.0258	7.1527	0.0114	0.0000	0.3719	0.3719	0.0000	0.3422	0.3422	0.0000	1,103.9393	1,103.9393	0.3570	0.0000	1,112.8652
Maximum	**0.7965**	**7.9850**	**7.5691**	**0.0120**	**0.7528**	**0.4475**	**1.1601**	**0.4138**	**0.4117**	**0.8024**	**0.0000**	**1,147.4338**	**1,147.4338**	**0.3570**	**0.0000**	**1,152.7797**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2021	0.7965	7.9850	7.5691	0.0120	0.2936	0.4475	0.7009	0.1614	0.4117	0.5500	0.0000	1,147.4338	1,147.4338	0.3568	0.0000	1,152.7797
2022	0.6863	7.0258	7.1527	0.0114	0.0000	0.3719	0.3719	0.0000	0.3422	0.3422	0.0000	1,103.9393	1,103.9393	0.3570	0.0000	1,112.8652
Maximum	**0.7965**	**7.9850**	**7.5691**	**0.0120**	**0.2936**	**0.4475**	**0.7009**	**0.1614**	**0.4117**	**0.5500**	**0.0000**	**1,147.4338**	**1,147.4338**	**0.3570**	**0.0000**	**1,152.7797**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**61.00**	**0.00**	**29.97**	**61.00**	**0.00**	**22.05**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					

Area	3.2200e-003	1.0000e-005	7.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.6000e-003	1.6000e-003	0.0000		1.7100e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**3.2200e-003**	**1.0000e-005**	**7.5000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**1.6000e-003**	**1.6000e-003**	**0.0000**	**0.0000**	**1.7100e-003**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	3.2200e-003	1.0000e-005	7.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.6000e-003	1.6000e-003	0.0000		1.7100e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**3.2200e-003**	**1.0000e-005**	**7.5000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**1.6000e-003**	**1.6000e-003**	**0.0000**	**0.0000**	**1.7100e-003**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	11/1/2021	11/19/2021	5	15	
2	Site Preparation	Site Preparation	11/22/2021	11/21/2021	5	0	

3	Grading	Grading	11/22/2021	12/3/2021	5	10	
4	Building Construction	Building Construction	12/6/2021	4/8/2022	5	90	
5	Paving	Paving	4/7/2022	4/6/2022	5	0	
6	Architectural Coating	Architectural Coating	4/11/2022	5/6/2022	5	20	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0.17

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 439

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Rubber Tired Dozers	1	1.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Concrete/Industrial Saws	1	8.00	81	0.73
Grading	Rubber Tired Dozers	1	1.00	247	0.40
Grading	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Building Construction	Cranes	1	4.00	231	0.29
Building Construction	Forklifts	2	6.00	89	0.20
Building Construction	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Cement and Mortar Mixers	4	6.00	9	0.56
Paving	Pavers	1	7.00	130	0.42
Paving	Rollers	1	7.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	4	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	2	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	5	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HHDT	HHDT
Paving	7	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Demolition - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.7276	0.0000	0.7276	0.1102	0.0000	0.1102			0.0000			0.0000
Off-Road	0.7965	7.2530	7.5691	0.0120		0.4073	0.4073		0.3886	0.3886		1,147.4338	1,147.4338	0.2138		1,152.7797
Total	**0.7965**	**7.2530**	**7.5691**	**0.0120**	**0.7276**	**0.4073**	**1.1349**	**0.1102**	**0.3886**	**0.4988**		**1,147.4338**	**1,147.4338**	**0.2138**		**1,152.7797**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.2838	0.0000	0.2838	0.0430	0.0000	0.0430			0.0000			0.0000
Off-Road	0.7965	7.2530	7.5691	0.0120		0.4073	0.4073		0.3886	0.3886	0.0000	1,147.4338	1,147.4338	0.2138		1,152.7797
Total	**0.7965**	**7.2530**	**7.5691**	**0.0120**	**0.2838**	**0.4073**	**0.6911**	**0.0430**	**0.3886**	**0.4316**	**0.0000**	**1,147.4338**	**1,147.4338**	**0.2138**		**1,152.7797**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

3.3 Site Preparation - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.4 Grading - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.7528	0.0000	0.7528	0.4138	0.0000	0.4138			0.0000			0.0000
Off-Road	0.7965	7.2530	7.5691	0.0120		0.4073	0.4073		0.3886	0.3886		1,147.4338	1,147.4338	0.2138		1,152.7797
Total	**0.7965**	**7.2530**	**7.5691**	**0.0120**	**0.7528**	**0.4073**	**1.1601**	**0.4138**	**0.3886**	**0.8024**		**1,147.4338**	**1,147.4338**	**0.2138**		**1,152.7797**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.2936	0.0000	0.2936	0.1614	0.0000	0.1614			0.0000			0.0000

Off-Road	0.7965	7.2530	7.5691	0.0120		0.4073	0.4073		0.3886	0.3886	0.0000	1,147.4338	1,147.4338	0.2138		1,152.7797
Total	**0.7965**	**7.2530**	**7.5691**	**0.0120**	**0.2936**	**0.4073**	**0.7009**	**0.1614**	**0.3886**	**0.5500**	**0.0000**	**1,147.4338**	**1,147.4338**	**0.2138**		**1,152.7797**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

3.5 Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.7750	7.9850	7.2637	0.0114		0.4475	0.4475		0.4117	0.4117		1,103.2158	1,103.2158	0.3568		1,112.1358
Total	**0.7750**	**7.9850**	**7.2637**	**0.0114**		**0.4475**	**0.4475**		**0.4117**	**0.4117**		**1,103.2158**	**1,103.2158**	**0.3568**		**1,112.1358**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.7750	7.9850	7.2637	0.0114		0.4475	0.4475		0.4117	0.4117	0.0000	1,103.2158	1,103.2158	0.3568		1,112.1358
Total	**0.7750**	**7.9850**	**7.2637**	**0.0114**		**0.4475**	**0.4475**		**0.4117**	**0.4117**	**0.0000**	**1,103.2158**	**1,103.2158**	**0.3568**		**1,112.1358**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

3.5 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.6863	7.0258	7.1527	0.0114		0.3719	0.3719		0.3422	0.3422		1,103.9393	1,103.9393	0.3570		1,112.8652
Total	**0.6863**	**7.0258**	**7.1527**	**0.0114**		**0.3719**	**0.3719**		**0.3422**	**0.3422**		**1,103.9393**	**1,103.9393**	**0.3570**		**1,112.8652**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.6863	7.0258	7.1527	0.0114		0.3719	0.3719		0.3422	0.3422	0.0000	1,103.9393	1,103.9393	0.3570		1,112.8652
Total	**0.6863**	**7.0258**	**7.1527**	**0.0114**		**0.3719**	**0.3719**		**0.3422**	**0.3422**	**0.0000**	**1,103.9393**	**1,103.9393**	**0.3570**		**1,112.8652**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

3.6 Paving - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Paving	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Paving	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.7 Architectural Coating - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	0.1017					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000

Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062
Total	**0.3063**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**		**281.4481**	**281.4481**	**0.0183**		**281.9062**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	0.1017					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817	0.0000	281.4481	281.4481	0.0183		281.9062
Total	**0.3063**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**	**0.0000**	**281.4481**	**281.4481**	**0.0183**		**281.9062**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Other Non-Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Other Non-Asphalt Surfaces	0.552111	0.043066	0.201891	0.118512	0.015605	0.005863	0.021387	0.031253	0.002087	0.001818	0.004803	0.000708	0.000896

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	3.2200e-003	1.0000e-005	7.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.6000e-003	1.6000e-003	0.0000		1.7100e-003
Unmitigated	3.2200e-003	1.0000e-005	7.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.6000e-003	1.6000e-003	0.0000		1.7100e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	5.6000e-004					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.5900e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	7.0000e-005	1.0000e-005	7.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.6000e-003	1.6000e-003	0.0000		1.7100e-003
Total	**3.2200e-003**	**1.0000e-005**	**7.5000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**1.6000e-003**	**1.6000e-003**	**0.0000**		**1.7100e-003**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	5.6000e-004					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.5900e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	7.0000e-005	1.0000e-005	7.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.6000e-003	1.6000e-003	0.0000		1.7100e-003
Total	**3.2200e-003**	**1.0000e-005**	**7.5000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**1.6000e-003**	**1.6000e-003**	**0.0000**		**1.7100e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Santa Gertrudis Creek Trail - South Coast Air Basin, Winter

Santa Gertrudis Creek Trail

South Coast Air Basin, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Non-Asphalt Surfaces	7.32	1000sqft	0.17	7,320.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	31
Climate Zone	10			**Operational Year**	2022
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - Project Schedule

Trips and VMT - Calculated outside of CalEEMod

Demolition - 260 CY concrete = 510 Tons

Grading - Import 176 CY Soil

Architectural Coating -

Energy Use -

Construction Off-road Equipment Mitigation -

Off-road Equipment -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	5.00	20.00
tblConstructionPhase	NumDays	100.00	90.00
tblConstructionPhase	NumDays	10.00	15.00
tblConstructionPhase	NumDays	2.00	10.00
tblConstructionPhase	NumDays	5.00	0.00
tblConstructionPhase	NumDays	1.00	0.00
tblGrading	MaterialImported	0.00	176.00
tblTripsAndVMT	HaulingTripNumber	50.00	0.00
tblTripsAndVMT	HaulingTripNumber	17.00	0.00
tblTripsAndVMT	VendorTripNumber	1.00	0.00
tblTripsAndVMT	VendorVehicleClass	HDT_Mix	HHDT
tblTripsAndVMT	WorkerTripNumber	10.00	0.00
tblTripsAndVMT	WorkerTripNumber	5.00	0.00
tblTripsAndVMT	WorkerTripNumber	10.00	0.00
tblTripsAndVMT	WorkerTripNumber	3.00	0.00
tblTripsAndVMT	WorkerTripNumber	18.00	0.00
tblTripsAndVMT	WorkerTripNumber	1.00	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e

Year	lb/day										lb/day					
2021	0.7965	7.9850	7.5691	0.0120	0.7528	0.4475	1.1601	0.4138	0.4117	0.8024	0.0000	1,147.4338	1,147.4338	0.3568	0.0000	1,152.7797
2022	0.6863	7.0258	7.1527	0.0114	0.0000	0.3719	0.3719	0.0000	0.3422	0.3422	0.0000	1,103.9393	1,103.9393	0.3570	0.0000	1,112.8652
Maximum	**0.7965**	**7.9850**	**7.5691**	**0.0120**	**0.7528**	**0.4475**	**1.1601**	**0.4138**	**0.4117**	**0.8024**	**0.0000**	**1,147.4338**	**1,147.4338**	**0.3570**	**0.0000**	**1,152.7797**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2021	0.7965	7.9850	7.5691	0.0120	0.2936	0.4475	0.7009	0.1614	0.4117	0.5500	0.0000	1,147.4338	1,147.4338	0.3568	0.0000	1,152.7797
2022	0.6863	7.0258	7.1527	0.0114	0.0000	0.3719	0.3719	0.0000	0.3422	0.3422	0.0000	1,103.9393	1,103.9393	0.3570	0.0000	1,112.8652
Maximum	**0.7965**	**7.9850**	**7.5691**	**0.0120**	**0.2936**	**0.4475**	**0.7009**	**0.1614**	**0.4117**	**0.5500**	**0.0000**	**1,147.4338**	**1,147.4338**	**0.3570**	**0.0000**	**1,152.7797**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**61.00**	**0.00**	**29.97**	**61.00**	**0.00**	**22.05**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					

Area	3.2200e-003	1.0000e-005	7.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.6000e-003	1.6000e-003	0.0000		1.7100e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**3.2200e-003**	**1.0000e-005**	**7.5000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**1.6000e-003**	**1.6000e-003**	**0.0000**	**0.0000**	**1.7100e-003**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	3.2200e-003	1.0000e-005	7.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.6000e-003	1.6000e-003	0.0000		1.7100e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**3.2200e-003**	**1.0000e-005**	**7.5000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**1.6000e-003**	**1.6000e-003**	**0.0000**	**0.0000**	**1.7100e-003**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	11/1/2021	11/19/2021	5	15	
2	Site Preparation	Site Preparation	11/22/2021	11/21/2021	5	0	

3	Grading	Grading	11/22/2021	12/3/2021	5	10	
4	Building Construction	Building Construction	12/6/2021	4/8/2022	5	90	
5	Paving	Paving	4/7/2022	4/6/2022	5	0	
6	Architectural Coating	Architectural Coating	4/11/2022	5/6/2022	5	20	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0.17

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 439

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Rubber Tired Dozers	1	1.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Concrete/Industrial Saws	1	8.00	81	0.73
Grading	Rubber Tired Dozers	1	1.00	247	0.40
Grading	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Building Construction	Cranes	1	4.00	231	0.29
Building Construction	Forklifts	2	6.00	89	0.20
Building Construction	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Cement and Mortar Mixers	4	6.00	9	0.56
Paving	Pavers	1	7.00	130	0.42
Paving	Rollers	1	7.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	4	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	2	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	5	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HHDT	HHDT
Paving	7	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Demolition - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.7276	0.0000	0.7276	0.1102	0.0000	0.1102			0.0000			0.0000
Off-Road	0.7965	7.2530	7.5691	0.0120		0.4073	0.4073		0.3886	0.3886		1,147.4338	1,147.4338	0.2138		1,152.7797
Total	**0.7965**	**7.2530**	**7.5691**	**0.0120**	**0.7276**	**0.4073**	**1.1349**	**0.1102**	**0.3886**	**0.4988**		**1,147.4338**	**1,147.4338**	**0.2138**		**1,152.7797**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.2838	0.0000	0.2838	0.0430	0.0000	0.0430			0.0000			0.0000
Off-Road	0.7965	7.2530	7.5691	0.0120		0.4073	0.4073		0.3886	0.3886	0.0000	1,147.4338	1,147.4338	0.2138		1,152.7797
Total	**0.7965**	**7.2530**	**7.5691**	**0.0120**	**0.2838**	**0.4073**	**0.6911**	**0.0430**	**0.3886**	**0.4316**	**0.0000**	**1,147.4338**	**1,147.4338**	**0.2138**		**1,152.7797**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

3.3 Site Preparation - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.4 Grading - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.7528	0.0000	0.7528	0.4138	0.0000	0.4138			0.0000			0.0000
Off-Road	0.7965	7.2530	7.5691	0.0120		0.4073	0.4073		0.3886	0.3886		1,147.4338	1,147.4338	0.2138		1,152.7797
Total	**0.7965**	**7.2530**	**7.5691**	**0.0120**	**0.7528**	**0.4073**	**1.1601**	**0.4138**	**0.3886**	**0.8024**		**1,147.4338**	**1,147.4338**	**0.2138**		**1,152.7797**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.2936	0.0000	0.2936	0.1614	0.0000	0.1614			0.0000			0.0000

Off-Road	0.7965	7.2530	7.5691	0.0120		0.4073	0.4073		0.3886	0.3886	0.0000	1,147.4338	1,147.4338	0.2138		1,152.7797
Total	**0.7965**	**7.2530**	**7.5691**	**0.0120**	**0.2936**	**0.4073**	**0.7009**	**0.1614**	**0.3886**	**0.5500**	**0.0000**	**1,147.4338**	**1,147.4338**	**0.2138**		**1,152.7797**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

3.5 Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.7750	7.9850	7.2637	0.0114		0.4475	0.4475		0.4117	0.4117		1,103.2158	1,103.2158	0.3568		1,112.1358
Total	**0.7750**	**7.9850**	**7.2637**	**0.0114**		**0.4475**	**0.4475**		**0.4117**	**0.4117**		**1,103.2158**	**1,103.2158**	**0.3568**		**1,112.1358**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.7750	7.9850	7.2637	0.0114		0.4475	0.4475		0.4117	0.4117	0.0000	1,103.2158	1,103.2158	0.3568		1,112.1358
Total	**0.7750**	**7.9850**	**7.2637**	**0.0114**		**0.4475**	**0.4475**		**0.4117**	**0.4117**	**0.0000**	**1,103.2158**	**1,103.2158**	**0.3568**		**1,112.1358**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

3.5 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.6863	7.0258	7.1527	0.0114		0.3719	0.3719		0.3422	0.3422		1,103.9393	1,103.9393	0.3570		1,112.8652
Total	**0.6863**	**7.0258**	**7.1527**	**0.0114**		**0.3719**	**0.3719**		**0.3422**	**0.3422**		**1,103.9393**	**1,103.9393**	**0.3570**		**1,112.8652**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.6863	7.0258	7.1527	0.0114		0.3719	0.3719		0.3422	0.3422	0.0000	1,103.9393	1,103.9393	0.3570		1,112.8652
Total	**0.6863**	**7.0258**	**7.1527**	**0.0114**		**0.3719**	**0.3719**		**0.3422**	**0.3422**	**0.0000**	**1,103.9393**	**1,103.9393**	**0.3570**		**1,112.8652**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

3.6 Paving - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Paving	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Paving	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.7 Architectural Coating - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	0.1017					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000

Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062
Total	**0.3063**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**		**281.4481**	**281.4481**	**0.0183**		**281.9062**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	0.1017					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817	0.0000	281.4481	281.4481	0.0183		281.9062
Total	**0.3063**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**	**0.0000**	**281.4481**	**281.4481**	**0.0183**		**281.9062**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Other Non-Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Other Non-Asphalt Surfaces	0.552111	0.043066	0.201891	0.118512	0.015605	0.005863	0.021387	0.031253	0.002087	0.001818	0.004803	0.000708	0.000896

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	3.2200e-003	1.0000e-005	7.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.6000e-003	1.6000e-003	0.0000		1.7100e-003
Unmitigated	3.2200e-003	1.0000e-005	7.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.6000e-003	1.6000e-003	0.0000		1.7100e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	5.6000e-004					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.5900e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	7.0000e-005	1.0000e-005	7.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.6000e-003	1.6000e-003	0.0000		1.7100e-003
Total	**3.2200e-003**	**1.0000e-005**	**7.5000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**1.6000e-003**	**1.6000e-003**	**0.0000**		**1.7100e-003**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	5.6000e-004					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.5900e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	7.0000e-005	1.0000e-005	7.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.6000e-003	1.6000e-003	0.0000		1.7100e-003
Total	**3.2200e-003**	**1.0000e-005**	**7.5000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**1.6000e-003**	**1.6000e-003**	**0.0000**		**1.7100e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Santa Gertrudis Creek Trail

South Coast Air Basin, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Non-Asphalt Surfaces	7.32	1000sqft	0.17	7,320.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	31
Climate Zone	10			**Operational Year**	2022
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - Project Schedule

Trips and VMT - Calculated outside of CalEEMod

Demolition - 260 CY concrete = 510 Tons

Grading - Import 176 CY Soil

Architectural Coating -

Energy Use -

Construction Off-road Equipment Mitigation -

Off-road Equipment -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	5.00	20.00
tblConstructionPhase	NumDays	100.00	90.00
tblConstructionPhase	NumDays	10.00	15.00
tblConstructionPhase	NumDays	2.00	10.00
tblConstructionPhase	NumDays	5.00	0.00
tblConstructionPhase	NumDays	1.00	0.00
tblGrading	MaterialImported	0.00	176.00
tblTripsAndVMT	HaulingTripNumber	50.00	0.00
tblTripsAndVMT	HaulingTripNumber	17.00	0.00
tblTripsAndVMT	VendorTripNumber	1.00	0.00
tblTripsAndVMT	VendorVehicleClass	HDT_Mix	HHDT
tblTripsAndVMT	WorkerTripNumber	10.00	0.00
tblTripsAndVMT	WorkerTripNumber	5.00	0.00
tblTripsAndVMT	WorkerTripNumber	10.00	0.00
tblTripsAndVMT	WorkerTripNumber	3.00	0.00
tblTripsAndVMT	WorkerTripNumber	18.00	0.00
tblTripsAndVMT	WorkerTripNumber	1.00	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e

Year	tons/yr										MT/yr					
2021	0.0177	0.1705	0.1673	2.6000e-004	9.2200e-003	9.5700e-003	0.0188	2.9000e-003	8.9700e-003	0.0119	0.0000	23.0199	23.0199	5.6600e-003	0.0000	23.1614
2022	0.0271	0.2600	0.2685	4.3000e-004	0.0000	0.0138	0.0138	0.0000	0.0128	0.0128	0.0000	37.6050	37.6050	0.0115	0.0000	37.8925
Maximum	**0.0271**	**0.2600**	**0.2685**	**4.3000e-004**	**9.2200e-003**	**0.0138**	**0.0188**	**2.9000e-003**	**0.0128**	**0.0128**	**0.0000**	**37.6050**	**37.6050**	**0.0115**	**0.0000**	**37.8925**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2021	0.0177	0.1705	0.1673	2.6000e-004	3.6000e-003	9.5700e-003	0.0132	1.1300e-003	8.9700e-003	0.0101	0.0000	23.0199	23.0199	5.6600e-003	0.0000	23.1614
2022	0.0271	0.2600	0.2685	4.3000e-004	0.0000	0.0138	0.0138	0.0000	0.0128	0.0128	0.0000	37.6049	37.6049	0.0115	0.0000	37.8925
Maximum	**0.0271**	**0.2600**	**0.2685**	**4.3000e-004**	**3.6000e-003**	**0.0138**	**0.0138**	**1.1300e-003**	**0.0128**	**0.0128**	**0.0000**	**37.6049**	**37.6049**	**0.0115**	**0.0000**	**37.8925**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**60.95**	**0.00**	**17.26**	**61.03**	**0.00**	**7.18**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	11-1-2021	1-31-2022	0.2558	0.2558
2	2-1-2022	4-30-2022	0.1968	0.1968
3	5-1-2022	7-31-2022	0.0037	0.0037
		Highest	0.2558	0.2558

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	5.8000e-004	0.0000	9.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.8000e-004	1.8000e-004	0.0000	0.0000	1.9000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**5.8000e-004**	**0.0000**	**9.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**1.8000e-004**	**1.8000e-004**	**0.0000**	**0.0000**	**1.9000e-004**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	5.8000e-004	0.0000	9.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.8000e-004	1.8000e-004	0.0000	0.0000	1.9000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**5.8000e-004**	**0.0000**	**9.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**1.8000e-004**	**1.8000e-004**	**0.0000**	**0.0000**	**1.9000e-004**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	11/1/2021	11/19/2021	5	15	
2	Site Preparation	Site Preparation	11/22/2021	11/21/2021	5	0	
3	Grading	Grading	11/22/2021	12/3/2021	5	10	
4	Building Construction	Building Construction	12/6/2021	4/8/2022	5	90	
5	Paving	Paving	4/7/2022	4/6/2022	5	0	
6	Architectural Coating	Architectural Coating	4/11/2022	5/6/2022	5	20	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0.17

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 439

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Rubber Tired Dozers	1	1.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Concrete/Industrial Saws	1	8.00	81	0.73
Grading	Rubber Tired Dozers	1	1.00	247	0.40

Grading	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Building Construction	Cranes	1	4.00	231	0.29
Building Construction	Forklifts	2	6.00	89	0.20
Building Construction	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Cement and Mortar Mixers	4	6.00	9	0.56
Paving	Pavers	1	7.00	130	0.42
Paving	Rollers	1	7.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	4	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	2	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	5	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HHDT	HHDT
Paving	7	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Demolition - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e

Category	tons/yr										MT/yr					
Fugitive Dust					5.4600e-003	0.0000	5.4600e-003	8.3000e-004	0.0000	8.3000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.9700e-003	0.0544	0.0568	9.0000e-005		3.0600e-003	3.0600e-003		2.9100e-003	2.9100e-003	0.0000	7.8070	7.8070	1.4500e-003	0.0000	7.8434
Total	**5.9700e-003**	**0.0544**	**0.0568**	**9.0000e-005**	**5.4600e-003**	**3.0600e-003**	**8.5200e-003**	**8.3000e-004**	**2.9100e-003**	**3.7400e-003**	**0.0000**	**7.8070**	**7.8070**	**1.4500e-003**	**0.0000**	**7.8434**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.1300e-003	0.0000	2.1300e-003	3.2000e-004	0.0000	3.2000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.9700e-003	0.0544	0.0568	9.0000e-005		3.0600e-003	3.0600e-003		2.9100e-003	2.9100e-003	0.0000	7.8070	7.8070	1.4500e-003	0.0000	7.8434

Total	**5.9700e-003**	**0.0544**	**0.0568**	**9.0000e-005**	**2.1300e-003**	**3.0600e-003**	**5.1900e-003**	**3.2000e-004**	**2.9100e-003**	**3.2300e-003**	**0.0000**	**7.8070**	**7.8070**	**1.4500e-003**	**0.0000**	**7.8434**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.3 Site Preparation - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e

Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.4 Grading - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					3.7600e-003	0.0000	3.7600e-003	2.0700e-003	0.0000	2.0700e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.9800e-003	0.0363	0.0379	6.0000e-005		2.0400e-003	2.0400e-003		1.9400e-003	1.9400e-003	0.0000	5.2047	5.2047	9.7000e-004	0.0000	5.2289
Total	**3.9800e-003**	**0.0363**	**0.0379**	**6.0000e-005**	**3.7600e-003**	**2.0400e-003**	**5.8000e-003**	**2.0700e-003**	**1.9400e-003**	**4.0100e-003**	**0.0000**	**5.2047**	**5.2047**	**9.7000e-004**	**0.0000**	**5.2289**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.4700e-003	0.0000	1.4700e-003	8.1000e-004	0.0000	8.1000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.9800e-003	0.0363	0.0379	6.0000e-005		2.0400e-003	2.0400e-003		1.9400e-003	1.9400e-003	0.0000	5.2047	5.2047	9.7000e-004	0.0000	5.2289
Total	**3.9800e-003**	**0.0363**	**0.0379**	**6.0000e-005**	**1.4700e-003**	**2.0400e-003**	**3.5100e-003**	**8.1000e-004**	**1.9400e-003**	**2.7500e-003**	**0.0000**	**5.2047**	**5.2047**	**9.7000e-004**	**0.0000**	**5.2289**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.5 Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	7.7500e-003	0.0799	0.0726	1.1000e-004		4.4800e-003	4.4800e-003		4.1200e-003	4.1200e-003	0.0000	10.0082	10.0082	3.2400e-003	0.0000	10.0891
Total	**7.7500e-003**	**0.0799**	**0.0726**	**1.1000e-004**		**4.4800e-003**	**4.4800e-003**		**4.1200e-003**	**4.1200e-003**	**0.0000**	**10.0082**	**10.0082**	**3.2400e-003**	**0.0000**	**10.0891**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e

Category	tons/yr										MT/yr					
Off-Road	7.7500e-003	0.0799	0.0726	1.1000e-004		4.4800e-003	4.4800e-003		4.1200e-003	4.1200e-003	0.0000	10.0082	10.0082	3.2400e-003	0.0000	10.0891
Total	**7.7500e-003**	**0.0799**	**0.0726**	**1.1000e-004**		**4.4800e-003**	**4.4800e-003**		**4.1200e-003**	**4.1200e-003**	**0.0000**	**10.0082**	**10.0082**	**3.2400e-003**	**0.0000**	**10.0891**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.5 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0240	0.2459	0.2503	4.0000e-004		0.0130	0.0130		0.0120	0.0120	0.0000	35.0517	35.0517	0.0113	0.0000	35.3351
Total	**0.0240**	**0.2459**	**0.2503**	**4.0000e-004**		**0.0130**	**0.0130**		**0.0120**	**0.0120**	**0.0000**	**35.0517**	**35.0517**	**0.0113**	**0.0000**	**35.3351**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0240	0.2459	0.2503	4.0000e-004		0.0130	0.0130		0.0120	0.0120	0.0000	35.0517	35.0517	0.0113	0.0000	35.3351
Total	**0.0240**	**0.2459**	**0.2503**	**4.0000e-004**		**0.0130**	**0.0130**		**0.0120**	**0.0120**	**0.0000**	**35.0517**	**35.0517**	**0.0113**	**0.0000**	**35.3351**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.6 Paving - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Paving	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e

Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Paving	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.7 Architectural Coating - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.0200e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.0500e-003	0.0141	0.0181	3.0000e-005		8.2000e-004	8.2000e-004		8.2000e-004	8.2000e-004	0.0000	2.5533	2.5533	1.7000e-004	0.0000	2.5574
Total	**3.0700e-003**	**0.0141**	**0.0181**	**3.0000e-005**		**8.2000e-004**	**8.2000e-004**		**8.2000e-004**	**8.2000e-004**	**0.0000**	**2.5533**	**2.5533**	**1.7000e-004**	**0.0000**	**2.5574**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.0200e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.0500e-003	0.0141	0.0181	3.0000e-005		8.2000e-004	8.2000e-004		8.2000e-004	8.2000e-004	0.0000	2.5533	2.5533	1.7000e-004	0.0000	2.5574
Total	**3.0700e-003**	**0.0141**	**0.0181**	**3.0000e-005**		**8.2000e-004**	**8.2000e-004**		**8.2000e-004**	**8.2000e-004**	**0.0000**	**2.5533**	**2.5533**	**1.7000e-004**	**0.0000**	**2.5574**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Other Non-Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Other Non-Asphalt Surfaces	0.552111	0.043066	0.201891	0.118512	0.015605	0.005863	0.021387	0.031253	0.002087	0.001818	0.004803	0.000708	0.000896

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			

Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	5.8000e-004	0.0000	9.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.8000e-004	1.8000e-004	0.0000	0.0000	1.9000e-004
Unmitigated	5.8000e-004	0.0000	9.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.8000e-004	1.8000e-004	0.0000	0.0000	1.9000e-004

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	1.0000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Consumer Products	4.7000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.0000e-005	0.0000	9.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.8000e-004	1.8000e-004	0.0000	0.0000	1.9000e-004
Total	**5.8000e-004**	**0.0000**	**9.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.8000e-004**	**1.8000e-004**	**0.0000**	**0.0000**	**1.9000e-004**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	1.0000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	4.7000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.0000e-005	0.0000	9.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.8000e-004	1.8000e-004	0.0000	0.0000	1.9000e-004
Total	**5.8000e-004**	**0.0000**	**9.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.8000e-004**	**1.8000e-004**	**0.0000**	**0.0000**	**1.9000e-004**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000

Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Appendix B

Biological Resources Technical Report

ESA

Draft

SANTA GERTRUDIS CREEK TRAIL PHASE II UNDERCROSSING AT MARGARITA ROAD PROJECT

Biological Technical Report

Prepared for
EXP U.S. Services, Inc.

January 2022

Draft

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Biological Technical Report

Prepared for
EXP U.S. Services, Inc.

January 2022

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SANTA GERTRUDIS CREEK TRAIL PHASE II UNDERCROSSING AT MARGARITA ROAD PROJECT

Biological Technical Report

1.0 Introduction

Environmental Science Associates (ESA) was retained by EXP U.S. Services to conduct an assessment of sensitive biological resources for the Santa Gertrudis Creek Trail Phase II Undercrossing at Margarita Road Project (project) located in the city of Temecula, Riverside County, California. The assessment, conducted in accordance with the western Riverside County Multiple Species Habitat Conservation Plan (MSHCP), was conducted within the 1.98-acre project site and a surrounding 500-foot buffer, collectively referred to as the "survey area". On-site and adjacent site conditions were evaluated for their potential to support sensitive biological resources, such as special-status species and associated habitats, wetlands and streams, and sensitive vegetation communities. This report provides an overview of the findings of biological database queries and field assessment. The report includes recommendations for avoiding or minimizing impacts to sensitive biological resources prior to the commencement of any ground-disturbing activities associated with the construction and operation of the project.

1.1 Project Description

The proposed project will reconstruct approximately 610 feet of shared bicycle/pedestrian trail undercrossing beneath the overpass of Margarita Road. The proposed off-street paved undercrossing would begin where the existing grade of the trail ramps begin to elevate to meet the grade of the overcrossing of Margarita Road at the east and west sides, which is slightly north of the existing overcrossing site**.** The project would include the removal of existing pavement and soils to bring the existing trail to 5 percent grade at a new location beneath Margarita Road, and would include various utility improvements. Other aspects of the project include landscaping and slope improvements along the proposed alignment.

Proposed Trail Connection

Implementation of the project would include the demolition of the existing trail along the east and western sides of Margarita Road, which includes the removal of a minimum of 1 foot of existing aggregated concrete pavement and the compaction of existing soils to bring to grade the proposed trail. The proposed juncture of the existing trail and proposed undercrossing would be brought to a median elevation of 1,064.3 feet above mean sea level (amsl), which results in a 5 percent grade change to the lowest extent of the proposed trail on each side. The trail would adjoin the existing

grade of 1,069 feet amsl at the western extent and 1,071.98 feet amsl at the eastern extent. The project would include the reconstruction and/or replacement of the existing retaining wall and channel slope paving and cut-off wall. A ground anchor wall is also proposed below the Margarita Road undercrossing, which would be used to retain the abutment end slope. Existing water valves and fixtures impacted by trenching of the soil to grade would be restored, along with curb and gutter replacements. It is anticipated that all conflicting surface utility facilities would either be protected in place or be relocated within the confines of the project boundary (including a 20-inch waterline owned by Rancho California Water District that would be relocated a maximum of 23-feet to the east).

The proposed trail undercrossing will measure 610 feet long and 12 feet wide, and will be paved on compacted soil beneath Margarita Road, directly to the north of the existing overcrossing. A retaining wall would be constructed where the proposed shared-use path would encroach into the cut slopes of Santa Gertrudis Creek along the northern length of the existing trail. The proposed retaining wall would measure approximately 6 to 10 feet in height and would incorporate drainage V-ditches outside of the Margarita Road bridge. The existing pier wall near the Santa Gertrudis Creek and Flood Control facilities and posts beneath the Margarita Road overpass would be protected in place.

The existing channel wall slope paving would be removed and reconstructed. As part of this process, articulated concrete blocks that currently extend into the bed of the creek, from the toe of the existing retaining wall, will be replaced with a comparable material that will improve the stability of the new infrastructure; this replacement will result in the removal of a minimal quantity of vegetation present within the channel; however, the new material will allow for this vegetation to regrow and persist following project completion. In addition, a tieback wall would be constructed to prevent erosion of the existing slopes, along the southern length of the proposed shared-use path. Access during the reconstruction of the channel wall, and the replacement of the articulated concrete blocks will result in additional temporary impacts to vegetation within the bed of the channel.

The project would also include the installation of a 4-foot-high chain-link fence and a Type 5 retaining wall in accordance with Caltrans Standard Plans (B3-1) along the north side of the proposed undercrossing. The retaining wall would serve as a barrier between the proposed shared-use path and the existing Santa Gertrudis Creek edge due to the proximity of the two facilities.

Other Improvements

Bike path signage would be installed throughout the project site to educate users of the trail on current laws and user responsibility. In addition, landscaping and slope improvements would be needed along the proposed shared-use path. The project does not include any installation of trail lighting.

1.2 Methods

Literature Review

Prior to conducting the field assessment, ESA conducted a query of available biological resource databases and literature, as well as available studies conducted within the immediate vicinity.

This information was used to identify sensitive biological resources that have been previously detected in the vicinity of the project site and to analyze the potential impacts that could result from the implementation of the project.

- California Department of Fish and Wildlife (CDFW). 2021a. California Natural Diversity Data Base (CNDDB). Database was queried for special status species records in the Murrieta USGS 7.5-minute quadrangle and eight surrounding quadrangles including Bachelor Mtn., Fallbrook, Lake Elsinore, Pechanga, Romoland, Temecula, Wildomar and Winchester. https://www.wildlife.ca.gov/Data/CNDDB/Maps-and-Data. Accessed January 14, 2021.
- California Department of Fish and Wildlife (CDFW). 2020. California Natural Community List. Sacramento, CA: CDFW, Natural Heritage Division, 2020.
- California Native Plant Society (CNPS). 2021. Inventory of Rare and Endangered Vascular Plants of California. Database was queried for special status species records in the Murrieta USGS 7.5-minute quadrangle and eight surrounding quadrangles including. Wildomar, Bachelor Mtn., Lake Elsinore, Romoland, Winchester, Fallbrook, Temecula, Pechanga. http://rareplants.cnps.org/. Accessed January 14, 2021.
- Natural Resource Conservation Service (NRCS). 2021. Web Soil Survey. https://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm. Accessed January 14, 2021.
- Dudek & Associates, Inc. (Dudek). 2003. Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP). Prepared for County of Riverside, Transportation and Land Management Agency.
- Riverside County Integrated Project (RCIP) RCA MSHCP Information Map. 2021. https://www.wrc-rca.org/rcamaps/. Accessed January 14, 2021.
- U.S. Fish and Wildlife Service (USFWS). 2021. Critical Habitat Portal. https://fws.maps.arcgis.com/home/webmap/viewer.html?webmap=9d8de5e265ad4fe09893cf75b8dbfb77. Accessed January 4, 2021.

Western Riverside County Consistency Analysis

The proposed project is located within the western Riverside County Multiple Species Habitat Conservation Plan (MSHCP) and the City of Temecula (permittee and lead agency) is a plan participant; therefore, ESA queried the Regional Conservation Authority MSHCP Conservation Map to determine the requirements for habitat assessments, focused surveys, and other issues related to biological resources (RCIP 2021). A discussion/analysis of consistency with the MSHCP is provided below in Section 3, Regulatory Setting, and Section 4, Potential Impacts to Biological Resources.

Field Survey

Biological Resources Assessment

ESA biologists Robert Sweet and Karla Flores conducted a biological resources assessment on December 16, 2020. Weather data collected during the assessment is included below in **Table 1, Weather Details During Survey**. The survey consisted of walking transects and meandering throughout the study area to characterize and map vegetation and habitats, and to determine the potential for special-status plants and wildlife to occur. A focused rare plant survey was conducted concurrently, within and immediately surrounding proposed impact areas, as well, in

accordance with the *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities* (CDFW 2018). The results of the focused rare plant survey have been incorporated into this report.

TABLE 1
WEATHER DETAILS DURING SURVEY

Time		Temperature (°F)		Wind (mph)		Clouds (%)		Surveyors
Start	End	Start	End	Start	End	Start	End	
7:30	14:15	47	73	0.6	1.2	0	0	Robert Sweet and Karla Flores

All incidental, visual observations of flora and fauna, including sign (e.g., presence of scat) and any audible detections of wildlife, were noted during the assessment and are described below, in Section 2.5, Wildlife. All native and non-native plant communities and land uses were characterized and delineated on aerial photographs during the field survey, and then digitized on aerial maps using a geographic information system software (ArcGIS). Most descriptions of community and land use types were characterized in the field in accordance with *A Manual of California Vegetation-Second Edition* (Keeler-Wolf et al. 2009); however, some were characterized based on species dominance or other visual characteristics if a suitable alliance was not appropriate. A detailed description of each plant community and land use is provided below, in Section 2.3, Plant Communities and Land Uses.

Burrowing Owl Habitat Assessment

A burrowing owl habitat assessment and focused survey was conducted within the survey area concurrently with the biological resources assessment. The habitat assessment and focused survey followed the guidelines outlined in the 2006 Regional Conservation Authority (RCA) Burrowing Owl Survey Instructions for the Western Riverside Multiple Species Habitat Conservation Plan Area (RCA 2006). A qualified biologist familiar with burrowing owl identification, habitat, behavior, vocalizations, and sign performed the surveys by walking parallel transects throughout the survey area. Pedestrian transects were spaced no more than 100 feet apart, and spacing was adjusted as needed in areas of dense vegetation. Special attention was given to areas that provided suitable habitat for burrowing owl. If burrows of suitable size and morphology were encountered, each was mapped using ArcGIS Collector, and examined for signs of activity/occupancy such as feathers, whitewash and regurgitated pellets.

Aquatic Resources Delineation

An aquatic resources delineation was conducted concurrent with the biological resources assessment and burrowing owl habitat assessment. The survey methods and results are documented in a separate Aquatic Resources Delineation report (ESA 2021).

2.0 Characteristics of Survey Area

2.1 Project Location

The project site is located at Margarita Road and the south side of Santa Gertrudis Creek in the city of Temecula, CA, as shown in **Figure 1, Regional Location**, and **Figure 2, Project Location**. The existing Santa Gertrudis Creek Trail (SGCT) is a 3-mile paved trail, which traverses from northeast to southwest in the city of Temecula and serves as both a recreational amenity and an active transportation alternative.

The northeastern terminus of SGCT is located at Nakayama Park, near the intersection of Joseph Road and Nicolas Road. The trail is adjacent to the south side of Santa Gertrudis Creek, meanders to the north and passes under State Route 79 (SR-79), before reaching the southwestern terminus at Ynez Road near Winchester Road.

The existing crossing of the SGCT is located at Margarita Road, which is a 100-foot-wide, four-lane divided collector street in the City of Temecula, with a posted speed limit of 45 miles per hour. At the crossing of the Santa Gertrudis Creek, Margarita Road narrows to 88 feet in width. Margarita Road has two lanes of traffic in each direction, with a partially landscaped median varying in width from 13 feet to 22 feet, a 7-foot northbound and 5-foot southbound Class II bike lane, and 6-foot sidewalks on both sides. The roadway grade varies from approximately 2 percent to 3 percent. The project site ranges in elevation, with the westernmost extent at 1,070 feet amsl, with the easternmost extent at 1,072 amsl.

2.2 Soils and Topography

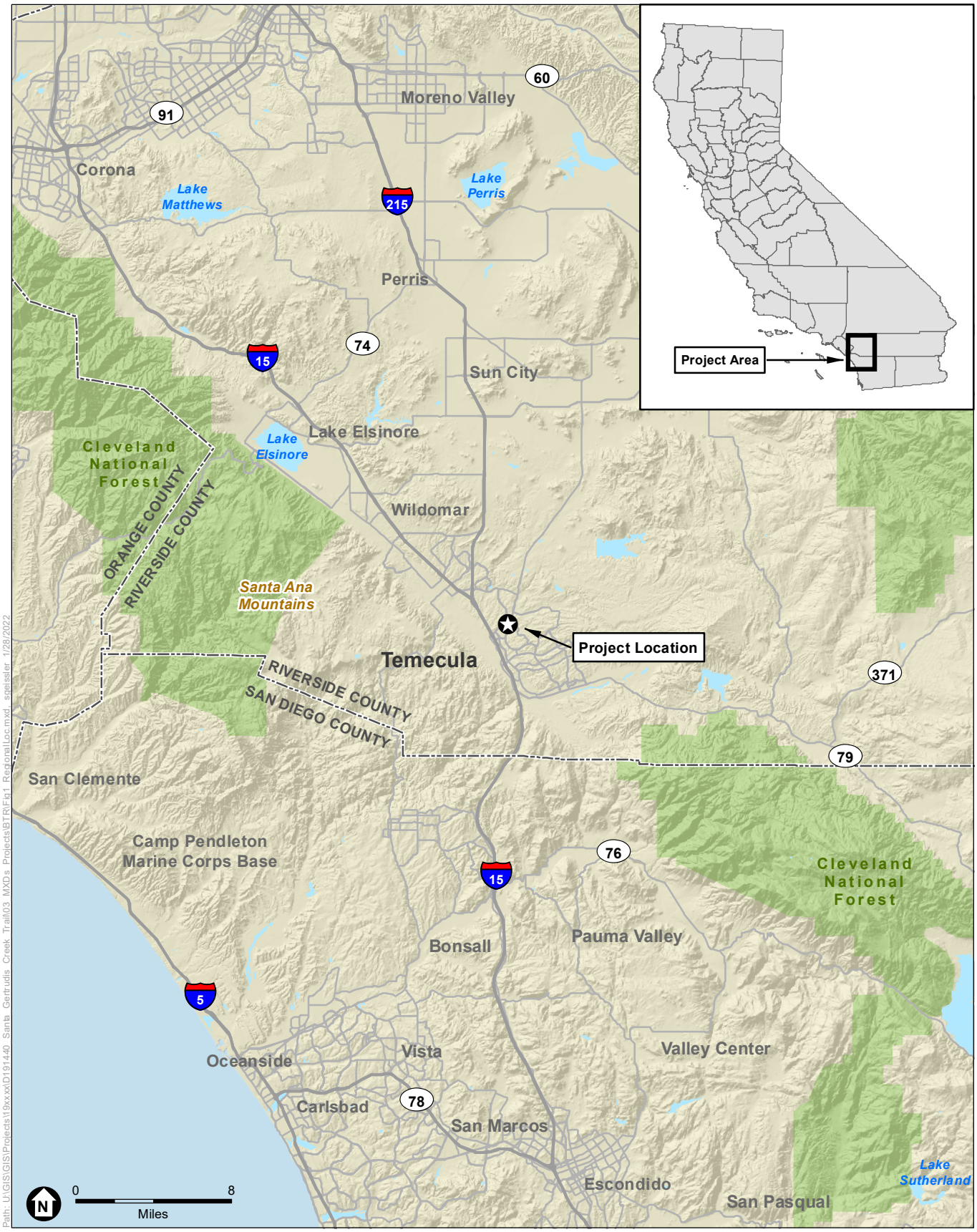
Based on review of the Natural Resources Conservation Services (NRCS) web soil survey, the survey area contains two soil types, Riverwash and Hanford coarse sandy loam. The Riverwash primarily occurs throughout the bed and banks Santa Gertrudis Creek, while the Hanford coarse sandy loam occurs within the upland areas that surround the creek (**Figure 3, Soils**) (NRCS 2020a). A brief description of the characteristics of each is provided below:

Riverwash

This soil association is considered excessively drained, and is typically comprised of sandy and gravelly alluvium derived from mixed sources. The soil profile consists of gravelly coarse sand from 0–6 inches and stratified extremely gravelly coarse sand to gravelly sand from 6–60 inches. This soil type is listed as hydric (NRCS 2021).

Hanford coarse sandy loam, 0 to 2 percent slopes

This soil association is considered well drained, and is typically comprised of stratified loamy sand to coarse sandy loam. The soil profile consists of coarse sandy loam from 0–8 inches, fine sandy loam from 8–40 inches and stratified loamy sand to coarse sandy loam from 40–60 inches. This soil is not listed as hydric (NRCS 2021).



SOURCE: ESRI

Santa Gertrudis Creek Trail Phase II Undercrossing at Margarita Road Project

Figure 1
Regional Location

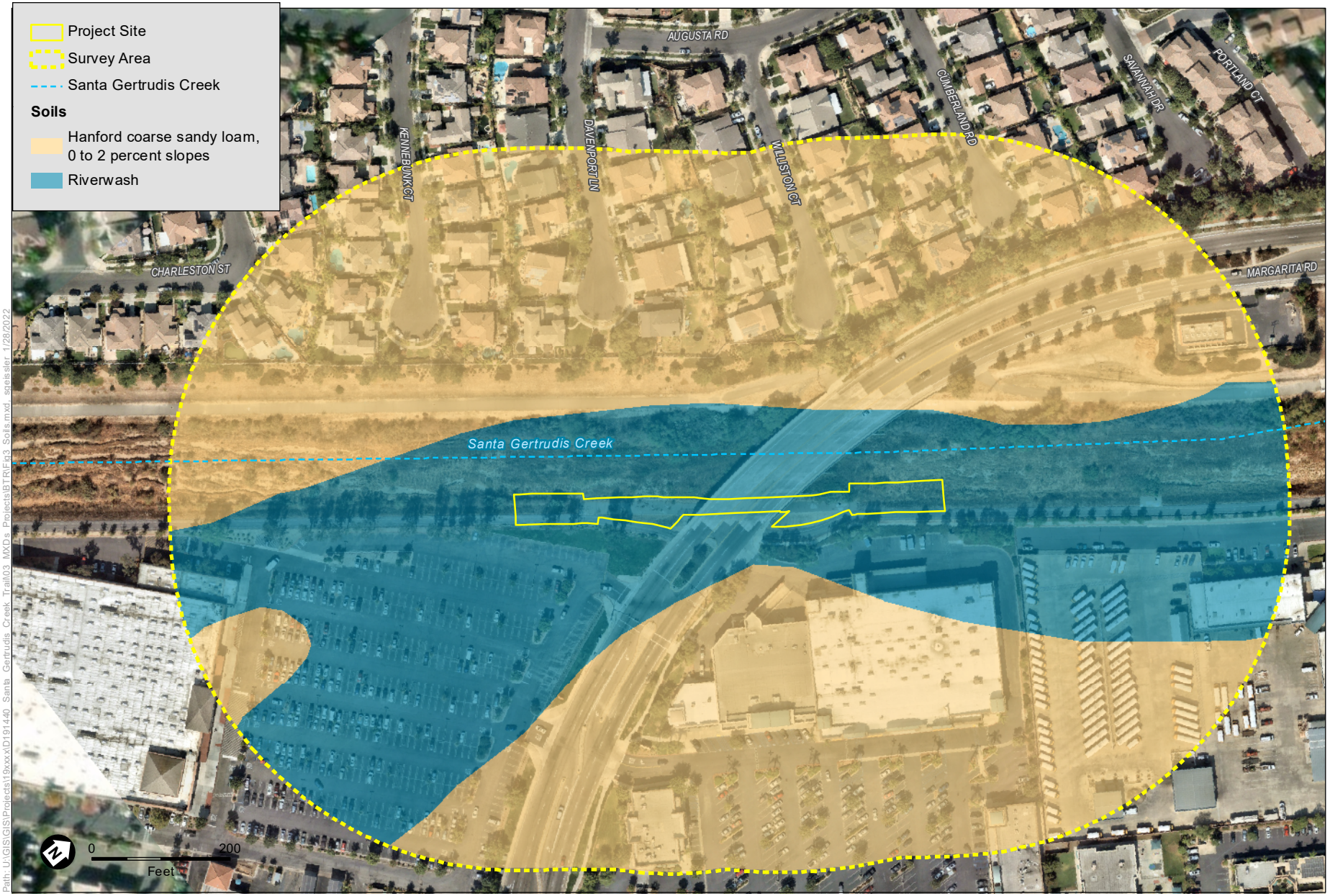
ESA

SOURCE: Nearmap, 2020.

Santa Gertrudis Creek Trail Phase II Undercrossing at Margarita Road Project

Figure 2
Project Location

ESA



SOURCE: Nearmap, 2020; Web Soil Survey, 2020.

Santa Gertrudis Creek Trail Phase II Undercrossing at Margarita Road Project

Figure 3
Soils

ESA

2.3 Plant Communities and Land Use

Plant communities and land use were characterized to map their extent and quantify their abundance within the survey area using ArcGIS. Plant taxonomy followed *The Jepson Manual: Vascular Plants of California, Second Edition* (Baldwin et al. 2012), and plant community descriptions were characterized using *A Manual of California Vegetation, Second Edition* Manual) (Sawyer et al. 2009). Plant communities and land use not identified within the Manual were characterized based on species dominance or other visual characteristics.

The plant communities and land use mapped within the survey area includes annual grasses and forbs, Goodding's willow-sandbar willow riparian woodland/forest, hardstem bulrush marsh, tamarisk thickets, unvegetated streambed and disturbed/developed land use. These are depicted in **Figure 4, Plant Communities and Land Use**. Acreages of each vegetation community in the survey area are summarized below in **Table 2, Plant Communities and Land Use**.

TABLE 2
PLANT COMMUNITIES AND LAND USE

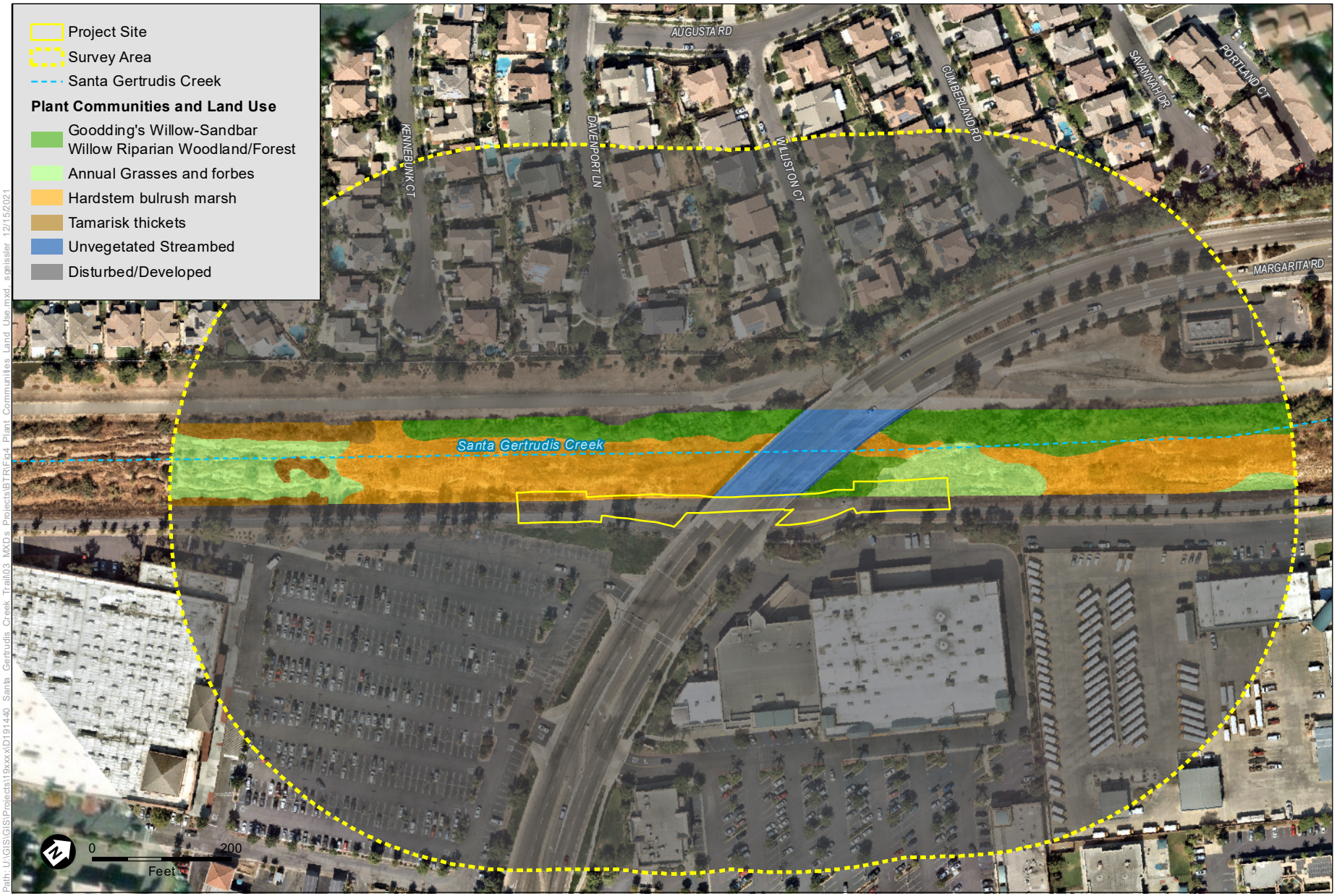
Plant Communities and Land Use	Acres
Annual Grasses and Forbs	0.807
Goodding's Willow-Sandbar Willow Riparian Woodland/Forest	1.187
Hardstem Bulrush Marsh	1.850
Tamarisk Thickets	0.262
Unvegetated Streambed	0.395
Disturbed/Developed	29.453
Grand Total	**33.954**

Annual Grasses and Forbs

Annual grasses and forbs occur in drier portions of the bed of Santa Gertrudis Creek. This community supports a dense herbaceous layer primarily consisting of non-native grasses and forbs with a co-dominance of annual beard grass (*Polypogon monspeliensis*) and curly dock (*Rumex crispus*). Other herbaceous species interspersed throughout include annual ragweed (*Ambrosia psilostachya*), Italian ryegrass (*Festuca perennis*) and cocklebur (*Xanthium strumarium*).

Goodding's Willow-Sandbar Willow Riparian Woodland/Forest 61.211.09

Goodding's willow-sandbar willow riparian woodland/forest occurs primarily as a narrow strip, along the northwestern edge of the bed of Santa Gertrudis Creek. One additional patch of this community type also occurs along the southeast boundary of the creek bed, immediately to the east of the Santa Margarita Bridge. This community is characterized by a prominence of Goodding's willow (Salix gooddingii) in the tree canopy, interspersed with various other shrub/small tree species, such as sandbar willow (Salix exigua). This community also supports a dense herbaceous layer of grass and forb species, such as annual beard grass, curly dock, tall flatsedge (Cyperus eragrostis) and hardstem bulrush (Schoenoplectus acutus). This community is considered sensitive under the 2020 California Department of Fish and Wildlife Natural Community List



SOURCE: Nearmap, 2020.

Santa Gertrudis Creek Trail Phase II Undercrossing at Margarita Road Project

Figure 4
Plant Communities and Land Use

ESA

Hardstem Bulrush Marsh 52.128.00

Hardstem bulrush marsh occurs throughout much of the bed of Santa Gertrudis Creek. This community is characterized by a dense herbaceous layer dominated by hardstem bulrush, interspersed with various other species that include annual beard grass, cocklebur, curly dock, Mexican rush (*Juncus mexicanus*) and tall flatsedge. This community is considered sensitive under the 2020 California Department of Fish and Wildlife Natural Community List.

Tamarisk Thickets 63.810.00

Tamarisk thickets occur along the bed of Santa Gertrudis Creek, in the western portion of the survey area. This community is characterized by an overwhelming dominance of tamarisk (*Tamarix ramosissima*) in the tree layer, and is interspersed throughout with various other trees, grasses and forbs, which include sandbar willow, tall flatsedge, curly dock, annual beard grass and cocklebur.

Unvegetated Streambed

Unvegetated streambed occurs under the Santa Margarita Bridge, within the bed of Santa Gertrudis Creek. This community is characterized as having little to no vegetation other than weedy, herbaceous growth. Species observed include annual beard grass, curly dock and cocklebur.

Disturbed developed

Disturbed/developed land use includes the manufactured concrete banks observed along Santa Gertrudis Creek, the concrete bridge/paved roadway along Margarita Road, the paved bike trail, and the surrounding commercial/industrial developments and associated parking lots/landscaped areas. These areas are either entirely or largely devoid of vegetation with the exception of some weedy non-native growth, which includes such species as short podded mustard (*Hirschfeldia incana*), and ornamental, planted trees that include red ironbark (*Eucalyptus sideroxylon*).

2.4 Sensitive Natural Communities

Sensitive natural communities are defined by the California Department of Fish and Wildlife (CDFW) as those natural communities that have a reduced range and/or are imperiled as a result of residential and commercial development, agriculture, energy production, and mining, or an influx of invasive and other problematic species. Vegetation communities are evaluated using NatureServe's Heritage Methodology (NatureServe 2018), which is based on the knowledge of range and distribution of a specific vegetation type and the proportion of occurrences that are of good ecological integrity. Evaluation is done at both a global (natural range within and outside of California [G]) and subnational (State level for California [S]) level, each ranked from 1 ("critically imperiled" or very rare and threatened) to 5 (demonstrably secure). Natural communities and habitats with state ranks of S1 through S3 are considered sensitive natural communities and may require review when evaluating environmental impacts (CDFW 2020). Sensitive natural communities observed within the survey area are depicted within **Figure 5, Sensitive Biological Resources**.

Goodding's willow-sandbar willow riparian woodland/forest has a global and state evaluation of G4/S3 and Hardstem bulrush marsh an evaluation of GNR/S3; therefore, both are designated as sensitive natural communities.

SOURCE: Nearmap, 2020.

Santa Gertrudis Creek Trail Phase II Undercrossing at Margarita Road Project

Figure 5
Sensitive Biological Resources

ESA

2.5 Wildlife

Common Wildlife

Common avian species observed during the field assessment include Anna's hummingbird (*Calypte anna*), marsh wren (*Cistothorus palustris*), American crow (*Corvus brachyrhynchos*), common yellowthroat (*Geothlypis trichas*), song sparrow (*Melospiza melodia*), California towhee (*Melozone crissalis*), Nuttall's woodpecker (*Picoides nuttallii*), ruby-crowned kinglet (*Regulus calendula*), black phoebe (*Sayornis nigricans*), yellow-rumped warbler (*Setophaga coronata*), lesser goldfinch *(Spinus psaltria*), house wren (*Troglodytes aedon*) and mourning dove (*Zenaida macroura*). Additional wildlife species detected during the assessment include California ground squirrel (*Otospermophilus beecheyi*), desert cottontail (*Sylvilagus audubonii*) and side-blotched lizard (*Uta stansburiana*).

A number of other bird species and various reptile and mammal species are also likely to forage and/or breed throughout the survey area. A list of wildlife species observed, including those expected to occur within the survey area, is included in **Appendix A, Floral and Faunal Compendia**.

Special Status Wildlife

Special-status wildlife includes those animals that, because of their recognized rarity or vulnerability to various forms of habitat loss or population decline, are considered by federal, state, or other agencies to be imperiled. Some of these species receive specific protection that is defined by federal or state endangered species legislation and others have been designated as special-status on the basis of adopted local policies (i.e., city and county) or the educated opinion of respected resource interest groups (e.g., Western Bat Working Group [WBWG]). Special-status wildlife is defined as follows:

- Wildlife listed or proposed for listing as threatened or endangered, or that are candidates for possible future listing as threatened or endangered, under the federal Endangered Species Act (FESA) or the California Endangered Species Act (CESA).
- Wildlife that meet the definitions of rare or endangered under CEQA Guidelines Section 15380.
- Wildlife designated by CDFW as species of special concern, included on the Watch List or are considered Special Animals.
- Wildlife "fully protected" in California (Fish and Game Code Sections 3511, 4700, and 5050).
- Bird species protected by the Migratory Bird Treaty Act (MBTA).
- Bat species considered priority by the WBWG.
- Covered Species under the MSHCP, Volume II, Section B, Species Accounts and/or Stephen's Kangaroo Rat Habitat Conservation Plan (SKR HCP).

A review of the most recent California Natural Diversity Database (CNDDB) (CDFW 2021a) records for the survey area revealed that 63 special-status wildlife species have been previously recorded within the nine–USGS quadrangle search area. A complete list of the species generated

in the CNDDB query are provided in **Appendix C, CNDDB and CNPS Search Results**. Species that are not expected to occur within the survey area based on an absence of suitable habitat, known geographic distributions, and/or range restrictions were omitted and are not discussed further in this report. Twelve special-status species, however, have varying levels of potential to occur within the survey area, based on the criteria provided below (see **Table 3, Potentially Occurring Special-Status Wildlife Species within the Survey Area)**.

- **Low Potential:** The survey area supports limited habitat for a particular species. For example, the appropriate vegetation assemblage may be present while the substrate preferred by the species may not be.
- **Moderate Potential:** The survey area provides marginal habitat for a particular species. For example, the habitat may be heavily disturbed, affectively reducing its ability to support the species.
- **High Potential:** The survey area provides suitable habitat conditions for a particular species and/or known populations occur in the immediate area.
- **Present:** The species was observed while conducting a survey.

Of the twelve special-status wildlife species listed in Table 3, eight have a moderate to high potential to occur within the survey area; these species include Cooper's hawk (*Accipiter cooperii*), least Bell's vireo (*Vireo bellii pusillu*s), yellow warbler (*Dendroica petechia* ssp. *brewsteri*), yellow-breasted chat (*Icteria virens*), pallid bat (*Antrozous pallidus*), Yuma myotis, coastal western whiptail (*Aspidoscelis tigris* ssp. *stejnegeri*), and coast horned lizard (*Phrynosoma blainvillii*).

Special-Status Plants

Special-status wildlife includes those animals that, because of their recognized rarity or vulnerability to various forms of habitat loss or population decline, are considered by federal, state, or other agencies to be imperiled. Some of these species receive specific protection that is defined by federal or state endangered species legislation and others have been designated as special-status on the basis of adopted local policies (i.e., city and county) or the educated opinion of respected resource interest groups (e.g., CNPS) Special-status plants are defined as follows:

- Plants listed or proposed for listing as threatened or endangered, or are candidates for possible future listing as threatened or endangered, under FESA or CESA.
- Plants that meet the definitions of rare or endangered under State CEQA Guidelines Section 15380.
- Plants considered by the CNPS to be rare, threatened, or endangered (Rank 1A, 1B, 2A and 2B plants) in California.
- Plants listed by the CNPS as plants in which more information is needed to determine their status and plants of limited distribution (List 3 and 4 plants).
- Plants listed as rare under the California Native Plant Protection Act (Fish and Game Code 1900 et seq.).
- Covered Species under the MSHCP, Volume II, Section B, Species Accounts.

TABLE 3
POTENTIALLY OCCURRING SPECIAL-STATUS WILDLIFE SPECIES WITHIN THE SURVEY AREA

Common Name	Scientific Name	Status (Federal/State/ Other)	Habitat	Western Riverside MSHCP	Potential to Occur
Amphibians					
Arroyo toad	*Anaxyrus californicus*	FE./SSC/None	Riparian scrub, Riparian woodland, desert wash, south coast flowing waters	Covered	**Low**. Riparian habitat is present within the survey area; however, other habitat requirements, such as flowing water, shallow pooling, sandy/gravel bars, etc., are not met.
Birds					
Cooper's hawk	*Accipiter cooperii*	None/WL, SA/None	Cismontane woodland, riparian forest and woodland and upper montane coniferous forest.	Covered	**High**. Suitable foraging and nesting habitat is present throughout survey area. This species may forage and nest within 500 feet of the proposed project site.
Burrowing owl	*Athene cunicularia*	BCC/SSC/None	Various open habitat types including grasslands and low scrub communities, and is known to utilize heavily disturbed areas for roosting and nesting purposes.	Covered	**Low.** Marginal foraging habitat for this species occurs throughout the annual grasses and forbs; however, no burrows of the appropriate size and morphology were observed during the burrowing owl habitat assessment. Therefore, this species is not expected roost or nest within the survey area.
Loggerhead shrike	*Lanius ludovicianus*	None/SSC/None	Chaparral, coastal scrub. Grasslands, forests and riparian woodlands.	Covered	**Low.** Suitable vegetation is present within the survey area; however, this species is generally associated with large, open areas.
Least Bell's vireo	*Vireo bellii* ssp. *pusillus*	FE/SE, SA/None	Riparian vegetation generally ranging from coastal areas, up to 2,000 feet elevation (Psomas 2008).	Covered	**Moderate.** Marginal foraging and nesting habitat is present within the thin strip/isolated patch of Goodding's willow-sandbar willow riparian woodland/forest. This species may forage and nest within 500 feet of the proposed project site.
Yellow-breasted chat	*Icteria virens*	None/SSC/None	Riparian forest, riparian scrub, riparian woodland	Covered	**Moderate.** Marginal foraging and nesting habitat is present within the thin strip/isolated patch of Goodding's willow-sandbar willow riparian woodland/forest. This species may forage and nest within 500 feet of the proposed project site.
Yellow warbler	Setophaga petechia	None/SSC, SA/None	Riparian woodland,	Covered	**Moderate.** Marginal foraging and nesting habitat is present within the thin strip/isolated patch of Goodding's willow-sandbar willow riparian woodland/forest.

Common Name	Scientific Name	Status (Federal/State/ Other)	Habitat	Western Riverside MSHCP	Potential to Occur
Amphibians					
Arroyo toad	*Anaxyrus californicus*	FE./SSC/None	Riparian scrub, Riparian woodland, desert wash, south coast flowing waters	Covered	**Low**. Riparian habitat is present within the survey area; however, other habitat requirements, such as flowing water, shallow pooling, sandy/gravel bars, etc., are not met.
Birds					
					This species may forage and nest within 500 feet of the proposed project site.
Mammals					
Pallid bat	*Antrozous pallidus*	None/SSC, SA/WBWG-H	Grasslands, shrublands, woodlands, and coniferous forests; most common in open, dry habitat with rocky areas for roosting, as well as abandon buildings and medal clad structures Species is known to roost in cavities of oak trees (WBWG, 2021).	Not Covered	**Moderate.** Marginal foraging and roosting habitat is present within the thin strip/isolated patch of Goodding's willow-sandbar willow riparian woodland/forest and under the Margarita Road bridge. This species may roost and breed within 500 feet of the project site.
Yuma myotis	*Myotis yumanensis*	None/None/ WBWG-M	Riparian forest, riparian woodland, low montane coniferous forest, upper montane coniferous forest	Not Covered	**Moderate**. Marginal foraging and roosting habitat is present within the thin strip/isolated patch of Goodding's willow-sandbar willow riparian woodland/forest and under the Margarita Road bridge. This species may roost and breed within 500 feet of the project site.
Reptiles					
Coastal western whiptail	*Aspidoscelis tigris* ssp. *stejnegeri*	None/SSC, SA/None	Deserts and semiarid areas with sparse vegetation and open areas, woodland and riparian areas.	Covered	**Moderate.** Suitable habitat for this species is present throughout the bed of Santa Gertrudis Creek.
Two-striped garter snake	*Thamnophis hammondii*	None/SSC/None	Riparian woodland, Riparian scrub, marsh and swamp, wetland	Not covered	**Low.** This species is highly aquatic and typically found near permanent freshwater. Santa Gertrudis creek supports flowing periodically; however, is not likely sufficient to support populations of this species.
Coast horned lizard	*Phrynosoma blainvillii*	None/SSC, SA/None	Various habitats throughout California, most commonly within scrub and chaparral communities.	Covered	**Moderate.** Suitable habitat for this species is present throughout the creek channel. However, no Harvester ants (a known prey species for the horned lizard.) were detected during surveys

Common Name	Scientific Name	Status (Federal/State/ Other)	Habitat	Western Riverside MSHCP	Potential to Occur
Amphibians					
Arroyo toad	*Anaxyrus californicus*	FE./SSC/None	Riparian scrub, Riparian woodland, desert wash, south coast flowing waters	Covered	**Low**. Riparian habitat is present within the survey area; however, other habitat requirements, such as flowing water, shallow pooling, sandy/gravel bars, etc., are not met.
Birds					
					This species may occur within the proposed project impact area.

Federal/State/Other Status: FE - Federally Endangered, BCC – Federal Bird of Conservation Concern; SE – State Endangered – SE, SSC – State Species of Special Concern, SA – State Special Animal, WL – State Watch List; WBWG - Western Bat Working Group List (H – high priority)

A review of the CNDDB (CDFW 2021a) and the CNPS Inventory of Rare and Endangered Plants (CNPS 2021) revealed 95 special-status plant species recorded within the 9–USGS quadrangle search. The potential for special-status plant species to occur is based on on-site vegetation and habitat quality, topography, elevation, soils, surrounding land uses, habitat preferences, and geographic ranges. Based on the absence of suitable habitat, known geographic distributions, and/or range restrictions, it was determined that many of the plant species do not have the potential to occur within the survey area and are therefore omitted from further discussion in this report. The three special-status plants listed in **Table 4, Potentially Occurring Special-Status Plant Species within the Survey Area** were determined to have varying potentials to occur, based on the criteria described below.

- **Not Expected:** This species would have been observable in a vegetative state and was not detected during focused surveys.
- **Low Potential:** The survey area only provides limited habitat for a particular species, for example, may support incorrect substrate with marginal vegetation or proper vegetation and an incorrect elevation range.
- **Moderate Potential:** The survey area provides marginal habitat for a particular species, for example, may support suitable vegetation with incorrect substrate or elevation range.
- **High Potential:** The survey area provides suitable habitat conditions for a particular species and/or known populations occur in the immediate vicinity.

Based the presence of marginal or suitable habitat conditions, it was determined that there is a moderate potential for one special-status plant species to occur within the survey area, the smooth tarplant (*Centromadia pungens* ssp. *laevis*).

TABLE 4
POTENTIALLY OCCURRING SPECIAL-STATUS PLANT SPECIES WITHIN THE SURVEY AREA

Common Name	Scientific Name	Status (Federal/State/ Other)	Habitat	Western Riverside MSHCP	Potential to Occur
Nevin's barberry	*Berberis nevinii*	FE/SE/1B.1	Riparian scrub, chaparral, coastal scrub, cismontane woodland	Covered	**Not Expected.** Marginal habitat for this species occurs within the riparian scrub; however, the closest known occurrences are located in the hills that surround Vail Lake, more than 10 miles to the southeast of the survey area. Further, this perennial shrub would have been identifiable in a vegetative state and was not observed during focused surveys.
Smooth tarplant	*Centromadia pungens* ssp. *laevis*	None/None/1B.1	Frequently associated with alkaline soils along the margins of marshes and swamps, valley and foothill grassland and vernal pools. Commonly found in disturbed areas.	Covered	**Moderate.** While alkaline conditions were not apparent during the biological assessment, suitable habitat for the species is present along the margins of the riparian and marsh vegetation and throughout the grasses/forbs.

Common Name	Scientific Name	Status (Federal/State/ Other)	Habitat	Western Riverside MSHCP	Potential to Occur
White-rabbit tobacco	*Pseudognaphalium leucocephalum*	None/None/2B.2	Sandy or gravelly benches along dry drainages, within coastal scrub, chaparral communities.	Not Covered	**Not Expected.** In general, the vegetation and substrate within the survey area is too dense and moist, respectively, to support this species. Further, the focused rare plant survey was conducted just outside of the blooming period for this species, and it would have been identifiable if present.

2.6 Protected Trees

The City of Temecula Heritage Tree Ordinance, Chapter 8.48 of the Municipal Code, is intended to "protect and preserve Oak, California bay laurel, California black walnut, California Holly, California Sycamore trees and other trees of special significance to the community" (TMC 2021). Oak trees (*Quercus* species) protected under this ordinance must measure more than 18 inches in diameter, and any other tree must measure greater than 12 inches, at a point four feet above the ground. No trees protected under the City of Temecula Heritage Tree Ordinance occur within the survey area.

2.7 Critical Habitat

Under FESA, to the extent feasible, the U.S. Fish and Wildlife Service (USFWS) and National Marine Fisheries Service are required to designate critical habitat for endangered and threatened species. Critical habitat is defined as areas of land, water, and air space containing the physical and biological features essential for the survival and recovery of endangered and threatened species. Designated critical habitat includes sites for breeding and rearing, movement or migration, feeding, roosting, cover, and shelter. Designated critical habitats require special management and protection of existing resources, including water quality and quantity, host animals and plants, food availability, pollinators, sunlight, and specific soil types. Critical habitat delineates all suitable habitat, occupied or not, essential to the survival and recovery of the species.

There is no critical habitat located within or adjacent to the survey area (USFWS 2021).

2.8 Aquatic Resources

Santa Gertrudis Creek is potentially jurisdictional with the United States Army Corps of Engineers (USACE), Regional Water Quality Control Board (RWQCB), and CDFW; and meets the criteria for a riparian/riverine area within the MSHCP. The aquatic resources mapped within the survey area are detailed in a separate Aquatic Resources Delineation Report (ESA 2021).

The riparian/riverine areas, as discussed in Section 6.1.2 of the MSHCP, are discussed further in Section 3.9, Western Riverside County MSHCP.

2.9 Wildlife Movement Corridors

Wildlife movement corridors are pathways (i.e., habitat linkages) that connect discrete areas of natural open space otherwise separated or fragmented by topography, changes in vegetation, and other natural or human-induced factors, such as urbanization. Santa Gertrudis Creek provides suitable foraging and breeding habitat for wildlife within the survey area, as well as an opportunity for large-scale movement between contiguous habitat present both upstream and downstream of the survey area.

3.0 Regulatory Setting

3.1 Federal and State Endangered Species Acts

FESA provides guidance for conserving federally listed species and the ecosystems upon which they depend. Section 9 of the FESA and its implementing regulations prohibit the "take" of any federally listed endangered or threatened plant or animal species, unless otherwise authorized by federal regulations. Take includes the destruction of a listed species' habitat. Section 9 also prohibits a number of specified activities with respect to endangered and threatened plants.

CESA mandates that state agencies not approve a project that would jeopardize the continued existence of species if reasonable and prudent alternatives are available that would avoid a jeopardy finding. CESA also prohibits the take of any fish, wildlife, or plant species listed as endangered or threatened, or designated as candidates for listing, under CESA. Similar to FESA, CESA contains a procedure for the CDFW to issue an incidental take permit authorizing the take of listed and candidate species incidental to an otherwise lawful activity, subject to specified conditions.

3.2 Migratory Bird Treaty Act

The federal MBTA prohibits the take of migratory birds except as permitted by regulations issued by the USFWS. The term "take" is defined by USFWS regulation to mean to "pursue, hunt, shoot, wound, kill, trap, capture or collect" any migratory bird or any part, nest, or egg of any migratory bird covered by the conventions, or to attempt those activities.

3.3 Clean Water Act

In accordance with Section 404 of the Clean Water Act (CWA), the USACE regulates discharge of dredged or fill material into waters of the U.S. Waters of the U.S. and their lateral limits are defined in 33 CFR 328.3(a) and includes navigable waters of the U.S., interstate waters, all other waters where the use or degradation or destruction of the waters could affect interstate or foreign commerce, tributaries to any of these waters, and wetlands that meet any of these criteria or that are adjacent to any of these waters or their tributaries. Waters of the U.S. are often categorized as "jurisdictional wetlands" (i.e., wetlands over which the USACE exercises jurisdiction under Section 404) and "other waters of the United States" when habitat values and characteristics are being described. "Fill" is defined as any material that replaces any portion of a water of the U.S. with dry land or that changes the bottom elevation of any portion of a water of the U.S. Any activity resulting in the placement of dredged or fill material within waters of the United States

requires a permit from USACE. In accordance with Section 401 of the CWA, projects that apply for a Section 404 permit for discharge of dredged or fill material must obtain water quality certification from the appropriate RWQCB indicating that the proposed project would uphold State of California water quality standards.

3.4 Native Plant Protection Act

The Native Plant Protection Act includes measures to preserve, protect, and enhance rare and endangered native plants. The list of native plants afforded protection pursuant to the Native Plant Protection Act includes those listed as rare and endangered under CESA. The Native Plant Protection Act provides limitations on take as follows: "No person will import into this state, or take, possess, or sell within this state" any rare or endangered native plant, except in compliance with provisions of the act. Individual landowners are required to notify the CDFW at least 10 days in advance of changing land uses to allow the CDFW to salvage any rare or endangered native plant material.

3.5 Section 15380 of the California Environmental Quality Act Guidelines

Although threatened and endangered species are protected by specific federal and state statutes, State CEQA Guidelines Section 15380(b) provides that a species not listed on the federal or state list of protected species may be considered rare or endangered if the species can be shown to meet certain specified criteria. These criteria have been modeled after the definition in FESA and the section of the California Fish and Game Code dealing with rare or endangered plants or animals. This section was included in CEQA primarily to deal with situations in which a public agency is reviewing a project that may have a significant effect on, for example, a candidate species that has not been listed by either USFWS or CDFW. Thus, CEQA provides an agency with the ability to protect a species from the potential impacts of a project until the respective government agencies have an opportunity to designate the species as protected, if warranted. CEQA also calls for the protection of other locally or regionally significant resources, including natural communities. Although natural communities do not, at present, have legal protection of any kind, CEQA calls for an assessment of whether any such resources would be affected, and requires findings of significance if there would be substantial losses. Natural communities listed in the CNDDB as sensitive are considered by CDFW to be significant resources and fall under the State CEQA Guidelines for addressing impacts. Local planning documents such as General Plans often identify these resources as well.

3.6 Sections 3503 and 3513 of the California Fish and Game Code

Section 3503 of the California Fish and Game Code prohibits the killing of birds or the destruction of bird nests. Birds of prey are protected under Section 3503.5 of the California Fish and Game Code, which provides that it is "unlawful to take, possess, or destroy any birds in the order Falconiformes or Strigiformes (birds of prey) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this code or any regulation adopted pursuant thereto." Section 3513 of the California Fish and Game Code prohibits any take or possession of

birds that are designated by the MBTA as migratory nongame birds except as allowed by federal rules and regulations promulgated pursuant to the MBTA. Migratory birds include all native birds in the United States, except those non-migratory game species, such as quail and turkey, which are managed by individual states.

3.7 Section 1602 of the California Fish and Game Code

Section 1602 of the California Fish and Game Code requires a Streambed Alteration Agreement for any activity that may alter the bed and/or bank of a lake, stream, river, or channel. Typical activities that require a Streambed Alteration Agreement include, but are not limited to, excavation or fill placed within a channel, vegetation clearing, installation of culverts and bridge supports, and bank reinforcement. As part of the notification process, the CDFW requires documentation of any trees to be removed as part of the project. Trees that have a trunk diameter at breast height of greater than 2 inches are subject to regulation by the CDFW via the Streambed Alteration Agreement.

3.8 City of Temecula Heritage Tree Ordinance

The City of Temecula Heritage Tree Ordinance Chapter 8.48 of the Municipal Code is intended to "protect and preserve Oak, California bay laurel, California black walnut, California Holly, California Sycamore trees and other trees of special significance to the community" (TMC 2021). Oak trees (*Quercus* species) protected under this ordinance must measure more than 18 inches in diameter, and any other tree must measure greater than 12 inches, at a point four feet above the ground.

3.9 Western Riverside County MSHCP

The survey area lies within rough step 6 of the MSHCP, which is a multi-jurisdictional Habitat Conservation Plan that involves the assembly and management of a 500,000-acre Conservation Area for the conservation of natural habitats and their constituent wildlife populations. The approval of the MSHCP and the Implementing Agreement by the USFWS and CDFW allows for the issuance of take authorization for the 146 "covered" species (and associated habitats), assuming that consistency can be demonstrated by the plan participant (Dudek 2003). Sections deemed relevant to the proposed project are described in further detail, below.

Section 3.2.1 – Public Quasi-Public Land

Public/Quasi-Public Lands (PQP Land) comprise a subset of the MSHCP conservation area, totaling 347,000 acres of public/private lands that are expected to be managed for open space value and/or in a manner that contributes to the conservation of covered species. Section 3.2.1 of the MSHCP states that if a proposed project results in the alteration of Public/Quasi-Public Lands, sufficient to reduce the level in which they previously contributed to the conservation of covered species (and/or the acquisition/conservation of additional reserve lands), then the plan participant must replace, or permanently protect biologically equivalent or superior land at a minimum ratio of 1:1 (Dudek 2003).

Section 6.1.2 – Protection of Species Associated with Riparian/Riverine Areas and Vernal Pools

Section 6.1.2 of the MSHCP requires the assessment of potential impacts of a proposed project to riparian/riverine or vernal pool resources, and those species that depend on such resources, including vernal pool fairy shrimp, and certain riparian bird species (e.g., least Bell's vireo, southwestern willow flycatcher [*Empidonax traillii* ssp. *extimus*] and western yellow-billed cuckoo [*Coccyzus americanus*]). Certain other species that also occur within these resource areas, such as yellow breasted chat (*Icteria virens*) and yellow warbler (*Setophaga petechia*), are identified in "Additional Species Benefits" of Section 6.1.2, and while they do not individually necessitate an assessment and potential mitigation of impacts resulting from a project (as is required for the least Bell's vireo, southwestern willow flycatcher and western yellow-billed cuckoo); they are expected to benefit from the protection of riparian/riverine and vernal pool areas.

If impacts to a riparian/riverine or vernal pool resource areas and/or an associated species, are proposed as a result of project implementation and mitigation is required, a Determination of Biologically Equivalent or Superior Preservation (DBESP) may be required to compensate for unavoidable impacts. The DBESP, if required, at a minimum must assess the value of the resource that will be impacted, as well as propose mitigation that can be demonstrated to adequately offset the impacts.

Section 6.1.3 – Protection of Narrow Endemic Plant Species

Section 6.1.3 of the MSHCP requires the assessment of potential impacts of a proposed project to narrow endemic plants species, when located within the Narrow Endemic Plant Species Survey Area, as identified in the RCA MSHCP Information Map (RCIP 2021). If the project is located within a designated survey area, focused surveys must be completed during the appropriate blooming period for each narrow endemic plant species, with potential to occur. If impacts to narrow endemic plant species are proposed as a result of project implementation, a DBESP may be necessary to compensate for the proposed impacts.

Section 6.1.4 – Guidelines Pertaining to the Urban/Wildlands Interface

Section 6.1.4 of the MSHCP specifies that certain guidelines should be implemented for proposed projects located adjacent to or that are connected to existing conservation lands/lands that are described for conservation (e.g., PQP Land). The various guidelines include the management of site drainage/runoff and toxics/pollutants, grading, lighting, noise, invasive plant species and wildlife barriers, to ensure that pre-project conditions are maintained during and following the completion of construction, to the degree feasible.

Section 6.3.2 – Additional Survey Needs and Procedures

Section 6.3.2 of the MSHCP requires the assessment of potential impacts of a proposed project to various other covered species included in the MSHCP, such as criteria area plants species for projects located within a criteria cell, select amphibians and mammals, and burrowing owl. If

impacts to these additional species are proposed as a result of project implementation, a DBESP may be necessary to compensate for the proposed impacts.

Section 7.4.2 – Conditionally Compatible Uses

Section 7.4.2 identifies various public access and recreational uses within the conservation area that are compatible with the objectives outlined within the MSHCP. Facilities associated with covered uses include trails and their associated trailheads, interpretive centers and maintenance facilities. Restrictions outlined within this section include the number of each type of facility, and the size/extent of each disturbance footprint allowed.

Section 7.5.3 – Construction Guidelines and Appendix C

Section 7.5.3 and Appendix C both establish guidelines for construction that occurs within the Criteria Area and PQP Land. These include but are not limited to the development of water pollution and erosion control plans, timing of construction to limit impact to breeding birds, implementation of sediment and erosion control measures, etc.

3.10 Stephens' Kangaroo Rat Habitat Conservation Plan

The SKR HCP, managed by the Riverside County Habitat Conservation Agency (RCHCA), provides coverage for members of the plan, who seek take of the Stephens' kangaroo rat (*Dipodomys stephensi*) through otherwise lawful project implementation. Through implementation of the SKR HCP, more than $45 million has been dedicated to the establishment and management of this system of regional preserves, designed to ensure the persistence of SKR. This effort has resulted in the permanent conservation of approximately 50 percent of the SKR occupied habitat remaining in the SKR HCP area. Through direct funding and in-kind contributions, SKR habitat in the regional reserve system is managed to ensure its continuing ability to support the species (WRCOG 2018). This project would not be subject to payment of SKR HCP fees because it is exempt.

4.0 Potential Impacts to Biological Resources

4.1 Sensitive Natural Communities

The proposed project will result in the temporary impact of approximately 0.024 acre of Goodding's willow-sandbar willow riparian woodland/forest and 0.038 (a total of 0.062 acre) acre of hardstem bulrush marsh during the replacement of articulated concrete blocks and achieving access along the bed of Santa Gertrudis Creek. These temporary impacts could be mitigated via reseeding/supplemental planting efforts; However, because the Riverside County Flood Control and Water Conservation District conducts routine maintenance within the channel, this will likely not be feasible. As such, the purchase of mitigation credits from an approved mitigation bank may be necessary to mitigate for the temporary loss of these sensitive natural communities.

4.2 Special-Status Plants and Wildlife

Nesting Birds and Raptors

Numerous passerine and raptor species may utilize the habitats that occur within 500 feet of the proposed project site to forage and breed. Activities associated with the proposed project may negatively affect nesting birds that are protected in accordance with the MBTA and Fish and Game Code.

Special-Status Wildlife

Based on the presence of suitable habitat, eight special-status wildlife species have a moderate to high potential to occur within 500 feet of the proposed project site. These eight species are discussed in further detail below.

Birds

The Cooper's hawk, least bell's vireo, yellow-breasted chat and yellow warbler may nest within 500 feet of the proposed project site and may be affected as a result of the proposed construction.

Least Bell's Vireo

The least Bell's vireo is a covered species and is addressed in Section 6.1.2 of the MSHCP. If deemed present within 500 feet of the project site, direct impacts to occupied habitat through the temporary removal of the 0.024 acre of Goodding's willow-sandbar willow riparian woodland/forest; and/or the indirect disturbance to nesting individuals may occur as a result of the proposed project activities.

Yellow-Breasted Chat and Yellow Warbler

The yellow-breasted chat and yellow warbler are covered species under the MSHCP; however, while these two species are expected to benefit from the protection/preservation of riparian/riverine, they are not considered triggers for the implementation of protection under Section 6.1.2 of the MSHCP.

Cooper's Hawk

Cooper's hawk is a covered species under the MSHCP and, assuming project activities do not result in an impact to an active nest, no further actions would be necessary.

Mammals

The pallid bat and the Yuma myotis may forage and roost within 500 feet of the project site and may be affected as a result of the proposed construction.

Reptiles

The coast horned lizard and coastal western whiptail may occur within 500 feet of the project site and may be affected as a result of the proposed construction; however, these two covered species are considered "adequately covered" under the MSHCP. Therefore, no further action is necessary.

Special-Status Plants

One special-status plant species, smooth tarplant, has a moderate to high potential to occur immediately adjacent to the project site. Smooth tarplant is a criteria survey area plant species, as discussed in Section 6.3.2 of the MSHCP. The survey area is not located within a criteria plant survey area; therefore, surveys for this species are not required.

4.3 Critical Habitat

Critical habitat for federally listed endangered or threatened species is not present within or immediately adjacent to the project site.

4.4 Wildlife Movement Corridors

The installation of fencing between the proposed trail and the Santa Gertrudis Creek may prevent ingress/egress of wildlife within the project site; however, the large-scale movement of wildlife through the survey area (along Santa Gertrudis Creek), is not expected to be affected by the proposed project. Further, construction is expected to take place during the daytime hours, when movement throughout the survey area is less frequent and at a lesser scale. The proposed project is not expected to impact wildlife movement corridors.

4.5 Western Riverside County MSHCP and Stephens' Kangaroo Rat HCP

Western Riverside County MSHCP

The survey area is located within the MSHCP and the City of Temecula is a plan participant; therefore, a demonstration of consistency is necessary.

MSHCP Section 3.2.1 – Public/Quasi-Public Land

The project site is situated entirely within PQP Land, which includes Santa Gertrudis Creek and adjacent areas. This portion of Santa Gertrudis Creek has been heavily modified through flood control practices and currently consists of a partially earthen bed (articulated concrete blocks extend into the margins of the creek bed) that supports limited growth of riparian, marsh and miscellaneous herbaceous vegetation; and manufactured banks, on either side of the Margarita Road bridge. The proposed project will involve the grading and replacement of a portion of the east bank, with the proposed pedestrian/bicycle trail relocation and new retaining wall. In addition, a portion of this manufactured bank (i.e., articulated concrete blocks) that extends into the bed of the creek will be replaced with a similar, new material that will allow for vegetation to re-grow and persist, following completion of the project.

The trail itself will function in a similar manner to the existing manufactured banks, in that the ability to convey hydrologic flows within Santa Gertrudis Creek would remain unchanged prior to and following completion of the construction. Further, the vegetation that currently exists (i.e., riparian/marsh and grass/forb vegetation) along the bed, within the articulated concrete blocks, would be allowed to re-grow naturally and would provide the same, or similar biological function

that it currently does. Therefore, the proposed project activities are not expected to result in the loss/degradation of PQP Land or its function.

MSHCP Section 6.1.2 – Riparian/Riverine Areas, Protection of Species Associated with Riparian/Riverine Areas and Vernal Pools

Riparian/Riverine Areas

The bed and banks of Santa Gertrudis Creek meet the criteria for riparian/riverine, as defined in the MSHCP. The proposed project will result in a temporary direct impact to approximately 0.387 acre of riparian/riverine, 0.062 acre of which includes native riparian/riverine vegetation (Goodding's willow –sandbar willow riparian woodland forest and hardstem bulrush marsh). As mentioned above regarding impacts to PQP Land, the resulting pedestrian/bicycle trail will continue to function in a similar manner to the existing manufactured bank and would count as in-kind replacement for this portion of the riparian/riverine impacts.

The temporary impacts to approximately 0.062 acre of native riparian/riverine vegetation, resulting from the replacement of the articulated concrete blocks and access/staging, could be mitigated via reseeding/supplemental planting; however, because the Riverside County Flood Control and Water Conservation District conducts routine maintenance within the channel, this is likely not feasible. As such, the preparation of a DBESP and the purchase of mitigation credits from an approved mitigation bank may be necessary to mitigate for these temporary impacts.

Least Bell's vireo

This species was not observed during the biological resources assessment; however, suitable habitat for the least Bell's vireo occurs within the approximate 1.187 acre of Goodding's willow-sandbar willow riparian woodland forest present throughout the bed of Santa Gertrudis Creek. Approximately 0.024 acre of this vegetation type will be removed (temporarily) as a result of project construction and access/staging. If pre-construction clearance surveys determine that the species does not occur within survey area, no further action, regarding least Bell's vireo, would be necessary.

If surveys result in the detection of vireo within the survey area, the proposed temporary removal of 0.024 acre of Goodding's willow-sandbar willow riparian woodland/forest may result in a temporary impact to occupied habitat. Because impacts would be temporary and the vegetation would be reestablished following project completion, construction activities outside of the nesting season (April 10–July 31) will likely eliminate the need for additional action/compensation, regarding vireo. However, if activities must occur during the nesting season, adjacent to occupied habitat, indirect disturbance to nesting least Bell's vireo could occur.

MSHCP Section 6.1.3 – Protection of Narrow Endemic Plant Species

According to the RCA MSHCP Information Map, the survey area is not located within a narrow endemic plant survey area; therefore, the proposed project activities are not expected to result in an impact to species covered under Section 6.1.3 of the MSHCP. No narrow endemic plant species were observed during the project site survey.

MSHCP Section 6.1.4 – Guidelines Pertaining to the Urban/Wildlands Interface

Section 6.1.4 of the MSHCP specifies that projects occurring within the urban/wildlands interface should implement appropriate storm water pollution prevention measures, prevent construction/operation noise and night lighting from entering the conservation area, prevent the spread of invasive plant species, install effective barriers to prevent trespass, and ensure that manufactured slopes do not extend into the conservation area, wherever feasible. Each of these items are discussed in detail below.

Drainage

The implementation of best management practices, as part of a Stormwater Pollution Prevention Plan (SWPPP) developed for the project, will ensure that drainage and water quality on-site remains in compliance with the requirements outlined in Section 6.1.4 of the MSHCP. Further, once construction is complete, drainage within the project site is expected to return to pre-construction levels.

Toxics

The implementation of best management practices, as part of a SWPPP developed for the project, will ensure that release of toxic chemicals that may affect wildlife and/or habitat/water quality will be prevented to the extent feasible, and will remain in compliance with the requirements outlined in Section 6.1.4 of the MSHCP. Further, once construction is complete, the project is not expected to result in the release of any toxics.

Lighting

The project will not include the installation of additional lighting; therefore, the project will not result in lighting impacts to wildlife during or following completion of construction.

Noise

Ambient noise may increase temporarily during construction; however, once complete, the project will not significantly alter current ambient noise levels within the survey area.

Invasives

The project proposes to install landscaping within the project site. Assuming that species listed in Table 6-2, Plants that Should Be Avoided Adjacent to the MSHCP Conservation Area, are considered when developing the landscape plan, the project is expected to remain in compliance with Section 6.1.4 of the MSHCP.

Barriers

The project will include the installation of a 4-foot-high chain-link fence between the proposed modified pedestrian/bicycle trail and Santa Gertrudis Creek. The proposed fence is intended to prevent trespass and potential disturbance to wildlife and other resources present within the creek. The installation of the fence will serve as a barrier between public areas and the Santa Gertrudis Creek and will ensure compliance with Section 6.1.4 of the MSHCP.

Grading/Land Development

The project will not result in an increase to the footprint of the existing manufactured slopes, within the project site, nor will it result in newly graded areas. Therefore, the project is not expected to result in a change in grading/land development as described in Section 6.1.4 of the MSHCP.

MSHCP Section 6.3.2 – Additional Survey Needs and Procedures

Burrowing Owl

The survey area is situated within a burrowing owl survey area, as indicated on the RCA MSHCP Information Map. As noted in Section 1.2, Methods, of this report, a burrowing owl habitat assessment was performed concurrent with the biological resources assessment survey. It was determined that while the survey area supports marginal foraging habitat for the species, no suitable burrows or other types of refuge (e.g., debris or rock piles) necessary to support burrowing owl nesting was observed.

Smooth Tarplant

Suitable habitat for smooth tarplant occurs within and immediately adjacent to the project site, within the bed of Santa Gertrudis Creek. As stated above in Section 4.2, Special-status Plants and Wildlife, this is a covered species under the MSHCP. The survey area is not located within a criteria cell nor within a criteria plant survey area; therefore, surveys to determine presence/absence of this species are not required. In addition, this species was not observed during the project site survey.

MSHCP Section 7.4.2 – Conditionally Compatible Uses

The proposed trail connection would likely qualify as a regional trail under section 7.4.2 of the MSHCP, which would require that it not exceed 20 feet in width. The proposed width of the trail is expected to measure approximately 12 feet, and is therefore in compliance with this section of the MSHCP.

MSHCP Section 7.5.3 – Construction Guidelines and Appendix C

The implementation of the construction guidelines outlined in Section 7.5.3 and Appendix C will ensure that the proposed project remains compliant with the MSHCP.

Stephens' Kangaroo Rat Habitat Conservation Plan

The survey area north of Margarita Road extends partially into the SKR HCP plan area. The biological resources assessment determined that suitable habitat for the Stephens' kangaroo rat does not occur. Further, the project would be exempt from payment into the SKR HCP because it involves the rehabilitation of an existing structure.

5.0 Minimization and Avoidance Measures

5.1 Sensitive Natural Communities

Following completion of construction activities, the 0.024 -acre area of temporary impact to Goodding's willow-sandbar willow riparian woodland/forest and 0.038 -acre area of temporary

impact to hardstem bulrush marsh (a total of 0.062 acre) should be re-contoured and mitigation credits should be purchased from the Barry Jones (Skunk Hollow) Wetland Mitigation Bank, to further compensate for the temporary impacts.

5.2 Nesting Birds

Project activities could negatively impact nesting birds that are protected in accordance with the MBTA and Fish and Game Code. Therefore, the following measure should be implemented in order to avoid potential impacts to nesting birds:

- To avoid impacts to nesting birds, work activities within 500 feet of suitable nesting habitat shall be timed to avoid the season when nests may be active (January 15 to September 15).
  - If work activities occur within the nesting season (generally defined as January 15 through September 15), a qualified biologist should conduct a focused survey within 30 days of the anticipated start date, and no less than 3 days prior to ground disturbance, to identify any active nests within 500 feet of the development footprint. If an active nest is found, the nest should be avoided and a suitable buffer zone should be delineated in the field where no impacts should occur until the chicks have fledged the nest as determined by a qualified biologist. Construction buffers should be 300 feet for passerines or up to 500 feet for raptors; however, avoidance buffers may be reduced at the discretion of the biologist, depending on the location of the nest and species tolerance to human presence and construction-related noises and vibrations.

5.3 Special-Status Wildlife

The following measures should be implemented to avoid or minimize impacts to special-status wildlife as a result of the project.

Birds

Least Bell's Vireo

Least Bell's vireo nesting season is from April 10 to July 31. If avoidance of work activities within this time period is not feasible, a pre-construction clearance survey for least Bell's vireo should be conducted (concurrent with the nesting bird survey described above, in Section 5.2) within suitable nesting habitat prior to initiation of work activities, to determine their presence or absence within 500 feet of proposed work limits. If the surveys do not result in the detection of the species within 500 feet of the proposed work limits, no further action is necessary. However, if:

- Least Bell's vireo are detected within the project site during the survey, and work activities must occur during the nesting season, the removal of the 0.024 acre of Goodding's willow-sandbar willow riparian woodland forest would result in temporary impacts to occupied habitat. Such impacts are not consistent with the MSHCP provisions and avoidance measures such as postponing work activities would likely be necessary.
- Least Bell's vireo are detected within the survey area, outside of the project site, and the nesting season cannot be avoided, steps should be taken to reduce indirect effects to nesting activity by actively reducing construction noise (to no more than 3 decibels (dBA) above pre-construction ambient noise levels) within proximity to suitable habitat and/or installing temporary construction noise barriers. If the reduction of noise is not feasible, work activities should be postponed until the nest is deemed inactive and/or the breeding season has concluded.

Mammals

Pallid Bat and Yuma Myotis

Prior to commencement of construction activities, within or outside of the bat maternity roosting season, a qualified biologist should conduct a pre-construction clearance survey of suitable habitat for pallid bat and Yuma myotis, within 500 feet of the project site. If roosting bats are identified, the biologist will determine whether there is a day roost (non-breeding) or maternity roost (lactating females and dependent young).

- If a day roost is determined to be present, the biologist should ensure that direct mortality to roosting individuals will not occur; this may include the installation of exclusionary flagging or some other similar protective measure, for example, to prevent ingress. In general, disturbances to day roosts as a result of noise or other indirect impact is not generally considered significant, as it would not cause direct mortality of individuals and would not be expected to reduce populations to below self-sustaining levels. If removal of any trees supporting a day roost would occur, the biologist will ensure that all roosting individuals disperse from the location prior to removal of the vegetation to prevent direct mortality.
- If a maternity roost is observed, the biologist will determine whether construction activities are likely to disturb breeding activities. If it is determined that the vegetation or infrastructure supporting the roost must be removed/modified or the construction activities are expected to disturb breeding, a Bat Exclusion Plan should be prepared. At a minimum, the plan should include avoidance and minimization measures to reduce potential impacts to breeding bats during construction activities and prescribed methods to safely and humanely evict bats from the roost in order to minimize any potential impacts. Typically, avoidance measures require construction to occur outside of maternity season.

5.4 General Avoidance and Minimization Measures

- Prior to the commencement of construction activities, construction personnel should check under stationary equipment to ensure no wildlife species are present.
- All trash should be collected daily and taken off-site for proper disposal.
- Prior to project implementation, a Workers Environmental Awareness Program (WEAP) should be prepared and presented to construction crews regarding all sensitive resources with the potential to occur on-site during construction activities. The WEAP training should concentrate on the proper identification of sensitive resources while in the field, suggested strategies in avoiding impact to sensitive resources, and proper reporting methods for field crews in the event that sensitive resources are observed during construction activities.

5.5 Western Riverside County MSHCP

MSHCP Section 6.1.2

Temporary Impacts to Occupied Least Bell's Vireo Habitat and Riparian/Riverine Areas

If pre-construction clearance surveys result in the detection of least Bell's vireo within the project site, and the nesting season can be avoided during construction, the following is recommended to compensate for the temporary impacts to occupied habitat as well as, riparian/riverine areas:

Following completion of construction activities, the 0.024-acre area of temporary impact to Goodding's willow-sandbar willow riparian woodland/forest and 0.038-acre area of temporary impact to hardstem bulrush marsh (0.062 acres) should be re-contoured to pre-construction grade; and a DBESP that outlines the proposed mitigation, should be developed for approval by the applicable wildlife agencies (i.e., CDFW and USFWS). The DBESP should include an overview of how impacts to the Goodding's willow-sandbar willow and hardstem bulrush marsh would be temporary and mitigated through the purchase of credits from the Barry Jones (Skunk Hollow) Wetland Mitigation Bank.

Indirect Disturbance to Nesting Least Bell's Vireo

If the surveys establish presence of vireo within the survey area, outside of the project site, and work cannot be avoided during the nesting season, steps should be taken to reduce indirect effects to nesting by actively reducing construction noise (no greater than a 3-dBA increase above pre-construction ambient noise levels) within proximity of a known nest/territory (500 feet) and/or installing temporary construction noise barriers. If the reduction of noise to appropriate levels is not feasible, temporary work stoppage to avoid indirect impacts to the least Bell's vireo may be necessary.

MSHCP Section 6.1.4

Invasives

Table 6-2, Plants that Should Be Avoided Adjacent to the MSHCP Conservation Area, as detailed in Section 6.1.4 of the MSHCP, should be reviewed during the development of the landscape plan for the project. Species identified in Table 6-2 shall be avoided and preference shall be given to locally indigenous species.

MSHCP Section 7.5.3

The guidelines described under Section 7.5.3 and Appendix C of the MSHCP should be implemented during project construction.

6.0 References

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U.S. Fish and Wildlife Service (USFWS). 2001. Least Bell's Vireo Survey Guidelines.

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Appendix A
Floral and Faunal Compendia

Scientific Name	Common Name	Comment
Flora		
Gymnosperms		
Pinaceae	**Pine Family**	
Pinus sp.* [1]	unidentified pine	
Angiosperms		
Eudicots		
Anacardiaceae	**Cashew Family**	
Searsia lancea	African sumac	
Asteraceae	**Aster Family**	
Ambrosia psilostachya	annual ragweed	
Artemisia douglasiana	California mugwort	
Baccharis salicifolia	mulefat	
*Centaurea melitensis**	tocalote	
*Lactuca serriola**	prickly lettuce	
Pseudognaphalium sp.*	rabbit tobacco	Available visual diagnostics suggest that the species observed is Jersey cudweed (*Pseudognaphalium luteoalbum*)
*Pulicaria paludosa**	Spanish false fleabane	
Xanthium strumarium	cocklebur	
Brassicaceae	**Mustard Family**	
*Hirschfeldia incana**	short podded mustard	
Chenopodiaceae	**Goosefoot Family**	
Salsola sp.*	Russian thistle	
Fabaceae	**Pea Family**	
*Acacia stenophylla**	shoe-string acacia	
Acmispon wrangelianus	Chilean trefoil	
*Melilotus sp.**	sweetclover	
Myrtaceae	**Eucalyptus Family**	
*Eucalyptus sideroxylon**	red ironbark	
Platanaceae	**Plane Tree Family**	
*Platanus x hispanica**	London plane tree	
Polygonaceae	**Buckwheat Family**	
Eriogonum fasciculatum	California buckwheat	

[1] Non-Native Species

Scientific Name	Common Name	Comment
Salicaceae	**Willow Family**	
Populus fremontii	Fremont's cottonwood	
Salix exigua	sandbar willow	
Salix gooddingii	Goodding's willow	
Salix lasiolepis	arroyo willow	
Saururaceae	**Lizards-Tail Family**	
Anemopsis californica	yerba mansa	
Tamaricaceae	**Tamarisk Family**	
*Tamarix ramosissima**	tamarisk	

Monocots

Aracaceae	**Palm Family**	
*Washingtonia robusta**	mexican fan palm	
Cyperaceae	**Sedge Family**	
Cyperus eragrostis	tall flatsedge	
Schoenoplectus acutus	hardstem bulrush	
Schoenoplectus pungens	common threesquare	
Juncaceae	**Rush Family**	
Juncus mexicanus	Mexican rush	
Poaceae	**Grass Family**	
Bromus madritensis ssp. *rubens**	red brome	
*Cortaderia jubata**	pampas grass	
Distichlis spicata	saltgrass	
*Festuca perennis**	Italian rye grass	
*Paspalum dilatatum**	dallis grass	
*Polypogon monspeliensis**	annual beard grass	
Typhaceae	**Cattail Family**	
Typha latifolia	cattail	

Fauna

Reptiles

Anguidae	**Alligator Lizards**	
E *Elgaria multicarinatus* ssp. *webbii*	San Diego alligator lizard	
Phrynosomatidae	**Zebra-tailed, Side-blotched and Horned Lizards**	
Aspidoscelis tigris ssp. *stejnegeri*	coastal whiptail	
E *Sceloporus occidentalis* ssp. *longipes*	Great Basin fence lizard	
E *Uta stansburiana* ssp. *elegans*	western side-blotched lizard	

	Scientific Name	Common Name	Comment
	Birds		
	Accipitridae	**Hawks**	
E	*Buteo jamaicensis*	red-tailed hawk	
	Cathartidae	**Vultures**	
E	*Cathartes aura*	turkey vulture	
	Columbidae	**Pigeons and Doves**	
	Zenaida macroura	mourning dove	
	Trochilidae	**Hummingbirds**	
	Calypte anna	Anna's hummingbird	
	Corvidae	**Jays and Crows**	
E	*Aphelocoma californica*	California scrub jay	
	Corvus brachyrhynchos	American crow	
E	*Corvus corax*	common raven	
	Picidae	**Woodpeckers**	
	Dryobates nuttallii	Nuttall’s woodpecker	
	Aegithalidae	**Bushtits**	
	Psaltriparus minimus	American bushtit	
	Troglodytidae	**Wrens**	
E	*Thryomanes bewickii*	Bewick’s wren	
E	*Troglodytes aedon*	house wren	
	Cistothorus palustris	marsh wren	
	Mimidae	**Mockingbirds and Thrashers**	
E	*Mimus polyglottos*	northern mockingbird	
	Hirundinidae		
E	*Hirundo rustica*	barn swallow	Inactive nest present
E	*Petrochelidon pyrrhonota*	cliff swallow	Inactive nest present
	Passerellidae	**Sparrows**	
	Melospiza melodia	song sparrow	
	Emberizidae	**Emberizine Sparrows and Allies**	
	Melozone crissalis	California towhee	
	Fringillidae	**Finches**	
	Haemorhous mexicanus	house finch	
	Spinus psaltria	lesser goldfinch	
	Tyrannidae	**Tyrant Flycatchers**	
	Sayornis nigricans	black phoebe	
	Regulidae		
	Regulus calendula	Ruby crowned kinglet	
	Apodidae	**Swift Family**	
E	*Aeronautes saxatalis*	white-throated swift	

Scientific Name	Common Name	Comment
Mammals		
Canidae	**Canines**	
Canis latrans	coyote	scat
Cricetidae	**New World Mice and Voles**	
E *Neotoma* macrotis	Big-eared woodrat	
E *Peromyscus maniculatus*	deer mouse	
Didelphidae	**Opossums**	
E *Didelphis virginiana*	Virginia opossum	
Geomyidae	**Pocket Gophers**	
E *Thomomys bottae*	Botta's pocket gopher	
Leporidae	**Hares and Rabbits**	
Sylvilagus audubonii	desert cottontail	direct observation and scat
Procyonidae	**Raccoons**	
E *Procyon lotor*	Raccoon	tracks
Sciuridae	**Squirrels and Chipmunks**	
Otospermophilus beecheyi	California ground squirrel	

Appendix B
Photographic Log

Photo 1 (N): Southside of Margarita Road bridge.

Photo 2 (SW): Northside of Margarita Road bridge.

Photo 3 (SW): View of Santa Gertrudis creek channel south of Margarita road.

Photo 4 (NE): View of Santa Gertrudis creek channel north of Margarita Road.

Photo 5 (NE): View of Santa Gertrudis Creek beneath the Margarita Road Bridge.

Photo 6 (SW): View of salt grass (*Distichlis spicata*) in Santa Gertrudis creek channel.

Appendix C
CNDDB and CNPS Database Search Results

Selected Elements by Common Name

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad IS (Murrieta (3311752) OR Wildomar (3311753) OR Bachelor Mtn. (3311751) OR Lake Elsinore (3311763) OR Romoland (3311762) OR Winchester (3311761) OR Fallbrook (3311743) OR Temecula (3311742) OR Pechanga (3311741))

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
alkali marsh aster *Almutaster pauciflorus*	PDASTEL010	None	None	G4	S1S2	2B.2
arroyo chub *Gila orcuttii*	AFCJB13120	None	None	G2	S2	SSC
arroyo toad *Anaxyrus californicus*	AAABB01230	Endangered	None	G2G3	S2S3	SSC
bald eagle *Haliaeetus leucocephalus*	ABNKC10010	Delisted	Endangered	G5	S3	FP
Bell's sage sparrow *Artemisiospiza belli belli*	ABPBX97021	None	None	G5T2T3	S3	WL
black-crowned night heron *Nycticorax nycticorax*	ABNGA11010	None	None	G5	S4	
bottle liverwort *Sphaerocarpos drewiae*	NBHEP35030	None	None	G1	S1	1B.1
burrowing owl *Athene cunicularia*	ABNSB10010	None	None	G4	S3	SSC
California ayenia *Ayenia compacta*	PDSTE01020	None	None	G4	S3	2B.3
California glossy snake *Arizona elegans occidentalis*	ARADB01017	None	None	G5T2	S2	SSC
California horned lark *Eremophila alpestris actia*	ABPAT02011	None	None	G5T4Q	S4	WL
California linderiella *Linderiella occidentalis*	ICBRA06010	None	None	G2G3	S2S3	
California Orcutt grass *Orcuttia californica*	PMPOA4G010	Endangered	Endangered	G1	S1	1B.1
California red-legged frog *Rana draytonii*	AAABH01022	Threatened	None	G2G3	S2S3	SSC
California screw moss *Tortula californica*	NBMUS7L090	None	None	G2G3	S2?	1B.2
Campbell's liverwort *Geothallus tuberosus*	NBHEP1C010	None	None	G2	S2	1B.1
chaparral nolina *Nolina cismontana*	PMAGA080E0	None	None	G3	S3	1B.2
chaparral ragwort *Senecio aphanactis*	PDAST8H060	None	None	G3	S2	2B.2

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
chaparral sand-verbena *Abronia villosa var. aurita*	PDNYC010P1	None	None	G5T2?	S2	1B.1
coast horned lizard *Phrynosoma blainvillii*	ARACF12100	None	None	G3G4	S3S4	SSC
coast patch-nosed snake *Salvadora hexalepis virgultea*	ARADB30033	None	None	G5T4	S2S3	SSC
Coast Range newt *Taricha torosa*	AAAAF02032	None	None	G4	S4	SSC
coastal cactus wren *Campylorhynchus brunneicapillus sandiegensis*	ABPBG02095	None	None	G5T3Q	S3	SSC
coastal California gnatcatcher *Polioptila californica californica*	ABPBJ08081	Threatened	None	G4G5T2Q	S2	SSC
coastal whiptail *Aspidoscelis tigris stejnegeri*	ARACJ02143	None	None	G5T5	S3	SSC
Cooper's hawk *Accipiter cooperii*	ABNKC12040	None	None	G5	S4	WL
Coronado skink *Plestiodon skiltonianus interparietalis*	ARACH01114	None	None	G5T5	S2S3	WL
Coulter's goldfields *Lasthenia glabrata ssp. coulteri*	PDAST5L0A1	None	None	G4T2	S2	1B.1
Crotch bumble bee *Bombus crotchii*	IIHYM24480	None	Candidate Endangered	G3G4	S1S2	
Davidson's saltscale *Atriplex serenana var. davidsonii*	PDCHE041T1	None	None	G5T1	S1	1B.2
delicate clarkia *Clarkia delicata*	PDONA050D0	None	None	G3	S3	1B.2
Dulzura pocket mouse *Chaetodipus californicus femoralis*	AMAFD05021	None	None	G5T3	S3	SSC
ferruginous hawk *Buteo regalis*	ABNKC19120	None	None	G4	S3S4	WL
Gander's ragwort *Packera ganderi*	PDAST8H1F0	None	Rare	G2	S2	1B.2
golden eagle *Aquila chrysaetos*	ABNKC22010	None	None	G5	S3	FP
Hall's monardella *Monardella macrantha ssp. hallii*	PDLAM180E1	None	None	G5T3	S3	1B.3
Hammitt's clay-cress *Sibaropsis hammittii*	PDBRA32010	None	None	G2	S2	1B.2
heart-leaved pitcher sage *Lepechinia cardiophylla*	PDLAM0V020	None	None	G3	S2S3	1B.2
Icenogle's socalchemmis spider *Socalchemmis icenoglei*	ILARAU7020	None	None	G1	S1	

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
intermediate mariposa-lily *Calochortus weedii var. intermedius*	PMLIL0D1J1	None	None	G3G4T2	S2	1B.2
intermediate monardella *Monardella hypoleuca ssp. intermedia*	PDLAM180A4	None	None	G4T2?	S2?	1B.3
Jacumba pocket mouse *Perognathus longimembris internationalis*	AMAFD01044	None	None	G5T2T3	S2	SSC
Jaeger's milk-vetch *Astragalus pachypus var. jaegeri*	PDFAB0F6G1	None	None	G4T1	S1	1B.1
Latimer's woodland-gilia *Saltugilia latimeri*	PDPLM0H010	None	None	G3	S3	1B.2
least Bell's vireo *Vireo bellii pusillus*	ABPBW01114	Endangered	Endangered	G5T2	S2	
lemon lily *Lilium parryi*	PMLIL1A0J0	None	None	G3	S3	1B.2
little mousetail *Myosurus minimus ssp. apus*	PDRAN0H031	None	None	G5T2Q	S2	3.1
loggerhead shrike *Lanius ludovicianus*	ABPBR01030	None	None	G4	S4	SSC
long-spined spineflower *Chorizanthe polygonoides var. longispina*	PDPGN040K1	None	None	G5T3	S3	1B.2
Los Angeles pocket mouse *Perognathus longimembris brevinasus*	AMAFD01041	None	None	G5T1T2	S1S2	SSC
many-stemmed dudleya *Dudleya multicaulis*	PDCRA040H0	None	None	G2	S2	1B.2
mesa horkelia *Horkelia cuneata var. puberula*	PDROS0W045	None	None	G4T1	S1	1B.1
Munz's onion *Allium munzii*	PMLIL022Z0	Endangered	Threatened	G1	S1	1B.1
Nevin's barberry *Berberis nevinii*	PDBER060A0	Endangered	Endangered	G1	S1	1B.1
northern harrier *Circus hudsonius*	ABNKC11011	None	None	G5	S3	SSC
northwestern San Diego pocket mouse *Chaetodipus fallax fallax*	AMAFD05031	None	None	G5T3T4	S3S4	SSC
orange-throated whiptail *Aspidoscelis hyperythra*	ARACJ02060	None	None	G5	S2S3	WL
Orcutt's brodiaea *Brodiaea orcuttii*	PMLIL0C0B0	None	None	G2	S2	1B.1
Orcutt's pincushion *Chaenactis glabriuscula var. orcuttiana*	PDAST20095	None	None	G5T1T2	S1	1B.1
pallid bat *Antrozous pallidus*	AMACC10010	None	None	G5	S3	SSC

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Palmer's grapplinghook *Harpagonella palmeri*	PDBOR0H010	None	None	G4	S3	4.2
Parish's brittlescale *Atriplex parishii*	PDCHE041D0	None	None	G1G2	S1	1B.1
Parish's meadowfoam *Limnanthes alba ssp. parishii*	PDLIM02052	None	Endangered	G4T2	S2	1B.2
Parry's spineflower *Chorizanthe parryi var. parryi*	PDPGN040J2	None	None	G3T2	S2	1B.1
Parry's tetracoccus *Tetracoccus dioicus*	PDEUP1C010	None	None	G2G3	S2	1B.2
Payson's jewelflower *Caulanthus simulans*	PDBRA0M0H0	None	None	G4	S4	4.2
Pendleton ceanothus *Ceanothus pendletonensis*	PDRHA04450	None	None	G1	S1	1B.2
Plummer's mariposa-lily *Calochortus plummerae*	PMLIL0D150	None	None	G4	S4	4.2
pocketed free-tailed bat *Nyctinomops femorosaccus*	AMACD04010	None	None	G4	S3	SSC
prostrate vernal pool navarretia *Navarretia prostrata*	PDPLM0C0Q0	None	None	G2	S2	1B.2
quino checkerspot butterfly *Euphydryas editha quino*	IILEPK405L	Endangered	None	G5T1T2	S1S2	
Rainbow manzanita *Arctostaphylos rainbowensis*	PDERI042T0	None	None	G2	S2	1B.1
Ramona horkelia *Horkelia truncata*	PDROS0W0G0	None	None	G3	S3	1B.3
red-diamond rattlesnake *Crotalus ruber*	ARADE02090	None	None	G4	S3	SSC
Riverside fairy shrimp *Streptocephalus woottoni*	ICBRA07010	Endangered	None	G1G2	S1S2	
Robinson's pepper-grass *Lepidium virginicum var. robinsonii*	PDBRA1M114	None	None	G5T3	S3	4.3
salt spring checkerbloom *Sidalcea neomexicana*	PDMAL110J0	None	None	G4	S2	2B.2
San Bernardino aster *Symphyotrichum defoliatum*	PDASTE80C0	None	None	G2	S2	1B.2
San Bernardino kangaroo rat *Dipodomys merriami parvus*	AMAFD03143	Endangered	Candidate Endangered	G5T1	S1	SSC
San Bernardino ringneck snake *Diadophis punctatus modestus*	ARADB10015	None	None	G5T2T3	S2?	
San Diego ambrosia *Ambrosia pumila*	PDAST0C0M0	Endangered	None	G1	S1	1B.1

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
San Diego banded gecko *Coleonyx variegatus abbotti*	ARACD01031	None	None	G5T3T4	S1S2	SSC
San Diego black-tailed jackrabbit *Lepus californicus bennettii*	AMAEB03051	None	None	G5T3T4	S3S4	SSC
San Diego button-celery *Eryngium aristulatum var. parishii*	PDAPI0Z042	Endangered	Endangered	G5T1	S1	1B.1
San Diego desert woodrat *Neotoma lepida intermedia*	AMAFF08041	None	None	G5T3T4	S3S4	SSC
San Diego fairy shrimp *Branchinecta sandiegonensis*	ICBRA03060	Endangered	None	G2	S2	
San Diego ringneck snake *Diadophis punctatus similis*	ARADB1001A	None	None	G5T2T3	S2?	
San Jacinto Valley crownscale *Atriplex coronata var. notatior*	PDCHE040C2	Endangered	None	G4T1	S1	1B.1
San Miguel savory *Clinopodium chandleri*	PDLAM08030	None	None	G3	S2	1B.2
Santa Lucia dwarf rush *Juncus luciensis*	PMJUN013J0	None	None	G3	S3	1B.2
Santa Rosa Basalt brodiaea *Brodiaea santarosae*	PMLIL0C0G0	None	None	G1	S1	1B.2
Santa Rosa Plateau fairy shrimp *Linderiella santarosae*	ICBRA06020	None	None	G1G2	S1	
senile tiger beetle *Cicindela senilis frosti*	IICOL02121	None	None	G2G3T1T3	S1	
Shevock's copper moss *Mielichhoferia shevockii*	NBMUSA1010	None	None	G2	S2	1B.2
slender-horned spineflower *Dodecahema leptoceras*	PDPGN0V010	Endangered	Endangered	G1	S1	1B.1
smooth tarplant *Centromadia pungens ssp. laevis*	PDAST4R0R4	None	None	G3G4T2	S2	1B.1
Southern California legless lizard *Anniella stebbinsi*	ARACC01060	None	None	G3	S3	SSC
southern California rufous-crowned sparrow *Aimophila ruficeps canescens*	ABPBX91091	None	None	G5T3	S3	WL
Southern Coast Live Oak Riparian Forest *Southern Coast Live Oak Riparian Forest*	CTT61310CA	None	None	G4	S4	
Southern Cottonwood Willow Riparian Forest *Southern Cottonwood Willow Riparian Forest*	CTT61330CA	None	None	G3	S3.2	
southern grasshopper mouse *Onychomys torridus ramona*	AMAFF06022	None	None	G5T3	S3	SSC
Southern Interior Basalt Flow Vernal Pool *Southern Interior Basalt Flow Vernal Pool*	CTT44310CA	None	None	G1	S1.2	

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
southern mountains skullcap *Scutellaria bolanderi ssp. austromontana*	PDLAM1U0A1	None	None	G4T3	S3	1B.2
Southern Sycamore Alder Riparian Woodland *Southern Sycamore Alder Riparian Woodland*	CTT62400CA	None	None	G4	S4	
Southern Willow Scrub *Southern Willow Scrub*	CTT63320CA	None	None	G3	S2.1	
spreading navarretia *Navarretia fossalis*	PDPLM0C080	Threatened	None	G2	S2	1B.1
Stephens' kangaroo rat *Dipodomys stephensi*	AMAFD03100	Endangered	Threatened	G2	S2	
sticky dudleya *Dudleya viscida*	PDCRA040T0	None	None	G2	S2	1B.2
summer holly *Comarostaphylis diversifolia ssp. diversifolia*	PDERI0B011	None	None	G3T2	S2	1B.2
Swainson's hawk *Buteo swainsoni*	ABNKC19070	None	Threatened	G5	S3	
Tecate cypress *Hesperocyparis forbesii*	PGCUP040C0	None	None	G2	S2	1B.1
thread-leaved brodiaea *Brodiaea filifolia*	PMLIL0C050	Threatened	Endangered	G2	S2	1B.1
tricolored blackbird *Agelaius tricolor*	ABPBXB0020	None	Threatened	G2G3	S1S2	SSC
two-striped gartersnake *Thamnophis hammondii*	ARADB36160	None	None	G4	S3S4	SSC
Vail Lake ceanothus *Ceanothus ophiochilus*	PDRHA041M0	Threatened	Endangered	G1	S1	1B.1
Valley Needlegrass Grassland *Valley Needlegrass Grassland*	CTT42110CA	None	None	G3	S3.1	
vernal pool fairy shrimp *Branchinecta lynchi*	ICBRA03030	Threatened	None	G3	S3	
Wawona riffle beetle *Atractelmis wawona*	IICOL58010	None	None	G3	S1S2	
western mastiff bat *Eumops perotis californicus*	AMACD02011	None	None	G5T4	S3S4	SSC
western pond turtle *Emys marmorata*	ARAAD02030	None	None	G3G4	S3	SSC
western snowy plover *Charadrius alexandrinus nivosus*	ABNNB03031	Threatened	None	G3T3	S2S3	SSC
western spadefoot *Spea hammondii*	AAABF02020	None	None	G3	S3	SSC
western yellow bat *Lasiurus xanthinus*	AMACC05070	None	None	G5	S3	SSC

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
western yellow-billed cuckoo *Coccyzus americanus occidentalis*	ABNRB02022	Threatened	Endangered	G5T2T3	S1	
white rabbit-tobacco *Pseudognaphalium leucocephalum*	PDAST440C0	None	None	G4	S2	2B.2
white-faced ibis *Plegadis chihi*	ABNGE02020	None	None	G5	S3S4	WL
white-tailed kite *Elanus leucurus*	ABNKC06010	None	None	G5	S3S4	FP
Wiggins' cryptantha *Cryptantha wigginsii*	PDBOR0A400	None	None	G2	S1	1B.2
woven-spored lichen *Texosporium sancti-jacobi*	NLTEST7980	None	None	G3	S2	3
yellow-breasted chat *Icteria virens*	ABPBX24010	None	None	G5	S3	SSC
Yucaipa onion *Allium marvinii*	PMLIL02330	None	None	G1	S1	1B.2
Yuma myotis *Myotis yumanensis*	AMACC01020	None	None	G5	S4	

Record Count: 132

CNPS California Native Plant Society

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

Plant List

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

Search Criteria

Found in Quads 3311763, 3311762, 3311761, 3311753, 3311752, 3311751, 3311743 3311742 and 3311741;

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

Scientific Name	Common Name	Family	Lifeform	Blooming Period	CA Rare Plant Rank	State Rank	Global Rank
Abronia villosa var. aurita	chaparral sand-verbena	Nyctaginaceae	annual herb	(Jan)Mar-Sep	1B.1	S2	G5T2?
Allium munzii	Munz's onion	Alliaceae	perennial bulbiferous herb	Mar-May	1B.1	S1	G1
Almutaster pauciflorus	alkali marsh aster	Asteraceae	perennial herb	Jun-Oct	2B.2	S1S2	G4
Ambrosia pumila	San Diego ambrosia	Asteraceae	perennial rhizomatous herb	Apr-Oct	1B.1	S1	G1
Amsinckia douglasiana	Douglas' fiddleneck	Boraginaceae	annual herb	Mar-May	4.2	S4	G4
Arctostaphylos rainbowensis	Rainbow manzanita	Ericaceae	perennial evergreen shrub	Dec-Mar	1B.1	S2	G2
Astragalus pachypus var. jaegeri	Jaeger's bush milk-vetch	Fabaceae	perennial shrub	Dec-Jun	1B.1	S1	G4T1
Atriplex coronata var. notatior	San Jacinto Valley crownscale	Chenopodiaceae	annual herb	Apr-Aug	1B.1	S1	G4T1
Atriplex pacifica	South Coast saltscale	Chenopodiaceae	annual herb	Mar-Oct	1B.2	S2	G4
Atriplex parishii	Parish's brittlescale	Chenopodiaceae	annual herb	Jun-Oct	1B.1	S1	G1G2
Atriplex serenana var. davidsonii	Davidson's saltscale	Chenopodiaceae	annual herb	Apr-Oct	1B.2	S1	G5T1
Ayenia compacta	California ayenia	Malvaceae	perennial herb	Mar-Apr	2B.3	S3	G4
Berberis nevinii	Nevin's barberry	Berberidaceae	perennial evergreen shrub	(Feb)Mar-Jun	1B.1	S1	G1
Brodiaea filifolia	thread-leaved brodiaea	Themidaceae	perennial bulbiferous herb	Mar-Jun	1B.1	S2	G2
Brodiaea orcuttii	Orcutt's brodiaea	Themidaceae	perennial bulbiferous	May-Jul	1B.1	S2	G2

			herb				
Brodiaea santarosae	Santa Rosa Basalt brodiaea	Themidaceae	perennial bulbiferous herb	May-Jun	1B.2	S1	G1
Calochortus catalinae	Catalina mariposa lily	Liliaceae	perennial bulbiferous herb	(Feb)Mar-Jun	4.2	S3S4	G3G4
Calochortus plummerae	Plummer's mariposa lily	Liliaceae	perennial bulbiferous herb	May-Jul	4.2	S4	G4
Calochortus weedii var. intermedius	intermediate mariposa lily	Liliaceae	perennial bulbiferous herb	May-Jul	1B.2	S2	G3G4T2
Camissoniopsis lewisii	Lewis' evening-primrose	Onagraceae	annual herb	Mar-May(Jun)	3	S4	G4
Carex buxbaumii	Buxbaum's sedge	Cyperaceae	perennial rhizomatous herb	Mar-Aug	4.2	S3	G5
Caulanthus simulans	Payson's jewelflower	Brassicaceae	annual herb	(Feb)Mar-May(Jun)	4.2	S4	G4
Ceanothus cyaneus	Lakeside ceanothus	Rhamnaceae	perennial evergreen shrub	Apr-Jun	1B.2	S2	G2
Ceanothus ophiochilus	Vail Lake ceanothus	Rhamnaceae	perennial evergreen shrub	Feb-Mar	1B.1	S1	G1
Ceanothus pendletonensis	Pendleton ceanothus	Rhamnaceae	perennial shrub	Mar-Jun	1B.2	S1	G1
Centromadia pungens ssp. laevis	smooth tarplant	Asteraceae	annual herb	Apr-Sep	1B.1	S2	G3G4T2
Chaenactis glabriuscula var. orcuttiana	Orcutt's pincushion	Asteraceae	annual herb	Jan-Aug	1B.1	S1	G5T1T2
Chamaebatia australis	southern mountain misery	Rosaceae	perennial evergreen shrub	Nov-May	4.2	S4	G4
Chorizanthe leptotheca	Peninsular spineflower	Polygonaceae	annual herb	May-Aug	4.2	S3	G3
Chorizanthe parryi var. parryi	Parry's spineflower	Polygonaceae	annual herb	Apr-Jun	1B.1	S2	G3T2
Chorizanthe polygonoides var. longispina	long-spined spineflower	Polygonaceae	annual herb	Apr-Jul	1B.2	S3	G5T3
Clinopodium chandleri	San Miguel savory	Lamiaceae	perennial shrub	Mar-Jul	1B.2	S2	G3
Comarostaphylis diversifolia ssp. diversifolia	summer holly	Ericaceae	perennial evergreen shrub	Apr-Jun	1B.2	S2	G3T2
Convolvulus simulans	small-flowered morning-glory	Convolvulaceae	annual herb	Mar-Jul	4.2	S4	G4
Cryptantha wigginsii	Wiggins' cryptantha	Boraginaceae	annual herb	Feb-Jun	1B.2	S1	G2
Deinandra paniculata	paniculate tarplant	Asteraceae	annual herb	(Mar)Apr-Nov(Dec)	4.2	S4	G4
Dodecahema leptoceras	slender-horned spineflower	Polygonaceae	annual herb	Apr-Jun	1B.1	S1	G1
Dudleya multicaulis	many-stemmed dudleya	Crassulaceae	perennial herb	Apr-Jul	1B.2	S2	G2
Dudleya viscida	sticky dudleya	Crassulaceae	perennial herb	May-Jun	1B.2	S2	G2

Eryngium aristulatum var. parishii	San Diego button-celery	Apiaceae	annual / perennial herb	Apr-Jun	1B.1	S1	G5T1
Erythranthe diffusa	Palomar monkeyflower	Phrymaceae	annual herb	Apr-Jun	4.3	S3	G4
Geothallus tuberosus	Campbell's liverwort	Sphaerocarpaceae	ephemeral liverwort		1B.1	S1	G1
Harpagonella palmeri	Palmer's grapplinghook	Boraginaceae	annual herb	Mar-May	4.2	S3	G4
Hesperocyparis forbesii	Tecate cypress	Cupressaceae	perennial evergreen tree		1B.1	S2	G2
Holocarpha virgata ssp. elongata	graceful tarplant	Asteraceae	annual herb	May-Nov	4.2	S3	G5T3
Hordeum intercedens	vernal barley	Poaceae	annual herb	Mar-Jun	3.2	S3S4	G3G4
Horkelia cuneata var. puberula	mesa horkelia	Rosaceae	perennial herb	Feb-Jul(Sep)	1B.1	S1	G4T1
Horkelia truncata	Ramona horkelia	Rosaceae	perennial herb	May-Jun	1B.3	S3	G3
Juglans californica	Southern California black walnut	Juglandaceae	perennial deciduous tree	Mar-Aug	4.2	S4	G4
Juncus acutus ssp. leopoldii	southwestern spiny rush	Juncaceae	perennial rhizomatous herb	(Mar)May-Jun	4.2	S4	G5T5
Juncus luciensis	Santa Lucia dwarf rush	Juncaceae	annual herb	Apr-Jul	1B.2	S3	G3
Lasthenia glabrata ssp. coulteri	Coulter's goldfields	Asteraceae	annual herb	Feb-Jun	1B.1	S2	G4T2
Lepechinia cardiophylla	heart-leaved pitcher sage	Lamiaceae	perennial shrub	Apr-Jul	1B.2	S2S3	G3
Lepidium virginicum var. robinsonii	Robinson's pepper-grass	Brassicaceae	annual herb	Jan-Jul	4.3	S3	G5T3
Lilium humboldtii ssp. ocellatum	ocellated Humboldt lily	Liliaceae	perennial bulbiferous herb	Mar-Jul(Aug)	4.2	S4?	G4T4?
Lilium parryi	lemon lily	Liliaceae	perennial bulbiferous herb	Jul-Aug	1B.2	S3	G3
Limnanthes alba ssp. parishii	Parish's meadowfoam	Limnanthaceae	annual herb	Apr-Jun	1B.2	S2	G4T2
Microseris douglasii ssp. platycarpha	small-flowered microseris	Asteraceae	annual herb	Mar-May	4.2	S4	G4T4
Mielichhoferia shevockii	Shevock's copper moss	Mielichhoferiaceae	moss		1B.2	S2	G2
Monardella hypoleuca ssp. intermedia	intermediate monardella	Lamiaceae	perennial rhizomatous herb	Apr-Sep	1B.3	S2?	G4T2?
Monardella hypoleuca ssp. lanata	felt-leaved monardella	Lamiaceae	perennial rhizomatous herb	Jun-Aug	1B.2	S3	G4T3
Monardella macrantha ssp. hallii	Hall's monardella	Lamiaceae	perennial rhizomatous herb	Jun-Oct	1B.3	S3	G5T3
Myosurus minimus ssp. apus	little mousetail	Ranunculaceae	annual herb	Mar-Jun	3.1	S2	G5T2Q
Navarretia fossalis	spreading navarretia	Polemoniaceae	annual herb	Apr-Jun	1B.1	S2	G2

Navarretia prostrata	prostrate vernal pool navarretia	Polemoniaceae	annual herb	Apr-Jul	1B.1	S2	G2
Nolina cismontana	chaparral nolina	Ruscaceae	perennial evergreen shrub	(Mar)May-Jul	1B.2	S3	G3
Orcuttia californica	California Orcutt grass	Poaceae	annual herb	Apr-Aug	1B.1	S1	G1
Packera ganderi	Gander's ragwort	Asteraceae	perennial herb	Apr-Jun	1B.2	S2	G2
Pickeringia montana var. tomentosa	woolly chaparral-pea	Fabaceae	evergreen shrub	May-Aug	4.3	S3S4	G5T3T4
Piperia cooperi	chaparral rein orchid	Orchidaceae	perennial herb	Mar-Jun	4.2	S3S4	G3G4
Polygala cornuta var. fishiae	Fish's milkwort	Polygalaceae	perennial deciduous shrub	May-Aug	4.3	S4	G5T4
Pseudognaphalium leucocephalum	white rabbit-tobacco	Asteraceae	perennial herb	(Jul)Aug-Nov(Dec)	2B.2	S2	G4
Quercus engelmannii	Engelmann oak	Fagaceae	perennial deciduous tree	Mar-Jun	4.2	S3	G3
Romneya coulteri	Coulter's matilija poppy	Papaveraceae	perennial rhizomatous herb	Mar-Jul(Aug)	4.2	S4	G4
Saltugilia latimeri	Latimer's woodland-gilia	Polemoniaceae	annual herb	Mar-Jun	1B.2	S3	G3
Scutellaria bolanderi ssp. austromontana	southern mountains skullcap	Lamiaceae	perennial rhizomatous herb	Jun-Aug	1B.2	S3	G4T3
Selaginella cinerascens	ashy spike-moss	Selaginellaceae	perennial rhizomatous herb		4.1	S3	G3G4
Senecio aphanactis	chaparral ragwort	Asteraceae	annual herb	Jan-Apr(May)	2B.2	S2	G3
Sibaropsis hammittii	Hammitt's clay-cress	Brassicaceae	annual herb	Mar-Apr	1B.2	S2	G2
Sidalcea neomexicana	salt spring checkerbloom	Malvaceae	perennial herb	Mar-Jun	2B.2	S2	G4
Sphaerocarpos drewei	bottle liverwort	Sphaerocarpaceae	ephemeral liverwort		1B.1	S1	G1
Symphyotrichum defoliatum	San Bernardino aster	Asteraceae	perennial rhizomatous herb	Jul-Nov(Dec)	1B.2	S2	G2
Tetracoccus dioicus	Parry's tetracoccus	Picrodendraceae	perennial deciduous shrub	Apr-May	1B.2	S2	G2G3
Texosporium sancti-jacobi	woven-spored lichen	Caliciaceae	crustose lichen (terricolous)		3	S1	G3
Tortula californica	California screw-moss	Pottiaceae	moss		1B.2	S2S3	G2G3

Suggested Citation

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Questions and Comments

rareplants@cnps.org

Appendix C

Aquatic Resources Delineation Report

ESA

Draft

SANTA GERTRUDIS CREEK TRAIL PHASE II UNDERCROSSING AT MARGARITA ROAD PROJECT

Aquatic Resources Delineation Report

Prepared for
EXP U.S. Services, Inc.

January 2022

Draft

SANTA GERTRUDIS CREEK TRAIL PHASE II UNDERCROSSING AT MARGARITA ROAD PROJECT

Aquatic Resources Delineation Report

Prepared for
EXP U.S. Services, Inc.

January 2022

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CHAPTER 1
Introduction

Environmental Science Associates (ESA) was retained by EXP U.S. Services Inc. to conduct an aquatic resources delineation prior to the commencement of the Santa Gertrudis Creek Trail Phase II Undercrossing at Margarita Road Project (project) located in the city of Temecula, Riverside County, California. The purpose of the delineation was to determine the extent of areas that could be considered waters of the United States (U.S.), waters of the State, features subject to regulation under Fish and Game Code (FGC) Section 1602 and/or features subject to Section 6.1.2 of the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP) (RCIP 2004. The delineation was conducted in accordance with the 1987 Corps of Engineers Wetlands Delineation Manual (Environmental Laboratory 1987) and *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0)* (USACE 2008a). The results from this report will be used to support any necessary permits from the regulatory agencies.

1.1 Survey Location

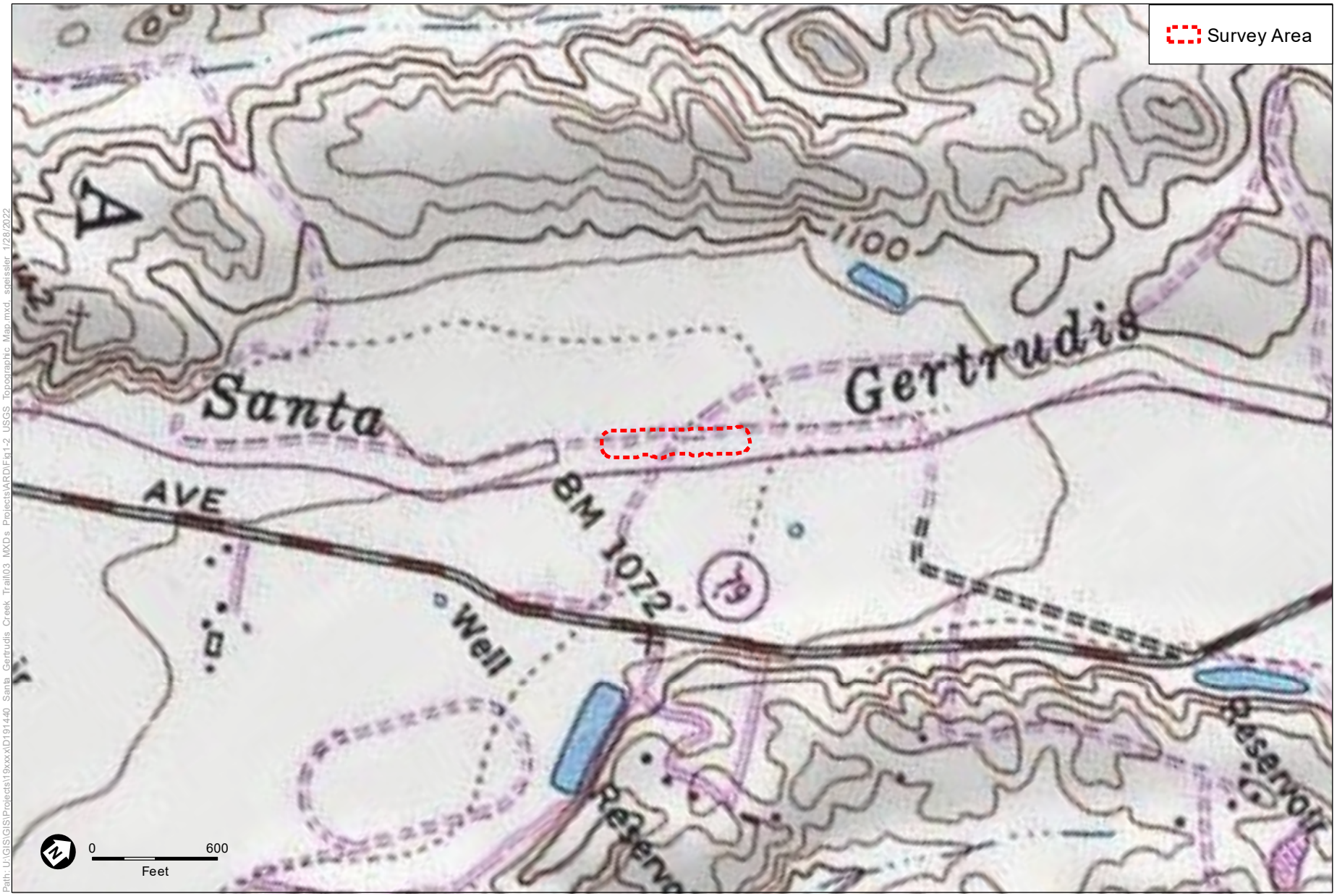
The delineation was completed within the project site and a surrounding 50-foot buffer, collectively referred to the "survey area." The survey area is situated along San Gertrudis Creek, at its intersection with the Margarita Road bridge, in the city of Temecula, CA. The city of Murrieta is located approximately 3.5 miles to the northwest; the cities of Perris and Hemet are generally located approximately 17 miles to the north and northeast, respectively; the city of Escondido is located approximately 30 miles to the south; and the foothills of the Santa Ana Mountains are situated within 3 miles to the southwest (**Figure 1-1 Survey Location**). The survey area is located within the U.S. Geological Survey (USGS) Murrieta 7.5-minute quadrangle (**Figure 1-2 USGS Topographic Map**) and the decimal degree coordinates are: 33°31' 56.80"N, 117°09' 12.40"W for the northwest corner, 33°31' 56.64"N, 117°09' 12.12"W for the southwest corner, 33°32' 01.55"N, 117°09' 07.92"W for the southeast corner, and 33°32' 01.69"N, 117°09' 08.17"W for the northeast corner.

SOURCE: Nearmap, 2020.

Santa Gertrudis Creek Trail Phase II Undercrossing at Margarita Road Project

Figure 1-1
Survey Location

ESA



SOURCE: USGS Topoquad Murrieta, 1980.

Santa Gertrudis Creek Trail Phase II Undercrossing at Margarita Road Project

Figure 1-2
USGS Topographic Map

ESA

1.1.1 Directions to the Survey Area

From the Los Angeles USACE office location, head southeast on Wilshire Blvd toward Figueroa St. for 410 feet. Turn left onto Figueroa St., continue 0.2 mile and turn left onto W. 5th Street. Continue for 174 feet and merge onto CA-110 (Harbor Freeway) North for 0.7 mile. Take the exit for US-101 South and in 1.6 mile, keep right at the fork toward I-10/I-5 and merge onto US-101 South. Keep left at the fork and continue for approximately 1.2 mile before merging onto I-10 E toward San Bernardino and continuing for approximately 23.3 miles. Merge onto CA-71 South toward Corona and continue for 15.6 miles before merging onto CA-91 East for 4.6 miles. Merge onto I-15 toward San Diego and continue for 35.5 miles.

Exit Winchester Road/CA-79 and turn left. Continue northwest on Winchester for approximately 1 mile before turning left onto Margarita Road and continuing for 0.2 mile before turning left into the parking lot for WinCo Foods. Park and walk approximately 100 feet to the northeast to reach the survey area.

1.2 Contact Information

1.2.1 Project Applicant

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1.2.2 Field Delineators

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Karla Flores, Delineator
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Camarillo, CA 93010
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RSweet@esassoc.com

CHAPTER 2
Existing Conditions

The proposed project is situated along the eastern bank of Santa Gertrudis Creek as it extends under the Margarita Road bridge, and is bound in all directions by commercial and residential development. Elevation ranges between 1,060 to 1,090 feet above mean sea level. Much of the bed of the drainage appears to have been previously cleared/disturbed as a result of flood control maintenance, but still supports native wetland and riparian vegetation. The bank has been manufactured and either consists of poured concrete or an articulated concrete block system. The vegetation, soils, and hydrology documented within the survey area are discussed in detail below.

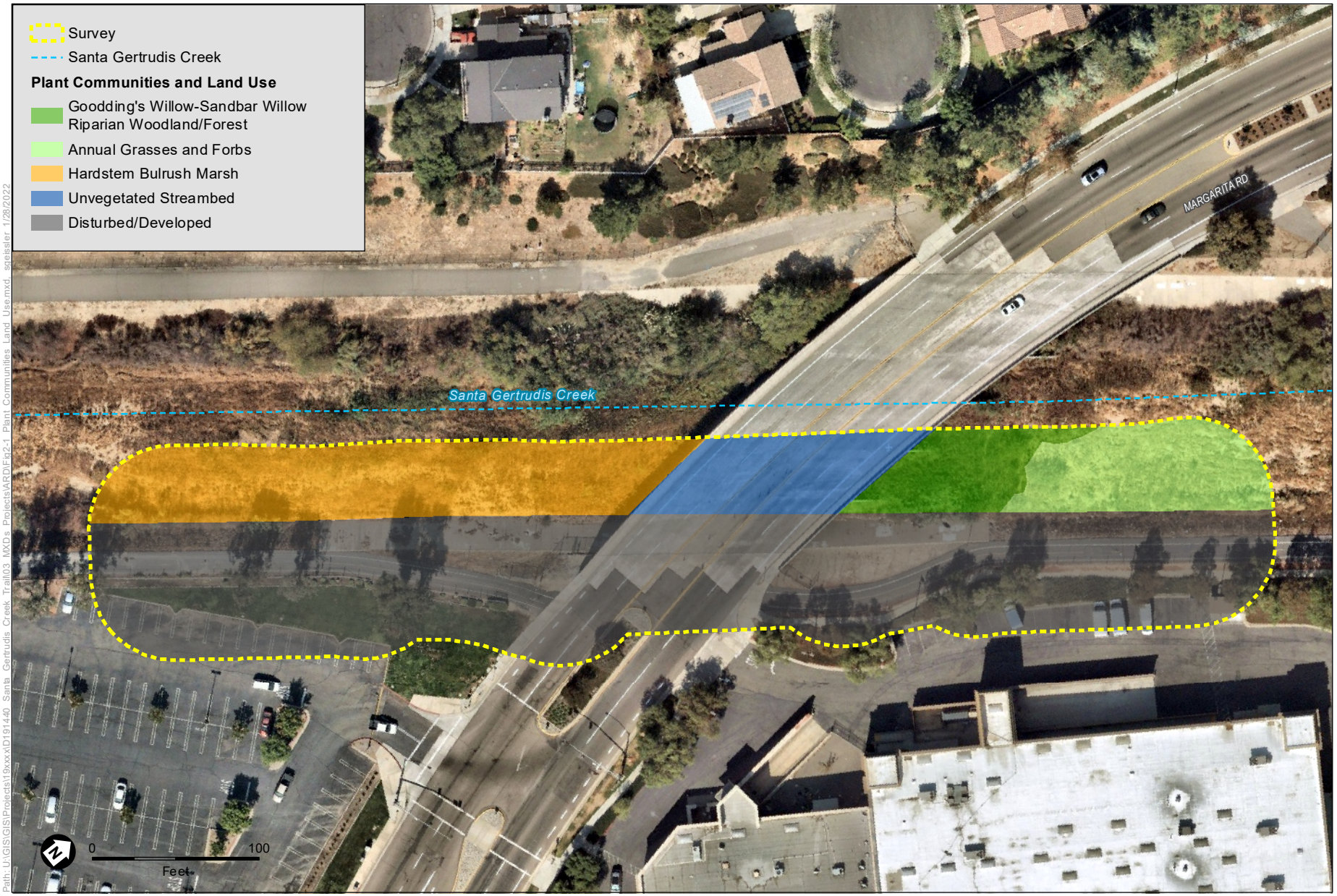
2.1 Plant Communities and Land Use

Plant communities and land use were characterized to map their extent and quantify their abundance within the survey area using ArcGIS. Plant taxonomy followed Hickman (1993), as updated in *The Jepson Manual: Vascular Plants of California, Second Edition* (Baldwin et al. 2012), and plant community descriptions were characterized using *A Manual of California Vegetation* (Sawyer et al. 2009). Plant communities and land use not identified within the aforementioned publications were characterized based on the California Department of Fish and Game's *List of California Terrestrial Natural Communities* (CDFW 2019) and/or based on species dominance or other characteristics.

The plant communities and land use mapped within the survey area include annual grasses and forbs, Goodding's willow-sandbar willow riparian woodland/forest, hardstem bulrush marsh, unvegetated streambed and disturbed/developed land use. These are depicted in **Figure 2-1 – Plant Communities and Land Use**. Acreages of each vegetation community in the survey area are summarized below in **Table 2-1 – Plant Communities and Land Use**.

TABLE 2-1
PLANT COMMUNITIES AND LAND USE

Plant Communities and Land Use	Acres
Annual Grasses and Forbs	0.16
Goodding's Willow-Sandbar Willow Riparian Woodland/Forest	0.10
Hardstem Bulrush Marsh	0.34
Unvegetated Streambed	0.14
Disturbed/Developed	1.23
Grand Total	**1.98**



SOURCE: Nearmap, 2020.

Santa Gertrudis Creek Trail Phase II Undercrossing at Margarita Road Project

Figure 2-1
Plant Communities and Land Use

ESA

2.1.1 Annual Grasses and Forbs

Annual grasses and forbs occur in drier portions of the survey area, along the bed of Santa Gertrudis Creek. This community supports a dense herbaceous layer consisting of grasses and forbs with a co-dominance of annual beard grass (*Polypogon monspeliensis*) and curly dock (*Rumex crispus*), interspersed throughout with annual ragweed (*Ambrosia psilostachya*), Italian ryegrass (*Festuca perennis*) and cocklebur (*Xanthium strumarium*).

2.1.2 Goodding's Willow-Sandbar Willow Riparian Woodland/Forest (*Salix gooddingii-Salix exigua* Woodland/Forest Alliance)

Goodding's willow-sandbar willow riparian woodland/forest is present along the creek bed, within the northern portion of the survey area, just northeast of the Margarita Road bridge. This community is characterized by a prominence of Goodding's willow (*Salix gooddingii*) in the tree canopy, interspersed with a dense shrub/small tree layer dominated by sandbar willow (*Salix exigua*). This community also supports a dense herbaceous layer, similar in character to the adjacent hardstem bulrush marsh, that includes annual beard grass, curly dock, tall flatsedge (*Cyperus eragrostis*) and hardstem bulrush (*Schoenoplectus acutus*).

2.1.3 Hardstem Bulrush Marsh (*Schoenoplectus acutus* Herbaceous Alliance)

Hardstem bulrush marsh is present in the western portion of the survey area, west of the Margarita Road bridge, although hardstem bulrush plants are found throughout much of the remainder of the survey area. This community is characterized by a dense herbaceous layer dominated by hardstem bulrush and interspersed with various other species that include annual beard grass, cocklebur, curly dock, Mexican rush (*Juncus mexicanus*) and tall flatsedge.

2.1.4 Unvegetated Streambed

Unvegetated streambed exists along the creek bed under the Margarita Road bridge. This community is characterized as having little to no vegetation (i.e., < 2% total cover), and appears to be the result of a lack of sunlight to promote vegetative growth. Additionally, this area did not appear to support hydric soil indicators, which were observed within the adjacent Goodding's willow-sandbar willow riparian woodland/forest and hardstem bulrush marsh.

2.1.5 Disturbed/Developed

Disturbed/developed land use includes the manufactured concrete banks observed along Santa Gertrudis Creek, the concrete bridge/paved roadway along Margarita Road, the paved bike trail, and the surrounding parking lots/landscaped areas. These areas are either entirely or largely devoid of vegetation with the exception of some "weedy" non-native growth, that include such species as short podded mustard (*Hirschfeldia incana*), and ornamental, planted trees that include red ironbark (*Eucalyptus sideroxylon*).

2.2 Soils

Based on review of the Natural Resources Conservation Services (NRCS) web soil survey, the survey area contains one soil type, Riverwash (**Figure 2-2 Soils**) (NRCS 2020a). A brief description of its characteristics is provided below:

2.2.1 Riverwash

This soil association is considered excessively drained, and is typically comprised of sandy and gravelly alluvium derived from mixed sources. The soil profile consists of gravelly coarse sand from 0-6 inches and stratified extremely gravelly coarse sand to gravelly sand from 6 to 60 inches. This soil type is listed as hydric within Riverside County (NRCS 2020a).

2.3 Site Hydrology

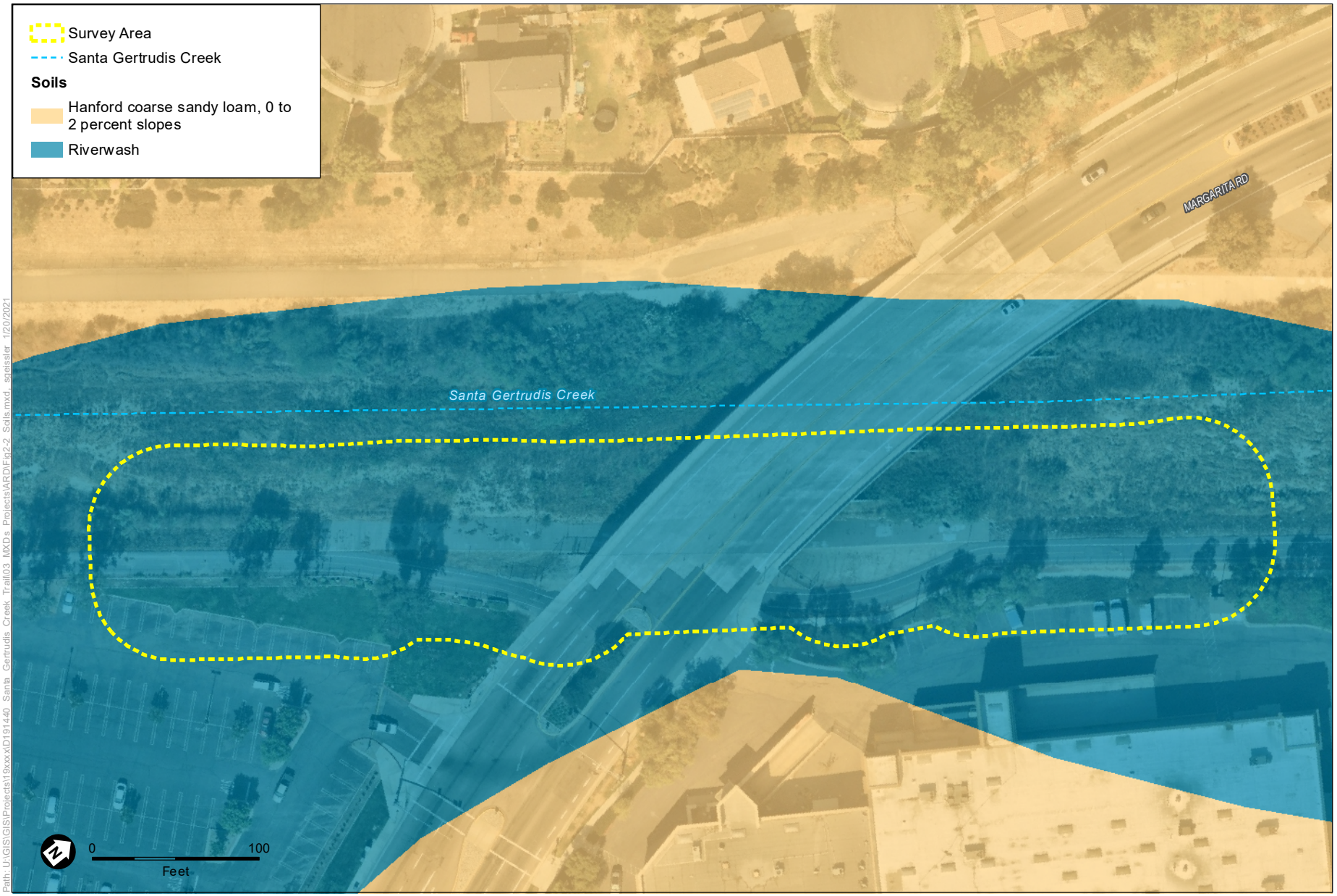
The survey area is located within the Santa Margarita River watershed and there is one aquatic feature, Santa Gertrudis Creek, in the survey area. This feature is depicted in **Figure 2-3 Site Hydrology** and described in detail below.

Santa Gertrudis Creek is an intermittent drainage that appears to convey seasonal stormwater and other nuisance runoff from nearby streets and surrounding residential developments across the survey area in a northeast-southwesterly direction. Surface water was not present during the delineation; however, moist soil and hydrophytic vegetation (facultative wetland and obligate indicator plant species) was observed throughout much of the creek bed. Observable site conditions suggest that creek flows are likely restricted to the wettest periods of the season; however, perennial mesic conditions appear to persist throughout the year.

The creek continues southwest of the survey area for approximately 1.6 river miles, before converging with Murrieta Creek. Murrieta Creek continues for approximately 3.5 river miles before converging with Santa Margarita Creek, which continues for approximately 29 river miles before reaching the Pacific Ocean at Marine Corps Base Camp Pendleton in San Diego County.

2.4 Climate

The aquatic resources delineation was conducted on December 16, 2020. The regional vicinity is described as having a Mediterranean climate characterized by warm, dry summers and cool winters will relatively low rainfall. Average highs range between 67º Fahrenheit (F) in the winter (December and January) and 90º F in the summer, while average lows range between 47º F in in the winter and 61º in the summer (World Climate 2020).



SOURCE: Nearmap, 2020; Web Soil Survey, 2020.

Santa Gertrudis Creek Trail Phase II Undercrossing at Margarita Road Project

Figure 2-2
Soils

ESA

SOURCE: Nearmap, 2020.

Santa Gertrudis Creek Trail Phase II Undercrossing at Margarita Road Project

Figure 2-3
Site Hydrology

ESA

2.4.1 Agricultural Applied Climate Information System Wetlands Climate Table

The Agricultural Applied Climate Information System (AgACIS) Wetlands (WETS) climate table for the Elsinore precipitation monitoring station, located in Riverside County, California is included below in **Table 2-2 – WETS Table: Monthly Total Precipitation (Inches) for Elsinore,** for January 2010 through December 2020. Historically (11-year sampling period), the month of December has supported the highest mean rainfall levels; however, during the approximately two weeks leading up to the aquatic resources delineation, only trace levels of precipitation were recorded at the Elsinore station (NRCS 2020b). Further, the total precipitation for the previous month of November was below the annual mean reported for the month of November. Based on site conditions and review of the AgACIS data provided in Table 2-2, below, it appears conditions at the time of the delineation were dry as compared to those typical for the winter months.

TABLE 2-2
MONTHLY TOTAL PRECIPITATION (INCHES) FOR ELSINORE

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
2010	8.88	1.81	0.44	1.23	0.13	0	0	0	0	1.61	1.06	11.67	26.8
2011	0.7	3.07	2.96	0.46	0.78	0.07	0.1	0.09	0.03	0.44	1.37	0.74	10.8
2012	0.55	0.67	1.51	1.18	0	0	0.3	0.05	0.24	0.36	0.3	1.78	6.94
2013	0.91	0.46	0.46	0	0.14	0	0	0	0	0.16	0.53	0.7	3.36
2014	0.13	1.28	1.27	0.5	0	0	0	0.66	0.45	0	0.21	3.65	8.15
2015	0.55	0.37	0.44	0.11	0.96	0	1.29	0	1.08	0.11	0.12	0.58	5.61
2016	2.79	0.3	0.74	0.28	0.06	0	0	0	0.1	0.39	1.18	3.81	9.65
2017	8.23	3.27	0.08	0.02	0.29	0	0	0.26	0.04	0.01	0.05	0	12.3
2018	2.01	0.2	1.11	0.02	0.05	0	0	0	0	1.4	0.62	1.88	7.29
2019	2.95	6.28	1.97	0.04	1.13	0	0.1	0	0	0	2.27	4.26	19
2020	0.3	0.38	3.39	M2.52	M0.00	0.05	0	0	0	0	0.36	M0.00	7
Mean (2010-2020)	2.55	1.64	1.31	0.38	0.35	0.01	0.18	0.11	0.19	0.45	0.77	2.91	10.63

SOURCE: Agricultural Applied Climate Information System Wetlands (WETS), USDA 2020b.
"M" Indicates trace precipitation

2.4.2 Antecedent Precipitation Tool

The Antecedent Precipitation Tool (APT) was developed by the U.S. Army Corps of Engineers (USACE) to compare recorded precipitation levels at a given location and date to the normal precipitation range at that location over the preceding 30 years. This tool analyzes similar data found in the AgACIS table above; however, averages precipitation from several precipitation monitoring stations and generates calculations that compare precipitation levels over time. Under the final Navigable Waters Protection Rule (NWPR), the determination of a waterbody is generally informed by understanding conditions in a "typical year" (i.e., the normal periodic

range of precipitation and other climate variables for that waterbody) and this tool provides assistance in achieving that determination.

Both the single-point and watershed analyses were completed for the date of the delineation (December 16, 2020). The APT outputs are provided in **Appendix A – APT Outputs**. The single point analysis concentrates on a centralized locational point within the survey area, while the watershed analysis is based on the Palmer Drought Severity Index (PDSI) and includes an approximate 22.42 square mile area of the Santa Margarita River watershed including the survey area. The resulting outputs include the following information:

Palmer Drought Severity Index (PDSI) – The PDSI is a monthly dataset published by the National Oceanic and Atmospheric Association (NOAA) and is intended to measure the duration and intensity of the long-term drought-inducing circulation patterns. Long-term drought is cumulative; therefore, the results of a current month are dependent on current weather patterns in relation to the cumulative patterns for previous months (NOAA 2020).

Average Antecedent Precipitation Score (AAPS) – The AAPS is used to determine how "wet" or "dry" a particular location (i.e. sampling point and/or date) is. The final condition is determined as follows:

- Wetter than Normal – Condition value greater than 14
- Normal – Condition ranging from 10 to 14
- Drier than Normal – Condition value less than 10

The average of the dates and/or sampling points analyzed are presented as an AAPS and a Preliminary Determination is made for the sampling location.

The results of the PDSI indicated the region is experiencing a mild drought, whereas the AAPS of 10 resulted in a Preliminary Determination of normal conditions. While it appears that the region is enduring a mild drought, conditions within the survey area generally appear to fall within the low end of the normal range.

CHAPTER 3
Regulatory Framework

3.1 Waters of the U.S.

3.1.1 Clean Water Act

The U.S. Army Corps of Engineers (USACE) and the Environmental Protection Agency (EPA) issued the NWPR that refines the 2008 Rapanos Rule (EPA 2008) definition of a nexus to a navigable water, and the process for determining Clean Water Act (CWA) jurisdiction over waters of the United States (waters of the U.S.). The EPA and USACE published the NWPR on June 22, 2020 (EPA 2020).

The NWPR, summarized as key points below, were used to collect relevant data for evaluation by the EPA and the USACE to determine CWA jurisdiction within the survey area. The determination of an ordinary high water mark [OHWM]), as outlined in the 2008 Rapanos Rule, is still applicable to assess the presence/absence of a hydrologic connection to a Traditionally Navigable Water (TNW) (EPA 2008). However, only intermittent and perennial features with a connection to a TNW will be considered "tributaries" and remain jurisdictional. The USACE is no longer asserting jurisdiction over ephemeral features.

Wetlands (including swamps, bogs, seasonal wetlands, seeps, marshes, and similar areas) adjacent to "tributaries" or other jurisdictional waters remain jurisdictional, as waters of the U.S. (subject to the significant nexus test), and are defined by USACE as "those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions" (33 CFR 328.3[b]; 40 CFR 230.3[t]). Indicators of three wetland parameters (i.e., hydric soils, hydrophytic vegetation, and wetlands hydrology), as determined by field investigation, must be present for a site to be classified as a wetland by USACE (Environmental Laboratory 1987). Isolated wetlands, that meet the criteria described above; however, do not exhibit a clear connection to a TNW, are not considered jurisdictional.

3.1.1.1 Navigable Waters Protection Rule

The USACE and EPA will assert jurisdiction over the following waters:

- Territorial seas and TNW's;
- tributaries (includes perennial and intermittent features);
- lakes, ponds, and impoundments of jurisdictional waters; and

- adjacent wetlands.
  - Wetlands that abut jurisdictional waters.
  - Wetlands that are inundated by flooding from a jurisdictional water in a typical year.
  - Wetlands that are physically separated by a jurisdictional water only by a natural berm, bank, dune, or similar natural feature; and
  - Wetlands that are physically separated from a jurisdictional water only by an artificial dike, barrier, or similar artificial structure so long as that structure allows for a direct hydrologic surface connection between the wetlands and the jurisdictional water in a typical year.

The USACE and USEPA will not assert jurisdiction over the following waters:

- Ephemeral streams that exhibit a connection to a TNW, as these do not meet the definition of "tributary";
- swales or erosional features (gullies, small washes characterized by low volume, infrequent, or short duration flow);
- ditches (including roadside ditches) excavated wholly in and draining only uplands and that do not carry a relatively permanent flow of water;
- groundwater;
- prior converted cropland;
- artificially irrigated areas, artificial lakes and ponds, and water-filled depressions;
- stormwater control features; and
- water treatment systems

Section 401 of the CWA gives the state authority to grant, deny, or waive certification of proposed federally licensed or permitted activities resulting in discharge to waters of the U.S. The State Water Resources Control Board (State Water Board) directly regulates multi-regional projects and supports the Section 401 certification and wetlands program statewide. The Regional Water Quality Control Board (RWQCB) regulates activities pursuant to Section 401(a)(1) of the federal CWA, which specifies that certification from the State is required for any applicant requesting a federal license or permit to conduct any activity including but not limited to the construction or operation of facilities that may result in any discharge into navigable waters. The certification shall originate from the State or appropriate interstate water pollution control agency in/where the discharge originates or will originate. Any such discharge will comply with the applicable provisions of Sections 301, 302, 303, 306, and 307 of the CWA.

3.2 Waters of the State

Most projects involving water bodies or drainages are regulated by the RWQCB, the principal State agency overseeing water quality of the State at the local/regional level. The survey area is located within the jurisdiction of the San Diego (R9) RWQCB. Where waters of the State overlap

with waters of the U.S., pending verification from the USACE, those waters would be regulated under Section 401 of the CWA which is described in the Regulatory Framework in Section 3.1.

In the absence of waters of the U.S., waters may be regulated under the Porter-Cologne Water Quality Control Act if project activities, discharges, or proposed activities or discharges could affect California's surface, coastal, or ground waters. The permit submitted by the applicant and issued by RWQCB is either a Water Quality Certification in the presence of waters of the U.S. or a Waste Discharge Requirement (WDR) in the absence of waters of the U.S.

The State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State (Procedures), as prepared by the State Water Resources Control Board, was implemented on May 28, 2020. The Procedures include a definition for wetland waters of the state that include 1) all wetland waters of the U.S.; and 2) aquatic resources that meet both the soils and hydrology criteria for wetland waters of the U.S. but lack vegetation.

3.3 Rivers, Streams, and Lakes

Pursuant to Division 2, Chapter 6, Section 1600 et seq. of the FGC, California Department of Fish and Wildlife (CDFW) regulates all diversions, obstructions, or changes to the natural flow or bed, channel or bank of any river, stream, or lake which supports fish or wildlife. A notification of a Lake or Streambed Alteration Agreement must be submitted to CDFW for "any activity that may substantially change the bed, channel, or bank of any river, stream, or lake." In addition, CDFW has authority under FGC over wetland and riparian habitats associated with lakes and streams. The CDFW reviews proposed actions, and if necessary, submits to the applicant a proposal that includes measures to protect affected fish and wildlife resources. The final proposal that is mutually agreed upon by CDFW and the applicant is the Lake or Streambed Alteration Agreement (LSAA).

3.4 MSHCP Riparian/Riverine Areas

Pursuant to Section 6.1.2, Protection of Species Associated with Riparian Areas and Vernal Pools, the potential effect of proposed project activities occurring within the MSCHP must assess any and all impacts to riparian/riverine areas and vernal pools. Riparian/riverine areas include "those that contain habitat dominated by trees, shrubs, persistent emergents, or emergent mosses and lichens, which occur close to or which depend upon soil moisture from a nearby water source; or areas with fresh water flow during all or a portion of the year"; and vernal pools include those seasonal wetlands that "occur in depression areas that have wetland indicators of all three parameters (soils, vegetation and hydrology) during the wetter portion of the growing season, but normally lack wetland indicators of hydrology and/or vegetation during the drier portion of the growing season" (RCIP 2004).

The Regional Conservation Authority (RCA) reviews and oversees all resource determinations and proposed actions that occur within the MSHCP.

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CHAPTER 4
Methodology

4.1 Pre-Field Review

Prior to conducting the aquatic resources delineation, ESA conducted a review of available background information pertaining to the survey area to gather baseline information on the existing conditions within the survey area. The following resources were reviewed prior to the delineation:

- Field Indicators of Hydric Soils in the United States, Version 7.0, 2010 (NRCS 2010);
- Natural Resources Conservation Service's (NRCS) Web Soil Survey, queried to determine the soils mapped in the survey area (NRCS 2020a);
- Murrieta, CA USGS 7.5-minute topographic quadrangle map;
- Color aerial photography for vegetative, topographic, and hydrologic features (Google Earth 2020); and
- The National Wetlands Inventory (USFWS 2020).

The results of the National Wetlands Inventory database query are provided in **Figure 4-1 National Wetlands Inventory**. As shown in Figure 4-1, Santa Gertrudis Creek is identified in the National Wetlands Inventory as a riverine feature.

4.2 Aquatic Resources Delineation Methods

ESA biologists Karla Flores and Robert Sweet conducted the aquatic resources delineation on December 16, 2020 to delineate aquatic features within the survey area. The limits of aquatic features were recorded in the field within accessible areas using aerial maps and a hand-held GPS with sub-foot accuracy. The extent of non-wetland aquatic features was closely assessed by establishing a total of two survey transects across Santa Gertrudis Creek and wetland/upland data points to determine potential wetland boundaries. Plant communities and land use were mapped concurrently during the aquatic resources delineation.

SOURCE: ESRI, 2019; NWI, 2020.

Santa Gertrudis Creek Trail Phase II Undercrossing at Margarita Road Project

Figure 4-1
National Wetlands Inventory

ESA

4.2.1 Waters of the U.S.

The delineation used the "Routine Determination Method" as described in the *1987 Corps of Engineers Wetland Delineation Manual* (Environmental Laboratory 1987), hereafter called the "1987 Manual." The 1987 Manual was used in conjunction with the Arid West Supplement (USACE 2008a). For areas where the 1987 Manual and the Arid West Supplement differ, the Arid West Supplement was followed. Wetlands and waters were classified using commonly accepted habitat types; however, the Cowardin classification (Cowardin et al. 1979) of each feature type is noted in the discussion in Chapter 5.

4.2.1.1 Wetlands

To determine the extent of potential jurisdictional wetlands on a project site, the 1987 Manual and Arid West Supplement were used as a guide for identifying wetland characteristics. Three positive wetland parameters must normally be present for an area to be considered a wetland: 1) a dominance of wetland vegetation, 2) presence of hydric soils, and 3) presence of wetland hydrology. Presence or absence of positive indicators for wetland vegetation, soils and hydrology was assessed per the 1987 Manual and Arid West Supplement guidelines (Environmental Laboratory 1987). Data points were taken within suspected wetlands and a paired point was taken (where applicable) in nearby upland areas. Data points were recorded on Arid West Region wetland determination data forms, which are provided in **Appendix B – Field Data Forms**.

At each data point, a visual assessment of the dominant plant species within the vegetation community was made. Dominant species were assessed using the recommended "50/20" rule per the Arid West Supplement. Plants were identified to species using the *The Jepson Manual: Vascular Plants of California, Second Edition* (Baldwin et al. 2012). The *National Wetland Plant List (NWPL) 2018* (USACE 2020) was used to determine the wetland indicator status of all plants. A floral compendium, including the wetland indicator status of each plant is provided in **Appendix C – Floral Compendium**.

Hydric soils were identified using soil indicators presented in the *Regional Supplement to the* Arid West Supplement and the *Field Indicators of Hydric Soils in the United States*, Version 7.0, 2010 (NRCS 2010). Soils at each data point were characterized by color, texture, organic matter accumulation, and the presence or absence of hydric soil indicators. The coloration of the soil samples, matrix, and concentrations were assessed using the *Munsell Soil Color Charts* (Munsell 2000). Presence of wetland hydrology was determined at each data point by presence of one or more of the primary and/or secondary indicators, per guidance of the Arid West Supplement.

4.2.1.2 Other Waters of the U.S.

Federal jurisdiction over a non-wetland waters of the U.S. extends to the OHWM, defined in 33 CFR 328.3 as the line on the shore established by fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank, shelving, changes in the character of the soil, destruction of terrestrial vegetation, or the presence of litter and debris. In the Arid West region of the United States, waters are variable and include ephemeral/intermittent and perennial channel forms. The most problematic ordinary high-water delineations are

associated with the commonly occurring ephemeral/intermittent channel forms that dominate the Arid West landscape. Delineation methods for "other waters of the U.S." were completed in accordance with *A Field Guide to the Identification of the Ordinary High Water Mark in the Arid West Region of the Western United States* (USACE 2008b). OHWM data sheets are provided in Appendix B.

4.2.2 Waters of the State

Waters of the State were delineated using the same methodology as waters of the U.S. Notably, the procedures adopted on May 28, 2020 assert that in the case that a potential wetland lacks vegetation (i.e., less than 5 percent cover), the methods outlined in the 1987 Manual shall be modified as not to preclude the determination of an area that otherwise meets the definition of wetland. Due to the conditions observed in the field, this modification to the delineation methods was not applicable. Based on informal guidance from the San Diego RWQCB, waters of the State extend to the top of the bank (TOB); therefore, the limits of non-wetland waters of the State were delineated to the TOB on the south bank, and the extent of streambed or riparian/wetland vegetation up to the northern survey area boundary.

4.2.3 Rivers, Streams, and Lakes and MSHCP Riparian/Riverine Areas

Potential CDFW-jurisdictional features and MSHCP riparian/riverine areas were delineated by establishing survey transects from the TOB along the south bank to the extent of streambed or riparian/wetland vegetation up to the northern survey area boundary.

4.3 Mapping and Acreage Calculations

Data collected during the aquatic resources delineation, including survey transects, were recorded using a hand-held GPS unit (Arrow 100) with sub-meter accuracy or were delineated on aerial photography using Geographic Information System (GIS) software (ArcGIS 10.2) and site-specific topographic data and aerial imagery. Data collected in the field was mapped using GIS software on an overlay of topographic contours and geo-referenced orthorectified aerial imagery. GPS data points were visually confirmed and the acreage of potential wetland and other waters of the U.S. and State, and potential CDFW/MSHCP-jurisdictional streams and associated vegetation were mapped using ArcGIS.

CHAPTER 5
Results

The results of the aquatic resources delineation are discussed in this section. All aquatic features within the survey area were analyzed in the field to determine whether each may be considered wetland or non-wetland ("other") waters of the U.S., waters of the State, and/or CDFW/MSHCP-jurisdictional features. Representative photographs from the field aquatic resources delineation are provided in **Appendix D – Photographic Exhibit**.

5.1 Aquatic Resources

Table 5-1 Aquatic Resources within the Survey Area identifies the extent of aquatic resources within the survey area that are potentially waters of the U.S. and/or waters of the State. Also included is the Cowardin aquatic habitat type used to describe each feature and the dominant plant communities observed. Delineated features, including the width of survey transects based on the OHWM (TOB for waters of the State) and data points, are depicted in **Figure 5-1 Waters of the U.S.** and **Figure 5-2 Waters of the State**.

TABLE 5-1
AQUATIC RESOURCES WITHIN THE SURVEY AREA

Aquatic Feature	Potential Waters of the U.S. and State	Cowardin Type	Dominant Plant Communities	GPS Coordinates (decimal degrees)	OHWM Range* (feet)	TOB Range* (feet)	Linear Feet	Area (acre)
Santa Gertrudis Creek (wetland)	Potential wetland waters of the U.S. and State	Palustrine	Goodding's willow-sandbar willow riparian woodland/forest, hardstem bulrush marsh	-117.153261, 33.53277	50-58	--	559	0.48
Santa Gertrudis Creek (intermittent)	Potential other waters of the U.S.	Riverine	Annual grasses and forbs, unvegetated streambed	-117.152805, 33.533284	45-54	--	146	0.33
Santa Gertrudis Creek (intermittent)	Potential non-wetland waters of the State	Riverine	Annual grasses and forbs, unvegetated streambed, Disturbed/Developed	-117.152805, 33.533284	--	66-67	146	0.57

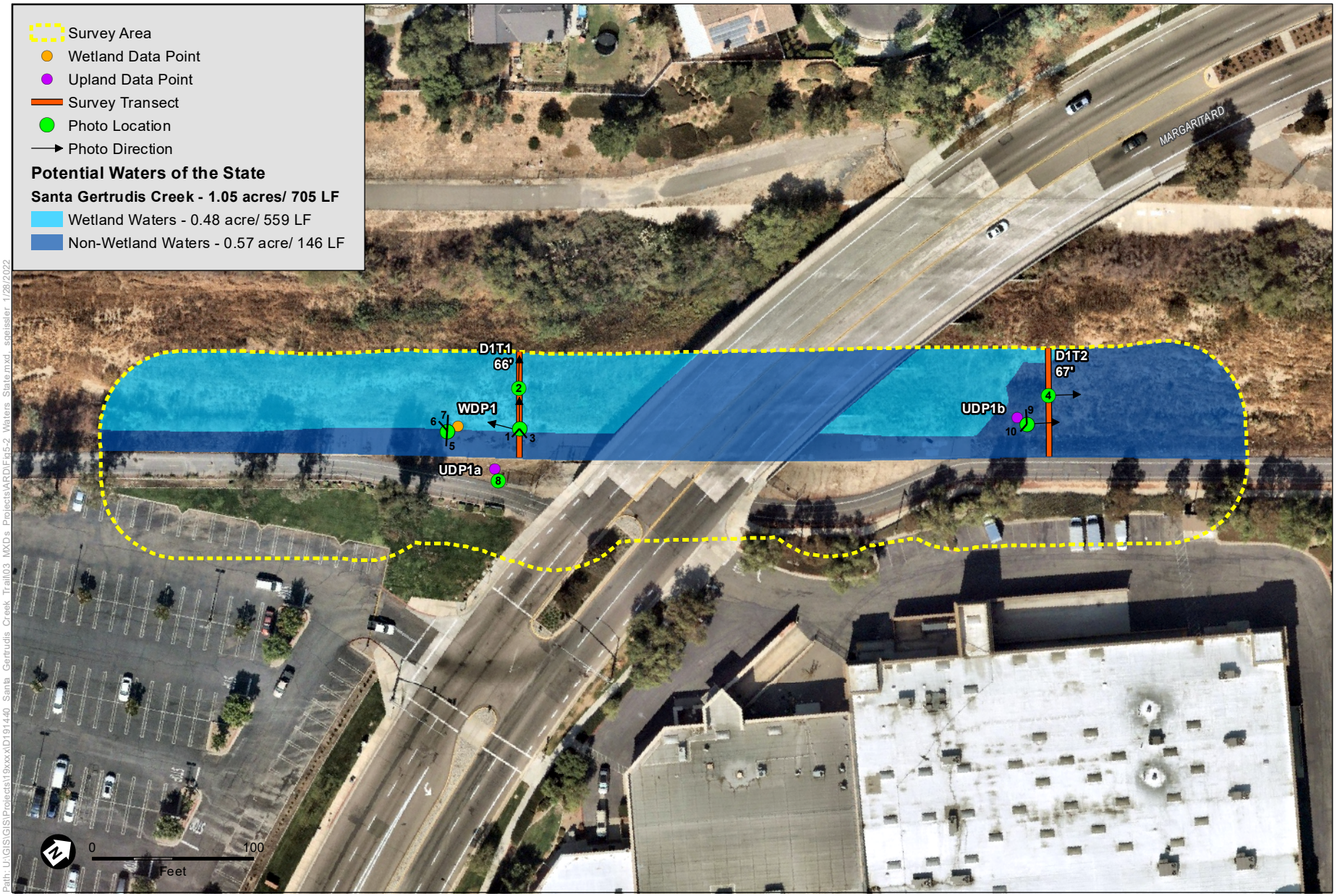
* Within survey area

SOURCE: Nearmap, 2020.

Santa Gertrudis Creek Trail Phase II Undercrossing at Margarita Road Project

Figure 5-1
Waters of the U.S.

ESA



SOURCE: Nearmap, 2020.

Santa Gertrudis Creek Trail Phase II Undercrossing at Margarita Road Project

Figure 5-2
Waters of the State

ESA

5.1.1 Potential Wetland Waters of the U.S.

The areas mapped as Goodding's willow-sandbar willow riparian woodland/forest and hardstem bulrush marsh met the three USACE wetland parameters: 1) a dominance of hydrophytic vegetation, 2) presence of hydric soils, and 3) presence of wetland hydrology. Wetland data point (WDP) 1 met the criteria for wetland vegetation by passing the Dominance Test (i.e., 100% OBL, FACW or FAC species) and the Prevalence Index (i.e. 1.36); and wetland hydrology by possessing primary indicator C3 – oxidized rhizospheres and secondary indicator B10 – drainage patterns. Inspection of the soil profile revealed a coloration of 2.5 Y 3/2 in the *Munsell Soil Color Charts* (Munsell 2000), throughout the entire soil matrix. The presence of redox concentrations (>2 percent) in the matrix, in concert with a Chroma of 2 meets the criteria for hydric soil indicators (i.e., S5 – sandy redox).

Upland data point (UDP) 1a was collected outside of the proposed wetland boundary, at the top of the manufactured bank. This sample point did not exhibit wetland hydrology, vegetation and/or soils. Vegetation at this location is dominated by upland species that include short podded mustard. UDP 1b was collected just outside of the proposed wetland boundary, along the bed of Santa Gertrudis Creek, and met the criteria for wetland vegetation by passing the Dominance Test (i.e., 100% OBL, FACW or FAC species) and the Prevalence Index (i.e. 3.00); however, did not exhibit wetland soils or hydrology (i.e., exhibited a single secondary indicator (B10)). Vegetation at this location is characterized by a dominance of annual beard grass. Upon inspection of the unvegetated streambed under the Margarita Road bridge revealed that this area does not appear to display signs of wetland vegetation, hydric soils or hydrology.

5.1.2 Potential Other Waters of the U.S.

Potential other waters of the U.S. include the limits of the OHWM established along Santa Gertrudis Creek within the survey area, excluding portions of the creek supporting wetland waters of the U.S. Survey transect D1T1 was 49 feet in length and taken within the bed of Santa Gertrudis Creek, entirely within potential wetland waters of the U.S. The information collected along this transect is discussed in detail above, in section 5.1.1. An additional survey transect 55 feet in length (D1T2), was established along Santa Gertrudis Creek in the eastern portion of the survey area. The data collected along this transect suggests that this creek supports a natural, soft-bottomed bed and a manufactured bank. The bank is comprised of poured concrete within approximately 175 feet of either side of the Margarita Road bridge, while the remainder of the bank in each direction is comprised of articulated concrete blocks. The OHWM indicators observed include a clear break in slope between the natural bed and the manufactured bank, and transects D1T1 and D1T2 were established based on the OHWM indicators. Flowing or standing water was not observed during the delineation. Plant communities and land use observed within the OHWM, outside of the proposed wetland waters of the U.S., include annual grasses and forbs and unvegetated streambed.

5.2.3 Clean Water Act Analysis

Santa Gertrudis Creek is an intermittent drainage that is a non-navigable tributary of a TNW, the Pacific Ocean. Therefore, the creek is considered waters of the U.S. under the NWPR. Wetlands that abut jurisdictional waters are also considered waters of the U.S. under the NWPR. As such,

the wetlands mapped within Santa Gertrudis Creek that met all three USACE wetland parameters are considered potential wetland waters of the U.S.

5.2 Waters of the State

The extent of non-wetland waters of the State was established with survey transects based on the TOB on the south bank and the extent of streambed or riparian/wetland vegetation up to the northern survey area boundary. Transect D1T1 was 66 feet and Transect D1T2 was 67 feet, and included the manufactured southern bank. As described above in Chapter 2, the manufactured bank consists almost entirely of poured concrete, with the exception of limited weedy growth interspersed throughout the articulated concrete blocks. It was determined that the boundaries for wetland waters of the State are the same as those for wetland waters of the U.S.

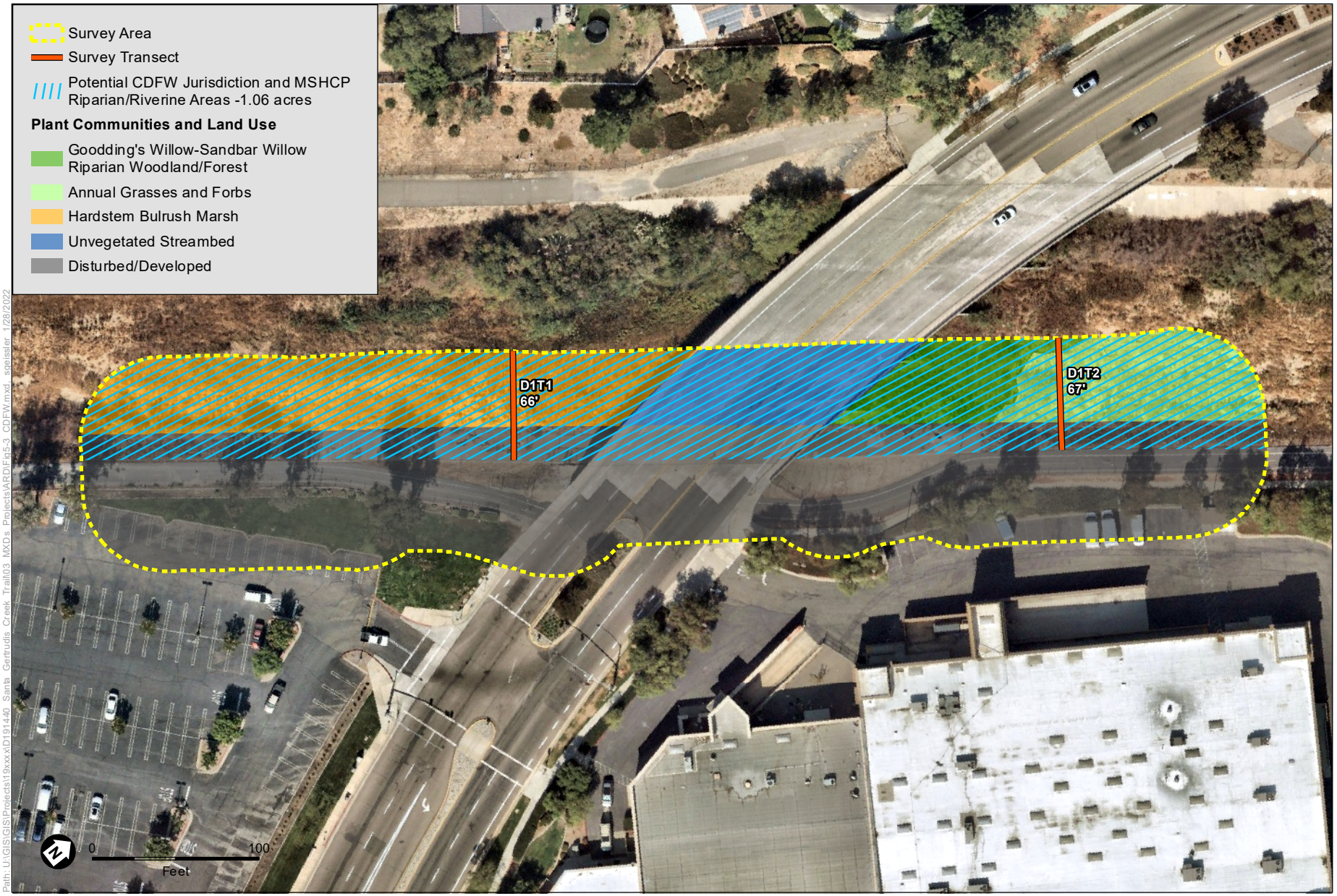
5.3 Rivers, Streams and Lakes; and MSHCP Riparian/Riverine Areas

Potential features subject to regulation under FGC Section 1600 et seq. and Section 6.1.2, Protection of Species Associated with Riparian Areas and Vernal Pools of the MSHCP (RCIP 2004) within the survey area is described in detail below. **Table 5-2 Rivers, Streams and Lakes; and MSHCP Riparian/Riverine Areas within the Survey Area** provides the extent of potential jurisdiction within the survey area. Mapped features, including width of survey transects were based on the TOB on the south bank and the extent of streambed or riparian/wetland vegetation up to the northern survey area boundary, as shown in **Figure 5-3 Rivers, Streams and Lakes; and MSHCP Riparian/Riverine Areas**. Each mapped feature is described in greater detail below.

TABLE 5-2
RIVERS, STREAMS AND LAKES; AND MSHCP RIPARIAN/RIVERINE AREAS WITHIN THE SURVEY AREA

Aquatic Feature	Cowardin Type[1]	Length (feet)	TOB Range (feet)	Plant Communities	Coordinates (lat/long)	Area (acre)
Santa Gertrudis Creek	Riverine	705	62-72	Annual grasses and forbs, Gooding's willow-sandbar willow riparian woodland/forest, hardstem bulrush marsh, unvegetated streambed, and disturbed/developed	-117.152831, 33.533103	1.06
Total:	**--**	**705**	**--**	**--**	**--**	**1.06**

As described above in Section 5.1 and 5.2, San Gertrudis Creek supports a natural, soft-bottomed bed and a manufactured bank. Survey transects D1T1 and D2T2 were 66 and 67 feet in length, respectively and the TOB was determined by a clear break in slope between the manufactured bank and the edge of the adjacent upland habitat. As noted above in Section 5.2, the bank of the creek is mostly devoid of vegetation, with the exception of limited weedy cover throughout the articulated concrete blocks; however, the bed supports annual grasses and forbs, Gooding's willow-sandbar willow riparian woodland/forest and hardstem bulrush marsh. The area beneath the Margarita Road bridge was characterized as unvegetated streambed.



SOURCE: Nearmap, 2020.

Santa Gertrudis Creek Trail Phase II Undercrossing at Margarita Road Project

Figure 5-3
Rivers, Streams and Lakes and MSHCP Riparian/Riverine Areas within the Survey Area

ESA

5.4 Conclusions

The results presented in this report represents the best professional judgment of ESA investigators and all aquatic resources. The extent of jurisdictional boundaries identified are considered preliminary pending verification from the appropriate regulatory agencies.

Based on the results of the aquatic resources delineation and the jurisdictional analysis, it is presumed that 0.48 acre of potential wetland waters of the U.S. and State; 0.33 acre of potential other (non-wetland) waters of the U.S.; and 0.57 acre of potential non-wetland waters of the State occur within the survey area.

It is presumed that 1.06 acres of stream and MSHCP Riparian/Riverine Areas, potentially jurisdictional under Section 1600 et seq. of the FGC and Section 6.1.2 of the MSHCP, occur within the survey area.

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CHAPTER 6
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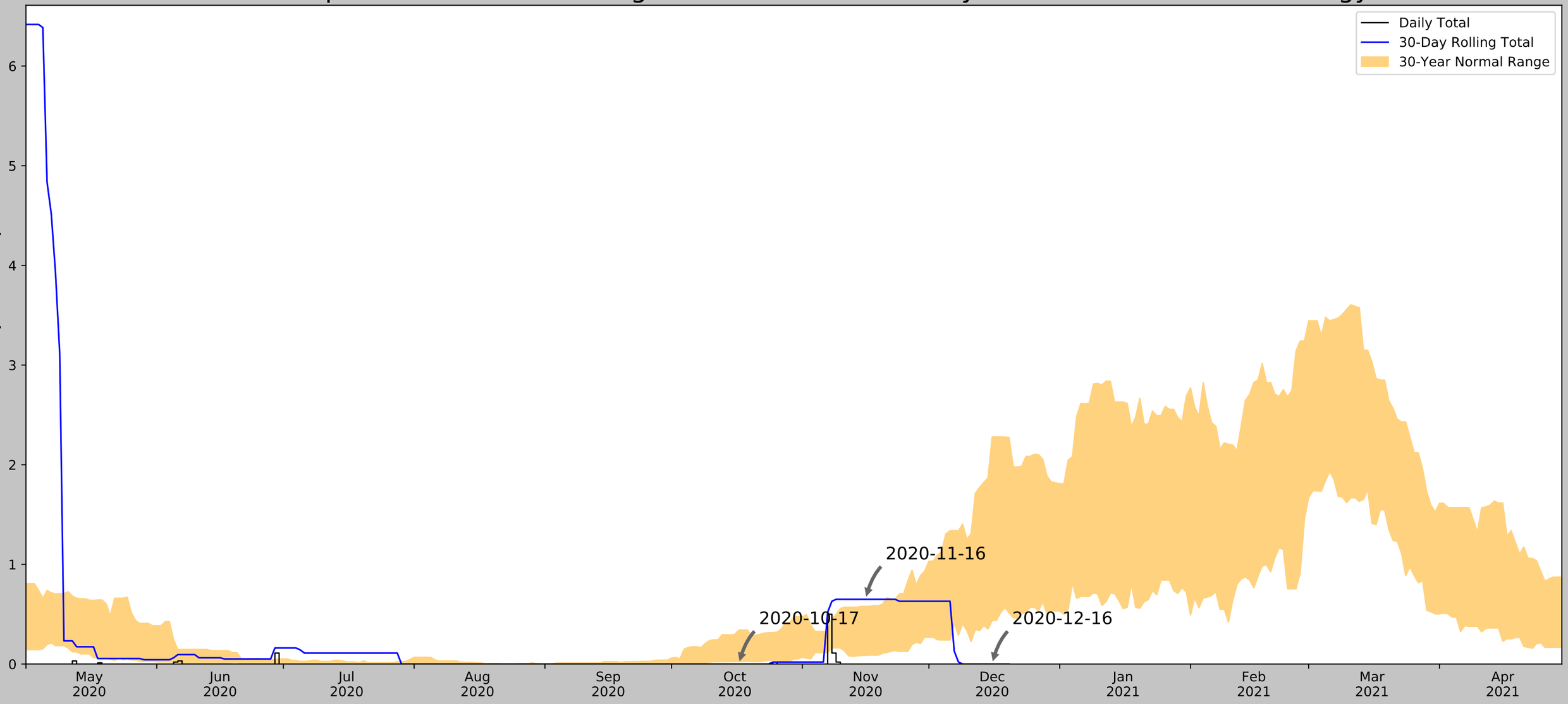
Appendix A
APT Outputs

ESA

Antecedent Precipitation vs Normal Range based on NOAA's Daily Global Historical Climatology Network



Coordinates	33.53, -117.15
Observation Date	2020-12-16
Elevation (ft)	1081.25
Drought Index (PDSI)	Mild drought (2020-11)
WebWIMP H_2O Balance	Wet Season

30 Days Ending	30th %ile (in)	70th %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2020-12-16	0.437402	2.279921	0.0	Dry	1	3	3
2020-11-16	0.086614	0.579134	0.649606	Wet	3	2	6
2020-10-17	0.023622	0.341339	0.0	Dry	1	1	1
Result							Normal Conditions - 10

Figure and tables made by the
Antecedent Precipitation Tool
Version 1.0

Written by Jason Deters
U.S. Army Corps of Engineers

Weather Station Name	Coordinates	Elevation (ft)	Distance (mi)	Elevation Δ	Weighted Δ	Days (Normal)	Days (Antecedent)
CARLSBAD PALOMAR AP	33.1281, -117.2794	328.084	28.756	753.166	34.598	8215	87
FALLBROOK 5 NE	33.4392, -117.1903	1140.092	6.69	58.842	3.404	2	3
ELSINORE	33.6861, -117.3458	1268.045	15.597	186.795	9.932	3108	0
SUN CITY	33.7156, -117.19	1419.948	13.029	338.698	10.276	26	0
SAN JACINTO	33.7964, -116.9753	1524.934	20.97	443.684	18.74	2	0

Antecedent Precipitation Tool v.1.0 - Watershed Sampling Summary

Generated on 2020-12-23

User Inputs

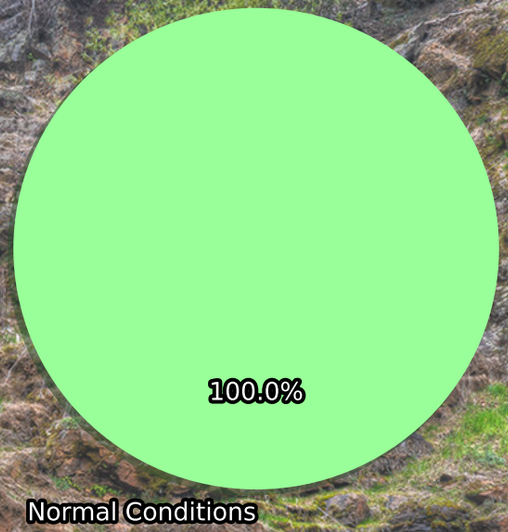
Coordinates	33.53, -117.15
Date	2020-12-16
Geographic Scope	HUC12

Intermediate Data

Hydrologic Unit Code	180703020407
Watershed Size	22.42 mi^2
# Random Sampling Points	4

Preliminary Result

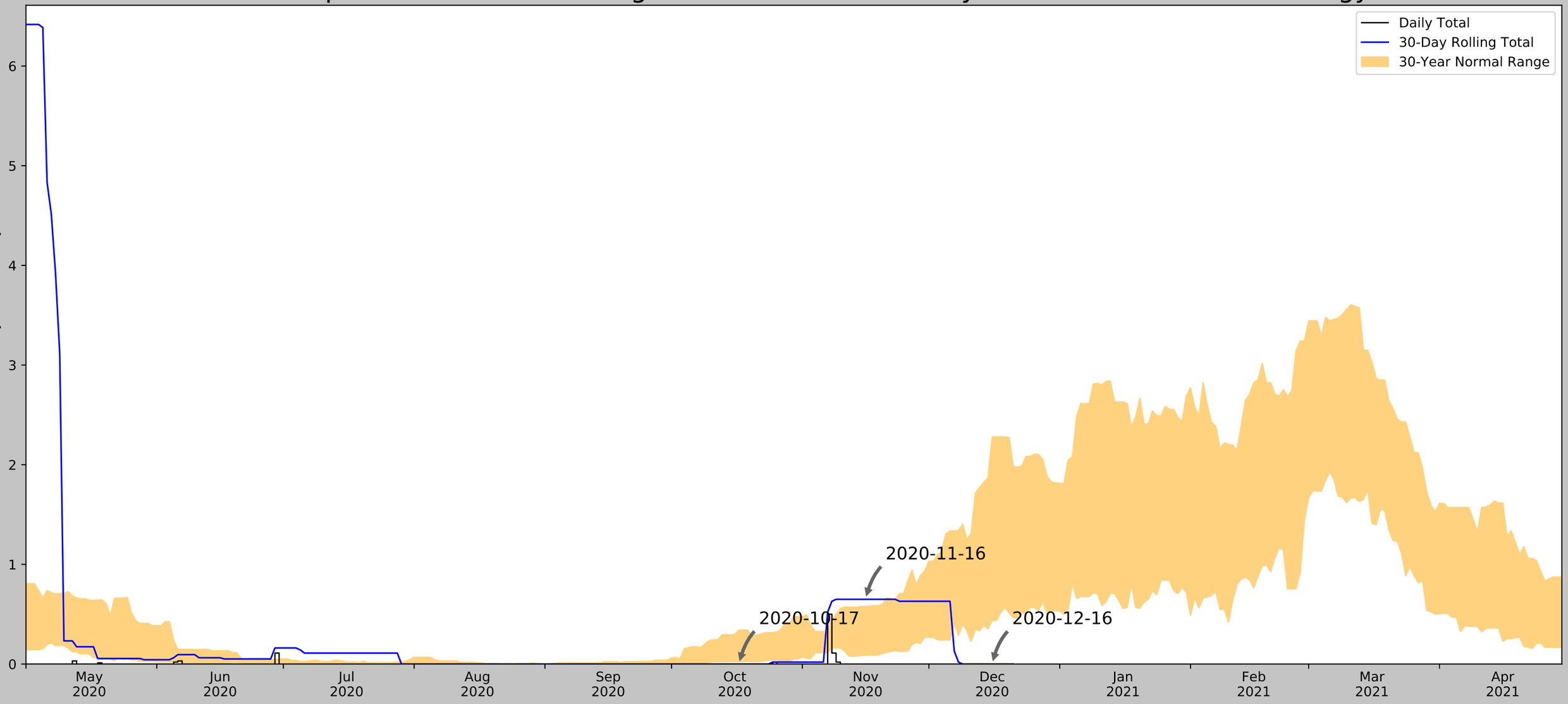
Average Antecedent Precipitation Score	10.0
Preliminary Determination	Normal Conditions



Sampling Point Breakdown

Antecedent Precipitation Score	Antecedent Precipitation Condition	WebWIMP H_2O Balance	Drought Index (PDSI)	# of Points
10	Normal Conditions	Wet Season	Mild drought (2020-11)	4

Antecedent Precipitation vs Normal Range based on NOAA's Daily Global Historical Climatology Network



Coordinates	33.53, -117.15
Observation Date	2020-12-16
Elevation (ft)	1081.25
Drought Index (PDSI)	Mild drought (2020-11)
WebWIMP H_2O Balance	Wet Season

30 Days Ending	30^{th} %ile (in)	70^{th} %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2020-12-16	0.437402	2.279921	0.0	Dry	1	3	3
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2020-10-17	0.023622	0.341339	0.0	Dry	1	1	1
Result							Normal Conditions - 10

Figure and tables made by the
Antecedent Precipitation Tool
Version 1.0

Written by Jason Deters
U.S. Army Corps of Engineers

Weather Station Name	Coordinates	Elevation (ft)	Distance (mi)	Elevation Δ	Weighted Δ	Days (Normal)	Days (Antecedent)
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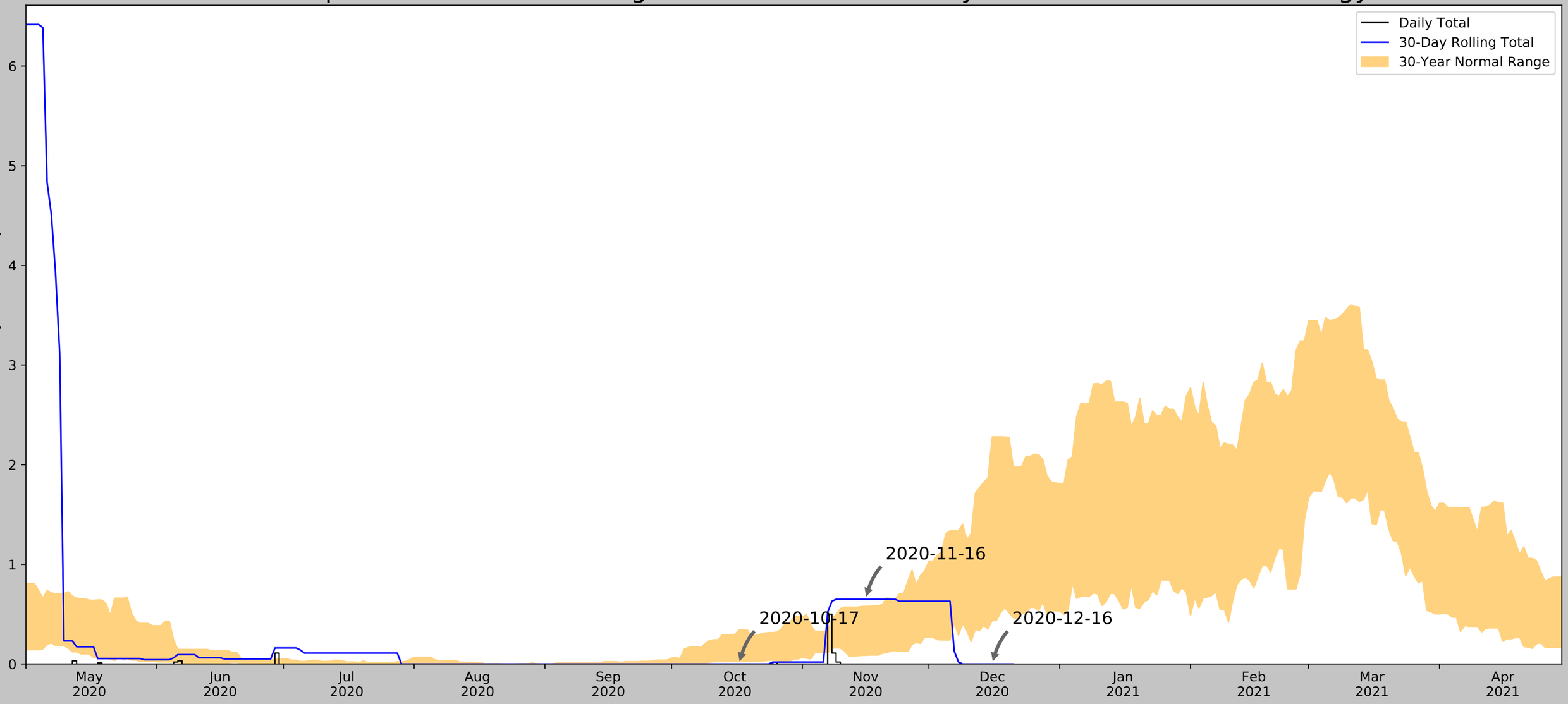
SUN CITY	33.7156, -117.19	1419.948	13.029	338.698	10.276	26	0
SAN JACINTO	33.7964, -116.9753	1524.934	20.97	443.684	18.741	2	0

Antecedent Precipitation vs Normal Range based on NOAA's Daily Global Historical Climatology Network



Coordinates	33.53, -117.15
Observation Date	2020-12-16
Elevation (ft)	1081.25
Drought Index (PDSI)	Mild drought (2020-11)
WebWIMP H_2O Balance	Wet Season

30 Days Ending	30^{th} %ile (in)	70^{th} %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
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2020-10-17	0.023622	0.341339	0.0	Dry	1	1	1
Result							Normal Conditions - 10

Figure and tables made by the
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ELSINORE	33.6861, -117.3458	1268.045	15.597	186.795	9.932	3108	0
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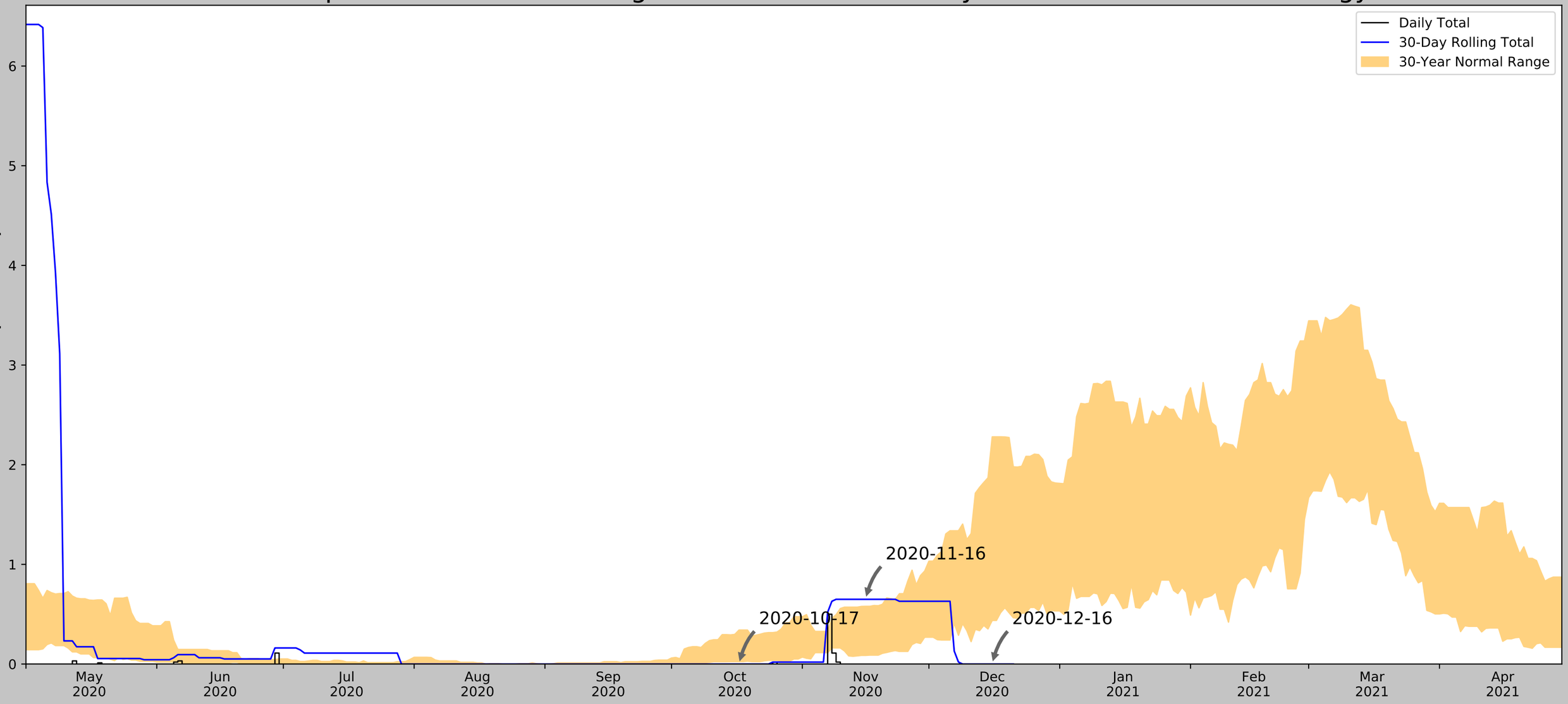
Antecedent Precipitation vs Normal Range based on NOAA's Daily Global Historical Climatology Network



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Observation Date	2020-12-16
Elevation (ft)	1091.84
Drought Index (PDSI)	Mild drought (2020-11)
WebWIMP H_2O Balance	Wet Season

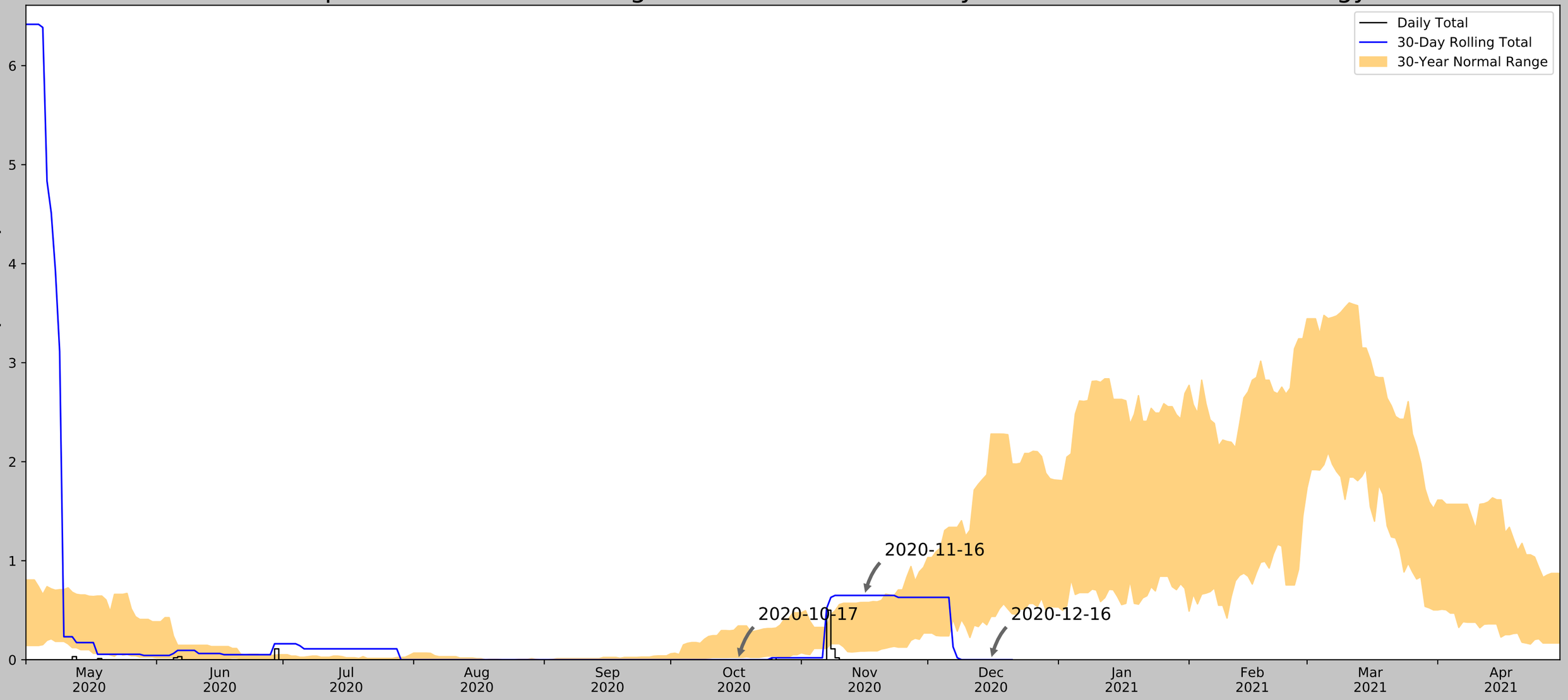
30 Days Ending	30^{th} %ile (in)	70^{th} %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2020-12-16	0.437402	2.279921	0.0	Dry	1	3	3
2020-11-16	0.086614	0.579134	0.649606	Wet	3	2	6
2020-10-17	0.023622	0.341339	0.0	Dry	1	1	1
Result							Normal Conditions - 10

Figure and tables made by the **Antecedent Precipitation Tool** Version 1.0

Written by Jason Deters
U.S. Army Corps of Engineers

Weather Station Name	Coordinates	Elevation (ft)	Distance (mi)	Elevation Δ	Weighted Δ	Days (Normal)	Days (Antecedent)
CARLSBAD PALOMAR AP	33.1281, -117.2794	328.084	26.764	763.756	32.485	8215	87
FALLBROOK 5 NE	33.4392, -117.1903	1140.092	4.674	48.252	2.329	2	3
ELSINORE	33.6861, -117.3458	1268.045	15.757	176.205	9.867	3108	0
SUN CITY	33.7156, -117.19	1419.948	14.496	328.108	11.279	26	0
SAN JACINTO	33.7964, -116.9753	1524.934	23.197	433.094	20.485	2	0

Antecedent Precipitation vs Normal Range based on NOAA's Daily Global Historical Climatology Network



Coordinates	33.526886, -117.112584
Observation Date	2020-12-16
Elevation (ft)	1262.57
Drought Index (PDSI)	Mild drought (2020-11)
WebWIMP H_2O Balance	Wet Season

30 Days Ending	30^{th} %ile (in)	70^{th} %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2020-12-16	0.437402	2.279921	0.0	Dry	1	3	3
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2020-10-17	0.023622	0.341339	0.0	Dry	1	1	1
Result							Normal Conditions - 10

Figure and tables made by the **Antecedent Precipitation Tool** Version 1.0

Written by Jason Deters
U.S. Army Corps of Engineers

Weather Station Name	Coordinates	Elevation (ft)	Distance (mi)	Elevation Δ	Weighted Δ	Days (Normal)	Days (Antecedent)
CARLSBAD PALOMAR AP	33.1281, -117.2794	328.084	29.188	934.486	40.41	8215	87
WINCHESTER 6.5 S	33.6153, -117.0911	1421.916	6.233	159.346	3.798	0	3
FALLBROOK 6.5 NE	33.4363, -117.1603	1376.969	6.836	114.399	3.858	2	0
ELSINORE	33.6861, -117.3458	1268.045	17.353	5.475	7.904	3108	0
SUN CITY	33.7156, -117.19	1419.948	13.779	157.378	8.369	26	0
SAN JACINTO	33.7964, -116.9753	1524.934	20.226	262.364	14.408	2	0

Appendix B
Data Sheets

ESA

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: St. Gertrudis Creek Trail Project
Project Number:
Stream: DITI
Investigator(s): R. Sweet, K.F

Date: 12/16/20 **Time:** 0948
Town: Temecula **State:** CA
Photo begin file#: 0303 **Photo end file#:** 0307

Y ☑ / N ☐ Do normal circumstances exist on the site?

Y ☑ / N ☐ Is the site significantly disturbed?

Location Details: Temecula, CA

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:
Concrete bank

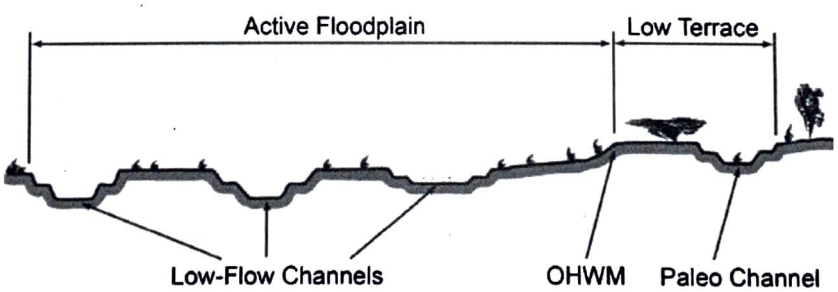
Brief site description:
Bank-poured Concrete

Checklist of resources (if available):

- ☒ Aerial photography
  Dates:
- ☑ Topographic maps
- ☐ Geologic maps
- ☒ Vegetation maps
- ☒ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☒ Global positioning system (GPS)
- ☒ Other studies

- ☐ Stream gage data
  Gage number:
  Period of record:
  - ☐ History of recent effective discharges
  - ☐ Results of flood frequency analysis
  - ☐ Most recent shift-adjusted rating
  - ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units



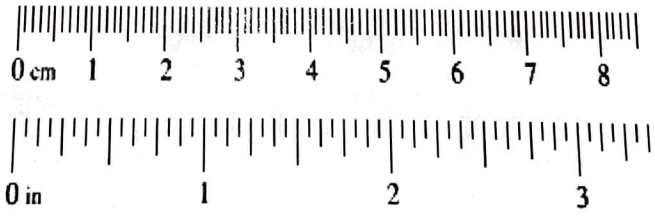
Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

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

photos: 0303 - 0307

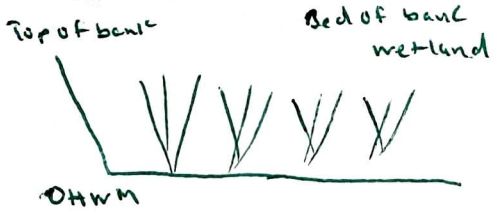
Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
		Cobble	Gravel
2.56	64	Pebble	
0.157	4	Granule	
0.079	2.00	Very coarse sand	
0.039	1.00	Coarse sand	
0.020	0.50	Medium sand	Sand
1/2 0.0098	0.25	Fine sand	
1/4 0.005	0.125	Very fine sand	
1/8 0.0025	0.0625	Coarse silt	
1/16 0.0012	0.031	Medium silt	
1/32 0.00061	0.0156	Fine silt	Silt
1/64 0.00031	0.0078	Very fine silt	
1/128 0.00015	0.0039	Clay	Mud



Project ID: San Gert. Cross section ID: D1T1 Date: 12/16/20 Time: 0948

Cross section drawing:



OHWM

GPS point: on collector

Indicators:

- ☐ Change in average sediment texture
- ☐ Change in vegetation species
- ☐ Change in vegetation cover
- ☐ Break in bank slope
- ☒ Other: Change from nature soil to manufactured slope
- ☐ Other: _____

Comments:

Floodplain unit: ☒ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: SC / SCC

Total veg cover: 70 % Tree: — % Shrub: ~~60~~ 10 % Herb: 60 %

Community successional stage:

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

Indicators:

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

Comments:

Describing area below OHWM.

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: St. Gertrudis Creek Trail Project
Project Number:
Stream: D1T2
Investigator(s): RCS, KF

Date: 12/16/20
Town: Temecula
Photo begin file#: none along transect

Time: 10:11
State: CA
Photo end file#:

Y ☑ / N ☐ Do normal circumstances exist on the site?

Y ☑ / N ☐ Is the site significantly disturbed?

Location Details: Temecula, CA

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:
Concrete bank

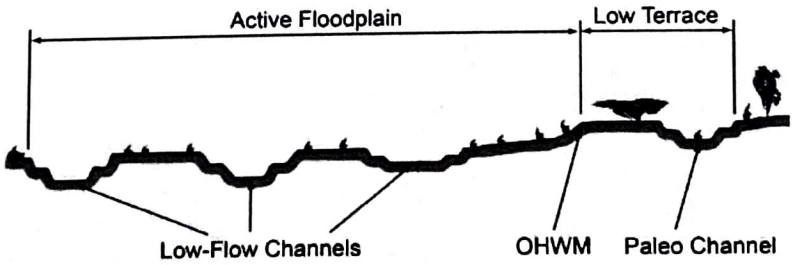
Brief site description:
Bank slope lined w/ cobble blocks

Checklist of resources (if available):

- ☑ Aerial photography
  Dates:
- ☒ Topographic maps
- ☐ Geologic maps
- ☒ Vegetation maps
- ☒ Soils maps
- ☐ Rainfall/precipitation maps
- ☒ Existing delineation(s) for site
- ☑ Global positioning system (GPS)
- ☐ Other studies

- ☐ Stream gage data
  Gage number:
  Period of record:
  - ☐ History of recent effective discharges
  - ☐ Results of flood frequency analysis
  - ☐ Most recent shift-adjusted rating
  - ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

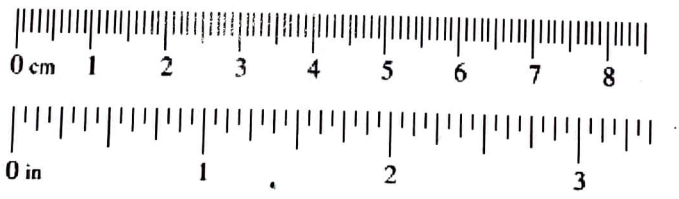


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

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

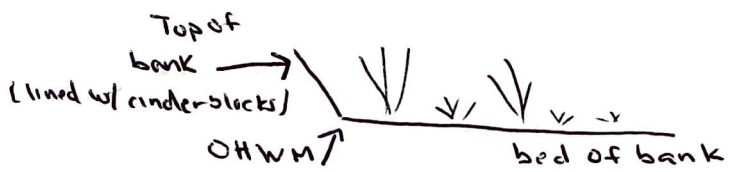
Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	Gravel
2.56	64	Cobble	Gravel
0.157	4	Pebble	Gravel
		Granule	Gravel
0.079	2.00		
0.039	1.00	Very coarse sand	Sand
0.020	0.50	Coarse sand	Sand
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	Sand
1/8 0.0025	0.0625	Very fine sand	Sand
1/16 0.0012	0.031	Coarse silt	Silt
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	Silt
1/128 0.00015	0.0039	Very fine silt	Silt
		Clay	Mud



Project ID: Cross section ID: DIT2 Date: 12/16/20 Time: 0948

Cross section drawing:



OHWM

GPS point: _____

Indicators:

- ☐ Change in average sediment texture
- ☐ Change in vegetation species
- ☐ Change in vegetation cover
- ☐ Break in bank slope
- ☒ Other: change from native soil to manufactured slope
- ☐ Other: _____

Comments:

Floodplain unit: ☒ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Fine sandy loam

Total veg cover: 95 % Tree: ____ % Shrub: 10 % Herb: 85 %

Community successional stage:

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

Indicators:

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

Comments: Describes area below OHWM

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: St Gertrudis Creek Trail Project City/County: Temecula, ~~San Diego~~ Riverside Sampling Date: 12/16/20

Applicant/Owner: City of Temecula State: CA Sampling Point: WDP-1

Investigator(s): Robert Sweet / Karla Flores Section, Township, Range:

Landform (hillslope, terrace, etc.): Local relief (concave, convex, none): Slope (%):

Subregion (LRR): Lat: Long: Datum:

Soil Map Unit Name: NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ____ (If no, explain in Remarks.)

Are Vegetation ✓, Soil ✓, or Hydrology ✓ significantly disturbed? yes Are "Normal Circumstances" present? Yes ✓ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? No (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓	No ____	**Is the Sampled Area within a Wetland?** Yes ✓ No ____
Hydric Soil Present?	Yes ✓	No ____	
Wetland Hydrology Present?	Yes ✓	No ____	

Remarks:

N/A

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:			
Sapling/Shrub Stratum			
1. Baccharis (Seriocarpus acutus)	80	Y	OBL
2. ~~Salix~~ black willow (Salix goodingii)	10	N	FACW
3. Salix exigua	1	N	FACW
4.			
5.			
Total Cover:	91		
Herb Stratum			
1. ~~Sonchus asper~~	—	—	—
2. Ambrosia ~~psilostachya~~ psilostachya	1	N	FACU
3. ~~Cyperus~~ Cyperus eragrostis	1	N	FACW
4. Pulicaria pal	0	Y	FAC
5. Xanthium (native)	1	N	FAC
6. ~~Salix exigua~~	—	—	—
7. Juncus mexicanus	5	Y	FACW
8. Polypogon mon	1	N	FACW
Total Cover:	17		
Woody Vine Stratum			
1.			
2.			
Total Cover:			

% Bare Ground in Herb Stratum ____ % Cover of Biotic Crust ____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: ~~8~~ 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 1 x100 = 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	80	x 1 =	80
FACW species	18	x 2 =	36
FAC species	9	x 3 =	27
FACU species	1	x 4 =	4
UPL species	2	x 5 =	~~10~~
Column Totals:	108 (A)		147 (B)

Prevalence Index = B/A = 1.36

Hydrophytic Vegetation Indicators:

✓ Dominance Test is >50%

✓ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? ✓ Yes ✓ No ____

Remarks:

Photos: 0285, 0286 WDP-1 Pit — Baccharis is Seriocarpus

5-m radius quadrat (Five) — 0287 - 0288 (Habitat) 0296 (Vegetation)

SOIL

Sampling Point: WDP-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-14	2.5Y 3/2	95	5YR 6/8	5	C	PC	SC	Sandy clay

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- X Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3) (maybe)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No _____

Remarks:

19 inch sample

Photo: 0290, -0296 (soil sample) ★

→ Likely still meets criteria for S5, however if concentrations are not valid (root channels) may be F3.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- X Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- X Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): _____

Water Table Present? Yes ___ No X Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): _____

Wetland Hydrology Present? Yes X No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Soil not saturated but very moist.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: St. Gertrudis Creek Trail Project City/County: Temecula, San Diego Sampling Date: 12-16-20

Applicant/Owner: City of Temecula State: CA Sampling Point: ~~Control~~ UDP-1A

Investigator(s): R. Sweet / K. Flores Section, Township, Range:

Landform (hillslope, terrace, etc.): Local relief (concave, convex, none): Slope (%):

Subregion (LRR): Lat: Long: Datum:

Soil Map Unit Name: NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ____ (If no, explain in Remarks.)

Are Vegetation ✓, Soil ✓, or Hydrology ✓ significantly disturbed? Yes Are "Normal Circumstances" present? Yes ✓ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? No (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No X	**Is the Sampled Area within a Wetland?** Yes ____ No ✓
Hydric Soil Present?	Yes ____	No X	
Wetland Hydrology Present?	Yes ____	No X	

Remarks:

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1. N/A			
2.			
3.			
4.			
Total Cover:			
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:			
Herb Stratum			
1. Hevshfeldia incana	20	Y	UPL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	20		
Woody Vine Stratum			
1.			
2.			
Total Cover:			

% Bare Ground in Herb Stratum 80 % Cover of Biotic Crust ____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species 0	x 1 = 0
FACW species 0	x 2 = 0
FAC species 0	x 3 = 0
FACU species 0	x 4 = 0
UPL species 1	x 5 = 5
Column Totals: 1 (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ____ No X

Remarks:

Photo: 0302 (veg)

3 meter radius

Sampling Point: UDP ~~UPL~~ - 1A

SOIL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 10	10YR 6/6	100					SCL	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) **(LRR C)**
- ___ 1 cm Muck (A9) **(LRR D)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR C)**
- ___ 2 cm Muck (A10) **(LRR B)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks: photo: 0299 - 0301 (soil sample)

10 inch sand.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) **(Nonriverine)**
- ___ Sediment Deposits (B2) **(Nonriverine)**
- ___ Drift Deposits (B3) **(Nonriverine)**
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) **(Riverine)**
- ___ Sediment Deposits (B2) **(Riverine)**
- ___ Drift Deposits (B3) **(Riverine)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____

Water Table Present? Yes _____ No X Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): _____

Wetland Hydrology Present? Yes _____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: UPL sample taken above concrete bank

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: St. Gertrudis Creek Trail Project City/County: Temecula, ~~San Diego~~ Riverside Sampling Date: 12-16-20

Applicant/Owner: City of Temecula State: CA Sampling Point: UP-1B

Investigator(s): R. Sweet / K. Flores Section, Township, Range:

Landform (hillslope, terrace, etc.): Local relief (concave, convex, none): Slope (%):

Subregion (LRR): Lat: Long: Datum:

Soil Map Unit Name: NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ____ (If no, explain in Remarks.)

Are Vegetation ✓, Soil ✓, or Hydrology ✓ significantly disturbed? Yes Are "Normal Circumstances" present? Yes ✓ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? NO (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area within a Wetland?** Yes ____ No X
Hydric Soil Present?	Yes ____	No X	
Wetland Hydrology Present?	Yes ____	No X	

Remarks:

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:			
Sapling/Shrub Stratum			
1. Tamarix sp. (ram?)	5	N	FAC
2. Salix exigua	25	Y	FACW
3.			
4.			
5.			
Total Cover:	30		
Herb Stratum			
1. ~~Rom~~ Polypogum monspeliensis	55	Y	FACW
2. Xanthium strumarium	20	Y	FAC
3. ~~Stromocium~~	—	—	—
4. Rumex crispus	25	Y	FAC
5. Helianthus annuus	1	N	FACU
6. 5% unidentified upland grass	1	N	FACU or UPL
7. ↳ Festuca ~~tenuifolia (?)~~ perennis			
8.			
Total Cover:	102		
Woody Vine Stratum			
1.			
2.			
Total Cover:			

% Bare Ground in Herb Stratum ____ % Cover of Biotic Crust ____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: ~~4~~ 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 1 x 100 = 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species 2	x 2 = 4
FAC species 3	x 3 = 9
FACU species 2	x 4 = 8
UPL species ____	x 5 = ____
Column Totals: ~~6~~ 7 (A)	72 (B)

Prevalence Index = B/A = 21/7 = 3

Hydrophytic Vegetation Indicators:

✓ Dominance Test is >50%

✓ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ✓ No ____

Remarks:

Photos: 0308, 0309 (veg)

SOIL

Sampling Point: UDP-13

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-13	10YR 3/4	100					SL	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) **(LRR C)**
- ___ 1 cm Muck (A9) **(LRR D)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR C)**
- ___ 2 cm Muck (A10) **(LRR B)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

13 inches sample

Photos: 0310, 0311 (soil)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) **(Nonriverine)**
- ___ Sediment Deposits (B2) **(Nonriverine)**
- ___ Drift Deposits (B3) **(Nonriverine)**
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) **(Riverine)**
- ___ Sediment Deposits (B2) **(Riverine)**
- ___ Drift Deposits (B3) **(Riverine)**
- X Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____

Water Table Present? Yes _____ No X Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): _____

Wetland Hydrology Present? Yes _____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Photos: 0312

Appendix C
Floral Compendium

ESA

Scientific Name	Common Name	Wetland Indicator Status*
Flora		
Angiosperms		
Eudicots		
Asteraceae	**Aster Family**	
Ambrosia psilostachya	annual ragweed	FACU
Helianthus annuus	annual sunflower	FACU
*Pulicaria paludosa***	Spanish false fleabane	FAC
Xanthium strumarium	cocklebur	FAC
Brassicaceae	**Mustard Family**	
*Hirschfeldia incana***	short podded mustard	No status found (likely FACU or UPL)
Polygonaceae	**Buckwheat Family**	
*Rumex crispus***	curly dock	FAC
Salicaceae	**Willow Family**	
Salix exigua	sandbar willow	FACW
Salix gooddingii	Goodding's willow	FACW
Tamaricaceae	**Tamarisk Family**	
*Tamarix ramosissima***	tamarisk	FAC
Monocots		
Cyperaceae	**Sedge Family**	
Cyperus eragrostis	tall flatsedge	FACW
Schoenoplectus acutus	hardstem bulrush	OBL
Juncaceae	**Rush Family**	
Juncus mexicanus	Mexican rush	FACW
Poaceae	**Grass Family**	
*Festuca perennis***	Italian ryegrass	No status found (likely FACU or UPL)
*Polypogon monspeliensis***	annual beard grass	FACW

*United States Army Corps of Engineers (USACE). 2020. National Wetland Plant List (NWPL) 2018. http://wetland-plants.usace.army.mil/nwpl_static/v34/home/home.html
**Non-native Species

Appendix D
Photographic Exhibit

ESA

Photograph 1 (W). Photograph faces across Drainage 1 at transect D1T1. Dense hardstem bulrush marsh is visible throughout much of the bed, while the left bank of the drainage consists of manufactured concrete.

Photograph 2 (W). Photograph depicts the hardstem bulrush marsh located along D1T1.

Photograph 3 (SW). Photograph faces downstream from D1T1 and depicts the manufactured concrete bank and adjacent bed to the west.

Photograph 4 (NE). Photograph faces upstream from D1T2. Dense annual grasses and forbs along the bed of the drainage are visible in the foreground.

Photograph 5. Photograph depicts wetland data point WDP 1, taken within the hardstem bulrush marsh, along Drainage 1. This point met the USACE criteria for wetland hydrology, soils and vegetation.

Photograph 6 (N). Photograph depicts the redox features observed along root channels, within the soil matrix at WDP 1. These redox features met the criteria for hydric soil indicator S5 (sandy redox) and hydrology indicator C3 (oxidized rhizospheres along living roots).

Photograph 7. Photograph depicts depressed vegetation along the bed of Drainage 1, immediately adjacent to WDP 1. This sign met the criteria for secondary hydrology indicator B10 (drainage patterns).

Photograph 8. Photograph depicts UDP 1a, taken immediately adjacent to the bank along Drainage 1. This point did not meet the USACE criteria for wetland hydrology, soils or vegetation.

Photograph 9. Photograph depicts UDP 1b, taken within the annual grasses and forbs located immediately adjacent to the hardstem bulrush marsh and within the bed of Drainage 1. This point met the USACE criteria for wetland vegetation; however, did not meet the criteria for soils or hydrology (however, it met secondary hydrology indicator B10).

Photograph 10 (NE). Photograph depicts the depressed vegetation along the bed of drainage 1, at UDP 1b. As stated above, secondary hydrology indicator B10 was met at this location.

Appendix D

Cultural Resources Assessment Report

ESA

Public Version

Santa Gertrudis Creek Trail Phase II Undercrossing at Margarita Road Project

Cultural Resources Assessment Report

Prepared for
City of Temecula
41000 Main Street
Temecula, CA 92590

January 2022

Public Version

Santa Gertrudis Creek Trail Phase II Undercrossing at Margarita Road Project

Cultural Resources Assessment Report

Prepared for:
City of Temecula
41000 Main Street
Temecula, CA 92590

January 2022

Prepared by:
ESA
550 West C Street, Suite 750
San Diego, CA 92101

Principal Investigator:
Monica Strauss, M.A., RPA

Report Author:
Michael Vader, B.A.

Project Location:
Murrieta (CA) USGS 7.5-minute Topographic Quad
Township 7 South, Range 3 West, Unsectioned

Acreage: Approx. 1.10 acres

550 West C Street
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EXECUTIVE SUMMARY

Santa Gertrudis Creek Trail Phase II Undercrossing at Margarita Road Project - Cultural Resources Assessment Report

The City of Temecula Planning Department (City) has retained Environmental Science Associates (ESA) to conduct a cultural resources assessment for the Santa Gertrudis Creek Trail Phase II Undercrossing at Margarita Road Project (Project) in support of an Initial Study/Mitigated Negative Declaration (IS/MND) being prepared pursuant to the California Environmental Quality Act (CEQA). The Project proposes the construction of a bicycle/multi-use trail undercrossing for the existing Santa Gertrudis Creek Trail (SGCT) where it crosses Margarita Road, a heavily traveled four-lane divided collector roadway. The proposed undercrossing would improve safety at this location by removing the need for recreational users to use the existing roadway as a trail crossing. The City is the lead agency pursuant to the California Environmental Quality Act (CEQA). The proposed Project requires a Section 404 permit from the U.S. Army Corps of Engineers (USACE) and must comply with Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended. The USACE is the lead federal agency responsible for compliance with Section 106 of the NHPA.

An Area of Potential Effects (APE) was established for the proposed Project according to Section 106 of the NHPA. The APE encompasses the horizontal and vertical extent in which Project effects could occur as a result of Project ground disturbing activities. The approximately 1.10-acre horizontal APE includes the Project footprint plus a 25-foot buffer to account for movement of construction equipment. The Project's vertical APE includes the maximum height of above-ground Project components, which is 10 feet for the construction of retaining walls, as well as the maximum depth of Project ground disturbance, which is a depth of 8 feet for the installation of retaining wall footings.

A records search for the Project was conducted on May 4, 2021 by staff at the California Historical Resources Information System (CHRIS) Eastern Information Center (EIC) housed at University of California, Riverside. The records search included a review of all recorded cultural resources and previous studies within the APE and a 1-mile radius of the APE. The records search results indicate that 49 cultural resources studies have been conducted within a 1-mile radius of the APE. Of the 49 previous studies, eight (RI-01048, -01865, -02241, -02431, -02614, -03611, -08390, and -09257) overlap the APE. The entirety of the APE has been included in previous cultural resources studies. The records search results indicate six cultural resources have been previously recorded within a 1-mile radius of the APE. Of these six cultural resources, one is a prehistoric archaeological site consisting of a lithic and groundstone scatter (P-33-001730),

and five are prehistoric isolates (P-33-012381, -012382, -012383, -012384, and -012385). None of these previously recorded resources are located within or immediately adjacent to the APE.

The results of a Sacred Lands File (SLF) search conducted by the California Native American Heritage Commission (NAHC) on December 28, 2020 indicates that Native American cultural resources are present in the APE's vicinity; however, the NAHC provided no further details. The NAHC recommended contacting the Pechanga Band of Luiseño Indians for more information. ESA conducted outreach to the 20 Native American representatives indicated by the NAHC as having affiliation with the APE. ESA sent outreach letters via certified mail to the 20 Native American representatives on January 15, 2021 and conducted follow-up phone calls on January 28, 2021. Three tribal groups, including the Rincon Band of Luiseño Indians, the Quechan Indian Tribe, and the Agua Caliente Band of Cahuilla Indians, responded to the outreach. The results of the outreach are summarized in the *Archival Research* section of this report.

A desktop review of geologic maps and soils data was conducted to assess the potential for subsurface archaeological deposits within the APE. The late Pleistocene to Holocene-age younger alluvial channel deposits mapped at surface in the APE encompass the entirety of human habitation of North America, and are, therefore, of appropriate age to contain subsurface archaeological deposits. However, given the degree of past disturbance associated with the construction of the Santa Gertrudis Creek Channel, the APE has moderate sensitivity for the presence of subsurface archaeological resources.

A cultural resources survey of the APE was conducted on May 14, 2021 by ESA cultural resources staff accompanied by a Pechanga Band of Luiseño Indians tribal monitor. The survey was aimed at identifying cultural resources within or immediately adjacent to the APE. All accessible areas of the APE containing visible ground surface were subject to inspection. No cultural resources identified as a result of the survey.

No cultural resources were identified within the APE as a result of this assessment. As such, the Project would result in **No Historic Properties Affected** under Section 106 of the NHPA.

As a result of the archival research and cultural resources survey conducted for the Project, no cultural resources have been identified within APE. However, the likelihood for encountering subsurface archaeological deposits within the APE during Project construction is moderate. In the event that subsurface archaeological deposits are encountered during Project implementation, they may qualify as historical resources or unique archaeological resources pursant to CEQA and may subject to significant impacts. As such, recommendations for the retention of a qualified archaeologist, cultural resources sensitivity training, construction monitoring and inadvertent discovery protcols are provided in the *Conclusions and Recommendations* Section at the close of this report.

Santa Gertrudis Trail Phase II Undercrossing at Margarita Road

Cultural Resources Assessment Report

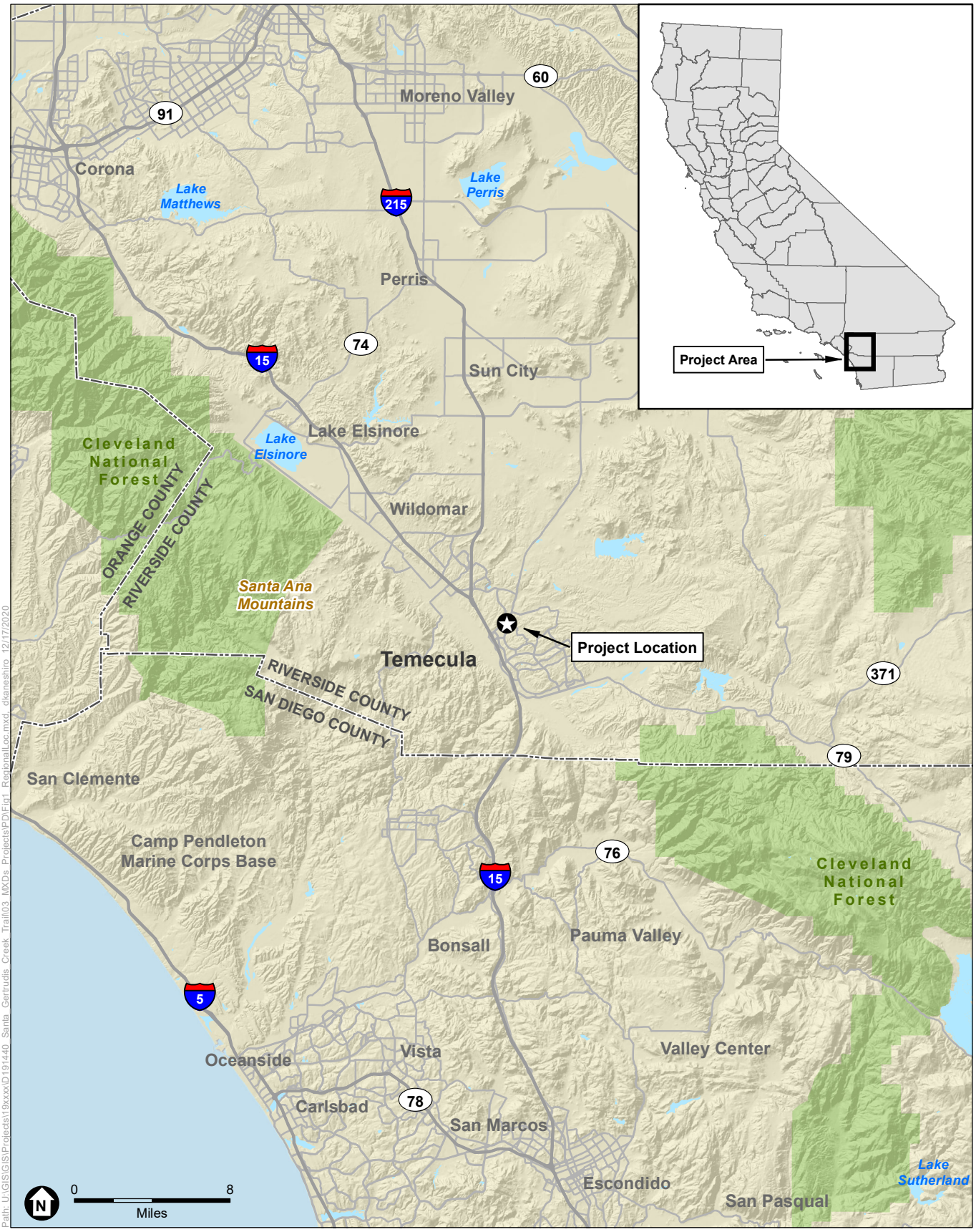
Introduction

The City of Temecula Planning Department (City) has retained Environmental Science Associates (ESA) to conduct a cultural resources assessment for the Santa Gertrudis Creek Trail Phase II Undercrossing at Margarita Road Project (Project) in support of an Initial Study/Mitigated Negative Declaration (IS/MND) being prepared pursuant to the California Environmental Quality Act (CEQA). The Project proposes the construction of a bicycle/multi-use trail undercrossing for the existing Santa Gertrudis Creek Trail (SGCT) where it crosses Margarita Road, a heavily traveled four-lane divided collector roadway. The proposed undercrossing would improve safety at this location by removing the need for recreational users to use the existing roadway as a trail crossing. The City is the lead agency pursuant to the California Environmental Quality Act (CEQA). The proposed Project requires a Section 404 permit from the U.S. Army Corps of Engineers (USACE) and must comply with Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended. The USACE is the lead federal agency responsible for compliance with Section 106 of the NHPA.

ESA personnel involved in the preparation of this report are as follows: Monica Strauss, M.A., RPA., Principal Investigator; Michael Vader, B.A, report author and surveyor; and Jason Nielson, GIS specialist. Resumes of key personnel are included in **Appendix A**.

Project Location

The Project is located in the City of Temecula in southwest Riverside County (**Figure 1**). Specifically, the Project is located on the southeast side of Santa Gertrudis Creek where it crosses under Margarita Road (**Figure 2**). The Project is located in an unsectioned portion of Township 7 South, Range 3 West on the Murrieta, CA U.S. Geological Survey (USGS)7.5-minute topographic quadrangle (**Figure 3**).



SOURCE: ESRI

Santa Gertrudis Creek Trail Phase II Undercrossing at Margarita Road

Figure 1
Regional Location

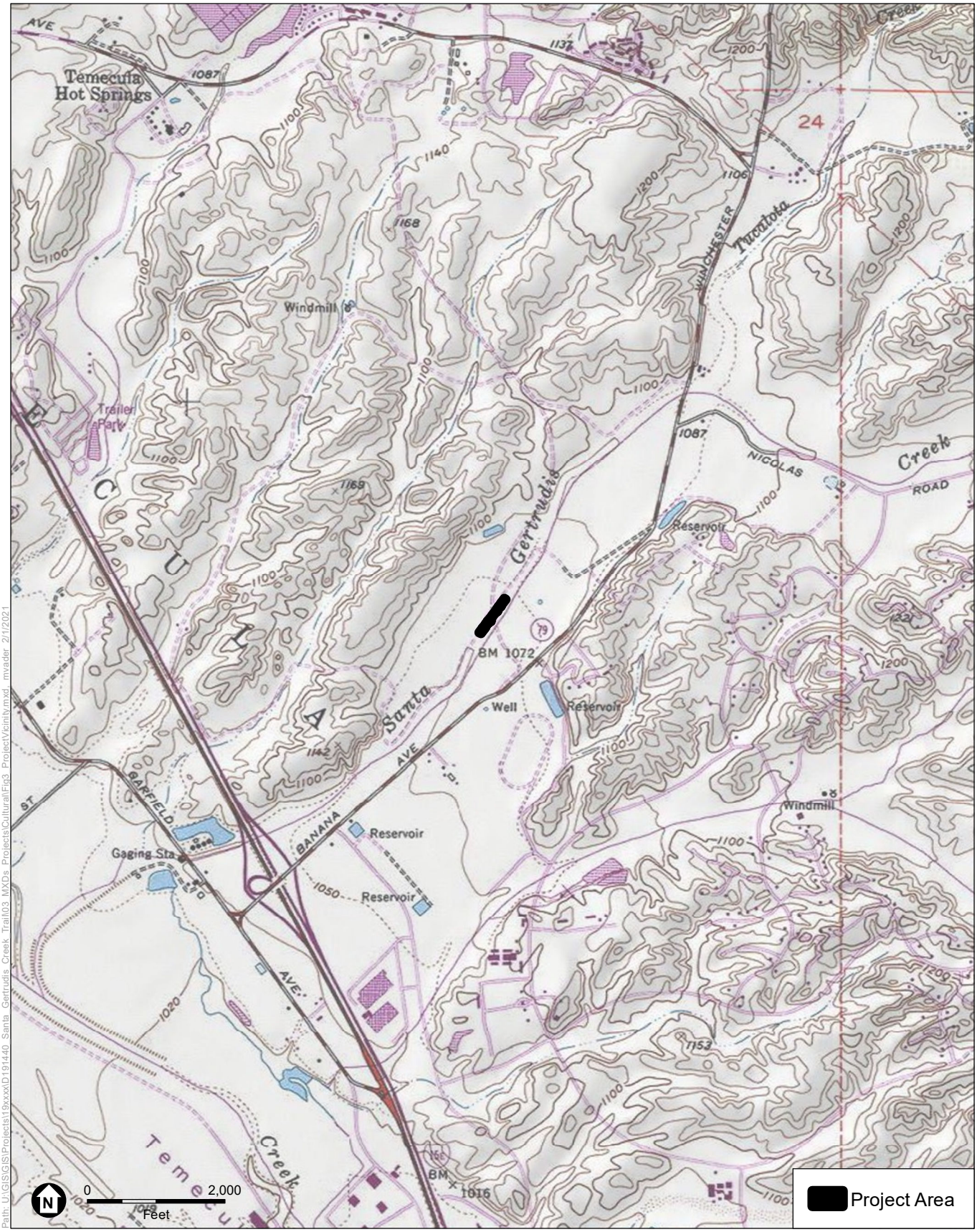
ESA

SOURCE: Nearmap, 2020.

Santa Gertrudis Trail Phase II Undercrossing

Figure 2
Project Location

ESA



TOPO QUAD: Murrieta, CA 7.5-minute

Santa Gertrudis Trail Phase II Undercrossing

Figure 3
Project Vicinity

ESA

Project Description

The Project would construct a bicycle/multi-use trail undercrossing for the existing Santa Gertrudis Creek Trail (SGCT). The existing trail crosses Margarita Road in the City of Temecula, which is a heavily traveled four-lane divided collector roadway. The proposed undercrossing would improve safety at this location by removing the need for existing at-grade roadway crossing for the trail.

The Project proposes the construction of a total of approximately 610 feet of a shared bicycle/trail undercrossing beneath the overpass of Margarita Road. The proposed off-street paved undercrossing would begin where the existing grade of the SGCT ramps begin to elevate to meet the grade of the overcrossing of Margarita Road at the east and west sides, which is slightly north of the existing overcrossing site. The Project would include the removal of existing pavements and soils to bring the proposed SCGT to five percent grade, utility improvements, and the construction of the SGCT in a new location beneath Margarita Road. The Project components are described in detail in the following paragraphs.

Proposed Trail Connection

Implementation of the Project would include the demolition of the existing SGCT along the east and western sides of Margarita Road, which includes the removal of one-foot minimum of existing aggregated concrete pavement and the compaction of existing soils to bring to grade the proposed trail**.** The proposed juncture of the existing trail and proposed undercrossing would be brought to a median elevation of 1,088 feet AMSL, which results in a five percent grade change to the lowest extent of the proposed trail on each side. The Project would include the reconstruction and/or replacement of the existing trail and infrastructure, such as the existing retaining wall and channel slope paving and cut-off wall. A ground anchor wall (GAW) is also proposed below the Margarita Road undercrossing, which would be used to retain the abutment end slope. Existing water valves and fixtures impacted by trenching of the soil to grade would be restored, which include utilities such as water valves and curb and gutter replacements. It is anticipated that all conflicting surface utilities facilities would either be protected in place or be relocated within the confines of the Project boundary.

Once the existing SGCT along the eastern and western sides of Margarita Road is demolished, the proposed trail undercrossing would be constructed beneath Margarita Road directly north of the existing overcrossing. The proposed undercrossing would be 610 feet long and 12 feet wide and would be paved on compacted soil. In addition, a retaining wall would be constructed where the proposed shared-use path would encroach into the cut slopes of Santa Gertrudis Creek along the northern length of the existing SGCT. The proposed retaining wall would be approximately 6 to 10 feet in height and would incorporate drainage V-ditches outside of the Margarita Road bridge. The existing pier wall near the Santa Gertrudis Creek and Flood Control facilities and posts beneath the Margarita Road overpass would be protected in place. The existing channel wall slope paving would be removed and reconstructed. Along the southern length of the proposed shared-use path, a tieback wall would be constructed to prevent erosion of the existing slopes.

The Project would include the installation of a 4-foot high, chain-link fence and a Type 5 retaining wall in accordance with Caltrans Standard Plans (B3-1) along the north side of the proposed undercrossing. The retaining wall would serve as a barrier between the proposed shared-use path and the existing Santa Gertrudis Creek edge due to the close proximity of the two facilities.

Other Improvements

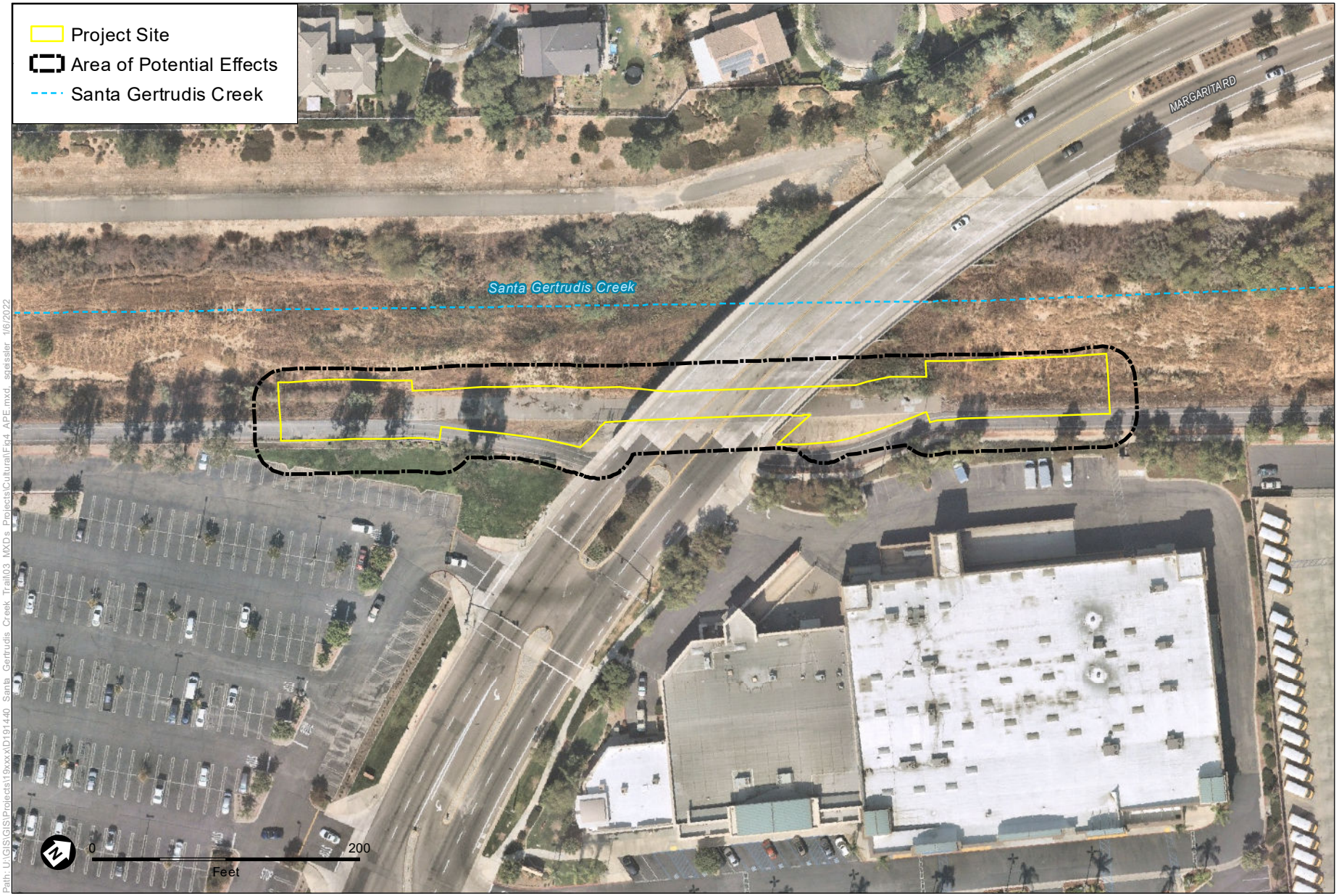
Bike path signage would be installed throughout the Project Site to educate users of the SGCT on current laws and user responsibility. The Project would not include any installation of trail lighting. In addition, landscaping and slope improvements would be needed along the proposed shared-use path

Area of Potential Effects

An Area of Potential Effects (APE) was established for the proposed Project according to Section 106 of the NHPA in coordination with USACE (**Figure 4**). An APE is defined as:

> "the geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties, if any such properties exist. The APE is influenced by the scale and nature of an undertaking and may be different for different kinds of effects caused by the undertaking" (36 Code of Federal Regulations [CFR] 800.16[d]).

The APE encompasses the horizontal and vertical extents in which Project effects could occur as a result of Project ground disturbing activities. The approximately 1.10-acre horizontal APE includes the Project footprint plus a 25-foot buffer to account for movement of construction equipment. The Project's vertical APE includes the maximum height of above ground Project components, which is 10 feet for the construction of the retaining walls, as well as the maximum depth of Project ground disturbance, which is a depth of 8 feet for the installation of retaining wall footings.



SOURCE: Nearmap, 2020.

Santa Gertrudis Trail Phase II Undercrossing

Figure 4
Area of Potential Effects

ESA

Setting

Natural Setting

The APE is situated along the southeastern bank of a channelized segment of Santa Gertrudis Creek. Santa Gertrudis Creek is a northeast-southwest trending intermittent drainage that conveys seasonal stormwater and other runoff from nearby streets and surrounding residential subdivision. The creek converges with Murrieta Creek approximately 1.6 miles southwest of the APE and Murrieta Creek continues for another 3.5 miles before converging with the Santa Margarita River, which continues for approximately 29 river miles before reaching the Pacific Ocean at Marine Corps Base Camp Pendleton in San Diego County. Vegetation within the APE and its immediate vicinity include annual grasses and forbs, Goodding's willow-sandbar willow riparian woodland/forest, and hardstem bulrush marsh (ESA, 2021).

The APE's vicinity is dominated by commercial and residential development. Residential subdivisions are present northwest and across the creek from the APE, and commercial development including grocery and drug stores bound the APE's southeastern margin.

Prehistoric Setting

The chronology of coastal southern California is typically divided into three general time periods: the Early Holocene (11,000 to 8,000 Before Present [B.P.]), the Middle Holocene (8,000 to 4,000 B.P.), and the Late Holocene (4,000 B.P. to A.D. 1769). Within this timeframe, the archaeology of southern California is generally described in terms of cultural "complexes." A complex is a specific archaeological manifestation of a general mode of life, characterized archaeologically by particular technologies, artifacts, economic systems, trade relationships, burial practices, and other aspects of culture.

Early Holocene (11,000 to 8,000 B.P.)

While it is not certain when humans first came to California, their presence in southern California by about 11,000 B.P. has been well documented. At Daisy Cave, on San Miguel Island, cultural materials have been radiocarbon dated to between 11,100 and 10,950 years B.P. (Byrd and Raab, 2007). On the mainland, radiocarbon evidence confirms occupation of the Orange County and San Diego County coast by about 9,000 B.P., primarily in lagoon and river valley locations (Gallegos, 2002). In western Riverside County, few Early Holocene sites are known to exist. One exception is site CA-RIV-2798, which contains deposits dating to as early as 8,580 cal. B.P. (Grenda, 1997). During the Early Holocene, the climate of southern California became warmer and more arid and the human population, residing mainly in coastal or inland desert areas, began exploiting a wider range of plant and animal resources (Byrd and Raab, 2007).

The primary Early Holocene cultural complex in coastal southern California was the San Dieguito Complex, occurring between approximately 10,000 and 8,000 B.P. The people of the San Dieguito Complex inhabited the chaparral zones of southwestern California, exploiting the plant and animal resources of these ecological zones (Warren, 1967). Leaf-shaped and large-

stemmed projectile points, scraping tools, and crescentics are typical of San Dieguito Complex material culture.

Middle Holocene (8,000 to 4,000 B.P.)

During the Middle Holocene, there is evidence for the processing of acorns for food and a shift toward a more generalized economy in coastal and inland southern California. The processing of plant foods, particularly acorns, increased, a wider variety of animals were hunted, and trade with neighboring regions intensified (Byrd and Raab, 2007).

The Middle Holocene La Jolla Complex (8,000–4,000 B.P.) is essentially a continuation of the San Dieguito Complex. La Jolla groups lived in chaparral zones or along the coast, often migrating between the two. Coastal settlement focused around the bays and estuaries of coastal Orange and San Diego Counties. La Jolla peoples produced large, coarse stone tools, but also produced well-made projectile points and milling slabs. The La Jolla Complex represents a period of population growth and increasing social complexity, and it was also during this time period that the first evidence of the exploitation of marine resources and the grinding of seeds for flour, as indicated by the abundance of millingstones in the archaeological record, appears (Byrd and Raab, 2007).

Contemporary with the La Jolla Complex, the Pauma Complex has been defined at inland sites in San Diego and Riverside Counties (True, 1958). The Pauma Complex is similar in technology to the La Jolla Complex; however, evidence of coastal subsistence is absent from the Pauma Complex sites (Moratto, 1984). The Pauma and La Jolla Complexes may either be indicative of separate inland and coastal groups with similar subsistence and technological adaptations, or, alternatively, may represent inland and coastal phases of one group's seasonal rounds. The latter hypothesis is supported by the lack of hidden and deeply buried artifacts at Pauma sites, indicating that these sites may have been temporary camps for resource gathering and processing.

Late Holocene (4,000 B.P. to A.D. 1769)

During the Late Holocene, native populations of southern California were becoming less mobile and populations began to gather in small sedentary villages with satellite resource-gathering camps (Byrd and Raab, 2007). Evidence indicates that the overexploitation of larger, high-ranked food resources may have led to a shift in subsistence towards a focus on acquiring greater amounts of smaller resources, such as shellfish and small-seeded plants (Byrd and Raab, 2007).

Around 1,000 B.P., an episode of sustained drought, known as the Medieval Climatic Anomaly (MCA), occurred. While the effects of this environmental change on prehistoric populations are still being debated, it did likely lead to changes in subsistence strategies in order to deal with the substantial stress on resources (Jones and Schwitalla, 2008). In coastal southern California, beginning before the MCA but possibly accelerated by it, conditions became drier and many lagoons had been transformed into saltwater marshes. Because of this, populations abandoned coastal mesa and ridge tops to settle nearer to permanent freshwater resources (Gallegos, 2002).

Although the intensity of trade had already been increasing, it reached its zenith in the Late Holocene, with asphaltum (tar), seashells and steatite being traded from southern California to the Great Basin. Major technological changes appeared as well, particularly with the advent of the bow and arrow, which largely replaced the use of the dart and atlatl (Byrd and Raab, 2007). Small projectile points, ceramics, including Tizon brownware pottery, and obsidian from Obsidian Butte (Imperial County), are all representative artifacts of the Late Holocene.

It has been postulated that as early as 3,500 B.P., a Takic-speaking people arrived in coastal Los Angeles and Orange counties, having migrated west from inland desert regions (Kroeber, 1925; Sutton, 2009; Warren, 1967). By around 1,500 to 1,000 B.P., Takic language and cultures had spread to the south and inland to the east. These new arrivals, linguistically and culturally different from earlier coastal populations, may have brought new settlement and subsistence systems with them, along with other new cultural elements. This migration has been postulated as being a factor in several of the significant changes in material culture seen in the Late Holocene (such as the use of smaller projectile points and pottery), as well as the introduction of cremation as a burial practice.

Alternatively, Shaul (2014) has postulated an origin of the Proto Uto Aztecan Language, an antecedent to Uto Aztecan language family of with the Takic language is a branch, in the southern portion of California's Central Valley as early as the Middle Holocene, with groups expanding into southern California and the Great Basin over time. Schaul's (2014) hypothesis is based on linguistic data, including loan words between Uto Aztecan and non-Uto Aztecan groups, as well as archaeological evidence in the form of Olivella grooved rectangular beads. Based on these lines of evidence, Shaul (2014) has hypothesized that peoples speaking Uto Aztecan languages have been present in California from at least 4,200 to 5,200 B.P.

The San Luis Rey culture (divided into San Luis Rey I [AD 1400 to 1750] and San Luis Rey II [AD 1750 to 1850]) represented the Late Period in southwestern Riverside County and northern San Diego County (Moratto, 1984). San Luis Rey I village sites contain manos (hand stones), metates (grinding slabs), bedrock mortars, shell artifacts, and triangular arrow points. In addition to these features, San Luis Rey II sites are characterized by the presence of pottery, pictographs, and the cremation of the dead (Moratto, 1984).

San Luis Rey settlement patterns in the upper San Luis Rey River drainage are typified by seasonally occupied lowland villages located in proximity to water sources, and highland villages occupied in the late summer and fall for acorn collection (True and Waugh, 1982). However, settlement patterns within southwestern Riverside County are less well known. The available information, stemming primarily from survey data, indicates that four primary site types existed within the region during the Late Period: field camps, resource procurement locations, residential bases, and villages (Mason, 1999). Resource procurement locations and field camps, the most common site types, contain a limited assemblage of artifacts and subsistence remains, primarily lithic debitage, some tools, fire affected rock, and small amounts of animal bones and charred seeds and nuts. This indicates that these types of sites were used primarily for focused activities and short-term occupancy.

Villages and residential bases, on the other hand, show evidence for long-term occupation by large groups of people. Villages were occupied year-round, while residential bases were occupied seasonally. Artifacts and features found at both villages and residential bases, including large amounts of faunal and botanical remains, numerous high-quality tools, fire-affected rock, and anthrosols, indicate a wide range of activities (Mason, 1999). Bedrock mortars point to the processing of seeds and acorns, and ceremonial activities are evidenced by the presence of pictographs, petroglyphs, and cupules within village sites.

The pre-contact Luiseño village of Teméku has a long rich documented history, and is comprised of over 30 sites located along Temecula Creek representing thousands of years of continuous occupation in the Valley. Masiel-Zamora (2015) indicates that the oldest components of Teméku date to at least 6,000 B.P. as obtained through by obsidian hydration dating.

Ethnographic Setting

Native Americans living in the APE's vicinity at the time of Spanish contact are now known as the Luiseño, after the Mission San Luis Rey to which many of them were relocated. The language of the Luiseño people has been identified as belonging to the Cupan group of the Takic subfamily, which is part of the larger Uto-Aztecan language family (Bean and Shipek, 1978). Luiseño territory was bordered by Agua Hedionda Creek on the south and Aliso Creek on the northwest, encompassed most of the drainage of the San Luis Rey River and the Santa Margarita River, and extended east as far as the San Jacinto Mountains (Kroeber, 1925). Today this area is located within northern San Diego, southern Orange, and Riverside Counties, and would have encompassed a diverse environment including lagoons and marshes, coastal areas, inland river valleys, foothills, and mountains. The neighbors of the Luiseño to the north and northwest were the Juaneño, Gabrielino, and Serrano; to the east were the Cahuilla and Cupeño; and to the south were the Kumeyaay.

The Luiseño subsisted on small game, coastal marine resources, and a wide variety of plant foods such as grass seeds and acorns. Luiseño houses were conical thatched reed, brush, or bark structures. The Luiseño inhabited permanent villages centered around patrilineal clans, with each village headed by a chief, or *not* (Kroeber, 1925; Sparkman, 1908). Seasonal camps associated with villages were also used. Each village or clan had an associated territory and hunting, collecting, and fishing areas. Villages were typically located in proximity to a food or water source, or in defensive locations, often near valley bottoms, streams, sheltered coves or canyons, or coastal strands (Bean and Shipek, 1978). It is estimated that there may have been around 50 Luiseño villages with a population of about 200 each at the time of the first Spanish contact (Bean and Shipek, 1978).

Today, there are six federally recognized tribes in California who share Luiseño tribal affiliation, language, and culture, including the La Jolla, Rincon, Pauma, Pechanga, Pala, and Soboba. The Pechanga Band of Luiseño Indians (Pechanga) is historically and currently affiliated with the APE.

Luiseño Origin Narrative

Of great importance to the Pechanga Tribe, and relevant to the current Project, is the Luiseño creation story, which tells how the world came into being. The creation story is embodied in the Luiseño Ancestral Origin Landscape, a National Register of Historic Places (National Register)-listed Traditional Cultural Property located primarily in southwest Riverside County near the City of Temecula, with a small portion in San Diego County. The landscape covers 8.39 square miles, and its boundary has been identified based on oral tradition and ethnographic literature. As detailed in the National Register listing, the property represents the landscape where the Creation of the World occurred and where the *Káamalam*, or Luiseño First People, lived. The landscape identifies the place of Luiseño origins, the beginning of the world, and the place where *Wuyóot*, one of the first born and a prophet to the *Káamalam*, instructed the people on how to live and gave them their religious songs and ceremonies that are still practiced today. There are 28 mostly intact resources located within the boundary of the landscape, which include sacred rock formations, rock art, and village sites. As one of the most sacred areas for all Luiseño People, the landscape is associated in oral historical accounts with the founding of the tribe, with the cultural traditions of the Pechanga and larger Luiseño community, and with the tribal prophet *Wuyóot* and tribal leader *Naxáchish*.

Historic Setting

The first European presence in what is now southern California came in 1542, when Juan Rodriguez Cabrillo led an expedition along the coast. Europeans did not return until 1769, when the expedition of Gaspar de Portolá traveled overland from San Diego to San Francisco. The Riverside County area received its first European visitors during the early and mid-1770s, shortly after the beginning of Spanish colonization of Alta California in 1769. The first known European to set foot in this area was a Franciscan padre, Father Juan Norberto de Santiago, who traveled into the Temecula Valley in October 1797. Santiago was on an expedition out of Mission San Juan Capistrano seeking a site for a new mission. With his party of seven soldiers, he came upon what is now Lake Elsinore, and then traveled southward through the Temecula Valley and on to the Pacific Ocean (City of Temecula, 2012).

In the late 18th century, the Spanish began establishing missions in California and forcibly relocating and converting native peoples. Mission San Juan Capistrano was founded approximately 30 miles west of the APE in 1776. In 1798, Father Juan Norberto de Santiago founded the Mission of San Luis Rey de Francia, approximately 23 miles to the southwest of the APE. Throughout California, disease and hard labor took a toll on the native populations; by 1900, the Native Californian population had declined by over 90 percent (Cook, 1978). In addition, native economies were disrupted, trade routes were interrupted, and native ways of life were significantly altered.

Mexican and European ranchers began settling in the Temecula Valley in the late 18th century. Nearer to the APE, the smaller *asistencia* San Antonio de Pala, about 10 miles southeast of Temecula, was founded in 1816 (Van Horn, 1974). In 1821, Mexico, which included much of present-day California, became independent from Spain, and during the 1820s and 1830s, the

California missions were secularized. Mission property, although it was supposed to have been held in trust for the Native Californians, was handed over to civil administrators and then into private ownership. After secularization, many former Mission Indians were forced to leave the Missions and seek employment as laborers, ranch hands, or domestic servants (Horne and McDougall, 2003).

Locally, three land grants were awarded during the Mexican period. The 26,608-acre Temecula Rancho, which included the APE along with much of the Temecula and Murrieta valleys, was deeded to Felix Valdez in 1844. The 26,597-acre Pauba Rancho was awarded to Vicente Moraga the same year. In 1845, the 2,283-acre Little Temecula Rancho was granted to Pablo Apis, a Luiseño Indian. The Little Temecula Rancho encompassed some of the most fertile land in the Temecula Valley, and was strategically situated on a trail between San Diego and northern regions (Van Horn, 1974).

In 1848, gold was discovered in California, leading to a huge influx of people from other parts of North America, and in 1850, California became part of the United States of America. The opening of the Butterfield Overland Mail route in 1858, and later the California Southern Railroad line in 1882 greatly increased the number of people coming to southern California (Helmich, 2008; Lowell, 1985).

The major travel corridor through Temecula in the 19th century was known as the Southern Emigrant Trail, and was the primary route by which prospectors and other immigrants travelled to and through California (Brigandi, 2012). In addition, the trail became the route for the Butterfield Overland Mail from 1858 to 1861. The stage company established a stop in Temecula at Louis Wolf's store, which was then the center of the village of Temecula. Temecula's first post office was established in 1859 at the stage stop (Brigandi, 2012).

In 1875, the Teméku people were evicted from their traditional lands. The Pechanga Reservation was established on June 27, 1882 under Executive Order by President Chester A. Arthur. The name is derived from a spring at the foot of the mountain named Pechaq (PEH-chaq), which means "water is dripping" (Woodward, n.d.) Due to lack of water, farming on the reservation was difficult and making a living was a challenge. In the early 1900s several families moved away from Pechanga to find work. In 1906, U.S. Indian Commissioner C.E. Kelsey proposed acquisition of additional farmland for the Pechanga Reservation. In 1907, the U.S. government purchased 235 acres of adjacent land that came to be known as the Kelsey Tract. The Pechanga people dug a well and installed a windmill-powered pump to facilitate irrigation of agricultural lands (Pechanga Band of Luiseño Indians, 2017).

In 1880, construction began on the California Southern Railroad, which would eventually connect San Diego with the Santa Fe railroad line through the Cajon Pass, by way of Temecula. The railroad established a new Temecula town site across the creek from the railroad tracks, about 3.5 miles to the northwest of the old town. Drawn by the prospect of direct access to the railroad, most residents relocated to the new town site. The railroad also helped to create a granite quarrying industry, which flourished in the late 19th century (Brigandi, 2012). However, the tracks through Temecula Canyon were washed out in a flood in 1891, and never rebuilt.

In 1893, following a period of conflict and discontent between the cities of Riverside and San Bernardino, portions of the Temecula and San Jacinto Valleys, which were then in San Diego County, joined with the City of Riverside in the formation of the new Riverside County (Horne and McDougall, 2003).

Until the 1960s, the Temecula Valley was part of the Vail Ranch and was used primarily for cattle ranching and agriculture. However, the last years of the 1960s and early 1970s witnessed the beginnings of dramatic change in the Temecula Valley as the area began to experience its growth as an urban area. This urban growth continued through the area's incorporation as a City in December 1989 into the present time. Wine production in Temecula began in the late 20th century as well. The first vineyards were planted in the late 1960s and today several dozen wineries can be found throughout the area (Brigandi, 2012).

Regulatory Framework

Numerous laws and regulations require federal, state, and local agencies to consider the effects a project may have on cultural resources. These laws and regulations stipulate a process for compliance, define the responsibilities of the various agencies proposing the action, and prescribe the relationship among other involved agencies.

Federal

National Historic Preservation Act

The principal federal law addressing historic properties is the National Historic Preservation Act (NHPA), as amended (54 United States Code of Laws [USC] 300101 et seq.), and its implementing regulations (36 CFR Part 800). Section 106 requires a federal agency with jurisdiction over a proposed federal action (referred to as an "undertaking" under the NHPA) to take into account the effects of the undertaking on historic properties, and to provide the Advisory Council on Historic Preservation (ACHP) an opportunity to comment on the undertaking.

The term "historic properties" refers to "any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the National Register" (36 CFR Part 800.16(*l*)(1)). The implementing regulations (36 CFR Part 800) describe the process for identifying and evaluating historic properties, for assessing the potential adverse effects of federal undertakings on historic properties, and seeking to develop measures to avoid, minimize, or mitigate adverse effects. The Section 106 process does not require the preservation of historic properties; instead, it is a procedural requirement mandating that federal agencies take into account effects to historic properties from an undertaking prior to approval.

The steps of the Section 106 process are accomplished through consultation with the State Historic Preservation Officer (SHPO), federally-recognized Indian tribes, local governments, and other interested parties. The goal of consultation is to identify potentially affected historic properties, assess effects to such properties, and seek ways to avoid, minimize, or mitigate any adverse effects on such properties. The agency also must provide an opportunity for public involvement (36 CFR 800.1(a)). Consultation with Indian tribes regarding issues related to

Section 106 and other authorities (such as NEPA and Executive Order No. 13007) must recognize the government-to-government relationship between the Federal government and Indian tribes, as set forth in Executive Order 13175, 65 FR 87249 (Nov. 9, 2000), and Presidential Memorandum of Nov. 5, 2009.

National Register of Historic Places

The National Register of Historic Places (National Register) was established by the NHPA of 1966, as "an authoritative guide to be used by federal, State, and local governments, private groups and citizens to identify the Nation's historic resources and to indicate what properties should be considered for protection from destruction or impairment" (36 CFR 60.2) (U.S. Department of the Interior, 2002). The National Register recognizes a broad range of cultural resources that are significant at the national, state, and local levels and can include districts, buildings, structures, objects, prehistoric archaeological sites, historic-period archaeological sites, traditional cultural properties, and cultural landscapes. As noted above, a resource that is listed in or eligible for listing in the National Register is considered "historic property" under Section 106 of the NHPA.

To be eligible for listing in the National Register, a property must be significant in American history, architecture, archaeology, engineering, or culture. Properties of potential significance must meet one or more of the following four established criteria:

A. Are associated with events that have made a significant contribution to the broad patterns of our history;

B. Are associated with the lives of persons significant in our past;

C. Embody the distinctive characteristics of a type, period, or method of construction or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or

D. Have yielded, or may be likely to yield, information important in prehistory or history.

In addition to meeting one or more of the criteria of significance, a property must have integrity. Integrity is defined as "the ability of a property to convey its significance" (U.S. Department of the Interior, 2002). The National Register recognizes seven qualities that, in various combinations, define integrity. The seven factors that define integrity are location, design, setting, materials, workmanship, feeling, and association. To retain historic integrity a property must possess several, and usually most, of these seven aspects. Thus, the retention of the specific aspects of integrity is paramount for a property to convey its significance.

Ordinarily religious properties, moved properties, birthplaces or graves, cemeteries, reconstructed properties, commemorative properties, and properties that have achieved significance within the past 50 years are not considered eligible for the National Register unless they meet one of the Criteria Considerations (A-G), in addition to meeting at least one of the four significance criteria and possessing integrity (U.S. Department of the Interior, 2002).

State

California Environmental Quality Act

CEQA is the principal statute governing environmental review of projects occurring in the state and is codified at *Public Resources Code (PRC) Section 21000 et seq.* CEQA requires lead agencies to determine if a proposed project would have a significant effect on the environment, including significant effects on historical or unique archaeological resources. Under CEQA (Section 21084.1), a project that may cause a substantial adverse change in the significance of an historical resource is a project that may have a significant effect on the environment.

The *CEQA Guidelines* (Title 14 California Code of Regulations [CCR] Section 15064.5) recognize that historical resources include: (1) a resource listed in, or determined to be eligible by the State Historical Resources Commission, for listing in the California Register of Historical Resources (California Register); (2) a resource included in a local register of historical resources, as defined in PRC Section 5020.1(k) or identified as significant in a historical resource survey meeting the requirements of PRC Section 5024.1(g); and (3) any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California by the lead agency, provided the lead agency's determination is supported by substantial evidence in light of the whole record. The fact that a resource does not meet the three criteria outlined above does not preclude the lead agency from determining that the resource may be an historical resource as defined in PRC Sections 5020.1(j) or 5024.1.

If a lead agency determines that an archaeological site is a historical resource, the provisions of Section 21084.1 of CEQA and Section 15064.5 of the *CEQA Guidelines* apply. If an archaeological site does not meet the criteria for a historical resource contained in the *CEQA Guidelines*, then the site may be treated in accordance with the provisions of Section 21083, which is as a unique archaeological resource. As defined in Section 21083.2 of CEQA a "unique" archaeological resource is an archaeological artifact, object, or site, about which it can be clearly demonstrated that without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

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

If an archaeological site meets the criteria for a unique archaeological resource as defined in Section 21083.2, then the site is to be treated in accordance with the provisions of Section 21083.2, which state that if the lead agency determines that a project would have a significant effect on unique archaeological resources, the lead agency may require reasonable efforts be

made to permit any or all of these resources to be preserved in place (Section 21083.1(a)). If preservation in place is not feasible, mitigation measures shall be required. The *CEQA Guidelines* note that if an archaeological resource is neither a unique archaeological nor a historical resource, the effects of the project on those resources shall not be considered a significant effect on the environment (*CEQA Guidelines* Section 15064.5(c)(4)).

A significant effect under CEQA would occur if a project results in a substantial adverse change in the significance of a historical resource as defined in *CEQA Guidelines* Section 15064.5(a). Substantial adverse change is defined as "physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of a historical resource would be materially impaired" (*CEQA Guidelines* Section 15064.5(b)(1)). According to *CEQA Guidelines* Section 15064.5(b)(2), the significance of a historical resource is materially impaired when a project demolishes or materially alters in an adverse manner those physical characteristics that:

A. Convey its historical significance and that justify its inclusion in, or eligibility for, inclusion in the California Register; or

B. Account for its inclusion in a local register of historical resources pursuant to section 5020.1(k) of the Public Resources Code or its identification in a historical resources survey meeting the requirements of section 5024.1(g) of the Public Resources Code, unless the public agency reviewing the effects of the project establishes by a preponderance of evidence that the resource is not historically or culturally significant; or

C. Convey its historical significance and that justify its eligibility for inclusion in the California Register as determined by a Lead Agency for purposes of CEQA.

In general, a project that complies with the *Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings* (Standards) (Grimmer, 2017) is considered to have mitigated its impacts to historical resources to a less-than-significant level (*CEQA Guidelines* Section 15064.5(b)(3)).

California Register of Historical Resources

The California Register is "an authoritative listing and guide to be used by State and local agencies, private groups, and citizens in identifying the existing historical resources of the State and to indicate which resources deserve to be protected, to the extent prudent and feasible, from substantial adverse change" (PRC Section 5024.1[a]). The criteria for eligibility for the California Register are based upon National Register criteria (PRC Section 5024.1[b]). Certain resources are determined by the statute to be automatically included in the California Register, including California properties formally determined eligible for, or listed in, the National Register.

To be eligible for the California Register, a prehistoric or historic-period property must be significant at the local, state, and/or federal level under one or more of the following four criteria:

1. Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;

2. Is associated with the lives of persons important in our past;
3. Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or
4. Has yielded, or may be likely to yield, information important in prehistory or history.

A resource eligible for the California Register must meet one of the criteria of significance described above, and retain enough of its historic character or appearance (integrity) to be recognizable as a historical resource and to convey the reason for its significance. It is possible that a historic resource may not retain sufficient integrity to meet the criteria for listing in the National Register, but it may still be eligible for listing in the California Register.

Additionally, the California Register consists of resources that are listed automatically and those that must be nominated through an application and public hearing process. The California Register automatically includes the following:

- California properties listed on the National Register and those formally determined eligible for the National Register;
- California Registered Historical Landmarks from No. 770 onward; and,
- Those California Points of Historical Interest that have been evaluated by the OHP and have been recommended to the State Historical Commission for inclusion on the California Register.

Other resources that may be nominated to the California Register include:

- Historical resources with a significance rating of Category 3 through 5 (those properties identified as eligible for listing in the National Register, the California Register, and/or a local jurisdiction register);
- Individual historical resources;
- Historical resources contributing to historic districts; and,
- Historical resources designated or listed as local landmarks, or designated under any local ordinance, such as an historic preservation overlay zone.

California Health and Safety Code Section 7050.5

California Health and Safety Code Section 7050.5 requires that in the event human remains are discovered, the County Coroner be contacted to determine the nature of the remains. In the event the remains are determined to be Native American in origin, the Coroner is required to contact the NAHC within 24 hours to relinquish jurisdiction.

California Public Resources Code Section 5097.98

California PRC Section 5097.98, as amended, provides procedures in the event human remains of Native American origin are discovered during project implementation. PRC Section 5097.98 requires that no further disturbances occur in the immediate vicinity of the discovery, that the

discovery is adequately protected according to generally accepted cultural and archaeological standards, and that further activities take into account the possibility of multiple burials. PRC Section 5097.98 further requires the NAHC, upon notification by a County Coroner, designate and notify a Most Likely Descendant (MLD) regarding the discovery of Native American human remains. The MLD has 48 hours from the time of being granted access to the site by the landowner to inspect the discovery and provide recommendations to the landowner for the treatment of the human remains and any associated grave goods.

In the event that no descendant is identified, or the descendant fails to make a recommendation for disposition, or if the land owner rejects the recommendation of the descendant, the landowner may, with appropriate dignity, reinter the remains and burial items on the property in a location that will not be subject to further disturbance.

California Government Code Sections 6254(r) and 6254.10

These sections of the California Public Records Act were enacted to protect archaeological sites from unauthorized excavation, looting, or vandalism. Section 6254(r) explicitly authorizes public agencies to withhold information from the public relating to "Native American graves, cemeteries, and sacred places maintained by the Native American Heritage Commission." Section 6254.10 specifically exempts from disclosure requests for "records that relate to archaeological site information and reports, maintained by, or in the possession of the Department of Parks and Recreation, the State Historical Resources Commission, the State Lands Commission, the Native American Heritage Commission, another state agency, or a local agency, including the records that the agency obtains through a consultation process between a Native American tribe and a state or local agency."

Assembly Bill 52 and Related Public Resources Code Sections

Assembly Bill (AB) 52 was approved by California State Governor Edmund Gerry "Jerry" Brown, Jr. on September 25, 2014. The act amended California PRC Section 5097.94, and added PRC Sections 21073, 21074, 21080.3.1, 21080.3.2, 21082.3, 21083.09, 21084.2, and 21084.3. AB 52 applies specifically to projects for which a Notice of Preparation (NOP) or a Notice of Intent to Adopt a Negative Declaration or Mitigated Negative Declaration (MND) will be filed on or after July 1, 2015. The primary intent of AB 52 was to include California Native American Tribes early in the environmental review process and to establish a new category of resources related to Native Americans that require consideration under CEQA, known as tribal cultural resources. PRC Section 21074(a)(1) and (2) defines tribal cultural resources as "sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American Tribe" that are either included or determined to be eligible for inclusion in the California Register or included in a local register of historical resources, or a resource that is determined to be a tribal cultural resource by a lead agency, in its discretion and supported by substantial evidence. On July 30, 2016, the California Natural Resources Agency adopted the final text for tribal cultural resources update to Appendix G of the CEQA Guidelines, which was approved by the Office of Administrative Law on September 27, 2016.

PRC Section 21080.3.1 requires that within 14 days of a lead agency determining that an application for a project is complete, or a decision by a public agency to undertake a project, the lead agency provide formal notification to the designated contact, or a tribal representative, of California Native American Tribes that are traditionally and culturally affiliated with the geographic area of the project (as defined in PRC Section 21073) and who have requested in writing to be informed by the lead agency (PRC Section 21080.3.1(b)). Tribes interested in consultation must respond in writing within 30 days from receipt of the lead agency's formal notification and the lead agency must begin consultation within 30 days of receiving the tribe's request for consultation (PRC Sections 21080.3.1(d) and 21080.3.1(e)).

PRC Section 21080.3.2(a) identifies the following as potential consultation discussion topics: the type of environmental review necessary; the significance of tribal cultural resources; the significance of the project's impacts on the tribal cultural resources; project alternatives or appropriate measures for preservation; and mitigation measures. Consultation is considered concluded when either: (1) the parties agree to measures to mitigate or avoid a significant effect, if a significant effect exists, on a tribal cultural resource; or (2) a party, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached (PRC Section 21080.3.2(b)).

If a California Native American tribe has requested consultation pursuant to Section 21080.3.1 and has failed to provide comments to the lead agency, or otherwise failed to engage in the consultation process, or if the lead agency has complied with Section 21080.3.1(d) and the California Native American tribe has failed to request consultation within 30 days, the lead agency may certify an EIR or adopt an MND (PRC Section 21082.3(d)(2) and (3)).

PRC Section 21082.3(c)(1) states that any information, including, but not limited to, the location, description, and use of the tribal cultural resources, that is submitted by a California Native American tribe during the environmental review process shall not be included in the environmental document or otherwise disclosed by the lead agency or any other public agency to the public without the prior consent of the tribe that provided the information. If the lead agency publishes any information submitted by a California Native American tribe during the consultation or environmental review process, that information shall be published in a confidential appendix to the environmental document unless the tribe that provided the information consents, in writing, to the disclosure of some or all of the information to the public.

Local

City of Temecula General Plan

The City of Temecula's General Plan, Open Space/Conservation Element (2005), contains the following cultural resources goals, policies, and implementation programs relevant to this Project:

Goal 6: Preservation of significant historical and cultural resources.

Policy 6.1: Maintain an inventory of areas with archaeological/paleontological sensitivity, and historic sites in the Planning Area.

Policy 6.3: Preserve and reuse historical buildings in accordance with the OTSP.

Policy 6.2: Work to preserve or salvage potential archeological and paleontological resources on sites proposed for future development through the development review and mitigation monitoring processes.

Policy 6.4: Assist property owners in seeking State and/or federal registration and appropriate zoning for historic sites and assets.

Policy 6.5: Pursue the acquisition and preservation of historical buildings for public facilities in accordance with the Old Town Specific Plan when appropriate.

Policy 6.6: Ensure compatibility between land uses and building designs in the Old Town Specific Plan Area and areas adjacent to Old Town.

Policy 6.7: Encourage use of California's Historic Building Code when preserving/rehabilitating historic structures.

Policy 6.8: Support an integrated approach to historic preservation in coordination with other affected jurisdictions, agencies, and organizations for areas within the Planning Area and surrounding region that seeks to establish linkages between historic sites or buildings with other historic features such as roads, trails, ridges, and seasonal waterways.

Policy 6.9: Encourage the preservation and re-use of historic structures, landscape features, roads, landmark trees, and trails.

Policy 6.10: Work with the Pechanga Band of Luiseño Indians to identify and appropriately address cultural resources and tribal sacred sites through the development review process.

Policy 6.11: Encourage voluntary landowner efforts to protect cultural resource and tribal sacred sites consistent with State requirements.

Implementation Procedures

The following implementation procedures from the Open Space Element of the City of Temecula General Plan are also relevant to the protection of historic resources:

OS-27: Historic Preservation Program

Continue to implement a historic preservation ordinance in the Old Town area to protect historically significant buildings, sites, road/trails, and other landscape elements, and to encourage their reuse, where appropriate. Consider adopting an ordinance to address preservation of other historic resources. Encourage owners of local sites to apply for recognition in the State Historic Resources Inventory, as Riverside County Landmarks, as State Points of Historic Interest, as State Landmarks, and as sites on the National Register of Historic Places, as deemed necessary.

OS-39: Tribal Cultural Resources

Development projects proposed on previously undeveloped property which involve earth-disturbing activities or which are located in areas with previously identified cultural resources need to comply with the following requirements to appropriately address tribal cultural resources:

- All projects shall be evaluated by a qualified archeologist by conducting a site records search, and if feasible, a Phase I walkover survey, and if necessary, a Phase II survey prior to project approval to identify the potential for the presence of significant cultural resources.
- If significant resources are located on the project site, or a high probability for cultural resources exists, the Pechanga Band of Luiseño Indians shall be consulted in the identification of mitigation measures to address impacts consistent with State requirements, including provisions to address inadvertent discoveries.
- During on-site grading activities in areas with cultural resources, or with a high potential for cultural resources, a qualified archeologist and tribal monitors shall be on-site to monitor grading operations.
- In the event of the discovery of a burial site, human bone or suspected human bone, grading in the immediate area shall be immediately halted, the site protected, and the County Coroner and representatives from Pechanga Band of Luiseño Indians notified.

Archival Research

EIC Records Search

A records search for the Project was conducted on May 4, 2021 at the California Historical Resources Information System (CHRIS) Eastern Information Center (EIC) housed at University of California, Riverside. The records search included a review of all recorded cultural resources and previous studies within the APE and a 1-mile radius of the APE. It is important to note, too, that, due to restrictions imposed by the EIC's response to the COVID-19 pandemic, an in-person records search was not possible and the EIC provided baseline results only. This included maps of cultural resources studies and DPR site record forms within the 1-mile search area.

Previous Cultural Resources Investigations

The records search results indicate that 49 cultural resources studies have been conducted within a 1-mile radius of the APE (**Table 1**). Approximately 75 percent of the 1-mile records search radius has been included in previous cultural resources surveys. Of the 49 previous studies, eight (RI-01048, -01865, -02241, -02431, -02614, -03611, -08390, and -09257) overlap the APE. The entirety of the APE has been included in previous cultural resources studies.

TABLE 1
PREVIOUS CULTURAL RESOURCES INVESTIGATIONS

Author	EIC No. (RI-)	Title	Date
Anonymous	08796	*Telecommunications Facility Project*	2012
Bissell, Ronald M.	02613	*Letter Report: Archaeological and Paleontological Monitoring of Phase I Grading, Temecula Mall, Temecula, California*	1997
Boner, Wayne and Sara Williams	08304	*Letter Report: Cultural Resources Records Search and Site Visit Results for T-Mobile USA Candidate IE25826A, (Day Street Plaza) 26674 Margarita Road, Murrieta, Riverside County, California*	2009
Bonner, Wayne and Marnie Aislin-Kay	08116	*Letter Report: Cultural Resource Records Search and Site Visit Results for T-Mobile Communications Candidate IE25826A (Date Street Plaza), Date Street and Margarita Road (26672 Margarita Road), Murrieta, Riverside County, California.*	2008
Bonner, Wayne H.	08956	*Cultural Resources Records Search and Site Visit Results for AT&T Mobility, LLC Candidate RS0393 (Chaparral Self Storage), 27380 Nicholas Road, Temecula, Riverside County California*	2012
Bruce Love, Bai "Tom" Tang, Michael Hogan, and Mariam Dahdul	01049	*Historical/ Archaeological Resources Report: Eli Lilly Property, APNs 921-090-054 and 921-680-010, City of Temecula, Riverside County, California*	2000
Bruce, Bonnie, Sarah A. Williams, and Carrie D. Wills	10858	*Cultural Resources Records Search and Site Visit Results for AT&T Mobility, LLC, Candidate CSL06279(RS0393) [Chaparral High School], 27215 Nicholas Road, Temecula, Riverside County, California, CSAPR 355145992*	2019
Brunzell, David	08387	*Letter Report: Cultural Resources Assessment of the Distributed Antennae Communications System Project in the Cities of Temecula and Murrieta, Riverside County, California (BCR Consulting Project No. SYN0903).*	2009
Brunzell, David	09257*	*Cultural Resources Assessment of the New Path Networks, LLC DAS Project in the Cities of Murrieta and Temecula, Riverside County, California (BCR Consulting Project No. SYN0901)*	2011
Brunzell, David	09520	*Cultural Resources Assessment of the Crown Castle Verizon Temecula DAS Extension Project, Temecula, Riverside County, California (BCR Consulting Project No. SYN 1217)*	2012
Brunzell, David	10137	*Cultural Resources Assessment of Hoehn Audi of Temecula Project, Temecula, Riverside County, California*	2016
Carbone, Lawrence, William	02361	*Cultural and Paleontological Investigations of the Warm Springs Project Riverside County, California*	1987

Author	EIC No. (RI-)	Title	Date
Gilmore, and Kevin Peter			
Christopher W. White	01048*	*Cultural Resource Inventory and Impact Assessment for the KACOR/Rancho California Property*	1980
Drover, C.E.	02081	*Cultural Resources Evaluation -Parcel Map # 19581, Near Temecula, Riverside County, California*	1986
Drover, C.E.	02240	*An Archaeological Assessment of PM 23430, Riverside County, California*	1988
Drover, C.E.	02241*	*An Archaeological Assessment of PM 23335, Riverside County, California*	1988
Drover, C.E.	02242	*An Archaeological Assessment of TP 21819*	1988
Drover, C.E.	02280	*An Archaeological Assessment of Parcel Map 2336 and Zone Change - Riverside County, California*	1988
Drover, C.E.	02431*	*An Archaeological Assessment of the Rancho California Commerce Center, Riverside County, California*	1988
Drover, C.E.	02611	*An Archaeological Assessment of the Campos Verdes Zone Change Riverside County, California*	1989
Drover, C.E.	02612	*An Archaeological Assessment of the Regional Center Specific Plan Riverside County, California*	1989
Drover, C.E.	02614*	*An Archaeological Assessment of the Westchester Meadows Zone Change, Riverside County, California*	1989
Drover, C.E.	02615	*An Archaeological Assessment of the Winchester Hills Specific Plan Riverside County, California*	1989
Drover, C.E.	03121	*The Santa Gertrudis Site: RIV-1730 - A Cultural Resource Mitigation Plan and Implementation - Conditions of Approval, TTM 19677, Temecula, California*	1986
Drover, C.E.	03611*	*A Cultural Resources Assessment, Winchester Properties Assessment District*	1987
Drover, C.E.	03665	*Impact Assessment RIV-1012 Margarita Road at Murrieta Hot Springs Road*	1993
Drover, C.E.	10232	*Cultural Resources Cultural Resource Mitigation Plan: Conditions of Approval; Tentative Parcel Map 19677, Temecula, California*	1985
Duke, Curt	04532	*Letter Report: Cultural Resource Assessment for Cingular Wireless facility No. SD 458-01, Riverside County, California*	2001
Garrison, Andrew J. and Brian F. Smith	10782	*A Phase I Cultural Resources Assessment for the Santa Gertrudis Creek Pedestrian/Bicycle Trail Extension and Interconnect Project*	2019
Gust, Sherri and Amy Glover	08016	*Paleontological And Archaeological Assessment Of The Jackson Avenue Street Improvements And Bridge Project, City of Murrieta, California*	2008
Jacquemain, Terri, Daniel Ballester, and Laura H. Shaker	06829	*Historical/Archaeological Resources Survey Report: Chaparral Village Project, Assessor's Parcel Nos. 920-100-025, -026, -030, and -032, in the City of Temecula, Riverside County, California*	2007
Jones and Stokes Associates, Inc.	04404	*Final Cultural Resources Inventory Report for the Williams Communications, Inc., Fiber Optic Cable System Installation Project, Riverside to San Diego, California Vol. I-IV*	2000
Keller, Jean A.	04064	*A Phase I Cultural Resources Assessment of the Solana Apartments Project Located in Temecula, Riverside County, California*	1996
Keller, Jean A.	04447	*A Phase I Cultural Resources Assessment of the Tentative Tract 28553*	1998
Kyle, Carolyn E.	07042	*Cultural Resources Assessment/Evaluation for Cingular Wireless Site SD462-01, Riverside County, California.*	2001
Mason, Roger D. and Brant A. Brechibiel	06068	*Cultural Resources Records Search and Literature Review for the Watt Homes Property Near The City of Murrieta, Riverside County, CA*	1998
McKenna, Jeanette A.	04321	*A Phase I Cultural Resources Survey of the Medowview Golf Course Property in the Community of Temecula, Riverside County, California*	2000
Peak and Associates and Brian F. Mooney Associates	03189	*Cultural Resources Assessment of AT&T's Proposed San Bernardino to San Diego Fiber Optic Cable, San Bernardino, Riverside and San Diego County, California*	1990
Perez, Don	09636	*Cultural Resources Survey Chaparral Self Storage/RS0393, 27380 Nicholas Road Temecula, Riverside County, California 92591*	2014

Author	EIC No. (RI-)	Title	Date
Robbins-Wade, Mary	04161	*Archaeological Survey for the RCWD EM-20 Pipeline and Turnouts, Ranch California, Riverside County, California*	1999
Roger J. Desautels	01222	*Archaeological Assessment Form (Roripaugh Estates)*	1981
Salpas, Jean A.	01744	*An Archeological and Historical Assessment of the Winchester Mesa Specific Plan Study Area, Riverside County, California*	1983
Sikes, Nancy E.	04687	*Cultural Resources Monitoring During Grading of the Harveston Project (Tract 29639-1), Temecula, Riverside County, California*	2003
Smith, Brian F.	10785	*Cultural Resources Monitoring Report for the Sanborn Avenue Parking Lot Project, Parcel Map [PM] No. 23561*	2018
Tang, Bai, Michael Hogan, Casey Tibbet, and Daniel Ballester	05973	*Historical/Archaeological Resources Survey Report, Rancho Temecula Town Center, in the City of Temecula, Riverside County, CA*	2003
Victorino, Ken and David Stone	08390*	*Archaeological Survey Report Santa Gertrudis Creek Overcrossing LA 080902 Temecula, Riverside County, California.*	2010
Watson, Luke	09659	*County of Riverside Department of Public Social Services Administrative Facility Project*	2016
Whitney-Desautels, Nancy	02320	*Archaeological Assessment Form: Property near Tucalota Creek*	1987
Wilmoth, Stan	01865*	*An Archaeological Assessment of Several Alternative Sites for the New Rancho California Airport, Riverside County, California*	1984

*Indicates study overlaps APE

Previously Recorded Cultural Resources

The records search results indicate six cultural resources have been previously recorded within a 1-mile radius of the APE (**Table 2**). Of these six cultural resources, one is a prehistoric archaeological site consisting of a lithic and groundstone scatter (P-33-001730), and five are prehistoric isolates (P-33-012381, -012382, -012383, -012384, and -012385). None of these previously recorded resources are located within or immediately adjacent to the APE.

TABLE 2
PREVIOUSLY RECORDED CULTURAL RESOURCES

Primary No. (P-33-)	Permanent Trinomial (CA-RIV-)	Descriptions	Dates Recorded	NRHP/CRHR Eligibility	Distance from APE
001730	1730	Prehistoric archaeological site: lithic and groundstone scatter	1979; 1981	Unknown	4,010 feet
012381	-	Prehistoric isolate: two basalt flakes	2003	Unknown	2,450 feet
012382	-	Prehistoric isolate: one metasedimentary core	2003	Unknown	2,615 feet
012383	-	Prehistoric isolate: one piece of obsidian debitage	2003	Unknown	1,830 feet
012384	-	Prehistoric isolate: two bifacial sandstone manos	2003	Unknown	685 feet
012385	-	Prehistoric isolate: one sandstone bifacial mano	2003	Unknown	455 feet

Native American Outreach

Native American outreach was conducted for the Project by ESA in support of USACE's Section 106 consultation process. The outreach conducted by ESA is separate from the AB 52 consultation process being undertaken by the City in support of the IS/MND.

An SLF search for the Project was requested from the NAHC on December 8, 2020. The results letter provided by the NAHC on December 28, 2020 indicates that Native American cultural resources are located in the APE's vicinity, but additional details were not provided. The NAHC recommended contacting the Pechanga Band of Luiseño Indians for more information. The NAHC also provided a list of Native American contacts. ESA conducted outreach with the 20 Native American representatives identified on the list provided by the NAHC.

ESA sent outreach letters via certified mail on January 15, 2021. The letters described the Project and included a map depicting the location of the APE. Recipients were requested to reply with any information concerning Native American cultural resources that might be affected by the proposed Project. Follow-up phone calls were conducted on January 28, 2021. **Table 3** provides a summary of ESA's outreach efforts. Documentation pertaining to Native American outreach is attached as **Appendix B**.

TABLE 3 SUMMARY OF NATIVE AMERICAN OUTREACH

Contact	Tribe/Organization	Date Letter Mailed	Date of Follow-up Phone Call	Response
Angela Elliott Santos, Chairperson	Manzanita Band of Kumeyaay Nation	1/15/2021	1/28/21	Left voicemail. No response to date.
Bo Mazzetti, Chairperson	Rincon Band of Luiseno Indians	1/15/2021	1/28/21	See Ms. Madrigal's response below
Cheryl Madrigal, Tribal Historic Preservation Officer	Rincon Band of Luiseno Indians	1/15/2021	1/28/21	Ms. Madrigal responded in a letter on 1/20/21 stating Rincon is not aware of resources within the APE, but recommended a records search for the Project be conducted and requested the records search results be shared with Rincon
Cody J. Martinez, Chairperson	Sycuan Band of the Kumeyaay Nation	1/15/2021	1/28/21	Spoke with receptionist who recommended, Kristie Orosco, Cultural Resources Manager for Sycuan be called. Called Ms. Orosco at the phone number provided by the receptionist, but was unable to leave a voicemail.
Fred Nelson, Chairperson	La Jolla Band of Luiseno Indians	1/15/2021	1/28/21	Mr. Nelson is no longer a chairperson at La Jolla; transferred to Ms. Norma Contreras, but was unable to leave a voicemail.
Gwendolyn Parada, Chairperson	La Posta Band of Diegueno Mission Indians	1/15/2021	1/28/21	Left voicemail. No response to date.
Javaughn Miller, Tribal Administrator	La Posta Band of Diegueno Mission Indians	1/15/2021	1/28/21	Left voicemail. No response to date
Jeff Grubbe, Chairperson	Agua Caliente Band of Cahuilla Indians	1/15/2021	1/28/21	Left voicemail. No response to date
Jill McCormick, Historic Preservation Officer	Quechan Tribe of the Fort Yuma Reservation	1/15/2021	1/28/21	Ms. McCormick responded in an email on 1/27/21 deferring to tribal groups in closer proximity to the APE
Lovina Redner, Tribal Chair	Santa Rosa Band of Cahuilla Indians	1/15/2021	1/28/21	Left message with receptionist. No response to date.
Mark Macarro, Chairperson	Pechanga Band of Luiseno Indians	1/15/2021	1/28/21	Left voicemail. No response to date.

Contact	Tribe/Organization	Date Letter Mailed	Date of Follow-up Phone Call	Response
Michael Garcia, Vice Chairperson	Ewiiaapaayp Band of Kumeyaay Indians	1/15/2021	1/28/21	Called phone number, but was unable to leave voicemail.
Michael Linton, Chairperson	Mesa Grande Band of Diegueno Mission Indians	1/15/2021	1/28/21	Mr. Linton stated he has no concerns or information regarding the Project.
Patricia Garcia-Plotkin, Director	Agua Caliente Band of Cahuilla Indians	1/15/2021	1/28/21	Arysa Gonzalez-Romero, Historic Preservation Technician, responded in an email stating Agua Caliente defers to tribal groups in closer proximity to the APE.
Ralph Goff, Chairperson	Campo Band of Diegueno Mission Indians	1/15/2021	1/28/21	Mr. Goff is no longer a chairperson at Campo; transferred to new Chairperson,, Mr. Marcus Cuero, but was unable to leave a voicemail.
Robert Pinto, Chairperson	Ewiiaapaayp Band of Kumeyaay Indians	1/15/2021	1/28/21	Called phone number, but was unable to leave voicemail.
San Luis Rey, Tribal Council	San Luis Rey Band of Mission Indians	1/15/2021	1/28/21	Spoke with Cami Mojado, Cultural Resources Manager for San Luis Rey, who stated San Luis Rey defers to the Pechanga regarding the Project.
Scott Cozart, Chairperson	Soboba Band of Luiseno Indians	1/15/2021	1/28/21	Mr. Cozart is no longer a chairperson at Soboba; transferred to Mr. Joe Ontiveros, but was unable to leave a voicemail.
Shasta Gaughen, Tribal Historic Preservation Officer	Pala Band of Mission Indians	1/15/2021	1/28/21	Left voicemail. No response to date
Temet Aguilar, Chairperson	Pauma Band of Luiseno Indians	1/15/2021	1/28/21	Left voicemail. No response to date

As a result of the Native American Outreach, three formal responses were received from the Rincon Band of Luiseño Indians (Rincon), the Quechan Indian Tribe (Quechan), and the Agua Caliente Band of Cahuilla Indians (Agua Caliente). These responses are detailed in the following paragraphs.

In a letter dated January 20, 2021, Cheryl Madrigal, Tribal Historic Preservation Officer and Cultural Resources Manager for Rincon, stated the APE is located within the tribe's specific area of historic interest. Ms. Madrigal stated Rincon does not know of any resources within the APE, but requested a records search for the Project be conducted and requested the results be provided to Rincon.

In an email dated January 27, 2021, Jill McCormick, Historic Preservation Officer for Quechan, stated Quechan defers to tribal groups in closer proximity to the APE regarding the Project.

In an email dated February 3, 2021, Arysa Gonzalez-Romero, Historic Preservation Technician for the Agua Caliente, stated the APE is not located within the tribes Traditional Use Area and that Agua Caliente defers to tribal groups in closer proximity to the APE regarding the Project.

Historic Maps and Aerial Photographs

Historic maps and aerial photographs were examined to provide historical information about land uses of the APE and to contribute to an assessment of the APE's archaeological sensitivity. Available topographic maps include the 1901 Elsinore, CA 30-minute quadrangles, the 1942 Murrieta, CA 15-minute topographic map, and the 1953 Murrieta, CA 7.5-minute topographic

map. Historic aerial photographs were available for the years 1938, 1967, 1978, 1996, 2005, and 2012 (historicaerials.com, 2020).

The topographic maps indicate very little development within the APE during the first half of the 20th century. The 1901 and 1942 topographic maps show the APE on the south side of Santa Gertrudis Creek approximately 650 feet west of a generally northeast-southwest trending road analogous to present-day Highway 79. The 1953 map shows a curved dirt road just north of the APE, but no additional development is indicated.

The 1938 aerial photograph shows the APE within the braided channel of Santa Gertrudis Creek with no development in the immediate vicinity aside from the generally northeast-southwest trending road depicted in the topographic maps, and a northwest-southeast trending road crossing the creek just northeast of the APE. The 1967 and 1978 photographs show Santa Gertrudis Creek has been realigned and bounded in a concrete channel with agricultural fields on both sides of the creek. The 1996 photograph shows Margarita Road crossing the creek, as well as a shopping center immediately southeast of the APE. The 2005 and 2012 photographs show an additional shopping center northeast of the APE, and residential subdivision northwest and across the creek from the APE.

In sum, the historic map and aerial photograph review indicates the portion of Santa Gertrudis Creek that the APE overlaps has been subject to a significant degree of disturbance associated with the construction of a concrete channel sometime prior to 1967 that realigned the creek from a braided channel to a linear channel. As a result, much of the APE is comprised of engineered slopes and surfaces associated with the channeling of the creek.

Subsurface Archaeological Sensitivity

A desktop review of geologic maps and soils data was conducted to assess the potential for subsurface archaeological deposits within the APE. A review of geologic maps indicates late Pleistocene to Holocene-age (126,000 years ago to present) younger alluvial channel deposits (map unit Qya) are mapped at the surface of the APE. These are fluvial deposits comprised of unconsolidated sand, silt, and clay occurring on canyon floors (Kennedy et al., 2003).

Soils mapping indicates soils present within the APE consist of riverwash (map unit RsC) (NRCS, 2020). These soils occur within waterway channels subject to frequent flooding and are comprised of sandy and gravelly alluvium derived from mixed sources. This soils type's typical profile consists of 0 to 6 inches of gravelly coarse sand followed by 6 to 60 inches of stratified extremely gravelly coarse sand to gravelly sand. Soils and sediments within active channel environments are typically re-worked, meaning they are deposited as flood waters or stream flows subside and present for relatively short periods of time following deposition before being eroded away as floodwaters or stream flows increase (Waters, 1992).

As noted in the historic map and aerial review, the APE overlaps a portion of Santa Gertrudis Creek that was channelized sometime prior to 1967, and, therefore, comprised largely of engineered slopes and paved surfaces associated with the channeling of the creek. Channel

construction would have likely displaced any native soils within the APE, reducing the likelihood for encountering undisturbed soils containing subsurface archaeological deposits.

The late Pleistocene to Holocene-age younger alluvial channel deposits mapped at surface in the APE encompass the entirety of human habitation of North America, and are, therefore, of appropriate age to contain subsurface archaeological deposits. However, given the degree of past disturbance associated with the construction of the Santa Gertrudis Creek Channel, the APE has moderate sensitivity for the presence of subsurface archaeological resources.

Cultural Resources Survey

A cultural resources survey of the APE was conducted on May 14, 2021 by ESA cultural resources specialist, Michael Vader, B.A., accompanied by Pechanga Band of Luiseño Indians tribal monitor, Robert Cordova Ringlero. The survey was aimed at identifying cultural resources within or immediately adjacent to the APE. Given the developed nature of the APE, an opportunistic survey strategy was employed to identify undeveloped and open areas of the APE where ground surface was visible. All accessible areas containing visible ground surface were subject to inspection.

Much of the APE is comprised of the existing paved SGCT, paved engineered slopes, vegetated engineered slopes, and the southern margin of the Santa Gertrudis Creek Channel (**Figure 5**). The only portions of the APE containing visible, unpaved ground surface included the vegetated, engineered slopes extending from the SGCT into the channel, as well as relatively flat areas adjacent to the segments of SGCT connecting to the Margarita Road Overcrossing (Figure 5). The vegetated engineered slopes were too steep for survey; however, the unpaved flat areas adjacent to the Margarita Road Overcrossing were subject to intensive inspection. No cultural resources were identified as a result of the survey.

Overview of paved engineered slopes on the southwest side of Margarita Road (view to NE)

Overview of relatively flat area with exposed ground surface (view to SW)

SOURCE : ESA, 2021

Santa Gertrudis Bicycle/Trail Undercrossing at Margarita Road

Figure 5
Survey Photos

Conclusions and Recommendations

No cultural resources were identified within the APE as a result of this assessment. As such, the Project would result in **No Historic Properties Affected** under Section 106 of the NHPA.

As a result of the archival research and cultural resources survey conducted for the Project, no cultural resources have been identified within APE. However, the likelihood for encountering subsurface archaeological deposits within the APE during Project construction is moderate. In the event that subsurface archaeological deposits are encountered during Project implementation, they may qualify as historical resources or unique archaeological resources pursant to CEQA and may subject to significant impacts. As such, the following recommended mitigation measures for the retention of a qualified archaeologist, cultural resources sensitivity training, construction monitoring, and inadvertent discovery protocols are provided below.

1. **Retention of a Qualified Archaeologis**t: Prior to the start of ground-disturbing activities, the City shall retain a qualified archaeologist meeting the Secretary of the Interior's Professional Qualifications Standards for archaeology (U.S. Department of the Interior, 2012) to carry out the following measures.

2. **Construction Worker Cultural Resources Sensitivity Training:** Prior to the start of ground-disturbing activities, construction personnel shall be trained in the identification of cultural resources. Prior to earth moving activities, the qualified archaeologist shall conduct cultural resources sensitivity training for all construction personnel. Construction personnel shall be informed of the types of archaeological resources that may be encountered, and of the proper procedures be to enacted in the event of an inadvertent discovery of archaeological resources or human remains. The City shall ensure that construction personnel are made available for and attend the training and retain documentation demonstrating attendance.

3. **Construction Monitoring:** An archaeological monitor (working under the direction of the qualified archaeologist) shall observe all subsurface ground-disturbing activities. A Native American monitor from the Pechanga Band of Luiseño Indians shall also be present to observe subsurface ground-disturbing activities. The qualified archaeologist, in coordination with the City and Pechanga Band of Luiseño Indians, may reduce or discontinue monitoring if it is determined that the possibility of encountering buried archaeological deposits is low based on observations of soil stratigraphy or other factors. Construction monitoring shall be conducted by an archaeologist familiar with the types of archaeological resources that could be encountered within the project site. The archaeological monitor and Native American monitor, in coordination with the construction manager or resident engineer, shall be empowered to request the halting or redirecting of ground-disturbing activities away from the vicinity of a discovery until the qualified archaeologist has evaluated the discovery and determined appropriate treatment. The archaeological monitor shall keep daily logs detailing the types of activities and soils observed, and any discoveries. After monitoring has been completed, the qualified archaeologist shall prepare a monitoring report that details the results of monitoring. The

report shall be submitted to the City, as well as the Pechanga Band of Luiseño Indians upon request. A copy of the final report shall be filed at the Eastern Information Center

4. **Inadvertent Archeological Finds:** If during ground disturbance activities, unique cultural resources are discovered that were not assessed by the archaeological report(s) and/or environmental assessment conducted prior to project approval, the following procedures shall be followed. Unique cultural resources are defined, for this condition only, as being multiple artifacts in close association with each other, but may include fewer artifacts if the area of the find is determined to be of significance due to its sacred or cultural importance as determined in consultation with the Native American Tribe(s).

    i. All ground disturbance activities within 100 feet of the discovered cultural resources shall be halted until a meeting is convened between the developer, the archaeologist, the tribal representative(s) and the Community Development Director to discuss the significance of the find.

    ii. At the meeting, the significance of the discoveries shall be discussed and after consultation with the tribal representative(s) and the archaeologist, a decision shall be made, with the concurrence of the Community Development Director, as to the appropriate mitigation (documentation, recovery, avoidance, etc.) for the cultural resources.

    iii. Grading of further ground disturbance shall not resume within the area of the discovery until an agreement has been reached by all parties as to the appropriate mitigation. Work shall be allowed to continue outside of the buffer area and will be monitored by additional Tribal monitors if needed.

    iv. Treatment and avoidance of the newly discovered resources shall be consistent with the Cultural Resources Management Plan and Monitoring Agreements entered into with the appropriate tribes. This may include avoidance of the cultural resources through project design, in-place preservation of cultural resources located in native soils and/or re-burial on the Project property so they are not subject to further disturbance in perpetuity as identified in Non-Disclosure of Reburial Condition.

    v. If the find is determined to be significant and avoidance of the site has not been achieved, a Phase III data recovery plan shall be prepared by the project archeologist, in consultation with the Tribe, and shall be submitted to the City for their review and approval prior to implementation of the said plan.

    vi. Pursuant to Calif. Pub. Res. Code § 21083.2(b) avoidance is the preferred method of preservation for archaeological resources and cultural resources. If the landowner and the Tribe(s) cannot agree on the significance or the mitigation for the archaeological or cultural resources, these issues will be presented to the City Community Development Director for decision. The City Community Development Director shall make the determination based on the provisions of the

California Environmental Quality Act with respect to archaeological resources, recommendations of the project archeologist and shall take into account the cultural and religious principles and practices of the Tribe. Notwithstanding any other rights available under the law, the decision of the City Community Development Director shall be appealable to the City Planning Commission and/or City Council."

5. **Inadvertent Discoveries of Human Remains:** If human remains are encountered, the contractor shall halt work in the vicinity (within 100 feet) of the find and contact the Riverside County Coroner in accordance with PRC Section 5097.98 and Health and SafetyCode Section 7050.5. If the County Coroner determines that the remains are Native American, the California Native American Heritage Commission (NAHC) will be notified in accordance with Health and Safety Code Section 7050.5, subdivision (c), and PRC Section 5097.98 (as amended by Assembly Bill 2641). The NAHC will designate a Most Likely Descendent (MLD) for the remains per PRC Section 5097.98. Until the landowner has conferred with the MLD, the contractor shall ensure that the immediate vicinity where the discovery occurred is not disturbed by further activity, is adequately protected according to generally accepted cultural or archaeological standards or practices, and that further activities take into account the possibility of multiple burials

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APPENDIX A
Personnel

Monica Strauss, RPA

Director, Southern California Cultural Resources Group

EDUCATION

MA, Archaeology, California State University, Northridge

BA, Anthropology, California State University, Northridge

AA, Humanities, Los Angeles Pierce College

24 YEARS OF EXPERIENCE

SPECIALIZED EXPERIENCE

Treatment of Historic and Prehistoric Human Remains

Archaeological Monitoring

Complex Shell Midden Sites

Groundstone Analysis

PROFESSIONAL AFFILIATIONS

Register of Professional Archaeologists (RPA), #12805

Society for California Archaeology (SCA)

Society for American Archaeology (SAA)

QUALIFICATIONS

Exceeds Secretary of Interior's Qualifications Standards for Archaeology

Meets Caltrans PQS for Principal Investigator

CA State BLM Permitted

NV State BLM Permitted (specific geographies)

Monica provides senior oversight to a multi-disciplinary team of cultural resources specialists throughout Southern California, including archaeologists, architectural historians, historians, and paleontologists. During her 24 years of practice, she has successfully directed hundreds of cultural resources projects meeting local, state, and/or federal regulatory requirements. Monica's strength lies in assisting clients in navigating complex cultural resources issues in the contexts of the California Environmental Quality Act (CEQA), the National Environmental Policy Act (NEPA), and Section 106 of the National Historic Preservation Act (NHPA). Monica's experience ranges from large infrastructure projects that are controversial and multi-jurisdictional to smaller development projects that are important to local agencies and stakeholders. She has excellent experience working with agencies to develop creative mitigation to address challenging cultural resources impacts. She directs a staff who conduct Phase I archaeological/paleontological and historic architectural surveys, construction monitoring, Native American outreach, archaeological testing and treatment, historic resource significance evaluations, and large-scale data recovery programs. She is expert in the area of Assembly Bill 52 and routinely provides training to her clients as well as being a workshop content author and session presenter for the Association of Environmental Professionals on the topic.

Relevant Experience

Helix Water District (HWD), El Monte Valley, San Diego County, CA. *Cultural Resources Principal Investigator*. ESA provided professional Environmental Consulting services in support of the HWD's El Monte Mining, Reclamation, and Groundwater Recharge Project. The project includes mining of approximately 10 million tons of aggregate from the El Monte Valley in San Diego County. Monica directed the cultural resources component of this project to ensure it complies with CEQA, Section 106 and the County of San Diego, Guidelines for Determining Significance. Duties involved providing oversight to the management team and coordination with the client on key issues including Section 106 requirements and Native American issues.

Metro Airpark LLC, Metropolitan Air Park, San Diego, CA. *Cultural Resources Principal Investigator*. ESA is preparing a master development plan, EIR, and EA for Metropolitan Air Park at Brown Field Airport in the City of San Diego. The project involves a 50-year land lease from the City of San Diego for a 400-acre portion of the airport property to be developed into airport and non-airport related land uses. The project requires the approval of the City of San Diego and the Federal Aviation Administration, and is being processed as Master Planned Development Permit Project. Monica is currently directing the cultural resources component of this project. Her duties involve coordination with the City of San

Diego to ensure compliance with the City of San Diego Historical Resources Guidelines and oversight of survey and identification methods and resource evaluations.

Sweetwater Reservoir, Water Main Replacement, San Diego County, CA. *Cultural Resources Principal Investigator.* ESA was retained by Sweetwater Authority to prepare an IS/MND for the replacement of a 36-inch pipeline leading from Sweetwater Dam. Sweetwater Dam was originally constructed in the late 19th century and was subject to upgrades in 1917. ESA conducted a Phase 1 Cultural Resources Assessment including archival research, pedestrian, survey, historical research, Native American outreach, and the preparation of a technical report documenting archaeological and historic-architectural resources that might be impacted by the project. The study concluded that features that would be altered by the project that were contributing elements to the historic dam would need to be replaced in kind. Monica directed the team of researchers which conducted this work, assisted in evaluating project impacts to the dam, and facilitated in the development of appropriate mitigation.

California Department of Water Resources, Perris Dam Mitigation Area, Riverside County, CA. *Cultural Resources Senior Reviewer*. ESA prepared a Phase I cultural resources survey report for the project which includes a creation/restoration program within the Western Riverside County Regional Conservation Authority mitigation area with the purpose of creating/restoring riparian habitat that is biologically equivalent or superior to that which is being impacted as a result of the Perris Dam Remediation Program being carried out at Lake Perris. The study concluded that the area is sensitive for archaeological resources and additional work was recommended. Monica served as the Senior Reviewer for the Phase I cultural resources survey report.

Bureau of Land Management, Lakeside and Ridgecrest Abandoned Mine Lands Archaeological Inventory, San Diego and Kern Counties, CA. *Cultural Resources Principal Investigator*. ESA has been retained to provide cultural resources services to the Bureau of Land Management (BLM) in connection with the Abandoned Mine Lands program. The BLM proposes to conduct remediation of physical safety hazards associated with Abandoned Mine Lands. Remediation would consist of backfilling or closing off mine shafts, adits, and prospects. ESA prepared archaeological inventory reports documenting the abandoned mines, in compliance with Section 106 of the NHPA.

Michael Vader

Senior Associate

EDUCATION

BA, Physical Anthropology, University of California, Santa Barbara

M.A., Applied Archaeology (In Progress), California State University San Bernardino

13 YEARS OF EXPERIENCE

PROFESSIONAL AFFILIATIONS

Society for California Archaeology (SCA)

Society for American Archaeology (SAA)

Pacific Coast Archaeological Society (PCAS)

SPECIALIZED EXPERIENCE

Analysis of faunal remains including fish and shellfish species

Archaeological Monitoring

Paleontological Monitoring

Environmental Compliance Monitoring

Human osteology and bioarchaeology

Michael is cultural resources specialist with experience working on survey, data recovery, and monitoring projects. Michael has experience with project management, has led crews on multiple surveys and excavations, and is familiar with environmental compliance documents. He has worked on a variety of energy and water infrastructure projects throughout California, including projects in Riverside, San Diego, Imperial, San Bernardino, Los Angeles, Orange, Santa Barbara, San Luis Obispo, Kern, Fresno, Madera, and Inyo Counties, as well as in Clark County Nevada. Michael regularly works as part of a team, coordinating with field staff and agency leads.

Relevant Experience

San Diego Gas & Electric's Tie Line (TL) 6975 San Marcos to Escondido 69 kV Project, San Diego County, CA. *Archaeologist.* San Diego Gas and Electric Company (SDG&E) retained ESA to prepare an Initial Study/Mitigated Negative Declaration. SDG&E proposes to install new overhead single-circuit electric power line structures, to rebuild existing structures from single circuit to double circuit, and to reconduct and re-energize existing conductors. Michael prepared the assisted with the Assembly Bill 52 consultation and prepared the cultural resources and tribal cultural resources ISMND sections for the project.

Bonsall High School Project, Bonsall, San Diego County, CA. *Archaeologist*. ESA was retained by the Bonsall Unified School District to conduct a Phase I cultural resources assessment for the Bonsall High School Project in support of an Environmental Impact Report. The project would include the construction of a new high school that would accommodate 1,500 students in grades 9-12 and 50-60 district staff. Michael led the survey and prepared the Cultural Resources Assessment Report for the project.

Pacific Beach Vector Habitat Remediation Project, San Diego, , CA. *Archaeologist*. The City of San Diego retained ESA to prepare an ISMND for the Pacific Beach Vector Habitat Remediation Project as part of the County of San Diego Vector Habitat Remediation Program. The City is proposing this area for mitigation under the County Department of Environmental Health Vector Habitat Remediation Program because it is a known mosquito breeding habitat. The purpose of the Project is to decrease favorable habitat for mosquitos, improve the water quality in the Kendall Frost Mission Bay Marsh Reserve, and to create tidal marsh, transitional zone and upland habitat by improving the Noyes Street storm drain outfall which drains and discharges into the Reserve. Michael led the cultural resources survey and prepared the Phase I cultural resources assessment report in support of the ISMND.

Coast Highway Corridor Study Project, Oceanside, CA. *Archaeologist*. ESA was retained by the City of Oceanside to prepare an EIR for the Coast Highway

Corridor Project. The project would modify an approximate 3.5-mile-long segment of the Coast Highway corridor that runs through the City of Oceanside to encourage redevelopment and revitalization of the area. Proposed modifications include lane conversions, street improvements, intersection roundabouts, and increased parking and bicycle facilities, as well as an amendment to the Zoning Ordinance to create a Coast Highway Incentive Overlay District. Michael conducted the survey and prepared the Phase I cultural resources assessment report in support of the EIR.

Sorrento Valley Channel Restoration Project, San Diego, CA. *Archaeologist.* ESA has been retained by the City of San Diego to prepare an EIR for the Sorrento/Los Peñasquitos Restoration Program. The Project consists of the restoration of the historic coastal salt marsh habitat within the Los Peñasquitos Lagoon to be completed in two phases. Michael assisted with the cultural resources survey and prepared the Phase I cultural resources assessment in support of the EIR.

El Money Valley Mining and Reclamation Project, San Diego County, CA. *Archaeologist.* El Monte Nature Preserve, LLC retained ESA to conduct an updated Phase I cultural resources survey in support of the El Monte Valley Mining and Reclamation Project. The project includes the extraction of 15-million tons of surface mineral over a 15-year period in the El Monte Valley on land that is zoned for extractive use, and the reclamation and restoration of the project area to open space with an open water pond. Michael led the updated survey, prepared the technical memorandum presenting the results of the survey, and assisted in Extended Phase I testing of archaeological site CA-SDI-13592.

Loma Alta Slough Vector Habitat remediation Project, Oceanside, CA. *Archaeologist.* The City of Oceanside retained ESA to prepare an ISMND for the Loma Alta Slough Vector Habitat Remediation Project as part of the County of San Diego Vector Habitat Remediation Program. The project includes the initial phase of planning to mitigate mosquito breeding habitat within Loma Alta Slough. In support of the ISMND, ESA prepared a Phase I cultural resources assessment of the project area. Michael conducted the survey and prepared the Phase I report for the cultural resources assessment.

Richard A Reynolds Desalination Plant Phase 2 Expansion-Solar Project MND, San Diego, CA. *Archaeologist.* ESA will be preparing an EIR for a PV solar facility to be co-located with the Richard A. Reynolds Desalination Plant. The purpose of the proposed project is to construct solar panel arrays within the bounds of the desalination facilities to provide enough electricity to power the Phase II expansion of the plant. Michael conducted the cultural resources survey and prepared a Phase 1 Cultural Resources Study for the project.

Richard A. Reynolds Desalination Plant Phase 2 Expansion - Cultural Resources, San Diego, CA. *Archaeologist.* ESA was contracted by the Sweetwater Authority to perform a cultural resources study for the Phase 2 Expansion at the Richard A. Reynolds Desalination Plant. The expansion would increase the desalinated potable water production at the desalination plant from its current 5 million gallons per day (mgd) capacity to 10 mgd. Michael conducted the cultural resources survey, coordinated with the BOR archaeologist, and prepared the cultural resources study for the expansion.

APPENDIX B
Native American Outreach

626 Wilshire Boulevard
Suite 1100
Los Angeles, CA 90017
213.599.4300 phone
213.599.4301 fax

www.esassoc.com

December 8, 2020

Native American Heritage Commission
1550 Harbor Boulevard, Suite 100
West Sacramento, CA 95691
FAX- 916-373-5471

Subject: **Sacred Lands File search request for the Santa Gertrudis Bicycle/Trail Undercrossing at Margarita Road Project (D201601440.00)**

To whom it may concern:

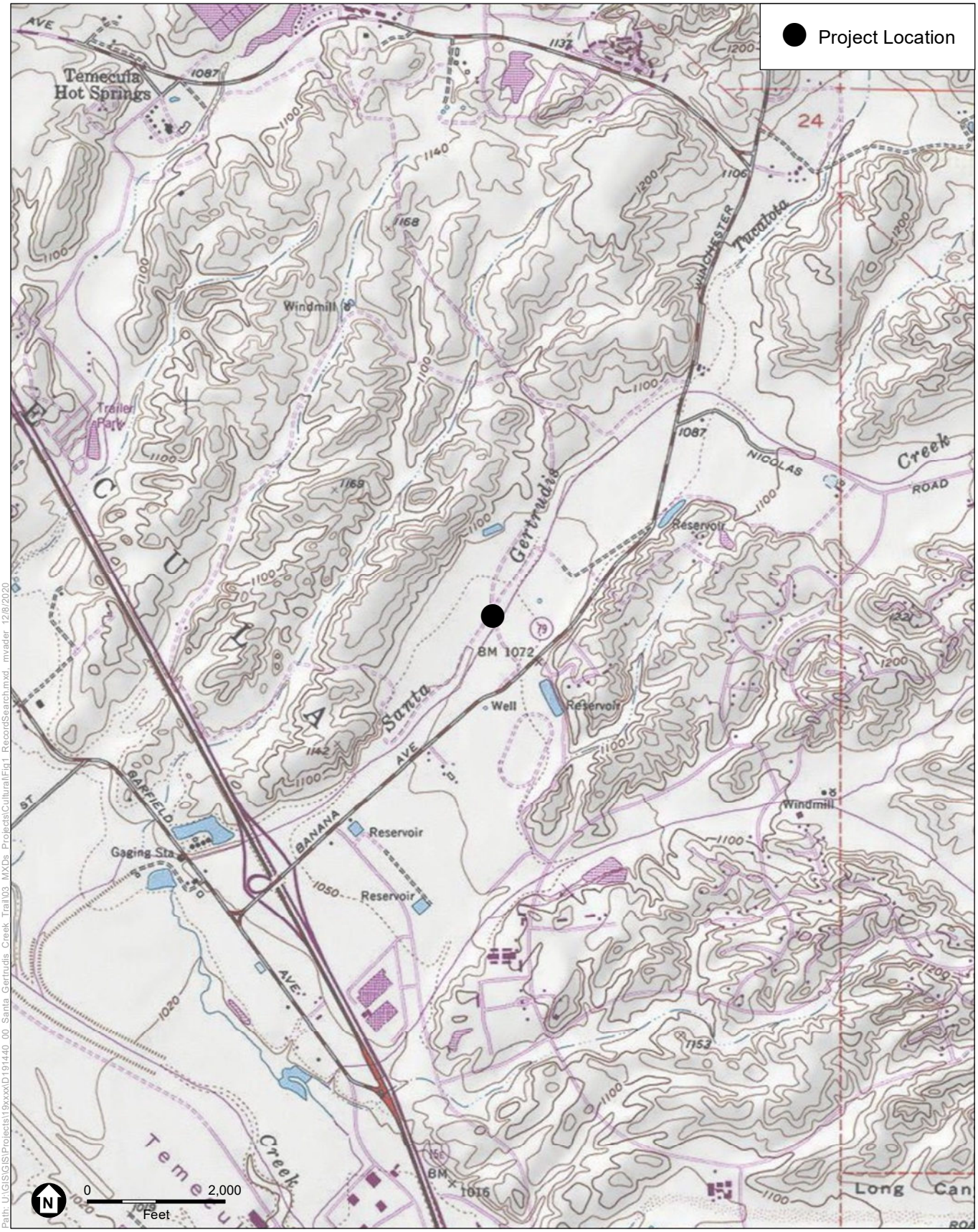
Environmental Science Associates (ESA) has been retained by the City Temecula Planning Department (City) to conduct a cultural resources assessment for the Santa Gertrudis Bicycle/Trail Undercrossing at Margarita Road Project (Project) in support of environmental documentation pursuant to the California Environmental Quality Act (CEQA). The Project would design and construct a bicycle/multi-use trail undercrossing for the existing Santa Gertrudis Creek Trail. The existing trail crosses Margarita Road in the City of Temecula, which is a heavily traveled four-lane divided collector roadway. The proposed undercrossing will improve safety at this location by removing the need for existing at-grade roadway crossing for the trail. As depicted in the attached map, the Project area is located in the City of Temecula within Riverside County, within an unsectioned portion of Township 7 South, Range 3 West on the Murrieta, CA 7.5-minute topographic quadrangle.

In an effort to provide an adequate appraisal of all potential effects to cultural resources that may result from the proposed Project, ESA is requesting that a records search be conducted for sacred lands or traditional cultural properties that may exist within the Project area.

Thank you for your time and cooperation regarding this matter. To expedite the delivery of search results, please fax them to 619.719.4201, or email them to mvader@esassoc.com. Please contact me at 619.241.9238 or at mvader@esassoc.com if you have any questions.

Sincerely,

Michael Vader
Cultural Resources



Path: U:\GIS\GIS\Projects\19xxxx\D191440_00_Santa_Gertrudis_Creek_Trail\03_MXDs_Projects\Cultural\Fig1_RecordSearch.mxd mvader 12/8/2020

TOPO QUAD: Murrieta, CA 7.5-minute

Santa Gertrudis Bicycle/Trail Undercrossing at Margarita Road

Figure 1
Records Search

ESA

NATIVE AMERICAN HERITAGE COMMISSION

NAHC HEADQUARTERS
1550 Harbor Boulevard
Suite 100
West Sacramento,
California 95691
(916) 373-3710
nahc@nahc.ca.gov
NAHC.ca.gov

December 28, 2020

Michael Vader
ESA

Via Email to: mvader@esassoc.com

Re: Native American Tribal Consultation, Pursuant to the Assembly Bill 52 (AB 52), Amendments to the California Environmental Quality Act (CEQA) (Chapter 532, Statutes of 2014), Public Resources Code Sections 5097.94 (m), 21073, 21074, 21080.3.1, 21080.3.2, 21082.3, 21083.09, 21084.2 and 21084.3, Santa Gertrudis Bicycle/Trail Undercrossing at Margarita Road Project, Riverside County

Dear Mr. Vader:

Pursuant to Public Resources Code section 21080.3.1 (c), attached is a consultation list of tribes that are traditionally and culturally affiliated with the geographic area of the above-listed project. Please note that the intent of the AB 52 amendments to CEQA is to avoid and/or mitigate impacts to tribal cultural resources, (Pub. Resources Code §21084.3 (a)) ("Public agencies shall, when feasible, avoid damaging effects to any tribal cultural resource.")

Public Resources Code sections 21080.3.1 and 21084.3(c) require CEQA lead agencies to consult with California Native American tribes that have requested notice from such agencies of proposed projects in the geographic area that are traditionally and culturally affiliated with the tribes on projects for which a Notice of Preparation or Notice of Negative Declaration or Mitigated Negative Declaration has been filed on or after July 1, 2015. Specifically, Public Resources Code section 21080.3.1 (d) provides:

Within 14 days of determining that an application for a project is complete or a decision by a public agency to undertake a project, the lead agency shall provide formal notification to the designated contact of, or a tribal representative of, traditionally and culturally affiliated California Native American tribes that have requested notice, which shall be accomplished by means of at least one written notification that includes a brief description of the proposed project and its location, the lead agency contact information, and a notification that the California Native American tribe has 30 days to request consultation pursuant to this section.

The AB 52 amendments to CEQA law does not preclude initiating consultation with the tribes that are culturally and traditionally affiliated within your jurisdiction prior to receiving requests for notification of projects in the tribe's areas of traditional and cultural affiliation. The Native American Heritage Commission (NAHC) recommends, but does not require, early consultation as a best practice to ensure that lead agencies receive sufficient information about cultural resources in a project area to avoid damaging effects to tribal cultural resources.

The NAHC also recommends, but does not require that agencies should also include with their notification letters, information regarding any cultural resources assessment that has been completed on the area of potential effect (APE), such as:

1. The results of any record search that may have been conducted at an Information Center of the California Historical Resources Information System (CHRIS), including, but not limited to:

- A listing of any and all known cultural resources that have already been recorded on or adjacent to the APE, such as known archaeological sites;
- Copies of any and all cultural resource records and study reports that may have been provided by the Information Center as part of the records search response;
- Whether the records search indicates a low, moderate, or high probability that unrecorded cultural resources are located in the APE; and
- If a survey is recommended by the Information Center to determine whether previously unrecorded cultural resources are present.

2. The results of any archaeological inventory survey that was conducted, including:

    - Any report that may contain site forms, site significance, and suggested mitigation measures.

      All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum, and not be made available for public disclosure in accordance with Government Code section 6254.10.

3. The result of any Sacred Lands File (SLF) check conducted through the Native American Heritage Commission was positive. Please contact the Pechanga Band of Luiseno Indians on the attached list for more information.

4. Any ethnographic studies conducted for any area including all or part of the APE; and

5. Any geotechnical reports regarding all or part of the APE.

Lead agencies should be aware that records maintained by the NAHC and CHRIS are not exhaustive and a negative response to these searches does not preclude the existence of a tribal cultural resource. A tribe may be the only source of information regarding the existence of a tribal cultural resource.

This information will aid tribes in determining whether to request formal consultation. In the event that they do, having the information beforehand will help to facilitate the consultation process.

If you receive notification of change of addresses and phone numbers from tribes, please notify the NAHC. With your assistance, we can assure that our consultation list remains current.

If you have any questions, please contact me at my email address: Andrew.Green@nahc.ca.gov.

Sincerely,

Andrew Green

Andrew Green
Cultural Resources Analyst

Attachment

Native American Heritage Commission
Tribal Consultation List
Riverside County
12/28/2020

Agua Caliente Band of Cahuilla Indians
Patricia Garcia-Plotkin, Director
5401 Dinah Shore Drive — Cahuilla
Palm Springs, CA, 92264
Phone: (760) 699 - 6907
Fax: (760) 699-6924
ACBCI-THPO@aguacaliente.net

Agua Caliente Band of Cahuilla Indians
Jeff Grubbe, Chairperson
5401 Dinah Shore Drive — Cahuilla
Palm Springs, CA, 92264
Phone: (760) 699 - 6800
Fax: (760) 699-6919

Campo Band of Diegueno Mission Indians
Ralph Goff, Chairperson
36190 Church Road, Suite 1 — Diegueno
Campo, CA, 91906
Phone: (619) 478 - 9046
Fax: (619) 478-5818
rgoff@campo-nsn.gov

Ewiiaapaayp Band of Kumeyaay Indians
Michael Garcia, Vice Chairperson
4054 Willows Road — Diegueno
Alpine, CA, 91901
Phone: (619) 445 - 6315
Fax: (619) 445-9126
michaelg@leaningrock.net

Ewiiaapaayp Band of Kumeyaay Indians
Robert Pinto, Chairperson
4054 Willows Road — Diegueno
Alpine, CA, 91901
Phone: (619) 445 - 6315
Fax: (619) 445-9126
wmicklin@leaningrock.net

La Jolla Band of Luiseno Indians
Fred Nelson, Chairperson
22000 Highway 76 — Luiseno
Pauma Valley, CA, 92061
Phone: (760) 742 - 3771

La Posta Band of Diegueno Mission Indians
Javaughn Miller, Tribal Administrator
8 Crestwood Road — Diegueno
Boulevard, CA, 91905
Phone: (619) 478 - 2113
Fax: (619) 478-2125
jmiller@LPtribe.net

La Posta Band of Diegueno Mission Indians
Gwendolyn Parada, Chairperson
8 Crestwood Road — Diegueno
Boulevard, CA, 91905
Phone: (619) 478 - 2113
Fax: (619) 478-2125
LP13boots@aol.com

Manzanita Band of Kumeyaay Nation
Angela Elliott Santos, Chairperson
P.O. Box 1302 — Diegueno
Boulevard, CA, 91905
Phone: (619) 766 - 4930
Fax: (619) 766-4957

Mesa Grande Band of Diegueno Mission Indians
Michael Linton, Chairperson
P.O Box 270 — Diegueno
Santa Ysabel, CA, 92070
Phone: (760) 782 - 3818
Fax: (760) 782-9092
mesagrandeband@msn.com

This list is current only as of the date of this document. Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and section 5097.98 of the Public Resources Code.

This list is only applicable for consultation with Native American tribes under Public Resources Code Sections 21080.3.1 for the proposed Santa Gertrudis Bicycle/Trail Undercrossing at Margarita Road Project, Riverside County.

Native American Heritage Commission
Tribal Consultation List
Riverside County
12/28/2020

Pala Band of Mission Indians
Shasta Gaughen, Tribal Historic Preservation Officer
PMB 50, 35008 Pala Temecula Rd.
Pala, CA, 92059
Phone: (760) 891 - 3515
Fax: (760) 742-3189
sgaughen@palatribe.com
Cupeno
Luiseno

Pauma Band of Luiseno Indians
Temet Aguilar, Chairperson
P.O. Box 369
Pauma Valley, CA, 92061
Phone: (760) 742 - 1289
Fax: (760) 742-3422
bennaecalac@aol.com
Luiseno

Pechanga Band of Luiseno Indians
Mark Macarro, Chairperson
P.O. Box 1477
Temecula, CA, 92593
Phone: (951) 770 - 6000
Fax: (951) 695-1778
epreston@pechanga-nsn.gov
Luiseno

Quechan Tribe of the Fort Yuma Reservation
Jill McCormick, Historic Preservation Officer
P.O. Box 1899
Yuma, AZ, 85366
Phone: (760) 572 - 2423
historicpreservation@quechantribe.com
Quechan

Rincon Band of Luiseno Indians
Bo Mazzetti, Chairperson
One Government Center Lane
Valley Center, CA, 92082
Phone: (760) 749 - 1051
Fax: (760) 749-5144
bomazzetti@aol.com
Luiseno

Rincon Band of Luiseno Indians
Cheryl Madrigal, Tribal Historic Preservation Officer
One Government Center Lane
Valley Center, CA, 92082
Phone: (760) 297 - 2635
crd@rincon-nsn.gov
Luiseno

San Luis Rey Band of Mission Indians
San Luis Rey, Tribal Council
1889 Sunset Drive
Vista, CA, 92081
Phone: (760) 724 - 8505
Fax: (760) 724-2172
cjmojado@slrmissionindians.org
Luiseno

Santa Rosa Band of Cahuilla Indians
Lovina Redner, Tribal Chair
P.O. Box 391820
Anza, CA, 92539
Phone: (951) 659 - 2700
Fax: (951) 659-2228
lsaul@santarosa-nsn.gov
Cahuilla

Soboba Band of Luiseno Indians
Scott Cozart, Chairperson
P. O. Box 487
San Jacinto, CA, 92583
Phone: (951) 654 - 2765
Fax: (951) 654-4198
jontiveros@soboba-nsn.gov
Cahuilla
Luiseno

Sycuan Band of the Kumeyaay Nation
Cody Martinez, Chairperson
1 Kwaaypaay Court
El Cajon, CA, 92019
Phone: (619) 445 - 2613
Fax: (619) 445-1927
ssilva@sycuan-nsn.gov
Kumeyaay

This list is current only as of the date of this document. Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and section 5097.98 of the Public Resources Code.

This list is only applicable for consultation with Native American tribes under Public Resources Code Sections 21080.3.1 for the proposed Santa Gertrudis Bicycle/Trail Undercrossing at Margarita Road Project, Riverside County.

626 Wilshire Boulevard
Suite 1100
Los Angeles, CA 90017
213.599.4300 phone
213.599.4301 fax

www.esassoc.com

January 15, 2021

Angela Elliott Santos, Chairperson
Manzanita Band of Kumeyaay Nation
P.O. Box 1302
Boulevard, CA 91905

Subject: Santa Gertrudis Bicycle/Trail Undercrossing at Margarita Road Project

Dear Chairperson Santos:

Environmental Science Associates (ESA) has been retained by the City of Temecula Planning Department (City) to conduct a cultural resources assessment for the Santa Gertrudis Bicycle/Trail Undercrossing at Margarita Road Project (Project) in support of environmental documentation pursuant to the California Environmental Quality Act (CEQA) and a U.S. Army Corps of Engineers (USACE) 404 permit, requiring compliance with Section 106 of the National Historic Preservation Act (Section 106). The Project would design and construct a bicycle/multi-use trail undercrossing for the existing Santa Gertrudis Creek Trail. The existing trail crosses Margarita Road in the City of Temecula, which is a heavily traveled four-lane divided collector roadway. The proposed undercrossing will improve safety at this location by removing the need for existing at-grade roadway crossing for the trail. The USACE is the lead federal agency responsible for complying with Section 106.

The Project is located at the intersection of Margarita Road, and the south side of Santa Gertrudis Creek, in the City of Temecula, Riverside County, California. The enclosed map shows the Project area is located within an unsectioned portion of Township 7 South, Range 3 West on the Murrieta, CA 7.5-minute topographic quadrangle.

A records search of the Project area plus a 1-mile buffer (study area) was requested through the Eastern Information Center (EIC) on December 8, 2020. The EIC search results have not been received by ESA at this time. A Sacred Lands File search was conducted by the Native American Heritage Commission (NAHC) on December 28, 2020. The results were positive.

In an effort to assist USACE with their Section 106 identification and consultation efforts, ESA is reaching out to Native American Tribes who are culturally and traditionally affiliated with the study area and vicinity. The NAHC identified you as someone who is affiliated with the study area, and as someone who may have knowledge of resources in the area or an interest in the Project. We are writing to request your input on resources that may be within or nearby the study area, and to solicit any concerns you may have regarding the Project.

Thank you for your cooperation on this matter. If you have any questions or comments, please contact Michael Vader by phone at 619.719.4195 or by email at mvader@esassoc.com.

Sincerely,

Michael Vader
Cultural Resources Specialist

626 Wilshire Boulevard
Suite 1100
Los Angeles, CA 90017
213.599.4300 phone
213.599.4301 fax

www.esassoc.com

January 15, 2021

Bo Mazzetti, Chairperson
Rincon Band of Luiseno Indians
One Government Center Lane
Valley Center, CA 92082

Subject: Santa Gertrudis Bicycle/Trail Undercrossing at Margarita Road Project

Dear Chairperson Mazzetti:

Environmental Science Associates (ESA) has been retained by the City of Temecula Planning Department (City) to conduct a cultural resources assessment for the Santa Gertrudis Bicycle/Trail Undercrossing at Margarita Road Project (Project) in support of environmental documentation pursuant to the California Environmental Quality Act (CEQA) and a U.S. Army Corps of Engineers (USACE) 404 permit, requiring compliance with Section 106 of the National Historic Preservation Act (Section 106). The Project would design and construct a bicycle/multi-use trail undercrossing for the existing Santa Gertrudis Creek Trail. The existing trail crosses Margarita Road in the City of Temecula, which is a heavily traveled four-lane divided collector roadway. The proposed undercrossing will improve safety at this location by removing the need for existing at-grade roadway crossing for the trail. The USACE is the lead federal agency responsible for complying with Section 106.

The Project is located at the intersection of Margarita Road, and the south side of Santa Gertrudis Creek, in the City of Temecula, Riverside County, California. The enclosed map shows the Project area is located within an unsectioned portion of Township 7 South, Range 3 West on the Murrieta, CA 7.5-minute topographic quadrangle.

A records search of the Project area plus a 1-mile buffer (study area) was requested through the Eastern Information Center (EIC) on December 8, 2020. The EIC search results have not been received by ESA at this time. A Sacred Lands File search was conducted by the Native American Heritage Commission (NAHC) on December 28, 2020. The results were positive.

In an effort to assist USACE with their Section 106 identification and consultation efforts, ESA is reaching out to Native American Tribes who are culturally and traditionally affiliated with the study area and vicinity. The NAHC identified you as someone who is affiliated with the study area, and as someone who may have knowledge of resources in the area or an interest in the Project. We are writing to request your input on resources that may be within or nearby the study area, and to solicit any concerns you may have regarding the Project.

Thank you for your cooperation on this matter. If you have any questions or comments, please contact Michael Vader by phone at 619.719.4195 or by email at mvader@esassoc.com.

Sincerely,

Michael Vader
Cultural Resources Specialist

626 Wilshire Boulevard
Suite 1100
Los Angeles, CA 90017
213.599.4300 phone
213.599.4301 fax

www.esassoc.com

January 15, 2021

Cheryl Madrigal, Tribal Historic Preservation Officer
Rincon Band of Luiseno Indians
One Government Center Lane
Valley Center, CA 92082

Subject: Santa Gertrudis Bicycle/Trail Undercrossing at Margarita Road Project

Dear Tribal Historic Preservation Officer Madrigal:

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January 15, 2021

Cody Martinez, Chairperson
Sycuan Band of the Kumeyaay Nation
1 Kwaaypaay Court
El Cajon, CA 92019

Subject: Santa Gertrudis Bicycle/Trail Undercrossing at Margarita Road Project

Dear Chairperson Martinez:

Environmental Science Associates (ESA) has been retained by the City of Temecula Planning Department (City) to conduct a cultural resources assessment for the Santa Gertrudis Bicycle/Trail Undercrossing at Margarita Road Project (Project) in support of environmental documentation pursuant to the California Environmental Quality Act (CEQA) and a U.S. Army Corps of Engineers (USACE) 404 permit, requiring compliance with Section 106 of the National Historic Preservation Act (Section 106). The Project would design and construct a bicycle/multi-use trail undercrossing for the existing Santa Gertrudis Creek Trail. The existing trail crosses Margarita Road in the City of Temecula, which is a heavily traveled four-lane divided collector roadway. The proposed undercrossing will improve safety at this location by removing the need for existing at-grade roadway crossing for the trail. The USACE is the lead federal agency responsible for complying with Section 106.

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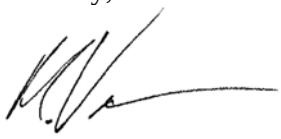

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January 15, 2021

Fred Nelson, Chairperson
La Jolla Band of Luiseno Indians
22000 Highway 76
Pauma Valley, CA, 92061

Subject: Santa Gertrudis Bicycle/Trail Undercrossing at Margarita Road Project

Dear Chairperson Nelson:

Environmental Science Associates (ESA) has been retained by the City of Temecula Planning Department (City) to conduct a cultural resources assessment for the Santa Gertrudis Bicycle/Trail Undercrossing at Margarita Road Project (Project) in support of environmental documentation pursuant to the California Environmental Quality Act (CEQA) and a U.S. Army Corps of Engineers (USACE) 404 permit, requiring compliance with Section 106 of the National Historic Preservation Act (Section 106). The Project would design and construct a bicycle/multi-use trail undercrossing for the existing Santa Gertrudis Creek Trail. The existing trail crosses Margarita Road in the City of Temecula, which is a heavily traveled four-lane divided collector roadway. The proposed undercrossing will improve safety at this location by removing the need for existing at-grade roadway crossing for the trail. The USACE is the lead federal agency responsible for complying with Section 106.

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January 15, 2021

Gwendolyn Parada, Chairperson
La Posta Band of Diegueno Mission Indians
8 Crestwood Road
Boulevard, CA 91905

Subject: Santa Gertrudis Bicycle/Trail Undercrossing at Margarita Road Project

Dear Chairperson Parada:

Environmental Science Associates (ESA) has been retained by the City of Temecula Planning Department (City) to conduct a cultural resources assessment for the Santa Gertrudis Bicycle/Trail Undercrossing at Margarita Road Project (Project) in support of environmental documentation pursuant to the California Environmental Quality Act (CEQA) and a U.S. Army Corps of Engineers (USACE) 404 permit, requiring compliance with Section 106 of the National Historic Preservation Act (Section 106). The Project would design and construct a bicycle/multi-use trail undercrossing for the existing Santa Gertrudis Creek Trail. The existing trail crosses Margarita Road in the City of Temecula, which is a heavily traveled four-lane divided collector roadway. The proposed undercrossing will improve safety at this location by removing the need for existing at-grade roadway crossing for the trail. The USACE is the lead federal agency responsible for complying with Section 106.

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January 15, 2021

Javaughn Miller, Tribal Administrator
La Posta Band of Diegueno Mission Indians
8 Crestwood Road
Boulevard, CA 91905

Subject: Santa Gertrudis Bicycle/Trail Undercrossing at Margarita Road Project

Dear Tribal Administrator Miller:

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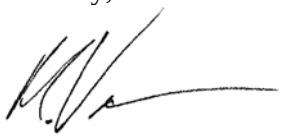

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January 15, 2021

Jeff Grubbe, Chairperson
Agua Caliente Band of Cahuilla Indians
5401 Dinah Shore Drive
Palm Springs, CA 92264

Subject: Santa Gertrudis Bicycle/Trail Undercrossing at Margarita Road Project

Dear Chairperson Grubbe:

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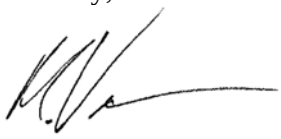

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January 15, 2021

Jill McCormick, Historic Preservation Officer
Quechan Tribe of the Fort Yuma Reservation
P.O. Box 1899
Yuma, AZ 85366

Subject: Santa Gertrudis Bicycle/Trail Undercrossing at Margarita Road Project

Dear Historic Preservation Officer McCormick:

Environmental Science Associates (ESA) has been retained by the City of Temecula Planning Department (City) to conduct a cultural resources assessment for the Santa Gertrudis Bicycle/Trail Undercrossing at Margarita Road Project (Project) in support of environmental documentation pursuant to the California Environmental Quality Act (CEQA) and a U.S. Army Corps of Engineers (USACE) 404 permit, requiring compliance with Section 106 of the National Historic Preservation Act (Section 106). The Project would design and construct a bicycle/multi-use trail undercrossing for the existing Santa Gertrudis Creek Trail. The existing trail crosses Margarita Road in the City of Temecula, which is a heavily traveled four-lane divided collector roadway. The proposed undercrossing will improve safety at this location by removing the need for existing at-grade roadway crossing for the trail. The USACE is the lead federal agency responsible for complying with Section 106.

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January 15, 2021

Lovina Redner, Tribal Chair
Santa Rosa Band of Cahuilla Indians
P.O. Box 391820
Anza, CA 92539

Subject: Santa Gertrudis Bicycle/Trail Undercrossing at Margarita Road Project

Dear Tribal Chair Redner:

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January 15, 2021

Mark Macarro, Chairperson
Pechanga Band of Luiseno Indians
P.O. Box 1477
Temecula, CA 92593

Subject: Santa Gertrudis Bicycle/Trail Undercrossing at Margarita Road Project

Dear Chairperson Macarro:

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January 15, 2021

Michael Garcia, Vice Chairperson
Ewiiaapaayp Band of Kumeyaay Indians
4054 Willows Road
Alpine CA, 91901

Subject: Santa Gertrudis Bicycle/Trail Undercrossing at Margarita Road Project

Dear Vice Chairperson Garcia:

Environmental Science Associates (ESA) has been retained by the City of Temecula Planning Department (City) to conduct a cultural resources assessment for the Santa Gertrudis Bicycle/Trail Undercrossing at Margarita Road Project (Project) in support of environmental documentation pursuant to the California Environmental Quality Act (CEQA) and a U.S. Army Corps of Engineers (USACE) 404 permit, requiring compliance with Section 106 of the National Historic Preservation Act (Section 106). The Project would design and construct a bicycle/multi-use trail undercrossing for the existing Santa Gertrudis Creek Trail. The existing trail crosses Margarita Road in the City of Temecula, which is a heavily traveled four-lane divided collector roadway. The proposed undercrossing will improve safety at this location by removing the need for existing at-grade roadway crossing for the trail. The USACE is the lead federal agency responsible for complying with Section 106.

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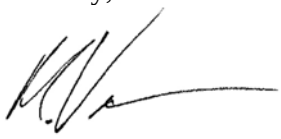

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January 15, 2021

Michael Linton, Chairperson
Mesa Grande Band of Diegueno Mission Indians
P.O Box 270
Santa Ysabel, CA 92070

Subject: Santa Gertrudis Bicycle/Trail Undercrossing at Margarita Road Project

Dear Chairperson Linton:

Environmental Science Associates (ESA) has been retained by the City of Temecula Planning Department (City) to conduct a cultural resources assessment for the Santa Gertrudis Bicycle/Trail Undercrossing at Margarita Road Project (Project) in support of environmental documentation pursuant to the California Environmental Quality Act (CEQA) and a U.S. Army Corps of Engineers (USACE) 404 permit, requiring compliance with Section 106 of the National Historic Preservation Act (Section 106). The Project would design and construct a bicycle/multi-use trail undercrossing for the existing Santa Gertrudis Creek Trail. The existing trail crosses Margarita Road in the City of Temecula, which is a heavily traveled four-lane divided collector roadway. The proposed undercrossing will improve safety at this location by removing the need for existing at-grade roadway crossing for the trail. The USACE is the lead federal agency responsible for complying with Section 106.

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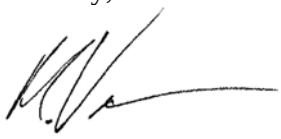
Thank you for your cooperation on this matter. If you have any questions or comments, please contact Michael Vader by phone at 619.719.4195 or by email at mvader@esassoc.com.

Sincerely,



Michael Vader
Cultural Resources Specialist

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January 15, 2021

Patricia Garcia-Plotkin, Director
Agua Caliente Band of Cahuilla Indians
5401 Dinah Shore Drive
Palm Springs, CA 92264

Subject: Santa Gertrudis Bicycle/Trail Undercrossing at Margarita Road Project

Dear Director Garcia-Plotkin:

Environmental Science Associates (ESA) has been retained by the City of Temecula Planning Department (City) to conduct a cultural resources assessment for the Santa Gertrudis Bicycle/Trail Undercrossing at Margarita Road Project (Project) in support of environmental documentation pursuant to the California Environmental Quality Act (CEQA) and a U.S. Army Corps of Engineers (USACE) 404 permit, requiring compliance with Section 106 of the National Historic Preservation Act (Section 106). The Project would design and construct a bicycle/multi-use trail undercrossing for the existing Santa Gertrudis Creek Trail. The existing trail crosses Margarita Road in the City of Temecula, which is a heavily traveled four-lane divided collector roadway. The proposed undercrossing will improve safety at this location by removing the need for existing at-grade roadway crossing for the trail. The USACE is the lead federal agency responsible for complying with Section 106.

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Sincerely,

Michael Vader
Cultural Resources Specialist

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January 15, 2021

Ralph Goff, Chairperson
Campo Band of Diegueno Mission Indians
36190 Church Road, Suite 1
Campo, CA 91906

Subject: Santa Gertrudis Bicycle/Trail Undercrossing at Margarita Road Project

Dear Chairperson Goff:

Environmental Science Associates (ESA) has been retained by the City of Temecula Planning Department (City) to conduct a cultural resources assessment for the Santa Gertrudis Bicycle/Trail Undercrossing at Margarita Road Project (Project) in support of environmental documentation pursuant to the California Environmental Quality Act (CEQA) and a U.S. Army Corps of Engineers (USACE) 404 permit, requiring compliance with Section 106 of the National Historic Preservation Act (Section 106). The Project would design and construct a bicycle/multi-use trail undercrossing for the existing Santa Gertrudis Creek Trail. The existing trail crosses Margarita Road in the City of Temecula, which is a heavily traveled four-lane divided collector roadway. The proposed undercrossing will improve safety at this location by removing the need for existing at-grade roadway crossing for the trail. The USACE is the lead federal agency responsible for complying with Section 106.

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Sincerely,

Michael Vader
Cultural Resources Specialist

626 Wilshire Boulevard
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213.599.4301 fax

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January 15, 2021

Robert Pinto, Chairperson
Ewiiaapaayp Band of Kumeyaay Indians
4054 Willows Road
Alpine, CA 91901

Subject: Santa Gertrudis Bicycle/Trail Undercrossing at Margarita Road Project

Dear Chairperson Pinto:

Environmental Science Associates (ESA) has been retained by the City of Temecula Planning Department (City) to conduct a cultural resources assessment for the Santa Gertrudis Bicycle/Trail Undercrossing at Margarita Road Project (Project) in support of environmental documentation pursuant to the California Environmental Quality Act (CEQA) and a U.S. Army Corps of Engineers (USACE) 404 permit, requiring compliance with Section 106 of the National Historic Preservation Act (Section 106). The Project would design and construct a bicycle/multi-use trail undercrossing for the existing Santa Gertrudis Creek Trail. The existing trail crosses Margarita Road in the City of Temecula, which is a heavily traveled four-lane divided collector roadway. The proposed undercrossing will improve safety at this location by removing the need for existing at-grade roadway crossing for the trail. The USACE is the lead federal agency responsible for complying with Section 106.

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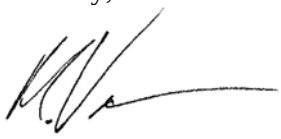

Michael Vader
Cultural Resources Specialist

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January 15, 2021

Tribal Council
San Luis Rey Band of Mission Indians
1889 Sunset Drive
Vista, CA 92081

Subject: Santa Gertrudis Bicycle/Trail Undercrossing at Margarita Road Project

Dear Tribal Council:

Environmental Science Associates (ESA) has been retained by the City of Temecula Planning Department (City) to conduct a cultural resources assessment for the Santa Gertrudis Bicycle/Trail Undercrossing at Margarita Road Project (Project) in support of environmental documentation pursuant to the California Environmental Quality Act (CEQA) and a U.S. Army Corps of Engineers (USACE) 404 permit, requiring compliance with Section 106 of the National Historic Preservation Act (Section 106). The Project would design and construct a bicycle/multi-use trail undercrossing for the existing Santa Gertrudis Creek Trail. The existing trail crosses Margarita Road in the City of Temecula, which is a heavily traveled four-lane divided collector roadway. The proposed undercrossing will improve safety at this location by removing the need for existing at-grade roadway crossing for the trail. The USACE is the lead federal agency responsible for complying with Section 106.

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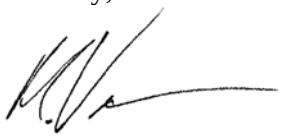

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January 15, 2021

Scott Cozart, Chairperson
Soboba Band of Luiseno Indians
P. O. Box 487
San Jacinto, CA 92583

Subject: Santa Gertrudis Bicycle/Trail Undercrossing at Margarita Road Project

Dear Chairperson Cozart:

Environmental Science Associates (ESA) has been retained by the City of Temecula Planning Department (City) to conduct a cultural resources assessment for the Santa Gertrudis Bicycle/Trail Undercrossing at Margarita Road Project (Project) in support of environmental documentation pursuant to the California Environmental Quality Act (CEQA) and a U.S. Army Corps of Engineers (USACE) 404 permit, requiring compliance with Section 106 of the National Historic Preservation Act (Section 106). The Project would design and construct a bicycle/multi-use trail undercrossing for the existing Santa Gertrudis Creek Trail. The existing trail crosses Margarita Road in the City of Temecula, which is a heavily traveled four-lane divided collector roadway. The proposed undercrossing will improve safety at this location by removing the need for existing at-grade roadway crossing for the trail. The USACE is the lead federal agency responsible for complying with Section 106.

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Sincerely,

Michael Vader
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January 15, 2021

Shasta Gaughen, Tribal Historic Preservation Officer
Pala Band of Mission Indians
PMB 50, 35008 Pala Temecula Road
Pala, CA 92059

Subject: Santa Gertrudis Bicycle/Trail Undercrossing at Margarita Road Project

Dear Tribal Historic Preservation Officer Gaughen:

Environmental Science Associates (ESA) has been retained by the City of Temecula Planning Department (City) to conduct a cultural resources assessment for the Santa Gertrudis Bicycle/Trail Undercrossing at Margarita Road Project (Project) in support of environmental documentation pursuant to the California Environmental Quality Act (CEQA) and a U.S. Army Corps of Engineers (USACE) 404 permit, requiring compliance with Section 106 of the National Historic Preservation Act (Section 106). The Project would design and construct a bicycle/multi-use trail undercrossing for the existing Santa Gertrudis Creek Trail. The existing trail crosses Margarita Road in the City of Temecula, which is a heavily traveled four-lane divided collector roadway. The proposed undercrossing will improve safety at this location by removing the need for existing at-grade roadway crossing for the trail. The USACE is the lead federal agency responsible for complying with Section 106.

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Sincerely,

Michael Vader
Cultural Resources Specialist

626 Wilshire Boulevard
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Los Angeles, CA 90017
213.599.4300 phone
213.599.4301 fax

www.esassoc.com

January 15, 2021

Temet Aguilar, Chairperson
Pauma Band of Luiseno Indians
P.O. Box 369
Pauma Valley, CA 92061

Subject: Santa Gertrudis Bicycle/Trail Undercrossing at Margarita Road Project

Dear Chairperson Aguilar:

Environmental Science Associates (ESA) has been retained by the City of Temecula Planning Department (City) to conduct a cultural resources assessment for the Santa Gertrudis Bicycle/Trail Undercrossing at Margarita Road Project (Project) in support of environmental documentation pursuant to the California Environmental Quality Act (CEQA) and a U.S. Army Corps of Engineers (USACE) 404 permit, requiring compliance with Section 106 of the National Historic Preservation Act (Section 106). The Project would design and construct a bicycle/multi-use trail undercrossing for the existing Santa Gertrudis Creek Trail. The existing trail crosses Margarita Road in the City of Temecula, which is a heavily traveled four-lane divided collector roadway. The proposed undercrossing will improve safety at this location by removing the need for existing at-grade roadway crossing for the trail. The USACE is the lead federal agency responsible for complying with Section 106.

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Sincerely,

Michael Vader
Cultural Resources Specialist

Michael Vader

From: Gonzalez Romero, Arysa (TRBL) <aromero@aguacaliente.net>
Sent: Tuesday, February 2, 2021 4:14 PM
To: Michael Vader
Subject: Santa Gertrudis Bicycle/Trail Undercrossing at Margarita Road project

Greetings,

A records check of the Tribal Historic preservation office's cultural registry revealed that this project is not located within the Tribe's Traditional Use Area. Therefore, we defer to the other tribes in the area. This letter shall conclude our consultation efforts.

Thank you,

Arysa Gonzalez Romero
Historic Preservation Technician
Agua Caliente Band of Cahuilla Indians
Tribal Historic Preservation Office
Main (760)-883-1327 | Cell (760)-831-2484

Rincon Band of Luiseño Indians

CULTURAL RESOURCES DEPARTMENT

One Government Center Lane | Valley Center | CA 92082
(760) 749-1051 | Fax: (760) 749-8901 | rincon-nsn.gov

January 20, 2021

Sent only via email to: mvader@esassoc.com
ESA
Michael Vader
626 Wilshire Boulevard, Suite 1100
Los Angeles, CA 90017

Re: Santa Gertrudis Bicycle/Trial Undercrossing at Margarita Road Project

Dear Mr. Vader,

This letter is written on behalf of the Rincon Band of Luiseño Indians ("Rincon Band" or "Band"), a federally recognized Indian Tribe and sovereign government. We have received your notification regarding the above referenced project and we thank you for the opportunity to provide information pertaining to cultural resources. The identified location is within the Territory of the Luiseño people, and is also within Rincon's specific area of Historic interest.

Embedded in the Luiseño territory are Rincon's history, culture and identity. We do not have knowledge of cultural resources within the proposed project area. However, this does not mean that none exist. We recommend that an archaeological record search be conducted and ask that a copy of the results be provided to the Rincon Band.

If you have additional questions or concerns, please do not hesitate to contact our office at your convenience at (760) 297-2635 or via electronic mail at CRD@rincon-nsn.gov. We look forward to working together to protect and preserve our cultural assets.

Sincerely,

Cheryl Madrigal
Tribal Historic Preservation Officer
Cultural Resources Manager

Michael Vader

From: Quechan Historic Preservation Officer <historicpreservation@quechantribe.com>
Sent: Wednesday, January 27, 2021 2:40 PM
To: Michael Vader
Subject: Santa Gertrudis Bicycle/Trail Undercrossing at Margarita Road Project

This email is to inform you that we have no comments on this project. We defer to the more local Tribes and support their decisions on the project.

Thank you,
H. Jill McCormick, M.A.

Quechan Indian Tribe
Historic Preservation Officer
P.O. Box 1899
Yuma, AZ 85366-1899
Office: 760-572-2423
Cell: 928-261-0254
E-mail: historicpreservation@quechantribe.com

Appendix E
Energy Calculations

ESA

Unmitigated Fuel Conversion - Construction

	Total CO_2 MT/yr	Fuel Type	Factor $KGCO_2$/gal	Gallons
source:	CalEEMOd			
Demolition	7.84	diesel	10.21	768
Grading	5.23	diesel	10.21	512
Building Construction	45.42	diesel	10.21	4,449
Architectural Coating	2.56	diesel	10.21	250
Total Off-Road Diesel				**5,980**

Onroad

source: EMFAC2017

	Hauling	Vendor	Worker
Demolition	2	-	1
Grading	1	-	0
Building Construction	-	5	4
Architectural Coating	-	-	1
	3	5	6

Total On-Road Diesel	**8**
Total On-Road Gasoline	**6**

Total Diesel	5,987.57
Total Gasoline	6.00

Construction Energy Analysis
Construction Water Energy Estimates

Source	Acres	Construction Water Use per Day (Mgal)	Days of Water Use	Total Construction Water Use (Mgal)	Total Electricity Demand from Water Demand (MWh)
Project Site	0.17	0.00051	10	0.005	0.1
CalEEMod Water Electricity Factors		**Electricity Intensity Factor To Supply (kWh/Mgal)**	**Electricity Intensity Factor To Treat (kWh/Mgal)**	**Electricity Intensity Factor To Distribute (kWh/Mgal)**	**Electricity Intensity Factor For Wastewater Treatment (kWh/Mgal)**
		9727	111	1272	1911

Sources and Assumptions:

-Electricity Intensity Factors - California Emissions Estimator Model (CalEEMod).

-Estimated construction water use assumed to be generally equivalent to landscape irrigation, based on a factor of 20.94 gallons per year per square foot of landscaped area within the Los Angeles area (Mediterranean climate), which assumes high water demand landscaping materials and an irrigation system efficiency of 85%. Factor is therefore (20.94 GAL/SF/year) x (43,560 SF/acre) / (365 days/year) / (0.85) = 2,940 gallons/acre/day, rounded up to 3,000 gallons/acre/day. (U.S. Department of Energy, Energy Efficiency & Renewable Energy, Federal Energy Management Program. “Guidelines for Estimating Unmetered Landscaping Water Use." July 2010. Page 12, Table 4 - Annual Irrigation Factor – Landscaped Areas with High Water Requirements).

Appendix F

Foundation Report for Retaining Walls

ESA

Earth Mechanics, Inc.

Geotechnical & Earthquake Engineering

January 20, 2021

EMI Project No. 20-130

EXP
451 East Vanderbilt Way, Suite 375
San Bernardino, CA 92408

Attention: Mr. Gabriel Rodriguez, PE

Subject: **Foundation Report for Retaining Walls**
Santa Gertrudis Creek Phase II, Temecula, California
City Project No. PW19-04

Dear Mr. Rodriguez:

The existing multiuse trail along Santa Gertrudis Creek crosses Margarita Road at grade over the existing bridge. The subject project proposes to extend the existing trail under the existing Margarita Road Undercrossing to provide a continuous and safe passage under Margarita Road. This re-configuration will require two retaining walls and this foundation report presents the findings, conclusions and recommendations for the design and construction of these walls.

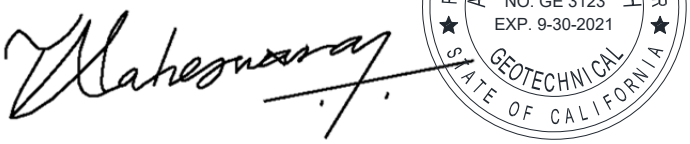
Please submit this report to City of Temecula, and any other participating agencies for their review. Responses to their review comments, as well as your comments, will be incorporated into a revised report.

We appreciate the opportunity to provide geotechnical services for this project. If you have any questions, please do not hesitate to contact us.

Sincerely,

EARTH MECHANICS, INC.

Prathapan Ragavan
Staff Engineer



(Alahesh) A. Thurairajah, GE 3123
Senior Engineer

FOUNDATION REPORT FOR RETAINING WALLS
SANTA GERTRUDIS CREEK PHASE II, TEMECULA, CALIFORNIA
CITY PROJECT NO. PW19-04

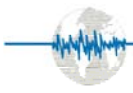
Prepared for:

EXP
451 East Vanderbilt Way, Suite 375
San Bernardino, CA 92408

Prepared by:
Earth Mechanics, Inc.
17800 Newhope Street, Suite B
Fountain Valley, California 92708

EMI Project No. 20-130

January 20, 2021



Earth Mechanics, Inc.
Geotechnical & Earthquake Engineering

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TABLES

FIGURES

APPENDICES

1.0 SCOPE OF WORK

This Foundation Report presents the findings and conclusions of a geotechnical study conducted by Earth Mechanics, Inc. (EMI) for the retaining walls proposed for the Santa Gertrudis Creek Phase II project. The purpose of the geotechnical study was to obtain information on subsurface soils and conditions, and develop design and construction recommendations to assist EXP in preparing the project Plans, Specifications, and Estimates (PS&E) for the project.

The geotechnical services provided for this project included the following tasks:

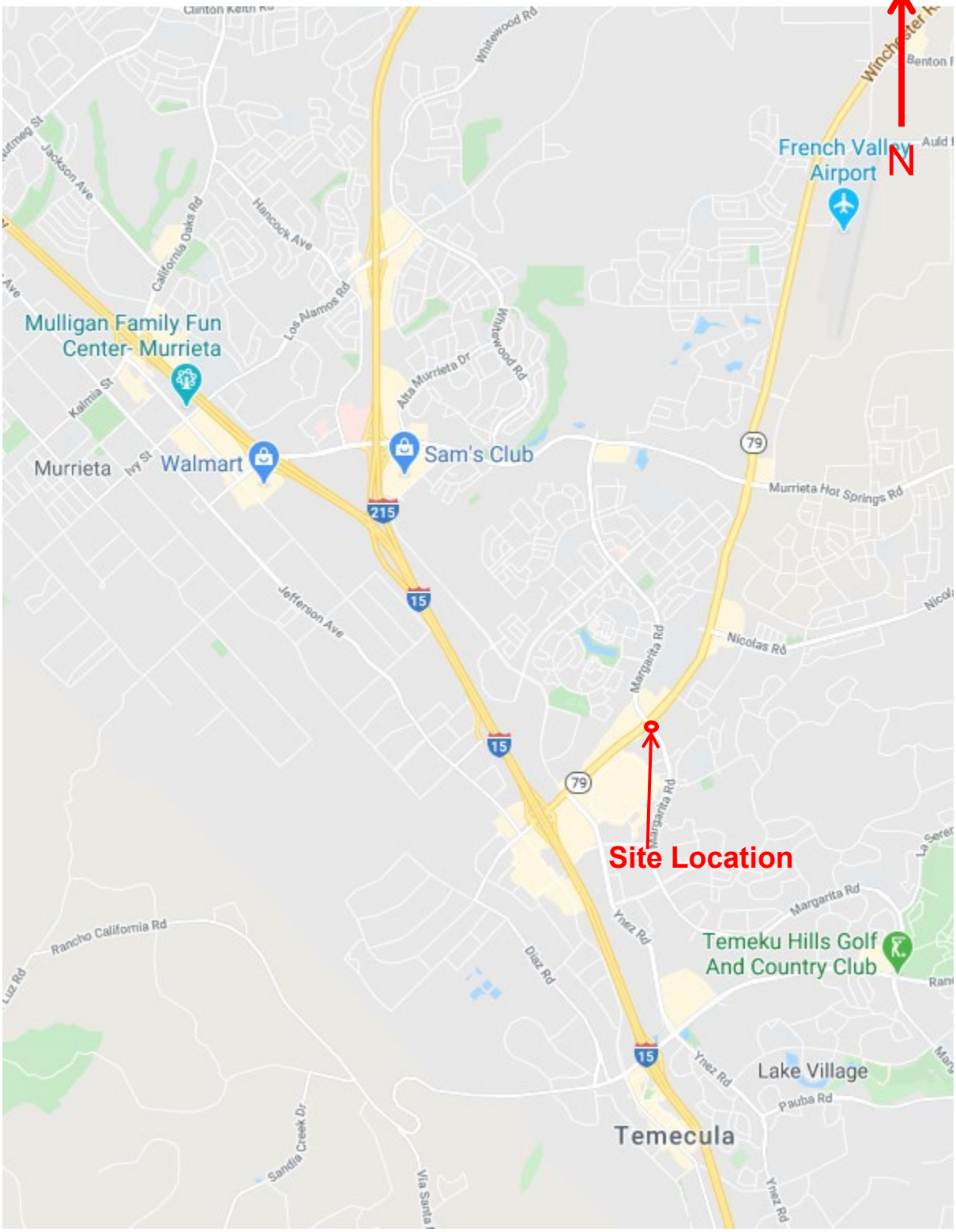
- Collection and review of existing geotechnical information;
- Geotechnical field exploration including drilling and logging of exploratory borings;
- Laboratory testing of selected subsurface soil samples;
- Engineering analysis to develop geotechnical design and construction recommendations; and
- Preparation of this report presenting our findings, conclusions, and recommendations.

2.0 PROJECT DESCRIPTION

The City of Temecula (City) proposes to eliminate the existing at-grade street crossing of the existing multi-use trail at Margarita Road and Santa Gertrudis Creek. The reconfigured trail will pass under the existing Margarita Road Undercrossing (UC). Two retaining walls (RWs) are needed to accommodate this reconfiguration: a Type-5 wall is proposed on the channel slope and will be used to retain the new trail; a ground anchor wall (GAW) is proposed below the existing Margarita Road UC and is used to retain the abutment end slope. The project location is shown in Figure 1 and the relevant wall information is presented in Table 1. Majority of the GAW designed height is 10'-10", tapering down to 6'-4" at both ends. The GAW retained height is about 1'-4" to 2'-10" shorter than the wall height.

Table 1. Relevant Retaining Walls Data

Type	Length (feet)	Height (feet)
Type-5	568	6 to 10
GAW	170	6'-4" to 10'-10"
Notes: (1) GAW = Ground Anchor Wall (2) Type-5 is a Caltrans Standard Plans Retaining Wall		



Earth Mechanics, Inc.
Geotechnical and Earthquake Engineering

SANTA GERTRUDIS CREEK PHASE II

SITE LOCATION MAP

Project No. 20-130 | Date: Dec 2020

Figure 1

3.0 FIELD INVESTIGATION AND TESTING PROGRAM

3.1 Available Subsurface Information

A draft geotechnical report has been prepared by Diaz Yourman & Associates (DYA, 2005) for the "Old Project" described in the RFP issued by the City. The DYA report contained three soil borings and the boring depths ranged from 11.5 to 38.5 feet. This boring data is drafted in a Log-of-Test-Borings (LOTB) format and included in Appendix A.

3.2 Supplemental Field Investigation

On November 5 and 6, 2020, EMI conducted a geotechnical field investigation consisting of five hollow-stem auger borings. The approximate locations of the borings are shown in Figure 2. Soil exploration information is summarized in Table 2 and the LOTB sheets are included in Appendix A.

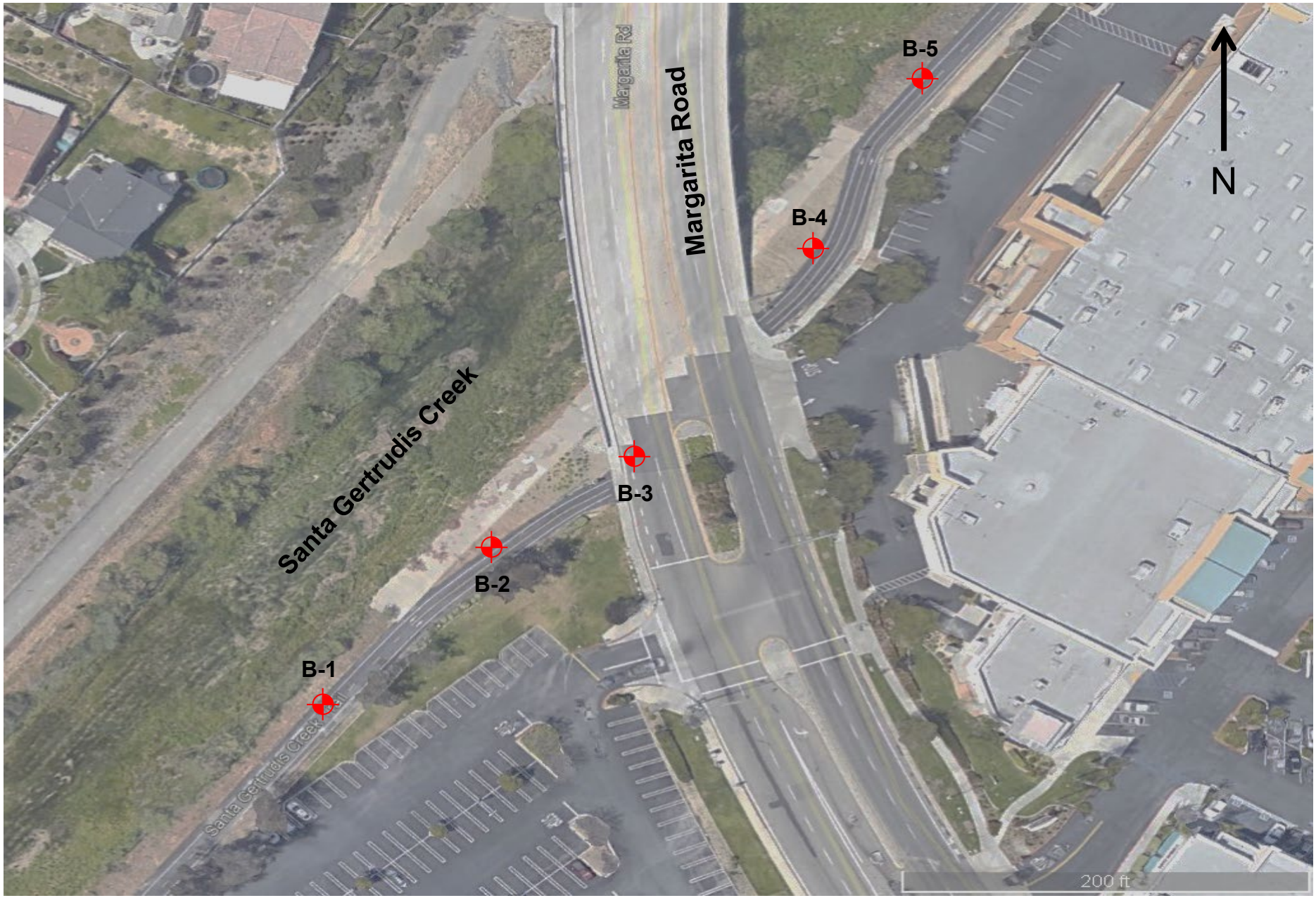
Table 2. Soil Exploration Information

Boring No.	Boring Type	Northing (feet)	Easting (feet)	Approx. Station	Station Line	Approx. Offset (feet)	Approx. Ground Surface El. (feet)	Approx. Bottom of Hole El. (feet)	Approx. Groundwater El. During Drilling (feet)
B-1	HSA	2138563.2	6286385.5	10+21	"A" Line	4.6 Rt	+1070.0	+1028.5	NE
B-2	HSA	2138650.1	6286463.9	11+38		24.2 Rt	+1072.0	+1030.5	+1032.0
B-3	HSA	2138721.8	6286541.7	12+42		42.7 Rt	+1077.0	+1025.5	+1031.0
B-4	HSA	2138856.3	6286632.6	14+04		33.9 Rt	+1075.0	+1043.5	NE
B-5	HSA	2138970.2	6286693.8	15+33		8.7 Rt	+1071.0	+1019.5	+1031.6

Notes: HSA = Hollow-Stem Auger, NE = Not Encountered, "A" Line = Multi-use Trail Centerline.

The borings were drilled using a track-mounted drill rig equipped with 8-inch diameter hollow-stem auger. Subsurface soils and conditions were logged and samples of soils were collected for laboratory testing. Bulk samples were collected from selected borings. Smaller disturbed and relatively undisturbed soil samples were collected from soil borings generally at 2.5 or 5-foot intervals using the Standard Penetration Test (SPT) sampler or the Modified California Drive (MCD) sampler. The SPT sampler is unlined and has an inside diameter of 1.4 inches and the MCD sampler is lined with a series of 1-inch tall brass rings with an inside diameter of 2.4 inches.

Blowcounts from the SPT and MCD samplers were recorded during the exploration. The samplers were driven using a 140-lb hammer falling 30 inches down a total depth of 18 inches or until refusal, whichever occurs first. The drill rig was equipped with an auto-trip safety hammer with a rated efficiency of 81% (hammer efficiency provided by the drilling contractor). The blowcounts for the last 12 inches or less of penetration were recorded and are shown on the LOTB sheets included in Appendix A.



Approximate Boring Location

Earth Mechanics, Inc. Geotechnical and Earthquake Engineering	Santa Gertrudis Creek – Phase II Project No. 20-130 | Date: Dec 2020	**BORING LOCATION MAP** **Figure 2**

3.3 Laboratory Testing Program

Selected soil samples were tested to determine soil classification and physical and engineering properties. A list of tests performed, the corresponding test methods, and purpose of testing is presented in Table 3.

The laboratory soil tests were conducted in general accordance with California Test (CT) methods or American Society for Testing and Materials (ASTM) standards. The test results are presented in Appendix B. The locations where tests were performed are shown on the LOTB sheets included in Appendix A. Laboratory test results extracted from the DYA report (2005) are also included in Appendix B.

Table 3. Explanation of Laboratory Tests Performed

Type of Test	Applicable Test Method	Purpose
Dry Density	ASTM D 2937	Estimate in-situ soil density
Moisture Content	ASTM D 2216	Estimate in-situ soil moisture content
Sand Equivalent	CT 217	Estimate relative proportions of clay-like material in soil
Direct Shear	ASTM D 3080	Estimate soil strength parameters
Soil pH	CT 532/643	Determine soil corrosion potential
Minimum Resistivity	CT 532/643	
Sulfate Content	CT 417	
Chloride Content	CT 422	

4.0 SUBSURFACE CONDITIONS

4.1 Soil Stratigraphy

The site is underlain predominately by sandy soils: an upper sand layer consisting of clayey sand and silty sand, and a lower sand layer consisting of clayey sand, silty sand and poorly-graded sand. A lean clay layer was encountered below the lower sand layer in one of the deeper soil boring; this lean clay layer may or may not be continuous across the project site. It should be noted that the above soil description is general and is intended to describe the subsurface in very broad terms. The soil description above should not be constructed to mean that the subsurface profile is uniform and that soil is homogeneous within the project area. Details on stratigraphy at each borehole location are provided on the LOTB sheets presented in Appendix A.

An idealized soil profile and design strength parameters for geotechnical analyses and foundation design were developed using the subsurface information obtained from the recent borings. The shear strength parameters were estimated using laboratory test data and correlations with field blowcounts (Lam and Martin, 1986). The lean clay layer below the lower sand layer was omitted from the idealized soil profile because this soil layer was encountered only in one boring at a relatively deep depth that will not impact foundation design.

Table 4. Idealized Soil Profile and Strength Parameters

Approximate Elevation (feet)	Predominant Soil Type	Range of Measured SPT Blowcount (Blows/ft)	Friction Angle (degrees)	Cohesion (psf)	Total Unit Weight (pcf)
Exist. Ground Surface to +1055	Clayey Sand & Silty Sand	9 to 28 Average = 17	31	125	120
+1055 to +1027	Clayey Sand, Silty Sand & Poorly Graded Sand	13 to 36 Average =21	34	100	120

It should be noted that the idealized soil profile and shear strength parameters in Table 4 were developed primarily for the design of retaining wall foundations addressed in this report. Direct application of the same idealized profile and shear strength parameters for other structural and non-structural elements in design and construction not specifically addressed in details in this report are likely to be invalid. This is because selecting an idealized profile and shear strength parameters, to some extent, is influenced by the preferred design methodologies associated with wall foundations. The same is true for the laboratory test results: the type and distribution of testing were tailored to wall foundation design. Selective usage of one or multiple sets of test results for other structural and non-structural elements in design and construction not specifically addressed in details in this report will likely provide an erroneous interpretation of onsite soil properties. For design and construction elements not specifically addressed herein, we recommend supplemental field exploration and laboratory tests be performed to establish suitable and representative geotechnical design data for the specific design element.

4.2 Groundwater

Groundwater was encountered near elevations +1,032 feet (approximately 45 feet below the approach to Abutment 1 of the Margarita Road UC) during field investigation in November 2020. However, the site is located immediately adjacent to the Santa Gertrudis Creek and groundwater depth will be very sensitive to the groundwater conditions inside and outside the creek.

Groundwater depth affects liquefaction assessment and foundation design. Caltrans Geotechnical Manual on Liquefaction Evaluation (Caltrans, 2020b) advises to use groundwater depth measured during field investigation (for final design), and caution the use of a shallower groundwater depth unless "there is clear evidence for seasonal or long-term fluctuations". Based on the above data, a design groundwater table was placed at an elevation of +1,032 feet for geotechnical analysis and foundation design.

In addition to the groundwater conditions inside and outside the creek, it should be noted that the groundwater elevation is subject to seasonal rainfall fluctuation and runoff amount, local irrigation practices, extraction and recharge of local and regional aquifers, and other manmade conditions. Therefore, the groundwater elevation during construction can be different from the design groundwater elevation provided above.

5.0 SITE-SEISMICITY AND ANALYSES

5.1 Seismic Design

The design Peak Ground Acceleration (PGA) for the project site was determined using the Caltrans ARS Online V3.0.2 (2020a) following the procedures described in Caltrans Seismic Design Criteria Version 2.0 (SDC 2.0) (2019b) and October 2019 Interim Revisions to SDC 2.0 (2019a), and the small-strain shear wave velocity for the upper 100 feet (V_{s30}). This V_{s30} was estimated from the information presented in the LOTB sheets included in Appendix A and the SPT correlations provided in the Methodology for Developing Design Response Spectrum for Use in Seismic Design Recommendations (Caltrans, 2012a). The key parameters for determining the design PGA are listed in Table 5. The calculated design magnitude (M) is 6.88 and the PGA is 0.55g.

Table 5. Key Parameters for Determining PGA

Site Coordinates	Latitude = 33.533075 degrees	Longitude = -117.152799 degrees
Shear Wave Velocity, V_{s30}	951 feet/sec (290 m/sec)	

5.2 Liquefaction Potential and Seismically-Induced Settlement

The liquefaction analysis was performed using the site-specific soil borings and the design groundwater elevations provided in Section 4.2. The liquefaction potential of saturated, coarse-grained materials below the design groundwater table was evaluated using the SPT data with the procedures outlined by Youd et al. (2001). Results of the analysis indicate that localized liquefiable layers were encountered in Borings B-3 and B-5 between elevations +1,032 and +1,027 feet (about 45 to 50 feet below the approach to Abutment 1 of the Margarita Road UC).

The resulting liquefaction induced settlement was estimated using the SPT blowcounts recorded in borings with the empirical method outlined by Tokimatsu and Seed (1987). Based on the calculation, a liquefaction-induced settlement of about an inch was obtained at the wall location. At this magnitude, the worst-case scenario is some tilting of the wall may occur and no collapse is anticipated.

5.3 Seismic Slope Instability

Since shallow liquefaction will not occur, lateral spreading is not considered a design issue. Results of the pseudo-static slope stability analysis are presented in Sections 8.3.

5.4 Ground Rupture

No major faults traverse through the project site. The California Division of Mines and Geology has not identified Alquist-Priolo Fault Zones through the site. Therefore, the risk of ground surface rupture and related hazards at the project site are expected to be low. According to Caltrans Memo To Designers 20-10 (Caltrans, 2013), since the project site does not fall within an Alquist-Priolo Earthquakes Fault Zone or within 1,000 feet of an unzoned fault that is Holocene or younger in age, further fault studies will not be needed.

6.0 SCOUR EVALUATION

The proposed retaining walls do not cross a channel or basin that conveys water. The channel slope adjacent to the trail at the Type-5 wall location will be concrete lined and the GAW is set-back away from the creek and separated by the new trail; therefore, scour potential is not considered a wall foundation design issue.

7.0 CORROSION EVALUATION

Representative soil samples were tested to determine corrosivity including minimum resistivity, pH, soluble sulfate content, and soluble chloride content. Four soil samples were tested for corrosivity and the results are summarized in Table 6.

Table 6. Soil Corrosion Test Results

Boring No.	Sample No.	Sample Depth (feet)	USCS Soil Type	Minimum Resistivity (ohm-cm)	pH	Chloride Content (ppm)	Sulfate Content (ppm)
B-1	B-0	0-5	Clayey Sand (SC)	2,800	8.4	259	248
B-1	S-5	15	Sandy Lean Clay (CL)	990	8.2	382	537
B-3	B-0	0-5	Clayey Sand (SC)	1,200	8.5	347	143
B-4	S-2	7.5	Silty Sand (SM)	2,400	8.7	299	288

According to Caltrans Corrosion Guidelines V3.0 (Caltrans, 2018c), soils are considered corrosive if the pH is 5.5 or less, or chloride concentration is 500 parts per million (ppm) or greater, or sulfate concentration is 1,500 ppm or greater. Based on the above corrosion test results and the Caltrans criteria, the on-site soils are classified to be non-corrosive to concrete and bare metals.

8.0 GEOTECHNICAL RECOMMENDATIONS

As mentioned in Section 2.0, a ground anchor wall will be constructed to retain the Abutment-1 end slope of the existing Margarita Road Undercrossing. A Type-5 wall is also proposed to retain the trail above the channel slope of the Santa Gertrudis Creek.

8.1 Ground Anchor Wall

Design of the ground anchor wall and the design lateral earth pressures should follow Caltrans Memo To Designers (MTD) 5-12 (Caltrans, 2012b). A ground anchor is comprised of an unbonded length and a bonded length. The unbonded length (or "free length") of the anchor is that portion which is not grouted; while the bonded length is that portion which is grouted to provide the pull-out resistance through friction between the soil-and-concrete interface. Recommendations for the ground anchor wall are provided below.

8.1.1 Lateral Earth Pressures

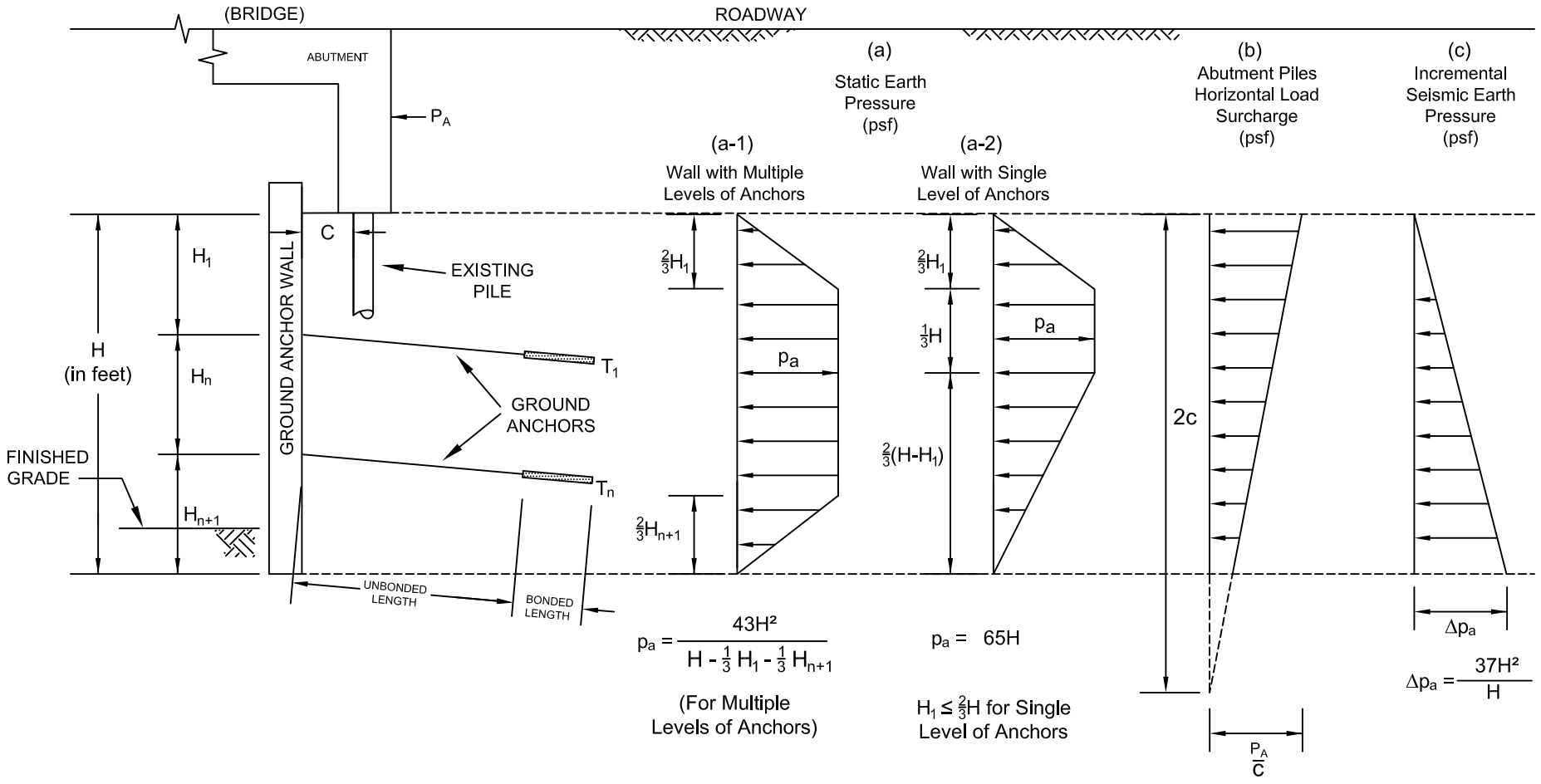
The static earth pressure in Figure 3 includes a load factor equal to 1.5 per MTD 5-12 (Caltrans, 2012b). Load factor of 1.0 was included in the incremental seismic earth pressure shown in Figure 3. Existing abutment piles surcharge is included in Figure 3 and was determined using the method described in MTD 5-12 (Caltrans, 2012b). The total lateral pile demand (P_A) should be calculated by the wall designers using the soil parameters provided below.

If abutment walls are free to move laterally at the top, a static active lateral earth pressure of 36 psf per foot of depth is recommended for a free draining, level and compacted backfill. If lateral movement at the top of abutment walls is restrained, the lateral earth pressure for a free draining, level and compacted backfill should follow Section 5.5.5.11 of the Caltrans Bridge Design Specification (Caltrans, 2004). For this condition, we recommend a coefficient of active lateral earth pressure of 0.3, a coefficient of at-rest lateral earth pressure of 0.47, and a soil unit weight of 120 pcf.

A uniform lateral pressure due to traffic loading, equivalent to a vertical pressure produced by at least 2 feet of earth with a soil unit weight of 120 pcf, should be added to the above lateral earth pressure. Therefore, for abutment walls that are free to move laterally at the top, the recommended uniform lateral earth pressure is 72 psf; for abutment walls where lateral movement at the top of the abutment walls is restrained, the recommended uniform lateral earth pressure is 113 psf.

For abutment walls that are free to move laterally at the top, the seismic incremental earth pressure should be modeled as a triangle with an equivalent fluid pressure of 25 pcf. For abutment walls where lateral movement at the top of the abutment walls is restrained, the seismic incremental earth pressure should be modeled as a triangle with an equivalent fluid pressure of 35 pcf.

According to the wall designer, the existing abutment wall can translate horizontally due to temperature changes. When the abutment wall moves, the existing piles supporting the abutment will also move and will exert pressure on the soil in front, and eventually this pressure will propagate onto the GAW.



c = Distance between anchored wall and abutment pile (feet)

P_A = Total Lateral Pile Demand: Static plus Traffic surcharge and incremental Seismic lateral load demand when applicable (pound per unit length); Geotechnical parameters to determine P_A are presented in Section 8.1.

Earth Mechanics, Inc. Geotechnical and Earthquake Engineering	SANTA GERTRUDIS CREEK TRAIL	Lateral Earth Pressures Against Ground Anchor Wall
	Project No. 20-130 / Date: December 2020	Figure 3

The wall designer estimates that the existing abutment can move as much as 1 inch. We estimate a pile-head shear force of 40 kips per pile for an inch of pile-top deflection, and linear interpolation can be used to determine the pile-head shear forces for movements between zero and 1 inch. The above pile-head shear force, expressed as a surcharge pressure, can be distributed in the same manner as shown in Figure 3b and for this case only, P_A is the above described pile-head shear force.

8.1.2 Unbonded Length

The unbonded length should fall outside the critical failure plane. This failure plane extends from the bottom of the wall clockwise at an angle of 44 degrees measured from the vertical. The unbonded length should be the largest of the following: (1) a minimum distance of H/5 (H is the wall height), or (2) 5 feet behind the above critical failure surface, or (3) a minimum distance of 5 feet behind the abutment piles, or (4) a minimum distance of 15 feet.

8.1.3 Bonded Length

As shown in Section 11.9.4.2 of the AASHTO LRFD Bridge Design Specifications (AASHTO, 2017), the nominal anchor pullout resistance is determined by multiplying the bonded surface area by an ultimate unit bond stress. The factored pullout resistance is computed by multiplying the nominal anchor pullout resistance by a resistance factor presented in AASHTO Table 11.5.7-1 [Modified in Caltrans amendments to AASHTO 2017 (2019c)]. Based on the information provided in AASHTO (2017), an ultimate unit bond stress of 30 psi is recommended for pressure grouted anchors. The contractor is responsible for determining the bonded length of the ground anchors; however, the bonded length of the anchors should not be less than 15 feet. Additionally, a minimum overburden of 15 feet over the center of the anchor bond zone is required per AASHTO (2017).

8.1.4 Bearing Capacity and Wall Friction

Bearing capacity of the wall base was calculated using a minimum embedment depth and wall width of 1.83 feet and 1.5 feet, respectively. The calculated bearing capacity values and recommended wall/soil coefficient of friction values are presented in Table 7. It should be noted that the frictional coefficients are applicable only when the shotcrete is in full contact with the soil; these frictional coefficients are not applicable for shotcrete in full contact with drainage panels.

Table 7. Bearing Capacity and Wall Friction, Ground Anchor Wall

Service Permissible Net Contact Stress (Settlement) (ksf)	**Strength** Factored Gross Nominal Bearing Resistance $\phi = 0.45$ (ksf)	**Extreme Event** Factored Gross Nominal Bearing Stress $\phi = 1.00$ (ksf)	**Permanent Condition** Coefficient of Friction Between Shotcrete and Soil Behind the Wall	**Temporary Condition** Coefficient of Friction Between Shotcrete and Soil Behind the Wall
2.0	2.6	5.7	0.3	0.35

8.2 Caltrans Standard Plans Type-5 Wall

The pertinent foundation design data for the Type-5 wall are presented in Table 8.

Table 8. Pertinent Design Data, Type-5 Wall

Wall Height (feet)	Wall Length (feet)	Bottom of Footing Elevation (feet)	Backfill Slope Condition	Ground Condition in Front of Wall
6	48	+1064.50, +1062.67	Level (Case 1)	1.5H:1V Sloping Down
8	24	+1060.60		
10	120	+1058.47		
8	48	+1058.47		
6	120	+1058.47		
8	48	+1058.47		
10	72	+1059.40		
8	48	+1060.60		
6	40	+1063.78		

8.2.1 Bearing Capacity and Settlement

The foundation bearing stresses for Strength Limit State, Extreme Event Limit State, and Service Limit State are presented in the Caltrans Standard Plans (Caltrans, 2018b) Sheet B3-4A for Type-5 (Case 1) walls. Settlement and soil bearing capacity calculations were performed using the minimum overexcavation depth presented in the next section. Based on the analysis, the Caltrans Standard Plans (Caltrans, 2018b) design is suitable for this retaining wall.

8.2.2 Overexcavation Recommendations

Based on the subsurface information collected from the recent site-specific soil borings, overexcavation recommendations are given in Table 9.

Table 9. Minimum Overexcavation Depth, Type-5 Wall

Wall Design Height (ft)	Minimum Overexcavation Depth Below Footing Bottom (ft)
6	1.0
8	1.5
10	2.0

The horizontal limits of the overexcavation should begin 1 foot from the edge of the footing bottom, and extending downward at a 45-degree imaginary plane until the plane intersects the recommended minimum overexcavation depth. If the 45-degree imaginary plane intersects any

temporary shoring, then this imaginary plane will continue downward along the shoring until the plane intersects the recommended minimum overexcavation depth. Caltrans Structure Backfill should be used for backfilling with a minimum relative compaction of 95% of maximum density as determined by Caltrans Test Method 216. The overexcavation bottom should be proof rolled prior to backfilling. Further, the overexcavation bottom should be inspected by a qualified geotechnical engineer or technician to confirm the presence of an unyielding and competent subgrade.

8.2.3 Lateral Resistance

Resistance to lateral loads may be developed by a combination of friction at the base of the retaining wall footing and passive earth pressure acting on the vertical face of the wall and wall footing. Since overexcavation and replacement with compacted Caltrans Structure Backfill were recommended for the footing, we recommend a frictional coefficient of 0.5 and an equivalent passive fluid pressure of 165 pcf. Resistance factors conforming to Section 11 of the California Amendments to AASHTO LRFD (Caltrans, 2019c) should be applied to the frictional and passive resistances.

The recommended soil passive resistance (as well as the soil bearing capacity) requires a minimum footing embedment of 3 feet measured from the nearest lowest adjacent grade to the footing bottom for footings constructed on a flat ground. For footings constructed on slopes, the minimum footing embedment is 3 feet measured from the nearest lowest adjacent grade to the footing bottom and the minimum horizontal offset is 4 feet measured at the top of footing to the slope face.

8.3 Global Stability

Global stability analyses were conducted for both static and pseudo-static conditions. The analysis was performed using the computer program SLIDE 2018 (Rocscience, 2018). The following cross-sections were analyzed: (1) at the maximum design height for the Type-5 wall, (2) at the maximum design height for the GAW, and (3) for a potential sliding surface passing below both the GAW and Type-5 wall.

The static condition included a 2-foot soil surcharge to represent traffic loading. In accordance with Caltrans guidelines (2014), stability analysis for the seismic condition was performed using the pseudo-static approach with a seismic coefficient of 0.183, which is equal to one-third the peak horizontal acceleration of 0.55g.

According to the results of the analyses, the proposed walls meet the minimum required factor-of-safety for deep-seated failure of 1.5 for the static condition and 1.1 for the pseudo-static condition per Caltrans guidelines (2014).

9.0 CONSTRUCTION CONSIDERATIONS

9.1 Earthwork

Earthwork should be performed in accordance with Section 19 of the Caltrans Standard Specifications (2018a). Appropriate measures should be taken to prevent damage to adjacent existing structures and utilities.

All overexcavations should be observed by qualified geotechnical personnel to verify that firm and unyielding bottoms are exposed. Overexcavated areas should be cleaned of loose soils and debris and should be observed to be firm and unyielding before receiving fill.

Qualified geotechnical personnel should monitor earthwork operations on a full-time basis. Any compacted fill placed in association with the construction of the retaining walls should be observed, monitored, and tested by qualified geotechnical personnel during construction. Field and laboratory tests should be conducted in accordance with California Test methods or ASTM Standards.

9.2 Temporary Excavation

Design of temporary construction slopes and shoring is the contractor's responsibility during construction. Heavy construction equipment should not be used immediately adjacent to shoring due to large lateral pressures induced by such equipment unless the shoring is designed to accommodate resulting pressures. Excavated soil or construction materials should not be stockpiled adjacent to shoring or open excavations. Stockpiled soil and construction materials should be set back a distance at least equal to the height of the excavation. It should be noted that it is the responsibility of the contractor to oversee the safety of the workers in the field during construction. The contractor shall conform to all applicable occupational safety and health standards, rules, regulations, and orders established by the State of California. If a trench shoring design and safety plan is required, the geotechnical consultant should review the plan to confirm that recommendations presented in this report have been applied to the design.

The contractor is responsible for evaluating the ease/difficulty of installing and extracting structural elements for temporary shoring walls in contact with the ground.

9.3 Groundwater Control

Groundwater was encountered near elevations +1,032 feet (approximately 45 feet below the approach to Abutment 1 of the Margarita Road UC) during field investigation in November 2020. It should also be noted that groundwater encountered during construction may be higher or lower than the elevation encountered during the recent field investigation because the site is immediately adjacent to the Santa Gertrudis Creek. Groundwater elevation can also vary due to seasonal rainfall fluctuation and runoff amount, local irrigation practices, extraction and recharge of local and regional aquifers, and other man-made conditions. Groundwater encountered during footing construction should be controlled in accordance with Section 19-3.03B(5) of the Caltrans Standard Specifications (2018a). Any seepage or groundwater removed from an excavation should be tested and disposed of in compliance with all applicable local, state and federal requirements.

It shall be made the contractor's responsibility to control subsurface and surface water. The contractor should dewater the site as necessary, if groundwater is encountered. Contractor should also be cognizant that any dewatering activities could induce ground subsidence which affects adjacent surface and subsurface structures and utilities. Water should not be allowed to stand in any excavations. If excavations become flooded, at-least the bottom 8 inches of soil should be removed and replaced, and re-compacted to a minimum 90 percent relative compaction. Additional removals may be required at the discretion of the resident engineer or geotechnical personnel.

9.4 Ground Anchor Wall Construction

To maintain stability of the existing abutment foundation, the ground anchor wall should be constructed in segments (slot cuts) to minimize the length of temporary excavations. EMI recommends that the maximum length of ground anchor wall, constructed at any given time, not exceed one-fifth of the length of the existing abutment foundation. It is likely, even with the provision of slot-cutting, that caving or sloughing will occur in these sandy soils during excavation. The contractor should expect a short stand up time at the exposed excavated face. Running of the coarse-grained materials can be controlled using soil stabilizing methods such as chemical grouting. The conditions described above should be considered by the contractor when bidding and selecting equipment and methods for construction.

We also recommend that a monitoring program be implemented during construction to monitor movement of the abutment. If the measured movement is ¼ inch or more, construction should be stopped immediately and measures to mitigate the movement should be implemented. A monitoring plan and a mitigation plan should be prepared by the contractor and submitted to the Resident Engineer for review.

"Wall Zones" are defined as segments of a wall that have different subsurface stratigraphy. Wall Zones are used in Stability Test, and stability tests for temporary excavations during wall construction should be performed in accordance with Section 19-3.01D(2) of the Caltrans Standard Specification (Caltrans, 2018a). Based on the information collected from the exploratory boreholes and the length of the proposed walls, one wall zone is recommended for the proposed ground anchor wall. Also, at-least two stability tests should be performed in the field during the wall excavations. Locations of the stability tests should be reviewed by the Resident Engineer or qualified geotechnical personnel prior to the start of the test excavations.

Ground anchors should be constructed and proof-tested in the field in accordance with Caltrans procedures and specifications. Diameter of the drilled hole for anchor installation is typically 6 to 8 inches. The angle of inclination of the anchors should be 10 to 15 degrees to facilitate tendon installation and grouting. Ground anchors should not be spaced closer than five diameters of the bonded zone or 5 feet, whichever is greater.

Controlling surface water and groundwater is important for minimizing the amount of water entering the soils and accumulating behind the back of the walls. EMI recommends constructing a gutter or v-ditch at the top and behind the wall and guiding surface water to approved drainage devices.

A subdrainage system should be installed behind the proposed walls in conjunction with the wall construction. Prefabricated geocomposite drains ("drainage board") connected to gravel galleries or slotted pipes or weepholes should be placed behind the proposed wall. Backdrain pipes or weepholes should outlet water to approved surface drainage collection devices.

9.5 Monitoring Existing Bridge Abutment During Construction

We recommend that a monitoring program be implemented during construction to monitor movement of the existing Abutment 1 of the Margarita Road UC. A minimum of three "markers" should be installed on the face of abutment. Movements of these markers will be monitored by surveyors using equipment that has an accuracy of at least 0.01-foot. If the measured vertical or horizontal movement is 1/4 inch or more, construction should be stopped immediately and measures to mitigate the movement should be implemented. A monitoring plan and a mitigation plan should be prepared by the contractor and submitted to the Resident Engineer for review.

9.6 Type-5 Retaining Wall Backfill and Drainage

Caltrans Structure Backfill should be used as backfill material behind the Type-5 retaining wall. Backfill should be compacted in accordance with Section 19-5 of the Caltrans Standard Specifications (2018a). Backfill should be placed in loose lifts not exceeding 8 inches in thickness, moisture-conditioned to near optimum moisture content, and compacted to at least 95 percent relative compaction. The relative compaction should be based on the maximum density determined by California Test Method 216. Jetting or flooding to compact backfill is not recommended. Heavy compaction equipment, such as vibratory rollers, dozers, or loaders, should not be used adjacent to the walls in order to avoid damaging the wall due to large lateral earth pressures.

Backdrains should be installed behind the wall to relieve hydrostatic pressure. Backdrains should be constructed in accordance with Bridge Detail 3-1 on Sheet B0-3 per Caltrans Standard Plans (2018b) or the geocomposite drain alternative per Section 6 of the Caltrans Bridge Design Details (1992).

9.7 Review of Construction Plans

Recommendations contained herein are based on the preliminary Structure Plans and design information provided by the wall designers. Recommendations presented in this report may require modification or additional recommendations may be necessary based on the final design.

9.8 Geotechnical Observation and Testing

Qualified geotechnical personnel should perform inspections and testing during the following stages of construction:

- Grading operations, including temporary and permanent excavations.
- Ground anchor installation and testing.
- Placement of structure backfill behind retaining wall.
- Backdrain installation at retaining wall.

- Preparation of foundation subgrades.
- Shoring installation, if necessary.
- Footing excavations.
- Removal or installation of support of buried utilities or structures.
- When any unusual subsurface conditions are encountered.

10.0 LIMITATIONS

This report is intended for use by EXP and the City of Temecula for the Santa Gertrudis Creek Phase-II project. This report is based on the project as described herein and the information obtained from the exploratory borings at the approximate locations shown in Figure 2 and LOTB sheets. The findings and recommendations contained in this report are based on the results of the field investigation, laboratory tests, and engineering analyses. Also, soils and subsurface conditions encountered in the exploratory borings are presumed to be representative of the project site; however, subsurface conditions and characteristics of soils between exploratory borings can vary. Findings reflect an interpretation of the direct evidence obtained. Recommendations presented herein are based on the assumption that an appropriate level of quality control and quality assurance (inspections and tests) will be provided during construction. EMI has no responsibility for errors and incompleteness of available design drawings and assumptions made by EMI due to these errors and incomplete information. EMI should be notified of any pertinent changes in the project plans or if subsurface conditions are found to vary from those described herein. Modifications to the project plans or variations in subsurface conditions may require re-evaluation of the recommendations contained in this report.

The data, opinions, and recommendations contained in this report are applicable to the specific design element(s) and location(s) which is (are) the subject of this report. They have no applicability to any other design elements or to any other locations, and any and all subsequent users accept any and all liability resulting from any use or reuse of the data, opinions, and recommendations without the prior written consent of EMI.

EMI has no responsibility for construction means, methods, techniques, sequences, or procedures, or for safety precautions or programs in connection with the construction, for the acts or omissions of the CONTRACTOR, or any other person performing any of the construction, or for the failure of any worker to carry out the construction in accordance with the Final Construction Drawings and Specifications.

Services performed by EMI have been conducted in a manner consistent with that level of care and skill ordinarily exercised by members of the profession currently practicing in the same locality under similar conditions. No other representation, expressed or implied, and no warranty or guarantee is included or intended.

11.0 REFERENCES

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APPENDIX A

LOG-OF-TEST-BORINGS SHEETS

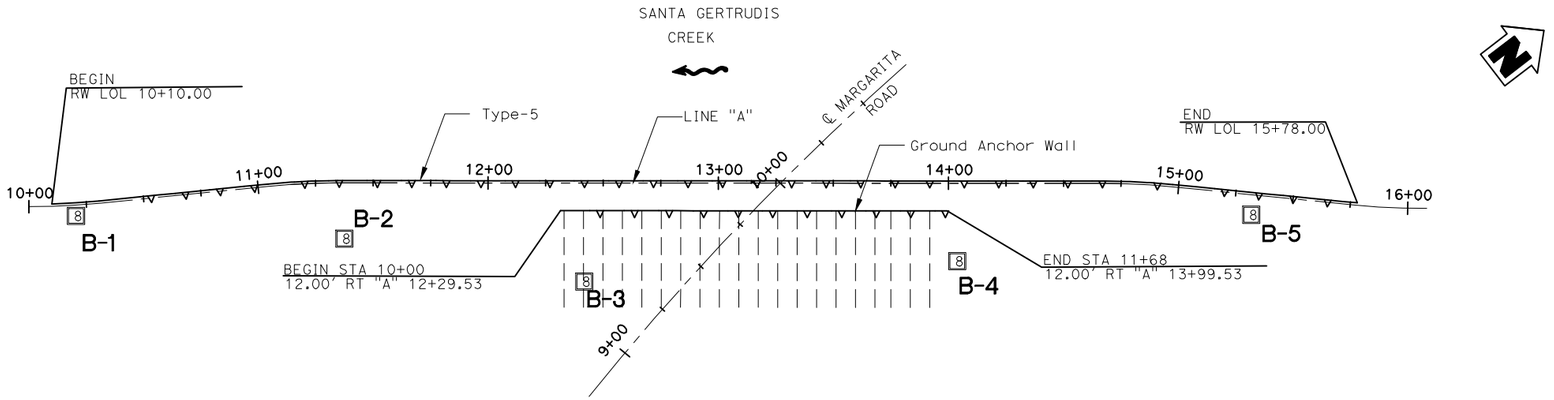
NOTES:

(1) This LOTB sheet (Boring Record) was prepared in accordance with Caltrans Soil and Rock Logging, Classification and Presentation Manual (2010).

(2) 1.4" samples were taken using a Standard Penetration Sampler and 2.4" samples were taken using a California Modified Sampler.

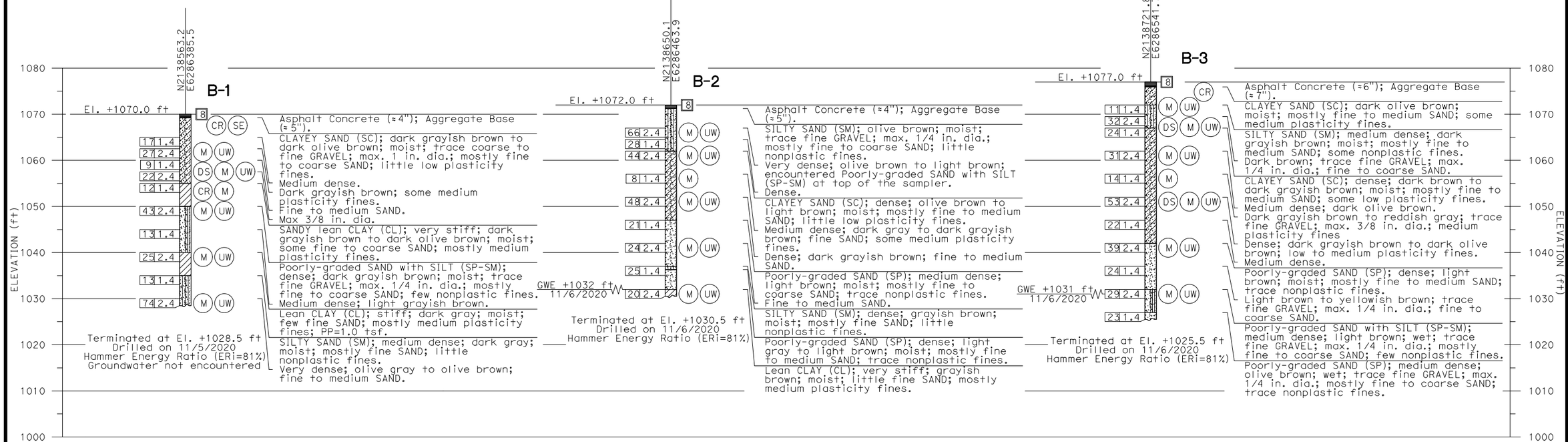
(3) An automatic trip hammer system consisting of a hammer weight of 140 lbs falling a distance of 30" drop was used to advance samplers.

(4) For Soil Legend, see A10F and A10G of the Caltrans Standard Plans.



PLAN

1" = 30'



PROFILE

1" = 10'

Hole ID	Alignment Name	Station and Offset
B-1	"A" Line	10+21 4.6 Rt
B-2	"A" Line	11+38 24.2 Rt
B-3	"A" Line	12+42 42.7 Rt

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Contractor_____					
Inspector_____					
Date Completed_____					

BENCH MARK: All coordinates are based on the California State Plane Coordinate SystemNAD-83 California zone VI epock 2017.5 North 28°57'23.8" East 31,286.305'

SCALE: Horizontal -; Vertical -

SEAL: REGISTERED PROFESSIONAL ENGINEER — NO. GE 3123 EXP. 9-30-2021 — GEOTECHNICAL — STATE OF CALIFORNIA

Designed By	Drawn By	Checked By
P.RAGAVAN	P.RAGAVAN	A.THURAIRAJAH

Plans Prepared Under Supervision Of

_____ Date_____

R.C.E. No. _____

RECOMMENDED BY:_____ DATE:_____

ACCEPTED BY:_____ DATE:_____

PATRICK THOMAS, P.E.
DIRECTOR OF PUBLIC WORKS / CITY ENGINEER
R.C.E. No. 44223

CITY OF TEMECULA — DEPARTMENT OF PUBLIC WORKS

SANTA GERTRUDIS CREEK TRAIL
MARGARITA RD UNDER-CROSSING
LOG OF TEST BORING 1 OF 3

Drawing No.

Sheet____of____

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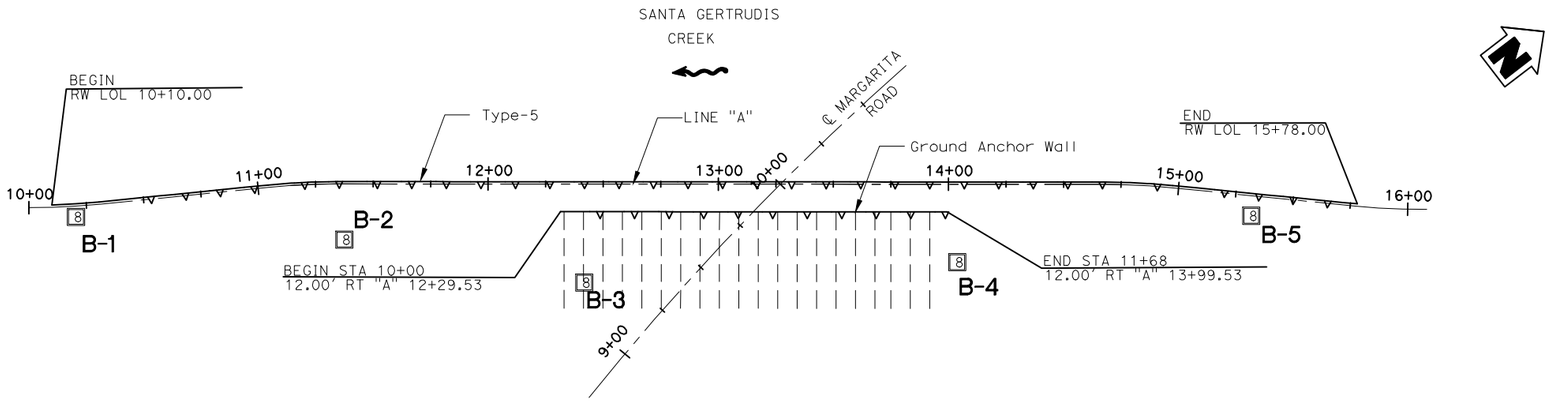
NOTES:

(1) This LOTB sheet (Boring Record) was prepared in accordance with Caltrans Soil and Rock Logging, Classification and Presentation Manual (2010).

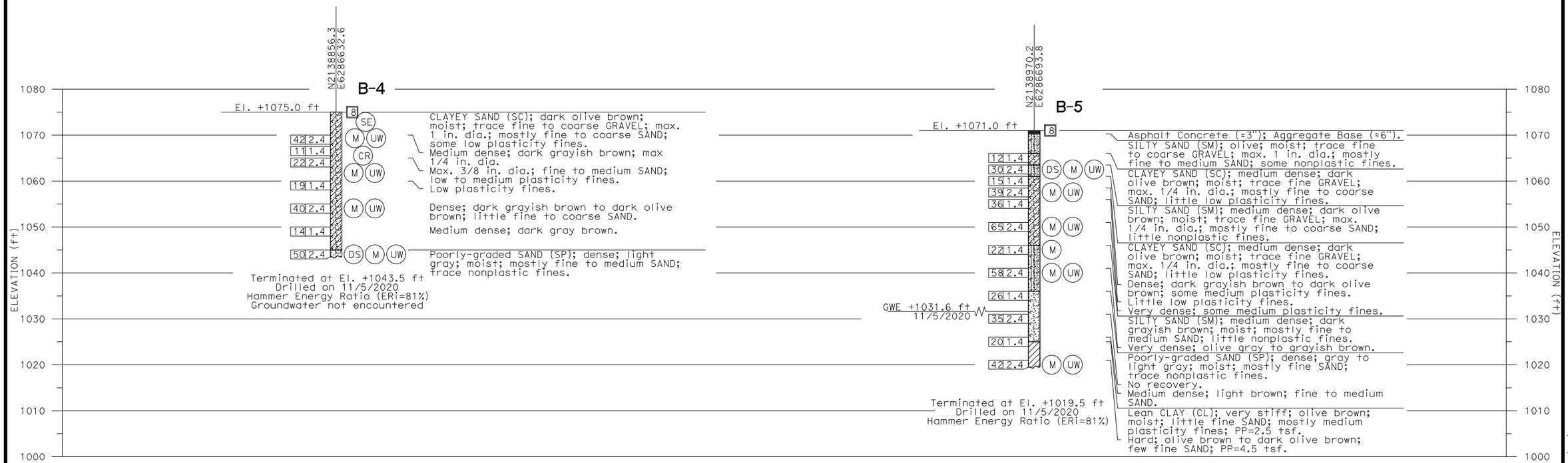
(2) 1.4" samples were taken using a Standard Penetration Sampler and 2.4" samples were taken using a California Modified Sampler.

(3) An automatic trip hammer system consisting of a hammer weight of 140 lbs falling a distance of 30" drop was used to advance samplers.

(4) For Soil Legend, see A10E and A10G of the Caltrans Standard Plans.



PLAN
1" = 30'



PROFILE
1" = 10'

Hole ID	Alignment Name	Station and Offset
B-4	"A" Line	14+04 33.9 Rt
B-5	"A" Line	15+33 8.7 Rt

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Contractor_____					
Inspector_____					
Date Completed_____					

BENCH MARK: All coordinates are based on the California State Plane Coordinate SystemNAD-83 California zone VI epock 2017.5 North 28°57'23.8" East 31,286.305'

SCALE: Horizontal -; Vertical -

SEAL: REGISTERED PROFESSIONAL ENGINEER ANTHONY THOMAS NO. GE 3123 EXP. 9-30-2021 STATE OF CALIFORNIA

Designed By	Drawn By	Checked By
P.RAGAVAN	P.RAGAVAN	A.THURAIRAJAH

Plans Prepared Under Supervision Of _____ Date_____

R.C.E. No. _____

RECOMMENDED BY:_____ DATE:_____

ACCEPTED BY:_____ DATE:_____
PATRICK THOMAS, P.E.
DIRECTOR OF PUBLIC WORKS / CITY ENGINEER
R.C.E. No. 44223

CITY OF TEMECULA DEPARTMENT OF PUBLIC WORKS

SANTA GERTRUDIS CREEK TRAIL
MARGARITA RD UNDER-CROSSING
LOG OF TEST BORING 2 OF 3

Drawing No.

Sheet____of____

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CONSISTENCY CLASSIFICATION FOR SOILS

According to the Standard Penetration Test (ASTM D-1586)

SPT N-Value (Blows/ 12-inch)	Granular	SPT N-Value (Blows/ 12-inch)	Cohesive
0–4	Very Loose	<2	Very Soft
5–10	Loose	2–4	Soft
11–30	Medium Dense	5–8	Firm
31–50	Dense	9–15	Stiff
>50	Very Dense	16–30	Very Stiff
		>30	Hard

NOTE: Visual classification of earth materials are based on field inspection and are confirmed or revised with laboratory test results as necessary.

LEGEND FOR EARTH MATERIALS (USCS) BASED ON ASTM D2487, D2488

- FILL MATERIAL
- CLAY (CL or CH)
- SILT (ML or MH)
- PEAT and/or ORGANIC MATTER
- WELL-GRADED GRAVEL (GW)
- POORLY GRADED GRAVEL (GP)
- SILTY GRAVEL (GM)
- CLAYEY GRAVEL (GC)
- POORLY-GRADED SAND (SP)
- WELL GRADED SAND (SW)
- SILTY SAND (SM) or SANDY SILT
- COBBLES AND BOULDERS
- CLAYEY SAND (SC) or SANDY CLAY
- IGNEOUS ROCK
- SEDIMENTARY ROCK
- METAMORPHIC ROCK

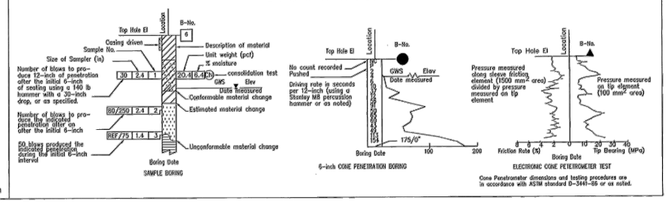
TYPE OF BORINGS

- 57 MM CONE PENETRATION
- ROTARY WASH
- ELECTRONIC CONE PENETROMETER
- AUGER BORING(DRY)
- TEST PIT
- DIAMOND CORE BORING
- SOIL TUBE

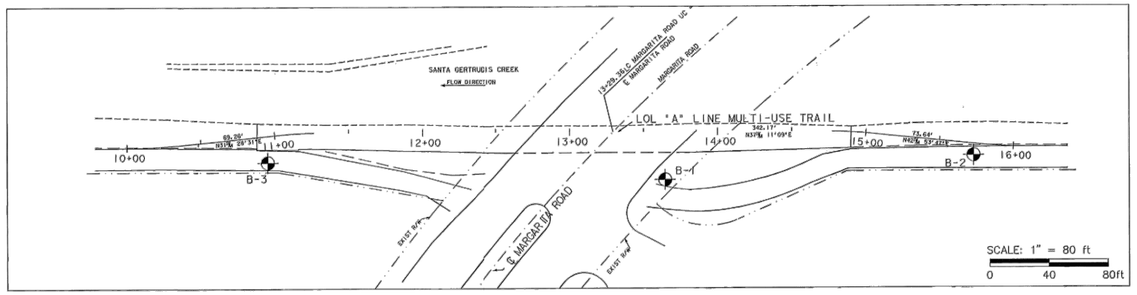
IN-SITU, LAB & FIELD TEST DESIGNATIONS

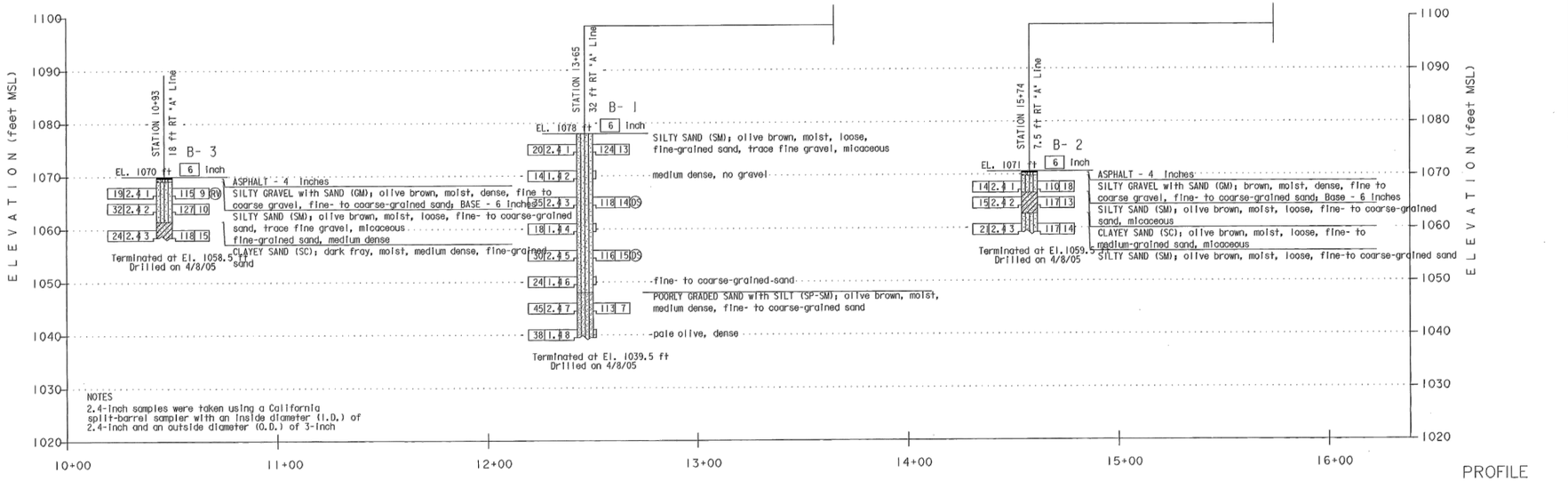
- (PI) Atterberg Limits
- (CL) Collapse Potential
- (CN) Consolidation
- (DS) Direct Shear
- (EI) Expansion Index
- (#) No. 200 Sieve Analysis
- (MD) Maximum Density
- (PP) Pocket Penetrometer
- (SE) Sand Equivalent
- (SH) Salve and Hydrometer Hydrometer
- (SW) Swell potential
- (UC) Unconfined Compression

LEGEND OF BORING OPERATIONS



Cone Penetrometer dimensions and testing procedures are in accordance with ASTM standard D-3441-86 or as noted.





NOTES
2.4-inch samples were taken using a California split-barrel sampler with an inside diameter (I.D.) of 2.4-inch and an outside diameter (O.D.) of 3-inch

PROFILE
VERTICAL 1" = 20 ft
HORIZONTAL 1" = 50 ft

CONSTRUCTION RECORD	DATE	BY	REVISIONS	ACC'D	DATE	BENCH MARK	SCALE	SEAL:	Designed By	Drawn By	Checked By
Contractor						Vertical Datum: Riverside County BM THEIR Road 1007 (Elevation 1067.810)	Horizontal AS SHOWN	REGISTERED PROFESSIONAL ENGINEER S. P. WEERARATNE No. 2374 EXP. 9-30-07 STATE OF CALIFORNIA	XXX	J. LEE	S. P. WEERARATNE
Inspector						FD 1" IRON PIPE WITH PLUG "LS 4547" AT INTERSECTION OF WESTERLY LINE OF MARGARITA ROAD AND SOUTHERLY LINE OF SANTA GERTRUDIS FLOOD CONTROL CHANNEL. Northing: 6109325.857 Easting: 2130003.723 Elevation: 1077.421	Vertical AS SHOWN		Plans Prepared Under Supervision Of		
Date Completed						FD 1" COPPERWELD MONUMENT AT INTERSECTION OF EASTERLY LINE OF MARGARITA ROAD AND SOUTHERLY LINE OF SANTA GERTRUDIS FLOOD CONTROL CHANNEL. Northing: 6108851.442 Easting: 2130567.130 Elevation: 1077.910			S. P. WEERARATNE Date 11/06/06		
									R.C.E. No. 2374 Expires 9/30/07		

RECOMMENDED BY: GREG BUTLER, PRINCIPAL ENGINEER DATE: 11-16-06
ACCEPTED BY: BILL HUGHES, DIRECTOR OF PUBLIC WORKS, CITY ENGINEER DATE: 1-8-07
R.C.E. No. C 36617 Expires: JUNE 30, 2008

CITY OF TEMECULA DEPARTMENT OF PUBLIC WORKS

MARGARITA ROAD UNDERCROSSING, PW04–13
LOG OF TEST BORINGS

Drawing No. 15
Sheet 15 of 18

PW19-04

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CONSTRUCTION RECORD	DATE	BY	REVISIONS	ACC'D	DATE	BENCH MARK	SCALE	SEAL:	Designed By	Drawn By	Checked By
Contractor						All coordinates are based on the California State Plane Coordinate SystemNAD-83 California zone VI epock 2017.5 North 28°57'23.8" East 31,286.305'	Horizontal -	REGISTERED PROFESSIONAL ENGINEER PATRICK THOMAS No. GE 3123 EXP. 9-30-2021 GEOTECHNICAL STATE OF CALIFORNIA	P.RAGAVAN	P.RAGAVAN	A.THURAIRAJAH
Inspector							Vertical -		Plans Prepared Under Supervision Of		
Date Completed									Date		
									R.C.E. No.		

RECOMMENDED BY: DATE:
ACCEPTED BY: DATE:
PATRICK THOMAS, P.E.
DIRECTOR OF PUBLIC WORKS / CITY ENGINEER
R.C.E. No. 44223

CITY OF TEMECULA DEPARTMENT OF PUBLIC WORKS

SANTA GERTRUDIS CREEK TRAIL
MARGARITA RD UNDER-CROSSING
LOG OF TEST BORING 3 OF 3

Drawing No.
Sheet ___ of ___

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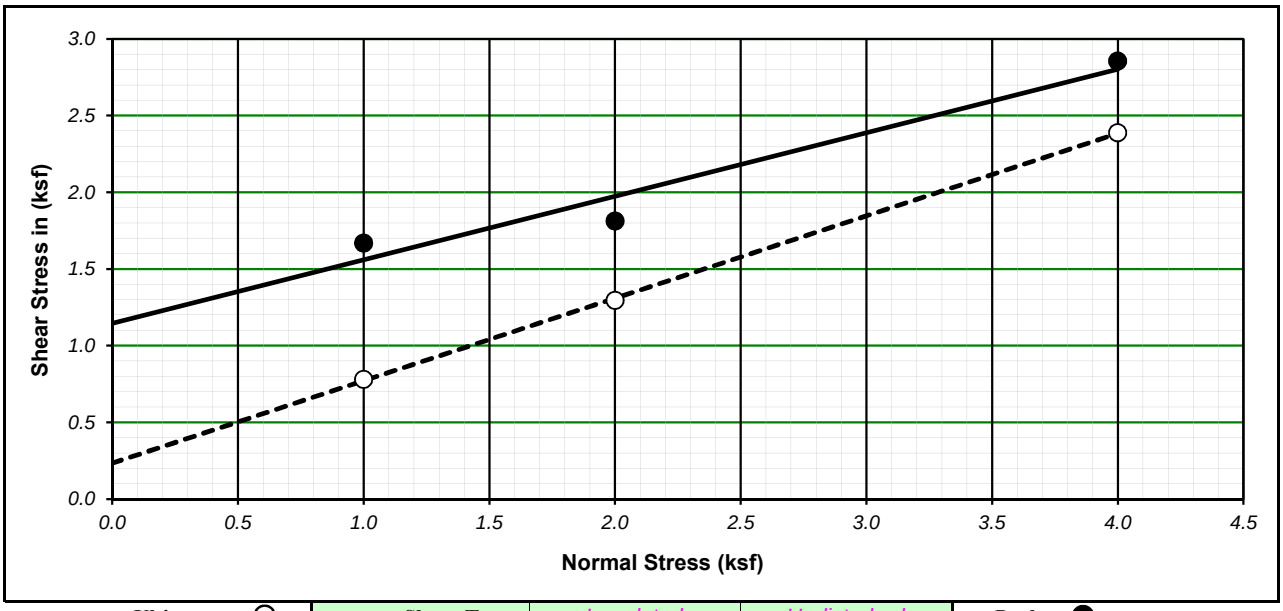
APPENDIX B

LABORATORY SOIL TEST RESULTS

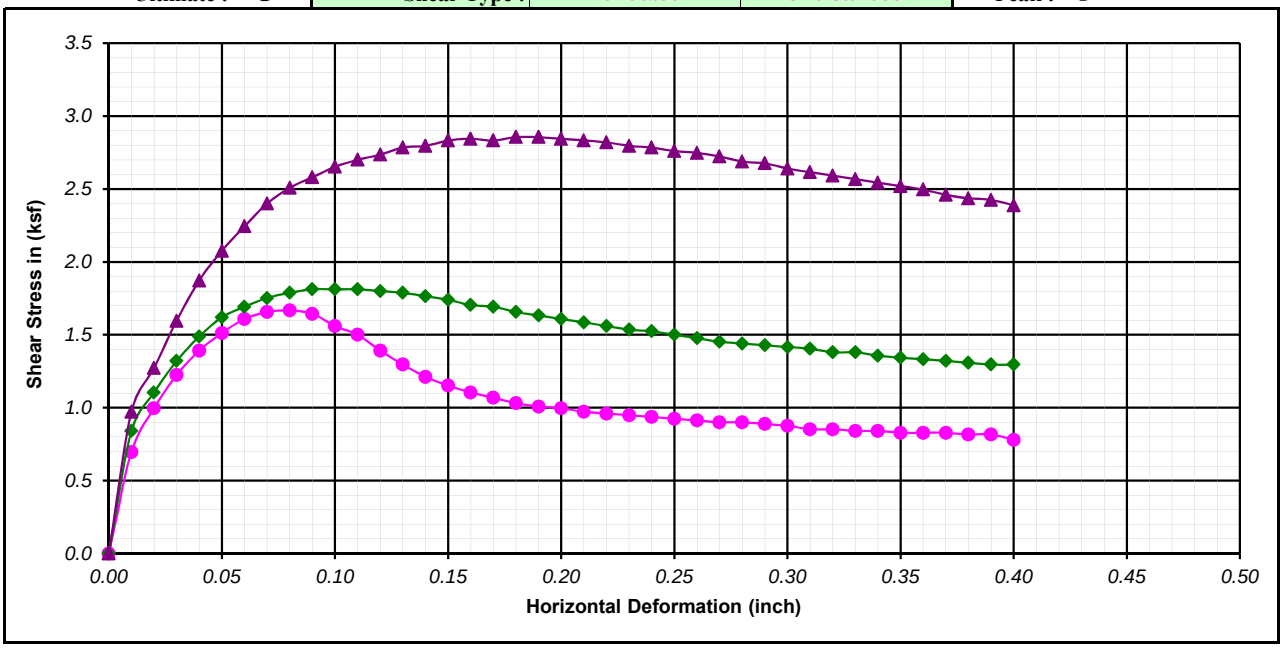
TABLE B-1 SUMMARY OF LABORATORY TEST RESULTS

Project No. : *20-130* **Project Name :** EXP, Santa Gertudis Creek Phase II, Temecula

Boring No .	Sample No.	Sample Depth (ft)	Soil Identification (group symbol) ASTM D2488/D2487	Moisture Content ASTM D2216 (%)	Total Unit Weight ASTM D2937 (pcf)	Pocket Penetrometer (tsf)	Torvane Shear (tsf)	Grain Size Distribution GR:SA:FI (%)	Sand Equivalent (CT-217)	Atterberg Limits ASTM D4318 (LL/PL/PI)	Soil-Minimum Resistivity CT-643 (ohm-cm)	Soil-pH CT-643	Soil-Soluble Sulfate Content CT-417 (ppm)	Soil-Moisture Free Chloride Content CT-422 (ppm)
B-1	*B-0*	0	SC						21		2800	8.4	248	259
B-1	*D-2*	7.5	SC	11.5	138.8									
B-1	*D-4*	12.5	SC	10.8	131.0									
B-1	*S-5*	15	CL	13.6							990	8.2	537	382
B-1	*D-6*	20	SP-SM	5.5	121.6									
B-1	*D-8*	30	CL	35.1	111.7									
B-1	*D-10*	40	SM	16.0	136.4									
B-2	*D-1*	5	SM	5.7	135.0									
B-2	*D-3*	10	SC	7.4	131.9									
B-2	*S-4*	15	SC	21.1										
B-2	*D-5*	20	SC	11.5	139.2									
B-2	*D-7*	30	SP	3.6	103.0									
B-2	*D-9*	40	CL	27.4	120.5									
B-3	*B-0*	0	SC								1200	8.5	143	347
B-3	*D-2*	7.5	SM	13.3	136.4									
B-3	*D-4*	15	SC	13.2	136.5									
B-3	*S-5*	20	SC	12.9										
B-3	*D-6*	25	SC	10.5	136.7									
B-3	*D-8*	35	SP	2.6	104.3									
B-3	*D-10*	45	SP-SM	10.7	128.6									
B-4	*B-0*	0	SC						15					
B-4	*D-1*	5	SC	9.0	140.7									
B-4	*S-2*	7.5	SM								2400	8.7	288	299
B-4	*D-3*	10	SC	10.7	135.6									
B-4	*D-5*	20	SC	9.3	138.1									
B-4	*D-7*	30	SP	4.2	107.5									
B-5	*D-2*	7.5	SM	12.5	133.6									
B-5	*D-4*	12.5	SC	13.4	137.2									
B-5	*D-6*	20	SC	12.8	131.3									
B-5	*S-7*	25	SM	11.6										
B-5	*D-8*	30	SM	10.8	129.7									
B-5	*D-12*	50	CL	20.8	129.1									



Ultimate : ○	Shear Type :	Inundated	Undisturbed	Peak : ●



Boring No.	: B-1		**Strength Intercept (C) :**	1.15	(ksf)	**Peak**	0.23	(ksf)	**Ultimate**
Sample No.	: D-4			54.87	(kPa)		11.20	(kPa)	
Depth (ft/m)	: 12.5	0.00	**Friction Angle (ϕ) :**	22.49	Degree		28.25	Degree	
Description	: Dark olive gray, CLAYEY SAND (SC)						**Shear Rate** (inch/minute) :		0.02

SYMBOL	MOISTURE CONTENT (%)	DRY DENSITY (pcf)	DRY DENSITY (kN/m^3)	VOID RATIO	NORMAL STRESS (ksf)	NORMAL STRESS (kPa)	PEAK STRESS (ksf)	PEAK STRESS (kPa)	ULTIMATE STRESS (ksf)	ULTIMATE STRESS (kPa)
●	24.99	103.76	16.33	0.62	1.00	47.88	1.67	79.86	0.78	37.35
◆	19.77	109.31	17.20	0.54	2.00	95.76	1.81	86.76	1.30	62.05
▲	24.44	103.06	16.22	0.64	4.00	191.52	2.86	136.75	2.39	114.34

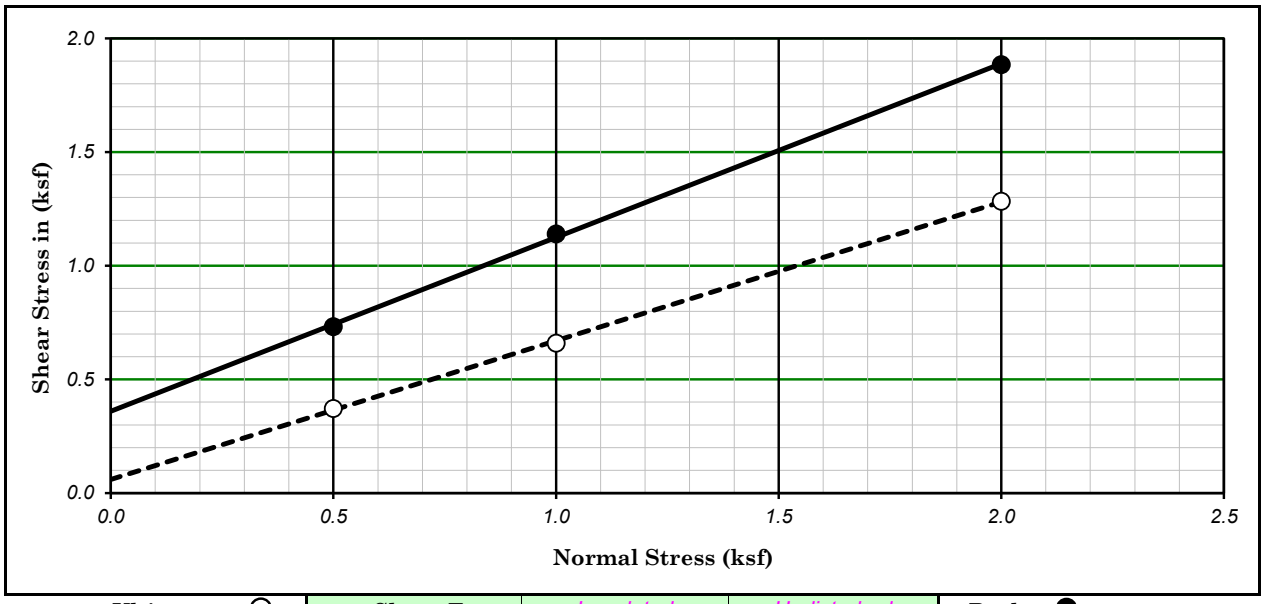
Earth Mechanics, Inc.
Geotechnical and Earthquake Engineering

EXP, Santa Gertudis Creek Phase II, Temecula

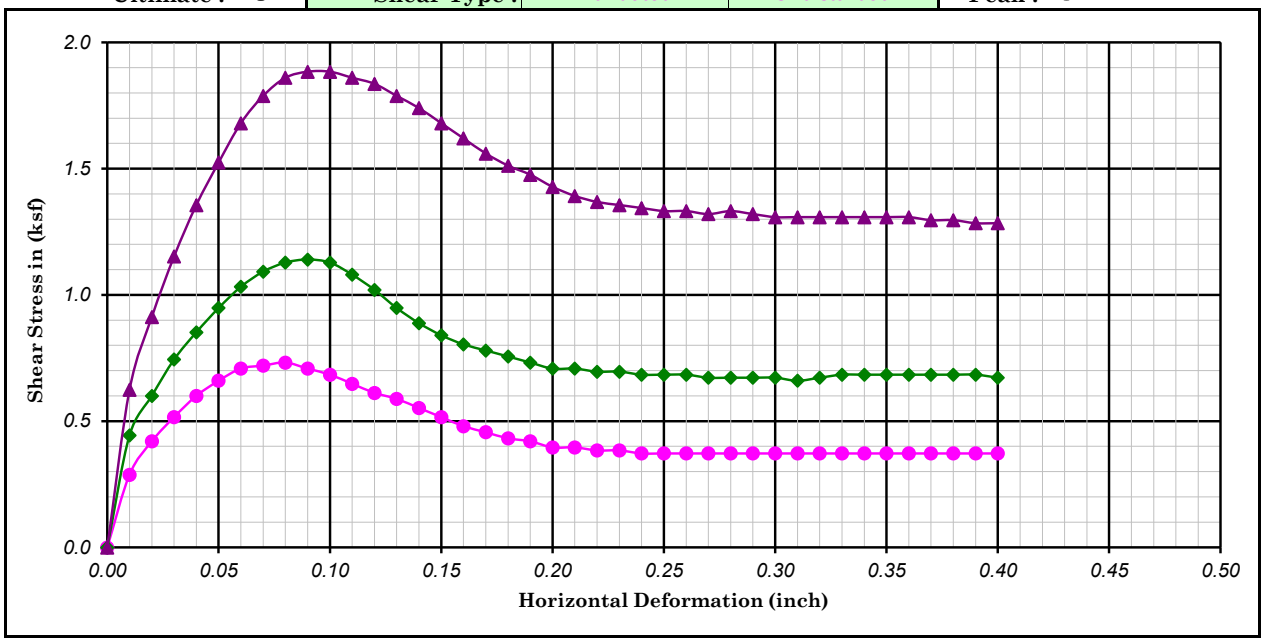
DIRECT SHEAR TEST (ASTM D-3080)

Project No. : 20-130 **Date :**

Figure No.



Ultimate : ○ | Shear Type : Inundated | Undisturbed | Peak : ●



Boring No. : B-3		Strength Intercept (C) :	0.36	(ksf)	Peak	0.06	(ksf)	Ultimate
Sample No. : D-2			17.24	(kPa)		2.87	(kPa)	
Depth (ft/m) : 7.5	0.00	Friction Angle (ϕ) :	37.40	Degree		31.40	Degree	
Description : Very dark brown, SILTY SAND (SM)					Shear Rate (inch/minute) :		0.02	

SYMBOL	MOISTURE CONTENT (%)	DRY DENSITY (pcf)	DRY DENSITY (kN/m^3)	VOID RATIO	NORMAL STRESS (ksf)	NORMAL STRESS (kPa)	PEAK STRESS (ksf)	PEAK STRESS (kPa)	ULTIMATE STRESS (ksf)	ULTIMATE STRESS (kPa)
●	16.92	113.88	17.92	0.48	0.50	23.94	0.73	35.05	0.37	17.81
◆	17.51	112.02	17.63	0.50	1.00	47.88	1.14	54.58	0.66	31.60
▲	16.41	116.75	18.38	0.44	2.00	95.76	1.88	90.21	1.28	61.48

Earth Mechanics, Inc.
Geotechnical and Earthquake Engineering

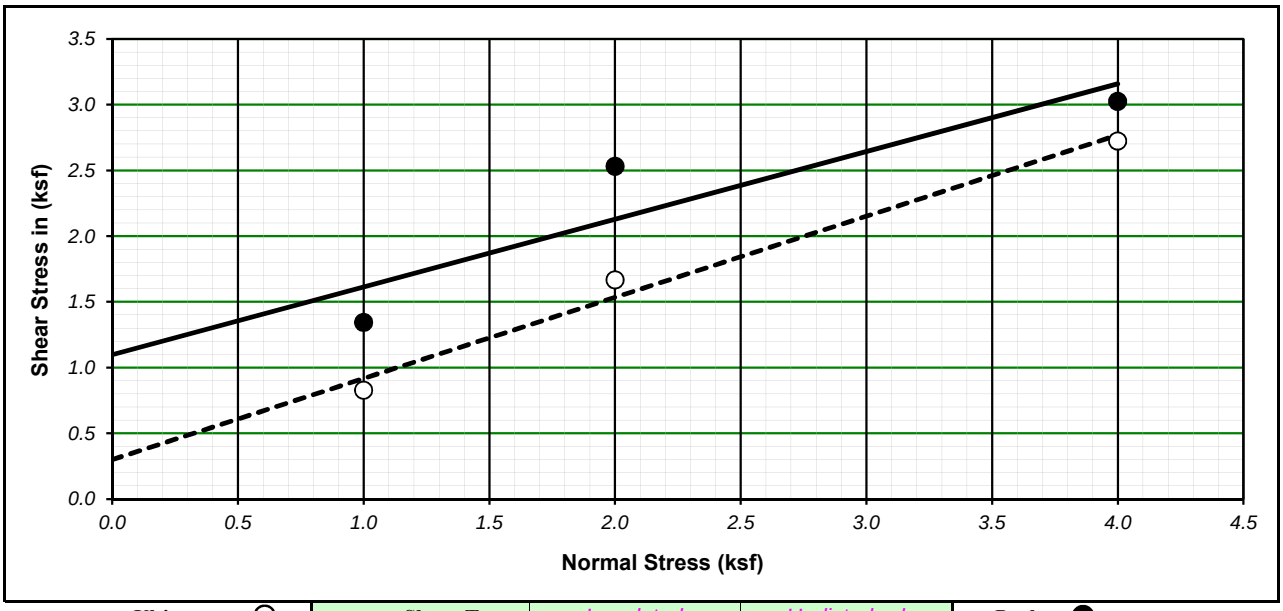
EXP, Santa Gertudis Creek Phase II, Temecula

Project No. : 20-130 | Date :

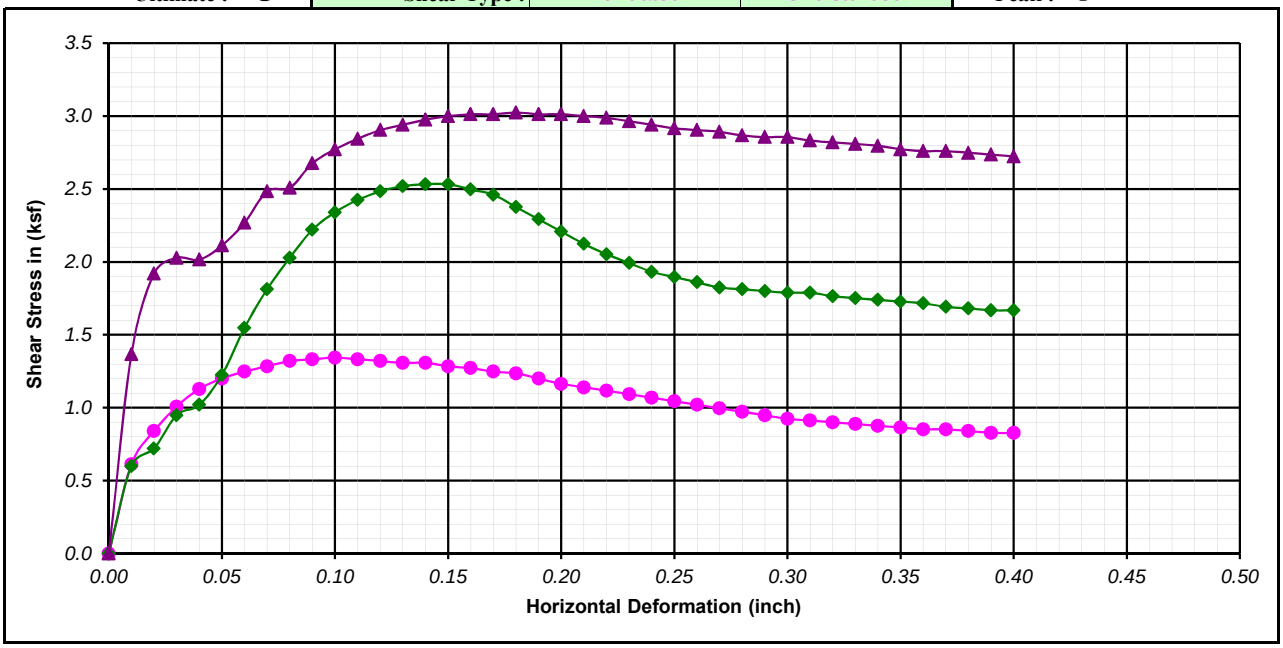
DIRECT SHEAR TEST

(ASTM D-3080)

Figure No.



Ultimate : ○	Shear Type :	Inundated	Undisturbed	Peak : ●



Boring No.	: B-3		**Strength Intercept (C) :**	1.10	(ksf)	**Peak**	0.30	(ksf)	**Ultimate**
Sample No.	: D-6			52.57	(kPa)		14.36	(kPa)	
Depth (ft/m)	: 25.0	0.00	**Friction Angle (ϕ) :**	27.25	Degree		31.68	Degree	
Description	: Dark olive gray, CLAYEY SAND (SC)						**Shear Rate** (inch/minute) :		0.02

SYMBOL	MOISTURE CONTENT (%)	DRY DENSITY (pcf)	DRY DENSITY (kN/m^3)	VOID RATIO	NORMAL STRESS (ksf)	NORMAL STRESS (kPa)	PEAK STRESS (ksf)	PEAK STRESS (kPa)	ULTIMATE STRESS (ksf)	ULTIMATE STRESS (kPa)
●	15.98	119.95	18.88	0.41	1.00	47.88	1.34	64.35	0.83	39.64
◆	16.56	118.38	18.63	0.42	2.00	95.76	2.53	121.23	1.67	79.86
▲	16.25	115.83	18.23	0.46	4.00	191.52	3.02	144.79	2.72	130.43

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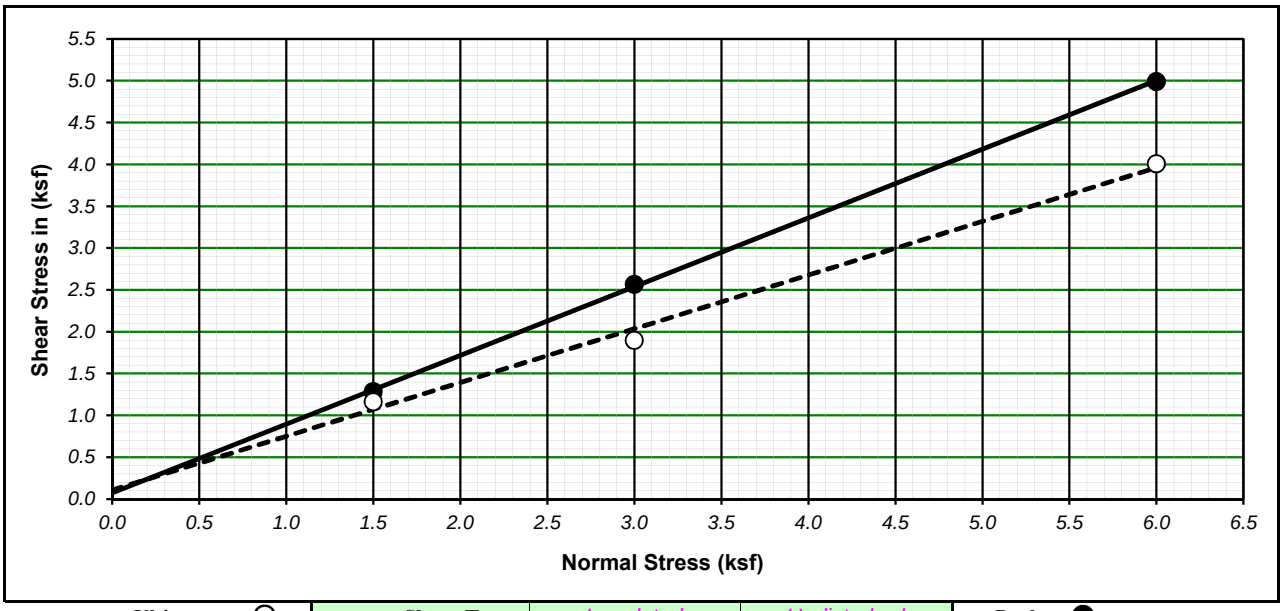
EXP, Santa Gertudis Creek Phase II, Temecula

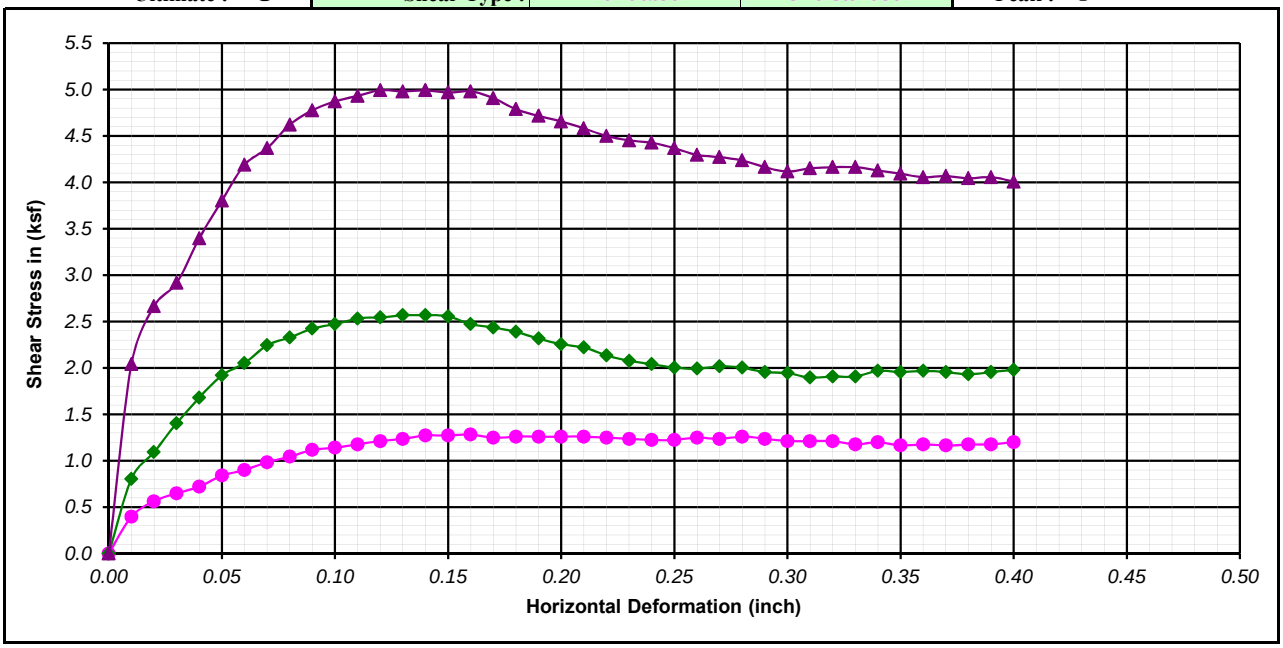
DIRECT SHEAR TEST (ASTM D-3080)

Project No. : 20-130 **Date :**

Figure No.



Ultimate : ○	Shear Type :	Inundated	Undisturbed	Peak : ●



Boring No.	: B-4		**Strength Intercept (C) :**	0.07	(ksf)	**Peak**	0.11	(ksf)	**Ultimate**
Sample No.	: D-7			3.45	(kPa)		5.17	(kPa)	
Depth (ft/m)	: 30.0	0.00	**Friction Angle (ϕ) :**	39.41	Degree		32.71	Degree	
Description	: Light olive brown, Poorly graded SAND (SP)						**Shear Rate** (inch/minute) :		0.02

SYMBOL	MOISTURE CONTENT (%)	DRY DENSITY (pcf)	DRY DENSITY (kN/m^3)	VOID RATIO	NORMAL STRESS (ksf)	NORMAL STRESS (kPa)	PEAK STRESS (ksf)	PEAK STRESS (kPa)	ULTIMATE STRESS (ksf)	ULTIMATE STRESS (kPa)
●	21.82	89.06	14.02	0.89	1.50	71.82	1.28	61.48	1.16	55.73
◆	21.94	88.88	13.99	0.90	3.00	143.64	2.57	122.96	1.90	90.78
▲	20.01	94.99	14.95	0.77	6.00	287.28	4.99	239.02	4.01	191.90

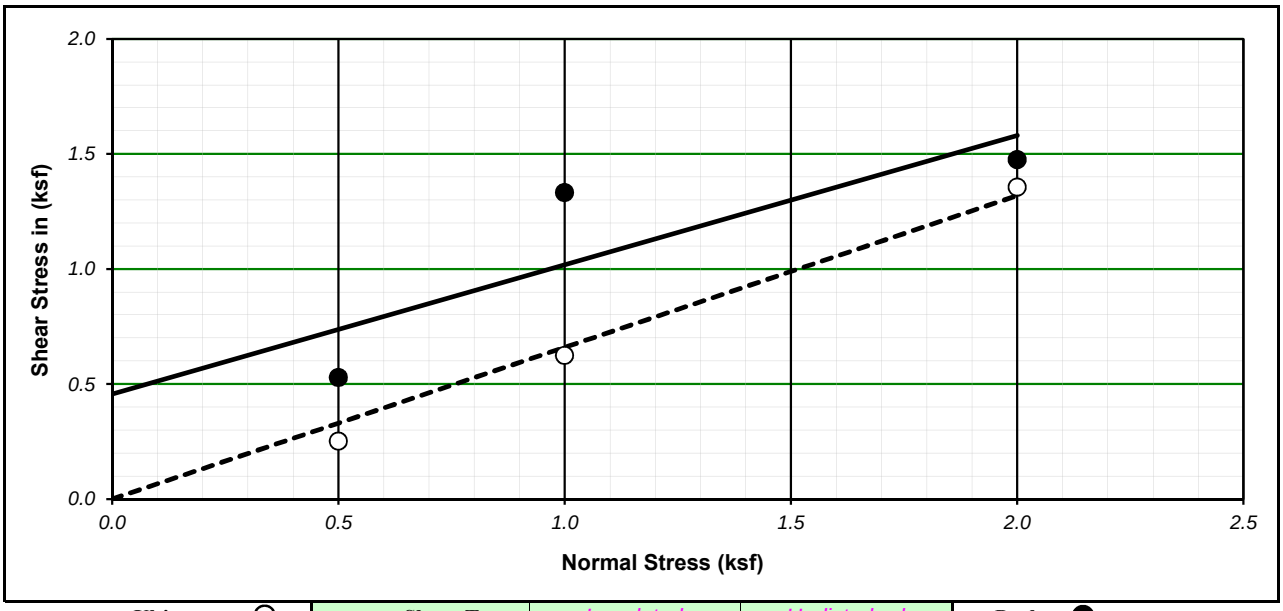
Earth Mechanics, Inc.
Geotechnical and Earthquake Engineering

EXP, Santa Gertudis Creek Phase II, Temecula

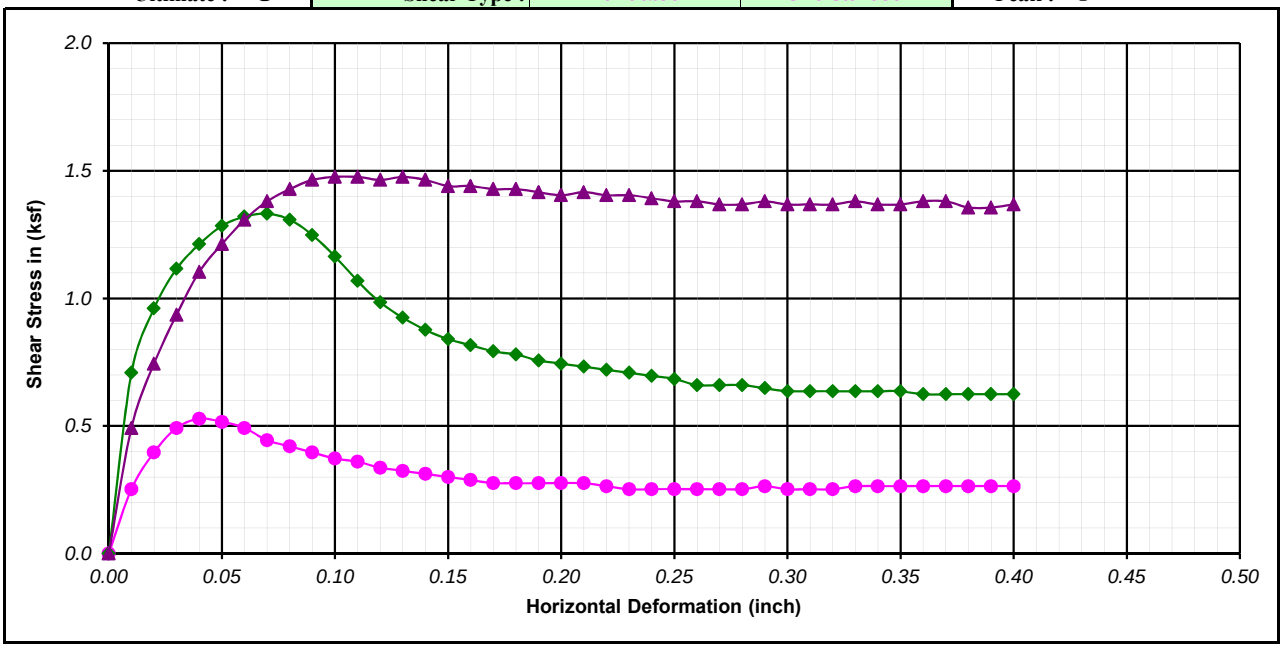
DIRECT SHEAR TEST (ASTM D-3080)

Project No. : 20-130 **Date :**

Figure No.



Ultimate : ○	Shear Type :	Inundated	Undisturbed	Peak : ●



Boring No.	: B-5		**Strength Intercept (C) :**	0.46	(ksf)	**Peak**	0.00	(ksf)	**Ultimate**
Sample No.	: D-2			21.83	(kPa)		0.00	(kPa)	
Depth (ft/m)	: 7.5	0.00	**Friction Angle (ϕ) :**	29.35	Degree		33.40	Degree	
Description	: Dark olive brown, SILTY SAND (SM)						**Shear Rate** (inch/minute) :		0.02

SYMBOL	MOISTURE CONTENT (%)	DRY DENSITY (pcf)	DRY DENSITY (kN/m^3)	VOID RATIO	NORMAL STRESS (ksf)	NORMAL STRESS (kPa)	PEAK STRESS (ksf)	PEAK STRESS (kPa)	ULTIMATE STRESS (ksf)	ULTIMATE STRESS (kPa)
●	17.73	110.50	17.39	0.53	0.50	23.94	0.53	25.28	0.25	12.07
◆	20.63	107.43	16.91	0.57	1.00	47.88	1.33	63.78	0.62	29.88
▲	16.84	104.65	16.47	0.61	2.00	95.76	1.48	70.67	1.36	64.93

Earth Mechanics, Inc.
Geotechnical and Earthquake Engineering

EXP, Santa Gertudis Creek Phase II, Temecula

DIRECT SHEAR TEST (ASTM D-3080)

Project No. : 20-130 **Date :**

Figure No.

APPENDIX B - LABORATORY TESTING

Diaz•Yourman & Associates selected soil samples to be tested and the tests to be performed on the selected samples. Laboratory testing was performed by Hushmand & Associates. Laboratory data are summarized on the boring logs in Appendix A and presented on Plates B1 through B6. We have reviewed and concur with the test results and accept full responsibility for their use in our analysis. A summary of the geotechnical laboratory testing is presented in Table B1. Corrosion potential test results are summarized in Table B2.

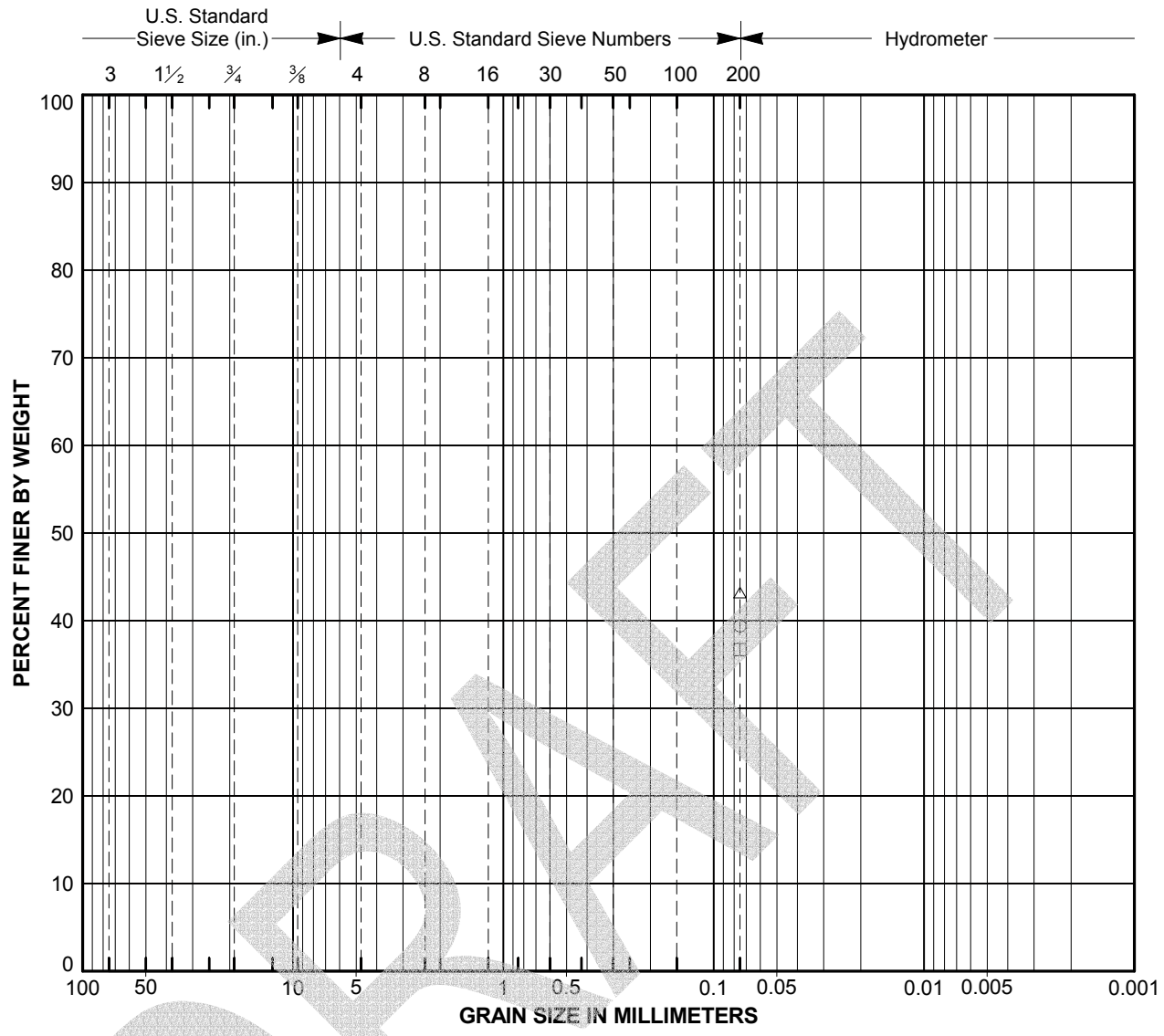
Table B1 - LABORATORY TESTING SUMMARY

TEST NAME	PROCEDURE	PURPOSE	LOCATION
Percent Passing the No. 200 Sieve	ASTM D1140-92	Classification, index properties	Boring Logs
Moisture Content, Dry Density	ASTM D2216-92	Classification, index properties	Boring Logs
Grain-Size Distribution	ASTM D422-63	Classification, index properties	Plate B1
Atterberg Limits	ASTM D-4318-93	Expansion potential, classification, index properties	Plate B2
Direct Shear	ASTM D3080-90	Shear strength	Plates B3 & B4
Compaction	ASTM D1557-91	Earthwork	Plates B5
Resistance (R-) Value	ASTM D2844-69 CTM 301	Pavement thickness design	Plates B6
pH	CTM 532	Corrosion potential	Table B2
Resistivity	CTM 532	Corrosion potential	Table B2
Soluble Sulfates	CTM 417-B	Corrosion potential	Table B2
Soluble Chlorides	CTM 422	Corrosion potential	Table B2
Notes: ASTM = American Society for Testing and Materials CTM = Caltrans Test Method UBC = Uniform Building Code			

Table B2 - CORROSION POTENTIAL TEST RESULTS

Boring No.	B1
Depth (feet)	0 to 5
pH	7.8
Water Soluble Sulfate Content (ppm)	ND
Water Soluble Chloride Content (ppm)	225
Minimum Resistivity/Moisture Content (ohms-cm)	3,800
Note: ND – Non Detect	

Template: DY_SIEVE_WIN



COBBLES	Coarse	Fine	Coarse	Medium	Fine	SILT or CLAY
	GRAVEL		SAND			

Laboratory Testing by: Husmand Associates, Inc

Symbol	Source	Depth (feet)	Classification	Natural M. C. (%)	Liquid Limit (%)	Plasticity Index (%)	% Passing #200 Sieve
○	B- 1	12.0	SILTY SAND (SM)	14			39
□	B- 1	22.0	SILTY SAND (SM)	15			37
△	B- 2	5.0	CLAYEY SAND (SC)	13	30	14	43

PARTICLE SIZE ANALYSIS

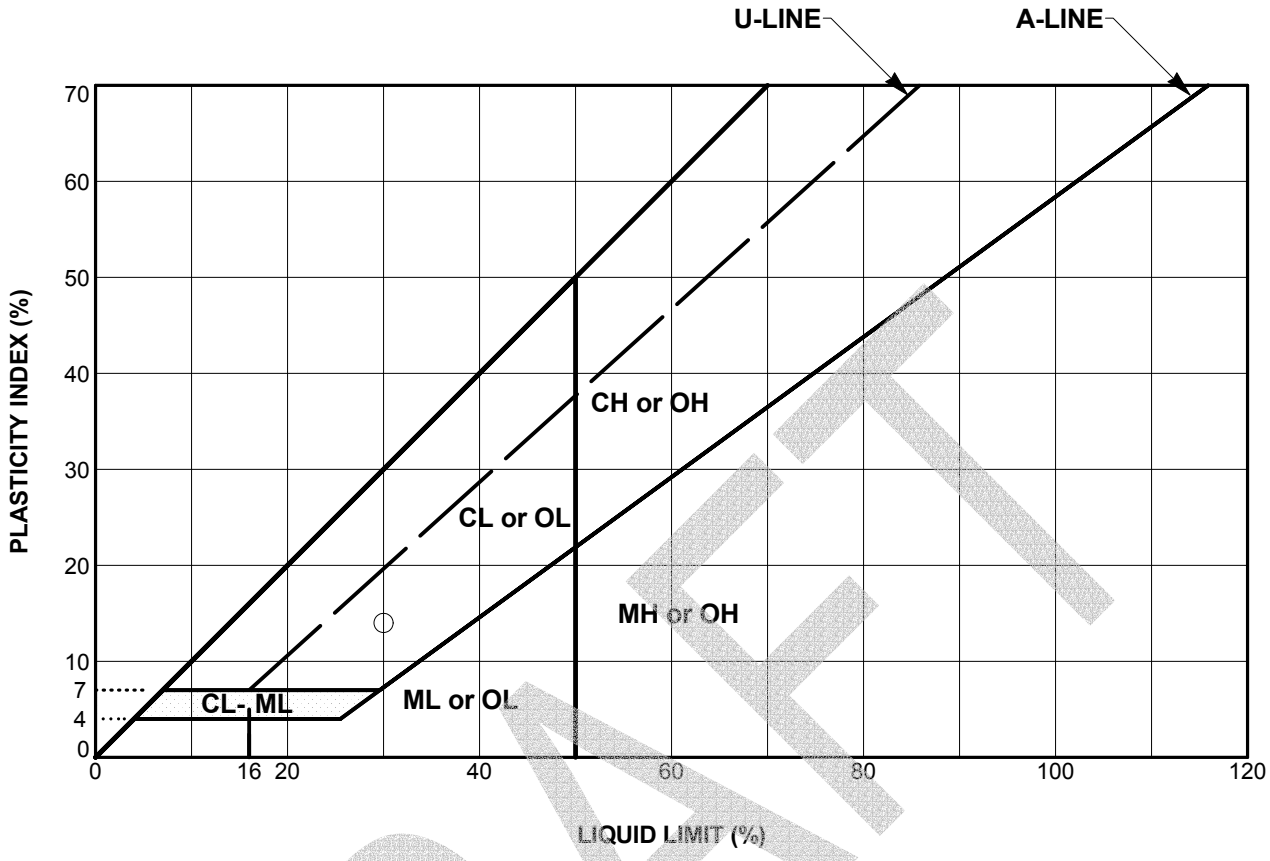
Temecula Margarita Road Undercrossing

Project No. 2005-003

PLATE

B1

Template: DY_ATTERBERG_CHART_WIN



Laboratory Testing by: Husmand Associates, inc

Symbol	Source	Depth (feet)	Classification	Natural M. C. (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	% Passing #200 Sieve
○	B- 2	5.0	CLAYEY SAND (SC)	13	30	16	14	43

PLASTICITY CHART

Temecula Margarita Road Undercrossing
Project No. 2005-003

PLATE
B2

HAI **HUSHMAND ASSOCIATES, INC.**
Geotechnical and Earthquake Engineers

DIRECT SHEAR TEST (ASTM D3080)

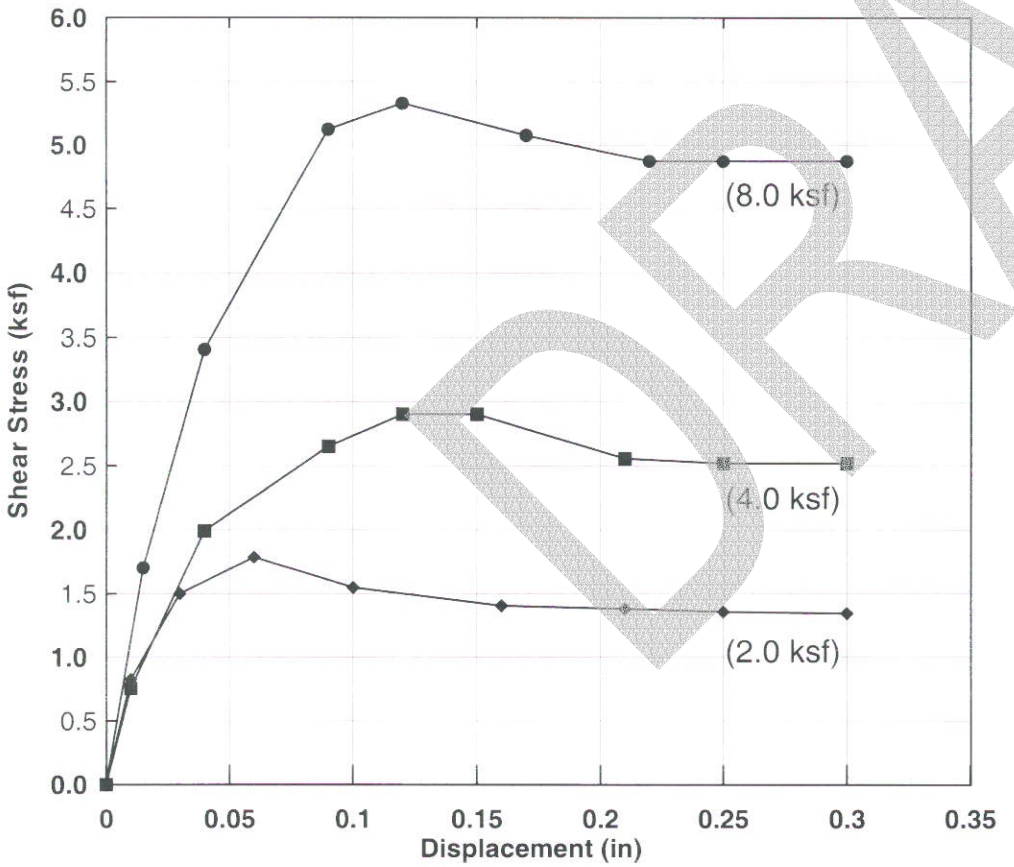
HAI Project No.: 03-0417
Tested by: PM
Checked by: JT
Date: 04/13/05

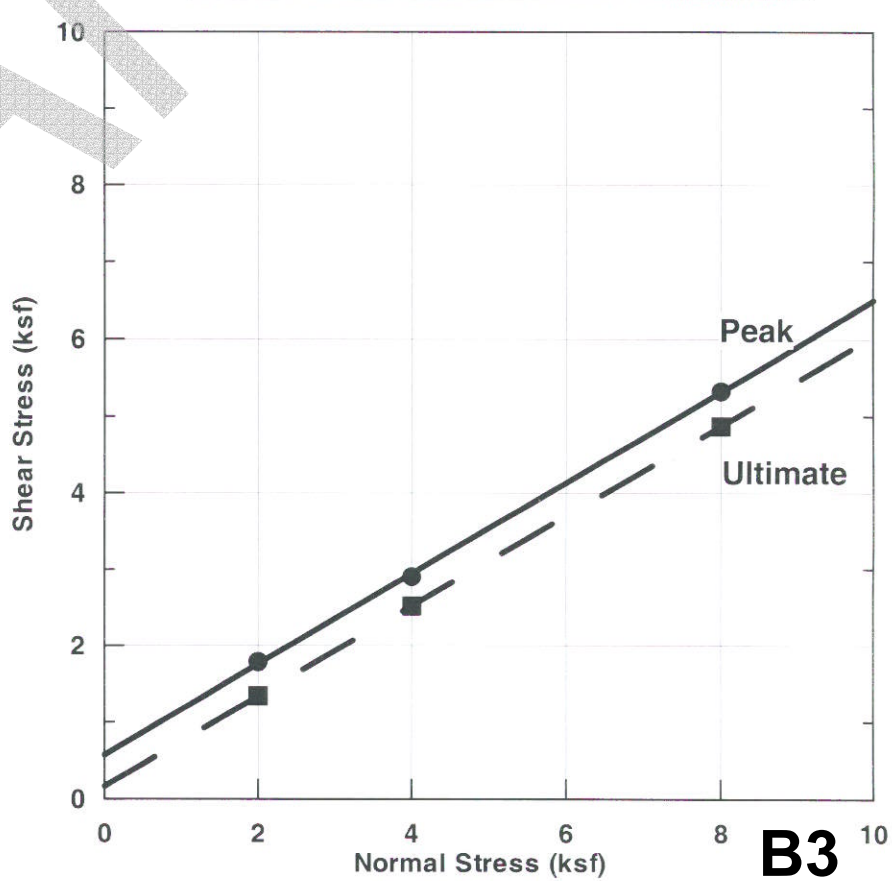
Client: Diaz Yourman & Associates
Project Name: Temecula Margarita Rd. Undercrossing
Project Number: 2005-003

Boring No.: B - 1 **Sample No.: 3** **Depth: 12'**
Sample Description: Dark Olive, Clayey Sand (SC)

Type of test: Consolidated, Saturated, Drained.
Rate of Displacement: 0.002 in/min.

PEAK		ULTIMATE	
c (ksf)	ϕ (degrees)	c (ksf)	ϕ (degrees)
0.58	30.6	0.17	30.5





B3

HAI **HUSHMAND ASSOCIATES, INC.**
Geotechnical and Earthquake Engineers

DIRECT SHEAR TEST (ASTM D3080)

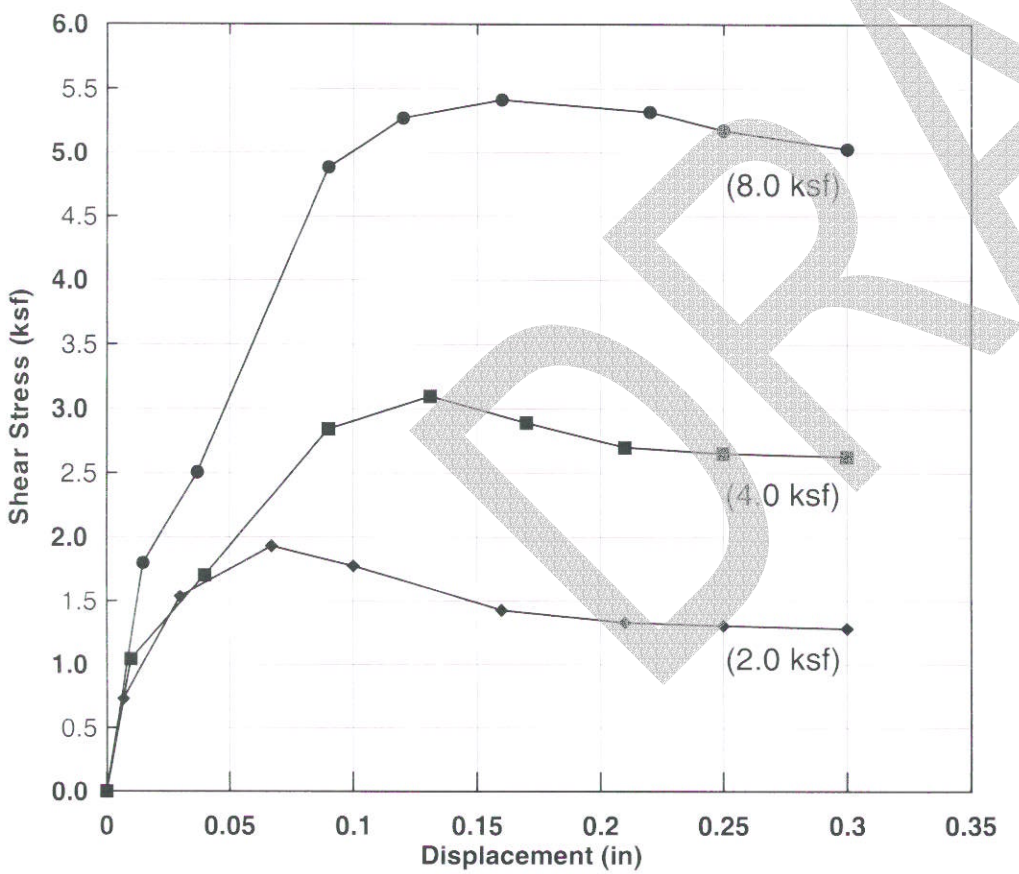
HAI Project No.: 03-0417
Tested by: PM
Checked by: JT
Date: 04/14/05

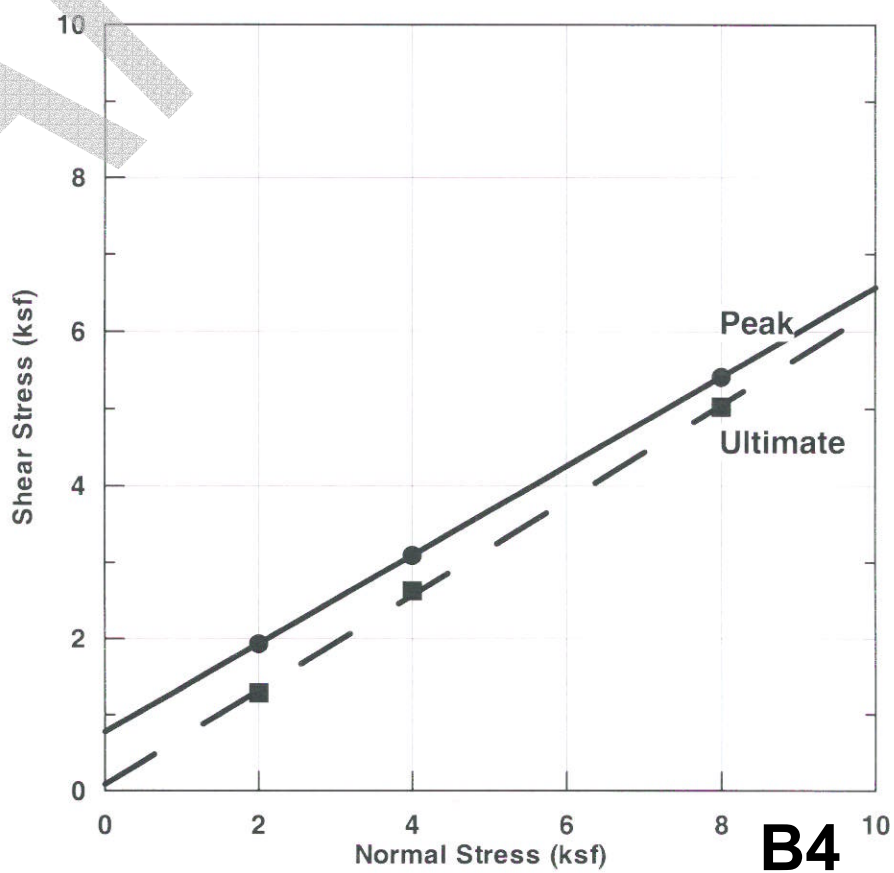
Client: Diaz Yourman & Associates
Project Name: Temecula Margarita Rd. Undercrossing
Project Number: 2005-003

Boring No.: B - 1 **Sample No.: 5** **Depth: 22'**
Sample Description: Dark Olive, Clayey Sand (SC)

Type of test: Consolidated, Saturated, Drained.
Rate of Displacement: 0.002 in/min.

PEAK		ULTIMATE	
c (ksf)	ϕ (degrees)	c (ksf)	ϕ (degrees)
0.77	30.1	0.08	31.8



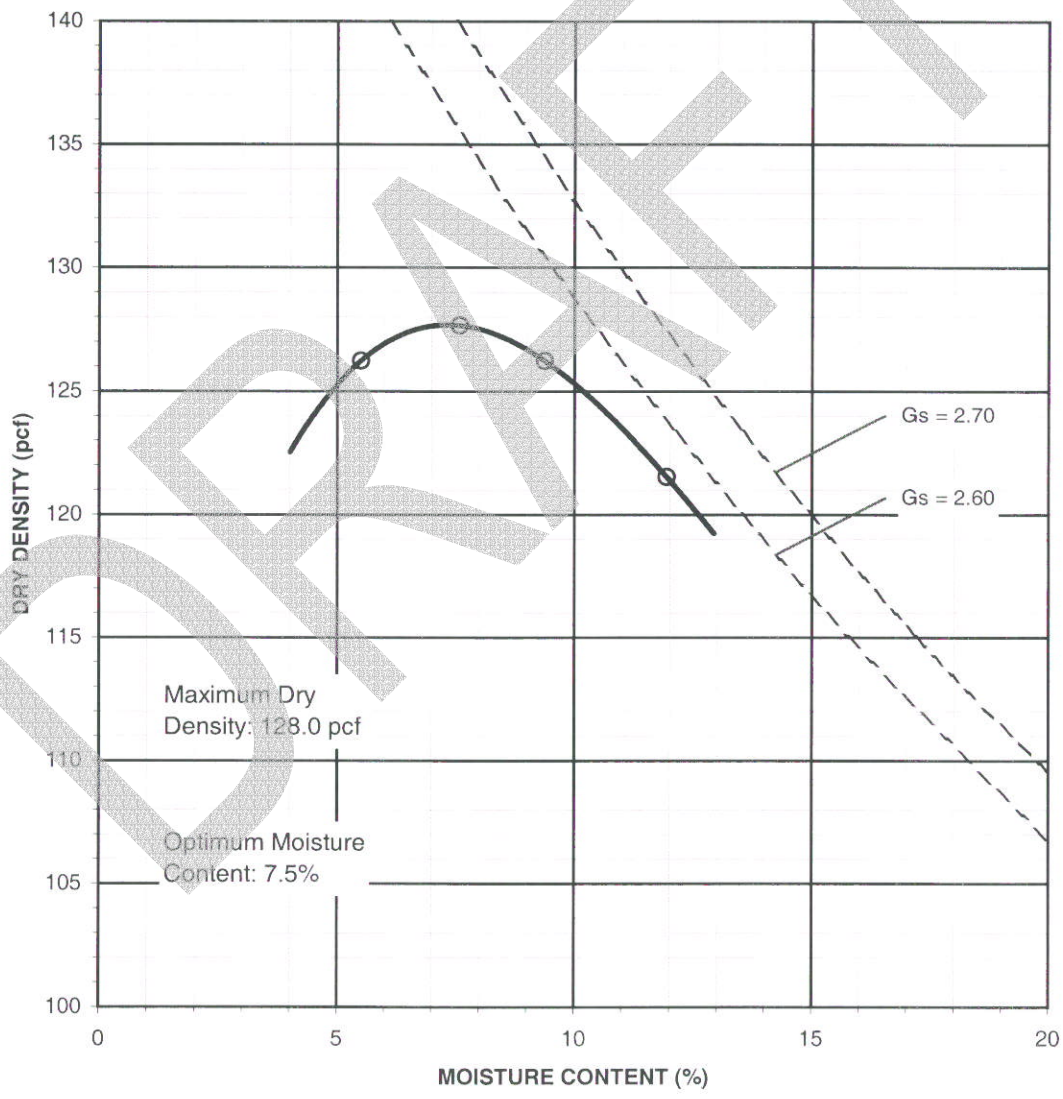


B4

HAI **HUSHMAND ASSOCIATES, INC.**
Geotechnical and Earthquake Engineers

COMPACTION CURVE (ASTM D1557)

Client :	Diaz Yourman & Associates	***HAI Project No.:***	03-0417
Project Name:	Temecula - Margarita Rd. Undercross	***Tested by:***	PM
Project No.:	2005-003	***Checked by:***	JT
Boring No.:	B - 2	***Date:***	4/17/2005
Sample No.:	--- ***Depth:*** 0 - 5'	***Procedure:***	A
Soil Description:	Dark Olive, Clayey Sand (SC)	***Mold Size:***	4 in



B5

R - VALUE DATA SHEET

P.N. 2005-003
Temecula/Margarita

PROJECT NUMBER 32053 BORING NUMBER: B-3 @ 0'-5'

SAMPLE DESCRIPTION: Brown Clayey Sand

Item	SPECIMEN		
	a	b	c
Mold Number	1	2	3
Water added, grams	50	30	38
Initial Test Water, %	9.7	8.0	8.7
Compact Gage Pressure,psi	50	160	115
Exudation Pressure, psi	216	502	367
Height Sample, Inches	2.62	2.50	2.44
Gross Weight Mold, grams	3282	3308	3278
Tare Weight Mold, grams	2083	2116	2118
Sample Wet Weight, grams	1199	1192	1160
Expansion, Inches x 10exp-4	2	25	19
Stability 2,000 lbs (160psi)	55 / 125	37 / 77	43 / 96
Turns Displacement	3.12	2.45	2.67
R-Value Uncorrected	18	52	38
R-Value Corrected	19	52	36
Dry Density, pcf	126.3	133.8	132.5
DESIGN CALCULATION DATA			
Traffic Index Assumed:	4.0	4.0	4.0
G.E. by Stability	0.83	0.49	0.66
G. E. by Expansion	0.07	0.83	0.63

Equilibrium R-Value **28** by EXUDATION

Examined & Checked: 4 /14/ 05

REMARKS:
Gf = 1.25
0.0% Retained on the 3/4" sieve.

Steven R. Marvin, RCE 30659

The data above is based upon processing and testing samples as received from the field. Test procedures in accordance with latest revisions to Department of Transportation, State of California, Materials & Research Test Method No. 301.

LaBelle • Marvin

Appendix G

Water Quality Management Plan for Santa Gertrudis Creek Phase II – Margarita Road Undercrossing

ESA

City of Temecula
WATER QUALITY MANAGEMENT PLAN (WQMP)

PROJECT NAME & NUMBER:
Santa Gertrudis Creek Phase II – Margarita Road Under crossing
PW19-04
PROJECT ADDRESS:
Margarita Road @ Santa Gertrudis Creek, Temecula

PREPARED BY:

Name	Portia Gonzalez, P.E., EXP U.S. Services
Address	451 E. Vanderbilt Way Suite 375
	San Bernardino, CA 92408
Phone	(949) 257-5340
Email	portia.gonzalez@exp.com

CIP PROJECT MANAGER:

Name William Becerra

DATE OF WQMP: December 10, 2020

Water Quality Project Type:

☐ Maintenance
☐ Standard Development
☐ Priority Development
X Exempt Priority Development

Preparer's Certification

Project Name: Santa Gertrudis Creek Phase II – Margarita Road Under crossing
Project Number: PW19-04

PREPARER'S CERTIFICATION

I have read and understand that the City of Temecula has adopted minimum requirements for managing urban runoff, including stormwater, from capital improvement activities, as described in the BMP Design Manual. I certify that this WQMP has been completed to the best of my ability and accurately reflects the project being proposed and the applicable BMPs proposed to minimize the potentially negative impacts of this project's activities on water quality.

I hereby declare that the design is consistent with the requirements of the City of Temecula BMP Design Manual, which is a design manual for compliance with local City of Temecula Stormwater and Urban Runoff Management and Discharge Controls Ordinance (Chapter 8.28 et seq.) and regional MS4 Permit (California Regional Water Quality Control Board San Diego Region Order No. R9-2013-0001 as amended by R9-2015-0001 and R9-2015-0100) requirements for stormwater management; as well as the requirements of the City of Temecula Engineering and Construction Manual (Chapter 18) and the City of Temecula Erosion and Sediment Control Ordinance (Chapter 18.18 et seq.).

12/10/20
Preparer's Signature Date:

Portia Gonzalez, P.E.
Print Name

EXP U.S. Services Inc.
Company

William Becerra
CIP Project Manager

STOP! Before continuing this form review Chapter 1.3 of the BMP Design Manual. If the project type is listed in Table 1-2, permanent stormwater requirements do not apply to your project. Write your exempt project category in the space provided below. Do not complete this WQMP.

Exempt Project category

Step 1: Source Control BMP Checklist

Source Control BMPs			
All development projects must implement source control BMPs 4.2.1 through 4.2.6 where applicable and feasible. See Chapter 4.2 and Appendix E of the City BMP Design Manual for information to implement source control BMPs shown in this checklist. Answer each category below pursuant to the following: • "Yes" means the project will implement the source control BMP as described in Chapter 4.2 and/or Appendix E of the City BMP Design Manual. Discussion / justification must be provided and **show locations on the project plans**. Select applicable Source Controls in the Source Control BMP summary on the following page. • "No" means the BMP is applicable to the project but it is not feasible to implement. Discussion / justification must be provided. • "N/A" means the BMP is not applicable at the project site because the project does not include the feature that is addressed by the BMP (e.g., the project has no outdoor materials storage areas). Discussion / justification must be provided.			
Source Control Requirement	**Applied?**		
4.2.1 Prevention of Illicit Discharges into the MS4	☐ Yes	☐No	X N/A
Discussion / justification: The project is not expected to generate any non-stormwater discharges in the post-project condition. The proposed project is to construct a multi-purpose trail under Santa Margarita Road on the existing Santa Gertrudis Creek concrete side slope.			
4.2.2 Storm Drain Stenciling or Signage	☐Yes	☐No	X N/A
Discussion / justification: The project is not proposing any new inlets. The Santa Margarita Road flows are contained in the roadway and directed to an existing catchbasin approximately 700' to the north.			
4.2.3 Protect Outdoor Materials Storage Areas from Rainfall, Run-On, Runoff, and Wind Dispersal	☐Yes	☐No	X N/A
Discussion / justification: The project is not proposing any material storage areas.			
4.2.4 Protect Materials Stored in Outdoor Work Areas from Rainfall, Run-On, Runoff, and Wind Dispersal	☐Yes	☐No	X N/A
Discussion / justification: The project is not proposing any outdoor work area in the post-project condition.			
4.2.5 Protect Trash Storage Areas from Rainfall, Run-On, Runoff, and Wind Dispersal	☐Yes	☐No	X N/A
Discussion / justification: The project is not proposing any trash storage areas.			
4.2.6 Additional BMPs Based on Potential Sources of Runoff Pollutants	☐Yes	☐No	X N/A

Discussion / justification. Clearly identify which sources of runoff pollutants are discussed:
There are no potential sources of runoff pollutants that have been identified within the project limits. The proposed trail is for non-motorized use and will be located on the Santa Gertrudis Creek concrete side slope.

Source Control BMP Summary			
Select all source control BMPs identified for your project in sections 4.2.1 through 4.2.6 above in the column on the left below. Then select "yes" if the BMP has been implemented **and shown on the project plans**, "No" if the BMP has not been implemented, or "N/A" if the BMP is not applicable to your project.			
☐ SC-A. On-site storm drain inlets	☐Yes	☐No	X N/A
☐ SC-B. Interior floor drains and elevator shaft sump pumps	☐Yes	☐No	X N/A
☐ SC-C. Interior parking garages	☐Yes	☐No	X N/A
☐ SC-D1. Need for future indoor & structural pest control	☐Yes	☐No	X N/A
☐ SC-D2. Landscape/outdoor pesticide use	☐Yes	☐No	X N/A
☐ SC-E. Pools, spas, ponds, fountains, and other water features	☐Yes	☐No	X N/A
☐ SC-F. Food service	☐Yes	☐No	X N/A
☐ SC-G. Refuse areas	☐Yes	☐No	X N/A
☐ SC-H. Industrial processes	☐Yes	☐No	X N/A
☐ SC-I. Outdoor storage of equipment or materials	☐Yes	☐No	X N/A
☐ SC-J. Vehicle and equipment cleaning	☐Yes	☐No	X N/A
☐ SC-K. Vehicle/equipment repair and maintenance	☐Yes	☐No	X N/A
☐ SC-L. Fuel dispensing areas	☐Yes	☐No	X N/A
☐ SC-M. Loading docks	☐Yes	☐No	X N/A
☐ SC-N. Fire sprinkler test water	☐Yes	☐No	X N/A
☐ SC-O. Miscellaneous drain or wash water	☐Yes	☐No	X N/A
☐ SC-P. Plazas, sidewalks, and parking lots	☐Yes	☐No	X N/A
☐ SC-Q. Large trash generating facilities	☐Yes	☐No	X N/A
☐ SC-R. Animal facilities	☐Yes	☐No	X N/A
☐ SC-S. Plant nurseries and garden centers	☐Yes	☐No	X N/A
☐ SC-T. Automotive facilities	☐Yes	☐No	X N/A

Note: Show all source control measures applied above on the plan sheets.

Step 2: Site Design BMP Checklist

Site Design BMPs
All development projects must implement site design BMPs SD-A through SD-H where applicable and feasible. See Chapter 4.3 and Appendix E of the City BMP Design Manual for information to implement site design BMPs shown in this checklist. Answer each category below pursuant to the following: • "Yes" means the project will implement the site design BMP as described in Chapter 4.3 and/or Appendix E of the City BMP Design Manual. Discussion / justification must be provided and **show locations on the project plans**. • "No" means the BMP is applicable to the project but it is not feasible to implement. Discussion / justification must be provided. • "N/A" means the BMP is not applicable at the project site because the project does not include the feature that is addressed by the BMP (e.g., the project site has no existing natural areas to conserve). Discussion / justification must be provided.

Site Design Requirement	Applied?		
4.3.1 Maintain Natural Drainage Pathways and Hydrologic Features	X Yes	☐No	☐N/A
Discussion / justification: The project maintains the existing drainage pattern toward the Santa Gertrudis Creek			
4.3.2 Conserve Natural Areas, Soils, and Vegetation	X Yes	☐No	☐N/A
Discussion / justification: The project will replace all vegetation to be removed during construction			
4.3.3 Minimize Impervious Area	X Yes	☐No	☐N/A
Discussion / justification: The project minimizes the new impervious areas by constructing the trail on the channel's existing concrete side slopes			
4.3.4 Minimize Soil Compaction	X Yes	☐No	☐N/A
Discussion / justification: The project minimizes soil compaction			
4.3.5 Impervious Area Dispersion	☐Yes	☐No	X N/A
Discussion / justification: Since the project area is located within the Santa Gertrudis Creek concrete side slope, the impervious area dispersion is the same as existing.			
4.3.6 Runoff Collection	☐Yes	☐No	X N/A
Discussion / justification: The project area drains directly to Santa Gertrudis Creek			
4.3.7 Landscaping with Native or Drought Tolerant Species	☐Yes	☐No	X N/A
Discussion / justification: Landscaping is not part of the scope of this project			

4.3.8 Harvesting and Using Precipitation	☐Yes	☐No	X N/A
Discussion / justification: The project area directly drains to Santa Gertrudis Creek			

Step 3: Project type determination (Standard or Priority Development Project)

Is the project part of another Priority Development Project (PDP)? ☐ Yes X No If so, Standard and PDP requirements apply. Go to Step 3.1 and select "PDP"			
The project is (select one): ☐ New Development X Redevelopment[1]			
The total proposed newly created or replaced impervious area is: 7,241 ft²			
The total existing (pre-project) impervious area is: 7,189 ft²			
The total area disturbed by the project is: 8,712 ft²			
If the total area disturbed by the project is 1 acre (43,560 sq. ft.) or more OR the project is part of a larger common plan of development disturbing 1 acre or more, a Waste Discharger Identification (WDID) number must be obtained from the State Water Resources Control Board.			
Is the project in any of the following categories, (a) through (f)?[2]			
Yes ☐	No X	(a)	New development projects that create 10,000 square feet or more of impervious surfaces [3](collectively over the entire project site). This includes commercial, industrial, residential, mixed-use, and public development projects on public or private land.
Yes ☐	No X	(b)	Redevelopment projects that create and/or replace 5,000 square feet or more of impervious surface (collectively over the entire project site on an existing site of 10,000 square feet or more of impervious surfaces). This includes commercial, industrial, residential, mixed-use, and public development projects on public or private land.
Yes ☐	No X	(c)	New and redevelopment projects that create and/or replace 5,000 square feet or more of impervious surface (collectively over the entire project site), and support one or more of the following uses: (i) Restaurants. This category is defined as a facility that sells prepared foods and drinks for consumption, including stationary lunch counters and refreshment stands selling prepared foods and drinks for immediate consumption (Standard Industrial Classification (SIC) code 5812). (ii) Hillside development projects. This category includes development on any natural slope that is twenty-five percent or greater. (iii) Parking lots. This category is defined as a land area or facility for the temporary parking or storage of motor vehicles used personally, for business, or for commerce. (iv) Streets, roads, highways, freeways, and driveways. This category is defined as any paved impervious surface used for the transportation of automobiles, trucks, motorcycles, and other vehicles.

[1] Redevelopment is defined as: The creation and/or replacement of impervious surface on an already developed site. Examples include the expansion of a building footprint, road widening, the addition to or replacement of a structure, and creation or addition of impervious surfaces. Replacement of impervious surfaces includes any activity that is not part of a routine maintenance activity where impervious material(s) are removed, exposing underlying soil during construction. Redevelopment does not include routine maintenance activities, such as trenching and resurfacing associated with utility work; pavement grinding; resurfacing existing roadways; new sidewalks construction; pedestrian ramps; or bike lanes on existing roads; and routine replacement of damaged pavement, such as pothole repair.

[2] Applicants should note that any development project that will create and/or replace 10,000 square feet or more of impervious surface (collectively over the entire project site) is considered a new development.

Yes X	No ☐	(d)	New or redevelopment projects that create and/or replace 2,500 square feet or more of impervious surface (collectively over the entire project site), and discharging directly to an Environmentally Sensitive Area (ESA). "Discharging directly to" includes flow that is conveyed overland a distance of 200 feet or less from the project to the ESA, or conveyed in a pipe or open channel any distance as an isolated flow from the project to the ESA (i.e. not commingled with flows from adjacent lands). *Note: ESAs are areas that include but are not limited to all Clean Water Act Section 303(d) impaired water bodies; areas designated as Areas of Special Biological Significance by the State Water Board and San Diego Water Board; State Water Quality Protected Areas; water bodies designated with the RARE beneficial use by the State Water Board and San Diego Water Board; and any other equivalent environmentally sensitive areas which have been identified by the Copermittees. See BMP Design Manual Chapter 1.4.2 for additional guidance.*
Yes ☐	No X	(e)	New development projects, or redevelopment projects that create and/or replace 5,000 square feet or more of impervious surface, that support one or more of the following uses: (i) Automotive repair shops. This category is defined as a facility that is categorized in any one of the following SIC codes: 5013, 5014, 5541, 7532-7534, or 7536-7539. (ii) Retail gasoline outlets (RGOs). This category includes RGOs that meet the following criteria: (a) 5,000 square feet or more or (b) a projected Average Daily Traffic (ADT) of 100 or more vehicles per day.
Yes ☐	No X	(f)	New or redevelopment projects that result in the disturbance of one or more acres of land and are expected to generate pollutants post construction. *Note: See BMP Design Manual Chapter 1.4.2 for additional guidance.*

Does the project meet the definition of one or more of the Priority Development Project categories (a) through (f) listed above?

☐ No – the project is not a Priority Development Project (Standard Project).

X Yes – the project is a Priority Development Project (PDP).

Further guidance may be found in Chapter 1 and Table 1-2 of the BMP Design Manual.

The following is for **redevelopment PDPs only**:

The area of existing (pre-project) impervious area at the project site is: 7,189 ft^2 (A)
The total proposed newly created or replaced impervious area is 7,241 ft^2 (B)
Percent impervious surface created or replaced (B/A)*100: 100 %
The percent impervious surface created or replaced is (select one based on the above calculation):

☐ less than or equal to fifty percent (50%) – **only newly created or replaced impervious areas are considered a PDP and subject to stormwater requirements**

OR

X greater than fifty percent (50%) – **the entire project site is considered a PDP and subject to stormwater requirements**

Step 3.1: Water Quality Management Plan requirements

Step	Answer	Progression
Is the project a Standard Project, Priority Development Project (PDP), or exemption to PDP definitions? To answer this item, complete Step 3 Project Type Determination Checklist, and see PDP exemption information below. For further guidance, see Chapter 1.4 of the BMP Design Manual *in its entirety*.	☐ Standard Project	Standard Project requirements apply, **STOP, you have satisfied stormwater requirements.**
	☐ PDP	Standard and PDP requirements apply. **Complete Exhibit A "PDP Requirements."** **http://temeculaca.gov/wqmpa2**
	X PDP Exemption	**Go to Step 3.2 below.**

Step 3.2: Exemption to PDP definitions

Is the project exempt from PDP definitions based on either of the following: X Projects that are only new or retrofit paved sidewalks, bicycle lanes, or trails that meet the following criteria: (i) Designed and constructed to direct stormwater runoff to adjacent vegetated areas, or other non-erodible permeable areas; OR (ii) Designed and constructed to be hydraulically disconnected from paved streets or roads [i.e., runoff from the new improvement does not drain directly onto paved streets or roads]; OR (iii) Designed and constructed with permeable pavements or surfaces in accordance with City of Temecula Guidance on Green Infrastructure;	If so: Standard Project requirements apply, AND any additional requirements specific to the type of project. City concurrence with the exemption is required. *Provide discussion and list any additional requirements below in this form.* **STOP, you have satisfied stormwater requirements.**
☐ Projects that are only retrofitting or redeveloping existing paved alleys, streets or roads that are designed and constructed in accordance with the City of Temecula Guidance on Green Infrastructure.	**Complete Exhibit A "PDP Requirements."** **Select Green Streets Exemptions where applicable.**
Discussion / justification, and additional requirements for exceptions to PDP definitions, if applicable:	

Appendix H
Noise Calculations

ESA

Project: St. Gertrudis Creek Trail

Construction Noise Impact on Sensitive Receptors

Parameters

Construction Hours:	8	Daytime hours (7 am to 7 pm)
	0	Evening hours (7 pm to 10 pm)
	0	Nighttime hours (10 pm to 7 am)
Leq to L10 factor	3	

				Residential (West)			
Construction Phase **Equipment Type**	**No. of Equip.**	**Reference Noise Level at 50ft, Lmax**	**Acoustical Usage Factor**	**Distance (ft)**	**Lmax**	**Leq**	**Estimated Noise Shielding, dBA**
Demolition					***80***	***75***	
Concrete Saw	1	90	20%	200	78	71	0
Rubber Tired Dozers	1	82	40%	200	70	66	0
Tractor/Loader/Backhoe	2	84	40%	200	75	71	0
Grading					***80***	***75***	
Concrete Saw	1	90	20%	200	78	71	0
Rubber Tired Dozers	1	82	40%	200	70	66	0
Tractor/Loader/Backhoe	2	84	40%	200	75	71	0
Construction - Trail and Wall					***76***	***72***	
Cranes	1	81	16%	200	69	61	0
Forklift	2	75	10%	200	66	56	0
Tractor/Loader/Backhoe	2	84	40%	200	75	71	0
Striping					***66***	***63***	
Air Compressor	1	78	50%	200	66	63	0
Maximum Noise Level						***74.6***	

Source for Ref. Noise Levels: FHWA RCNM, 2006