

**FINAL MITIGATED NEGATIVE DECLARATION
FOR THE CREEKSIDE TERRACE
SLOPE PROTECTION PROJECT**

**UNIVERSITY OF CALIFORNIA, RIVERSIDE
PROJECT No. 950503/950551
SCH No. 2014081086**

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Acronyms and Abbreviations

AB	Assembly Bill
APE	area of potential effects
APN	Assessor's Parcel Number
AQMP	Air Quality Management Plan
ARB	California Air Resources Board
Basin	South Coast Air Basin
BAU	business as usual
BMPs	best management practices
CCR	California Code of Regulations
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CNPS	California Native Plant Society
CO ₂	carbon dioxide
CO ₂ e	carbon dioxide equivalent
CUP	Conditional Use Permit
cy	cubic yards
dBA	A-weighted decibels
DBESP	Determination of Biologically Equivalent or Superior Preservation
EIR	environmental impact report
GHG	greenhouse gas
HMMP	Habitat Mitigation and Monitoring Program
IS/MND	initial study/mitigated negative declaration
L _{eq}	equivalent sound level
LRDP	Long Range Development Plan
LRDP EIR	Long Range Development Plan Environmental Impact Report
LSA	Lake and Streambed Alteration
MLD	Most Likely Descendant
MM	Mitigation Measure
MMRP	Mitigation Monitoring and Reporting Program
MMT	million metric tons

MSHCP	Multiple Species Habitat Conservation Plan
MSL	mean sea level
MT	metric tons
NAHC	Native American Heritage Commission
NO _x	nitrogen oxide
NPDES	National Pollutant Discharge Elimination System
PM	particulate matter
PM10	particulate matter less than 10 microns in diameter
PM2.5	particulate matter less than 2.5 microns in diameter
PP	Programs and Practices
Project	Creekside Terrace Slope Protection Project
PS	Planning Strategy
RCRPOSD	Riverside County Regional Parks and Open Space District
ROC	reactive organic compounds
RWQCB	Regional Water Quality Control Board
SCAQMD	South Coast Air Quality Management District
SSC	Species of Special Concern
SKR	Stephens' Kangaroo Rat
SWPPP	Stormwater Pollution Prevention Plan
The Regents	Board of Regents of the University of California
University	University of California Riverside
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
WoS	waters of the State
WoUS	waters of the U.S
WRC	Western Riverside County

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Introduction

The Creekside Terrace Slope Protection Project (herein referred to as “Project”) is located partially on property owned by the University of California, approximately 770 feet from the southern boundary of the west campus area of the Riverside campus, and partially located on property owned by others within the City of Riverside, Riverside County, California (Figure 1). The site is generally east of Chicago Avenue and south of Le Conte Drive. Specifically, the project site consists of a drainage feature approximately 0.20 mile north of the intersection of Chicago and Central Avenues (Figure 2), and includes a small, soft-bottom channel that enters the project boundary through a concrete culvert in the southeast and exits through a 6-foot concrete culvert in the northwest. The channel is bounded on either side by existing residential developments and vacant parcels zoned for residential development. A housing development terraced keystone retaining wall stands approximately 75 feet above the bed of the north side of the channel (Figure 3). The Project is within Section 31, Township 2 South, Range 4 West of the Riverside East U.S. Geological Survey (USGS) quadrangle dated 1967, photo revised 1980 (USGS 1967). The primary Assessor’s Parcel Number (APN) associated with the project site is 254-370-003.

Project History

The Creekside Terrace residential development project was approved by the City of Riverside in 2004. The site was graded, and utility and street improvements, common facilities (clubhouse, pool, and playground), and 24 of the 78 approved residences were completed prior to acquisition of the property by the University of California, Riverside (University) in 2008. In 2012, the University addressed the uncompleted compensatory mitigation obligations required by the prior landowner pursuant to the previously issued California Department of Fish and Wildlife (CDFW) Streambed Alteration Agreement. Through cooperation with the CDFW, the University revised the required onsite mitigation to be addressed off site at a mitigation bank. Once the mitigation obligation was satisfied, the University was able to move forward with seeking approvals for the proposed Project.

An initial study/mitigated negative declaration (IS/MND) for the proposed Project was circulated in 2014, and comments were received from various agencies. However, the University put the Project on hold and the Final IS/MND, inclusive of response to comments, was not presented for approval to the Board of Regents of the University of California (The Regents), or its delegate. Delegates of The Regents include, but are not limited to, the University Chancellor. The Project has since become active again. Due to the lapse in time since the circulation of the 2014 IS/MND, the biological and cultural resources surveys were updated in 2018 and 2019, respectively. The proposed Project has not changed; however, it was determined that a portion of the soil removed from the channel would need to be hauled off site. This Final IS/MND discusses the changes in analysis from the Draft IS/MND that was circulated in 2014, including responding to the agencies’ comments.

Engineering evaluations conducted during the course of the property acquisition process identified remedial measures necessary to ensure long-term stability of the stream bank close to substantial keystone retaining walls along the northern side of the drainage (generally the western tract boundary).

During a pre-application meeting on October 9, 2019, with the U.S. Army Corps of Engineers (USACE), U.S. Fish and Wildlife Service (USFWS), Santa Ana Regional Water Quality Control Board (RWQCB), and CDFW (collectively, "the agencies"), the agencies asked the University to provide information on other options that were considered for the proposed Project. Remedial measures considered included a vertical concrete wall, sloped ungrouted rip-rap, and a sloped concrete wall. The slope with ungrouted rip-rap was selected as it would allow for some planting of vegetation. Based on the velocity in the channel, the rock rip-rap would be approximately one-quarter ton. The proposed design would serve as a permanent solution to the ongoing erosion problem and would provide long-term stability and protection of the retaining wall.

During project development, widening the channel was also considered to increase the channel's flood capacity; however, due to the lack of physical space within the access road area, this was determined infeasible. A minimum 10-foot setback is needed between the drainage channel and retaining wall so that the structural integrity of the wall footers is not compromised. Where the channel bends there is a larger physical area on the northern bank; however, widening the channel would only allow for a 5- to 5.5-foot setback, therefore compromising the integrity of the adjacent wall and homes. Although the portion of the access road east of the channel is narrower, the existing width is the minimum width allowable along that bank (because those soils have already stabilized); therefore, the option of widening the channel was not selected.

The proposed Project consists of stabilization improvements within a previously improved stream channel that lies partially within the Creekside Terrace boundaries, but primarily within the site of an adjacent, privately owned apartment development (Canyon Crest Village Apartment) south of the proposed Project (Figure 4). The apartment site owner entered into a legal agreement with the University granting access for due diligence inspections and construction of the proposed stabilization improvements. Other than pipe and outlet easements, no other easements occur over the drainage channel.

Relationship to the University of California, Riverside 2005 Long Range Development Plan and Environmental Impact Report

The Creekside Terrace development is on University-owned property, but outside the contiguous University campus boundaries that define the planning area in the University of California, Riverside 2005 Long Range Development Plan (LRDP), as amended, and that frame the analysis in the associated program environmental impact report (LRDP EIR). On this basis, the environmental analysis for the Creekside Terrace Slope Protection Project may not be tiered from the LRDP EIR, as is typical with campus development and improvement projects.

Even though this analysis is not tiered from the LRDP EIR, it is University policy to extend established campus avoidance, minimization, and mitigation measures as contained in the adopted Mitigation Monitoring and Reporting Program (MMRP) for the LRDP EIR to relevant off-campus activities. Applicable LRDP EIR MMRP provisions are recognized throughout the impact discussion section of this document.

Environmental Review and Approval

The University prepared a Draft IS/MND (State Clearinghouse number 2014081086) for the Project and circulated the document for a 30-day public review period commencing August 26, 2014, and ending September 25, 2014. The University used several methods to solicit comments on the Draft IS/MND from agencies, organizations, and members of the public. Notification included circulation through the Governor's Office of Planning and Research State Clearinghouse for distribution to state agencies and publication in the *Press-Enterprise* on September 2, 2014. In addition, the Draft IS/MND was posted with the Riverside County Clerk's office on August 25, 2014; on the University's Capital Programs-Architects & Engineers website (subsequently renamed the Planning, Design, & Construction website—<https://odc.ucr.edu/environmental-planning-ceqa>); and at the University Capital Planning (subsequently renamed the Planning, Design, & Construction) offices (1223 University Avenue, Suite 240 [formerly 200], Riverside, CA 92507). A notice of completion was mailed directly to various agencies and organizations and to individuals that had previously requested such notice, including 16 responsible and trustee agencies, a property owner, four individuals, and a Native American tribe. Three written comments were received during the public review period. Pursuant to Section 15074 of the California Environmental Quality Act (CEQA) Guidelines, the University has reviewed and considered all comments received on the Draft IS/MND, and has prepared responses to these comments, contained later on in this Final IS/MND.

In the course of completing this Final IS/MND, the following sections have been modified and new information has been added for further clarification: Air Quality, Biological Resources, Cultural Resources, Energy, Greenhouse Gas Emissions, Tribal Cultural Resources, and Wildfires. The project design and project objectives are consistent with the Project as previously proposed and would not result in greater impacts than previously documented as a result of the updated surveys/assessments. None of this information has revealed the existence of: (1) new, unavoidable or significant effects and mitigation measures or project revisions that must be added in order to reduce the effect to a less-than-significant level, or (2) a determination by the lead agency that the proposed mitigation measures or Project revisions will not reduce potential effects to a less-than-significant level and new measures or revisions must be required. Consequently, the University finds that the modifications and clarifications made to this Final IS/MND do not collectively or individually constitute a substantial revision in comparison to what was included in the Draft IS/MND within the meaning of State CEQA Guidelines §15073.5. Recirculation of this Final IS/MND, or any portion thereof, is therefore not required.

Final Mitigated Negative Declaration

The University has prepared this Final IS/MND for the proposed Project in compliance with CEQA, the State CEQA Guidelines (14 California Code of Regulations [CCR] 15000 et seq.), and the University of California CEQA Handbook for consideration by The Regents or its delegate. The Final IS/MND incorporates the Draft IS/MND and presents all of the required contents as set forth in Section 15071 of the State CEQA Guidelines.

The intent of the Final IS/MND is to present comments pertaining to the analysis contained in the Draft IS/MND and to provide an opportunity for clarification, corrections, or minor revisions to the Draft IS/MND, as needed to address those comments. The Regents or its delegate will consider this Final IS/MND and the Draft IS/MND in the decision-making process regarding approval of project design and construction.

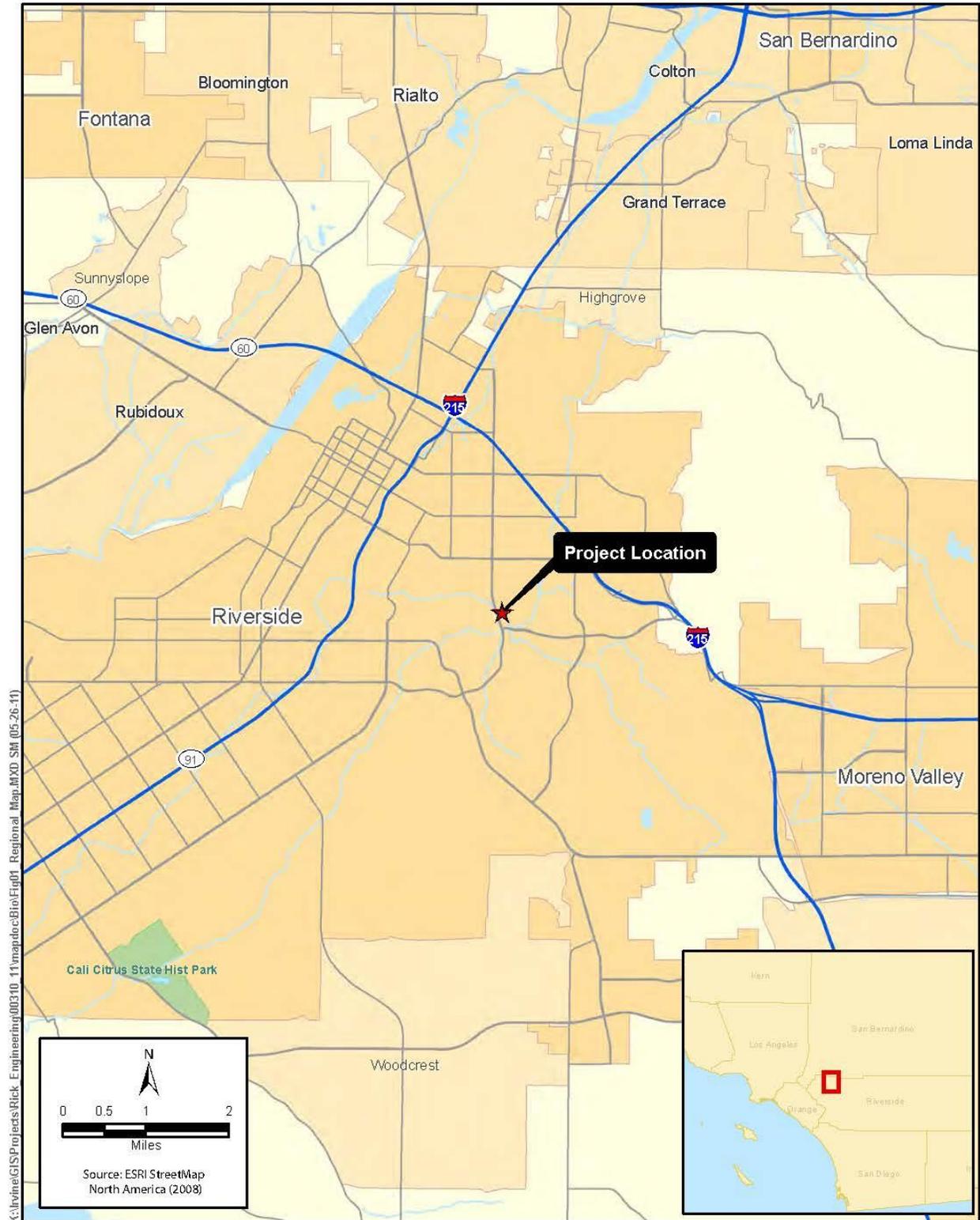


Figure 1
Regional Vicinity Map
Creekside Terrace Slope Protection Project



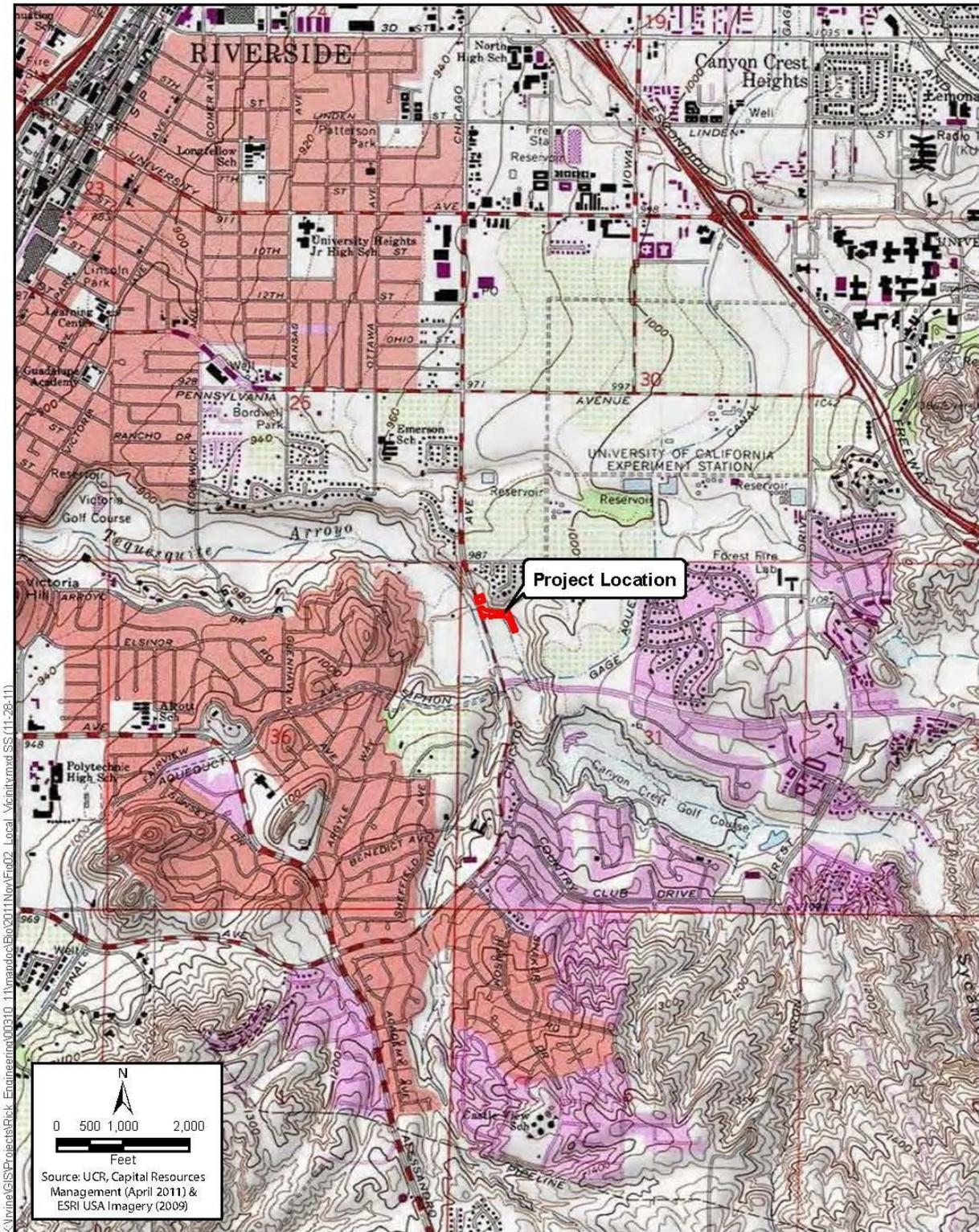


Figure 2
Vicinity/USGS Topographic Map
Creekside Terrace Slope Protection Project





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Figure 3
Project Site
Creekside Terrace Slope Protection Project

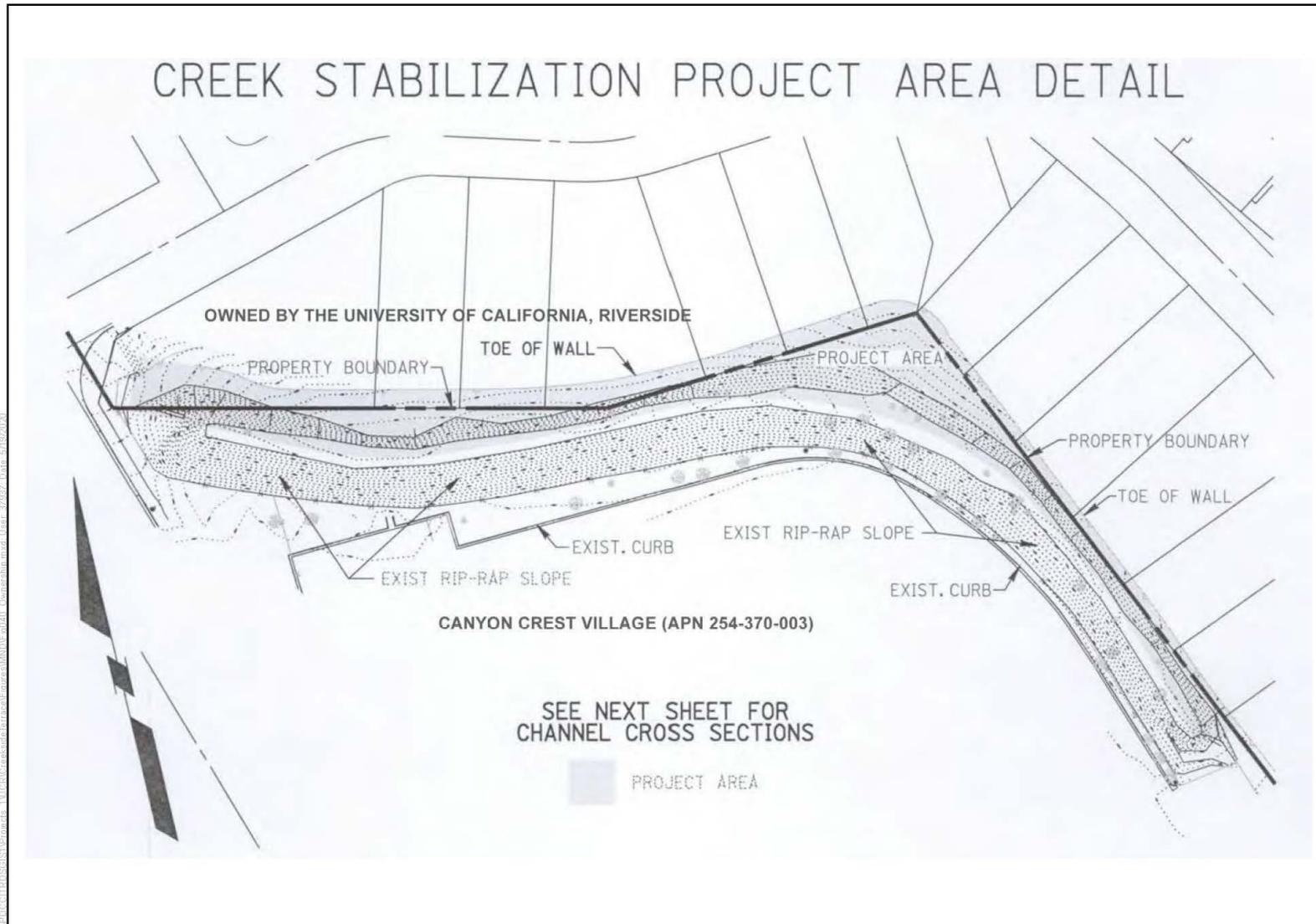


Figure 4
Property Ownership
Creekside Terrace Slope Protection Project

Project Location

The proposed Project is located within the City of Riverside, Riverside County, California, approximately 0.20 mile north of Central Avenue and east of Chicago Avenue in the Canyon Crest area of the City of Riverside, California, within and adjacent to an off-campus residential development known as Creekside Terrace (Tract 31671). Figure 1 identifies the project location in the regional context.

Project Site and Environmental Setting

The drainage channel is a previously improved remnant feature confined by two major roads, an established apartment development, and a residential subdivision. The surrounding area to the north, south, and east is characterized by residential development. Chicago Avenue, the City of Riverside's Andulka Park, and further residential development are situated to the west. This includes land owned by the University and property belonging to the adjacent apartment complex. The riparian area within the proposed project site lies primarily within the legal parcels associated with the apartments bordering the south and west banks.

Project Objectives

The proposed Project intends to stabilize the stream bank in accordance with the recommendations of the University's consulting engineer, based upon accepted design standards.

The proposed finished conditions are intended to retain the existing hydrologic functions and values of the impacted drainage feature and to maximize post-construction biological functions for the north¹ channel bank.

Project Description

The proposed Project involves stabilization of the north bank of an existing drainage channel adjacent to the University-owned Creekside Terrace residential development (Tract 31671). Specifically, the channel would be reshaped and rip-rap would be placed on the north bank to match existing conditions on the south bank. The proposed improvements would require the removal of all vegetation on the north bank as well as the channel bottom. Proposed ongoing activity would maintain a vegetation-free condition on the north bank to ensure channel flow capacity is maintained. Existing vegetation on the south bank would remain in place, and native vegetation

¹ The drainage channel includes a bend within the project limits, with a portion of the channel oriented generally north/south and a portion oriented generally east/west. For this report, the bank adjacent to the University-owned property is referred to as the *north bank*, while the bank adjacent to the privately owned apartment site is referred to as the *south bank*.

would be allowed to naturally reestablish within the drainage channel bank on the south side. In addition to clearing vegetation from the work limits, the proposed improvements would include removal of non-native plants throughout the riparian area.

The proposed design would excavate the channel to expose the lower extent of the existing rip-rap cover on the south bank.² The site would be accessed via a gate at Chicago Avenue. The proposed staging area for the Project is located on an undeveloped residential lot at the corner of Donalisa Avenue and Oroblanco Avenue. Work would be conducted from the existing access path along the north side of the channel. A series of 34 small-diameter drains extending from the north bank would be protected in place (these are the outlets for the subdrain system for the Creekside Terrace retaining walls). Bottom sediments would be stockpiled for replacement in the reconstructed drainage channel. The excavated area would be graded to establish a v-channel with uniform slope face extending between the existing top of the bank on the Creekside Terrace side of the channel and the existing toe of rip-rap cover on the opposite bank. UngROUTED rip-rap with a filter fabric underlay would be placed over the newly graded slope and the subdrain system outlet pipes would be trimmed so that they do not extend beyond the rock surface. A portion of the stockpiled sediments would be replaced within the channel bottom. This differs from the Project analyzed in the Draft IS/MND circulated in 2014, where it was proposed that all the soil would be replaced in the channel bottom. It has since been determined that a portion of the soil removed from the channel would need to be hauled off site. However, this change would not result in new significant impacts. Finished surface elevations would be established to create a functional flow regime between the existing culverts at each end of the Project. Rip-rap pads (5 feet wide and 10 feet long) would be established at the existing inlet and outlet for energy dissipation.

The subject drainage channel flows year-round; therefore, diversion would be necessary during construction. Considering the nature of the tributary flows and the constrained conditions along the work limits, feasible diversion methods are limited. The entire work limits would need to be dewatered for the duration of construction. This would require a piped diversion from the existing culvert outlet at the upstream end of the work limits to the existing culvert inlet at the downstream end of the work limits. The diversion pipe is expected to be placed along the south bank or perhaps within landscaped areas within the adjacent apartment development. Considering the relative grade between the culvert outlet at the upstream end of the work limits and the likely bypass pipeline location, pumping is expected to be required. A portable generator may be required as a power source.

Construction is anticipated to last approximately 120 days. The proposed finished conditions are intended to retain the existing hydrologic functions and values of the impacted drainage feature and to maximize post-construction biological functions.

Project improvement plans are presented in Appendix A.

Summary of Impacts

The review and analysis contained herein recognizes compliance with established local, state, and federal regulations and University standard procedures as the basis for a determination that impacts are less than significant for aesthetics, agricultural and forestry resources, air quality,

² The southern slope was stabilized as part of the apartment development, approximately in 1983.

cultural resources, geology and soils, greenhouse gas emissions, hazards and hazardous materials, transportation/traffic, tribal cultural resources, and wildfire. No project impacts are anticipated for mineral resources, population and housing, public services, recreation, and energy. The environmental review and analysis contained herein indicates that the proposed Project presents the potential for project-level environmental impacts related to biological resources, hydrology and water quality, land use and planning, noise, and utilities and service systems. Project impacts are summarized below.

Project-Level Impacts Requiring Mitigation Measures

Biological Resources

The proposed Project would impact a previously channelized stream feature that meets jurisdictional criteria under state and federal programs governing streams and riparian resources. The riparian habitat within the stream area is suitable habitat for the federally listed as endangered Least Bell's vireo, although focused surveys determined the species' habitat to be absent. The riparian habitat within the stream area is also suitable habitat for numerous species of birds protected under state and federal law. Collectively, the proposed improvements and post-construction treatments are judged to provide a finished condition of comparable, or better, biological function.

The proposed Project would result in permanent impacts, including all direct impacts associated with movement of soils within the channel and its banks, installation of rip-rap, filter fabric underlay, and any permanent features being installed for the Project to be built. Temporary impacts include staging areas or areas used for equipment access, vehicles, or personnel.

Even though the Project would not be within the contiguous University campus boundaries that define the planning area in the LRDP, the following project-specific mitigation measures provide a mechanism for implementation of the LRDP EIR MMRP measures below to reduce environmental impacts:

- Planning Strategy Conservation 1 (protect natural resources),
- Planning Strategy Conservation 2 (development to minimize site disturbance),
- Programs and Practices 4.4-1(a) (reduce impacts on Natural Open Spaces Reserve area, also listed as PP 4.1-2(c)),
- Programs and Practices 4.4-1(b) (reduce disturbance to Natural Open Spaces Reserve area),
- Programs and Practices 4.4-2(a) (avoid impacts on riparian and wetland habitats or evaluate),
- Mitigation Measure 4.4-3(a) (habitat regulated by Clean Water Act)
- Mitigation Measure 4.4-3(b) (habitat regulated by Clean Water Act),
- Mitigation Measure 4.4-3(c) (wetland creation or enhancement),
- Mitigation Measure 4.4-4(a) (nesting special status avian species surveys during construction), and
- Mitigation Measure 4.4-4(b) (delay construction if active nests for avian species are found).

The following measures also establish means to verify successful implementation of the riparian habitat restoration aspects of the proposed improvements as characterized in the project description, as they may be adjusted through the required state and federal permit processes. With implementation of these measures, potential impacts on biological resources would be less than significant.

BIO 1 – Minimize Direct Impacts on Riparian Habitat. Prior to initiation of ground disturbance activities, disturbance limits shall be clearly defined at the construction site and demarcated on site plans (refer to Appendix A). Access and staging shall be limited to the existing gated entrance from Chicago Avenue, the existing maintenance path along the north bank, or paved/landscaped areas within the adjoining apartment development. Protection measures for riparian habitat on the south bank will be established in consultation with the biological monitor.

BIO 2 – Conduct Biological Monitoring During Construction. A qualified biologist shall monitor construction for compliance with best management practices outlined in LRDP Programs and Practices (PP) 4.4-1(b) (reduce disturbance to Natural Open Space areas). Such measures may include minimizing vehicular access and parking in undisturbed areas or drainages; avoiding removal of native shrub or disturbance of drainages, except where necessary; avoiding overwatering; and not harassing wildlife species. Considering the nature of the work area and proximity of protected resources to the work limits, monitoring shall be continuous during the initial preparation and excavation phases. Once work transitions to placement of rip-rap, the frequency of monitoring may be reduced, as recommended by the monitoring biologist (taking into consideration the nature of the proposed work and time of year).

BIO 3 – Provide a Worker Environmental Awareness Training. To ensure compliance with best management practices identified in LRDP PP 4.4-1(b) (reduce disturbance to Natural Open Space areas), a biologist shall provide to all construction personnel a worker environmental awareness training prior to personnel initiating ground disturbance activities. The training will include a discussion of the importance of the stream and associated riparian habitat, areas to be avoided (including during parking and staging of equipment), a discussion of native wildlife with the potential to occur, and education on not harassing native wildlife.

BIO 4 – Remove Exotic Plant Species. During the construction phase, exotic plant species shall be removed from the riparian zone, including the protected south bank area. Exotic plant material shall be properly handled to prevent sprouting or regrowth. Construction equipment shall be cleaned of mud or other debris that may contain invasive plants/seed and inspected to reduce the potential of spreading noxious weeds before mobilizing to the work area and before leaving the work area. Cleaning of equipment shall occur outside the work area where the wastewater stream is contained so as to prevent any invasive plant material from entering natural areas.

BIO 5 – Monitor Revegetation. As part of the project design, a one-time removal of exotic plants would occur on the southern bank, and native riparian species would be planted throughout the channel. No ongoing maintenance of vegetation within the channel is proposed. Because the channel enhancement is being done as part of the project design, it is not subject to performance criteria; however, it would provide a net benefit to the channel. Compensatory mitigation is addressed in BIO 6.

BIO 6 – Purchase into a Mitigation Bank or In-Lieu Fee Program as Compensatory Mitigation. BIO 6 in the Draft IS/MND circulated in 2014 included language pertaining to the outstanding mitigation the previous landowner left unaddressed. In 2012, the University addressed the uncompleted compensatory mitigation obligations required by the prior landowner pursuant to the previously issued CDFW Streambed Alteration Agreement. Through cooperation with the CDFW, the University revised the required onsite mitigation to be addressed off site at a mitigation bank.

BIO 6 now only pertains to the compensatory mitigation associated with the proposed Project. Compensation for impacts on non-wetland waters of the U.S. (WoUS) and CDFW streambeds would occur at a 1:1 ratio, and impacts on wetland WoUS and CDFW riparian habitat would be at a 2:1 ratio primarily through offsite mitigation at an agency-approved mitigation bank or in-lieu fee program. The final credit purchase requirement will be determined through the regulatory permit process with USACE, RWQCB, and CDFW.

BIO 7 – Pre-construction Nesting Bird Surveys. Prior to the onset of construction activities that would result in vegetation removal between February 15 and September 15 or as early as January for raptors, nesting bird surveys shall be conducted by a qualified biologist no more than 3 days prior to initiation of ground disturbance activities. The survey area shall include the direct disturbance limits and a 250-foot buffer zone or as determined through project-related permits. If nesting birds are encountered within the survey area, the qualified biologist will flag an avoidance buffer zone around the nest. No ground disturbance activities shall occur within the avoidance buffer zone until the qualified biologist has determined that the nest is no longer active and the young are not dependent on the nest.

BIO 8 – Preconstruction Roosting Bat Assessment and Survey. To ensure potential impacts on bat species are reduced, the following measure will be implemented:

- a) Prior to project initiation (e.g., staging, clearing/grubbing, grading), a daytime preliminary assessment will be conducted by a qualified bat biologist to reexamine areas suitable for bat use (i.e., palm trees). If bat sign is observed, then preconstruction roosting bat surveys will be conducted to confirm whether the areas with suitable habitat identified during the preliminary assessment are utilized by bats for day roosting and/or night roosting and to ascertain the level of bat foraging and roosting activity at each of these locations.
- b) If preconstruction roosting bat surveys are warranted, prior to tree removal or trimming, large trees and snags will be examined by a qualified bat biologist to ensure that no roosting bats are present. Palm frond trimming, if necessary, should be conducted outside the maternity season (i.e., April 15–August 31) to avoid potential mortality of flightless young.
- c) If a maternity site is identified during the preconstruction roosting bat surveys, then no construction activities at that location will be allowed during the maternity season (i.e., April 15–August 31) unless a qualified bat biologist has determined the young have been weaned. If a maternity site is present, and it is anticipated that construction activities cannot be completed outside of the maternity season, bat eviction and exclusion at maternity roost sites will be completed by a qualified bat biologist either as soon as possible after the young have been weaned, outside of the maternity season, or as otherwise approved by the qualified bat biologist in coordination with the CDFW.

The proposed Project would permanently affect 0.21 acre (652 linear feet) of federal non-wetland WoUS and waters of the State (WoS) and 0.01 acre of wetland waters jurisdictional under USACE and RWQCB. Refer to Table 3 in Section IV, *Biological Resources*, for a summary of impacts on USACE and RWQCB jurisdictional aquatic resources.

In addition, the proposed Project would permanently affect 0.06 acre (240 linear feet) of CDFW state streambed and 0.31 acre of CDFW riparian habitat. Temporary impacts would occur on 0.02 acre (296 linear feet) of CDFW state streambed and 0.04 acre of CDFW riparian habitat. Refer to Table 2 in Section IV, *Biological Resources*, for a summary of impacts on CDFW jurisdictional aquatic resources.

Compensation for the direct permanent impacts on USACE/RWQCB wetland and non-wetland WoUS and CDFW streambed and associated riparian habitat will be necessary. As part of the project design, a one-time removal of exotic plants would occur on the southern bank and native riparian species would be planted throughout the channel. No ongoing maintenance of vegetation within the channel is proposed. Because the channel enhancement is being done as part of the project design, it is not subject to performance criteria; however, it would provide a net benefit to the channel. The compensation for impacts on non-wetland WoUS and CDFW streambeds would occur at a 1:1 ratio, and impacts on wetland WoUS and CDFW riparian habitat would be at a 2:1 ratio primarily through offsite mitigation at an agency-approved in-lieu fee program. The University would coordinate with USACE, RWQCB, and CDFW to finalize the mitigation requirements. This compensation would ensure no-net-loss of wetlands and that impacts are less than significant under CEQA.

The project site is within the plan areas of two regional conservation efforts—the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP) and the Long-term Habitat Conservation Plan for the Stephens' Kangaroo Rat (SKR). Implementation of the SKR plan is at a stage in which all conservation lands have been acquired. For projects outside the reserve areas, plan conformance is achieved through payment of mitigation fees that support ongoing management of the reserve lands. The campus is not within an SKR reserve and the University is exempt from payment of SKR mitigation fees.

Under the MSHCP, the stream feature and associated riparian habitat are subject to plan provisions for riverine and riparian resources (Volume I, Section 6.1.2). For riparian habitat, the plan requires consideration of suitability for three protected bird species: least Bell's vireo, southwestern willow flycatcher, and western yellow-billed cuckoo. The habitat at the project site is not suitable for southwestern willow flycatcher and western yellow-billed cuckoo, and least Bell's vireo are assumed to be absent on the basis of negative focused surveys.

The MSHCP stipulates that riparian habitat is to be avoided to the greatest extent practicable. If riparian habitat is affected, mitigation must demonstrate equal or superior functions and values. The proposed stabilization improvements would affect a highly constrained stream feature that is removed from MSHCP reserve areas. **Mitigation Measures BIO 1 through BIO 4 and BIO 7** provide for implementation of various measures during construction to ensure individual least Bell's vireos are not impacted and to ensure that impacts on the stream and riparian habitat are minimized. **Mitigation Measure BIO 6** provides for purchase into a mitigation bank or in-lieu fee program to ensure that riverine and riparian habitat functions and values are equivalent or superior to pre-project conditions. With implementation of **Mitigation Measures BIO 1 through BIO 6**, proposed activities and improvements would not conflict with MSHCP provisions for riparian and riverine resources, and a less-than-significant impact would result.

Cultural Resources

A cultural resources survey, Native American consultation, and project-specific historical research did not reveal the presence of any known cultural resources within the project limits. There are no standing historic structures within or near the project limits. Considering the existing setting, prior survey results, and prior disturbances, there is no reasonable potential for the proposed improvements to cause a substantial adverse change in the significance of an historical resource. However, the following mitigation measure provides a means to ensure that the potential impacts on unanticipated and unknown archaeological resources that may exist and be encountered during construction would be avoided or minimized and impacts in this regard would be less than significant.

MM CUL 1. If an archaeological resource is discovered during construction, all soil-disturbing work within 100 feet of the find shall cease and the University Representative shall contact a qualified Archaeologist meeting the Secretary of the Interior standards within 24 hours of discovery to inspect the site. If a resource within the project area of potential effect is determined to qualify as a unique archaeological resource (as defined by the California Environmental Quality Act [CEQA]), the University shall devote adequate time and funding to determine if it is feasible, through project design measures, to preserve the find intact. If it cannot be preserved, the University shall retain a qualified non-University Archaeologist to design and implement a treatment plan, prepare a report, and salvage the material, as appropriate. Any important artifacts recovered during monitoring shall be cleaned, catalogued, and analyzed, with the results presented in a report of findings that meets professional standards.

- a) If significant Native American cultural resources are discovered, as determined by the consulting Archaeologist for which a Treatment Plan must be prepared, the contractor or his Archaeologist shall immediately contact the University Representative. The University Representative shall contact the appropriate tribal representatives.
- b) If requested by tribal representatives, the University, the contractor, or the project Archaeologist shall, in good faith, consult on the discovery and its disposition (e.g., avoidance, preservation, return of artifacts to tribe).
- c) In the event of the discovery of a burial, human bone, or suspected human bone, all excavation or grading in the vicinity of the find shall halt immediately and the area of the find shall be protected. The University shall immediately notify the Riverside County Coroner of the find and comply with the provisions of California Health and Safety Code Section 7050.5.

Hydrology and Water Quality

Temporary diversion of the existing stream would be required for the approximately 120-day construction period. Considering the proposed work limits, the constrained nature of the stream, and the proximity of developed private property and public improvements, the options for diversion are limited. It is expected that diversion would involve a contained method, such as pipes or hoses, extending from the existing inlet to the existing outlet and placed along the south bank or within adjacent landscaped areas.

With the assumed contained diversion, there is potential for flooding due to an upset condition involving a breach in the pipe or hose. An approximately 0.92-acre area that contains the existing stream channel has been zoned as Watercourse by the City of Riverside. This roughly corresponds to the fenced area between the apartment site parking lot and the Creekside Terrace development. As long as the potential overflow boundaries are confined to the existing Watercourse-zoned area, there would be no change in anticipated inundation boundaries and, therefore, no potential for significant impacts due to flooding from the temporary change in the stream course. **The following mitigation measure provides a means to ensure that the temporary diversion does not result in flooding on or off site, and impacts in this regard would be less than significant.**

HYD 1 – Temporary Diversion Design. The temporary diversion works shall be designed such that the inundation limits (including those resulting from an inadvertent breach of flows contained in a pipe or hose) are confined to the existing Watercourse overlay zone boundary. The University shall ensure that construction contracts provide sufficient detail for the design and method of temporary diversion.

Land Use and Planning

Potential impacts in regard to land use and planning relate to project consistency with the adopted regional conservation plans. The discussion of Biological Resources above explains that, with implementation of recommended **Mitigation Measures BIO 1 through BIO 8**, the proposed Project would not conflict with applicable provisions of the two adopted habitat conservation plans that apply within the project area. Therefore, a less-than-significant impact would result with implementation of mitigation.

Noise

The project-specific noise analysis evaluated potential construction-period noise from operation of heavy equipment and of a generator and pump for the temporary stream diversion. Predicted noise levels at the nearest residential receptors exceed applicable standards established under the City of Riverside Municipal Code. For all noise sources except the generator/pump for the stream diversion, construction activity may be limited to adhere to the provisions of Riverside Municipal Code Section 7.35.10(b)(5). Recommended **Mitigation Measure NOI 1** provides a means to enforce this restriction and, with implementation of this measure, impacts in this regard would be less than significant. This measure is more restrictive than the construction hour limits typically applied to campus projects under LRDP EIR MMRP PP 4.10-2 (hour limits for construction activities). Generator and/or pump operations for streamflow diversion would be continuous, and it would not be feasible to conform to the hour limitations under **Mitigation Measure NOI 1**. Recommended **Mitigation Measure NOI 2** requires implementation of attenuation features to achieve noise levels not exceeding applicable Riverside Municipal Code standards. Compliance with LRDP EIR MMRP PP 4.10-2, PP 4.10-7(b), PP 4.10-7(c), and PP 4.10-8 are also included as Campus standard practices for minimizing construction noise. With implementation of these measures, impacts in this regard would be less than significant.

NOI 1 – Restrict Construction Hours. The University will ensure that the construction contractor limits construction activities, where feasible, to occurring between 7:00 a.m. and 7:00 p.m. Monday through Friday and 8:00 a.m. and 5:00 p.m. on Saturday. An exception is made as to operation of a generator and/or pump for temporary stream diversion, subject to Mitigation Measure NOI 2, below.

NOI 2 – Attenuation for diversion pump and generator. The University will ensure construction contracts specify that any generator or diversion pump will be equipped with mufflers, silencers, shrouds, shields, or other noise-reducing features so as to achieve a maximum exterior operational noise level not exceeding 45 A-weighted decibels (dBA) (one-hour equivalent sound level [L_{eq}]) at exterior locations of nearby noise-sensitive land uses. Measures that can be implemented to achieve this include but are not limited to:

- enclosing equipment in solid wall structures,
- using low-noise equipment, and
- placing sound barriers (earth berms or constructed barriers) around equipment.

Tribal Cultural Resources

Based on the results of the records search (Appendix E), Native American scoping, and field survey, specific cultural resources (prehistoric or historic) were not identified in the project APE. No specific resource information was provided by tribal contacts for the project APE, and no impact on historical resources under CEQA would occur. However, the discovery of unanticipated cultural resources and/or human remains is always a possibility during ground-disturbing activities.

Mitigation Measure CUL 1 has been identified and included to reduce any potential impacts to unanticipated archaeological resources should they be encountered during construction. Impacts would be less than significant.

Utilities and Service Systems

Potential impacts on utilities and service systems relate to the function of the subject stream feature as a component of the City of Riverside storm water drainage system. The proposed bank stabilization improvements would temporarily disturb the existing stream channel and associated riparian vegetation, which presents the potential for significant environmental effects related to biological resources, temporary flooding, and noise, as noted above. **Mitigation Measures BIO 1 through BIO 8, HYD 1, NOI 1, and NOI 2** have been identified to reduce these potential impacts to below a level of significance. **With implementation of the recommended LRDP EIR and campus standard practices noted above, the potential environmental effects of the proposed storm water facility improvements would be less than significant.**

Environmental Checklist

I. Project Information

- | | |
|---|---|
| 1. Project Title: | Creeside Terrace Slope Protection Project
University Project Number 950503/950551 |
| 2. Lead Agency Name and Address: | University of California, Riverside
Planning, Design & Construction
1223 University Avenue, Suite 240
Riverside, CA 92507 |
| 3. Contact Person and Phone Number: | Jaime Engbrecht
Planner
(951) 827-2421 |
| 4. Project Location: | Section 31, Township 2 South, Range 4 West of the
Riverside East USGS quadrangle; northeast of
Central and Chicago Avenues in the City of
Riverside. |
| 5. Project Sponsor's Name and Address: | See items 2 and 3, above |
| 6. Custodian of the administrative record for this project (if different from response to item 3 above.): | See item 3, above |
| 7. Identification of previous EIRs relied upon for tiering purposes (including all applicable LRDP and project EIRs and address where a copy is available for inspection.) | 2005 LRDP EIR and 2005 LRDP MMRP, as amended
incorporated by reference |

II. Project Location and Description

- Description of Project:** (Describe the whole action involved, including but not limited to physical characteristics, site, later phases of the project, and any secondary, support, or off-site features necessary for its implementation and site selection process. Attach additional sheets if necessary.)

The proposed Project is located within Section 31, Township 2 South, Range 4 West of the Riverside East USGS quadrangle dated 1967, photorevised 1980 (USGS 1967). The project site is approximately 940 feet above mean sea level (MSL) as depicted on the Riverside

East USGS topographic map. The coordinates (decimal degrees) for the project site are latitude 33.958882° and longitude 117.346076°. The primary APN associated with the project site is 254-370-003.

The proposed Project involves stabilization of the north bank of an existing drainage channel adjacent to the University-owned Creekside Terrace residential development (Tract 31671). See *Project Description* in the preceding *Summary* section for a complete description.

2. Project Objectives:

The proposed Project is intended to stabilize the existing stream bank in accordance with the recommendations of the University's consulting engineer based upon accepted design standards. Specifically, ungrouted rip-rap would be placed on the north bank to match existing conditions on the south bank.³ The proposed design would excavate the channel to expose the lower extent of the existing rip-rap cover on the south bank. The excavated area would be graded to establish a v-channel with uniform slope face extending between the existing top of the bank on the northern bank and the existing toe of rip-rap cover on the southern bank. A portion of the stockpiled sediments would be replaced within the channel bottom over a filter fabric, and finished surface elevations would be established to create a functional flow regime between the existing culverts at each end of the Project.

The proposed finished conditions are intended to retain the existing hydrologic functions and values of the impacted drainage feature and to maximize post-construction biological functions for the north channel bank.

3. Surrounding land uses and environmental setting (Briefly describe the project's surroundings):

The project site is within a developed area of the City of Riverside. Existing land uses include the Creekside Terrace residential community on the north side; vacant, undeveloped residential parcels immediately on the east side; Chicago Avenue, Andulka Park, and residential development to the west; and Canyon Crest Village Apartment followed by Central Avenue to the south. The project site lies between these two residential developments. Disturbances in the project boundary include small amounts of trash, human encroachment, high density of invasive plant species, and domestic animals. A large aquatic feature within the project boundary is a soft-bottom, perennial channel containing a mix of riparian and nonnative vegetation.

4. Discretionary approval authority and other public agencies whose approval is required (e.g., permits, financing approval, or participation agreement.)

Primary approval authority resides with The Regents of University of California or its delegate (the University).

Approvals may also be required from the City of Riverside Public Works and/or Planning departments (the campus has been in contact with City representatives, and determinations as to any required approvals by the City of Riverside are pending).

The proposed construction would also be subject to approvals from CDFW, the RWQCB, and USACE under various programs governing work within jurisdictional streams.

³ The drainage channel includes a bend within the project limits, with a portion of the channel oriented generally north/south and a portion oriented generally east/west. For this report, the bank adjacent to the University-owned property is referred to as the north bank, while the bank adjacent to the privately-owned apartment site is referred to as the south bank.

Applications were submitted to each agency in 2012 (USACE file number 2012-004340JEM, Regional Board File Number 332012-01, and CDFW reference number 1600-2005-0093-R6); however, they will be resubmitted for processing.

5. Consistency with the LRDP: (Describe the project's consistency with: the scope of development projected in the LRDP; campus and community population levels projected in the LRDP; LRDP designation for this type of project; and applicable policy objectives and goals of the LRDP).

The Creekside Terrace development is located off-campus, outside of the LRDP planning area. While the LRDP does not specifically address this location, the analysis in this document takes into account LRDP planning strategies, programs and practices, and mitigation measures that are applicable to resources potentially impacted by the proposed Project.

III. Environmental Factors Potentially Affected

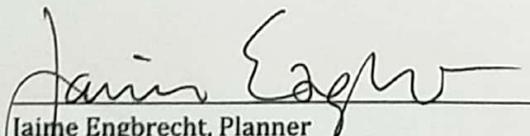
The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages.

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

IV. Determination

On the basis of this initial evaluation that follows:

- I find that the proposed project WOULD 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 that will avoid or reduce any potential significant effects to a less than significant level. A MITIGATED NEGATIVE DECLARATION will be prepared.
- I find that the proposed project MAY have a significant effect on the environment. An ENVIRONMENTAL IMPACT REPORT will be prepared.


 Jaime Engbrecht, Planner
 University of California, Riverside
 Planning, Design & Construction

2.12.2021
 Date

V. Evaluation of Environmental Impacts

During the completion of the environmental evaluation, the lead agency relied on the following categories of impact noted as column headings in the initial study checklist:

- A) “Potentially Significant Impact” is appropriate if there is substantial evidence that the project’s effect may be significant. If there are one or more “Potentially Significant Impacts” a Project EIR will be prepared.
- B) “Less Than Significant With Mitigation Incorporated” applies where the incorporation of project-specific mitigation measures will reduce an effect from “Potentially Significant Impact” to a “Less Than Significant Impact.” All mitigation measures must be described, including a brief explanation of how the measures reduce the effect to a less-than-significant level.
- C) “Less Than Significant Impact” applies where the Project will not result in any significant effects. The project impact is less than significant without the incorporation of mitigation.
- D) “No Impact” applies where the Project would not result in any impact in the category or the category does not apply. “No Impact” answers need to be adequately supported by the information sources cited, which show that the impact does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A “No Impact” answer should be explained where it is based on project-specific factors as well as general standards (e.g., the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis).

I. Aesthetics

I. Aesthetics	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a. Have a substantial adverse effect on a scenic vista?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<p>The project site is situated at the interface of an existing apartment development and an existing single-family residential subdivision, at the bottom of an approximately 40-foot bluff. The existing terrain and the apartment buildings limit public views of the project site to only a very limited window along Chicago Avenue. While the proposed improvements would remove mature riparian vegetation and remove soil from the channel within the work limits, the existing mature vegetation on the south bank would be retained, and riparian vegetation would be allowed to reestablish within the channel bottom. Physical conditions at the project site, together with the nature of the proposed improvements, preclude the potential for substantial adverse effects upon scenic vistas. Potential impacts would be less than significant.</p>				
b. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<p>While the project site is not within the viewshed of a designated or eligible state scenic highway, Central Avenue between Chicago Avenue and Canyon Crest Drive is designated as a Scenic Boulevard in the City of Riverside General Plan, Circulation and Community Mobility Element (Figure CCM-4, Master Plan of Roadways). The proposed Project would remove mature trees, vegetation, and soil within the stream channel. Views of the project limits from Central Avenue would be blocked by existing topography and the apartment development. Since the improvement area is not visible from Central Avenue and would be removed from a designated or eligible state scenic highway, the proposed Project does not present the potential for significant impacts upon scenic roadways. Potential impacts would be less than significant.</p>				
c. Substantially degrade the existing visual character or quality of the site and its surroundings?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<p>The project site is characterized by a remnant natural drainage feature isolated within a residential area within the City of Riverside. The riparian zone is visible from parking areas within the adjacent apartment development and from a very limited window along Chicago Avenue. The visual character of the project area and its surroundings could be affected in the short term by construction activity, including excavation, stockpiling, and presence of construction materials and equipment. Such conditions would cease once construction is complete and are not considered to represent a substantial degradation of the visual character of the site or its surroundings.</p> <p>The proposed improvements would require removal of all vegetation on the north bank of the channel, as well as the channel bottom. The existing mature vegetation on the south bank, adjacent to the apartments, would be retained, and riparian vegetation would be allowed to reestablish</p>				

I. Aesthetics	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
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within the channel bottom. While the proposed Project may diminish the extent of riparian cover, the essential look and function as perceived from the existing public perspectives would not change substantially. Therefore, potential impacts on the visual character and quality of the site and its surroundings would be less than significant.

d. Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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The proposed channel improvements do not include temporary or permanent lighting elements or reflective construction materials. The proposed Project, by its nature, would not produce any new sources of light or glare. No impacts are anticipated.

II. Agriculture and Forestry Resources

II. Agriculture and Forestry Resources	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
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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 CA Resources Agency, to non-agricultural use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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The project site itself is developed with a stream channel and is surrounded by developed lands and existing roads within the City of Riverside. The project site is not designated as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, as shown on maps prepared pursuant to the Farmland Mapping and Monitoring Program. The resource of concern is absent and there is no potential for adverse impacts.

b. Conflict with existing zoning for agricultural use, or a Williamson Act contract?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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The project site is not subject to a Williamson Act contract (City of Riverside General Plan Figure OS-3, Williamson Act Preserves). While agricultural uses are permitted within the Watercourse overlay zone that applies within the drainage channel, multiple physical constraints at this particular location would not accommodate agricultural uses (access, slopes, trees, perennial water flows). Implementation of the proposed Project would remain and function as a stream channel. No impact would occur.

II. Agriculture and Forestry Resources	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
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))?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

The project site is in a developed area of the City of Riverside. The site and surrounding area do not contain forest land or timberland. The resources of concern are absent and there is no potential for adverse impacts.

d. Result in the loss of forest land or conversion of forest land to non-forest use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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The project site is in a developed area of the City of Riverside. The site and surrounding area do not contain forest land. The resource of concern is absent and there is no potential for adverse impacts.

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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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The project site is in a developed setting. The site and surrounding area do not contain forest land or farmland. The resources of concern are absent and there is no potential for adverse impacts.

III. Air Quality

III. Air Quality	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
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Where available, the significance criteria established by the applicable air quality management 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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The project site is within the South Coast Air Basin (Basin), which is a subregion of the South Coast Air Quality Management District (SCAQMD). Development within the Basin is subject to a comprehensive program of pollution control strategies detailed in SCAQMD's Air Quality Management Plan (AQMP) and implementing Rules. SCAQMD is required, pursuant to the federal

III. Air Quality

Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
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Clean Air Act, to reduce emissions of criteria pollutants for which the Basin is in nonattainment (i.e., ozone and fine particulate matter). The proposed Project would be subject to SCAQMD’s AQMP, which contains a comprehensive list of pollution control strategies directed at reducing emissions in order to achieve state and federal air quality standards.

The limited activities associated with ongoing operation and maintenance of the completed improvements would generate a negligible volume of air pollutant emissions. Therefore, assessment of air quality impacts for this Project is limited to the construction phase.

AQMP provisions and rules applicable to the proposed stabilization work include those pertaining to fugitive dust control (Rules 403, 404, and 405), visibility of emissions (Rule 401), and nuisance activities (Rule 402) (SCAQMD 2013). PP 4.3-2(a) (construction contract specifications measures to reduce emissions) and PP 4.3-2(b) (dust control measures) under the LRDP EIR MMRP require compliance with SCAQMD rules and regulations applicable to this Project, and LRDP EIR MMRP Mitigation Measures (MM) 4.3-1(a) (particulate matter [PM] control measures), MM 4.3-1(b) (construction emissions control plan), and MM 4.3-2 (use of low nitrogen oxide [NO_x] diesel fuel) detail project-specific actions to ensure implementation of measures at construction sites and through construction contract specifications. Such measures include but are not limited to: incorporating into construction contract specifications measures to reduce emissions (compliance with SCAQMD Rules and regulations, maintenance programs, avoid idling, use of alternative fuels, provision of electrical on-site eliminating generators); implementing dust control measures to reduce fugitive dust (apply water or soil stabilizers, replace ground cover, suspend grading when wind speeds exceed 25 miles per hour, cover loose material within haul trucks, sweep streets, install wheel washers, post and enforce speed limits); providing contact information for notification of dust complaints; use of California Air Resources Board (ARB)–certified equipment during construction; prohibiting vehicle and engine idling in excess of 5 minutes; providing temporary traffic controls; scheduling construction activities to off-peak times to not affect traffic flows; maintaining construction equipment to specification; and use of low NO_x diesel fuel and construction equipment. Campus procedures for project design development and contract administration provide an established mechanism for implementation of LRDP EIR MMRP provisions, including those related to implementation of applicable SCAQMD Rules for individual construction projects. Because project emissions would be restricted to the construction phase and established campus programs would ensure compliance with applicable SCAQMD Rules, the proposed Project would not conflict with or obstruct implementation of the SCAQMD AQMP. This would be considered a less-than-significant impact.

- b. Violate any air quality standard or contribute substantially to an existing or projected air quality violation?

The proposed Project would contribute to regional air pollutant emissions during construction. Mass daily combustion emissions and fugitive dust (particulate matter less than 10 microns in diameter [PM₁₀] and less than 2.5 microns in diameter [PM_{2.5}]) emissions were compiled using CalEEMod (version CalEEMod.2016.3.2), which is a statewide land use emissions estimation/evaluation computer model designed to provide a uniform platform for government agencies, land use planners, and environmental professionals to quantify potential criteria pollutant emissions associated with both construction and operations from a variety of projects.

III. Air Quality

Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
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The model was developed for the California Air Pollution Control Officers Association in collaboration with the California air districts.

Assumptions regarding construction phasing and equipment use were developed based on information provided by the University. Key assumptions included the following: approximately 1,000 cubic yards (cy) of soil would be excavated and hauled from the site; approximately 1,460 cy of rip-rap would be hauled in and placed within the channel; and construction would last approximately 120 days. A complete listing of the construction equipment by phase, construction phase duration assumptions, and changes to modeling default values used in this analysis are included within the CalEEMod printout sheets, attached in Appendix B, which contains the air quality and greenhouse gas emission impact analysis, including assumptions and model output.

Construction-period emissions are summarized in Table 1 below based on new project assumptions for an updated analysis conducted in 2019 (Appendix B). The amount of excavation would not cause the Project to exceed the SCAQMD local or regional significance thresholds.

Table 1 below and Appendix B summarize the emissions estimates for project construction and compare the estimated emissions to the regional and localized significance thresholds established by SCAQMD. Estimated emissions are all substantially below the applicable thresholds. Emissions estimates for PM10 and PM2.5 take into account compliance with SCAQMD Rule 403. As noted in the response to item III.a, above, PP 4.3-2(a) (construction contract specifications measures to reduce emissions) and PP 4.3-2(b) (dust control measures) under the LRDP EIR MMRP require compliance with SCAQMD Rules and regulations applicable to this Project, and LRDP EIR MMRP MM 4.3-1(a) (PM control measures), MM 4.3-1(b) (construction emissions control plan), and MM 4.3-2 (use of low NOX diesel fuel) detail project-specific actions to ensure implementation of measures at construction sites and through construction contract specifications (see item III.a, above, for additional detail). Campus procedures for project design development and contract administration provide an established mechanism for implementation of LRDP EIR MMRP provisions, including those related to implementation of applicable SCAQMD Rules for individual construction projects. Because estimated emissions are below applicable SCAQMD thresholds and established campus programs provide for incorporation of SCAQMD Rule 403 controls for particulate emissions assumed in the impact analysis, the proposed Project would not violate any air quality standard or contribute substantially to an existing or projected air quality violation. Potential impacts in this regard would be less than significant. The applicable standard campus practices detailed in the LRDP EIR MMRP remain unchanged and are provided in this Final IS/MND.

Table 1. Conservative Estimate of Maximum Daily Construction Emissions for the Project

	Criteria Pollutant Emissions (pounds per day)					
	ROG	NO_x	CO	SO_x	PM10^a	PM2.5
<i>Regional Emissions</i>						
Project Emissions	3	29	21	<1	5	3
Regional Significance Threshold	75	100	550	150	150	55
Exceed Regional Significance Threshold?	No	No	No	No	No	No
<i>Localized Emissions</i>						
Project Emissions	3	19	20	<1	3	2
Localized Significance Threshold ^b	n/a	118	602	n/a	4	3
Exceed Localized Significance Threshold?	No	No	No	No	No	No

Source: CalEEMod (Appendix B).

^a PM10 emissions estimates take into account compliance with SCAQMD Rule 403 requirements for fugitive dust suppression, which require that no visible dust be present beyond the site boundaries.

^b Localized thresholds derived from SCAQMD Localized Significance Threshold Tables and are based on the project location (Source Receptor Area [SRA] 23, Metropolitan Riverside County), project area disturbed in any given day (1 acre), and the distance to the nearest sensitive receptor (25 meters).

Notes:

Construction emission calculation worksheets are included in Appendix B. These estimates of maximum daily emissions are for all construction phases (i.e., highest emissions from all phases for each pollutant presented).

Key assumptions included the following: excavation volume would be 1,000 cy, which is an increase of 700 cy from the 2019 analysis; rip-rap materials in the amount of 1,460 cy (same as in the 2015 estimate) would be hauled in and placed within the channel, and construction would last approximately 120 days.

III. Air Quality	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
c. 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 (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

The Basin is in nonattainment status for ozone, PM10, and PM2.5. Ozone is regulated by way of its precursors—reactive organic compounds (ROC) and NO_x. SCAQMD guidelines suggest that construction-related or operational emissions that exceed thresholds for individual projects would also be considered cumulatively considerable net increases in pollutants. As discussed under item III.b above, proposed construction is subject to standard construction-period control measures governed by SCAQMD Rules and regulations and LRDP EIR MMRP PP 4.3-2(a) (construction contract specifications measures to reduce emissions) and PP 4.3-2(b) (dust control measures) and MM 4.3-1(a) (PM control measures), MM 4.3-1(b) (construction emissions control plan), and MM 4.3-2 (use of low NO_x diesel fuel). The SCAQMD’s approach for assessing cumulative impacts is based on the AQMP forecasts of attainment of ambient air quality standards in accordance with the requirements of the federal and state Clean Air Acts. As discussed earlier, the proposed Project

III. Air Quality

Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
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would be consistent with the AQMP, which is intended to bring the Basin into attainment for all criteria pollutants.⁴ In addition, the mass regional emissions calculated for the proposed Project presented above in Table 1 are less than the applicable SCAQMD daily significance thresholds.

In the long term, the Project would involve only limited operation and maintenance activities that would not generate appreciable emissions. As such, the proposed Project would not result in a cumulatively considerable net increase of any criteria pollutant for which the region is in nonattainment. Cumulative impacts would be less than significant.

- | | | | | |
|--|--------------------------|--------------------------|-------------------------------------|--------------------------|
| d. Expose sensitive receptors to substantial pollutant concentrations? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
|--|--------------------------|--------------------------|-------------------------------------|--------------------------|

Diesel particulate matter, which is classified as a carcinogenic toxic air contaminant by ARB, is the primary pollutant of concern with respect to health risks to sensitive receptors. Cancer health risks associated with exposures to diesel exhaust are typically associated with chronic exposure, in which a 70-year exposure period is assumed. Because construction would be of short duration (approximately 120 days), project construction is not anticipated to result in an elevated cancer risk to exposed sensitive receptors. In addition, localized construction emissions estimates would be well below SCAQMD localized emissions thresholds for applicable criteria pollutants (see Table 1, Appendix B). Considering the limited scale and duration of the proposed stabilization improvements, the proposed Project would not present the potential for significant sources of carbon monoxide, diesel particulate matter, or other toxic air pollutants that are of potential concern with respect to sensitive receptors. Potential impacts would be less than significant.

- | | | | | |
|---|--------------------------|--------------------------|-------------------------------------|--------------------------|
| e. Create objectionable odors affecting a substantial number of people? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
|---|--------------------------|--------------------------|-------------------------------------|--------------------------|

According to the SCAQMD *CEQA Air Quality Handbook*, land uses associated with odor complaints typically include agricultural uses, wastewater treatment plants, food processing plants, chemical plants, composting, refineries, landfills, dairies, and fiberglass molding. Considering the nature and scale of the proposed stabilization improvements, potential sources of objectionable odors would be exhaust from vehicles and construction equipment during the approximately 120-day construction period. Construction at the project site would be of limited scale and duration, and the project site would be located at a major street intersection where such sources of odors are an element of the baseline condition. The proposed Project does not include any uses identified by the SCAQMD as being associated with odors, nor would the proposed Project materially change the exposure to sources of odors in the project vicinity. Potential impacts would be less than significant.

⁴ CEQA Guidelines Section 15064(h)(3) states “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.”

IV. Biological Resources

IV. Biological Resources	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

In preparation for this Final IS/MND, biological resource surveys were updated since the last surveys were conducted in 2013. The updated survey results are presented in the Biological Resources Assessment included in Appendix C. (The Biological Resources Assessments included in the Draft IS/MND circulated in 2014 are included in Appendix D for reference.) The results have not resulted in a change where impacts would be considered significant. The findings reflected in this section represent the surveys conducted in 2018. Four species were evaluated for their potential to occur within the vicinity of the project boundary based on the results of the literature review and professional experience of the region: burrowing owl, least Bell’s vireo, southwestern willow flycatcher, and western yellow-billed cuckoo.

- **Burrowing Owl.** This species is a CDFW Species of Special Concern (SSC) and could potentially occur in the regional vicinity. Based on the habitat assessment conducted, the project site does not contain the potential for burrowing owl to occur due to a lack of suitable burrowing owl habitat (i.e., open, sparsely vegetated areas) and the lack of potential burrow features (i.e., small mammal burrows). Therefore, this species is not anticipated to be present.
- **Least Bell’s Vireo.** The disturbed southern willow scrub (0.64 acre) on the project site has the potential to support least Bell’s vireo due to suitable canopy structure. This species was not documented within the project boundary during the focused surveys in 2018 and 2011 and was assumed absent in 2013. Because it was not detected in 2018, the species is still considered absent.
- **Southwestern Willow Flycatcher and Western Yellow-billed Cuckoo.** The project site does not contain suitable habitat for either species due to the relatively small size of the riparian habitat, the lack of extensive riparian vegetation with dense canopy within wide floodplain areas, and the fairly isolated nature of the riparian community. Therefore, these species are not anticipated to be present.

Based on review of the California Natural Diversity Database (CDFW 2019) and California Native Plant Society (CNPS) database (2019), there were seven special-status species that were identified as having potential to occur on the project site. These species are California satintail (*Imperata brevifolia*), western pond turtle (*Actinemys marmorata*), two-striped garter snake (*Thamnophis hammondi*), San Diego desert woodrat (*Neotoma lepida intermedia*), yellow warbler (*Dendroica petechia*), long-eared owl (*Asio otus*), and western yellow bat (*Lasiurus xanthinus*).

IV. Biological Resources

Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
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Only one special-status species was observed within the project boundary during the reconnaissance surveys: yellow warbler. Yellow warbler is designated as a CDFW SSC and is a species considered to be adequately conserved and covered under the Western Riverside County (WRC) MSHCP. Regional conservation efforts focused on areas outside of the project site have, and will, conserve sufficient habitat for this species. As such, in a regional context, impacts on this species would be considered less than significant.

Five special-status species were determined to have a low potential to occur in the project boundary: California satintail, western pond turtle, two-striped garter snake, San Diego desert woodrat, and long-eared owl.

California satintail is designated as a California Rare Plant Rank 2.1 species by CNPS. No individuals of California satintail were observed during the site visits. It was determined that this species has a low potential to occur on the site; however, if it does occur on site, it is in low numbers and project-related impacts would be considered less than significant.

Regional conservation efforts focused on areas outside of the project site have conserved sufficient habitat for western pond turtle, two-striped garter snake, San Diego desert woodrat, and long-eared owl to be considered adequately conserved in the region. As such, in a regional context, impacts on these species would be considered less than significant.

Western pond turtle was determined to have a low potential to occur on the site due to the presence of stream habitat; however, it is not expected to occur on site due to a lack of sufficient suitable basking sites. No individuals or any sign of presence of this species were detected during the site visits.

Two-striped garter snake was determined to have a low potential to occur on the site due to limited access to stream habitat; however, it is not expected to occur on site due to the highly urbanized nature of the site and a small prey-base in the stream. No individuals or any sign of presence of this species were detected during the site visits. Based on the limited availability of habitat and prey and overall low potential, if this species is present, it would not occur in numbers where potential impacts on this species would be considered significant under CEQA.

The San Diego desert woodrat was determined to have a low potential to occur on site due to the presence of riparian habitat; however, it is not expected due to a lack of substantial shrub cover and the narrow nature of the riparian corridor on the site. No individuals or any sign of presence of this species were detected during the site visits.

The long-eared owl was determined to have a low potential to occur on site due to the presence of riparian habitat; however, it is not expected to occur due to a lack of substantial riparian coverage on the project site and the high density of invasive plant species. No individuals or any sign of presence of this species were detected during the site visits.

One species, western yellow bat, was determined to have a moderate potential to occur on the project site. This species is known to roost in the dead fronds of palm trees within palm oases or residential areas and forages over water and among trees. Due to the lack of extensive palm coverage within the project boundary, it was determined that the project site lacks suitable communal roosting habitat for this species. However, due to the presence of a several individual palm trees, it was determined that the site has a moderate potential to support individual roosting and foraging western yellow bats. The proposed Project may directly remove suitable roosting

IV. Biological Resources

Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
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trees, and there is also a potential for temporary indirect impacts due to construction noise and ground-moving disturbance during construction, as the majority of the palms within the project boundary occur on the south bank. Direct and/or indirect impacts on western yellow bat may be considered significant under CEQA. To ensure that the Project would have a less-than-significant effect on western yellow bat potentially roosting or foraging within the project boundary, biological construction monitoring **(BIO 2)** and a pre-construction roosting bat survey **(BIO 8)** would be performed to ensure there are no impacts on the species.

In addition to the species-specific analysis provided above, vegetation within the project site provides habitat for a variety of nesting birds that are protected under state and federal laws. Migratory, nongame, native bird species are protected under the federal Migratory Bird Treaty Act. Additionally, Sections 3503, 3503.5, and 3513 of the California Fish and Game Code prohibit take of all birds and their active nests. If vegetation removal and other ground disturbance activities occur within the nesting bird breeding season (February 15 through September 15), there is a potential for impacts on nesting birds. **BIO 7** provides the avoidance and minimization measures that would be implemented during the bird breeding season. These measures may be superseded by conditional requirements in the Project’s CDFW Streambed Alteration Agreement. Potential impacts would be less than significant with the incorporation of the measures noted above.

b. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or US Fish and Wildlife Service?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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The project site is characterized by a remnant reach of stream completely encompassed by existing residential development and major streets. The stream supports approximately 0.64 acre of riparian habitat in a highly constrained, channelized feature. The onsite riparian community is classified as disturbed southern willow scrub because of the numerous exotic plant species including edible fig, Mexican fan palm, salt-cedar, tree tobacco, and castor bean. The disturbed southern willow scrub also meets the WRC MSHCP definition of a riparian/riverine area pursuant to Section 6.1.2 of the WRC MSHCP. Riparian/riverine areas are also considered CDFW jurisdictional streambeds and riparian habitat. There are 0.057 acre of CDFW streambeds (MSHCP riverine) and 0.64 acre CDFW riparian habitat present in the study area. The project site does not support vernal pools or seasonal pools, or associated species.

Several LRDP EIR MMRP provisions have been taken into account in the campus design and development process for the proposed improvements, namely:

PS Conservation 1 – Protect natural resources, including native habitat, remnant arroyos, and mature trees, identified as in good health as determined by a qualified arborist, to the extent feasible.

PS Conservation 2 – Site buildings and plan site development to minimize site disturbance, reduce erosion and sedimentation, reduce storm water runoff, and maintain existing landscapes, including healthy mature trees whenever possible.

IV. Biological Resources	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
<p>PP 4.4-1(b) – To reduce disturbance of Natural and Naturalistic Open Space areas:</p>				
<p>(i) Unnecessary driving in sensitive or otherwise undisturbed areas shall be avoided. New roads or construction access roads would not be created where adequate access already exists.</p>				
<p>(ii) Removal of native shrub or brush shall be avoided, except where necessary.</p>				
<p>(iii) Drainages shall be avoided, except where required for construction. Limit activity to crossing drainages rather than using the lengths of drainage courses for access.</p>				
<p>(iv) Excess fill or construction waste shall not be dumped in washes.</p>				
<p>(v) Vehicles or other equipment shall not be parked in washes or other drainages.</p>				
<p>(vi) Overwatering shall be avoided in washes and other drainages.</p>				
<p>(vii) Wildlife including species such as fox, coyote, snakes, etc. shall not be harassed. Harassment includes shooting, throwing rocks, etc.</p>				
<p>PP 4.4-2(a) – Impacts to riparian and wetland habitats shall be avoided, wherever feasible. If avoidance is not feasible, then the impacts will be evaluated as part of the Clean Water Act section 404 and California Fish and Game Code section 1602 permit application process. If mitigation is required, the University of California will develop and implement a resource mitigation program to be reviewed and approved by the ACOE [USACE] and CDFG [CDFW] through the State and federal permit process. The permit shall mitigate the habitats such that they are consistent with the Clean Water Act and CDFG policy of “no net loss” of wetland. Furthermore, impacted wetlands and/or riparian vegetation that cannot be avoided would be replaced at a ratio approved by the ACOE and CDFG. If replacement within the area is not feasible, then an approved mitigation bank or other off-site area will be used. The revegetation of impacted areas or mitigation parcels will be performed by a qualified restoration specialist and shall be conducted only on sites where soils, hydrology, and microclimate conditions are suitable for riparian habitat. First priority will be given to areas that are adjacent to existing patches of native habitat.</p>				
<p>MM 4.4-3(b) – If wetland or riparian habitat would be removed as a result of project development, the University shall restore or enhance wetland or riparian habitat as required by the applicable State and/or federal resource agencies.</p>				
<p>MM 4.4-3(c) – Any proposal for wetland creation or enhancement (pursuant to MM 4.4-3(b) above) will be based upon the completion of soils, hydrologic and other studies confirming the feasibility of the creation or enhancement proposal and shall include United States Army Corps of Engineers (USACE)–approved measures intended to promote occupancy by special status and other wetland-dependent species (e.g., plantings, collection of topsoil and inoculation of target areas).</p>				
<p>Aside from temporary diversions required during construction, the proposed improvements would not alter the existing hydrologic regime—flows would continue to enter through the upstream culvert and exit through the downstream culvert. Tributary area limits and characteristics would</p>				

IV. Biological Resources

Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
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not be altered.

The potential for adverse effects on riparian habitat relates to the direct removal that would be required to construct the stabilization improvements. A one-time removal of non-native vegetation on the south bank will also be conducted. Based upon the 2018 biological resources surveys (Appendix D) performed for the project site, the proposed Project will permanently affect 0.04 acre (240 linear feet) of CDFW state streambed and 0.31 acre of CDFW riparian habitat. Temporary impacts would occur on 0.02 acre (296 linear feet) of CDFW state streambed and 0.04 acre of CDFW riparian habitat. Riparian habitat is considered a sensitive biological resource; therefore, the temporary and permanent impacts on riparian vegetation represent a potentially significant impact. **Mitigation Measures BIO 1 through BIO 6**, below, would provide a means to document compliance with project commitments to minimize impacts on riparian habitat within the work area. Because the Project would also affect WRC MSHCP riparian/riverine habitat, a Determination of Biologically Equivalent or Superior Preservation (DBESP) report will be prepared and reviewed by the USFWS and CDFW. Approval of the DBESP by the CDFW and USFWS will provide an official record of Project consistency with the WRC MSHCP Riparian/Riverine policy (Section 6.1.2 of the WRC MSHCP Volume I).

With implementation of **Mitigation Measures BIO 1 through BIO 6**, project impacts on riparian habitat would be less than significant.

BIO 1 – Minimize Direct Impacts on Riparian Habitat. Prior to initiation of ground disturbance activities, disturbance limits shall be clearly defined at the construction site and demarcated on site plans (refer to Appendix A). Access and staging shall be limited to the existing gated entrance from Chicago Avenue, the existing maintenance path along the north bank, or paved/landscaped areas within the adjoining apartment development. Protection measures for riparian habitat on the south bank will be established in consultation with the biological monitor.

BIO 2 – Conduct Biological Monitoring During Construction. A qualified biologist shall monitor construction for compliance with best management practices outlined in LRDP EIR MMRP Programs and Practices (PP) 4.4-1(b) (reduce disturbance to Natural Open Space areas). Such measures may include minimizing vehicular access and parking in undisturbed areas or drainages; avoiding removal of native shrub or disturbance of drainages, except where necessary; avoiding overwatering; and not harassing wildlife species. Considering the nature of the work area and proximity of protected resources to the work limits, monitoring shall be continuous during the initial preparation and excavation phases. Once work transitions to placement of rip-rap, the frequency of monitoring may be reduced, as recommended by the monitoring biologist (taking into consideration the nature of the proposed work and time of year).

BIO 3 – Provide a Worker Environmental Awareness Training. To ensure compliance with best management practices identified in LRDP EIR MMRP PP 4.4-1(b) (reduce disturbance to Natural Open Space areas), a biologist shall provide to all construction personnel a worker environmental awareness training prior to personnel initiating ground disturbance activities. The training will include a discussion of the importance of the stream and associated riparian habitat, areas to be avoided (including during parking and staging of equipment), a discussion of native wildlife with the potential to occur, and education on not harassing native wildlife.

IV. Biological Resources

Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
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BIO 4 – Remove Exotic Plant Species. During the construction phase, exotic plant species shall be removed from the riparian zone, including the protected south bank area. Exotic plant material shall be properly handled to prevent sprouting or regrowth. Construction equipment shall be cleaned of mud or other debris that may contain invasive plants/seed and inspected to reduce the potential of spreading noxious weeds before mobilizing to the work area and before leaving the work area. Cleaning of equipment shall occur outside the work area where the wastewater stream is contained so as to prevent any invasive plant material from entering natural areas.

BIO 5 – Monitor Revegetation. As part of the project design, a one-time removal of exotic plants would occur on the southern bank, and native riparian species would be planted throughout the channel. No ongoing maintenance of vegetation within the channel is proposed. Because the channel enhancement is being done as part of the project design, it is not subject to performance criteria; however, it would provide a net benefit to the channel. Compensatory mitigation is addressed in BIO 6.

BIO 6 – Purchase into a Mitigation Bank or In-Lieu Fee Program as Compensatory Mitigation. BIO 6 in the Draft IS/MND circulated in 2014 included language pertaining to the outstanding mitigation the previous landowner left unaddressed. In 2012, the University addressed the uncompleted compensatory mitigation obligations required by the prior landowner pursuant to the previously issued CDFW Streambed Alteration Agreement. Through cooperation with the CDFW, the University revised the required onsite mitigation to be addressed off site at a mitigation bank.

BIO 6 now only pertains to the compensatory mitigation associated with the proposed Project. Compensation for impacts on non-wetland WoUS and CDFW streambeds would occur at a 1:1 ratio, and impacts on wetland WoUS and CDFW riparian habitat would be at a 2:1 ratio, primarily through offsite mitigation at an agency-approved mitigation bank or in-lieu fee program. The final credit purchase requirement will be determined through the regulatory permit process with the USACE, RWQCB, and CDFW.

Potential impacts would be less than significant with the incorporation of measures noted above.

c. Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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A delineation of jurisdictional waters and wetlands was conducted for the subject stream feature, in accordance with LRDP EIR MMRP MM 4.4-3(a). The jurisdictional delineation report is included as Appendix B of the attached Appendix C.) There are two potentially jurisdictional drainage features under the Clean Water Act Section 401/404 and Section 1600 of the California Fish and Game Code present within the study area. Feature 1 is a perennial channel and narrow riparian corridor. Feature 2 is a concrete-lined v-ditch along the northern edge of the project boundary. Refer to Table 2 below and Figure 6.

IV. Biological Resources

Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
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The proposed Project would permanently affect 0.21 acre (652 linear feet) of federal non-wetland WoUS/WoS and 0.01 acre of wetland waters jurisdictional under USACE and RWQCB. Refer to Table 3 below and Figure 5.

Several LRDP EIR MMRP provisions have been taken into account in the campus design and development process for the proposed improvements. Compensation for the direct permanent impacts on USACE/RWQCB and CDFW jurisdictional waters will be necessary (**BIO 6**). As part of the project design, a one-time removal of exotic plants would occur on the southern bank, and native riparian species would be planted throughout the channel. No ongoing maintenance of vegetation within the channel is proposed. Because the channel enhancement is being done as part of the project design, it is not subject to performance criteria; however, it would provide a net benefit to the channel. The compensation for impacts on non-wetland WoUS and CDFW streambeds would occur at a 1:1 ratio, and impacts on wetlands WoUS and CDFW riparian habitat would be at a 2:1 ratio primarily through offsite mitigation at an agency-approved in-lieu fee program. The University will coordinate with the USACE, RWQCB, and CDFW to finalize the mitigation requirements. This compensatory mitigation would ensure no net loss of wetlands and that impacts are less than significant under CEQA.

See IV.b above regarding potential impacts on the onsite stream feature, which is protected under the broader category of “waters of the United States” under Section 404 of the Clean Water Act.

Table 2. Summary of Impacts on CDFW Streambed and Associated Riparian Habitat

Feature Type	Feature Description	Unvegetated Streambed (acres/linear feet)		Riparian (acres)	
		Permanent	Temporary	Permanent	Temporary
Feature 1	Perennial; earthen; wetland portions exhibit hydrophytic vegetation, hydric soils (sandy redox and muck), and hydrology (debris wrack, drainage patterns).	0.04/240	0.02/295	0.31	0.04
Feature 2	Ephemeral; concrete-lined v-ditch.	0.00/0	0.00/1	0.00/0	0.00
	Total	0.04/240	0.02/296	0.31/0	0.04

Table 3. Summary of Impacts on USACE and RWQCB Wetland and Non-Wetland Waters of the U.S./State

Feature Type	Feature Description	Non-Wetland WoUS/WoS (acres/linear feet)		Wetland WoUS/WoS (acres)	
		Permanent	Temporary	Permanent	Temporary

Feature 1	Perennial; earthen; wetland portions exhibit hydrophytic vegetation, hydric soils (sandy redox and muck), and hydrology (debris wrack, drainage patterns). Sample Points SP-1 through 7.	0.21/652	0.00/0	0.01	0.01
Feature 2	Ephemeral; concrete-lined v-ditch.	--	--	--	--
Total		0.21/652	0.00/0	0.01	0.01

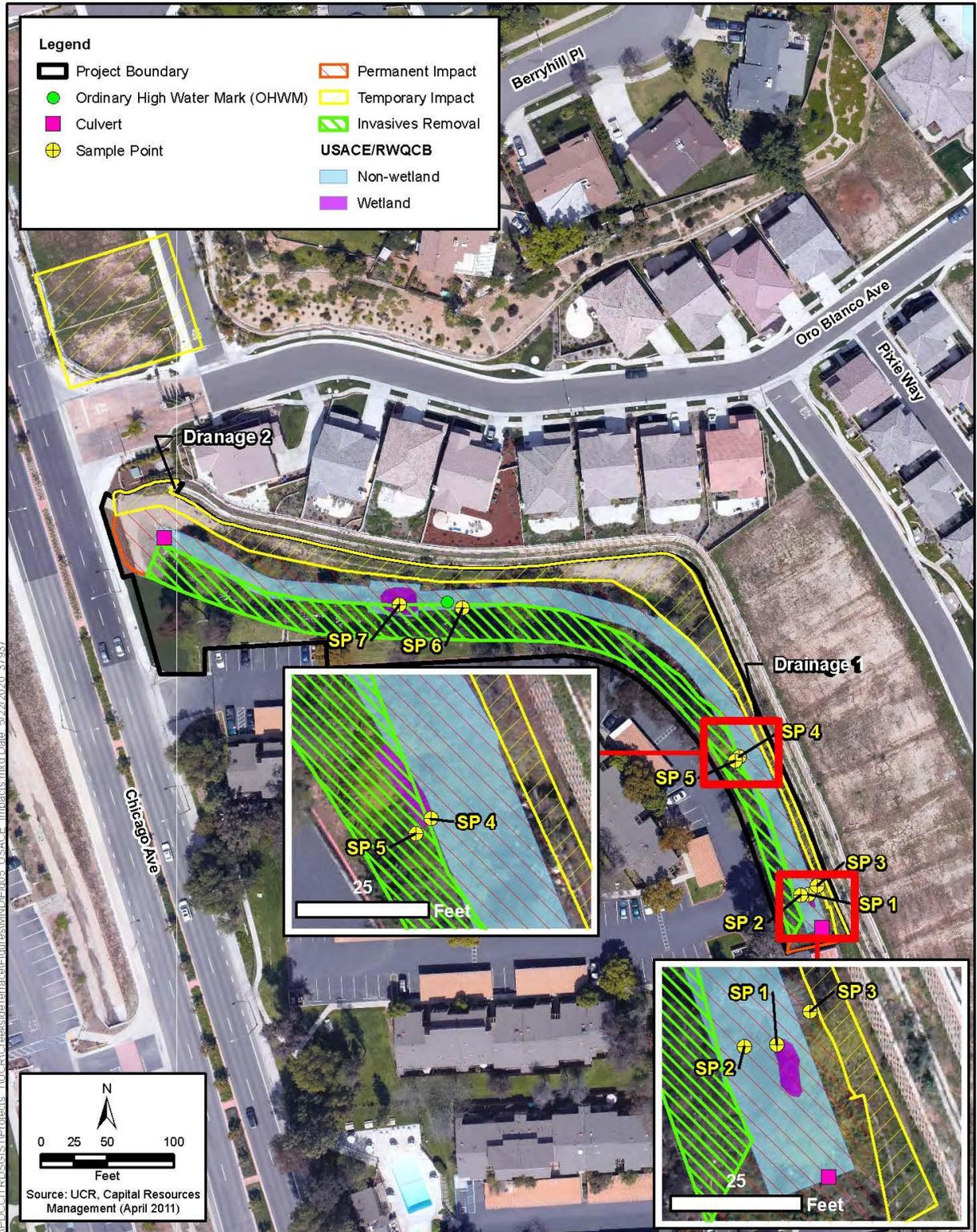


Figure 5
Impacts on USACE/RWQCB Jurisdiction
Creekside Terrace Slope Protection Project





Figure 6
Impacts on CDFW Jurisdiction
Creekside Terrace Slope Protection Project



IV. Biological Resources	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
<p>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?</p>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<p>The riparian stream feature that is the subject of the proposed stabilization work is confined between buried storm drains at each end and is closely constrained by development. These conditions constrain the value of this stream for wildlife movement or nursery functions. While the extent of riparian habitat on site would be diminished as a result of the proposed improvements, the finished site conditions would retain a flowing channel. The site would be revegetated with riparian plants and the proposed Project would not substantially affect any limited movement or nursery functions that may exist. Potential impacts would be less than significant.</p>				
<p>e. Conflict with any applicable policies protecting biological resources?</p>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<p>See items IV.a and IV.b, above, relative to policies protecting sensitive species and riparian habitat, and item IV.f, below, regarding regional conservation plans.</p>				
<p>The proposed Project would remove riparian vegetation and ruderal vegetation and would involve construction activity close to remaining riparian vegetation, ruderal vegetation, and residential landscaping that provides nesting habitat for bird species protected under the federal Migratory Bird Treaty Act and the California Fish and Game Code. Disturbance of active nests as a result of vegetation removal or construction activity would be in conflict with these state and federal biological resources protection policies. LRDP EIR MMRP provisions MM 4.4-4(a) (nesting special status avian species surveys during construction) and MM 4.4-4(b) (delay construction if active nests for avian species are found) establish standard campus practices to comply with these protection programs by avoiding impacts on active nests. The following mitigation measures (Mitigation Measure BIO 7 and BIO 8) for the proposed Project reflects the requirements of these LRDP EIR MMRP provisions and would serve to reduce potential impacts in this regard on protected bird species to below a level of significance.</p>				
<p><u>BIO 7 – Pre-construction Nesting Bird Surveys.</u> Prior to the onset of construction activities that would result in vegetation removal between February 15 and September 15 or as early as January for raptors, nesting bird surveys shall be conducted by a qualified biologist no more than 3 days prior to initiation of ground disturbance activities. The survey area shall include the direct disturbance limits and a 250-foot buffer zone or as determined through project-related permits. If nesting birds are encountered within the survey area, the qualified biologist will flag an avoidance buffer zone around the nest. No ground disturbance activities shall occur within the avoidance buffer zone until the qualified biologist has determined that the nest is no longer active and the young are not dependent on the nest.</p>				
<p><u>BIO 8 – Preconstruction Roosting Bat Assessment and Survey.</u> To ensure potential impacts on bat species are reduced, the following measure will be implemented:</p>				
<p>a) Prior to project initiation (e.g., staging, clearing/grubbing, grading), a daytime preliminary assessment will be conducted by a qualified bat biologist to reexamine areas suitable for bat</p>				

IV. Biological Resources	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
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use (i.e., palm trees). If bat sign is observed, then preconstruction roosting bat surveys will be conducted to confirm whether the areas with suitable habitat identified during the preliminary assessment are utilized by bats for day roosting and/or night roosting and to ascertain the level of bat foraging and roosting activity at each of these locations.

- b) If preconstruction roosting bat surveys are warranted, prior to tree removal or trimming, large trees and snags will be examined by a qualified bat biologist to ensure that no roosting bats are present. Palm frond trimming, if necessary, should be conducted outside the maternity season (i.e., April 15–August 31) to avoid potential mortality of flightless young.
- c) If a maternity site is identified during the preconstruction roosting bat surveys, then no construction activities at that location will be allowed during the maternity season (i.e., April 15–August 31) unless a qualified bat biologist has determined the young have been weaned. If a maternity site is present, and it is anticipated that construction activities cannot be completed outside of the maternity season, bat eviction and exclusion at maternity roost sites will be completed by a qualified bat biologist either as soon as possible after the young have been weaned, outside of the maternity season, or as otherwise approved by the qualified bat biologist in coordination with the CDFW.

In addition to the species-specific analysis provided above, vegetation within the project site provides habitat for a variety of nesting birds that are protected under state and federal laws. Migratory, nongame, native bird species are protected under the federal Migratory Bird Treaty Act. Additionally, Sections 3503, 3503.5, and 3513 of the California Fish and Game Code prohibit take of all birds and their active nests. If vegetation removal and other ground disturbance activities occur within the nesting bird breeding season (February 15 through September 15), there is a potential for impacts on nesting birds. **Mitigation Measures BIO 2** and **BIO 7** provide the avoidance and minimization measures that would be implemented during the bird breeding season. These measures may be superseded by conditional requirements in the State Streambed Alteration Agreement.

The measures would serve to reduce potential impacts in this regard on protected bird species to a less-than-significant impact under CEQA.

f. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other applicable habitat conservation plan?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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The project site is within the plan areas of two regional conservation efforts—the Western Riverside County MSHCP and the Long-term Habitat Conservation Plan for the SKR. Implementation of the SKR plan is at a stage in which all conservation lands have been acquired. For projects outside the reserve areas, plan conformance is achieved through payment of mitigation fees that support ongoing management of the reserve lands. The project site is not within an SKR reserve and the University is exempt from payment of SKR mitigation fees.

The University is not a Permittee of the WRC MSHCP; however, because a discretionary approval from the City of Riverside (a WRC MSHCP Permittee) is required, the Project must be in compliance with the WRC MSHCP. The project site occurs within the “Cities of Riverside and Norco Area Plan”

IV. Biological Resources	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
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of the WRC MSHCP. The project site is not within a criteria cell, a linkage area, or public/quasi-public lands; therefore, the Project is not subject to the Habitat Acquisition Negotiation Process. In addition, the Project is not within plan-defined areas requiring surveys for narrow endemic plant species, criteria area plant species, amphibian species, or mammalian species. The project site is not within or adjacent to a WRC MSHCP Conservation Area; therefore, the project site is not required to address Section 6.1.4 (Guidelines Pertaining to the Urban/Wildlands Interface) of the WRC MSHCP. The project site is not within the WRC MSHCP Criteria Area Plant Species Survey Area pursuant to Section 6.3.2 of the WRC MSHCP. The project site is not within or adjacent to the WRC MSHCP Conservation Area; therefore, the project site is not required to address Section 6.4 (Fuels Management) of the WRC MSHCP, and the Project is consistent with the WRC MSHCP Fuels Management policies.

The project site is outside of the MSHCP Criteria Area, which identifies areas potentially subject to acquisition for long-term conservation. Beyond the evaluation of potential involvement of Criteria Area lands, determination that a particular activity is consistent with the MSHCP also entails consideration of a variety of plan policies directed at protection of specific species and resources. Plan policies potentially applicable to consistency evaluation for the project site are those related to riparian/riverine/vernal pool resources. The project site contains areas meeting the definition of a WRC MSHCP riparian/riverine area pursuant to Section 6.1.2 of the WRC MSHCP. As stated above, approval of the DBESP will provide an official record of the Project's consistency with the WRC MSHCP Riparian/Riverine policies. Mitigation measures mentioned earlier would serve to reduce potential conflicts with applicable plans to a less-than-significant impact under CEQA.

However, the stream feature and associated riparian habitat are subject to the plan provisions for riverine and riparian resources (Section 6.1.2 of the WRC MSHCP). For riparian habitat, the plan requires consideration of suitability for three protected bird species—least Bell's vireo, southwestern willow flycatcher, and western yellow-billed cuckoo. The biological survey conducted in support of this IS/MND (Appendix C) documents the absence of suitable habitat for southwestern willow flycatcher and western yellow-billed cuckoo. A focused survey was conducted for least Bell's vireo (Appendix D). No individuals of these species were identified, and it is assumed to be absent.

The MSHCP stipulates that riparian habitat is to be avoided to the greatest extent practicable. If riparian habitat is affected, mitigation must demonstrate equal or superior functions and values. The proposed stabilization improvements would affect a highly constrained stream feature that is removed from MSHCP reserve areas. **Mitigation Measures BIO 1 through BIO 4** and **BIO 7** (see item IV.b, above) provide for implementation of various measures during construction to ensure impacts on the stream and riparian habitat are minimized. **Mitigation Measures BIO 5** and **BIO 6** (see item IV.b, above) provide for revegetation monitoring and for purchase into a mitigation bank or in-lieu fee program to ensure that riverine and riparian habitat functions and values are equal or superior to pre-project conditions. With implementation of **Mitigation Measures BIO 1 through BIO 8**, proposed activities and improvements would not conflict with MSHCP provisions for riparian and riverine resources. As the proposed Project, including **Mitigation Measures BIO 1 through BIO 8**, would not conflict with applicable provisions of the two adopted habitat conservation plans that apply within the project area, potential impacts in this regard would be less than significant with mitigation incorporated.

V. Cultural Resources

V. Cultural Resources	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
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Would the project:

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|---|--------------------------|--------------------------|-------------------------------------|--------------------------|
| a. Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
|---|--------------------------|--------------------------|-------------------------------------|--------------------------|

The proposed work limits and adjacent areas have been previously disturbed with construction of the existing apartments (in the 1980s) and the Creekside Terrace residential tract (in the early 2000s). There are no standing historic structures within or near the project limits. A cultural resource assessment prepared for the Creekside Terrace project in June 2003 determined that no historic resources were evident in site surveys and that no further evaluation was warranted. Considering the existing setting, prior survey results, and prior disturbances, there is no reasonable potential for the proposed improvements to cause a substantial adverse change in the significance of an historical resource.

A cultural resources survey performed for the Project in 2018 examined all exposed ground surface for the following: artifacts (e.g., flaked stone tools, tool-making debris, stone milling tools, ceramics, fire-affected rock), ecofacts (marine shell and bone), soil discoloration that might indicate the presence of a cultural midden, soil depressions, and features indicative of the former presence of structures or buildings (e.g., standing exterior walls, postholes, foundations) or historic debris (e.g., metal, glass, ceramics). Ground disturbances such as burrows and drainages were inspected visually. Based on the results of an updated records search in 2018 (Appendix E), Native American scoping, and field survey, specific cultural resources (prehistoric or historic) were not identified in the project area of potential effects (APE).

No specific resource information was provided by tribal contacts for the project APE. There are no standing historic structures within or near the project limits. Considering the existing setting, prior survey results, and prior disturbances, there is no reasonable potential for the proposed improvements to cause a substantial adverse change in the significance of an historical resource.

The University’s standard contract specifications address the protection and recovery of buried archaeological resources, including historical resources, and the standard requirements are incorporated into the project as **Mitigation Measure CUL 1**, presented below. This mitigation measure identifies steps to be taken in the event archaeological resources, including cultural resources, are discovered during construction activities.

Additional Project-Level Mitigation Measures

MM CUL 1. If an archaeological resource is discovered during construction, all soil-disturbing work within 100 feet of the find shall cease and the University Representative shall contact a qualified Archaeologist meeting the Secretary of the Interior standards within 24 hours of discovery to inspect the site. If a resource within the project area of potential effect is determined to qualify as a unique archaeological resource (as defined by the California Environmental Quality Act [CEQA]), the University shall devote adequate time and funding to determine if it is feasible, through project design measures, to preserve the find intact. If it cannot be preserved, the University shall retain a qualified non-University Archaeologist to design and implement a treatment plan, prepare a report, and salvage the material, as appropriate. Any important

V. Cultural Resources	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
artifacts recovered during monitoring shall be cleaned, catalogued, and analyzed, with the results presented in a report of findings that meets professional standards.				
a) If significant Native American cultural resources are discovered, as determined by the consulting Archaeologist for which a Treatment Plan must be prepared, the contractor or his Archaeologist shall immediately contact the University Representative. The University Representative shall contact the appropriate tribal representatives.				
b) If requested by tribal representatives, the University, the contractor, or the project Archaeologist shall, in good faith, consult on the discovery and its disposition (e.g., avoidance, preservation, return of artifacts to tribe).				
c) In the event of the discovery of a burial, human bone, or suspected human bone, all excavation or grading in the vicinity of the find shall halt immediately and the area of the find shall be protected. The University shall immediately notify the Riverside County Coroner of the find and comply with the provisions of California Health and Safety Code Section 7050.5.				
It is noted that this campus procedure is consistent with City of Riverside practices under General Plan EIR Mitigation Measure Cultural 4 (discovery of archaeological resources and Native American human remains). Potential impacts would be less than significant.				

b. Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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The proposed work limits and adjacent areas have been previously disturbed with construction of the existing apartments (in the 1980s) and the Creekside Terrace residential tract (in the early 2000s). A cultural resource assessment prepared for the Creekside Terrace project previously in June 2003 determined that no archaeological resources were evident in site surveys and that no further evaluation was warranted. Additionally, an updated Cultural Resources Study was prepared for the project in 2019, which included a pedestrian survey, an updated records search, and Native American consultation. The pedestrian survey did not identify any cultural resources in the project APE, nor did the updated records search, and Native American consultation did not reveal any specific information of cultural resources within the project area. Considering the existing setting, prior survey results, and prior disturbances, there is no reasonable potential for the proposed improvements to cause a substantial adverse change in the significance of an archaeological resource, as none are known to exist.

Nevertheless, there is always a possibility of encountering unknown or undocumented cultural resources during earth-moving activities. The University’s standard contract specifications address the protection and recovery of buried archaeological resources, including human remains, and the standard requirements are incorporated into the project as **Mitigation Measure CUL 1**. This mitigation measure identifies steps to be taken in the event archaeological resources, including human remains, are discovered during construction activities.

It is noted that this campus procedure is consistent with City of Riverside practices under General Plan EIR Mitigation Measure Cultural 4 (discovery of archaeological resources and Native American human remains) and recommendations from a cultural resources report completed in 2019. Potential impacts would be less than significant.

V. Cultural Resources	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
c. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<p>The proposed work limits and adjacent areas have been previously disturbed with construction of the existing apartments (in the 1980s) and the Creekside Terrace residential tract (in the early 2000s). Considering the existing setting and prior disturbances, there is no reasonable potential for the proposed improvements to cause a substantial adverse change in the significance of a paleontological resource or unique geologic feature. Additionally, based on the results of an updated records search in 2018 (Appendix E), Native American scoping, and field survey, specific cultural resources (prehistoric or historic) were not identified in the project APE.</p>				
<p>LRDP EIR MMRP PP 4.5-5 (discovery of buried human remains) and established campus construction contracting procedure provide for a standard provision in construction contracts requiring the contractor to report any unexpected discoveries of buried resources. In the event of unexpected discoveries, work must be halted until a paleontologist is retained to assess the significance of any find and to develop and implement appropriate measures to protect or collect the find. It is noted that this campus procedure is consistent with City of Riverside practices under General Plan EIR Mitigation Measure Cultural 4 (discovery of archaeological resources and Native American human remains). Potential impacts would be less than significant.</p>				
d. Disturb any human remains, including those interred outside of formal cemeteries?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<p>The proposed improvement limits have been previously disturbed. There is no reasonable basis to anticipate that the proposed construction would disturb human remains. LRDP EIR MMRP PP 4.5-5 (discovery of buried human remains) and established campus procedure require a halt to excavation or grading in the event of the discovery of a burial, human bone, or suspected human bone. The procedure requires that the area of the find is protected and the University is to immediately notify authorities for evaluation as to whether the find is human remains and determination as to any ensuing course of action pursuant to California Health and Safety Code Section 7050.5 (for all human remains) and/or Public Resources Code (for Native American human remains). The code states that no further disturbance shall occur until the county coroner has made a determination of origin and disposition pursuant to Public Resources Code Section 5097.98. If the human remains are determined to be prehistoric, the coroner will notify the Native American Heritage Commission (NAHC), which will determine and notify the Most Likely Descendant (MLD). The MLD shall complete the inspection of the site within 48 hours of being granted access and provide recommendations as to the treatment of the remains to the landowner.</p>				
<p>It is noted that this campus procedure is consistent with City of Riverside practices under General Plan EIR Mitigation Measure Cultural 4 (discovery of archaeological resources and Native American human remains). Potential impacts would be less than significant.</p>				

VI. Energy

In January 2019, updates to the State CEQA Guidelines were adopted, which included the addition of an Energy section, as addressed in this section.

VI. Energy	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
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? <i>(New CEQA Threshold)</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<p>The proposed Project would result in a commitment of energy resources in the form of diesel fuel, gasoline, and electricity during construction and operation. The Project would not result in the wasteful, inefficient, or unnecessary consumption of energy. These types of resources are anticipated to be in adequate supply into the foreseeable future, and their use under the proposed Project would not differ from the use of these resources for any other type of project. A portable generator may be required as a power source during construction but would cease once construction has concluded.</p> <p>The construction of the project improvements described above would require the commitment of energy resources in the form of diesel fuel and gasoline. However, the operation of the proposed Project would be considered passive use and would not require electricity. Therefore, no additional impacts on energy sources are anticipated with implementation of the proposed Project. Energy consumption during construction and operation would not substantially contribute to an increase in energy use and therefore would not substantially affect local and regional energy supplies or result in wasteful or inefficient use of energy. Impacts would be less than significant.</p>				
b. Conflict with or obstruct a state or local plan for renewable energy or energy efficiency? <i>(New CEQA Threshold)</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Riverside County has a program to coordinate and encourage eligible renewable energy resource development (County of Riverside 2014) in the County of Riverside at the General Plan level. The proposed Project would use a minimal amount of energy during construction, which would not lead to a conflict with or obstruction of a state or local plan for renewable energy or energy efficiency. No impact would occur.

VII. Geology and Soils

VII. Geology and Soils	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a. Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
1. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<p>The project site is not within a mapped earthquake fault zone (City of Riverside 2007c). The proposed improvements would stabilize an eroded stream bank by reconstructing the bank and establishing a non-erodible surface. Considering the absence of known faults and the nature of the proposed improvements, the proposed Project would not alter conditions that expose people or structures to adverse effects in this regard. No impact would occur.</p>				
2. Strong seismic ground shaking?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<p>There are several active earthquake faults within Southern California that could affect the project area in terms of ground shaking. The San Andreas, San Jacinto, and Elsinore faults are the more prominent due to their proximity and relatively high seismic potential (City of Riverside 2007c). The proposed improvements would stabilize an eroded stream bank by reconstructing the bank and providing a non-erodible surface treatment. The proposed improvements would not involve new structures and, therefore, would not alter exposure of people or structures to potential adverse effects in this regard. No impact would occur.</p>				
3. Seismic-related ground failure, including liquefaction?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<p>The due diligence investigations conducted prior to the University's purchase of the Creekside Terrace residential development identified potentially liquefiable soils at the foot of the existing retaining walls along the north side of the stream (C.H.J. Incorporated 2007b and 2008a). Pressure grouting, as recommended by the geotechnical engineer (C.H.J. Incorporated 2008b), was completed in 2009 (John R. Byerly Incorporated 2009) to alleviate the risk of damage due to this condition. The proposed improvements would stabilize an eroded stream bank by reconstructing the bank and providing a non-erodible surface. The proposed improvements would not alter the exposure of people or structures to potential adverse effects in this regard. No impact would occur.</p>				

VII. Geology and Soils	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
<p>4. Landslides?</p> <p>The proposed work is directed at protection of the Creekside Terrace retaining walls from potential stability hazards resulting from erosion of the north channel bank by water flowing within the stream. The proposed improvements would not alter the exposure of people or structures to potential adverse effects in this regard. No impact would occur.</p>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<p>b. Result in substantial soil erosion or the loss of topsoil?</p> <p>The proposed improvements may present the potential for soil erosion during construction. Soils within the work limits and temporary stockpiles may be prone to erosion due to exposure to both wind and rain. Established programs of the SCAQMD and the RWQCB require implementation of known best management practices (BMPs) during construction. The Stormwater Pollution Prevention Plan (SWPPP) required under the RWQCB regulations details applicable measures, location of application, timing of application, and responsibility for monitoring and maintenance of erosion control measures. LRDP EIR MMRP measures PP 4.4-2(b) (National Pollutant Discharge Elimination System [NPDES] compliance) and PP 4.8-1 (compliance with applicable water quality requirements) state the campus commitment to compliance with all applicable requirements of the RWQCB, including incorporation of BMPs in project design and construction. Established campus programs and procedures ensure that SWPPP requirements are incorporated into construction bid specifications, the SWPPP is prepared and notices are filed prior to start of construction, and that BMPs are implemented during construction.</p> <p>In the operation phase, the proposed Project would incorporate rip-rap cover on the north bank (to match existing conditions on the south bank) and at the existing storm drain inlet and outlet at each end of the stream. These design features would minimize potential for soil erosion in the operation phase and support the conclusion that impacts in this regard would be less than significant. Established campus procedures ensure that such design features are incorporated into project plans and that improvements are constructed in accordance with the plans. Potential impacts would be less than significant.</p>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<p>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?</p> <p>The proposed work is directed at correcting a stability hazard identified in the course of the University's acquisition of the Creekside Terrace development. The proposed improvements would protect the existing retaining walls from potential stability hazards due to erosion of the north channel bank by water flowing within the stream. A series of 34 small-diameter drains extending from the north bank would be protected in place (these are the outlets for the subdrain system for the Creekside Terrace retaining walls). The subdrain system outlet pipes would be trimmed so that they do not extend beyond the rock surface. The proposed improvements would not alter the exposure of people or property to stability hazards in a manner that presents the potential for new or more severe adverse impacts. Potential impacts would be less than significant.</p>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

VII. Geology and Soils	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
d. Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<p>The proposed work is directed at protection of the Creekside Terrace retaining walls from potential stability hazards resulting from erosion of the north channel bank by water flowing within the stream. Materials testing as part of the 2008 geotechnical investigation (C.H.J. Incorporated 2008a) characterized site soils as having “very low” potential for expansion. The proposed reconstruction of the north stream bank and covering of the bank with rip-rap would not alter the exposure of people or structures to potential adverse effects in this regard. No impact would occur.</p>				
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

The proposed stabilization improvements would not generate waste water or affect any existing septic or alternative waste water disposal system. There is no potential for impacts of this nature. No impact would occur.

VIII. Greenhouse Gas Emissions

VIII. Greenhouse Gas Emissions	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Project greenhouse gas (GHG) emissions were estimated using the CalEEMod emissions estimation/evaluation model (Appendix B). The Project’s contribution to GHG emissions would be limited to the construction phase and is estimated to be 102 metric tons (MT) of carbon dioxide (CO₂) equivalent (CO₂e).

The SCAQMD has not adopted quantitative GHG emissions thresholds for non-industrial development projects. However, in its *Interim CEQA GHG Significance Threshold for Stationary Sources, Rules and Plans* documentation, SCAQMD suggests that a screening-level threshold of 1,400 MT per year of CO₂e emissions for commercial projects is appropriate. While the proposed Project is not technically a commercial project, the suggested screening-level thresholds for all other land use types are higher than 1,400 MT CO₂e per year. As such, the 1,400 MT CO₂e per year significance criteria was used for this analysis.

VIII. Greenhouse Gas Emissions

Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
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Modeling assumptions regarding construction phasing and equipment use were developed based on information provided by the project applicant. Key assumptions included the following: excavation volume and export would be 1,000 cy, rip-rap materials in the amount of 1,460 cy would be hauled in and placed within the channel, and construction would last approximately 120 days. A complete listing of the construction equipment by phase, construction phase duration assumptions, and changes to modeling default values used in this analysis is included within the CalEEMod printout sheets that are included in Appendix B.

The proposed Project’s contribution to GHG emissions is estimated to be 118 MT of CO₂e, total. Total CO₂e emissions resulting from project construction would be far less than the 1,400 MT CO₂e per year significance criteria identified above. Estimated CO₂e emissions resulting from project construction would be temporary and substantially below this threshold. Impacts would be less than significant.

- | | | | | |
|--|--------------------------|--------------------------|-------------------------------------|--------------------------|
| b. Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
|--|--------------------------|--------------------------|-------------------------------------|--------------------------|

The State of California identified a year 2020 target level for state-wide GHG emissions of 427 million metric tons (MMT) of CO₂e, which is approximately 28.5% less than the year 2020 business as usual (BAU) emissions estimate of 596 MMT CO₂e. ARB has adopted the Assembly Bill (AB) 32 Scoping Plan, which details specific GHG emission reduction measures for specific GHG emissions sources. The Scoping Plan considers a range of actions including regulations, alternative compliance mechanisms, monetary and non-monetary incentives, voluntary actions, and market-based mechanisms.

To achieve these GHG reductions, there will have to be widespread reductions of GHG emissions across California. Some of those reductions will need to come in the form of changes in vehicle emissions and mileage standards, changes in the sources of electricity, and increases in energy efficiency by existing facilities. The remainder will need to come from requiring new facility development to have lower carbon intensity than BAU conditions. Therefore, this analysis uses a threshold of significance that is in conformance with the state’s goals.

Both the University and the City of Riverside have adopted programs to reduce GHG emissions. Because emissions for the proposed Project would be limited to the construction phase, relevant aspects of both the University and City of Riverside GHG emission reduction programs are limited to those establishing objectives for substantial diversion of construction waste. The campus operates a very successful landscape waste recycling program that diverts 99% of green waste from landfills, with much of the green waste generated on the main campus composted at Agricultural Operations, a field station dedicated to plant sciences research on the West Campus. For the proposed Project, much of the construction waste would involve green waste and removal of existing vegetation to stabilize the slope. No operational waste, aside from the periodic removal of small amounts of exotic species of vegetation, would be required. Standard campus contracting provisions, to be included in contract specifications for implementation by the construction contractor, include green waste recycling and other requirements for implementation and monitoring of waste diversion practices in all campus construction projects. These campus provisions address both City and County of Riverside GHG reduction policies in this regard.

VIII. Greenhouse Gas Emissions

Potentially Significant Impact	Less-than- Significant with Mitigation Incorporated	Less-than- Significant Impact	No Impact
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The proposed Project would not obstruct any AB 32 Scoping Plan measures or be inconsistent in any way with the AB 32 goal of reducing state-wide GHG emissions to 1990 levels by year 2020. Both the University and the City of Riverside have prepared plans/strategies/programs to reduce GHG emissions. Because emissions for the proposed Project are limited to the construction phase, relevant aspects of both the University and City of Riverside GHG emission reduction programs are limited to those establishing objectives for substantial diversion of construction waste. The campus operates a very successful landscape waste recycling program that diverts 99% of green waste from landfills, with much of the green waste generated on the main campus composted at Agricultural Operations, a field station dedicated to plant sciences research on the West Campus. For the proposed Project, much of the construction waste would involve green waste and removal of existing vegetation to stabilize the slope. No operational waste, aside from the periodic removal of small amounts of exotic species of vegetation, would be required. Standard campus contracting provisions include requirements for implementation and monitoring of waste diversion practices in all campus construction projects. These campus provisions address both City and County GHG reduction policies in this regard. As such, the proposed Project would not conflict with any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases. Potential impacts would be less than significant.

IX. Hazards and Hazardous Materials

IX. Hazards and Hazardous Materials	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<p>The proposed construction may include short-term use of petroleum-based fuels, lubricants, pesticides, and other similar materials. LRDP EIR MMRP PP 4.7-1 (hazardous materials safety plans) acknowledges established campus programs to administer federal, state, and local laws regulating the management and use of hazardous materials. Considering the limited duration of construction activity and established programs governing transport, use, and disposal of hazardous materials, the proposed Project does not present the potential for a significant hazard to the public or to the environment through the routine transport, use, or disposal of hazardous materials. Potential impacts would be less than significant.</p>				
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Refer to item IX.a, above. Potential impacts would be less than significant.				
c. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
There are no existing or proposed schools within 0.25 mile of the site. No impact would occur.				
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

A Preliminary Environmental Site Assessment was conducted for the Creekside Terrace project as part of the University’s acquisition process (C.H.J. Incorporated 2007a). This assessment included a site inspection, records search, interviews, and review of similar documentation prepared for the homebuilder that developed the Creekside Terrace tract. The assessment documents that the site is not on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and that there is no evidence of recognized hazardous conditions affecting the property. No impact would occur.

IX. Hazards and Hazardous Materials	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
<p>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 for people residing or working in the project area?</p>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<p>The project site is within the land use planning area for the airport operations at March Air Reserve Base/Inland Port. The proposed stream bank stabilization work does not present the potential for any change with respect to airport safety hazards for people residing or working in the project area. No impact would occur.</p>				
<p>f. For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?</p>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<p>There are no private airstrips in the project vicinity. No impact would occur.</p>				
<p>g. Impair implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan?</p>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<p>Central Avenue is designated as an arterial evacuation route in the City of Riverside Emergency Operations Plan (City of Riverside 2007c, Figure PS-8.1, Evacuation Routes). While it is expected that Central Avenue may be used for construction deliveries and access, there is no reason to expect that project activities would block through-traffic or require a road closure. On this basis, the proposed Project does not present the potential to impair implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan. Potential impacts would be less than significant.</p>				
<p>h. Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?</p>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<p>The project area is mostly within an urban area, and the stabilization and mitigation work would not increase the risk of loss, injury, or death involving wildland fires. The project site is in a developed area of the City of Riverside not affected by wildland fire hazard (City of Riverside 2007c, Figure PS-7, Fire Hazard Area). Considering the absence of contributing factors for such risk, the proposed Project would not present potential impacts in this regard. No impact would occur.</p>				

X. Hydrology and Water Quality

X. Hydrology and Water Quality	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a. Violate any water quality standards or waste discharge requirements?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<p>The proposed Project would entail clearing, grading, and construction activity within and adjacent to a perennial stream channel. Temporary stockpiling of excavated soil material and construction materials may occur within the bench area along the north side of the stream area or at other nearby locations, most likely within previously graded lots within the Creekside Terrace development or within the parking lot and landscape areas of the adjacent apartments. Without proper safeguards, project construction could result in a discharge of pollutants into the stream or the local storm drain system.</p> <p>As required under the State General Permit for Discharge of Storm Water Associated with Construction Activity, the campus Stormwater Management Plan, and LRDP EIR MMRP PP 4.4-2(b) (NPDES compliance) and PP 4.8-1 (compliance with applicable water quality requirements), project contractors would prepare and implement a SWPPP detailing project-specific BMPs to limit the potential for the discharge of polluted water during construction. Typical BMPs anticipated to be included in the SWPPP include stream flow diversion, preservation of existing vegetation, temporary soil stabilization, track-out control, street sweeping, storm drain inlet protections, and general good housekeeping practices to separate sources of pollutants from runoff. Additional standard SWPPP provisions include requirements for implementation of control measures 48 hours prior to predicted rain events (i.e., 50% or greater chance of precipitation) and both visual monitoring and stormwater quality monitoring to ensure that BMPs are functioning properly throughout construction.</p> <p>Considering the limited scale and duration of construction activity and established state and campus programs governing construction-period storm water discharges, the proposed Project does not present the potential to violate any water quality standards or waste discharge requirements. Potential impacts would be less than significant.</p>				
b. Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<p>The proposed bank stabilization improvements, by their scale and nature, do not present the potential to affect groundwater recharge or deplete groundwater supplies. No impact would occur.</p>				

X. Hydrology and Water Quality	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
<p>c. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?</p>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<p>The Project would involve a previously channelized, remnant drainage feature confined by two major roads (Chicago Avenue and Central Avenue), an established apartment development, and a residential subdivision within a developed area of the City of Riverside. Temporary diversion of the existing stream within the work limits would be required for the approximately 120-day construction period. See item X.a, above, regarding the standard requirement for a SWPPP to minimize potential for erosion and siltation due to this temporary alteration of the stream.</p> <p>The completed improvements would not alter the existing inlet, outlet, or basic channel configuration and capacity. Tributary area limits and characteristics would not be altered. Added rip-rap protection on the north bank, channel bottom, and at the inlet and outlet are expected to reduce any erosion and resultant siltation that may occur under existing conditions.</p> <p>Considering the limited scale and duration of construction activity, established state and campus programs governing construction-period storm water discharges, and the stabilized finished conditions, the proposed Project does not present the potential for substantial erosion or siltation. Potential impacts would be less than significant.</p>				
<p>d. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?</p>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The completed improvements would not alter the basic channel configuration and capacity. The existing inlet and outlet would remain as is and the tributary area limits and characteristics would not be altered. With essentially no change from relevant pre-project conditions, the proposed finished conditions do not present the potential to increase the rate or amount of surface runoff in a manner that would result in flooding, on or off site.

Temporary diversion of the existing stream would be required for the approximately 120-day construction period. Considering the proposed work limits, the constrained nature of the stream, and the proximity of developed private property and public improvements, the options for diversion are limited. It is expected that diversion would involve a contained method, such as pipes or hoses, extending from the existing inlet to the existing outlet and placed along the south bank or within adjacent landscaped areas.

With the assumed contained diversion, there is potential for flooding due to an upset condition involving a breach in the pipe or hose. An approximately 0.92-acre area that contains the existing stream channel has been zoned as Watercourse by the City of Riverside. This roughly corresponds to the fenced area between the apartment site parking lot and the Creekside Terrace development. As long as the potential overflow boundaries are confined to the existing Watercourse-zoned area,

X. Hydrology and Water Quality	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
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there would be no change in anticipated inundation boundaries and, therefore, no potential for significant impacts due to flooding from the temporary change in the stream course. **Mitigation Measure HYD 1** provides a means to ensure that the temporary diversion does not result in flooding on or off site:

HYD 1 – Temporary Diversion Design. The temporary diversion works shall be designed such that the inundation limits (including those resulting from an inadvertent breach of flows contained in a pipe or hose) are confined to the existing Watercourse overlay zone boundary. The University shall ensure that construction contracts provide sufficient detail for the design and method of temporary diversion.

Potential impacts would be less than significant with implementation of the mitigation measure noted above.

e. 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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The proposed improvements would stabilize an existing stream bank with ungrouted rip-rap. There are no aspects of the construction process or the finished improvements that would increase runoff volumes. On this basis, there is no potential impact in this regard with respect to stormwater drainage system capacity.

See item X.a, above, regarding potential construction-period impacts associated with polluted runoff. Potential impacts would be less than significant.

f. Otherwise substantially degrade water quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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The proposed improvements would stabilize an existing stream bank with ungrouted rip-rap. There are no apparent aspects of the construction process or the finished improvements that present the potential for substantial degradation of water quality.

See item X.a, above, for discussion of potential water quality concerns during the construction period. Potential impacts would be less than significant.

g. Place housing 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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The proposed Project does not involve housing. No impact would occur.

X. Hydrology and Water Quality	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
<p>h. Place within a 100-year flood hazard area structures which would impede or redirect flood flows?</p> <p>The existing stream channel is within the 100-year floodplain (FIRM Panel 06065C0728G, Zone AE, Base Flood Elevations determined). In the finished condition, the proposed channel configuration would be essentially unchanged. The proposed finished improvements would not present the potential to impede or redirect flood flows.</p> <p>The construction process would entail temporary placement of structures within the 100-year flood hazard zone to divert stream flows from the construction area. With implementation of Mitigation Measure HYD 1 (see item X.d, above), the temporarily diverted stream flows would be confined to an area already recognized as susceptible to flood hazard. Potential impacts would be less than significant with implementation of the mitigation measure noted above.</p>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<p>i. Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?</p> <p>The project site is within the dam inundation area for the Sycamore Canyon Dam (City of Riverside 2007c, Figure PS-4, Flood Hazard Areas) and is also within the 100-year floodplain (see item X.h, above). The proposed Project would alter the existing setting by grading the stream bank and placing rip-rap on the finished surface. This nominal change in the existing setting would not alter the existing exposure to risk of loss, injury, or death associated with the existing 100-year floodplain and dam inundation limits.</p> <p>The construction process would require temporary diversion of stream flows, which presents limited potential for exposure of people and structures in the immediate vicinity to risk of loss or injury due to flooding (see item X.d, above). With implementation of Mitigation Measure HYD 1, the temporarily diverted stream flows would be confined to an area already recognized as susceptible to flood hazard. Potential impacts would be less than significant with the implementation of the mitigation measure noted above.</p>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<p>j. Inundation by seiche, tsunami, or mudflow?</p> <p>The project site is at an inland location and there are no confined water bodies in the project vicinity; therefore, there is no potential for impacts related to seiche or tsunami. The surrounding area consists of relatively level paved and landscaped surfaces and retaining walls. Conditions contributing to mudflow hazard are similarly absent, with no potential for impacts in this regard.</p>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

XI. Land Use and Planning

XI. Land Use and Planning	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a. Physically divide an established community?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
The Project would stabilize one bank of a stream situated within a fenced easement between two existing residential developments. There is no potential for impacts in this regard.				
b. Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the LRDP, general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<p>While the University is exempt from local land use controls pursuant to its constitutional authority, the University has nonetheless analyzed the Project’s consistency with local zoning and permitting requirements. The City of Riverside provides a zoning designation for the Creekside Terrace residential development of R-1-8500 for single family residential, and the apartment complex is designated as R-3-3000 for multi-family residential. The drainage channel and adjacent lands totaling 0.92 acre are within the Watercourse overlay zone (roughly corresponds to the existing fenced area along the stream at the interface of the apartments and the Creekside Terrace development). This zoning designation is in recognition of the existing stream channel and periodic flooding hazards. Such areas are to be kept free of particular structures or improvements that may endanger life or property or significantly restrict the carrying capacity of the designated floodway or stream channel (Riverside Municipal Code, Chapter 19.230.010). Riverside Municipal Code Section 19.230.020.C provides that grading within the Watercourse overlay zone is subject to a Conditional Use Permit (CUP).</p> <p>The proposed improvements would stabilize the north stream bank and maintain the existing channel capacity; the Project would not compromise the water course protection objectives of the Municipal Code zoning provisions. On this basis, there is no potential for conflict with this land use policy adopted to avoid effects on water courses and associated flood zones.</p> <p>University coordination with the City to date has indicated that a CUP would not be required in this case—ostensibly due to the limited nature of the proposed grading and temporary nature of changes in channel flow conditions. Should the City’s position change regarding the need for such an approval, the University is amenable to processing the necessary application. Such a requirement is an administrative matter that does not alter the conclusion regarding potential impacts or the magnitude thereof. The City of Riverside provided a comment letter that describes requirements for processing within the City as the project site is within private land. The City states that (1) grading plans must be submitted to the Public Works Department for review and (2) a separate construction permit must be obtained prior to any operations within the Chicago Avenue street right-of-way and/or public storm drain easement. The University will comply with these</p>				

XI. Land Use and Planning	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
requirements, and no other application is assumed required by the City. No impact would occur.				
c. Conflict with any applicable habitat conservation plan or natural community conservation plan?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Refer to item IV.f, above, for discussion of project conformance to the Western Riverside County MSHCP and the Long-term Habitat Conservation Plan for the SKR. With implementation of recommended Mitigation Measures BIO 1 through BIO 8 , the proposed Project would not conflict with applicable provisions of the two adopted habitat conservation plans that apply within the project area. Potential impacts would be less than significant with the incorporation of the mitigation measures noted above.				
d. Create other land use impacts?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
The proposed stabilization work would not involve a change in land use. There are no apparent aspects of the proposed construction or finished conditions that present the potential for creation of other land use impacts. No impact would occur.				

XII. Mineral Resources

XII. Mineral Resources	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
The project site and surrounding area are committed to development that precludes the potential for loss of availability of a known mineral resource of value to the region and the residents of the state. No impact would occur.				
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
There are no locally important mineral resource recovery sites in the City of Riverside (General Plan 2025 Draft EIR (City of Riverside 2007d, page 5.10-6). No impact would occur.				

XIII. Noise

XIII. Noise	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
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Would the project result in:

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|--|--------------------------|-------------------------------------|--------------------------|--------------------------|
| a. Exposure of persons to or generation of noise levels in excess of standards established in any applicable plan or noise ordinance, or applicable standards of other agencies? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|--|--------------------------|-------------------------------------|--------------------------|--------------------------|

Potential noise impacts of the proposed Project would be limited to the 120-day construction phase. The City of Riverside Municipal Code (Section 7.35.10(b)(5)) addresses construction noise and identifies timeframes in which operation of construction equipment would be considered to result in excessive noise levels. On the basis of this City Municipal Code provision, noise emanating from construction activity adhering to hours of 7:00 a.m. to 9:00 p.m. on weekdays, and 8:00 am to 6:00 p.m. on Saturdays is not considered excessive or in violation of the Municipal Code.

Chapter 7.25 of the Riverside Municipal Code establishes exterior and interior performance standards for residential properties. During the daytime (7 a.m. to 10 p.m.), the noise level standard is 55 decibels for exterior use areas and 45 decibels for interior locations. During nighttime hours (10 p.m. to 7 a.m.), these limits are lowered to 45 decibels for exterior use areas and 35 decibels for interior locations. Section 7.25.010 further defines a series of time periods for which the noise standard may be exceeded without violating the ordinance—ranging from 15 minutes per hour for noise exceeding the performance standard by 5 decibels to 1 minute for noise levels exceeding the performance standard by 15 decibels. An exceedance of 20 decibels or more for any duration is considered a violation. Since construction noise during certain hours of the day is not considered to be in violation of the Municipal Code, these noise limits apply to construction noise between the hours of 9 p.m. and 7 a.m. on weekdays and 6 p.m. and 8 a.m. on Saturdays.

Campus standard practices for minimizing construction noise are detailed in the following LRDP EIR MMRP provisions and will be included for the proposed Project:

PP 4.10-7(b) – The campus shall continue to require by contract specifications that construction equipment be required to be muffled or otherwise shielded. Contract shall specify that engine-driven equipment be fitted with appropriate noise mufflers.

PP 4.10-7(c) – The campus shall continue to require that stationary construction equipment, material and vehicle staging to be placed to direct noise away from sensitive receptors.

PP 4.10-8 – The campus shall continue to conduct meetings, as needed, with off-campus constituents that are affected by campus construction to provide advance notice of construction activities and ensure that mutual needs of the particular construction project and of those impacted by construction noise are met, to extent feasible.

An analysis of projected noise levels resulting from project construction is presented as Appendix F, and staff reviewed the assumptions in 2019. The predicted maximum combined sound level of simultaneously operating equipment is 83 decibels at 50 feet. Sensitive receptors that may be

XIII. Noise

Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
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affected by construction noise are nearby residences within the adjacent apartment project and the Creekside Terrace development, as well as recreation areas within Andulka Park. Accounting for attenuation provided by the distance to the nearest residential uses in the adjacent apartment complex, the maximum exterior noise level is predicted to be 79 decibels. Accounting for the distance and vertical separation to the nearest residential uses in the Creekside Terrace development, the maximum exterior noise level is predicted to be 70 decibels. Construction noise levels at Andulka Park would up to 66 decibels, but in most outdoor use locations in the park, construction noise would be overshadowed by noise from traffic on Chicago Avenue.

The noise analysis also considers noise from operation of a generator and pump for the temporary stream diversion. It is anticipated that the pump would need to be situated at the upstream end of the project limits near the existing inlet culvert. This location is approximately 50 feet from the nearest residences within the apartment site; the predicted exterior noise level at these sensitive receptors is approximately 82 decibels. The nearest receptors within the Creekside Terrace development are farther away and separated vertically from the noise source; the predicted maximum exterior noise level at the nearest receptor is 66 decibels. Accounting for attenuation provided by the buildings, interior noise levels could be as high as 57 decibels at adjacent apartment units and 41 decibels at residences in Creekside Terrace.

For all noise sources except the generator/pump for the stream diversion, construction activity may be limited to adhere to the provisions of Riverside Municipal Code Section 7.35.10(b)(5). Recommended **Mitigation Measure NOI 1** provides a means to enforce this restriction and, with implementation of this measure, impacts in this regard would be less than significant. This measure is more restrictive than the construction hour limits typically applied to campus projects under the LRDP EIR MMRP PP 4.10.2 (hour limits for construction activities).

Continuous operation of a generator and/or pump for streamflow diversion during the construction period would result in noise levels exceeding the standards within Riverside Municipal Code Chapter 7.25, which would constitute a significant impact. Recommended **Mitigation Measure NOI 2** requires implementation of attenuation features to achieve noise levels not exceeding the Municipal Code standards. With implementation of this measure, impacts in this regard would be less than significant.

NOI 1 – Restrict Construction Hours. The University will ensure that the construction contractor limits construction activities, where feasible, to occurring between 7:00 a.m. and 7:00 p.m. Monday through Friday and 8:00 a.m. and 5:00 p.m. on Saturday. An exception is made as to operation of a generator and/or pump for temporary stream diversion, subject to Mitigation Measure NOI 2, below.

NOI 2 – Attenuation for diversion pump and generator. The University will ensure construction contracts specify that any generator or diversion pump will be equipped with mufflers, silencers, shrouds, shields, or other noise-reducing features so as to achieve a maximum exterior operational noise level not exceeding 45 A-weighted decibels (dBA) (one-hour equivalent sound level [L_{eq}]) at exterior locations of nearby noise-sensitive land uses. Measures that can be implemented to achieve this include but are not limited to:

- enclosing equipment in solid wall structures,
- using low-noise equipment, and

XIII. Noise	Potentially Significant Impact	Less-than- Significant with Mitigation Incorporated	Less-than- Significant Impact	No Impact
<ul style="list-style-type: none"> placing sound barriers (earth berms or constructed barriers) around equipment. <p>Potential impacts would be less than significant with the incorporation of the mitigation measures noted above.</p>				
<p>b. Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?</p> <p>The proposed Project would entail stabilization of the slopes of a drainage feature that has previously been channelized along its natural alignment. Project construction activities may result in some minor amount of ground vibration. However, the proposed stabilization work would not include use of equipment or processes that are significant sources of groundborne noise and vibration. Additionally, vibration from these activities would be short term and would end when construction is completed. Because construction activity would not involve high-impact activities, such as blasting and pile driving, this potential impact is considered less than significant.</p>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<p>c. A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?</p> <p>The finished bank stabilization improvements would not entail any new permanent sources of noise. No impact would occur.</p>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<p>d. A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project (including construction)?</p> <p>See item XIII.a, above. Potential impacts would be less than significant.</p>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<p>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 expose people residing or working in the project area to excessive noise levels?</p> <p>The project site is within the land use planning area for airport operations at March Air Reserve Base/Inland Port. The proposed stream bank stabilization does not present the potential for any change with respect to exposure to aircraft noise for people residing or working in the project area. Potential impacts would be less than significant.</p>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<p>f. For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?</p> <p>There are no private airstrips in the project vicinity. No impact would occur.</p>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

XIV. Population and Housing

XIV. Population and Housing	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a. Induce substantial 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)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
The proposed Project would not involve new homes or businesses and would not extend new infrastructure to an undeveloped area. No impact would occur.				
b. Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
The proposed Project would not displace any existing housing. No impact would occur.				
c. Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
The proposed Project would not displace any existing housing. No impact would occur.				

XV. Public Services

XV. Public Services	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
a. Fire protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
The proposed Project would entail stabilization of the slopes of a drainage feature situated within an area of existing residential development. There are no aspects of the construction process or the finished improvements that would alter demand for fire protection services or affect existing physical facilities associated with provision of fire protection services. No impact would occur.				

XV. Public Services	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
b. Police protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
The proposed Project would entail stabilization of the slopes of a drainage feature situated within an area of existing residential development. There are no aspects of the construction process or the finished improvements that would alter demand for police protection services or affect existing physical facilities associated with provision of police protection services. No impact would occur.				
c. Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
The proposed Project would entail stabilization of the slopes of a drainage feature situated within an area of existing residential development. There are no aspects of the construction process or the finished improvements that would alter demand for school services or affect existing physical facilities associated with provision of school services. No impact would occur.				
d. Parks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
The proposed Project would entail stabilization of the slopes of a drainage feature situated within an area of existing residential development. The project site is separated from nearby Andulka Park by an existing major thoroughfare, Chicago Avenue, and, in the finished condition, the Project would not alter the volume or nature of flows that are received in existing downstream storm drain improvements along the park boundary. There are no aspects of the construction process or the finished improvements that would alter demand for park services or affect existing physical facilities associated with provision of park services. No impact would occur.				
e. Other public facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Considering the location and the general nature and limited scale of the proposed improvements, the proposed Project does not present the potential for substantial adverse impacts associated with increased demand for public services or the need for additional public facilities. No impact would occur.				
f. Create other public service impacts?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Considering the location and the general nature and limited scale of the proposed improvements, the proposed Project does not present the potential for substantial adverse impacts associated with increased demand for public services or the need for additional public facilities. No impact would occur.				

XVI. Recreation

XVI. Recreation	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a. Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<p>The proposed Project would entail stabilization of the slopes of a drainage feature situated within an area of existing residential development. There are no aspects of the construction process or the finished improvements that would alter demand for parks or recreational facilities services or affect existing physical facilities due to increased use of existing parks or recreational facilities.</p> <p>The subject drainage feature outlets through an existing 72-inch concrete storm drain pipe that passes under Chicago Avenue and discharges to an open channel along the perimeter of Andulka Park. The proposed bank stabilization improvements would not alter stream flow or tributary area conditions and, therefore, do not present the potential for changes in discharge characteristics that could contribute to physical deterioration of the existing downstream improvements. No impact would occur.</p>				
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<p>The proposed Project would not include recreational facilities and would not require the construction or expansion of recreational facilities. No impact would occur.</p>				

XVII. Transportation/Traffic

XVII. Transportation/Traffic	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a. Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<p>Both Chicago Avenue and Central Avenue are fully improved as four-lane, divided arterials. The City of Riverside service standard for arterials is Level of Service D (City of Riverside 2007a, page CCM-11). Level of Service D corresponds to a volume to capacity ratio not exceeding 1.0; therefore, roadways in the City of Riverside are considered to operate over capacity when the daily traffic volume exceeds the daily capacity value (City of Riverside 2007e, page 12). The traffic counts (City of Riverside 2013) available from the City’s website indicate daily traffic volumes of approximately 17,000 to 25,000 vehicles per day on the segments of Chicago Avenue and Central Avenue near the project site. The General Plan EIR traffic study indicates a daily capacity of 33,000 per day for 110-foot arterials such as Central Avenue and Chicago Avenue. Under existing conditions, there is capacity to add an additional 8,000 to 16,000 daily trips before reaching the City’s service standard for arterials and exceeding the allowed volume to capacity ratio.</p> <p>Temporary construction-related trips would result in an increase in trips on the surrounding roadway network. Specifically, construction-related trips would include daily trips for construction workers, delivery of equipment, delivery of materials, and removal of debris and excavated soil. No more than 18 construction worker trips are anticipated on any given day during the 120-day construction period. A total of 15 pieces of off-road equipment would be used throughout the four phases of construction, and no more than six pieces would be delivered during any given phase. As such, the number of construction trips related to the delivery of equipment would be minimal. A range of 2,500 to 4,360 cy of materials would be delivered or removed from the project site, including up to 1,460 cy of rip-rap delivered to the site and 300 cy of excavated soil and 2,600 cy of vegetation debris taken from the site. At a capacity of about 16 to 20 cy of materials per truck trip, a total of about 250 to 545 round trips would account for material delivery and removal of debris and excavated soil over the 120-day construction period. The adjacent roadway network would be able to accommodate the additional short-term construction trips, including trips of up to 50 miles away to and from a quarry in Corona or southern Riverside County for rock import.</p> <p>While the proposed Project would temporarily increase the number of vehicle trips in the immediate vicinity, the proposed Project does not present the potential to conflict with City of Riverside policy regarding performance of the circulation system. Potential impacts would be less than significant.</p>				

XVII. Transportation/Traffic	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
b. Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
See item XVII.a, above. Potential impacts would be less than significant				
c. Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
The project site is within the land use planning area for the airport operations at March Air Reserve Base/Inland Port. The proposed stream bank stabilization work would not present the potential for any change with respect to air traffic patterns. No impact would occur.				
d. Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Access to the work area is by way of a gated entry off Chicago Avenue immediately south of the entrance drive to the Creekside Terrace development. There is a continuous raised median separating the northbound and southbound travel lanes along this section of Chicago Avenue, which has a posted speed limit of 45 miles per hour and a striped bike lane adjacent to the outside curb. The signalized intersection at Central Avenue is approximately 1,100 feet to the south. Two driveways serving the apartment complex are located between Central Avenue and the work area access point.				
It is not expected that temporary closures of the traffic lanes on Chicago Avenue between the northern apartment driveway and the Creekside Terrace entrance would be required during the anticipated 120-day construction period. However, in the event that traffic lane closures may be required during construction, at least one through lane of traffic would be maintained at all times, consistent with LRDP PP 4.14-5 (maintaining access during construction), which requires the campus to maintain at least one unobstructed lane in both directions on campus roadways; in this case, the measure would apply to off-campus streets to be affected by the proposed campus Project. Standard provisions of the required City encroachment permit would also ensure that appropriate signage and traffic control measures are implemented to provide for safety of vehicles, bikes, and pedestrians.				
Once construction is complete, the road and access conditions would be unchanged. With no change from existing conditions, there is no potential for increased hazards due to design features or incompatible uses. Potential impacts would be less than significant.				

	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
XVII. Transportation/Traffic				
e. Result in inadequate emergency access?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
See item XVII.d, above. As stated previously, at least one through lane would be maintained at all times, consistent with LRDP PP 4.14-5 (maintaining access during construction), and no lane closures on Chicago Avenue are anticipated. In the finished condition, there would be no change potentially affecting emergency access. Potential impacts would be less than significant.				
f. Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
See items XVII.d and XVII.e, above. The bus stop on the east side of Chicago Avenue just north of Central Avenue is several hundred feet south of the proposed Project and would not be adversely affected by proposed construction activity with compliance with LRDP PP 4.14-5 (maintaining access during construction). In the finished condition, there would be no change potentially affecting public transit, bicycle, or pedestrian facilities. Potential impacts would be less than significant.				

XVIII. Tribal Cultural Resources

In January 2019, updates to the State CEQA Guidelines were adopted, which included the addition of a Tribal Cultural resources section, as addressed in this section.

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
XVIII. Tribal Cultural Resources				
Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:				
a. Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or (New CEQA Threshold)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
In September 2014, Governor Brown signed AB 52 (Chapter 532, Statutes of 2014), which creates a new category of environmental resources that must be considered under CEQA: "tribal cultural resources." The legislation imposes new requirements for offering to consult with California				

XVIII. Tribal Cultural Resources

Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
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Native American tribes regarding projects that may affect a tribal cultural resource, emphasizes a broad definition of what may be considered to be a tribal cultural resource, and includes a list of recommended mitigation measures.

Recognizing that tribes may have expertise regarding their tribal history and practices, AB 52, which became effective on July 1, 2015, requires lead agencies to provide notice to tribes that are traditionally and culturally affiliated with the geographic area of a proposed project, if they have requested such notice in writing. The project notification is required prior to the lead agency’s release of a Notice of Preparation of an EIR or NOI to adopt an MND or ND. Once Native American tribes receive a project notification, they have 30 days to respond as to whether they wish to initiate consultation regarding the project, including subjects such as mitigation for any potential project impacts. If a tribe request consultation and the lead agency and the tribe ultimately agree on mitigation to address any potentially significant impacts on tribal cultural resources, the mitigation measures agreed upon during consultation must be recommended for inclusion in the environmental document. It should be noted that the original environmental document for the proposed project went out for public review in 2014, before AB 52 tribal consultation was enacted. To date, the University has received two requests for project notification pursuant to AB 52 (from the Agua Caliente Band of Cahuilla Indians and the Torres Martinez Desert Cahuilla Indians).

In January 2019, updates to the State CEQA Guidelines were adopted, which included the addition of a Tribal Cultural Resources section, as addressed in this section.

Refer to item V. a, above. Based on the results of the records search (Appendix E), Native American scoping, and field survey, specific cultural resources (prehistoric or historic) were not identified in the project APE. No specific resource information was provided by tribal contacts for the project APE, and no impact on historical resources under CEQA would occur. However, the discovery of unanticipated cultural resources and/or human remains is always a possibility during ground-disturbing activities. The University’s standard contractor specifications address protection and recovery of buried artifacts, including archaeological resources, and the standard requirements are incorporated into the project as **Mitigation Measure CUL 1**. It is noted that this campus procedure is consistent with City of Riverside practices under General Plan EIR Mitigation Measure Cultural 4 (discovery of archaeological resources and Native American human remains) and recommendations from a cultural resources report completed in 2019.

b. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe. (New CEQA Threshold)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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A cultural resources report was completed in 2019 (Appendix E). Based on the results of the

XVIII. Tribal Cultural Resources

Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
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records search in 2018, the Sacred Lands File search through the NAHC, and the field survey, no specific tribal cultural resources were identified in the project APE. No impact is anticipated.

In 2018, an updated cultural survey and outreach to affected tribes were conducted for the Project. The proposed Project was found to be within the territory of the Rincon Band of Luiseño Indians, and is within Rincon's specific area of historic interest, but there is no knowledge of cultural resources within or near the proposed Project. The Gabrieleño/Tongva San Gabriel Band of Mission Indians stated that the area could be sensitive due to its proximity to the creek and that there should be archaeological or Native American monitoring or spot-checking during ground disturbance. The San Manuel Band of Mission Indians stated that the Project is located just outside of Serrano ancestral territory, and they will not be requesting consulting party status with the lead agency. The Soboba Band of Luiseño Indians stated that the Project is within the bounds of the Luiseño Tribal Traditional Use Areas, is near known sites, and is a shared use area that was used in ongoing trade between the tribes and is considered to be culturally sensitive by the people of Soboba. They requested consultation with the project proponents and lead agency and that Native American monitor(s) from the Soboba Band of Luiseño Indians Cultural Resource Department be present during ground disturbing proceedings. It should be noted that to date, the above noted tribes have not requested to be part of the University's AB 52 tribal consultation process. The campus subsequently contacted Soboba Band of Luiseño Indians via email on May 22, 2020 noting that based on the results of a records search in 2018, Native American scoping, the Sacred Lands File search through the NAHC, and the field survey, specific tribal cultural resources (prehistoric or historic) were not identified in the project APE, and as such, tribal monitoring will not be included during construction activities. To date, there has been no response from the tribe. Nevertheless, there is always a possibility of encountering unknown or undocumented burials containing human remains or cultural resources during earth moving activities. UCR's standard contract specifications address the protection and recovery of buried cultural or archaeological resources, including human remains, and the standard requirements are incorporated in the project as a mitigation measure as noted in **Mitigation Measure CUL 1**. Additionally, **Mitigation Measure CUL 1** provides specifications for consultation with tribes should any resources be encountered during construction. It should be noted that the original environmental document for the proposed project went out for public review in 2014, before AB 52 tribal consultation was enacted. To date, the University has received two requests for project notification pursuant to AB 52 (from the Agua Caliente Band of Cahuilla Indians and the Torres Martinez Desert Cahuilla Indians). On July 18, 2018, the University provided these tribes with notification of the proposed project. No response was received by the Torres-Martinez Desert Cahuilla Indians. On July 26, 2018, the Agua Caliente Band of Cahuilla Indians (ACBCI) responded to this request stating that the project area is not within the boundaries of the ACBCI Reservation; however, the project area is within the tribes' Traditional Use Area. The tribe requested copies of any cultural resources documentation (records search, inventory, report, and site records) generated in connection with the project. On April 10, 2019, the Cultural Resources Report was e-mailed to ACBCI. On April 30, 2019, ACBCI requested updates to the Cultural Resources Report regarding the following items: incorporate their comments in Section 4.2, Native American Heritage Commission, and

XVIII. Tribal Cultural Resources

Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
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incorporate their response letter dated November 7, 2018 in Appendix B. They also deferred to Soboba and the Gabrieleno/Tongva San Gabriel Band of Mission Indians. As noted above, to date, these tribes have not requested to be part of the University’s AB 52 tribal consultation process. The updates to the Cultural Resources Report were incorporated, and the updated report was provided to ACBCI on May 23, 2019.

The University’s standard contractor specifications address protection and recovery of buried artifacts, including archaeological resources, and the standard requirements are incorporated into the project as **Mitigation Measure CUL 1**. This mitigation measure identifies steps to be taken in the event archaeological resources, including Native American cultural resources, are discovered during construction activities. Potential impacts would be less than significant with mitigation incorporated.

XIX. Utilities and Service Systems

XIX. Utilities and Service Systems

Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
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Would the project:

- a. Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?

The proposed bank stabilization improvements would not generate wastewater or require wastewater treatment services. No impact would occur.

- b. Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

The proposed bank stabilization improvements would not generate new demand for water or wastewater services or otherwise require or result in the construction of expansion of water or wastewater treatment facilities. No impact would occur.

XIX. Utilities and Service Systems	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
<p>c. Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?</p> <p>The proposed Project would modify a segment of open channel that functions as a component of the City’s storm water drainage system. The proposed bank stabilization improvements would entail temporary disturbance of the existing stream channel and associated riparian vegetation, which presents the potential for significant environmental effects related to biological resources, temporary flooding, and noise, as discussed in preceding sections of this checklist (see Sections IV, X, and XIII). Mitigation Measures BIO 1 through BIO 8, HYD 1, NOI 1, and NOI 2 have been identified to reduce these potential impacts to below a level of significance. In addition, the environmental analysis presented throughout this initial study acknowledges established campus and City programs and practices that contribute to avoidance and minimization of potential environmental effects, including those related to construction-period air emissions, discovery of unknown cultural resources, erosion, construction-period noise, construction-period hazardous materials use and transport, and construction-period traffic safety (see Sections II, V, VII, VIII, IX, X, XIII, and XVII, above). With implementation of the recommended mitigation measures BIO 1 through BIO 8, HYD 1, NOI 1, and NOI 2 and implementation of City and campus standard practices, the potential environmental effects of the proposed storm water facility improvements would be less than significant.</p>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<p>d. Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?</p> <p>Refer to item XIX.a, above. The proposed Project would require comparatively limited volumes of water only during the construction phase. There are no known circumstances with existing water supplies that suggest such temporary demand would require new or expanded entitlements or resources. Potential impacts would be less than significant.</p>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<p>e. 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?</p> <p>The proposed bank stabilization improvements would not require wastewater service. No impact would occur.</p>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

XIX. Utilities and Service Systems	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
<p>f. Be served by a landfill with sufficient permitted capacity to accommodate the project’s solid waste disposal needs?</p>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<p>Project construction activities would generate a one-time volume of demolition waste, consisting of approximately 133 to 2,600 cubic yards of vegetation and 236 to 300 cubic yards of soil. As stated previously in item VIII.b, both the University and the City of Riverside have adopted programs requiring substantial diversion of construction waste. Standard campus contracting provisions include requirements for implementation and monitoring of waste diversion practices in all campus construction projects. These campus provisions address both City and County reduction policies in this regard. For the proposed Project, much of the construction waste would involve green waste and removal of existing vegetation to stabilize the slope. No operational waste, aside from the periodic removal of small amounts of exotic species of vegetation, would be required. Standard campus contracting provisions, to be included in contract specifications for implementation by the construction contractor, include green waste recycling and other requirements for implementation and monitoring of waste diversion practices in all campus construction projects. Ongoing operation would generate limited volumes of waste consisting of vegetation cleared from the north bank and adjacent access area.</p> <p>The Robert A. Nelson Transfer Station, located at 1830 Agua Mansa Road, receives refuse from western Riverside County, including the UCR campus. The transfer station is owned by the Riverside County Department of Waste Resources (RCDWR) and is operated by Burrtec Waste Industries. The transfer station is permitted to accept up to 4,000 tons of solid waste per day and is currently processing approximately 2,500 to 3,000 tons of solid waste per day (Burrtec 2019). It should be noted that this number reflects all waste, including recycling, green waste, and C&D. Considering the limited nature of project waste generation and established practices for substantial diversion from landfill disposal, the Project does not present the potential to generate solid waste in excess of local landfill capacity. Potential impacts would be less than significant.</p>				
<p>g. Comply with applicable federal, state, and local statutes and regulations related to solid waste?</p>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<p>Applicable statutes related to solid waste are those addressing reduction of the volume of waste sent to landfills. As stated previously in items IX.b and XIX.f, above, both the University and the City of Riverside have adopted programs and established standard implementation programs for substantial diversion of waste. Considering the limited nature of project waste generation and established programs for diversion from landfill disposal, the proposed Project would comply with all applicable federal, state, and local statutes and regulations related to solid waste, and there would be no impact in this regard. No impact would occur.</p>				

XIX. Utilities and Service Systems	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
h. Create other utility and service system impacts?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Considering the location and the general nature and limited scale of the proposed improvements, the proposed Project does not present the potential for adverse impacts on utility and service systems. No impact would occur.

XX. Wildfire

In January 2019, updates to the State CEQA Guidelines were adopted, which included the addition of a Wildfire section, as addressed in this section.

XX. Wildfire	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
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? (<i>New CEQA Threshold</i>)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

The project area is mostly within an urban area, and the stabilization and mitigation work would not alter any roadways that could impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. The Project would not involve modifications to facilities that are critical to emergency response—such as police, fire, and hospital facilities—and project improvements would not impede access to these facilities in an emergency. All access points, storage, and staging areas would be located in a manner that has the least impact on vehicular and pedestrian traffic. Therefore, the proposed Project would not affect an adopted emergency response plan or emergency evacuation plan, and impacts would be less than significant.

b. Due to slope, prevailing winds, and other factors, exacerbate wildfire risks of, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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According to the Fire and Resource Assessment Program *Very High Fire Hazard Severity Zones in LRA As Recommended by CAL FIRE* map for the City of Riverside, the project area is not located within or near areas that are susceptible to wildfires; therefore, further analysis of the hazards related to wildfire is not warranted (CAL FIRE 2019). Also, the project area is surrounded on all

	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
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XX. Wildfire

sides by development and vacant development parcels. There would be a less-than-significant impact related to wildland fires.

The proposed project activities would not increase exposure to significant risk of loss, injury, or death involving wildland fires, and the Project would not exacerbate wildfire risk or expose occupants to pollutant concentrations from a wildfire. Additionally, there would be no significant increase in naturally caused fires as the project would maintain similar natural, open spaces as currently exist at the project locations, and because the project includes the provision of additional water to sites to ensure success of newly installed vegetation. Potential impacts would be less than significant.

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 on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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Implementation of the proposed Project would involve restoration, stabilization, mitigation, and enhancement of the hydrology of the channel and native habitat. The proposed Project would not construct buildings, power lines or other utilities, or permanent roads. All access points, storage, and staging areas during construction would be located in a manner that has the least impact on native vegetation as well as vehicular and pedestrian traffic. Potential impacts would be less than significant.

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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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The proposed Project aims to stabilize the north bank of an existing drainage channel adjacent to the University-owned Creekside Terrace residential development. The subject drainage channel flows year-round; therefore, diversion would be necessary during construction. The entire work limits would need to be dewatered for the duration of construction. Considering the relative grade between the culvert outlet at the upstream end of the work limits and the likely bypass pipeline location, pumping is expected and a portable generator may be required as a power source. Construction is anticipated to last approximately 120 days. No buildings or habitable structures are proposed as part of the Project. No permanent residences or structures would be displaced with the proposed improvements. Therefore, the Project would not expose people or structures to significant risks of flooding or landslides, and a less-than-significant impact would occur.

XXI. Mandatory Findings of Significance

XXI. Mandatory Findings of Significance	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
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The lead agency shall find that a project may have a significant effect on the environment and thereby require an EIR to be prepared for the project where there is substantial evidence, in light of the whole record, that any of the following conditions may occur. Where prior to commencement of the environmental analysis a project proponent agrees to mitigation measures or project modifications that would avoid any significant effect on the environment or would mitigate the significant environmental effect, a lead agency need not prepare an EIR solely because without mitigation the environmental effects would have been significant (per Section 15065 of the State CEQA Guidelines):

- a. Does the project have the potential to 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?

<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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The proposed Project would stabilize the slopes of highly constrained, previously channelized drainage feature in an area of residential development. The recommended mitigation measures (**Mitigation Measures BIO 1, BIO 2, and BIO 3**) establish requirements to minimize impacts on the stream and associated riparian habitat and provide a framework for implementation of onsite riparian habitat restoration as well as offsite riparian habitat restoration via the purchase into a mitigation bank or in-lieu fee program (**Mitigation Measures BIO 4, BIO 5 and BIO 6**). In the finished condition, the overall quality of the environment and the value of the channel as habitat would not be substantially altered from pre-project conditions.

Project-specific surveys have documented the limited presence of wildlife within the work limits and the absence of rare, threatened, or endangered species. Mitigation measures (**Mitigation Measures BIO 2 and BIO 8**) have been recommended to avoid significant impacts should any sensitive or otherwise protected bird species be identified within the work limits as construction proceeds.

The project site is previously disturbed and supports a perennial stream. No cultural resources were discovered in conjunction with prior development and there is no reasonable expectation that cultural resources would be discovered in the course of the proposed work. Nevertheless, there is always a possibility of encountering unknown or undocumented burials containing human remains or cultural resources during earth moving activities. UCR's standard contract specifications address the protection and recovery of buried cultural or archaeological resources, including human remains, and the standard requirements are incorporated in the project as a mitigation measure as noted in **Mitigation Measure CUL 1**.

Potential impacts would be less than significant with mitigation incorporated.

XXI. Mandatory Findings of Significance	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
<p>b. Does the project have impacts that are individually limited, but cumulatively considerable? (“Cumulatively considerable” means that the incremental effects of a project are significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of past, present and probable future projects)?</p>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<p>Impacts resulting from the proposed bank stabilization improvements as identified in the discussion of checklist sections I through XX of this IS/MND would be isolated to the work limits or immediately surrounding environs within an established residential neighborhood in the City of Riverside. Potential impacts would be substantially limited to the approximately 120-day construction period. The review and analysis contained herein recognizes compliance with established local, state, and federal regulations and University-standard procedures as the basis for a determination that impacts are less than significant for aesthetics, agricultural and forestry resources, air quality, cultural resources, energy, geology and soils, greenhouse gas emissions, hazards and hazardous materials, transportation/traffic, tribal cultural resources, and wildfire. The environmental review and analysis contained herein also indicates that the proposed Project presents the potential for project-level environmental impacts related to biological resources, hydrology and water quality, land use and planning, noise, and utilities and service systems, and mitigation is proposed to reduce those impacts. All identified direct impacts of the proposed improvements would be mitigated to below a level of significance with implementation of the recommended mitigation measures and standard City and University programs and practices. Therefore, no significant cumulatively considerable impacts would result under the proposed Project.</p>				
<p>c. Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?</p>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Aspects of the Project presenting the potential for adverse impacts on human beings are associated with construction-related air emissions, flooding, noise, traffic, and hazardous materials use and transport. The discussion presented in the respective sections of this checklist (see discussion under Sections III, IX, X, XIII, and XVII) supports the conclusion that the proposed Project would not cause substantial adverse effects on human beings.

VI. Supporting Information Sources

Printed References

Unless noted, all documents are available for review at the University of California, Riverside, Planning, Design & Construction (formerly Capital Resource Management), University Village, 1223 University Avenue, Suite 240 (formerly 200), Riverside California, 92507

C.H.J. Incorporated. 2007a. Preliminary Environmental Site Assessment Tract No. 31671 Creekside Terrace Riverside California, Prepared for University of California, Riverside (Job No. 07616-9). August 10. Colton, CA.

———. 2007b. Summary of Preliminary Findings Due Diligence Investigation, Tract No. 31671, Chicago Avenue, North of Central Avenue, Riverside California, Prepared for University of California, Riverside (Job No. 07615-3). November 14. Colton, CA.

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VII. Initial Study Preparers

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University of California, Riverside

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Stephanie Tang, Campus Environmental Planner

Jaime Engbrecht, Planner

Comments and Responses

The University has reviewed and evaluated the comments received on the Draft IS/MND for the Creekside Terrace Slope Protection Project and has prepared written responses to these comments. Since circulation of the Draft IS/MND in 2014, it has been determined that additional soil will need to be transported off site. The remainder of the proposed Project has not changed. This section contains copies of the comments received during the public review process and provides an evaluation and written response for comments made regarding environmental issues.

Comments Received

During the public review period for the Draft IS/MND, which occurred between August 26, 2014 and September 24, 2014, the University received three comment letters from agencies; no letters were received from organizations and individuals.

The commenting parties are listed below, along with a corresponding letter for organizational purposes of identifying comments and responses, which are provided in this section.

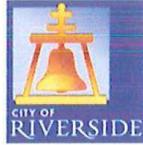
Comment Letter	Agency	Correspondence Date	Date Received
A	City of Riverside Community Development Department	September 22, 2014	September 25, 2014
B	State of California Department of Fish and Wildlife	September 24, 2014	September 25, 2014
C	State of California Governor's Office of Planning and Research, State Clearinghouse and Planning Unit	September 25, 2014	September 29, 2014

Comments and Responses to Comments

This section presents all written comments on the Draft IS/MND received by the University during the 30-day public review period from August 26, 2014 to September 25, 2014 and the responses to those comments.

The comments received do not trigger any recirculation as required by CEQA Guidelines Section 15073.5, nor do they question the University's determination that an MND is the appropriate CEQA compliance document for the proposed Project.

Comment Letter A: City of Riverside Community Development Department



Community Development
Department
Planning Division

City of Arts and Innovation

Comment Letter A

September 22, 2014

Tricia D. Thrasher, ASLA LEED AP
Principal Environmental Project Manager
UCR Capital Planning
University Village
1223 University Avenue, Suite 200
Riverside, CA 92507

SUBJECT: NOTICE OF COMPLETION - NEGATIVE DECLARATION - CREEKSIDE TERRACE SLOPE STABILIZATION PROJECT

Dear Ms. Thrasher:

Thank you for the opportunity to comment on the Negative Declaration for the proposed Creekside Terrace Slope Stabilization Project a proposal to stabilize the north bank of an existing drainage channel generally located north of Central Avenue, East of Chicago Avenue and south of LeConte Drive. Given the location of the project within the City of Riverside and the potential impacts on City streets and stormwater facilities, the City's Public Works Department is providing the following comments for your consideration.

A-1

As indicated within the Draft initial Study, project construction would take place on property owned by the University of California, Riverside as well as on private land not owned by the University of California Regents. Typically, operations on University-owned property are not subject to City approval or permitting. However, given that the project also includes construction on private property, grading plans must be submitted to Public Works for review and approval and a Grading Permit shall be obtained from the City prior to commencing any construction operations on private property. A separate Construction Permit must also be obtained prior to any operations within the Chicago Avenue street Right-of-Way and/or the adjacent public storm drain easement.

A-2

The City of Riverside appreciates your consideration of the comments provided in this letter. Should you have any specific questions regarding the grading permit requirements, please contact the City's Public Works Department at 951-826-5341. Should you have any additional questions regarding this letter, please feel free to contact David Murray, Senior Planner at (951) 826-5773 or by email at dmurray@riversideca.gov.

Sincerely,

Jay Eastman, AICP
Principal Planner

UCR

CAPITAL RESOURCE MANAGEMENT

DATE RECEIVED 9-25-14
tbt

3900 Main Street, Riverside, CA 92522 | Phone: (951) 826-5371 | RiversideCA.gov

c: Scott Barber, City Manager
Deanna Lorson, Assistant City Manager
Kristi Smith, Supervising Deputy City Attorney
Al Zelinka, Community Development Director
Emilio Ramirez, Deputy Community Development Director
Tom Boyd, Public Works Director/City Engineer
Rob Van Zanten, Principal Engineer

G:\PLANNING\SPECIALPROJECTS\Agency Comments\UCR\PSP 14-0047 Creekside Terrace Slope Stabilization Project Neg
Dec\PSP14-0047 Creekside Terrace Slope Stabilization Project Letter.docx

Response to Comment A-1 (Introduction)

The University appreciates the City's participation in the comment period for the Draft IS/MND. This introduction to the City's comments presents an accurate summary of the Project.

Response to Comment A-2 (City Requirements)

This comment does not raise any new or altered environmental impacts. The City describes requirements for processing within the City of Riverside as the Project is partially within private land. The City states that (1) grading plans must be submitted to the Public Works Department for review and (2) a separate construction permit must be obtained prior to any operations within the Chicago Avenue street right-of-way and/or public storm drain easement. The University will comply with these requirements and no further response is required.

Comment Letter B: State of California Department of Fish and Wildlife



State of California - Natural Resources Agency
 DEPARTMENT OF FISH AND WILDLIFE
 Inland Deserts Region
 3602 Inland Empire Blvd., Suite C-220
 Ontario, CA 91764
 (909) 484-0459
www.wildlife.ca.gov

EDMUND G. BROWN, Jr., Governor
CHARLTON H. BONHAM, Director



Comment Letter B

September 24, 2014

Ms. Tricia Thrasher
 The Regents of the University of California
 1223 University Avenue, Suite 200
 Riverside, CA 92507

Subject: Creekside Terrace Slope Stabilization Project
 Draft Initial Study/Mitigated Negative Declaration
 State Clearinghouse No. 2014081086

Dear Ms. Thrasher:

The Department of Fish and Wildlife (Department) appreciates the opportunity to comment on the Draft Initial Study/Mitigated Negative Declaration for the Creekside Terrace Slope Stabilization Project (Project) [State Clearinghouse No. 2014081086]. The Department is responding to the IS/MND as a Trustee Agency for fish and wildlife resources (California Fish and Game Code Sections 711.7 and 1802, and the California Environmental Quality Act [CEQA] Guidelines Section 15386), and as a Responsible Agency regarding any discretionary actions (CEQA Guidelines Section 15381), such as the issuance of a Lake or Streambed Alteration Agreement (California Fish and Game Code Sections 1600 *et seq.*) and/or a California Endangered Species Act (CESA) Permit for Incidental Take of Endangered, Threatened, and/or Candidate species (California Fish and Game Code Sections 2080 and 2080.1).

Project Description

The Project is located in a stream located 0.20 mile north of the intersection of Chicago Avenue and Central Avenue, east of Chicago Avenue, south of Creekside Terrace, in the City of Riverside. The applicant (University of California, Riverside) proposes to stabilize the north bank of the existing channel by removing all vegetation from the north bank and channel bottom, reshaping the channel and placing ungrouted rip-rap on the north bank. The proposed design includes channel excavation and reshaping into a v-channel with uniform slope face extending between the existing top of the north bank and the existing toe of riprap cover on the opposite bank. Riprap pads will be established at the inlet and outlet for energy dissipation. Water diversion will be necessary during project activities.

B-1

Conserving California's Wildlife Since 1870

Draft Initial Study/Mitigated Negative Declaration
 Creekside Terrace Slope Stabilization Project
 SCH No. 2014081086
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Biological Resources and Impacts

The Department has multiple questions, comments, and concerns, related to the Biological Resources section of the IS/MND, and requests that these questions, comments, and concerns be addressed in the subsequent CEQA document. The Department's questions, comments, and concerns include:

1. Regarding Mitigation Measure BIO-7: Please note that it is the Lead Agency's responsibility to comply with all applicable laws related to nesting birds and birds of prey. Migratory non-game native bird species are protected by international treaty under the federal Migratory Bird Treaty Act (MBTA) of 1918, as amended (16 U.S.C. 703 et seq.). In addition, sections 3503, 3503.5, and 3513 of the FGC prohibit the take of all birds and their nests. Section 3503 states that it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by FGC or any regulation made pursuant thereto; Section 3503.5 states that it is unlawful to take, possess, or destroy any birds in the orders 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 FGC or any regulation adopted pursuant thereto; and Section 3513 states that it is unlawful to take or possess any migratory nongame bird as designated in the MBTA or any part of such migratory nongame bird except as provided by rules and regulations adopted by the Secretary of the Interior under provisions of the MBTA.
2. Mitigation Measure BIO-7 states that the breeding bird season includes "...February 15 through September 15..." Please note that some species of raptors (e.g., owls) may commence nesting activities in January. The Department encourages the Lead Agency to complete nesting bird surveys regardless of time of year to ensure compliance with all applicable laws related to nesting birds and birds of prey.
3. The Department recommends that pre-construction surveys be required no more than three (3) days prior to vegetation clearing or ground disturbance activities, as instances of nesting could be missed if surveys are conducted sooner. As mentioned previously, it is the Lead Agency's responsibility to ensure that the project complies with all applicable laws related to nesting birds and birds of prey, and that violations of these laws do not occur.
4. The IS/MND does not include sufficient analysis of project related impacts to species identified as candidate, sensitive, or special status. Regarding the following rationale given on page D-17 on the "less than reasonable potential to occur" for Santa Ana speckled dace: "This species is known to occur both upstream and downstream of the project site. However, these populations are isolated from the project site due to flood control structures ..." that "...do not support habitat for this species," Please provide a reference for this statement.

B-2

B-3

B-4

B-5

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The Department recommends that the Lead Agency complete focused surveys for Santa Ana speckled dace and Arroyo chub and include the results of these surveys in the revised MND.

B-5
cont.

5. The Department requests the clarification of project impacts and corresponding mitigation measures. Mitigation Measure BIO-5 states that "native riparian vegetation shall be allowed to reestablish through natural recruitment within the work limits...", yet the project description states that proposed activities would "require the removal of all vegetation on the north bank as well as the channel bottom" and "ongoing activity would maintain a vegetation-free condition on the north bank." Please clarify if the proposed impacts to the vegetation within the north bank will be ongoing and identify suitable mitigation for the associated impacts. Furthermore, Mitigation Measure BIO-6 identifies residual mitigation obligations. Please disclose any current or outstanding mitigation obligations associated with the Creekside Terrace development.

B-6

6. The mitigation measures as described in the IS/MND are insufficient to mitigate for the impacts to the Project will have to the Jurisdictional Areas and the areas designated for mitigation under previous permits. For this reason, the Department believes that it cannot fulfill its obligations as a Trustee and Responsible Agency for fish and wildlife resources. Permit negotiations conducted after and outside of the CEQA process are not CEQA-compliant, because they deprive the public and agencies of their right to know what project impacts are and how they are being mitigated (CEQA Section 15002). Please note that the Department requires mitigation to be placed within the same watershed. The purchase of mitigation bank credits for the creation of wetlands is also subject to Department approval.

B-7

7. The CEQA document should contain sufficient, specific, and current biological information on the existing habitat and species at the Project site; measures to minimize and avoid sensitive biological resources; and mitigation measures to offset the loss of native flora and fauna and State waters. The CEQA document should not defer impact analysis and mitigation measures to future regulatory discretionary actions, such as a Lake or Streambed Alteration Agreement.

B-8

8. If state or federal endangered or threatened species have the potential to occur on the Project site, species specific surveys should be conducted using methods approved by the Department or assume the presence of the species throughout the project site. The CEQA document should include recent survey data (CEQA Guidelines Section 15125(a)). The CEQA document should also address species of special concern and federal critical habitat. To assist with review, an accompanying map showing the areas of impact should be included in the subsequent CEQA document. Additional maps detailing the location of endangered, threatened, or special of special concern should also be included in the subsequent CEQA document.

B-9

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Natural Community Conservation Program (NCCP) and California Endangered Species Act (CESA)

The Department is responsible for ensuring appropriate conservation of fish and wildlife resources including threatened, endangered, and/or candidate plant and animal species, pursuant to the CESA, and administers the Natural Community Conservation Plan Program (NCCP Program). Within the Inland Deserts Region, the Department issued Natural Community Conservation Plan Approval and Take Authorization for the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP) per Section 2800, *et seq.*, of the California Fish and Game Code on June 22, 2004. The MSHCP establishes a multiple species conservation program to minimize and mitigate habitat loss and provides for the incidental take of covered species in association with activities covered under the permit.

B-10

Compliance with approved habitat plans, such as the MSHCP, is discussed in CEQA. Specifically, Section 15125(d) of the CEQA Guidelines requires that the CEQA document discuss any inconsistencies between a proposed Project and applicable general plans and regional plans, including habitat conservation plans and natural community conservation plans. An assessment of the impacts to the MSHCP as a result of this Project is necessary to address CEQA requirements. To obtain additional information regarding the MSHCP please go to: <http://rctlma.org/epd/WR-MSHCP>.

Lake and Streambed Alteration Program

The Department has regulatory authority with regard to activities occurring in streams and/or lakes that could adversely affect any fish or wildlife resource. For any activity that will divert or obstruct the natural flow, or change the bed, channel, or bank (which may include associated riparian resources) of a river or stream or use material from a streambed, the project applicant (or "entity") must provide written notification to the Department pursuant to Section 1602 of the Fish and Game Code. Based on this notification and other information, the Department then determines whether a Lake and Streambed Alteration (LSA) Agreement is required. The Department's issuance of an LSA Agreement is a "project" subject to CEQA (see Pub. Resources Code 21065). To facilitate issuance of an LSA Agreement, if necessary, the environmental document should fully identify the potential impacts to the lake, stream or riparian resources and provide adequate avoidance, mitigation, and monitoring and reporting commitments. Early consultation with the Department is recommended, since modification of the proposed project may be required to avoid or reduce impacts to fish and wildlife resources. To obtain a Lake or Streambed Alteration notification package, please go to <http://www.dfg.ca.gov/habcon/1600forms.html>.

B-11

The Department's website has information regarding dryland streams in "A review of Stream Processes and Forms in Dryland Watersheds," available at this location: <http://www.dfg.ca.gov/habcon/1600/1600resources.html>.

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Additional information can also be found in "Methods to Describe and Delineate Episodic Stream Processes on Arid Landscapes for Permitting Utility-Scale Solar Power Plants, With the MESA Field Guide- Final Project Report" available here: <http://www.energy.ca.gov/2014publications/CEC-500-2014-013/index.html>

Although the proposed Project is within the MSHCP, a Notification of Lake or Streambed Alteration may be required by the Department, should the site contain jurisdictional areas, and the Project proposes impacts to these areas. Additionally, the Department's criteria for determining the presence of jurisdictional waters are more comprehensive than the MSHCP criteria in Section 6.1.2 (Protection of Species Associated with Riparian/Riverine Areas and Vernal Pools).

The following information will be required for the processing of a Notification of Lake or Streambed Alteration and the Department recommends incorporating this information into the CEQA document to avoid subsequent documentation and project delays. Please note that failure to include this analysis in the project's environmental document could preclude the Department from relying on the Lead Agency's analysis to issue an LSA Agreement without the Department first conducting its own, separate Lead Agency subsequent or supplemental analysis for the project:

- 1) Delineation of lakes, streams, and associated habitat that will be temporarily and/or permanently impacted by the proposed project (include an estimate of impact to each habitat type);
- 2) Discussion of avoidance and minimization measures to reduce project impacts; and,
- 3) Discussion of potential mitigation measures required to reduce the project impacts to a level of insignificance. Please refer to section 15370 of the CEQA Guidelines for the definition of mitigation.

B-11
cont.

Alternatives Analysis

The CEQA document should analyze a range of fully considered and evaluated alternatives to the Project (CEQA Guidelines Section 15126.6). The analysis should include a range of alternatives which avoid or otherwise minimize impacts to sensitive biological resources. The Department considers Rare Natural Communities as threatened habitats, having both local and regional significance. Thus, these communities should be fully avoided and otherwise protected from Project-related impacts. The CEQA document should include an evaluation of specific alternative locations with lower resource sensitivity where appropriate. Off-site compensation for unavoidable impacts through acquisition and protection of high-quality habitat should be addressed.

B-12

Please note that the Department generally does not support the use of relocation, salvage, and/or transplantation as mitigation for impacts to rare, threatened, or

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endangered species. Department studies have shown that these efforts are experimental in nature and largely unsuccessful.

B-12
cont.

Department Recommendations

The Department has the following concerns about the Project, and requests that these concerns be addressed in the CEQA document:

1. The CEQA document should quantify impacts to habitats and species as per the informational requirements of CEQA. An accompanying map showing the areas of impact should also be included.
2. The analysis in the CEQA document should satisfy the requirements of the Department's Lake and Streambed Alteration Program. The Department recommends that the project applicant provide written notification to the Department pursuant to Section 1602 of the Fish and Game Code. The subsequent CEQA document should include a Jurisdictional Delineation of jurisdictional waters and disclose specific impacts to existing mitigation areas, and should propose specific adequate mitigation measures for the loss of jurisdictional areas.
3. The CEQA document should provide a thorough analysis of direct, indirect, and cumulative impacts and identify specific measures to offset such impacts.
4. The CEQA document should analyze a range of fully considered and evaluated alternatives to the Project (CEQA Guidelines Section 15126.6).

B-13

In summary, the Department requests that the CEQA document include current information regarding biological resources, and provide an alternatives analysis. If you should have any questions pertaining to these comments, please contact Claire Ingel at 909-484-3979 or Claire.Ingel@wildlife.ca.gov.

Sincerely,


 Kimberly Nicol
 Regional Manager

cc: State Clearinghouse, Sacramento

Response to Comment B-1 (Introduction)

The University appreciates the CDFW's participation in the comment period for the Draft IS/MND. This introduction to the CDFW's comments presents an accurate summary of the Project.

Response to Comment B-2 (Migratory non-game bird species; number 1)

The comment provides information regarding migratory non-game bird species and does not specifically address an environmental issue relating to the impacts of the proposed Project.

Response to Comment B-3 (Nesting bird surveys; number 2)

The comment recommends the completion of nesting bird surveys regardless of the time of year to ensure compliance with all applicable laws related to nesting birds and birds of prey. The potential impact on nesting birds were identified and adequately analyzed in the Draft IS/MND. In addition to standard LRDP measures and practices, project-specific Mitigation Measure BIO 7 has been revised (see response B-4 below) to address the need for earlier surveys to identify nesting raptors, and the changes provided below will be made to the Final IS/MND as a result of this comment.

An additional measure has been added specifically for roosting bats preconstruction surveys,

BIO 8 – Preconstruction Roosting Bat Assessment and Survey. To ensure potential impacts on bat species are reduced, the following measure will be implemented:

- a) Prior to project initiation (e.g., staging, clearing/grubbing, grading), a daytime preliminary assessment will be conducted by a qualified bat biologist to reexamine areas suitable for bat use (i.e., palm trees). If bat sign is observed, then preconstruction roosting bat surveys will be conducted to confirm whether the areas with suitable habitat identified during the preliminary assessment are utilized by bats for day roosting and/or night roosting and to ascertain the level of bat foraging and roosting activity at each of these locations.
- b) If preconstruction roosting bat surveys are warranted, prior to tree removal or trimming, large trees and snags will be examined by a qualified bat biologist to ensure that no roosting bats are present. Palm frond trimming, if necessary, should be conducted outside the maternity season (i.e., April 15–August 31) to avoid potential mortality of flightless young.
- c) If a maternity site is identified during the preconstruction roosting bat surveys, then no construction activities at that location will be allowed during the maternity season (i.e., April 15–August 31) unless a qualified bat biologist has determined the young have been weaned. If a maternity site is present, and it is anticipated that construction activities cannot be completed outside of the maternity season, bat eviction and exclusion at maternity roost sites will be completed by a qualified bat biologist either as soon as possible after the young have been weaned, outside of the maternity season, or as otherwise approved by the qualified bat biologist in coordination with the California Department of Fish and Wildlife (CDFW).

Response to Comment B-4 (Timing of pre-construction surveys; number 3)

The comment requests a change in the timing of implementation of Mitigation Measure BIO 7 from a maximum of seven days, in accordance with the Migratory Bird Treaty Act (MBTA) to no more than three days prior to vegetation clearing for the completion of pre-construction surveys. To comply with this current CDFW standard practice, the University has revised the measure as follows, with no change in impact to the significance conclusion:

BIO 7 – Pre-construction Nesting Bird Surveys. Prior to the onset of construction activities that would result in vegetation removal between February 15 and September 15 or as early as January for raptors, nesting bird surveys shall be conducted by a qualified biologist no more than 3 days prior to initiation of ground disturbance activities. The survey area shall include the direct disturbance limits and a 250-foot buffer zone or as determined through project-related permits. If nesting birds are encountered within the survey area, the qualified biologist will flag an avoidance buffer zone around the nest. No ground disturbance activities shall occur within the avoidance buffer zone until the qualified biologist has determined that the nest is no longer active and the young are not dependent on the nest.

Response to Comment B-5 (Santa Ana speckled dace and Arroyo Chub; number 4)

The comment states that there is not enough analysis to determine that the Santa Ana speckled dace and Arroyo Chub are not likely to occur on the project site. As stated in Appendices C and D (Biological Resources Assessments), the Santa Ana speckled dace has a less than reasonable potential to occur on site. This species is known to occur both upstream and downstream of the project site, typically found within the cool clear headwater streams of the Santa Ana and San Gabriel rivers. However, these populations are isolated from the project site due to flood control structures, i.e. dams, and fully channelized above and below ground sections of stream that do not support habitat for this species. Additionally, there lacks connectivity on both ends of the creek as Chicago Avenue blocks the Project downstream and Central Avenue blocks the creek from connecting upstream. As such, it was determined that under the current conditions (stream does not contain cool, clear headwater), this species would have a less than reasonable potential to occur on the project site. The Arroyo chub also has a less than reasonable potential to occur on site. The project site lacks slow moving back water areas required for this species as this species tends to be found in warm fluctuating streams with slow moving back water sections with sandy and/or muddy substrates, conditions not typical of the project site or directly adjacent areas.

During the pre-application meeting with the agencies on October 9, 2019, it was requested to confirm the arroyo chub was not present within the project site. The above-referenced information was confirmed. As such, it was determined that no further evaluation or survey would be required for either the Santa Ana speckled dace or Arroyo Chub.

Response to Comment B-6 (Mitigation obligations; number 5)

The comment requests the clarification of project impacts and mitigation related to native riparian vegetation. As stated on pages 3 and 4, the Draft IS/MND clarifies that vegetation on the south side will be allowed to naturally reestablish, but the condition on the north side of the bank will maintain a vegetation-free condition:

“Specifically, the channel would be reshaped and rip-rap would be placed on the north bank to match existing conditions on the south bank. The proposed improvements would require the removal of all vegetation on the north bank as well as the channel bottom. Proposed ongoing activity would maintain a vegetation-free condition on the north bank and channel bottom to ensure channel flow capacity is maintained. Existing vegetation on the south bank would remain in place, and native vegetation would be allowed to naturally reestablish within the drainage channel bank on the south side. In addition to clearing vegetation from the work limits, the proposed improvements would include removal of non-native plants throughout the riparian area.”

Mitigation Measure BIO 5 will be revised as follows to clarify the measure:

BIO 5 – Monitor Revegetation. As part of the project design, a one-time removal of exotic plants would occur on the southern bank and native riparian species would be planted throughout the channel. No ongoing maintenance of vegetation within the channel is proposed. Because the channel enhancement is being done as part of the project design, it is not subject to performance criteria; however, it would provide a net benefit to the channel. Compensatory mitigation is addressed in BIO 6.

The comment also requests disclosure of any current or outstanding mitigation obligation associated with the Creekside Terrace residential development. The Creekside Terrace residential developer obtained permits from appropriate regulatory agencies for undergrounding of the tributary feature (USACE/RWQCB Reference Number 200400635-DPS and CDFG 1600 Agreement 1600-2005-0093-R6, Revision 1). These permits included a condition requiring a riparian restoration program and long-term conservation of the stream area that is the subject of this Project. Implementation of the restoration program was delayed due to obstacles with obtaining cooperation of the neighboring apartment landowner (the riparian area was not owned by the Creekside Terrace developer, but lies primarily within the legal parcels associated with the apartments bordering the south and west banks) and then was suspended when the Creekside Terrace developer lost their project in foreclosure. The Creekside Terrace property was acquired by the University for use as staff and faculty housing in 2008, and the University assumed responsibility to comply with the previous permits.

Through coordination with Ms. Kim Freeburn-Marquez, it was verified that the Creekside Terrace residential development was out of compliance. One such obligation was to place a conservation easement over the creek; however, the University does not own the land where the creek is located. The apartment site owner has entered a legal agreement with the University that grants access for due diligence inspections and construction of the proposed stabilization improvements. The University attempted to acquire the rights to place a conservation easement on the property from the property owner of the adjacent apartment development. However, no agreement was reached and it did not appear that the adjacent property owner is amenable to such an agreement. As such, the alternative option for mitigation compliance was to purchase off site mitigation credits through the established Santa Ana River mitigation bank operated by Riverside County Regional Parks and Open Space District (RCRPOSD) or other agency-approved mitigation bank or in-lieu fee agreement. In 2012, the University addressed the uncompleted compensatory mitigation obligations through coordination with the CDFW, and formally amending the LSA Agreement No. 1600-2005-0093-R6, Revision 1 that required onsite mitigation to be addressed off site at a mitigation bank. Once the mitigation obligation was satisfied, the University was able to move forward with seeking approvals for the proposed Project. Mitigation Measure BIO 6 summarizes that the mitigation obligation

associated with the Creekside Terrace residential development has been addressed. BIO 6 now only addresses compensatory mitigation associated with the proposed Project.

Response to Comment B-7 (Mitigation for jurisdictional areas; number 6)

The comment states that proposed mitigation in the Draft IS/MND is insufficient to mitigate project impacts on jurisdictional areas and for mitigation under previous permits.

As stated in Response to Comment B-6, the University satisfied the unaddressed mitigation associated with the LSA Agreement for the Creekside Terrace residential development. The proposed mitigation measure has been revised because the prior mitigation obligations have been satisfied. Mitigation BIO 6 has been revised to address only the proposed Project.

Mitigation Measure BIO 6 will be revised as follows to clarify the measure:

BIO 6 – Purchase into a Mitigation Bank or In-Lieu Fee Program as Compensatory Mitigation.
BIO 6 in the Draft IS/MND circulated in 2014 included language pertaining to the outstanding mitigation the previous landowner left unaddressed. In 2012, the University addressed the uncompleted compensatory mitigation obligations required by the prior landowner pursuant to the previously issued CDFW Streambed Alteration Agreement. Through cooperation with the CDFW, the University revised the required onsite mitigation to be addressed off site at a mitigation bank.

BIO 6 now only pertains to the compensatory mitigation associated with the proposed Project. Compensation for impacts on non-wetland WoUS and CDFW streambeds would occur at a 1:1 ratio, and impacts on wetland WoUS and CDFW riparian habitat would be at a 2:1 ratio primarily through offsite mitigation at an agency-approved mitigation bank or in-lieu fee program. The final credit purchase requirement will be determined through the regulatory permit process with the USACE, RWQCB, and CDFW.

Further, the University will be responsible for enforcing mitigation measures, such as those described in this document (Mitigation Measures BIO 1 through BIO 8). If alternative measures are identified that would be equally effective in mitigating the identified impacts, implementation of these alternative measures will not occur until agreed upon by the University in consultation with CDFW, as applicable, and in accordance with applicable protocols or guidelines.

Response to Comment B-8 (Include current biological information; number 7)

The Draft IS/MND contains data and information along with technical reports to support the analysis of biological resources. Mitigation measures presented in the Draft IS/MND do identify specific, enforceable measures to be carried out that would avoid, minimize and/or mitigate for project impacts on natural resources and regulated habitats. Specifically, Mitigation Measures BIO 1 through BIO 8 address minimizing impacts on riparian habitat (BIO 1), conducting biological monitoring during construction (BIO 2), providing worker environmental awareness training (BIO 3), removal of exotic plant species (BIO 4), monitoring revegetation (BIO 5), purchase into a mitigation bank or in-lieu fee program (BIO 6), pre-construction nesting bird surveys (BIO 7), and pre-construction roosting bat assessment and survey (BIO 8). Further, LRDP PP 4.4-2(a) states that if avoidance of impacts is not feasible, then the impacts will be evaluated as part of the Clean Water Act (CWA) Section 404 permit, CWA Section 401 Water Quality Certification, and California Fish and Game Code Section 1602 LSA Agreement processes, which are currently on-going. The final

avoidance mitigation ratios, replanting plans and permits will require careful coordination to meet the needs for various agencies. Agency specific language in the Draft IS/MND may include measures that are counter to the needs of other approving agencies. The specific requirements of each responsible agency will be vetted out during the completion of the permit process, and all impacts as noted will be minimized to reduce project impacts. As such, the existing analysis and mitigation measures adequately address this comment and no changes are needed to the Final IS/MND as a result of this comment.

Response to Comment B-9 (Species specific surveys; number 8)

The comment requests inclusion of recent survey data, and a map showing the areas of impact, and a map showing the location of endangered, threatened, or species of special status concern. A biological resource assessment was prepared for the Project in May 2019 (Appendix C), and prior assessments were prepared in 2013 and 2011 (Appendix D), to verify the conditions on the site to ensure that no further surveys would be required.

The direct impacts on the project stream are shown on Figure 6 of the Final IS/MND. There are no endangered, threatened, or species of special status concern located near the project site and therefore, no map is required.

Response to Comment B-10 (NCCP and CESA)

The comment requests compliance with the MSHCP and a discussion of any inconsistencies between the Project and applicable general plans and regional plans, including habitat conservation plans and natural community conservation plans. As stated in the Draft IS/MND in Section IV, f, the project site is within the plan areas of two regional conservation efforts—the Western Riverside County (WRC) MSHCP and the Long-term Habitat Conservation Plan for the SKR. Implementation of the SKR plan is at a stage in which all conservation lands have been acquired. For projects outside the reserve areas, plan conformance is achieved through payment of mitigation fees that support ongoing management of the reserve lands. The project site is not within an SKR reserve and the University is exempt from payment of SKR mitigation fees.

The project site is located within the plan area for the WRC MSHCP. The University is not a permittee under the WRC MSHCP and, therefore, is not afforded coverage under the State or federal Endangered Species Acts for impacts upon listed species covered by the plan. Even though the University is not a participant in the WRC MSHCP, it is necessary to address project consistency with the provisions of the plan in the context of the CEQA significance criteria regarding project consistency with adopted habitat conservation plans. As such, the Draft IS/MND was prepared to provide necessary information required to determine project consistency with the WRC MSHCP.

The project site is outside of the MSHCP Criteria Area, which identifies areas potentially subject to acquisition for long-term conservation. Beyond the evaluation of potential involvement of Criteria Area lands, determination that a particular activity is consistent with the MSHCP also entails consideration of a variety of plan policies directed at protection of specific species and resources. Plan policies potentially applicable to consistency evaluation for the project site are those related to burrowing owl and riparian/riverine/vernal pool resources. The biological survey conducted in support of the Draft IS/MND (Appendix D) and the 2019 biological resources survey (Appendix C) document the absence of habitat suitable for burrowing owls and the absence of vernal pools, so these MSHCP provisions do not apply.

However, the stream feature and associated riparian habitat are subject to the plan provisions for riverine and riparian resources. For riparian habitat, the plan requires consideration of suitability for three protected bird species—least Bell’s vireo, southwestern willow flycatcher, and western yellow-billed cuckoo. The biological survey conducted in support of the Draft IS/MND (Appendix D) and the 2019 biological resources survey (Appendix C) document the absence of suitable habitat for southwestern willow flycatcher and western yellow-billed cuckoo. A focused survey was conducted for least Bell’s vireo (Appendices C and D). No individuals of these species were identified, and it is assumed to be absent.

Overall, as the proposed Project, including Mitigation Measures BIO 1 through BIO 6, would not conflict with applicable provisions of the two adopted habitat conservation plans that apply within the project area, potential impacts in this regard would be less than significant with mitigation incorporated.

Also stated in the Draft IS/MND in Section XI.b., the University is exempt from local land use controls pursuant to its constitutional authority, but the University has nonetheless analyzed the Project’s consistency with local zoning and permitting requirements. The City of Riverside provides a zoning designation for the Creekside Terrace residential development of R-1-8500 for single family residential, and the adjacent apartment complex is designated as R-3-3000 for multi-family residential. The drainage channel and adjacent lands totaling 0.92 acre are within the Watercourse overlay zone (roughly corresponds to the existing fenced area along the stream at the interface of the apartments and the Creekside Terrace development). This zoning designation is in recognition of the existing stream channel and periodic flooding hazards. The proposed improvements would stabilize the north stream bank and maintain the existing channel capacity; the Project would not compromise the water course protection objectives of the Municipal Code zoning provisions. On this basis, there is no potential for conflict with this land use policy adopted to avoid effects on water courses and associated flood zones.

Response to Comment B-11 (Lake and Streambed Alteration Agreement)

The comment states that the project applicant should provide written notification to the Department pursuant to Section 1602 of the Fish and Game Code, and the Project should fully identify the potential impacts on the stream and provide adequate avoidance, mitigation and monitoring and reporting commitments. As stated in Response to Comment B-6, the University and its designated consultant are currently engaged in conversations with the Department’s LSA Program, specifically Ms. Freeburn-Marquez, for an LSA Agreement for activities and impacts associated with the Creekside Terrace slope protection activities proposed by the Project.

The comment also requests information for the processing of a Notification of LSA with this information contained within the CEQA document. The Final IS/MND contains a complete analysis of the proposed Project with mitigation necessary to reduce impacts to less-than-significant levels. The Final IS/MND also contains associated documentation to support the conclusions contained within: a 2019 Biological Resources Assessment report (Appendix C)—which includes least Bell’s vireo survey results and a jurisdictional delineation—and a 2011 and 2013 Biological Resources Assessment (Appendix D). Mitigation measures presented in this Final IS/MND have been updated to identify specific, enforceable measures to be carried out that would avoid, minimize and/or mitigate for project impacts on natural resources and regulated habitats. LRDP programs, policies, and mitigation measures also establish standard campus practices to comply with all applicable laws governing those resources.

Response to Comment B-12 (Alternatives Analysis)

It was not a requirement of an IS/MND to evaluate a range of alternatives to the proposed Project, therefore, no further response is provided here in that context. However, during a pre-application meeting on October 9, 2019, with the USACE, USFWS, Santa Ana RWQCB, and CDFW (collectively the agencies), the agencies asked the University to provide information on other options that were considered for the proposed Project. Remedial measures considered included a vertical concrete wall, sloped ungrouted rip-rap, and a sloped concrete wall. The slope with ungrouted rip-rap was selected as it would allow for some planting of vegetation. Based on the velocity in the channel, the rock rip-rap will not be larger than one-quarter ton. The proposed design would serve as a permanent solution to the ongoing erosion problem and would provide long-term stability and protection of the retaining wall.

During project development, widening the channel was also considered to increase the channel's flood capacity; however, due to the lack of physical space within the access road area, this was determined infeasible. A minimum 10-foot setback is needed between the drainage channel and retaining wall so that the structural integrity of the wall footers is not compromised. Where the channel bends there is a larger physical area on the northern bank. However, widening the channel would only allow for a 5- to 5.5-foot setback, thus compromising the integrity of the adjacent wall and homes. Although the portion of the access road east of the channel is narrower, the existing width is the minimum width allowable along that bank as those soils have already stabilized. As such, the option of widening the channel was not selected.

It should be noted that the Project considers offsite compensation for impacts (Mitigation Measure BIO 6).

Response to Comment B-13 (Department Recommendations)

This comment summarizes the Department's major concerns and recommends analysis and additional information to be provided in the Final IS/MND. Responses are provided previously in this document, and no further responses are required. Further, the existing analysis and mitigation measures provided in the Draft IS/MND, and any small change to them, adequately address impacts and mitigation related to biological and jurisdictional resources and no additional changes are needed to the Final IS/MND as a result of this comment.

Comment Letter C: State of California Governor's Office of Planning and Research



EDMUND G. BROWN JR.
GOVERNOR

STATE OF CALIFORNIA
GOVERNOR'S OFFICE *of* PLANNING AND RESEARCH
STATE CLEARINGHOUSE AND PLANNING UNIT



KENALEX
DIRECTOR

September 25, 2014

Comment Letter C

Tricia D. Thrasher
Regents of the University of California
1223 University Avenue, Suite 200
Riverside, CA 92507

Subject: Creekside Terrace Slope Stabilization
SCH#: 2014081086

Dear Tricia D. Thrasher:

The State Clearinghouse submitted the above named Negative Declaration to selected state agencies for review. On the enclosed Document Details Report please note that the Clearinghouse has listed the state agencies that reviewed your document. The review period closed on September 24, 2014, and the comments from the responding agency (ies) is (are) enclosed. If this comment package is not in order, please notify the State Clearinghouse immediately. Please refer to the project's ten-digit State Clearinghouse number in future correspondence so that we may respond promptly.

Please note that Section 21104(c) of the California Public Resources Code states that:

"A responsible or other public agency shall only make substantive comments regarding those activities involved in a project which are within an area of expertise of the agency or which are required to be carried out or approved by the agency. Those comments shall be supported by specific documentation."

C-1

These comments are forwarded for use in preparing your final environmental document. Should you need more information or clarification of the enclosed comments, we recommend that you contact the commenting agency directly.

This letter acknowledges that you have complied with the State Clearinghouse review requirements for draft environmental documents, pursuant to the California Environmental Quality Act. Please contact the State Clearinghouse at (916) 445-0613 if you have any questions regarding the environmental review process.

Sincerely,

Director, State Clearinghouse

Scott Morgan

Enclosures

cc: Resource Agency

UCR
CAPITAL RESOURCE MANAGEMENT
DATE RECEIVED 9-29-14

tm

1400 10th Street P.O. Box 3044 Sacramento, California 95812-3044
(916) 445-0613 FAX (916) 323-3018 www.opr.ca.gov

**Document Details Report
State Clearinghouse Data Base**

SCH# 2014081086
Project Title Creekside Terrace Slope Stabilization
Lead Agency University of California, Regents of the

Type **Neg** Negative Declaration

Description The proposed project involves stabilization of the north bank of an existing drainage channel located adjacent to the University-owned residential development and partially located on property owned by others. The channel will be reshaped and rip-rap will be placed on the north bank to match existing conditions on the south bank. The proposed improvements will require the removal of all vegetation located on the north bank as well as the channel bottom. The proposed project involves the recommended remedial measures which consist of stabilization improvements within a previously improved stream channel to ensure long-term stability of the stream bank in proximity to substantial keystone retaining walls along the north side of the drainage.

Lead Agency Contact

Name Tricia D. Thrasher
Agency Regents of the University of California
Phone 951 827 1484 **Fax**
email
Address 1223 University Avenue, Suite 200
City Riverside **State** CA **Zip** 92507

Project Location

County Riverside
City Riverside
Region
Lat/Long 33° 57' 32.64" N / 117° 20' 50" W
Cross Streets Central and Chicago Avenues
Parcel No. 254-370-003
Township 2S **Range** 4W **Section** 31 **Base**

Proximity to:

Highways 1-215
Airports
Railways
Waterways drainage channel on site, Gage Canal
Schools UCR
Land Use City of Riverside: R-3-3000 (Multi-family Residential), R-1-8500 (Single Family Residential), and Watercourse Overlay

Project Issues Air Quality; Biological Resources; Drainage/Absorption; Flood Plain/Flooding; Geologic/Seismic; Noise; Soil Erosion/Compaction/Grading; Solid Waste; Traffic/Circulation; Vegetation; Water Quality; Wetland/Riparian; Landuse

Reviewing Agencies Resources Agency; Department of Fish and Wildlife, Region 6; Department of Parks and Recreation; Department of Water Resources; Office of Emergency Services, California; California Highway Patrol; Caltrans, District 8; Air Resources Board; State Water Resources Control Board, Division of Financial Assistance; Regional Water Quality Control Board, Region 8; Department of Toxic Substances Control; Native American Heritage Commission

Date Received **Start of Re** 08/28/2014 **End of Review** 09/24/201

Response to Comment C-1 (Acknowledgement letter)

This comment and response do not raise any new or altered environmental impacts. This letter merely acknowledges that the University has complied with the State Clearinghouse review requirements.

Mitigation Monitoring and Reporting Program

Introduction

State CEQA Guidelines Section 15097 requires that when a public agency completes an environmental document which includes measures to mitigate or avoid significant environmental effects, the public agency must adopt a reporting or monitoring program for the changes to the project which it has adopted or made a condition of project approval in order to mitigate or avoid significant effects on the environment. The reporting or monitoring program must be designed to ensure compliance during project implementation.

Even though this analysis is not tiered from the LRDP EIR, it is University policy to extend established campus avoidance, minimization, and mitigation measures as contained in the adopted Mitigation Monitoring and Reporting Program (MMRP) for the LRDP EIR to relevant off-campus activities. For ease of tracking, the 2005 LRDP EIR Planning Strategies (PSs), Programs and Practices (PPs), and Mitigation Measures (MMs) incorporated by the proposed Project have been included in the Project's MMRP. The University Planning, Design & Construction office will coordinate monitoring and reporting of the implementation of the MMRP for the proposed Project. Monitoring will include: (1) verification that each mitigation measure has been implemented; (2) recordation of the verification and any necessary notations regarding implementation of each mitigation measure; and (3) retention of records in the Creekside Terrace Slope Protection Project Mitigation Monitoring file.

Purpose

A listing of the 10 project-specific mitigation measures and all applicable 2005 LRDP PSs, PPs, and MMs incorporated by the Project is provided in this MMRP. The objectives of the MMRP for the Creekside Terrace Slope Protection Project include the following:

- To provide assurance and documentation that mitigation measures are implemented as planned;
- To provide information to assist the campus administration in understanding the effectiveness of the adopted mitigation measures;
- To maintain a campus record of compliance with project mitigation measures.

The implementation of the mitigation measures applicable to the Project shall be performed and monitored by the campus staff, consultants, and appropriate agencies in conjunction with project implementation as follows:

- Development of the design
- Preparation of construction contracts
- Construction phase
- Post-construction and project operation

By including both monitoring and reporting provisions, the campus has voluntarily exceeded the minimum requirements of the State CEQA Guideline Section 15097(c), which allows selection of monitoring or reporting, but does not require both.

Project Overview

The proposed Project is located partially on property owned by the University of California, approximately 770 feet from the southern boundary of the west campus area of the Riverside campus, and partially located on property owned by others within the Canyon Crest area of the City of Riverside, Riverside County, California. The site is generally east of Chicago Avenue and south of Le Conte Drive. Specifically, the project site consists of a drainage feature approximately 0.20 mile north of the intersection of Chicago and Central Avenues.

The proposed Project involves stabilization of the north bank of an existing drainage channel adjacent to the University-owned Creekside Terrace residential development (Tract 31671). Specifically, the channel would be reshaped and rip-rap would be placed on the north bank to match existing conditions on the south bank. The proposed improvements would require the removal of all vegetation on the north bank as well as the channel bottom. Proposed ongoing activity would maintain a vegetation-free condition on the north bank to ensure channel flow capacity is maintained. Existing vegetation on the south bank would remain in place, and native vegetation would be allowed to naturally reestablish within the drainage channel bank on the south side. In addition to clearing vegetation from the work limits, the proposed improvements would include removal of non-native plants throughout the riparian area. See *Project Description* in the preceding *Summary* section for a complete description.

Responsibilities and Duties

The Campus Planning unit of the University's Planning, Design & Construction office would be responsible for coordinating the reporting of compliance with the mitigation measures listed in this MMRP. These responsibilities include:

- Coordination with units within the University's Planning, Design, & Construction office to ensure that design and construction contracts contain the relevant mitigation measures adopted in the Final IS/MND, and that these mitigation measures are implemented during the design and construction phases of the Project.
- Coordination with Project Inspectors to assure compliance and reporting during the construction phase of the Project.
- Coordination and assistance to other campus units and/or departments with monitoring and reporting responsibilities to ensure that they understand their charge and complete their reporting procedures accurately and on schedule, during construction and on-going project operations.

Implementation and Monitoring Procedures

In general, monitoring would consist of the responsible units verifying that the relevant mitigation measures were implemented.

Reporting consists of establishing a record that a mitigation measure is being implemented, and generally involves the following steps:

- Campus Planning distributes reporting forms to the appropriate responsible entity or employs the entity's existing reporting procedures for verification of compliance.
- Responsible entities verify compliance and document compliance by signing the monitoring form and/or documenting compliance using their own internal procedures when monitoring is triggered.
- Responsible entities provide Campus Planning with verification that monitoring has been conducted and ensure, as applicable, that mitigation measures have been implemented.

The project-specific reporting forms prepared by Campus Planning document the implementation status of the mitigation measures and applicable LRDP PSs, PPs, and MMs for the Project. Project reporting forms and documentation will be available at the Planning, Design & Construction office, upon request, during normal business hours.

List of Applicable Project-Specific Mitigation Measures and LRDP Planning Strategies, Programs and Practices, and Mitigation Measures

The following summary table lists the Project-specific mitigation measures and LRDP PS's, PP's, and MM's, as well as the timing and responsible entities for their implementation, monitoring, and reporting.

Table 4. Mitigation Monitoring and Reporting Program

Impact	Mitigation Measures	Responsible Entity	Monitoring Triggers	Frequency of Reporting	Verification of Compliance		
					Signature	Date	Remarks
Monitoring Triggers		University Responsible Entities					
1. Design stage		CP – Campus Planning					
2. Construction documents		A&E – Architects & Engineers/Project Management					
3. Construction		TAPS – Transportation and Parking Services					
4. Commencement of occupancy							
5. Post-construction							
6. On-going through Project operation							
Air Quality							
Project construction activities would emit fugitive dust and other pollutants in an area with applicable standards.	Programs and Practices (PP) 4.3-2(a). Construction contract specifications shall include the following: (i) Compliance with all SCAQMD rules and regulations (ii) Maintenance programs to assure vehicles remain in good operating condition (iii) Avoid unnecessary idling of construction vehicles and equipment (iv) Use of alternative fuel construction vehicles (iv) Provision of electrical power to the site, to eliminate the need for onsite generators	A&E	2		Once to confirm inclusion in final construction documents.		
	PP 4.3-2(b). The campus shall continue to implement dust control measures consistent with South Coast Air Quality Management District (SCAQMD) Rule 403—Fugitive Dust during the construction phases of new project development. The following actions are currently recommended to implement Rule 403 and have been quantified by the SCAQMD as being able to reduce dust generation between 30 and 85 percent depending on the source of the dust generation. The Campus shall implement	A&E	2, 3		Once to confirm inclusion in final construction documents; ongoing verification during construction.		

Impact	Mitigation Measures	Responsible Entity	Monitoring Triggers	Frequency of Reporting	Verification of Compliance		
					Signature	Date	Remarks
	<p>these measures as necessary to reduce fugitive dust. Individual measures shall be specified in construction documents and require implementation by construction contractor:</p> <ul style="list-style-type: none"> (i) Apply water and/or approved non-toxic chemical soil stabilizers according to manufacturer’s specification to all inactive construction areas (previously graded areas that have been inactive for 10 or more days) (ii) Replace ground cover in disturbed areas as quickly as possible (iii) Enclose, cover, water twice daily, or apply approved chemical soil binders to exposed piles with 5 percent or greater silt content (iv) Water active grading sites at least twice daily (v) Suspend all excavating and grading operations when wind speeds (as instantaneous gusts) exceed 25 miles per hour over a 30-minute period (vi) All trucks hauling dirt, sand, soil, or other loose materials are to be covered or should maintain at least two feet of freeboard (i.e., minimum (vertical distance between top of the load and the top of the trailer), in accordance with Section 23114 of the California Vehicle Code (vii) Sweep streets at the end of the day if visible soil material is carried over to adjacent roads (viii) Install wheel washers where vehicles enter and exit unpaved roads onto paved roads, or wash off trucks and any equipment leaving the site each trip 						

Impact	Mitigation Measures	Responsible Entity	Monitoring Triggers	Frequency of Reporting	Verification of Compliance		
					Signature	Date	Remarks
	<p>(ix) Apply water three times daily or chemical soil stabilizers according to manufacturers’ specifications to all unpaved parking or staging areas or unpaved road surfaces</p> <p>(x) Post and enforce traffic speed limits of 15 miles per hour or less on all unpaved roads.</p>						
	<p><u>Mitigation Measure (MM) 4.3-1a.</u> For each construction project on campus, the project contractor will implement Programs and Practices 4.3-2(a) and 4.3-2(b). In addition, the following PM10 and PM2.5 control measure shall be implemented for each construction project.</p> <ul style="list-style-type: none"> Post a publicly visible sign with telephone number and person to contact at the lead agency regarding dust complaints. This person shall respond to corrective action within 48 hours. The phone number of the District shall also be visible to ensure compliance. 	A&E	2, 3	Once to confirm inclusion in final construction documents; ongoing verification during construction.			
	<p><u>MM 4.3-1b</u> For each construction project on the campus, the University shall require that the project include a construction emissions control plan that includes a comprehensive inventory of all off-road construction equipment, equal to or greater than 50 horsepower, that will be used for an aggregate of 40 or more hours during any portion of the construction project. During construction activity, the contractor shall utilize CARB certified equipment or better for all onsite construction equipment according to the following schedule:</p>	A&E	2, 3	Once to confirm inclusion in final construction documents; ongoing verification during construction.			

Impact	Mitigation Measures	Responsible Entity	Monitoring Triggers	Frequency of Reporting	Verification of Compliance		
					Signature	Date	Remarks
	<ul style="list-style-type: none"> January 1, 2011 to December 31, 2011: All off-road diesel-powered construction equipment greater than 50 hp shall meet Tier 2 off-road emissions standards. In addition, all construction equipment shall be outfitted with the BACT devices certified by CARB. Any emissions control device used by the contractor shall achieve emissions reductions that are no less than what could be achieved by a Level 2 or Level 3 diesel emissions control strategy for a similarly sized engine as defined by CARB regulations. January 1, 2012 to December 31, 2014: All off-road diesel-powered construction equipment greater than 50 hp shall meet Tier 3 off-road emissions standards. In addition, all construction equipment shall be outfitted with BACT devices certified by CARB. Any emissions control device used by the contractor shall achieve emissions reductions that are no less than what could be achieved by a Level 3 diesel emissions control strategy for a similarly sized engine as defined by CARB regulations. Post January 1, 2015: All off-road diesel-powered construction equipment greater than 50 hp shall meet the Tier 4 emission standards, where available. In addition, all construction equipment shall be outfitted with BACT devices certified by CARB. Any emissions control device used by the contractor shall achieve emissions reductions that are no less than what could be achieved by a Level 3 diesel emissions control strategy for a similarly sized engine as defined by 						

Impact	Mitigation Measures	Responsible Entity	Monitoring Triggers	Frequency of Reporting	Verification of Compliance		
					Signature	Date	Remarks
	<p>CARB regulations.</p> <ul style="list-style-type: none"> • A copy of each unit’s certified specification, BACT documentation and CARB or SCAQMD operating permit shall be provided at the time of mobilization of each applicable unit or equipment. • Encourage construction contractors to apply for AQMD ‘SOON’ funds. Incentives could be provided for those construction contractors who apply for AQMD “SOON” funds. The “SOON” program provides funds to accelerate clean-up of off-road diesel vehicles, such as heavy duty construction equipment. More information on this program can be found at the following website: http://www.aqmd.gov/tao/implementation/soonprogram.htm <p>The contractor shall also implement the following measures during construction:</p> <ul style="list-style-type: none"> • Prohibit vehicle and engine idling in excess of 5 minutes and ensure that all off-road equipment is compliant with the California Air Resources Board’s (CARB) in-use off-road diesel vehicle regulation and SCAQMD Rule 2449. • Configure construction parking to minimize traffic interference. • Provide temporary traffic controls such as a flag person, during all phases of construction to maintain smooth traffic flow. • Provide dedicated turn lanes for movement of construction trucks and equipment on- and off site. • Schedule construction activities that affect traffic flow on the arterial system to off-peak hour to the extent 						

Impact	Mitigation Measures	Responsible Entity	Monitoring Triggers	Frequency of Reporting	Verification of Compliance		
					Signature	Date	Remarks
	<p>practicable.</p> <ul style="list-style-type: none"> • Improve traffic flow by signal synchronization, and ensure that all vehicles and equipment will be properly tuned and maintained according to manufacturers' specifications. • Use diesel-powered construction vehicles and equipment that operate on low-NOx fuel where possible. • Reroute construction trucks away from congested streets or sensitive receptor areas. • Maintain and tune all vehicles and equipment according to manufacturers' specifications. 						
	<p><u>MM 4.3-2</u> Programs and Practices 4.3-2(a), (b), and (c), or their equivalent, shall be included in construction contract specifications. The contract specifications shall require the use of low NOx diesel fuel and construction equipment to the extent that is readily available at the time of development.</p>	A&E	2	Once to confirm inclusion in final construction documents.			

Impact	Mitigation Measures	Responsible Entity	Monitoring Triggers	Frequency of Reporting	Verification of Compliance		
					Signature	Date	Remarks
Biological Resources							
Proposed project improvements would result in temporary and permanent impacts on riparian habitat.	<u>BIO 1: Minimize Direct Impacts on Riparian Habitat.</u>						
	Prior to initiation of ground disturbance activities, disturbance limits shall be clearly defined at the construction site and demarcated on site plans (refer to Appendix A).	A&E	2	Once to confirm inclusion in final construction documents to verify limits are defined in construction plans.			
	Access and staging shall be limited to the existing gated entrance from Chicago Avenue, the existing maintenance path along the north bank, or paved/landscaped areas within the adjoining apartment development.	A&E	2, 3	One time prior to start of construction to verify limits are defined on site; ongoing verification during construction.			
	Protection measures for riparian habitat on the south bank will be established in consultation with the biological monitor.	Biologist	3	Biologist to provide written report to Campus Planning.			
Proposed project improvements would result in temporary and permanent impacts on	<u>BIO 2: Conduct Biological Monitoring During Construction.</u>						
A qualified biologist shall monitor construction for compliance with best management practices outlined in LRDP Programs and Practices (PP) 4.4-1(b)	A&E, CP, Biologist	2, 3	Once to confirm prior to the commence-				

Impact	Mitigation Measures	Responsible Entity	Monitoring Triggers	Frequency of Reporting	Verification of Compliance		
					Signature	Date	Remarks
riparian habitat and biological resources.	(reduce disturbance to Natural Open Space areas). Such measures may include minimizing vehicular access and parking in undisturbed areas or drainages; avoiding removal of native shrub or disturbance of drainages, except where necessary; avoiding overwatering; and not harassing wildlife species. Considering the nature of the work area and proximity of protected resources to the work limits, monitoring shall be continuous during the initial preparation and excavation phases. Once work transitions to placement of rip-rap, the frequency of monitoring may be reduced, as recommended by the monitoring biologist (taking into consideration the nature of the proposed work and time of year).			ment of construction —retain a biologist to perform scope noted in BIO 2.			
				Biologist will monitor daily during the initial preparation/ excavation phases of construction to document need for, and nature of, monitoring, then as needed. Biologist to provide written report to Campus Planning at the completion of construction to document required monitoring.			

Impact	Mitigation Measures	Responsible Entity	Monitoring Triggers	Frequency of Reporting	Verification of Compliance		
					Signature	Date	Remarks
	<p><u>BIO 3: Provide a Worker Environmental Awareness Training.</u> To ensure compliance with best management practices identified in LRDP EIR MMRP PP 4.4-1(b) (reduce disturbance to Natural Open Space areas), a biologist shall provide to all construction personnel a worker environmental awareness training prior to personnel initiating ground disturbance activities. The training will include a discussion of the importance of the stream and associated riparian habitat, areas to be avoided (including during parking and staging of equipment), a discussion of native wildlife with the potential to occur, and education on not harassing native wildlife.</p>	A&E, Biologist	3	One time, provision of pamphlet and training to construction contractor prior to start of construction (pre-construction meeting).			
	<p><u>BIO 4: Remove Exotic Plant Species.</u> During the construction phase, exotic plant species shall be removed from the riparian zone, including the protected south bank area. Exotic plant material shall be properly handled to prevent sprouting or regrowth. Construction equipment shall be cleaned of mud or other debris that may contain invasive plants/seed and inspected to reduce the potential of spreading noxious weeds before mobilizing to the work area and before leaving the work area. Cleaning of equipment shall occur outside the work area where the wastewater stream is contained so as to prevent any invasive plant material from entering natural areas.</p>	A&E, Restoration Specialist. Construction Contractor (cleaning of construction equipment only), Biologist	3	Weekly construction inspection reports to document compliance. Once at completion of vegetation removal to document compliance.			

Impact	Mitigation Measures	Responsible Entity	Monitoring Triggers	Frequency of Reporting	Verification of Compliance		
					Signature	Date	Remarks
	<p><u>BIO 5: Monitor Revegetation.</u> As part of the project design, a one-time removal of exotic plants would occur on the southern bank, and native riparian species would be planted throughout the channel. No ongoing maintenance of vegetation within the channel is proposed. Because the channel enhancement is being done as part of the project design, it is not subject to performance criteria; however, it would provide a net benefit to the channel. Compensatory mitigation is addressed in BIO 6.</p>	A&E, Restoration Specialist/Biologist	2, 3, 5	<p>Once prior to disturbance of native vegetation to confirm that the construction documents are consistent with BIO 5, including any outside agency approvals.</p> <p>Periodically, in accordance with the monitoring component for removal of exotic vegetation.</p> <p>Document completion of work.</p>			

Impact	Mitigation Measures	Responsible Entity	Monitoring Triggers	Frequency of Reporting	Verification of Compliance		
					Signature	Date	Remarks
Project includes gap in mitigation compliance under previous permits.	<p><u>BIO 6: Purchase into a Mitigation Bank or In-Lieu Fee Program as Compensatory Mitigation.</u></p> <p>BIO 6 in the Draft IS/MND circulated in 2014 included language pertaining to the outstanding mitigation the previous landowner left unaddressed. In 2012, the University addressed the uncompleted compensatory mitigation obligations required by the prior landowner pursuant to the previously issued CDFW Streambed Alteration Agreement. Through cooperation with the CDFW, the University revised the required onsite mitigation to be addressed off site at a mitigation bank.</p> <p>BIO 6 now only pertains to the compensatory mitigation associated with the proposed Project. Compensation for impacts on non-wetland WoUS and CDFW streambeds would occur at a 1:1 ratio, and impacts on wetland WoUS and CDFW riparian habitat would be at a 2:1 ratio primarily through offsite mitigation at an agency-approved mitigation bank or in-lieu fee program. The final credit purchase requirement will be determined through the regulatory permit process with the USACE, RWQCB, and CDFW.</p>	CP	1/2	Provide documentation that payment was made in project file and to USACE, RWQCB, and CDFW.			

Impact	Mitigation Measures	Responsible Entity	Monitoring Triggers	Frequency of Reporting	Verification of Compliance		
					Signature	Date	Remarks
Project construction may result in impacts on nesting birds.	<p><u>BIO 7: Pre-Construction Nesting Bird Surveys.</u></p> <p>Prior to the onset of construction activities that would result in vegetation removal between February 15 and September 15 or as early as January for raptors, nesting bird surveys shall be conducted by a qualified biologist no more than 3 days prior to initiation of ground disturbance activities. The survey area shall include the direct disturbance limits and a 250-foot buffer zone. If nesting birds are encountered within the survey area, the qualified biologist will flag an avoidance buffer zone around the nest. No ground disturbance activities shall occur within the avoidance buffer zone until the qualified biologist has determined that the nest is no longer active and the young are not dependent on the nest.</p>	CP, Biologist	3	As needed, prior to start of construction. Biologist to provide written statement of survey and results to CP.			
Project construction may result in impacts on roosting bats.	<p>BIO 8 – Preconstruction Roosting Bat Assessment and Survey. To ensure potential impacts on bat species are reduced, the following measure will be implemented:</p> <p>a) Prior to project initiation (e.g., staging, clearing/grubbing, grading), a daytime preliminary assessment will be conducted by a qualified bat biologist to reexamine areas suitable for bat use (i.e., palm trees). If bat sign is observed, then preconstruction roosting bat surveys will be conducted to confirm whether the areas with suitable habitat identified during the preliminary assessment are utilized by bats for day roosting and/or night roosting and to ascertain the level</p>	CP, Biologist	3	As needed, prior to start of construction. Biologist to provide written statement of survey and results to CP.			

Impact	Mitigation Measures	Responsible Entity	Monitoring Triggers	Frequency of Reporting	Verification of Compliance		
					Signature	Date	Remarks
	<p>of bat foraging and roosting activity at each of these locations.</p> <p>b) If preconstruction roosting bat surveys are warranted, prior to tree removal or trimming, large trees and snags will be examined by a qualified bat biologist to ensure that no roosting bats are present. Palm frond trimming, if necessary, should be conducted outside the maternity season (i.e., April 15–August 31) to avoid potential mortality of flightless young.</p> <p>c) If a maternity site is identified during the preconstruction roosting bat surveys, then no construction activities at that location will be allowed during the maternity season (i.e., April 15–August 31) unless a qualified bat biologist has determined the young have been weaned. If a maternity site is present, and it is anticipated that construction activities cannot be completed outside of the maternity season, bat eviction and exclusion at maternity roost sites will be completed by a qualified bat biologist either as soon as possible after the young have been weaned, outside of the maternity season, or as otherwise approved by the qualified bat biologist in coordination with the CDFW.</p>						

Impact	Mitigation Measures	Responsible Entity	Monitoring Triggers	Frequency of Reporting	Verification of Compliance		
					Signature	Date	Remarks
Proposed project improvements would result in temporary and permanent impacts on riparian habitat and biological resources.	MM 4.4-3(a). When habitat that could be regulated by the Clean Water Act (Section 404) would be impacted, either directly or indirectly, the University shall perform a jurisdictional and/or wetland delineation to assess the extent of the jurisdictional area(s).	CP, Biologist	1	Compliance established; report provided in IS/MND.			
	MM 4.4-3(b). If wetland or riparian habitat would be removed as a result of project development, the University shall restore or enhance wetland or riparian habitat as required by the applicable State and/or federal resource agencies.	CP	1	See above, evaluated as part of the IS/MND.			
	MM 4.4-3(c). Any proposal for wetland creation or enhancement (pursuant to MM 4.4 3(b) above) will be based upon the completion of soils, hydrologic and other studies confirming the feasibility of the creation or enhancement proposal and shall include United States Army Corps of Engineers (USACE)-approved measures intended to promote occupancy by special status and other wetland-dependent species (e.g., plantings, collection of topsoil and inoculation of target areas).	CP, Biologist	1	Compliance established; report provided in IS/MND.			
	MM 4.4-4(a). Prior to the onset of construction activities that would result in the removal of mature trees that would occur between March and mid-August, surveys for nesting special status avian species and raptors shall be conducted on the affected portion of the campus following USFWS and/or CDFG guidelines. If no active avian nests are identified on or within 250 feet of the construction site, no further				See Mitigation Measures BIO 7 and BIO 8 above.		

Impact	Mitigation Measures	Responsible Entity	Monitoring Triggers	Frequency of Reporting	Verification of Compliance		
					Signature	Date	Remarks
	mitigation is necessary.						
	MM 4.4-4(b). If active nests for avian species of concern or raptor nests are found within the construction footprint or a 250-foot buffer zone, exterior construction activities shall be delayed within the construction footprint and buffer zone until the young have fledged or appropriate mitigation measures responding to the specific situation have been developed and implemented in consultation with USFWS and CDFG.						See Mitigation Measures BIO 7 and BIO 8 above.
Proposed project improvements would result in temporary and permanent impacts on biological resources.	Planning Strategy (PS) Conservation 1. Protect natural resources, including native habitat; remnant arroyos, and mature trees, identified as in good health as determined by a qualified arborist, to the extent feasible.	CP, Biologist	1				Compliance established; biological resources report provided in IS/MND.
	PS Conservation 2. Site buildings and plan site development to minimize site disturbance, reduce erosion and sedimentation, reduce storm water runoff, and maintain existing landscapes, including healthy mature trees whenever possible.	CP, A&E	1, 2				No buildings proposed. Once to confirm inclusion in final construction documents; design for site improvements will be prepared to minimize impacts.

Impact	Mitigation Measures	Responsible Entity	Monitoring Triggers	Frequency of Reporting	Verification of Compliance		
					Signature	Date	Remarks
	<p>PP 4.4-1(b) To reduce disturbance of Natural and Naturalistic Open Space areas:</p> <ul style="list-style-type: none"> (i) Unnecessary driving in sensitive or otherwise undisturbed areas shall be avoided. New roads or construction access roads would not be created where adequate access already exists. (ii) Removal of native shrub or brush shall be avoided, except where necessary. (iii) Drainages shall be avoided, except where required for construction. Limit activity to crossing drainages rather than using the lengths of drainage courses for access. (iv) Excess fill or construction waste shall not be dumped in washes. (v) Vehicles or other equipment shall not be parked in washes or other drainages. (vi) Overwatering shall be avoided in washes and other drainages. (vii) Wildlife including species such as fox, coyote, snakes, etc. shall not be harassed. Harassment includes shooting, throwing rocks, etc. <p>PP 4.4-2(a). Impacts to riparian and wetland habitats shall be avoided, wherever feasible. If avoidance is not feasible, then the impacts will be evaluated as part of the Clean Water Act section 404 and California Fish and Game Code section 1602 permit application process. If mitigation is required, the University of California will develop and implement a resource mitigation program to be reviewed and approved by the ACOE and CDFG through the State and federal permit process. The permit shall mitigate the habitats such that they are consistent with</p>	CP, A&E	1, 3	<p>No designated Natural and Naturalistic Open Space areas on the project site.</p> <p>Ongoing verification of compliance with measures during construction.</p> <p>Evaluated as part of the IS/MND.</p> <p>See Mitigation Measure BIO 1 above for reduction of impacts on riparian habitat.</p>			

Impact	Mitigation Measures	Responsible Entity	Monitoring Triggers	Frequency of Reporting	Verification of Compliance		
					Signature	Date	Remarks
	the Clean Water Act and CDFG policy of “no net loss” of wetland. Furthermore, impacted wetlands and/or riparian vegetation that cannot be avoided would be replaced at a ratio approved by the ACOE and CDFG. If replacement within the area is not feasible, then an approved mitigation bank or other off-site area will be used. The revegetation of impacted areas or mitigation parcels will be performed by a qualified restoration specialist and shall be conducted only on sites where soils, hydrology, and microclimate conditions are suitable for riparian habitat. First priority will be given to areas that are adjacent to existing patches of native habitat.						

Cultural Resources

Project earthwork would not cause a substantial adverse change in the significance of an archaeological resource.	MM CUL 1. If an archaeological resource is discovered during construction, all soil-disturbing work within 100 feet of the find shall cease and the University Representative shall contact a qualified Archaeologist meeting the Secretary of Interior standards within 24 hours of discovery to inspect the site. If a resource within the project area of potential effect is determined to qualify as a unique archaeological resource (as defined by the California Environmental Quality Act [CEQA]), the University shall devote adequate time and funding to determine if it is feasible, through project design measures, to preserve the find intact. If it cannot be preserved, the University shall retain a qualified non-University Archaeologist to design and implement a treatment plan, prepare a report, and salvage the material,	A&E	2, 3	Once to confirm inclusion in final construction documents. As needed during ground disturbance phases to document evaluation and disposition of any artifacts.			
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Impact	Mitigation Measures	Responsible Entity	Monitoring Triggers	Frequency of Reporting	Verification of Compliance		
					Signature	Date	Remarks
	<p>as appropriate. Any important artifacts recovered during monitoring shall be cleaned, catalogued, and analyzed, with the results presented in a report of findings that meets professional standards.</p> <p>a) If significant Native American cultural resources are discovered, as determined by the consulting Archaeologist for which a Treatment Plan must be prepared, the contractor or his Archaeologist shall immediately contact the University Representative. The University Representative shall contact the appropriate tribal representatives.</p> <p>b) If requested by tribal representatives, the University, the contractor, or the project Archaeologist shall, in good faith, consult on the discovery and its disposition (e.g., avoidance, preservation, return of artifacts to tribe).</p> <p>c) In the event of the discovery of a burial, human bone, or suspected human bone, all excavation or grading in the vicinity of the find shall halt immediately and the area of the find shall be protected. The University shall immediately notify the Riverside County Coroner of the find and comply with the provisions of California Health and Safety Code Section 7050.5.</p>						
Project earthwork would not cause a substantial adverse change	PP 4.5-5 In the event of the discovery of a burial, human bone, or suspected human bone, all excavation or grading in the vicinity of the find shall halt immediately and the area of the find shall be protected and the	A&E	3	As needed during ground disturbance phases			

Impact	Mitigation Measures	Responsible Entity	Monitoring Triggers	Frequency of Reporting	Verification of Compliance		
					Signature	Date	Remarks
in the significance of an archaeological resource.	University immediately shall notify the Riverside County Coroner of the find and comply with the provisions of P.R.C. Section 5097 with respect to Native American involvement, burial treatment, and re-burial, if necessary.						
Geology and Soils							
Proposed project improvements would result in impacts from stormwater runoff and erosion.	PP 4.4-2(b) In compliance with NPDES, the campus would continue to implement Best Management Practices, as identified in the UCR Stormwater Management Plan (UCR 2003): (i) Public education and outreach on stormwater impacts (ii) Public involvement/ participation (iii) Illicit discharge detection and elimination (iv) Pollution prevention/good housekeeping for facilities (v) Construction site stormwater runoff control (vi) Post-construction stormwater management in new development and redevelopment	A&E, EH&S	3		Ongoing oversight through campus Storm Water Management Program – MS4 permit and Construction General Permit requirements.		
There is potential for soil erosion and water runoff to pollute waters during construction.	PP 4.8-1. The campus will continue to comply with all applicable water quality requirements established by the SARWQCB.	A&E	2, 3		Ongoing oversight through design, construction.		
Hazards and Hazardous Materials							
There is potential for hazardous materials spills during	PP 4.7-1. The campus shall continue to implement the current (or equivalent) health and safety plans, programs, and practices related to the use, storage, disposal, or transportation of hazardous	A&E, EH&S	3		Ongoing oversight during construction.		

Impact	Mitigation Measures	Responsible Entity	Monitoring Triggers	Frequency of Reporting	Verification of Compliance		
					Signature	Date	Remarks
construction.	materials, including, but not necessarily limited to, the Business Plan, the Broadscope Radioactive Materials License, and the following programs: Biosafety, Emergency Management, Environmental Health, Hazardous Materials, Industrial Hygiene and Safety, Laboratory/Research Safety, Radiation Safety, and Integrated Waste Management. These programs may be subject to modification as more stringent standards are developed or if the programs are replaced by other programs that incorporate similar health and safety protection measures.						
Hydrology and Water Quality							
There is potential for flooding due to an upset condition involving a breach in the pipe or hose during construction.	HYD 1: Temporary Diversion Design. The temporary diversion works shall be designed such that the inundation limits (including those resulting from an inadvertent breach of flows contained in a pipe or hose) are confined to the existing Watercourse overlay zone boundary. The University shall ensure that construction contracts provide sufficient detail for the design and method of temporary diversion.	A&E	2	Once to confirm inclusion in final construction documents.			
Noise							
Project construction would result in a temporary increase in off-campus ambient noise.	NOI 1: Restrict Construction Hours. The University will ensure that the construction contractor limits construction activities, where feasible, to occurring between 7:00 a.m. and 7:00 p.m. Monday through Friday and 8:00 a.m. and 5:00 p.m. on Saturday. An exception is made as to operation of a generator and/or pump for temporary stream diversion, subject to Mitigation Measure NOI 2, below.	A&E	2, 3	Once to confirm inclusion in final construction documents. Ongoing verification through construction.			

Impact	Mitigation Measures	Responsible Entity	Monitoring Triggers	Frequency of Reporting	Verification of Compliance		
					Signature	Date	Remarks
	<p><u>NOI 2: Attenuation for diversion pump and generator.</u></p> <p>The University will ensure construction contracts specify that any generator or diversion pump will be equipped with mufflers, silencers, shrouds, shields, or other noise-reducing features so as to achieve a maximum exterior operational noise level not exceeding 45 A-weighted decibels (dBA) (one-hour equivalent sound level [Leq]) at exterior locations of nearby noise-sensitive land uses.</p> <p>Measures that can be implemented to achieve this include but are not limited to:</p> <ul style="list-style-type: none"> • enclosing equipment in solid wall structures, • using low-noise equipment, and • placing sound barriers (earth berms or constructed barriers) around equipment. <p><u>PP 4.10-2</u> The UCR campus shall limit the hours of exterior construction activities, where feasible, from 7:00 a.m. to 7:00 p.m. Monday through Friday and 8:00 a.m. to 5:00 p.m. on Saturday when necessary. Construction traffic shall follow transportation routes prescribed for all construction traffic to minimize the impact of this traffic (including noise impacts) on the surrounding community.</p> <p><u>PP 4.10-7(b)</u> The campus shall continue to require by contract specifications that construction equipment be required to be muffled or otherwise shielded. Contract shall specify that engine-driven equipment be fitted with appropriate noise mufflers.</p>	A&E	2, 3	Once to confirm inclusion in final construction documents.			
							Ongoing verification through construction.
							See Mitigation Measure NOI1 above.
		A&E	2	Once to confirm inclusion in final construction documents.			

Impact	Mitigation Measures	Responsible Entity	Monitoring Triggers	Frequency of Reporting	Verification of Compliance		
					Signature	Date	Remarks
	PP 4.10-7(c) The campus shall continue to require that stationary construction equipment, material and vehicle staging to be placed to direct noise away from sensitive receptors.	A&E	2	Once to confirm inclusion in final construction documents.			
	PP 4.10-8 The campus shall continue to conduct meetings, as needed, with off-campus constituents that are affected by campus construction to provide advance notice of construction activities and ensure that mutual needs of the particular construction project and of those impacted by construction noise are met, to extent feasible.	A&E	3	Ongoing oversight through construction.			
Traffic and Transportation							
Project construction would result in short-term hazards due to temporary lane closures and the presence of construction vehicles and equipment on local roads.	PP 4.14-5 To the extent feasible, the campus shall maintain at least one unobstructed lane in both directions on campus roadways. At any time only a single lane is available, the campus shall provide a temporary traffic signal, signal carriers (i.e., flagpersons), or other appropriate traffic controls to allow travel in both directions. If construction activities require the complete closure of a roadway segment, the campus shall provide alternate routes and appropriate signage.	A&E	3	Ongoing verification during construction to ensure access is maintained.			

Impact	Mitigation Measures	Responsible Entity	Monitoring Triggers	Frequency of Reporting	Verification of Compliance		
					Signature	Date	Remarks
Tribal Cultural Resources							
Project earthwork would not cause a substantial adverse change in the significance of a tribal cultural resource.	See Mitigation Measure CUL 1 above for reduction of impacts on Tribal Cultural Resources.	A&E	2, 3	Once to confirm inclusion in final construction documents. As needed during ground disturbance phases to document evaluation and disposition of any artifacts.			

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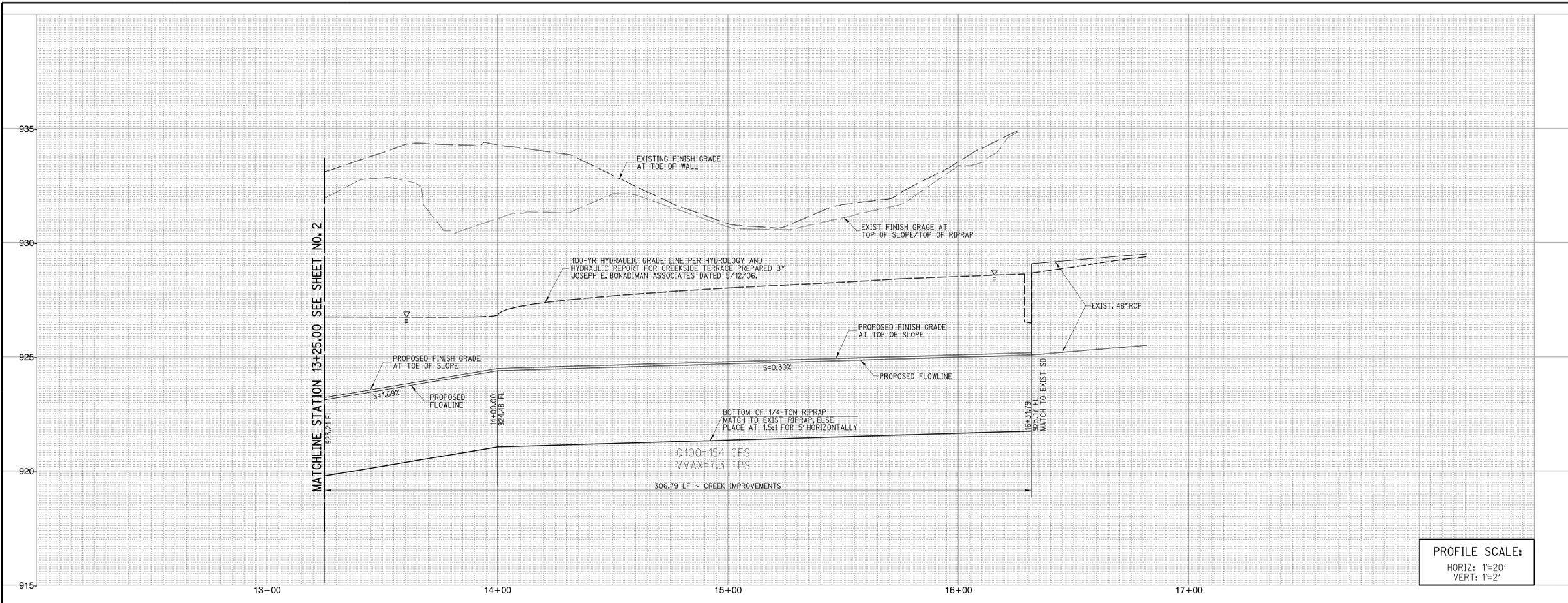
Appendix A
Project Plans

Architect's Data:

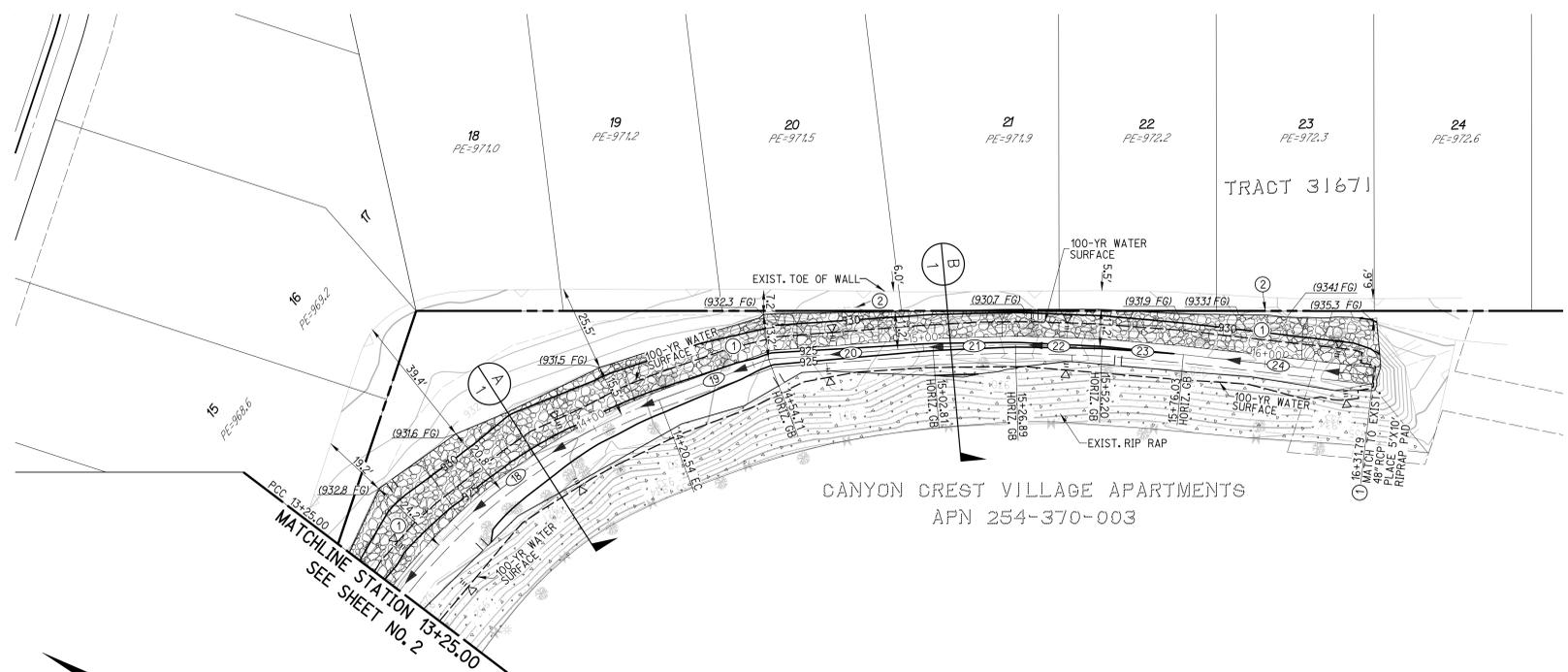
Architect's Stamp: Consultant's Stamp:



TRACT 31671 - CHANNEL BANK STABILIZATION PLAN CONSTRUCTION DRAWINGS



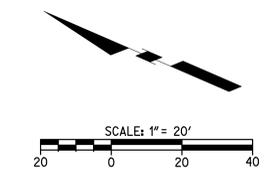
PROFILE SCALE:
HORIZ: 1"=20'
VERT: 1"=2'



CENTERLINE DATA				
NO.	DELTA OR BRG.	RADIUS	LENGTH	TANGENT
18	31°54'00"	171.60'	95.54'	49.04'
19	N 44°18'18" W		34.17'	
20	N 27°54'58" W		48.10'	
21	N 25°16'43" W		24.08'	
22	N 21°47'23" W		25.31'	
23	N 18°39'13" W		23.83'	
24	N 17°08'35" W		55.76'	

CONSTRUCTION NOTES

- PLACE 1/4-TON RIPRAP AT 2.75" THICKNESS. ALL RIP RAP SHALL BE PLACED ON MIRAFI 1100N/15/300 FILTER FABRIC OR EQUAL IN ACCORDANCE WITH CALTRANS STANDARD SPECIFICATION SECTION 88. PLACE RIPRAP PER SECTION 72, AND AS APPROVED BY THE PROJECT GEOTECHNICAL ENGINEER.
- REGRADE ERODED SLOPE. ELEVATIONS PER PLAN



UCR Project Manager: GERALD CARAG
Scale: Drawn By: NCS Checked By: RCO Project No.: 950551 DSA No.:
SD Approval: DD Approval: CD Approval: Construction Release:

Drawing Title: TRACT 31671 CHANNEL BANK STABILIZATION PLAN Sheet No. 3

Appendix B

**Air Quality and Greenhouse Gas
Technical Memorandum**



Technical Memorandum

Air Quality and Greenhouse Gas Emissions Impact Analysis

Date:	November 19, 2019
To:	Jaime Engbrecht, Planner UCR Planning, Design & Construction
From:	Keith Cooper
Subject:	UCR Creekside Terrace Slope Protection Project

Introduction and Results Summary

This memorandum provides an analysis of criteria pollutant and greenhouse gas (GHG) emissions resulting from implementation of the University of California, Riverside (UCR) Creekside Terrace Slope Protection Project, or proposed project. This air quality and GHG emissions assessment includes a discussion of applicable significance criteria and analysis methodologies outlined in the following South Coast Air Quality Management District (SCAQMD) guidance documents:

- *CEQA Air Quality Handbook* (1993)¹
- *Localized Significance Threshold Methodology for CEQA Evaluations* (2003)
- *Particulate Matter (PM) 2.5 Significance Thresholds and Calculation Methodology* (2006)

Based on these above-referenced guidance documents, this assessment evaluates the construction-period impacts on regional and local air quality that would result with construction of the proposed improvements.

The SCAQMD has not adopted quantitative GHG emissions thresholds for non-industrial development projects. However, in its *Interim CEQA GHG Significance Threshold for Stationary Sources, Rules and Plans* (2008) documentation, SCAQMD suggests that a screening-level threshold of 1,400 metric tons (MT) per year of carbon dioxide equivalent (CO₂e) emissions for commercial projects is appropriate. While the proposed project is not technically a commercial project, the suggested screening-level thresholds for all other land use types are higher than 1,400 MT CO₂e per year. As such, the 1,400 MT CO₂e per year significance criteria was used for this analysis.

The impact analysis demonstrates that (1) criteria pollutant emissions during construction would remain below SCAQMD regional and localized daily mass emissions thresholds; and (2) GHG emissions during construction would be less than significant.

¹ Used subject to the limitations described on the SCAQMD website (www.aqmd.gov/ceqa/oldhdbk.html).

Air Quality Impact Assessment

a. Would the project conflict with or obstruct implementation of the applicable air quality plan?

No Impact. SCAQMD is required, pursuant to the federal Clean Air Act, to reduce emissions of criteria pollutants for which the Basin is in nonattainment (i.e., ozone [O₃], and particulate matter with a diameter of 2.5 microns or less [PM_{2.5}]). The project would be subject to 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.

With respect to the proposed project, there would be no emissions following conclusion of construction activity. As such, only AQMP strategies directed at reducing construction-period emissions would apply to the proposed project. As a matter of law, all project construction activities must comply with AQMP regulatory measures, including SCAQMD rules pertaining to fugitive dust control (Rules 403, 404, and 405), visibility of emissions (Rule 401), nuisance activities (Rule 402), and limiting VOC content in both asphalt and architectural coatings (Rules 1108 and 1113). The proposed project would not conflict with or obstruct implementation of the AQMP.

b. Would the project violate any air quality standard or contribute substantially to an existing or projected air quality violation?

Less-than-Significant Impact. The proposed project would contribute to regional air pollutant emissions during construction. Mass daily combustion emissions and fugitive dust (particulate matter with a diameter of 10 microns or less [PM₁₀] and PM_{2.5}) emissions were compiled using CalEEMod, which is an emissions estimation/evaluation model developed in collaboration with SCAQMD, among other air quality management districts of California.

Assumptions regarding construction phasing and equipment use were developed based on information provided by the project applicant. Key assumptions included the following: excavation volume would be 1,000 cubic yards, 1,460 cubic yards of rip rap materials would be hauled in and placed within the channel, and construction duration would be approximately 4 months. A complete listing of the construction equipment by phase, construction phase duration assumptions, and changes to modeling default values used in this analysis is included within the CalEEMod printout sheets that are attached to this technical memorandum.

Summarized in **Error! Reference source not found.**, construction-period emissions would not exceed the SCAQMD local or regional significance thresholds. Impacts would be less than significant and no mitigation measures are necessary.

Table 1. Conservative Estimate of Maximum Daily Construction Emissions

	Criteria Pollutant Emissions (pounds per day)					
	ROG	NO _x	CO	SO _x	PM ₁₀ ^a	PM _{2.5}
Regional Emissions						
Project Emissions	3	29	21	<1	5	3
Regional Significance Threshold	75	100	550	150	150	55
Exceed Regional Significance Threshold?	No	No	No	No	No	No
Localized Emissions						
Project Emissions	3	19	20	<1	3	2
Localized Significance Threshold ^b	n/a	118	602	n/a	4	3
Exceed Localized Significance Threshold?	No	No	No	No	No	No
Notes: Construction emission calculation worksheets are attached to this technical memorandum. These estimates of maximum daily emissions are for all construction phases (i.e., highest emissions from all phases for each pollutant presented). ^a PM ₁₀ emissions estimates take into account compliance with SCAQMD Rule 403 requirements for fugitive dust suppression, which require that no visible dust be present beyond the site boundaries. ^b Localized thresholds derived from SCAQMD Localized Significance Threshold Tables are based on the project location (Source Receptor Area [SRA] 23, Metropolitan Riverside County), project area disturbed in any given day (1 acre), and the distance to the nearest sensitive receptor (25 meters). Source for thresholds: SCAQMD 1993, 2003.						

- c. Would the project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is a nonattainment area for an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors)?**

Less-than-Significant Impact. The SCAQMD’s approach for assessing cumulative impacts is based on the AQMP forecasts of attainment of ambient air quality standards in accordance with the requirements of the federal and state Clean Air Acts. As discussed earlier, the proposed project would be consistent with the AQMP, which is intended to bring the Basin into attainment for all criteria pollutants.² In addition, the mass regional emissions calculated for the proposed project presented earlier in **Error! Reference source not found.** are less than the applicable SCAQMD daily

² CEQA Guidelines Section 15064(h)(3) states “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.”

significance thresholds. As such, cumulative impacts would be less than significant and no mitigation measures are necessary.

d. *Would the project expose sensitive receptors to substantial pollutant concentrations?*

Less-than-Significant Impact. Diesel Particulate Matter (DPM), which the California Air Resources Board classifies as a toxic air contaminant, is the primary pollutant of concern with respect to health risks to sensitive receptors. Cancer health risks associated with exposures to diesel exhaust are typically associated with chronic exposure, in which a 70-year exposure period is assumed. Because construction would be of short duration (less than 4 months), project construction is not anticipated to result in an elevated cancer risk to exposed sensitive receptors. In addition, localized construction emissions would not exceed SCAQMD localized emissions thresholds for any criteria pollutant. Impacts would be less than significant and no mitigation measures are necessary.

e. *Would the project create objectionable odors affecting a substantial number of people?*

No Impact. According to the SCAQMD *CEQA Air Quality Handbook*, land uses associated with odor complaints typically include agricultural uses, wastewater treatment plants, food processing plants, chemical plants, composting, refineries, landfills, dairies, and fiberglass molding. The proposed project does not include any uses identified by the SCAQMD as being associated with odors and therefore would not produce objectionable odors.

Greenhouse Gas Emissions Impact Assessment

a. *Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?*

Less-than-Significant Impact. Project GHG emissions were estimated using the CalEEMod emissions estimation/evaluation model. Modeling assumptions regarding construction phasing and equipment use were developed based on information provided by the project applicant. Key assumptions included the following: excavation volume would be 1,000 cubic yards, 1,460 cubic yards of rip rap materials would be hauled in and placed within the channel, and construction duration would be approximately 4 months. A complete listing of the construction equipment by phase, construction phase duration assumptions, and changes to modeling default values used in this analysis is included within the CalEEMod printout sheets that are attached to this technical memorandum.

The proposed project's contribution to GHG emissions is estimated to be 118 MT of CO₂e, total. Total CO₂e emissions resulting from project construction would be far less than the 1,400 MT CO₂e per year significance criteria identified above. Impacts would be less than significant and no mitigation measures are necessary.

b. *Would the project conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?*

Less-than-Significant Impact. With Assembly Bill (AB) 32, the State of California identified a year 2020 target level for state-wide GHG emissions of 427 million metric tons (MMT) of CO₂e, which is

approximately 28.5% less than the year 2020 business as usual (BAU) emissions estimate of 596 MMT CO₂e. To achieve these GHG reductions there will have to be widespread reductions of GHG emissions across California. Some of those reductions will need to come in the form of changes in vehicle emissions and mileage standards, changes in the sources of electricity, and increases in energy efficiency by existing facilities. The remainder will need to come from requiring new facility development to have lower carbon intensity than BAU conditions. Therefore, this analysis uses a threshold of significance that is in conformance with the state's goals.

On December 12, 2008, the California Air Resources Board adopted the AB 32 Scoping Plan, which details specific GHG emission reduction measures that target specific GHG emissions sources. The AB2 Scoping Plan considers a range of actions that include direct regulations, alternative compliance mechanisms, monetary and non-monetary incentives, voluntary actions, and market-based mechanisms (e.g., cap-and-trade system). Some examples include the following:

- Mobile-source GHG emissions reduction measures
 - Pavley emissions standards (19.8% reduction)
 - Low carbon fuel standard (7.2% reduction)
 - Vehicle efficiency measures (2.8% reduction)
- Energy production related GHG emissions reduction measures
 - Natural gas transmission and distribution efficiency measures (7.4% reduction)
 - Natural gas extraction efficiency measures (1.6% reduction)
 - Renewables (electricity) portfolio standard (33.0% reduction)

The proposed project would not frustrate any AB 32 Scoping Plan measures or be inconsistent in any way with the AB 32 goal of reducing state-wide GHG emissions to 1990 levels by year 2020. Both UCR and the City of Riverside have prepared plans/strategies/programs to reduce greenhouse gas emissions (City of Riverside 2007, 2012; UCR 2010). Because emissions for the proposed project are limited to the construction phase, relevant aspects of both the UCR and City of Riverside GHG emission reduction programs are limited to those establishing objectives for substantial diversion of construction waste. Standard campus contracting provisions include requirements for implementation and monitoring of waste diversion practices in all campus construction projects. These campus provisions address both city and county GHG reduction policies in this regard. As such, the proposed project would not conflict with any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of GHGs.

References

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- . 2008. *Interim CEQA GHG Significance Threshold for Stationary Sources, Rules and Plans*.
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Creekside UCR - Riverside-South Coast County, Summer

Creekside UCR
Riverside-South Coast County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Recreational	1.00	User Defined Unit	1.00	0.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.4	Precipitation Freq (Days)	28
Climate Zone	10			Operational Year	2021
Utility Company	Riverside Public Utilities				
CO2 Intensity (lb/MWhr)	1325.65	CH4 Intensity (lb/MWhr)	0.029	N2O Intensity (lb/MWhr)	0.006

1.3 User Entered Comments & Non-Default Data

Creekside UCR - Riverside-South Coast County, Summer

Project Characteristics - Construction only

Land Use - Construction only

Construction Phase - Schedule assumptions provided by applicant

Off-road Equipment - 1 generator for diversion pump 24 hrs/day

1 tractor/loader/backhoe 6 hrs/day

1 off-highway tractor 6 hrs/day

Grading - 1,000 CY export; 1,460 CY import

Trips and VMT - Export = 1,000 CY, 16 CY per truck, 63 trips

Import = 1,460 CY, 16 CY per truck, 92 trips

Construction Off-road Equipment Mitigation -

Off-road Equipment - 1 generator for diversion pump 24 hours/day

4 tractor/loader/backhoes 8 hrs/day

Off-road Equipment - 1 generator for diversion pump 24 hrs/day

1 tractor/loader/backhoe 6 hrs/day

1 off-highway tractor 6 hrs/day

Off-road Equipment - 1 generator for diversion pump 24 hours/day, plus

Default Excavation

Off-road Equipment - 2 tractor/loader/backhoes 6 hrs/day

Off-road Equipment - 1 generator for diversion pump 24 hours/day, plus

Default Site Prep

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	1.00	30.00
tblConstructionPhase	NumDays	1.00	5.00
tblConstructionPhase	NumDays	1.00	30.00
tblConstructionPhase	NumDays	1.00	5.00
tblConstructionPhase	NumDays	1.00	10.00
tblConstructionPhase	PhaseEndDate	4/1/2020	7/14/2020
tblConstructionPhase	PhaseEndDate	4/2/2020	4/7/2020
tblConstructionPhase	PhaseEndDate	4/3/2020	6/2/2020
tblConstructionPhase	PhaseEndDate	4/6/2020	7/21/2020

Creekside UCR - Riverside-South Coast County, Summer

tblConstructionPhase	PhaseEndDate	4/7/2020	4/21/2020
tblConstructionPhase	PhaseStartDate	4/1/2020	6/3/2020
tblConstructionPhase	PhaseStartDate	4/2/2020	4/1/2020
tblConstructionPhase	PhaseStartDate	4/3/2020	4/22/2020
tblConstructionPhase	PhaseStartDate	4/4/2020	7/15/2020
tblConstructionPhase	PhaseStartDate	4/7/2020	4/8/2020
tblGrading	AcresOfGrading	8.63	1.00
tblGrading	AcresOfGrading	2.50	1.00
tblGrading	MaterialExported	0.00	1,000.00
tblGrading	MaterialImported	0.00	1,460.00
tblGrading	PhaseName	Excavation	3 Excavation
tblGrading	PhaseName	Vegetation Removal	2 Vegetation Removal
tblGrading	PhaseName	Establish Diversion	1 Establish Diversion
tblGrading	PhaseName	Riprap Placement	4 Riprap Placement
tblGrading	PhaseName	Remove Diversion	5 Remove Diversion
tblLandUse	LotAcreage	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentType		Generator Sets
tblOffRoadEquipment	OffRoadEquipmentType		Generator Sets
tblOffRoadEquipment	OffRoadEquipmentType		Generator Sets
tblOffRoadEquipment	OffRoadEquipmentType		Generator Sets
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Tractors
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00

Creekside UCR - Riverside-South Coast County, Summer

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	PhaseName		2 Vegetation Removal
tblOffRoadEquipment	PhaseName	Vegetation Removal	2 Vegetation Removal
tblOffRoadEquipment	PhaseName		3 Excavation
tblOffRoadEquipment	PhaseName	Excavation	3 Excavation
tblOffRoadEquipment	PhaseName	Riprap Placement	4 Riprap Placement
tblOffRoadEquipment	PhaseName	Establish Diversion	1 Establish Diversion
tblOffRoadEquipment	PhaseName	Excavation	3 Excavation
tblOffRoadEquipment	PhaseName	Remove Diversion	5 Remove Diversion
tblOffRoadEquipment	PhaseName	Vegetation Removal	2 Vegetation Removal
tblOffRoadEquipment	PhaseName	Excavation	3 Excavation
tblOffRoadEquipment	PhaseName	Vegetation Removal	2 Vegetation Removal
tblOffRoadEquipment	PhaseName		4 Riprap Placement
tblOffRoadEquipment	PhaseName		1 Establish Diversion
tblOffRoadEquipment	PhaseName		1 Establish Diversion
tblOffRoadEquipment	UsageHours	7.00	6.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	8.00	7.00
tblOffRoadEquipment	UsageHours	8.00	2.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblOnRoadDust	PhaseName	Establish Diversion	1 Establish Diversion
tblOnRoadDust	PhaseName	Vegetation Removal	2 Vegetation Removal
tblOnRoadDust	PhaseName	Excavation	3 Excavation
tblOnRoadDust	PhaseName	Riprap Placement	4 Riprap Placement
tblOnRoadDust	PhaseName	Remove Diversion	5 Remove Diversion
tblTripsAndVMT	HaulingTripNumber	125.00	0.00
tblTripsAndVMT	HaulingTripNumber	183.00	63.00

Creekside UCR - Riverside-South Coast County, Summer

tblTripsAndVMT	HaulingTripNumber	0.00	92.00
tblTripsAndVMT	PhaseName	Establish Diversion	1 Establish Diversion
tblTripsAndVMT	PhaseName	Vegetation Removal	2 Vegetation Removal
tblTripsAndVMT	PhaseName	Excavation	3 Excavation
tblTripsAndVMT	PhaseName	Riprap Placement	4 Riprap Placement
tblTripsAndVMT	PhaseName	Remove Diversion	5 Remove Diversion
tblTripsAndVMT	WorkerTripNumber	13.00	8.00
tblTripsAndVMT	WorkerTripNumber	18.00	13.00
tblTripsAndVMT	WorkerTripNumber	10.00	5.00

2.0 Emissions Summary

Creekside UCR - Riverside-South Coast County, Summer

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	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-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
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	1.0000e-005	0.0000	1.0000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000	0.0000	2.3000e-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	lb/day										lb/day					
Area	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-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
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	1.0000e-005	0.0000	1.0000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000	0.0000	2.3000e-004

Creekside UCR - Riverside-South Coast County, Summer

	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
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	4 Riprap Placement	Site Preparation	6/3/2020	7/14/2020	5	30	Riprap Placement
2	1 Establish Diversion	Site Preparation	4/1/2020	4/7/2020	5	5	Establish Diversion
3	3 Excavation	Site Preparation	4/22/2020	6/2/2020	5	30	Excavation
4	5 Remove Diversion	Site Preparation	7/15/2020	7/21/2020	5	5	Remove Diversion
5	2 Vegetation Removal	Site Preparation	4/8/2020	4/21/2020	5	10	Vegetation Removal

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Creekside UCR - Riverside-South Coast County, Summer

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
2 Vegetation Removal	Generator Sets	1	24.00	84	0.74
3 Excavation	Generator Sets	1	24.00	84	0.74
2 Vegetation Removal	Graders	1	8.00	187	0.41
4 Riprap Placement	Generator Sets	1	24.00	84	0.74
3 Excavation	Rubber Tired Dozers	1	6.00	247	0.40
4 Riprap Placement	Tractors/Loaders/Backhoes	4	8.00	97	0.37
1 Establish Diversion	Tractors/Loaders/Backhoes	1	6.00	97	0.37
3 Excavation	Tractors/Loaders/Backhoes	1	7.00	97	0.37
5 Remove Diversion	Tractors/Loaders/Backhoes	2	2.00	97	0.37
2 Vegetation Removal	Tractors/Loaders/Backhoes	1	8.00	97	0.37
3 Excavation	Graders	1	6.00	187	0.41
2 Vegetation Removal	Rubber Tired Dozers	1	7.00	247	0.40
1 Establish Diversion	Generator Sets	1	24.00	84	0.74
1 Establish Diversion	Off-Highway Tractors	1	6.00	124	0.44

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
1 Establish Diversion	5	8.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
2 Vegetation Removal	4	10.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
3 Excavation	4	10.00	0.00	63.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
4 Riprap Placement	7	13.00	0.00	92.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
5 Remove Diversion	4	5.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Creekside UCR - Riverside-South Coast County, Summer

3.2 4 Riprap Placement - 2020

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					4.2530	0.0000	4.2530	2.1661	0.0000	2.1661			0.0000			0.0000
Off-Road	2.0352	18.8564	20.2354	0.0322		1.1212	1.1212		1.0786	1.0786		3,072.177 7	3,072.177 7	0.4943		3,084.536 4
Total	2.0352	18.8564	20.2354	0.0322	4.2530	1.1212	5.3742	2.1661	1.0786	3.2447		3,072.177 7	3,072.177 7	0.4943		3,084.536 4

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	0.0158	0.7261	0.0896	2.3300e-003	0.0537	2.3100e-003	0.0560	0.0147	2.2100e-003	0.0169		247.7153	247.7153	0.0148		248.0844
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	0.0662	0.0391	0.5242	1.4400e-003	0.1453	8.8000e-004	0.1462	0.0385	8.1000e-004	0.0394		143.2073	143.2073	3.6700e-003		143.2991
Total	0.0819	0.7653	0.6138	3.7700e-003	0.1990	3.1900e-003	0.2022	0.0533	3.0200e-003	0.0563		390.9226	390.9226	0.0184		391.3834

Creekside UCR - Riverside-South Coast County, Summer

3.2 4 Riprap Placement - 2020

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					1.6587	0.0000	1.6587	0.8448	0.0000	0.8448			0.0000			0.0000
Off-Road	2.0352	18.8564	20.2354	0.0322		1.1212	1.1212		1.0786	1.0786	0.0000	3,072.1777	3,072.1777	0.4943		3,084.5364
Total	2.0352	18.8564	20.2354	0.0322	1.6587	1.1212	2.7799	0.8448	1.0786	1.9234	0.0000	3,072.1777	3,072.1777	0.4943		3,084.5364

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	0.0158	0.7261	0.0896	2.3300e-003	0.0537	2.3100e-003	0.0560	0.0147	2.2100e-003	0.0169		247.7153	247.7153	0.0148		248.0844
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	0.0662	0.0391	0.5242	1.4400e-003	0.1453	8.8000e-004	0.1462	0.0385	8.1000e-004	0.0394		143.2073	143.2073	3.6700e-003		143.2991
Total	0.0819	0.7653	0.6138	3.7700e-003	0.1990	3.1900e-003	0.2022	0.0533	3.0200e-003	0.0563		390.9226	390.9226	0.0184		391.3834

Creekside UCR - Riverside-South Coast County, Summer

3.3 1 Establish Diversion - 2020

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					11.5992	0.0000	11.5992	5.9074	0.0000	5.9074			0.0000			0.0000
Off-Road	1.5499	14.1006	15.1468	0.0256		0.7898	0.7898		0.7737	0.7737		2,435.9867	2,435.9867	0.2886		2,443.2014
Total	1.5499	14.1006	15.1468	0.0256	11.5992	0.7898	12.3889	5.9074	0.7737	6.6811		2,435.9867	2,435.9867	0.2886		2,443.2014

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	0.0407	0.0241	0.3226	8.8000e-004	0.0894	5.4000e-004	0.0900	0.0237	5.0000e-004	0.0242		88.1276	88.1276	2.2600e-003		88.1840
Total	0.0407	0.0241	0.3226	8.8000e-004	0.0894	5.4000e-004	0.0900	0.0237	5.0000e-004	0.0242		88.1276	88.1276	2.2600e-003		88.1840

Creekside UCR - Riverside-South Coast County, Summer

3.3 1 Establish Diversion - 2020

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					4.5237	0.0000	4.5237	2.3039	0.0000	2.3039			0.0000			0.0000
Off-Road	1.5499	14.1006	15.1468	0.0256		0.7898	0.7898		0.7737	0.7737	0.0000	2,435.9867	2,435.9867	0.2886		2,443.2014
Total	1.5499	14.1006	15.1468	0.0256	4.5237	0.7898	5.3134	2.3039	0.7737	3.0776	0.0000	2,435.9867	2,435.9867	0.2886		2,443.2014

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	0.0407	0.0241	0.3226	8.8000e-004	0.0894	5.4000e-004	0.0900	0.0237	5.0000e-004	0.0242		88.1276	88.1276	2.2600e-003		88.1840
Total	0.0407	0.0241	0.3226	8.8000e-004	0.0894	5.4000e-004	0.0900	0.0237	5.0000e-004	0.0242		88.1276	88.1276	2.2600e-003		88.1840

Creekside UCR - Riverside-South Coast County, Summer

3.4 3 Excavation - 2020

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					3.5042	0.0000	3.5042	1.9081	0.0000	1.9081			0.0000			0.0000
Off-Road	2.5470	25.5212	17.5709	0.0338		1.2731	1.2731		1.2184	1.2184		3,234.8220	3,234.8220	0.5470		3,248.4957
Total	2.5470	25.5212	17.5709	0.0338	3.5042	1.2731	4.7773	1.9081	1.2184	3.1265		3,234.8220	3,234.8220	0.5470		3,248.4957

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	0.0108	0.4973	0.0614	1.6000e-003	0.0367	1.5800e-003	0.0383	0.0101	1.5200e-003	0.0116		169.6311	169.6311	0.0101		169.8839
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	0.0509	0.0301	0.4032	1.1100e-003	0.1118	6.8000e-004	0.1125	0.0296	6.2000e-004	0.0303		110.1595	110.1595	2.8200e-003		110.2301
Total	0.0617	0.5274	0.4646	2.7100e-003	0.1485	2.2600e-003	0.1508	0.0397	2.1400e-003	0.0419		279.7906	279.7906	0.0129		280.1139

Creekside UCR - Riverside-South Coast County, Summer

3.4 3 Excavation - 2020

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					1.3666	0.0000	1.3666	0.7442	0.0000	0.7442			0.0000			0.0000
Off-Road	2.5470	25.5212	17.5709	0.0338		1.2731	1.2731		1.2184	1.2184	0.0000	3,234.8220	3,234.8220	0.5470		3,248.4957
Total	2.5470	25.5212	17.5709	0.0338	1.3666	1.2731	2.6397	0.7442	1.2184	1.9625	0.0000	3,234.8220	3,234.8220	0.5470		3,248.4957

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	0.0108	0.4973	0.0614	1.6000e-003	0.0367	1.5800e-003	0.0383	0.0101	1.5200e-003	0.0116		169.6311	169.6311	0.0101		169.8839
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	0.0509	0.0301	0.4032	1.1100e-003	0.1118	6.8000e-004	0.1125	0.0296	6.2000e-004	0.0303		110.1595	110.1595	2.8200e-003		110.2301
Total	0.0617	0.5274	0.4646	2.7100e-003	0.1485	2.2600e-003	0.1508	0.0397	2.1400e-003	0.0419		279.7906	279.7906	0.0129		280.1139

Creekside UCR - Riverside-South Coast County, Summer

3.5 5 Remove Diversion - 2020

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					5.7996	0.0000	5.7996	2.9537	0.0000	2.9537			0.0000			0.0000
Off-Road	0.1048	1.0526	1.1399	1.5500e-003		0.0666	0.0666		0.0612	0.0612		150.3843	150.3843	0.0486		151.6002
Total	0.1048	1.0526	1.1399	1.5500e-003	5.7996	0.0666	5.8661	2.9537	0.0612	3.0149		150.3843	150.3843	0.0486		151.6002

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	0.0254	0.0151	0.2016	5.5000e-004	0.0559	3.4000e-004	0.0562	0.0148	3.1000e-004	0.0151		55.0797	55.0797	1.4100e-003		55.1150
Total	0.0254	0.0151	0.2016	5.5000e-004	0.0559	3.4000e-004	0.0562	0.0148	3.1000e-004	0.0151		55.0797	55.0797	1.4100e-003		55.1150

Creekside UCR - Riverside-South Coast County, Summer

3.5 5 Remove Diversion - 2020

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					2.2618	0.0000	2.2618	1.1519	0.0000	1.1519			0.0000			0.0000
Off-Road	0.1048	1.0526	1.1399	1.5500e-003		0.0666	0.0666		0.0612	0.0612	0.0000	150.3843	150.3843	0.0486		151.6002
Total	0.1048	1.0526	1.1399	1.5500e-003	2.2618	0.0666	2.3284	1.1519	0.0612	1.2132	0.0000	150.3843	150.3843	0.0486		151.6002

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	0.0254	0.0151	0.2016	5.5000e-004	0.0559	3.4000e-004	0.0562	0.0148	3.1000e-004	0.0151		55.0797	55.0797	1.4100e-003		55.1150
Total	0.0254	0.0151	0.2016	5.5000e-004	0.0559	3.4000e-004	0.0562	0.0148	3.1000e-004	0.0151		55.0797	55.0797	1.4100e-003		55.1150

Creekside UCR - Riverside-South Coast County, Summer

3.6 2 Vegetation Removal - 2020

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					2.7534	0.0000	2.7534	1.4616	0.0000	1.4616			0.0000			0.0000
Off-Road	2.8271	28.7822	18.8259	0.0369		1.4097	1.4097		1.3440	1.3440		3,536.5156	3,536.5156	0.6445		3,552.6286
Total	2.8271	28.7822	18.8259	0.0369	2.7534	1.4097	4.1631	1.4616	1.3440	2.8056		3,536.5156	3,536.5156	0.6445		3,552.6286

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	0.0509	0.0301	0.4032	1.1100e-003	0.1118	6.8000e-004	0.1125	0.0296	6.2000e-004	0.0303		110.1595	110.1595	2.8200e-003		110.2301
Total	0.0509	0.0301	0.4032	1.1100e-003	0.1118	6.8000e-004	0.1125	0.0296	6.2000e-004	0.0303		110.1595	110.1595	2.8200e-003		110.2301

Creekside UCR - Riverside-South Coast County, Summer

3.6 2 Vegetation Removal - 2020

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					1.0738	0.0000	1.0738	0.5700	0.0000	0.5700			0.0000			0.0000
Off-Road	2.8271	28.7822	18.8259	0.0369		1.4097	1.4097		1.3440	1.3440	0.0000	3,536.5156	3,536.5156	0.6445		3,552.6286
Total	2.8271	28.7822	18.8259	0.0369	1.0738	1.4097	2.4835	0.5700	1.3440	1.9140	0.0000	3,536.5156	3,536.5156	0.6445		3,552.6286

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	0.0509	0.0301	0.4032	1.1100e-003	0.1118	6.8000e-004	0.1125	0.0296	6.2000e-004	0.0303		110.1595	110.1595	2.8200e-003		110.2301
Total	0.0509	0.0301	0.4032	1.1100e-003	0.1118	6.8000e-004	0.1125	0.0296	6.2000e-004	0.0303		110.1595	110.1595	2.8200e-003		110.2301

4.0 Operational Detail - Mobile

Creekside UCR - Riverside-South Coast County, Summer

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

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Recreational	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	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
User Defined Recreational	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
User Defined Recreational	0.542116	0.037578	0.185203	0.118503	0.016241	0.005141	0.017392	0.068695	0.001383	0.001183	0.004582	0.000945	0.001038

Creekside UCR - Riverside-South Coast County, Summer

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

Creekside UCR - Riverside-South Coast County, Summer

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					
User Defined Recreational	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					
User Defined Recreational	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

Creekside UCR - Riverside-South Coast County, Summer

	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	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Unmitigated	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-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	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004

Creekside UCR - Riverside-South Coast County, Summer

6.2 Area by SubCategory

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	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004

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
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10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Creekside UCR - Riverside-South Coast County, Summer

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

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

Equipment Type	Number
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11.0 Vegetation

Creekside UCR - Riverside-South Coast County, Annual

Creekside UCR
Riverside-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Recreational	1.00	User Defined Unit	1.00	0.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.4	Precipitation Freq (Days)	28
Climate Zone	10			Operational Year	2021
Utility Company	Riverside Public Utilities				
CO2 Intensity (lb/MW hr)	1325.65	CH4 Intensity (lb/MW hr)	0.029	N2O Intensity (lb/MW hr)	0.006

1.3 User Entered Comments & Non-Default Data

Creekside UCR - Riverside-South Coast County, Annual

Project Characteristics - Construction only

Land Use - Construction only

Construction Phase - Schedule assumptions provided by applicant

Off-road Equipment - 1 generator for diversion pump 24 hrs/day

1 tractor/loader/backhoe 6 hrs/day

1 off-highway tractor 6 hrs/day

Grading - 1,000 CY export; 1,460 CY import

Trips and VMT - Export = 1,000 CY, 16 CY per truck, 63 trips

Import = 1,460 CY, 16 CY per truck, 92 trips

Construction Off-road Equipment Mitigation -

Off-road Equipment - 1 generator for diversion pump 24 hours/day

4 tractor/loader/backhoes 8 hrs/day

Off-road Equipment - 1 generator for diversion pump 24 hrs/day

1 tractor/loader/backhoe 6 hrs/day

1 off-highway tractor 6 hrs/day

Off-road Equipment - 1 generator for diversion pump 24 hours/day, plus

Default Excavation

Off-road Equipment - 2 tractor/loader/backhoes 6 hrs/day

Off-road Equipment - 1 generator for diversion pump 24 hours/day, plus

Default Site Prep

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	1.00	30.00
tblConstructionPhase	NumDays	1.00	5.00
tblConstructionPhase	NumDays	1.00	30.00
tblConstructionPhase	NumDays	1.00	5.00
tblConstructionPhase	NumDays	1.00	10.00
tblConstructionPhase	PhaseEndDate	4/1/2020	7/14/2020
tblConstructionPhase	PhaseEndDate	4/2/2020	4/7/2020
tblConstructionPhase	PhaseEndDate	4/3/2020	6/2/2020
tblConstructionPhase	PhaseEndDate	4/6/2020	7/21/2020

Creekside UCR - Riverside-South Coast County, Annual

tblConstructionPhase	PhaseEndDate	4/7/2020	4/21/2020
tblConstructionPhase	PhaseStartDate	4/1/2020	6/3/2020
tblConstructionPhase	PhaseStartDate	4/2/2020	4/1/2020
tblConstructionPhase	PhaseStartDate	4/3/2020	4/22/2020
tblConstructionPhase	PhaseStartDate	4/4/2020	7/15/2020
tblConstructionPhase	PhaseStartDate	4/7/2020	4/8/2020
tblGrading	AcresOfGrading	8.63	1.00
tblGrading	AcresOfGrading	2.50	1.00
tblGrading	MaterialExported	0.00	1,000.00
tblGrading	MaterialImported	0.00	1,460.00
tblGrading	PhaseName	Excavation	3 Excavation
tblGrading	PhaseName	Vegetation Removal	2 Vegetation Removal
tblGrading	PhaseName	Establish Diversion	1 Establish Diversion
tblGrading	PhaseName	Riprap Placement	4 Riprap Placement
tblGrading	PhaseName	Remove Diversion	5 Remove Diversion
tblLandUse	LotAcreage	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentType		Generator Sets
tblOffRoadEquipment	OffRoadEquipmentType		Generator Sets
tblOffRoadEquipment	OffRoadEquipmentType		Generator Sets
tblOffRoadEquipment	OffRoadEquipmentType		Generator Sets
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Tractors
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00

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tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	PhaseName		2 Vegetation Removal
tblOffRoadEquipment	PhaseName	Vegetation Removal	2 Vegetation Removal
tblOffRoadEquipment	PhaseName		3 Excavation
tblOffRoadEquipment	PhaseName	Excavation	3 Excavation
tblOffRoadEquipment	PhaseName	Riprap Placement	4 Riprap Placement
tblOffRoadEquipment	PhaseName	Establish Diversion	1 Establish Diversion
tblOffRoadEquipment	PhaseName	Excavation	3 Excavation
tblOffRoadEquipment	PhaseName	Remove Diversion	5 Remove Diversion
tblOffRoadEquipment	PhaseName	Vegetation Removal	2 Vegetation Removal
tblOffRoadEquipment	PhaseName	Excavation	3 Excavation
tblOffRoadEquipment	PhaseName	Vegetation Removal	2 Vegetation Removal
tblOffRoadEquipment	PhaseName		4 Riprap Placement
tblOffRoadEquipment	PhaseName		1 Establish Diversion
tblOffRoadEquipment	PhaseName		1 Establish Diversion
tblOffRoadEquipment	UsageHours	7.00	6.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	8.00	7.00
tblOffRoadEquipment	UsageHours	8.00	2.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblOnRoadDust	PhaseName	Establish Diversion	1 Establish Diversion
tblOnRoadDust	PhaseName	Vegetation Removal	2 Vegetation Removal
tblOnRoadDust	PhaseName	Excavation	3 Excavation
tblOnRoadDust	PhaseName	Riprap Placement	4 Riprap Placement
tblOnRoadDust	PhaseName	Remove Diversion	5 Remove Diversion
tblTripsAndVMT	HaulingTripNumber	125.00	0.00
tblTripsAndVMT	HaulingTripNumber	183.00	63.00

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tblTripsAndVMT	HaulingTripNumber	0.00	92.00
tblTripsAndVMT	PhaseName	Establish Diversion	1 Establish Diversion
tblTripsAndVMT	PhaseName	Vegetation Removal	2 Vegetation Removal
tblTripsAndVMT	PhaseName	Excavation	3 Excavation
tblTripsAndVMT	PhaseName	Riprap Placement	4 Riprap Placement
tblTripsAndVMT	PhaseName	Remove Diversion	5 Remove Diversion
tblTripsAndVMT	WorkerTripNumber	13.00	8.00
tblTripsAndVMT	WorkerTripNumber	18.00	13.00
tblTripsAndVMT	WorkerTripNumber	10.00	5.00

2.0 Emissions Summary

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Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	4-1-2020	6-30-2020	0.8450	0.8450
2	7-1-2020	9-30-2020	0.1117	0.1117
		Highest	0.8450	0.8450

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	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005
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	0.0000	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005

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2.2 Overall Operational

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	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005
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	0.0000	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005

	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
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

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Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	4 Riprap Placement	Site Preparation	6/3/2020	7/14/2020	5	30	Riprap Placement
2	1 Establish Diversion	Site Preparation	4/1/2020	4/7/2020	5	5	Establish Diversion
3	3 Excavation	Site Preparation	4/22/2020	6/2/2020	5	30	Excavation
4	5 Remove Diversion	Site Preparation	7/15/2020	7/21/2020	5	5	Remove Diversion
5	2 Vegetation Removal	Site Preparation	4/8/2020	4/21/2020	5	10	Vegetation Removal

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

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Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
2 Vegetation Removal	Generator Sets	1	24.00	84	0.74
3 Excavation	Generator Sets	1	24.00	84	0.74
2 Vegetation Removal	Graders	1	8.00	187	0.41
4 Riprap Placement	Generator Sets	1	24.00	84	0.74
3 Excavation	Rubber Tired Dozers	1	6.00	247	0.40
4 Riprap Placement	Tractors/Loaders/Backhoes	4	8.00	97	0.37
1 Establish Diversion	Tractors/Loaders/Backhoes	1	6.00	97	0.37
3 Excavation	Tractors/Loaders/Backhoes	1	7.00	97	0.37
5 Remove Diversion	Tractors/Loaders/Backhoes	2	2.00	97	0.37
2 Vegetation Removal	Tractors/Loaders/Backhoes	1	8.00	97	0.37
3 Excavation	Graders	1	6.00	187	0.41
2 Vegetation Removal	Rubber Tired Dozers	1	7.00	247	0.40
1 Establish Diversion	Generator Sets	1	24.00	84	0.74
1 Establish Diversion	Off-Highway Tractors	1	6.00	124	0.44

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
1 Establish Diversion	5	8.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
2 Vegetation Removal	4	10.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
3 Excavation	4	10.00	0.00	63.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
4 Riprap Placement	7	13.00	0.00	92.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
5 Remove Diversion	4	5.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

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3.2 4 Riprap Placement - 2020

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					0.0638	0.0000	0.0638	0.0325	0.0000	0.0325	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0305	0.2829	0.3035	4.8000e-004		0.0168	0.0168		0.0162	0.0162	0.0000	41.8055	41.8055	6.7300e-003	0.0000	41.9737
Total	0.0305	0.2829	0.3035	4.8000e-004	0.0638	0.0168	0.0806	0.0325	0.0162	0.0487	0.0000	41.8055	41.8055	6.7300e-003	0.0000	41.9737

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	2.4000e-004	0.0112	1.4400e-003	3.0000e-005	7.9000e-004	3.0000e-005	8.3000e-004	2.2000e-004	3.0000e-005	2.5000e-004	0.0000	3.3354	3.3354	2.1000e-004	0.0000	3.3407
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	9.0000e-004	6.3000e-004	6.7100e-003	2.0000e-005	2.1400e-003	1.0000e-005	2.1600e-003	5.7000e-004	1.0000e-005	5.8000e-004	0.0000	1.7932	1.7932	4.0000e-005	0.0000	1.7943
Total	1.1400e-003	0.0118	8.1500e-003	5.0000e-005	2.9300e-003	4.0000e-005	2.9900e-003	7.9000e-004	4.0000e-005	8.3000e-004	0.0000	5.1286	5.1286	2.5000e-004	0.0000	5.1350

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3.2 4 Riprap Placement - 2020

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					0.0249	0.0000	0.0249	0.0127	0.0000	0.0127	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0305	0.2829	0.3035	4.8000e-004		0.0168	0.0168		0.0162	0.0162	0.0000	41.8054	41.8054	6.7300e-003	0.0000	41.9736
Total	0.0305	0.2829	0.3035	4.8000e-004	0.0249	0.0168	0.0417	0.0127	0.0162	0.0289	0.0000	41.8054	41.8054	6.7300e-003	0.0000	41.9736

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	2.4000e-004	0.0112	1.4400e-003	3.0000e-005	7.9000e-004	3.0000e-005	8.3000e-004	2.2000e-004	3.0000e-005	2.5000e-004	0.0000	3.3354	3.3354	2.1000e-004	0.0000	3.3407
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	9.0000e-004	6.3000e-004	6.7100e-003	2.0000e-005	2.1400e-003	1.0000e-005	2.1600e-003	5.7000e-004	1.0000e-005	5.8000e-004	0.0000	1.7932	1.7932	4.0000e-005	0.0000	1.7943
Total	1.1400e-003	0.0118	8.1500e-003	5.0000e-005	2.9300e-003	4.0000e-005	2.9900e-003	7.9000e-004	4.0000e-005	8.3000e-004	0.0000	5.1286	5.1286	2.5000e-004	0.0000	5.1350

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3.3 1 Establish Diversion - 2020

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					0.0290	0.0000	0.0290	0.0148	0.0000	0.0148	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.8700e-003	0.0353	0.0379	6.0000e-005		1.9700e-003	1.9700e-003		1.9300e-003	1.9300e-003	0.0000	5.5247	5.5247	6.5000e-004	0.0000	5.5411
Total	3.8700e-003	0.0353	0.0379	6.0000e-005	0.0290	1.9700e-003	0.0310	0.0148	1.9300e-003	0.0167	0.0000	5.5247	5.5247	6.5000e-004	0.0000	5.5411

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	9.0000e-005	6.0000e-005	6.9000e-004	0.0000	2.2000e-004	0.0000	2.2000e-004	6.0000e-005	0.0000	6.0000e-005	0.0000	0.1839	0.1839	0.0000	0.0000	0.1840
Total	9.0000e-005	6.0000e-005	6.9000e-004	0.0000	2.2000e-004	0.0000	2.2000e-004	6.0000e-005	0.0000	6.0000e-005	0.0000	0.1839	0.1839	0.0000	0.0000	0.1840

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3.3 1 Establish Diversion - 2020

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					0.0113	0.0000	0.0113	5.7600e-003	0.0000	5.7600e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.8700e-003	0.0353	0.0379	6.0000e-005		1.9700e-003	1.9700e-003		1.9300e-003	1.9300e-003	0.0000	5.5247	5.5247	6.5000e-004	0.0000	5.5411
Total	3.8700e-003	0.0353	0.0379	6.0000e-005	0.0113	1.9700e-003	0.0133	5.7600e-003	1.9300e-003	7.6900e-003	0.0000	5.5247	5.5247	6.5000e-004	0.0000	5.5411

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	9.0000e-005	6.0000e-005	6.9000e-004	0.0000	2.2000e-004	0.0000	2.2000e-004	6.0000e-005	0.0000	6.0000e-005	0.0000	0.1839	0.1839	0.0000	0.0000	0.1840
Total	9.0000e-005	6.0000e-005	6.9000e-004	0.0000	2.2000e-004	0.0000	2.2000e-004	6.0000e-005	0.0000	6.0000e-005	0.0000	0.1839	0.1839	0.0000	0.0000	0.1840

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3.4 3 Excavation - 2020

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					0.0526	0.0000	0.0526	0.0286	0.0000	0.0286	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0382	0.3828	0.2636	5.1000e-004		0.0191	0.0191		0.0183	0.0183	0.0000	44.0187	44.0187	7.4400e-003	0.0000	44.2048
Total	0.0382	0.3828	0.2636	5.1000e-004	0.0526	0.0191	0.0717	0.0286	0.0183	0.0469	0.0000	44.0187	44.0187	7.4400e-003	0.0000	44.2048

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	1.7000e-004	7.6400e-003	9.9000e-004	2.0000e-005	5.4000e-004	2.0000e-005	5.7000e-004	1.5000e-004	2.0000e-005	1.7000e-004	0.0000	2.2841	2.2841	1.4000e-004	0.0000	2.2876
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	6.9000e-004	4.8000e-004	5.1600e-003	2.0000e-005	1.6500e-003	1.0000e-005	1.6600e-003	4.4000e-004	1.0000e-005	4.5000e-004	0.0000	1.3794	1.3794	3.0000e-005	0.0000	1.3803
Total	8.6000e-004	8.1200e-003	6.1500e-003	4.0000e-005	2.1900e-003	3.0000e-005	2.2300e-003	5.9000e-004	3.0000e-005	6.2000e-004	0.0000	3.6634	3.6634	1.7000e-004	0.0000	3.6679

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3.4 3 Excavation - 2020

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					0.0205	0.0000	0.0205	0.0112	0.0000	0.0112	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0382	0.3828	0.2636	5.1000e-004		0.0191	0.0191		0.0183	0.0183	0.0000	44.0187	44.0187	7.4400e-003	0.0000	44.2047
Total	0.0382	0.3828	0.2636	5.1000e-004	0.0205	0.0191	0.0396	0.0112	0.0183	0.0294	0.0000	44.0187	44.0187	7.4400e-003	0.0000	44.2047

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	1.7000e-004	7.6400e-003	9.9000e-004	2.0000e-005	5.4000e-004	2.0000e-005	5.7000e-004	1.5000e-004	2.0000e-005	1.7000e-004	0.0000	2.2841	2.2841	1.4000e-004	0.0000	2.2876
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	6.9000e-004	4.8000e-004	5.1600e-003	2.0000e-005	1.6500e-003	1.0000e-005	1.6600e-003	4.4000e-004	1.0000e-005	4.5000e-004	0.0000	1.3794	1.3794	3.0000e-005	0.0000	1.3803
Total	8.6000e-004	8.1200e-003	6.1500e-003	4.0000e-005	2.1900e-003	3.0000e-005	2.2300e-003	5.9000e-004	3.0000e-005	6.2000e-004	0.0000	3.6634	3.6634	1.7000e-004	0.0000	3.6679

Creekside UCR - Riverside-South Coast County, Annual

3.5 5 Remove Diversion - 2020

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					0.0145	0.0000	0.0145	7.3800e-003	0.0000	7.3800e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.6000e-004	2.6300e-003	2.8500e-003	0.0000		1.7000e-004	1.7000e-004		1.5000e-004	1.5000e-004	0.0000	0.3411	0.3411	1.1000e-004	0.0000	0.3438
Total	2.6000e-004	2.6300e-003	2.8500e-003	0.0000	0.0145	1.7000e-004	0.0147	7.3800e-003	1.5000e-004	7.5300e-003	0.0000	0.3411	0.3411	1.1000e-004	0.0000	0.3438

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	6.0000e-005	4.0000e-005	4.3000e-004	0.0000	1.4000e-004	0.0000	1.4000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.1150	0.1150	0.0000	0.0000	0.1150
Total	6.0000e-005	4.0000e-005	4.3000e-004	0.0000	1.4000e-004	0.0000	1.4000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.1150	0.1150	0.0000	0.0000	0.1150

Creekside UCR - Riverside-South Coast County, Annual

3.5 5 Remove Diversion - 2020

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					5.6500e-003	0.0000	5.6500e-003	2.8800e-003	0.0000	2.8800e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.6000e-004	2.6300e-003	2.8500e-003	0.0000		1.7000e-004	1.7000e-004		1.5000e-004	1.5000e-004	0.0000	0.3411	0.3411	1.1000e-004	0.0000	0.3438
Total	2.6000e-004	2.6300e-003	2.8500e-003	0.0000	5.6500e-003	1.7000e-004	5.8200e-003	2.8800e-003	1.5000e-004	3.0300e-003	0.0000	0.3411	0.3411	1.1000e-004	0.0000	0.3438

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	6.0000e-005	4.0000e-005	4.3000e-004	0.0000	1.4000e-004	0.0000	1.4000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.1150	0.1150	0.0000	0.0000	0.1150
Total	6.0000e-005	4.0000e-005	4.3000e-004	0.0000	1.4000e-004	0.0000	1.4000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.1150	0.1150	0.0000	0.0000	0.1150

Creekside UCR - Riverside-South Coast County, Annual

3.6 2 Vegetation Removal - 2020

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					0.0138	0.0000	0.0138	7.3100e-003	0.0000	7.3100e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0141	0.1439	0.0941	1.8000e-004		7.0500e-003	7.0500e-003		6.7200e-003	6.7200e-003	0.0000	16.0414	16.0414	2.9200e-003	0.0000	16.1145
Total	0.0141	0.1439	0.0941	1.8000e-004	0.0138	7.0500e-003	0.0208	7.3100e-003	6.7200e-003	0.0140	0.0000	16.0414	16.0414	2.9200e-003	0.0000	16.1145

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	2.3000e-004	1.6000e-004	1.7200e-003	1.0000e-005	5.5000e-004	0.0000	5.5000e-004	1.5000e-004	0.0000	1.5000e-004	0.0000	0.4598	0.4598	1.0000e-005	0.0000	0.4601
Total	2.3000e-004	1.6000e-004	1.7200e-003	1.0000e-005	5.5000e-004	0.0000	5.5000e-004	1.5000e-004	0.0000	1.5000e-004	0.0000	0.4598	0.4598	1.0000e-005	0.0000	0.4601

Creekside UCR - Riverside-South Coast County, Annual

3.6 2 Vegetation Removal - 2020

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					5.3700e-003	0.0000	5.3700e-003	2.8500e-003	0.0000	2.8500e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0141	0.1439	0.0941	1.8000e-004		7.0500e-003	7.0500e-003		6.7200e-003	6.7200e-003	0.0000	16.0414	16.0414	2.9200e-003	0.0000	16.1144
Total	0.0141	0.1439	0.0941	1.8000e-004	5.3700e-003	7.0500e-003	0.0124	2.8500e-003	6.7200e-003	9.5700e-003	0.0000	16.0414	16.0414	2.9200e-003	0.0000	16.1144

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	2.3000e-004	1.6000e-004	1.7200e-003	1.0000e-005	5.5000e-004	0.0000	5.5000e-004	1.5000e-004	0.0000	1.5000e-004	0.0000	0.4598	0.4598	1.0000e-005	0.0000	0.4601
Total	2.3000e-004	1.6000e-004	1.7200e-003	1.0000e-005	5.5000e-004	0.0000	5.5000e-004	1.5000e-004	0.0000	1.5000e-004	0.0000	0.4598	0.4598	1.0000e-005	0.0000	0.4601

4.0 Operational Detail - Mobile

Creekside UCR - Riverside-South Coast County, Annual

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

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Recreational	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	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
User Defined Recreational	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
User Defined Recreational	0.542116	0.037578	0.185203	0.118503	0.016241	0.005141	0.017392	0.068695	0.001383	0.001183	0.004582	0.000945	0.001038

Creekside UCR - Riverside-South Coast County, Annual

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

Creekside UCR - Riverside-South Coast County, Annual

5.3 Energy by Land Use - Electricity

Unmitigated

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

Creekside UCR - Riverside-South Coast County, Annual

	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	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005
Unmitigated	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005

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	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005
Total	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005

Creekside UCR - Riverside-South Coast County, Annual

6.2 Area by SubCategory

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	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005
Total	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005

7.0 Water Detail

7.1 Mitigation Measures Water

Creekside UCR - Riverside-South Coast County, Annual

	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			
User Defined Recreational	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

Creekside UCR - Riverside-South Coast County, Annual

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
User Defined Recreational	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

Creekside UCR - Riverside-South Coast County, Annual

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
User Defined Recreational	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			
User Defined Recreational	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
----------------	--------	-----------	-----------	-------------	-------------	-----------

Creekside UCR - Riverside-South Coast County, Annual

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
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User Defined Equipment

Equipment Type	Number
----------------	--------

11.0 Vegetation

Appendix C

2019 Biological Resources Assessment

DRAFT

**BIOLOGICAL RESOURCES ASSESSMENT REPORT
FOR THE UCR CREEKSIDE DRAINAGE PROJECT**

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May 2019



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Acronyms and Abbreviations

CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CNDDDB	California Natural Diversity Database
CNPS	California Native Plant Society
DBESP	Determination of Biologically Equivalent or Superior Preservation
NRCS	Natural Resources Conservation Service
Project	Creekside Drainage Project
RWQCB	Regional Water Quality Control Board
SSC	Species of Special Concern
the University; UCR	University of California Riverside
USACE	U.S. Army Corps of Engineers
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
WoS	waters of the State
WoUS	waters of the U.S
WRC MSHCP	Western Riverside County Multiple Species Habitat Conservation Plan

This report is intended to provide information about existing biological resources within the proposed Creekside Drainage Project (herein referred to as “Project”) footprint and surrounding areas and an analysis of temporary and permanent impacts on those resources in the context of federal, state, and local regulatory compliance programs. The project is being proposed by the University of California Riverside (the University; UCR). Additionally, this report includes an evaluation of significance pursuant to the California Environmental Quality Act (CEQA), and recommends mitigation measures to offset potential impacts. An analysis of consistency with the Western Riverside County Multiple Species Habitat Conservation Plan (WRC MSHCP) is also provided.

1.1 Project Location

The Project is within the City of Riverside, Riverside County, California (Figure 1). Specifically, the Project site consists of a drainage feature approximately 0.20 mile north of the intersection of Chicago Avenue and Central Avenue (Figure 2). The Project is within Section 31, Township 2 South, Range 4 West of the Riverside East U.S. Geological Survey (USGS) quadrangle dated 1967, photo revised 1980 (USGS 1967). The Project site is approximately 940 feet above mean sea level as depicted on the Riverside East USGS topographic map. The coordinates (decimal degrees) for the Project site are latitude 33.958882° and longitude 117.346076°. The primary Assessor’s Parcel Number associated with the Project site is 254-370-003. The Project site includes a small, soft-bottom channel that enters the Project boundary through a concrete culvert in the southeast and exits through a 6-foot concrete culvert in the northwest. The channel is bounded on either side by residential developments. A housing development terraced-brick wall stands approximately 75 feet above the bed of the north side of the channel.

1.2 Project History

The Creekside Terrace residential development, north and east of the proposed Project, was approved by the City of Riverside in 2004; the site was graded, utility and street improvements were constructed, and common facilities (clubhouse, pool, and playground) and 24 of the 78 approved residences were completed prior to acquisition of the property by the UCR in 2008.

Engineering evaluations conducted during the course of the campus acquisition process identified remedial measures necessary to ensure long-term stability of the stream bank close to substantial keystone retaining walls along the northern side of the drainage (generally the western tract boundary).

The proposed Project involves the recommended remedial measures, which consist of stabilization improvements within a previously improved stream channel that lies partially within the Creekside Terrace boundaries, but primarily within the site of an adjacent privately owned apartment development, south of the proposed Project. The apartment site owner has entered a legal

agreement with the University that grants access for due diligence inspections and construction of the proposed stabilization improvements, as the south bank is not owned by the University.

1.3 Project Description

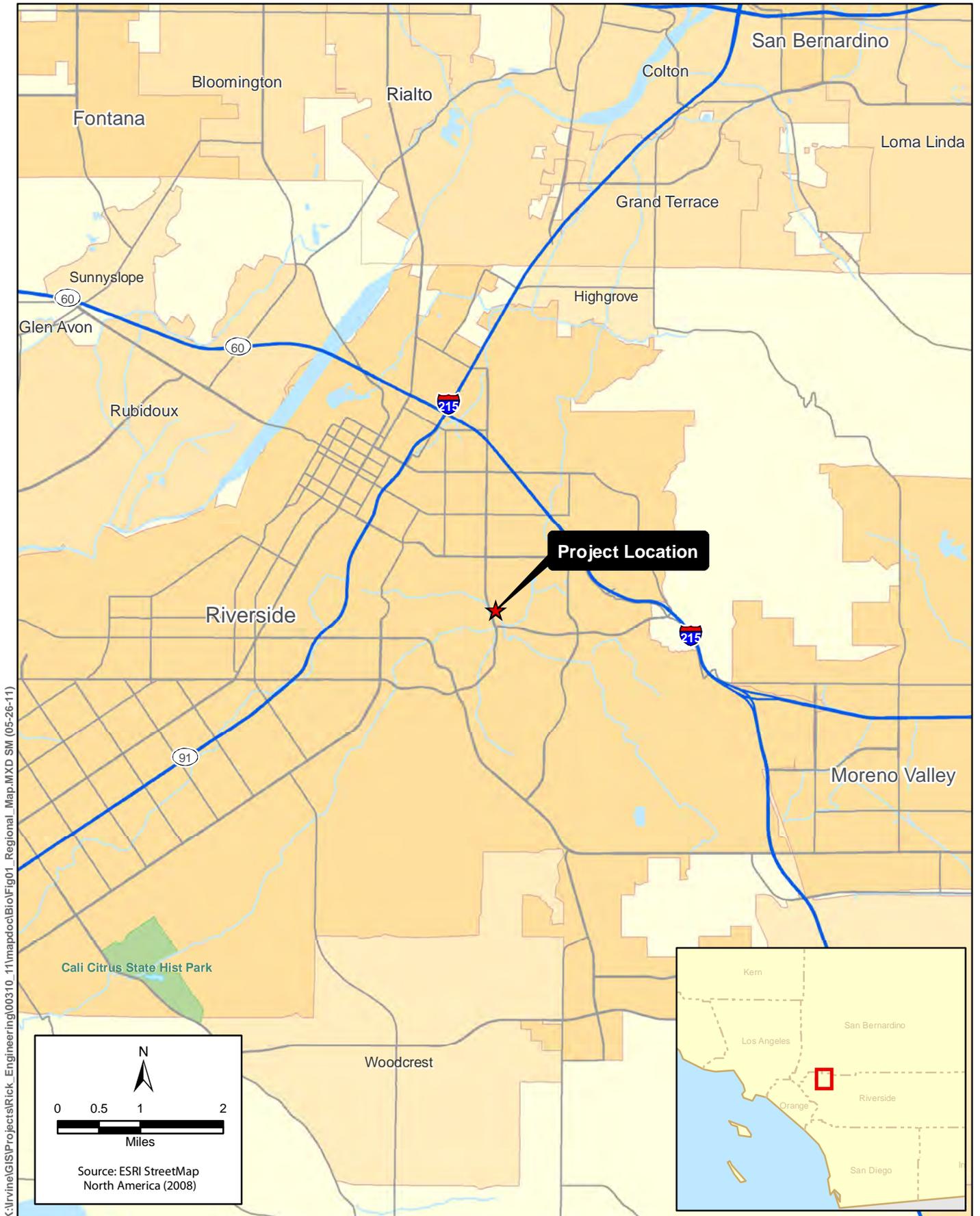
The proposed Project involves stabilization of the north bank of an existing drainage channel adjacent to the University-owned Creekside Terrace residential development (Tract 31671).

Specifically, the channel would be reshaped and rip-rap would be placed on the north bank¹ to match existing conditions on the south bank. The proposed improvements would require the removal of all vegetation on the north bank as well as the channel bottom. A one-time removal of nonnative plants would occur on the south bank. Revegetation with native plants would occur throughout the riparian area on both the north and south banks.

The proposed design would excavate the channel to expose the lower extent of the existing rip-rap cover on the south bank. The site would be accessed via a gate at Chicago Avenue. The proposed staging area for the Project is located on an undeveloped residential lot at the corner of Donalisa Avenue and Oroblanco Avenue. Work would be conducted from the existing access path along the north side of the channel. A series of 34 small-diameter drains extending from the north bank would be protected in place (these are the outlets for the subdrain system for the Creekside Terrace retaining walls). Bottom sediments would be stockpiled for replacement in the reconstructed drainage channel. The excavated area would be graded to establish a v-channel with a uniform slope face extending between the existing top of the bank on the Creekside Terrace side of the channel and the existing toe of rip-rap cover on the opposite bank. UngROUTED rip-rap with a filter fabric underlay would be placed over the newly graded slope and the subdrain system outlet pipes would be trimmed so that they do not extend beyond the rock surface. Stockpiled sediments would be replaced within the channel bottom and finished surface elevations would be established to create a functional flow regime between the existing culverts at each end of the Project. Rip-rap pads (5 feet wide and 10 feet long) would be established at the existing inlet and outlet for energy dissipation. Figure 3 provides the Project design and limits of the proposed Project.

The subject drainage channel flows year-round; therefore, diversion would be necessary during construction. Considering the nature of the tributary flows and the constrained conditions along the work limits, feasible diversion methods are limited. The entire work limits would need to be dewatered for the duration of construction. This would require a piped diversion from the existing culvert outlet at the upstream end of the work limits to the existing culvert inlet at the downstream end of the work limits. The diversion pipe is expected to be placed along the south bank or perhaps within landscaped areas within the adjacent apartment development. Considering the relative grade between the culvert outlet at the upstream end of the work limits and the likely bypass pipeline location, pumping is expected to be required. A portable generator may be required as a power source.

¹ The drainage channel includes a bend within the Project limits, with a portion of the channel oriented generally north/south and a portion oriented generally east/west. For this report, the bank adjacent to the University-owned property is referred to as the north bank, while the bank adjacent to the privately owned apartment site is referred to as the south bank.

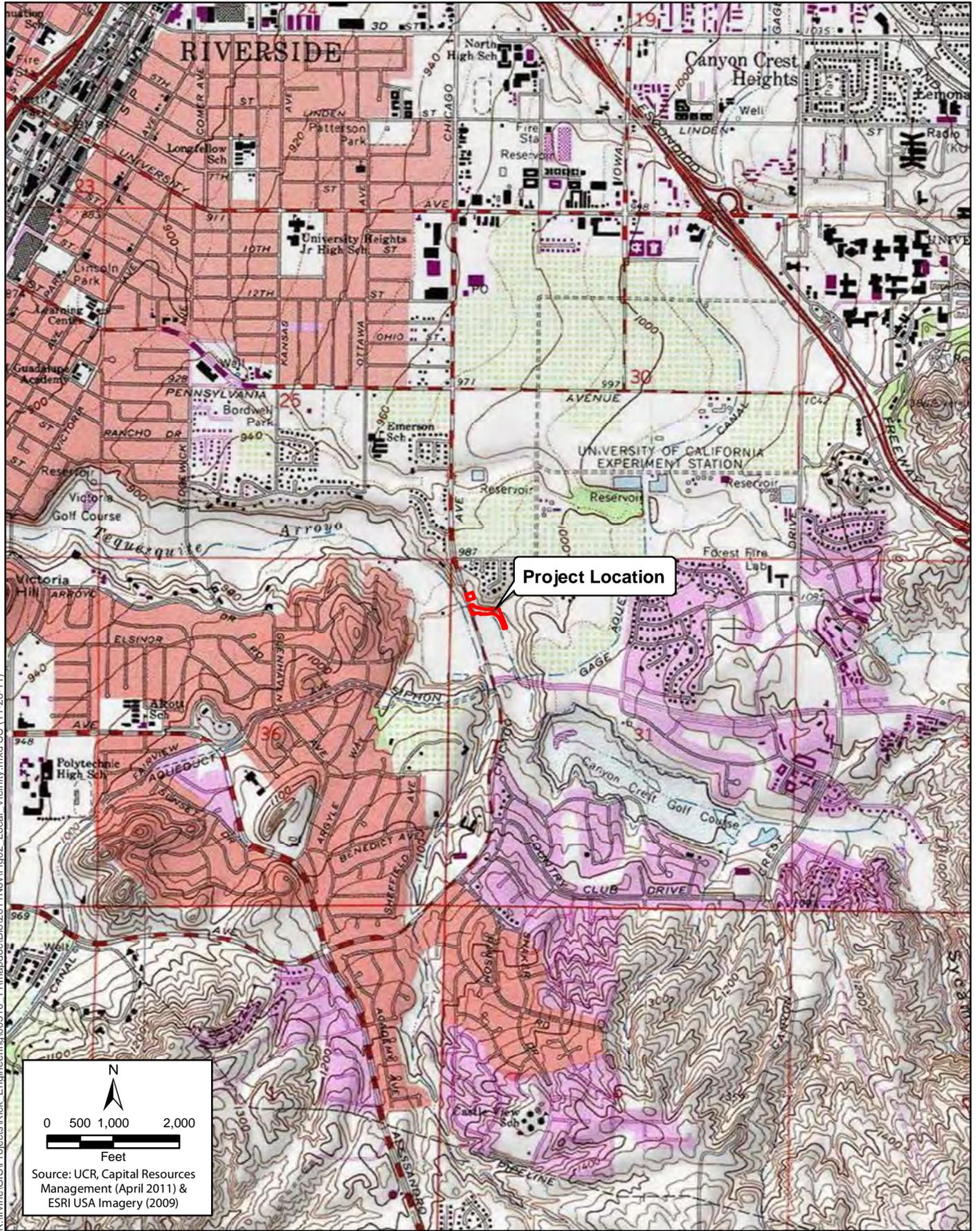


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Figure 1
Regional Vicinity Map
UCR Creekside Drainage Project

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Figure 2
Vicinity/USGS Topographic
UCR Creekside Drainage Project



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Construction is anticipated to last approximately 120 days. The proposed finished conditions are intended to retain the existing hydrologic functions and values of the affected drainage feature and to maximize post-construction biological functions.

1.4 Western Riverside County Multiple Species Habitat Conservation Plan

The WRC MSHCP (Dudek & Associates 2003) is a comprehensive, multi-jurisdictional habitat-conservation planning program for western Riverside County, California. The purpose of the WRC MSHCP is to preserve native habitats and, to this end, the plan focuses on the habitat needs of multiple species rather than one species at a time. The WRC MSHCP provides coverage/take authorization for some species listed under the federal or state Endangered Species Acts as well as non-listed special-status plant and wildlife species. It also provides mitigation for impacts on special-status species and their associated habitats.

Through agreements with the U.S. Fish and Wildlife Service (USFWS) and California Department of Fish and Wildlife (CDFW), 146 listed and special-status plant and animal species receive some level of coverage under the WRC MSHCP. Of the 146 covered species, the majority of these species have no additional survey needs or conservation requirements. Furthermore, the WRC MSHCP provides mitigation for project-specific impacts on these species, thereby reducing the degree of impact to below a level of significance, pursuant to CEQA.

Several of the species covered under the WRC MSHCP have additional survey requirements. These include the riparian/riverine communities and associated species addressed in Section 6.1.2 of the WRC MSHCP document (Protection of Species Associated with Riparian/Riverine Areas and Vernal Pools), plants identified in Section 6.1.3 (Narrow Endemic Plant Species), and plants and animal species addressed in Section 6.3.2 (Additional Survey Needs and Procedures).

1.4.1 Project Relationship to the WRC MSHCP

The Project site is within the plan area for the WRC MSHCP. UCR is not a permittee under the WRC MSHCP and, therefore, is not afforded take coverage under the state or federal Endangered Species Acts for impacts on listed species covered by the plan. Even though the University is not a participant in the WRC MSHCP, it is necessary to address Project consistency with the provisions of the plan in the context of CEQA significance criteria regarding Project consistency with adopted habitat conservation plans. Additionally, while the University is exempt from local planning and building regulations, the proposed Project requires improvements adjacent to but outside of the campus property and, therefore, may be subject to additional review by the City of Riverside. If this is the case, the City would be required to document consistency with the WRC MSHCP in conjunction with any City discretionary approval for the Project. As such, this report was prepared to provide all necessary information required to determine Project consistency with the WRC MSHCP.

The Project site is within the “Cities of Riverside and Norco Area Plan” of the WRC MSHCP. The Project site is not within a criteria cell, a core/linkage area, or public/quasi-public lands. The Project is not within any plan-defined areas requiring surveys for narrow endemic plant species, criteria area plant species, amphibian species, or mammalian species.

The Project site is within the WRC MSHCP burrowing owl (*Athene cunicularia*) survey area. A habitat assessment has determined that the site does not provide suitable habitat for burrowing owl.

The stream and associated riparian habitat meet the definition of WRC MSHCP riparian/riverine resources; however, no vernal pool or seasonal pool resources (fairy shrimp habitat) are located on site. The onsite riparian habitat has been evaluated with respect to WRC MSHCP provisions related to focused survey requirements for the covered riparian-associated bird species: least Bell's vireo (*Vireo bellii pusillus*), southwestern willow flycatcher (*Empidonax traillii extimus*), and western yellow-billed cuckoo (*Coccyzus americanus occidentalis*). On the basis of the habitat assessment, focused surveys for least Bell's vireo were completed.

Projects adversely affecting WRC MSHCP riparian/riverine resources as they benefit the 34 covered plant and animal species identified in the plan documents (under WRC MSHCP Section 6.1.2, "Purpose," on pages 6-20 and 6-21) are subject to preparation of a Determination of Biologically Equivalent or Superior Preservation (DBESP) report. The DBESP details Project impacts on the WRC MSHCP riparian/riverine resources and identifies measures to ensure replacement of any lost functions and values as they relate to the 34 focus species. The DBESP is subject to review by the local permittee and concurrence by USFWS and CDFW.

2.1 Literature Review

A comprehensive literature review was conducted to evaluate the environmental setting of the Project site and identify potential special-status species that may be found on the site. The review included a search of the California Natural Diversity Database (CNDDDB) (CDFW 2018) and the California Native Plant Society (CNPS) Inventory of Rare and Endangered Plants (CNPS 2018) for the Riverside East, San Bernardino South, Redlands, Sunnymead, Perris, Steele Peak, Lake Mathews, Riverside West, and Fontana 7.5-minute USGS quadrangles. Additionally, the U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) Web Soil Survey (NRCS 2018) for the Project boundary, literature detailing the habitat requirements of special-status species, Volumes I and II of the WRC MSHCP document, and the most recent USFWS critical habitat maps were reviewed.

2.2 Field Visit

The reconnaissance field work was conducted on June 18, 2018, by ICF biologists Marissa Maggio and Marisa Flores. The site visit was conducted between 1030 and 1230 hours. Weather conditions during the field visit consisted of temperatures ranging from 74 to 78 degrees Fahrenheit with winds ranging from 0 to 2 miles per hour, and clear skies with 0 percent cloud cover. The survey focused on mapping vegetation and conducting habitat assessments for special-status plants and wildlife within the 1.31-acre Project boundary. No study area buffer was applied because all areas surrounding the Project boundary are developed.

All plant and wildlife species observed during the site visit were recorded in field notes and are listed in Appendix A. Plants were identified through direct observation to the lowest taxonomic level sufficient to determine whether the plant species observed was invasive, nonnative, native, or special status using the *Jepson Manual: Vascular Plants of California* (Baldwin et al. 2012). Wildlife species were detected by sight, calls, tracks, scat, or other sign.

In addition, a jurisdictional delineation was conducted for the Project area on June 21, 2018. The Jurisdictional Delineation Report is provided in Appendix B and includes the full methodology.

2.3 Vegetation Mapping

Vegetation classifications for plant communities were derived from the criteria and definitions in Holland (1986) consistent with classifications described in the WRC MSHCP. Vegetation mapping was conducted in the field using a map with the scale of 1 inch = 60 feet. During the vegetation mapping, areas of special-status habitat pursuant to CDFW and USFWS were noted. Additionally, the Project boundary was evaluated for the presence of WRC MSHCP riparian/riverine areas and vernal pools subject to Section 6.1.2 of the WRC MSHCP.

2.4 Habitat Assessments

Habitat assessments were conducted for all special-status species documented as historically occurring in the vicinity of the Project site by the CNDDDB (CDFW 2018) or CNPS (2018) (Appendix C). A species-specific habitat evaluation was performed for burrowing owl because the proposed Project occurs within the WRC MSHCP Burrowing Owl Survey Area. The habitat assessment for burrowing owl followed the WRC MSHCP Burrowing Owl Survey Instructions (County of Riverside 2005). Specifically, the entire site was walked and inspected for the presence of suitable burrowing owl habitat and potential burrow features. In addition, to ensure WRC MSHCP compliance, a habitat assessment was performed for all riparian/riverine species discussed under “Purpose” in Section 6.1.2 of the WRC MSHCP, including least Bell’s vireo, southwestern willow flycatcher, and western yellow-billed cuckoo.

Habitat assessments for all species were performed by biologists familiar with species habitat requirements with all portions of the Project boundary being reviewed. A description of species requirements for all special-status species evaluated is provided in Appendix C.

This section provides the results of the existing conditions and habitat assessments performed for special-status species. In addition, the impacts on biological resources with potential to occur are provided, along with recommendations for mitigation. The permanent and temporary impact areas identified for the Project are shown on Figure 3. Permanent impacts include all direct impacts associated with movement of soils within the within the channel and its banks, installation of rip-rap, and any permanent features being installed for the Project. Temporary impacts include staging areas or areas used for equipment access, vehicles, or personnel.

3.1 Existing Conditions

Existing land uses include the Creekside Terrace residential community on the north side and Chicago Avenue and Canyon Crest Village apartment complex on the south side. The Project site lies between these two residential developments. Disturbances in the Project boundary include small amounts of trash, human encroachment, a high density of invasive plant species, and domestic animals. Appendix D contains photographs of the Project site.

A large aquatic feature within the Project boundary is a soft-bottom perennial channel containing a mix of riparian and nonnative vegetation. The terrace on the north bank of the channel within the Project boundary is routinely mowed. The north bank of the channel is experiencing substantial erosion in several locations.

The following soil types were mapped by the USDA NRCS Web Soil Survey (June 2018) within the Project boundary: Hanford Coarse Sandy Loam 2 to 8 percent slopes (HcC), and Terrace Escarpments (TeG). None of these soils are known to support sensitive plants or designated as WRC MSHCP sensitive soils. Refer to Figure 4 for a map of the soils.

3.2 Vegetation Communities

Four vegetation/land cover types were mapped within the 1.13-acre Project boundary: Developed, Ruderal, Exotic, and Disturbed Southern Willow Scrub. These vegetation types are described below and depicted on Figure 5. Table 1 summarizes the vegetation communities present and includes the permanent and temporary impacts on these communities.

Table 1. Vegetation Communities and Proposed Impact Areas

Vegetation Community	Total Existing Vegetation*	Permanent Impact	Temporary Impact
Developed	0.22	<0.01	0.21
Ruderal	0.25	0.06	0.17
Exotic	0.29	0.00	0.00
Disturbed Southern Willow Scrub	0.64	0.31	0.04
Grand Total	1.34	0.37	0.21

* Includes the Project boundary (1.13 acres) and offsite potential staging area (0.21 acre).

3.2.1 Developed

Approximately 0.01 acre of developed land was mapped within the Project boundary. Developed areas include all portions of the residential developments (Canyon Crest Village Apartments and Creekside Terrace) surrounding the channel, including the brick-terraced retaining wall and concrete v-ditches associated with the retaining wall and houses above. Developed areas are unvegetated and are mostly composed of the parking lot edges directly adjacent to the south banks of the channel. Within the Project boundary, there is a small portion of the concrete v-ditch that connects to the streambed at the downstream portion via an 8-inch-diameter polyvinyl chloride pipe.

A previously graded and undeveloped area (0.21 acre) at the corner of Donalisa Avenue and Oroblanco Avenue has been identified as a potential staging area. Impacts from the potential staging area would be considered temporary.

3.2.2 Ruderal

Approximately 0.25 acre of ruderal land was mapped within the Project boundary. Ruderal lands include the flat terraced areas and exposed rip-rap on the sides of the channel adjacent to Chicago Avenue. The exposed rip-rip areas of the channel contain little to no vegetation. Vegetation on the terraced area consists of nonnative ruderal plants and is dominated by wild lettuce (*Lactuca serriola*), common horseweed (*Conyza canadensis*), cheeseweed (*Malva parviflora*), black mustard (*Brassica nigra*), and nonnative grasses such as red brome (*Bromus madritensis* ssp. *rubens*), riggut brome (*Bromus diandrus*), and Mediterranean grass (*Schismus barbatus*). The terrace is routinely maintained for easement access and appeared to have been recently mowed at the time of the site visit.

With the exception of the rip-rap area adjacent to Chicago Avenue, 0.06 acre of ruderal areas would be permanently affected and 0.17 acre would be temporarily affected by the proposed Project. No mitigation is required to offset impacts on ruderal habitat. Activity in areas of ruderal vegetation that entail removal of vegetation or use of heavy construction equipment would be subject to recommendations in Section 3.4, below, and Appendix E, Avoidance, Minimization, and Mitigation Measures, regarding nesting birds.

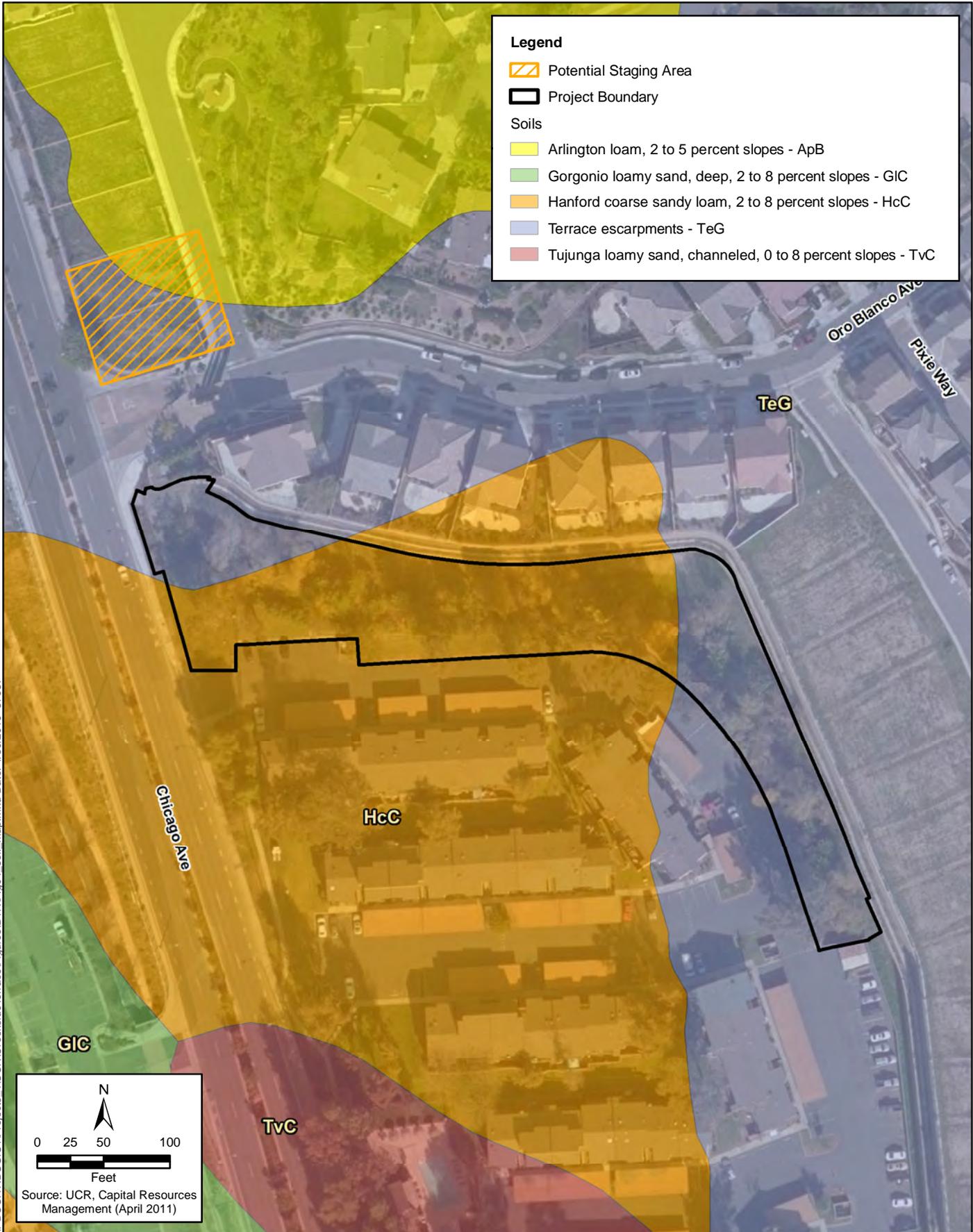


Figure 5
Soil Map
 UCR Creekside Drainage Project

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Legend

Project Boundary	Vegetation Communities
Permanent Impact	Disturbed Southern Willow Scrub
Temporary Impact	Exotic
Potential Staging Area	Developed
Invasives Removal	Ruderal

N
 0 25 50 100
 Feet
 Source: UCR, Capital Resources Management (April 2011)

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Figure 5
Impacts on Vegetation
UCR Creekside Drainage Project



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3.2.3 Exotic

Approximately 0.23 acre of exotic vegetation was mapped within the Project boundary. Specifically, the exotic vegetation is on the south side of the drainage channel and consists of nonnative eucalyptus trees (*Eucalyptus* sp.), ornamental landscaping plants, and landscaping associated with the adjacent apartment complex.

As part of the Project design, a one-time removal of invasive plants would occur, 0.02 acre of which was mapped as exotic vegetation. The removal of 0.02 acre of exotic plants would result in a net benefit.

It is anticipated that all construction work would be conducted from the north bank of the channel. Access to the south side of the channel would be limited to removal of exotic vegetation. Activity in areas of exotic vegetation that entail removal of vegetation or use of heavy construction equipment would be subject to recommendations in Section 3.4, below, and Appendix E regarding nesting birds.

3.2.4 Disturbed Southern Willow Scrub

Approximately 0.64 acre of disturbed southern willow scrub was mapped within the Project boundary. This riparian community is composed of arroyo willow (*Salix lasiolepis*), Gooding's willow (*Salix gooddingii*), mulefat (*Baccharis salicifolia*), sycamore (*Platanus racemosa*), elderberry (*Sambucus mexicana*), and stinging nettle (*Urtica dioica*). There is a high percentage of nonnative vegetation, such as ornamental ash (*Fraxinus* sp.), castor bean (*Ricinus communis*), Mexican fan palm (*Washingtonia robusta*), date palm (*Phoenix canariensis*), Peruvian peppertree (*Schinus molle*), tamarisk (*Tamarix ramosissima*), and tree tobacco (*Nicotiana glauca*). There is a low cover of riparian herbaceous species under the canopy, including cocklebur (*Xanthium strumarium*), willow weed (*Persicaria lapathifolia*), and mugwort (*Artemisia douglasiana*). Disturbed southern willow scrub is designated as a sensitive community by CDFW. Additionally, this vegetation community meets the definition of a WRC MSHCP riparian/riverine area.

With Project implementation, approximately 0.31 acre of disturbed southern willow scrub would be permanently affected and 0.04 acre would be temporarily affected. In addition, as part of the Project design, a one-time removal of invasive plants would occur within the disturbed southern willow scrub (0.27 acre). Furthermore, the entire channel would be replanted with native plants. Invasive plant removal and the replanting of native species would result in a net benefit to 0.27 acre of this vegetation community within the invasive removal area.

Measure 1 (Stormwater Control Measures) and Measure 2 (Biological Monitoring) in Appendix E would ensure the Project complies with water quality requirements and reduces the potential for indirect impacts from construction on sensitive vegetation communities adjacent to the impact area. Compensation for impacts on the disturbed southern willow scrub will be addressed through purchase into an agency-approved in-lieu fee program or mitigation at 2:1. This compensation will be coordinated during the acquisition of a state Streambed Alteration Agreement (California Fish and Game Code 1602) with CDFW and federal Clean Water Act 401 and 404 permits (through the U.S. Army Corps of Engineers [USACE] and CDFW). To ensure WRC MSHCP consistency, a DBESP report will be prepared outlining the impacts on WRC MSHCP riparian/riverine resources and specific mitigation requirements. The mitigation and minimizations measures in Appendix E would ensure the Project would have a less-than-significant effect on sensitive natural communities.

3.3 Special-Status Species Habitat Assessment

Four species were evaluated for their potential to occur within the vicinity of the Project boundary based on the results of the literature review and professional experience of the region (Appendix C): burrowing owl, least Bell's vireo, southwestern willow flycatcher, and western yellow-billed cuckoo. The species discussed below have a potential to occur based on the presence of suitable habitat observed during the habitat assessment, or have species-specific survey requirements for a habitat assessment. Appendix A provides a list of all plant and animal species observed during the site visit. All other species described in Appendix C are not discussed in this chapter; however, they would not have a potential to occur based on lack of suitable habitat including areas for breeding or foraging, lack of suitable soils (such as clay soils), existing disturbances on the site, or geographic location of the Project site.

3.3.1 Burrowing Owl

The burrowing owl is a CDFW Species of Special Concern (SSC) and was assessed for habitat suitability on the Project site because the Project would occur within the MSHCP Burrowing Owl Survey Area. Refer to Appendix C for details of this species' habitat requirements.

Based on the habitat assessment conducted for burrowing owl, the Project site does not contain the potential for burrowing owl to occur due to a lack of suitable burrowing owl habitat (i.e., open, sparsely vegetated areas) and the lack of potential burrow features (i.e., small mammal burrows).

3.3.2 Least Bell's Vireo

The least Bell's vireo is a federally and state-listed endangered species. The disturbed southern willow scrub (0.64 acre) on the Project site has the potential to support least Bell's vireo due to suitable canopy structure, although the quality of the habitat is low due to a high percentage of invasive species and low density within the shrub layer. Refer to Appendix C for additional details of the species' habitat requirements. Because suitable habitat for least Bell's vireo is present, USFWS protocol-level focused surveys were initiated on May 16, 2018, and completed on July 30, 2018. This species was not documented in the Project boundary during the focused surveys in 2018 and 2011 and was assumed absent in 2013. The methods and results of the least Bell's vireo focused surveys are reported in Appendix F.

3.3.3 Southwestern Willow Flycatcher

The southwestern willow flycatcher is a federally and state-listed endangered species. The Project site does not contain suitable habitat for the southwestern willow flycatcher due to the relatively small size of the riparian habitat, the lack of extensive riparian vegetation with dense canopy within wide floodplain areas, and the fairly isolated nature of the riparian community. Refer to Appendix C for details of the species' habitat requirements.

3.3.4 Western Yellow-billed Cuckoo

Western yellow-billed cuckoo is a state-listed endangered species. The Project site does not contain suitable habitat for the western yellow-billed cuckoo due to the small size of the riparian habitat, the lack of extensive areas of riparian vegetation within large floodplain areas, and the fairly isolated

nature of the riparian community. Refer to Appendix C for details of the species' habitat requirements.

3.3.5 Additional Species Observed or Identified with the Potential to Occur

Based on review of the CNDDDB (CDFW 2018) and CNPS database (2018), there were seven special-status species that were identified as having potential to occur or were detected on the Project site. These species are California satintail (*Imperata brevifolia*), western pond turtle (*Actinemys marmorata*), two-striped garter snake (*Thamnophis hammondi*), San Diego desert woodrat (*Neotoma lepida intermedia*), yellow warbler (*Dendroica petechia*), long-eared owl (*Asio otus*), and western yellow bat (*Lasiurus xanthinus*).

Special-Status Species and WRC MSHCP Covered Species Observed

One special-status species was observed in the Project boundary during the reconnaissance survey: yellow warbler. Yellow warbler is designated as a CDFW SSC and is a species considered to be adequately conserved and covered under the WRC MSHCP. Regional conservation efforts focused on areas outside of the Project site have, and will, conserve sufficient habitat for this species. As such, in a regional context, impacts on this species would be considered less than significant.

Species Identified as Having a Low Potential to Occur

Five special-status species were determined to have a low potential to occur in the Project boundary: California satintail, western pond turtle, two-striped garter snake, San Diego desert woodrat, and long-eared owl. The four species are described below.

California Satintail

California satintail is designated as a California Rare Plant Rank 2.1 species by CNPS. This species is not designated as a state- or federally listed species or a species receiving coverage under the WRC MSHCP. No individuals of California satintail were observed during site visits. It was determined that this species has a low potential to occur on the site; however, if it does occur on site, it is in low numbers and Project-related impacts would be considered less than significant.

Western Pond Turtle

Western pond turtle is designated as a CDFW SSC as well as a WRC MSHCP species considered adequately conserved. This species is not a state- or federally listed species. The western pond turtle was determined to have a low potential to occur on the site due to the presence of stream habitat; however, it is not expected to occur on site due to a lack of sufficient suitable basking sites. No individuals or any sign of presence of this species were detected during the site visits.

Regional conservation efforts focused on areas outside of the Project site have conserved sufficient habitat for this species. As such, in a regional context, impacts on this species would be considered less than significant under CEQA.

Two-striped Garter Snake

Two-striped garter snake is designated as a CDFW SSC, and is not listed as a conserved species by the WRC MSHCP. The two-striped garter snake was determined to have a low potential to occur on the site due to limited access to stream habitat; however, it is not expected to occur on site due to the highly urbanized nature of the site and a small prey-base in the stream. No individuals or any sign of presence of this species were detected during the site visits. Based on the limited availability of habitat and prey and overall low potential, if this species is present, it would not occur in numbers where potential impacts on this species would be considered significant under CEQA.

San Diego Desert Woodrat

The San Diego desert woodrat is designated as a CDFW SSC as well as a WRC MSHCP species considered adequately conserved. This species is not a state- or federally listed species. The San Diego desert woodrat was determined to have a low potential to occur on site due to the presence of riparian habitat; however, it is not expected due to a lack of substantial shrub cover and the narrow nature of the riparian corridor on the site. No individuals or any sign of presence of this species were detected during the site visits.

Regional conservation efforts focused on areas outside of the Project site have conserved sufficient habitat for this species to be considered adequately conserved in the region. As such, in a regional context, impacts on this species would be considered less than significant under CEQA.

Long-eared Owl

The long-eared owl is designated as a CDFW SSC as well as a WRC MSHCP species considered adequately conserved. Additionally, this species is not a state- or federally listed species. The long-eared owl was determined to have a low potential to occur on site due to the presence of riparian habitat; however, it is not expected due to a lack of substantial riparian coverage on the Project site and the high density of invasive plants. No individuals or any sign of presence of this species were detected during the site visits.

Regional conservation efforts focused on areas outside of the Project site have conserved sufficient habitat for this species to be considered adequately conserved in the region. As such, in a regional context, impacts on this species would be considered less than significant.

Species Identified as Having a Moderate Potential to Occur

One species, western yellow bat, was determined to have a moderate potential to occur on the Project site. The western yellow bat is designated as a CDFW SSC. The western yellow bat is not covered under the WRC MSHCP, nor is it designated as a state- or federally listed species. This species is known to roost in the dead fronds of palm trees within palm oases or residential areas and forages over water and among trees. Due to the lack of extensive palm coverage within the Project boundary, it was determined that the Project site lacks suitable communal roosting habitat for this species. However, due to the presence of a several individual palm trees, it was determined that the site has a moderate potential to support individual roosting and foraging western yellow bats. The proposed Project may directly remove suitable roosting trees and there is also a potential for temporary indirect impacts due to construction noise and ground-moving disturbance during construction, as the majority of the palms in the Project boundary occur on the south bank. Direct and/or indirect impacts on western yellow bat may be considered significant under CEQA.

To ensure that the Project would have a less-than-significant effect on western yellow bat potentially roosting or foraging within the Project boundary, biological monitoring (Measure 3, Appendix E) and a preconstruction roosting bat survey (Measure 4, Appendix E) would occur to ensure there are no impacts on the species.

3.4 Nesting Birds

In addition to the species-specific analysis provided above, vegetation within the Project site provides habitat for a variety of nesting birds that are protected under state and federal laws. Migratory, nongame, native bird species are protected under the federal Migratory Bird Treaty Act. Additionally, Sections 3503, 3503.5, and 3513 of the California Fish and Game Code prohibit take of all birds and their active nests. If vegetation removal and other ground disturbance activities occur within the nesting bird breeding season (February 15 through September 15), there is a potential for impacts on nesting birds. Measure 2 and Measure 4 in Appendix E provide the avoidance and minimization measures that would be implemented during the bird breeding season. These measures may be superseded by conditional requirements in the State Streambed Alteration Agreement.

3.5 Jurisdictional Aquatic Resources

The jurisdictional delineation mapped the aquatic features within the Project boundary that are potentially jurisdictional under the Clean Water Act Section 401/404 and Section 1600 of the California Fish and Game Code. Two drainage features are within the Project boundary. Feature 1 is a perennial channel and narrow riparian corridor. Feature 2 is a concrete-lined v-ditch along the northern edge of the Project boundary. The Jurisdictional Delineation Report (Appendix B) provides the results of the jurisdictional delineation and detailed descriptions of the aquatic features mapped within the Project boundary. Table 2 summarizes the total jurisdictional waters under USACE, Regional Water Quality Control Board (RWQCB), and CDFW jurisdictions within the Project boundary.

Table 2. Summary of Potential USACE, RWQCB, and CDFW Jurisdictional Water Resources

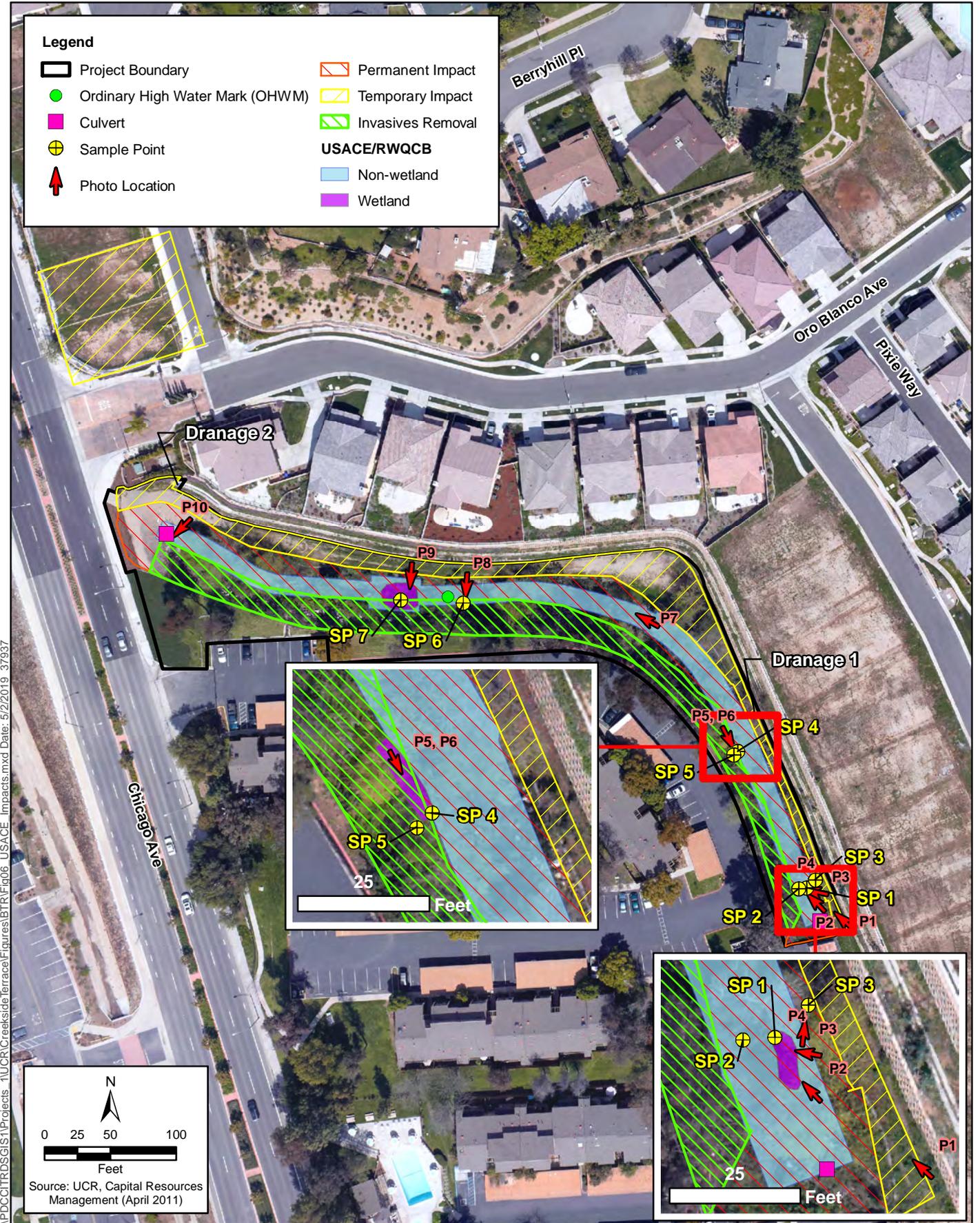
Drainage Feature	Descriptions	USACE/RWQCB		CDFW	
		Non-Wetland WoUS/WoS (acres/ linear feet)	Wetland WoUS/WoS (acres)	Unvegetated Streambed (acres/ linear feet)	Riparian (acres)
Feature 1	Perennial; earthen; wetland portions exhibit hydrophytic vegetation, hydric soils (sandy redox and muck), and hydrology (debris wrack, drainage patterns). Sample Points SP-1 through 7.	0.239/650	0.013	0.056/430	0.641
Feature 2	Ephemeral; concrete-lined v-ditch.	0.000/2	0.000	0.001/2	0.00
Total		0.239/652	0.013	0.057/432	0.641

The proposed Project would permanently affect 0.21 acre (652 linear feet) of federal non-wetland waters of the U.S (WoUS) and waters of the State (WoS) and 0.01 acre of wetland waters jurisdictional under USACE and RWQCB. Figure 6 illustrates the permanent and temporary impacts on USACE and RWQCB jurisdictional areas. Refer to Table 3 for a summary of impacts on USACE and RWQCB jurisdictional aquatic resources.

In addition, the proposed Project would permanently affect 0.06 acre (240 linear feet) of CDFW state streambed and 0.31 acre of CDFW riparian habitat. Temporary impacts would occur on 0.02 acre (296 linear feet) of CDFW state streambed and 0.04 acre of CDFW riparian habitat. Figure 7 illustrates the permanent and temporary impacts on CDFW jurisdictional areas. Refer to Table 4 for a summary of impacts on CDFW jurisdictional aquatic resources.

Table 3. Summary of Impacts on USACE and RWQCB Wetland and Non-Wetland Waters of the U.S./State

Feature Type	Feature Description	Non-Wetland WoUS/WoS (acres/linear feet)		Wetland WoUS/WoS (acres)	
		Permanent	Temporary	Permanent	Temporary
Feature 1	Perennial; earthen; wetland portions exhibit hydrophytic vegetation, hydric soils (sandy redox and muck), and hydrology (debris wrack, drainage patterns). Sample Points SP-1 through 7.	0.21/652	0.00/0	0.01	0.01
Feature 2	Ephemeral; concrete-lined v-ditch.	--	--/0	--	--
Total		0.21/652	0.00/0	0.01	0.01



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Figure 6
Impacts on USACE/RWQCB Jurisdiction
UCR Creekside Drainage Project

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Figure 7
Impacts on CDFW Jurisdiction
UCR Creekside Drainage Project



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Table 4. Summary of Impacts on CDFW Streambed and Associated Riparian Habitat

Feature Type	Feature Description	Unvegetated Streambed (acres/linear feet)		Riparian (acres)	
		Permanent	Temporary	Permanent	Temporary
Feature 1	Perennial; earthen; wetland portions exhibit hydrophytic vegetation, hydric soils (sandy redox and muck), and hydrology (debris wrack, drainage patterns).	0.04/240	0.02/295	0.31	0.04
Feature 2	Ephemeral; concrete-lined v-ditch.	0.00/0	0.00/1	0.00/0	0.00
Total		0.04/240	0.02/296	0.31/0	0.04

Compensation for the direct permanent impacts on USACE/RWQCB and CDFW jurisdictional waters will be necessary (Measure 5). As part of the Project design, a one-time removal of exotic plants would occur on the southern bank and native riparian species would be planted throughout the channel. No ongoing maintenance of vegetation within the channel is proposed. Because the channel enhancement is being done as part of the Project design, it is not subject to performance criteria; however it would provide a net benefit to the channel. The compensation for impacts on non-wetland WoUS and CDFW streambeds would occur at 1:1 and impacts on wetlands WoUS and CDFW riparian habitat would be at a 2:1 ratio primarily through offsite mitigation at an agency-approved in-lieu fee program. The University will coordinate with USACE, RWQCB, and CDFW to finalize the mitigation requirements. This compensation would ensure no net loss of wetlands and would ensure impacts are less than significant under CEQA.

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4.1 Relationship of the Project Site to the WRC MSHCP

The proposed Project is within the plan area for the WRC MSHCP. As previously noted in Section 1, UCR is not a permittee under the WRC MSHCP. Even though the University is not a participant in the WRC MSHCP, it is necessary to address Project consistency with the provisions of the plan in the context of CEQA significance criteria dealing with Project consistency with adopted habitat conservation plans. In addition, the proposed Project may entail a discretionary approval from the City of Riverside. As a permittee, the City would be required to make a formal determination of Project consistency with the WRC MSHCP. As such, this report was prepared to provide all necessary information required to determine WRC MSHCP consistency.

The Project site is within the “Cities of Riverside and Norco Area Plan” of the WRC MSHCP. The Project site is not within a criteria cell, a linkage area, or public/quasi-public lands; therefore, the Project is not subject to the Habitat Acquisition Negotiation Process. In addition, the Project is not within plan-defined areas requiring surveys for narrow endemic plant species, criteria area plant species, amphibian species, or mammalian species. The Project site is within the WRC MSHCP Burrowing Owl Survey Area pursuant to Section 6.3.2 of the WRC MSHCP. In addition, the Project site contains areas meeting the definition of a WRC MSHCP riparian/riverine area pursuant to Section 6.1.2 of the WRC MSHCP.

4.2 Protection of Species Associated With Riparian/Riverine Areas and Vernal Pools

The WRC MSHCP defines riparian/riverine areas as:

Lands which contain habitat dominated by trees, shrubs, persistent emergent mosses and lichens, which occur close to or which depend upon soils moisture from a nearby fresh water source; or areas with fresh water flow during all or a portion of the year.

The WRC MSHCP defines vernal pools as:

Seasonal wetlands that occur in depression areas that have wetlands 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.

The proposed Project boundary contains 0.64 acre of disturbed southern willow scrub, which meets the WRC MSHCP definition of a riparian/riverine area pursuant to Section 6.1.2 of the WRC MSHCP, 0.31 acre of which would be permanently affected and 0.04 acre would be temporarily affected. The Project site does not support vernal pools or seasonal pools, or associated species. Due the Project affecting riparian and riverine habitat, a DBESP report will be prepared and reviewed by USFWS and CDFW. Approval of the DBESP will provide an official record of Project consistency with the WRC MSHCP Riparian/Riverine policies.

4.3 Protection of Narrow Endemic Plant Species

The Project site is not within the WRC MSHCP Narrow Endemic Plant Species Survey Area pursuant to Section 6.1.3 of the MSHCP. Therefore, the Narrow Endemic Plant Species Survey Area requirements are not applicable to the Project and the Project is consistent with the WRC MSHCP Narrow Endemic Plant Species policies.

4.4 Guidelines Pertaining to the Urban/Wildlands Interface

The Project site is not within or adjacent to a WRC MSHCP Conservation Area; therefore, the Project site is not required to address Section 6.1.4 (Guidelines Pertaining to the Urban/Wildlands Interface) of the WRC MSHCP.

In addition to the direct application under this WRC MSHCP provision, the Urban/Wildlands Interface policies also apply to riparian/riverine areas as part of the avoidance and minimization process for areas not to be included in the WRC MSHCP Conservation Area. Considering the existing developed nature of surrounding properties and the highly constrained nature of the subject stream feature, there is limited opportunity for application of the majority of the recommended treatments. Project activities should take into consideration provisions related to invasive, nonnative plant species in the context of any revegetation element, or opportunities to remove invasive species from riparian areas that would not be disturbed.

4.5 Additional Survey Needs and Procedures

The Project site is not within the WRC MSHCP Criteria Area Plant Species Survey Area pursuant to Section 6.3.2 of the WRC MSHCP. Therefore, the Criteria Area Plant Species Survey Area requirements are not applicable to the Project.

In addition, the Project site is not within the WRC MSHCP Additional Survey Areas for Amphibians, Survey Areas for Mammals, or any Special Linkage Areas; however, the Project site is within the WRC MSHCP Burrowing Owl Survey Area (see Section 3.3.1 above). It was determined that the Project site does not have the potential to support burrowing owl.

4.6 Fuels Management

The Project site is not within or adjacent to the WRC MSHCP Conservation Area; therefore, the Project site is not required to address Section 6.4 (Fuels Management) of the WRC MSHCP, and the Project is consistent with the WRC MSHCP Fuels Management policies.

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Appendix A

Plant and Wildlife Species Detected

Plant Species Detected

Scientific Name – Common Name

Amaranthaceae – Amaranth Family

Amaranthus albus – Pigweed

Anacardiaceae – Sumac and Cashew Family

Schinus molle – Peruvian Pepper Tree

Apiaceae – Carrot Family

Apium graveolens – Garden Celery

Areaceae – Palm Family

Phoenix canariensis – Canary Palm

Washingtonia robusta – Mexican Fan Palm

Asteraceae – Sunflower Family

Artemisia douglasiana – Mugwort

Baccharis salicifolia – Mulefat

Erigeron canadensis – Canada Horseweed

Lactuca serriola – Prickly Lettuce

Senecio vulgaris – Common Groundsel

Sonchus asper – Spiny Sowthistle

Xanthium strumarium – Cocklebur

Brassicaceae – Mustard Family

Brassica nigra – Black Mustard

Hirschfeldia incana – Short Podded Mustard

Nasturtium officinale – Watercress

Sisymbrium irio – London Rocket

Capripoliaceae – Honeysuckle Family

Sambucus nigra – Elderberry

Chenopodiaceae – Goosefoot Family

Chenopodium album – Lamb's Quarters

Salsola tragus – Russian Thistle

Cyperaceae – Sedge Family

Cyperus involucratus – Umbrella Plant

Euphorbiaceae – Spurge Family

Euphorbia albomarginata – Rattlesnake Weed

Euphorbia peplus – Petty Spurge

Ricinus communis – Castor Bean

***Fabaceae* – Legume Family**

Melilotus indicus – yellow Sweet Clover

***Geraniaceae* – Geranium Family**

Erodium cicutarium – Coastal Heron’s Bill

***Hydrophyllaceae* – Waterleaf Family**

Phacelia ramosissima – Branching Phacelia

***Lamiaceae* – Mint Family**

Stachys ajugoides – Hedge Nettle

***Malvaceae* – Mallow Family**

Malva parviflora – Cheeseweed

***Moraceae* – Mulberry Family**

Ficus carica – Common Fig

***Myrtaceae* – Myrtle Family**

Eucalyptus sp. – Eucalyptus

***Phrymaceae* – Lopseed Family**

Mimulus guttatus – Seep Monkey Flower

***Poaceae* – Grass Family**

Avena fatua – Wildoat

Bromus diandrus – Ripgut Brome

Hordeum murinum – Foxtail Barley

Polypogon monspeliensis – Rabbitsfoot Grass

Stipa miliacea – Smilo Grass

***Polygonaceae* – Buckwheat Family**

Persicaria lapathifolia – Common Knotweed

***Oleaceae* – Olive Family**

Fraxinus sp. – Ash

***Salicaceae* – Willow Family**

Populus fremontii – Fremont’s Cottonwood

Salix gooddingii – Goodding’s Black Willow

Salix laevigata – Red Willow

Salix lasiolepis – Arroyo Willow

***Solanaceae* – Nightshade Family**

Datura wrightii – Jimsonweed

Solanum americanum – White Nightshade

Nicotiana glauca – Tree Tobacco

***Platanaceae* – Sycamore Family**

Platanus racemosa – Western Sycamore

***Tamaricaceae* – Tamarisk Family**

Tamarix ramosissima – Tamarisk

***Typhaceae* – Cattail Family**

Typha domingensis – Southern Cattail

***Urticaceae* – Nettle Family**

Urtica dioica ssp. *holosericea* – Hoary Nettle

***Zygophyllaceae* – Tamarisk Family**

Tribulus terrestris – Puncturevine

Wildlife Species Detected

Scientific Name – Common Name

INVERTEBRATES

Butterflies

Papilio zelicaon – Anise Swallowtail

VERTEBRATES

Birds

Ardea Herodias – Great blue heron

Archilochus alexandri – Black-chinned Hummingbird

Calypte anna – Anna’s Hummingbird

Cardellina pusilla – Wilson’s Warbler

Carduelis psaltria – Lesser Goldfinch

Carpodacus mexicanus – House Finch

Catharus ustulatus – Swainson’s Thrush

Corvus brachyrhynchos – American Crow

Falco sparverius – American Kestrel

Haemorhous mexicanus – House Finch

Hirundo rustica – Barn Swallow

Icterus cucullatus – Hooded Oriole

Lonchura punctulata – Munia

Melospiza melodia – Song Sparrow

Melospiza crissalis – California Towhee

Petrochelidon pyrrhonota – Cliff Swallow

Picoides nuttallii – Nuttall’s Woodpecker

Piranga ludoviciana – Western Tanager

Psaltiriparus minimus – Bushtit

Sayornis nigricans – Black Phoebe

Sayornis saya – Say’s Phoebe

Selasphorus sasin – Allen’s hummingbird

Setophaga petechia – Yellow Warbler

Trochilidae sp. – Hummingbird

Turdus migratorius – American robin

Zenaida macroura – Mourning Dove

Mammals

Felis catus – Domestic Cat

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Appendix B

Jurisdictional Delineation Report

JURISDICTIONAL DELINEATION REPORT FOR THE UCR CREEKSIDE DRAINAGE PROJECT

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May 2019



ICF. 2019. Jurisdictional Delineation Report for the UCR Creekside Drainage Project, Draft. May. (ICF 00303.18.) Corona, CA. Prepared for University of California, Riverside, CA.

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Acronyms and Abbreviations

CDFW	California Department of Fish and Wildlife
CFR	Code of Federal Regulations
CWA	Clean Water Act
EPA	U.S. Environmental Protection Agency
ESRI	Environmental Systems Research Institute
FAC	facultative
FACU	facultative upland
FACW	facultative wetland
GPS	global positioning system
HUC	Hydrologic Unit Code
JD	jurisdictional determination
OBL	obligate
OHWM	Ordinary High Water Mark
Porter-Cologne Act	Porter-Cologne Water Quality Control Act
project	Creekside Drainage Project
PVC	polyvinyl chloride
RPW	relatively permanent water
RWQCB	Regional Water Quality Control Board
SP	sample point
SSURGO	Soil Survey Geographic
<i>SWANCC</i>	<i>Solid Waste Agency of North Cook County</i>
SWRCB	State Water Resources Control Board
TNW	traditional navigable water
UCR	University of California, Riverside
UPL	obligate upland
USACE	U.S. Army Corps of Engineers
WoS	waters of the State
WoUS	waters of the United States

Executive Summary

ICF conducted a routine-level delineation of jurisdictional waters and wetlands for the Creekside Drainage Project (project). The purpose of this delineation was to identify the extent of jurisdictional waters within and adjacent to the project site as part of the federal and state regulatory permitting process under Sections 401 and 404 of the Clean Water Act (CWA) and Section 1602 of the California Fish and Game Code. Relevant jurisdictions include federal jurisdiction regulated by the U.S. Army Corps of Engineers (USACE) as waters of the United States (WoUS) or USACE wetlands, state jurisdiction regulated by the State Water Resources Control Board (SWRCB) and Regional Water Quality Control Board (RWQCB) as waters of the State (WoS) and RWQCB wetlands, and state jurisdiction regulated by the California Department of Fish and Wildlife (CDFW) as streambed and associated riparian habitat.

The jurisdictional delineation focused on one unnamed drainage that lies within the project boundary and would be affected by the project. In total, 0.252 acre (653 linear feet) of USACE/RWQCB jurisdictional WoUS/WoS was mapped within the project boundary, of which 0.013 acre is composed of USACE/RWQCB wetlands. In addition, 0.697 acre (685 linear feet) of potential CDFW jurisdiction was mapped with the project boundary, of which 0.641 acre is composed of CDFW vegetated riparian habitat.

Chapter 1

Introduction

This report documents a jurisdictional delineation performed by ICF for the proposed slope protection for the University of California Riverside (UCR) Creekside Drainage Project (project). The purpose of this delineation was to identify the extent of potential federal and state jurisdiction within the project boundary to support the resource agency permitting process under Sections 401 and 404 of the Clean Water Act (CWA) as well as Section 13260 of the Porter-Cologne Water Quality Control Act (Porter-Cologne Act) and Section 1602 of the California Fish and Game Code.

Section 404 of the CWA covers waters of the United States (WoUS) as well as federal wetlands and is regulated by the U.S. Army Corps of Engineers (USACE). Under Section 401 of the CWA, the Regional Water Quality Control Board (RWQCB) regulates at the state level all activities that are regulated at the federal level by USACE. The RWQCB/State Water Resources Control Board (SWRCB) may also regulate activities affecting non-federal waters and wetlands (e.g., isolated features) under the Porter-Cologne Act. Section 1600 of the California Fish and Game Code is regulated by the California Department of Fish and Wildlife (CDFW) and covers aquatic features, which may include lakes or streambeds with a defined bed and bank plus any adjacent riparian vegetation. If a proposed project may affect waters or wetlands, then the project site must be evaluated to determine the presence of jurisdictional waters. Permits for the proposed activity must be sought from each applicable regulatory agency. Details regarding each of these resource agencies, including their regulatory authority, jurisdiction, permits, and regulatory processes, are provided in Chapter 2, *Regulatory Background*.

This jurisdictional delineation report describes the existing conditions within the project boundary, discusses the regulations that govern the site, outlines the methodology used to conduct the delineation, and presents the results of the study. The findings are correct and complete according to our best professional judgment. However, all jurisdictional determinations (JDs) should be considered preliminary until reviewed and approved by the regulatory agencies.

Project Location

The Creekside Drainage Project is located within the City of Riverside, Riverside County, California (Figure 1, Appendix A). Specifically, the project is approximately 0.20 mile north of the intersection of Chicago Avenue and Central Avenue. The project is within Section 31, Township 2 South, Range 4 West of the Riverside East U.S. Geological Survey quadrangle (1967) (Figure 2, Appendix A). The coordinates (decimal degrees) for the project site are latitude 33.958882°W and longitude 117.346076°N. The primary Assessor's Parcel Number associated with the project site is 254-370-003.

Project Description

The proposed project involves stabilization of the existing stream banks due to concerns regarding the stability of the massive brick retaining walls adjoining the northern and eastern edges of the

drainage within the Creekside Terrace residential development. The proposed improvements consist of re-grading the existing north¹ bank of the drainage channel and establishing rip-rap protection along the channel bottom of the north bank to match existing conditions on the south bank. Construction will require the removal of all vegetation within the impact area on the north bank and across the channel bottom.

The proposed design would excavate the channel to expose the lower extent of the existing rip-rap cover on the south bank. Work would be conducted from the existing access path along the north side of the channel. A series of 34 small-diameter drains extending from the north bank would be protected in place (these are the outlets for the subdrain system for the Creekside Terrace retaining walls). Bottom sediments would be stockpiled for replacement in the reconstructed drainage channel. The excavated area would be graded to establish a v-channel with a uniform slope face extending between the existing top of the bank on the Creekside Terrace side of the channel and the existing toe of rip-rap cover on the opposite bank. UngROUTED rip-rap with a filter fabric underlay would be placed over the newly graded slope and the subdrain system outlet pipes would be trimmed so that they do not extend beyond the rock surface. Stockpiled sediments would be replaced within the channel bottom and finished surface elevations would be established to create a functional flow regime between the existing culverts at each end of the project. Rip-rap pads (5 feet wide and 10 feet long) would be established at the existing inlet and outlet for energy dissipation. The proposed design provides for reestablishment of soil over the rip-rap on the channel bottom. Vegetation will be allowed to reestablish naturally on the channel bottom. The proposed improvements would include a one-time removal of nonnative plants throughout the riparian area. Existing native vegetation on the south bank would remain in place, and native vegetation would be allowed to naturally reestablish within the drainage channel bank on the south side.

¹ The drainage channel includes a bend within the project limits, with a portion of the channel oriented generally north/south and a portion oriented generally east/west. For this report, the bank adjacent to the UCR-owned property is referred to as the north bank, while the bank adjacent to the privately owned apartment site is referred to as the south bank.

The following sections summarize the regulations imposed on each type of jurisdictional feature potentially present within the proposed project boundary.

U.S. Army Corps of Engineers Regulated Activities

Pursuant to Section 404 of the CWA, USACE regulates the discharge (temporary or permanent) of dredged or fill material into WoUS, including wetlands. A discharge of fill material includes, but is not limited to, grading, placing rip-rap for erosion control, pouring concrete, laying sod, and stockpiling excavated material into WoUS. Activities that generally do not involve a regulated discharge (if performed specifically in a manner to avoid discharges) include driving pilings, performing certain drainage channel maintenance activities, constructing temporary mining and farm/forest roads, and excavating without stockpiling.

Waters of the U.S.

WoUS, as defined in Code of Federal Regulations (CFR) title 33, section 328.3, include the following.

- (1) All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;
- (2) All interstate waters including interstate wetlands;
- (3) All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce including any such waters:
 - (i) Which are or could be used by interstate or foreign travelers for recreational or other purposes; or
 - (ii) From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or
 - (iii) Which are used or could be used for industrial purpose by industries in interstate commerce;
- (4) All impoundments of waters otherwise defined as waters of the United States under the definition;
- (5) Tributaries of waters identified in paragraphs (1) through (4) of this section;
- (6) The territorial seas;
- (7) Wetlands adjacent to waters (other than waters that are themselves wetlands) identified in paragraphs (1) through (6) of this section.
- (8) Waters of the United States do not include prior converted cropland. Notwithstanding the determination of an area's status as prior converted cropland by any other Federal agency, for

the purposes of the Clean Water Act, the final authority regarding Clean Water Act jurisdiction remains with Environmental Protection Agency (EPA).

Waste treatment systems, including treatment ponds or lagoons designed to meet the requirements of CWA (other than cooling ponds as defined in 40 CFR 423.11(m) which also meet the criteria of this definition) are not waters of the United States.

The limit of USACE jurisdiction, excluding wetlands and tidal waters, is delineated using the Ordinary High Water Mark (OHWM), defined in CFR 328.3(e) as

...that line on the shore established by the fluctuations of water and indicated by physical characteristics such as [a] clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas.

Wetlands

Normally, three criteria must be satisfied to classify an area as a jurisdictional wetland: (1) a predominance of plant life that is adapted to life in wet conditions (hydrophytic vegetation); (2) soils that saturate, flood, or pond long enough during the growing season to develop anaerobic conditions in the upper part (hydric soils); and (3) permanent or periodic inundation or soils saturation, at least seasonally (wetland hydrology) (Environmental Laboratory 1987).

Solid Waste Agency of Northern Cook County v. United States Army Corps of Engineers

In 1986, in an attempt to clarify the reach of its jurisdiction, USACE stated that Section 404(a) extends to intrastate waters that

...(a) are or would be used as habitat by birds protected by migratory bird treaties, or (b) are or would be used as habitat by other migratory birds which cross state lines, or (c) are or would be used as habitat for endangered species, or (d) used to irrigate crops sold in interstate commerce.” (51 Federal Register 41217).

As a result of the 2001 *Solid Waste Agency of Northern Cook County (SWANCC)* case, the U.S. Supreme Court held that USACE may not rely on the Migratory Bird Rule to establish a significant nexus to interstate or foreign commerce. Although no formal guidance was issued by USACE interpreting the extent to which the *SWANCC* decision would limit JDs, in practice USACE considers intrastate waters as WoUS where there is an appropriate connection to a navigable water or other clear interstate commerce connection. Therefore, WoUS, including jurisdictional wetlands, must show connectivity with (be tributary to) a navigable WoUS to be subject to USACE under Section 404 of the CWA.

Rapanos v. United States and Carabell v. U.S. Army Corps of Engineers

In 2006, the U.S. Supreme Court issued an opinion regarding the extent of USACE jurisdiction over certain waters under Section 404 of the CWA. The *Rapanos-Carabell* consolidated decisions addressed the question of jurisdiction over attenuated tributaries to WoUS, as well as wetlands adjacent to those tributaries.

On June 5, 2007, USACE and EPA issued guidance related to the *Rapanos* decision. The guidance identifies those waters over which the agencies (USACE/EPA 2008) will assert jurisdiction categorically and on a case-by-case basis. To summarize, USACE will continue to assert jurisdiction over the following features.

- Traditional navigable waters (TNWs) and their adjacent wetlands
- Non-navigable tributaries of TNWs that are relatively permanent waters (RPWs) (e.g., tributaries that typically flow year-round or have a continuous flow at least seasonally [i.e., typically 3 months]) and wetlands that directly abut such tributaries (i.e., not separated by uplands, berm, dike, or similar feature)

For non-RPWs, the agencies will determine whether a “significant nexus” exists with a TNW using the data found in an Approved JD Form. The purpose of the significant nexus evaluation is to determine whether the existing functions of a tributary affect the chemical, physical, and/or biological integrity of a downstream TNW. Tributary characteristics that are considered when evaluating whether a significant nexus exists include volume, duration, and frequency of flow; proximity to a TNW; and hydrologic and ecologic functions performed by the tributary and all of its adjacent wetlands. Based on that information, the agencies may assert jurisdiction over the following features.

- Nonnavigable tributaries that do not typically flow year-round or have continuous flow at least seasonally
- Wetlands adjacent to such tributaries
- Wetlands adjacent to but not directly abutting a relatively permanent nonnavigable tributary

The agencies will typically not assert jurisdiction over the following features.

- Swales or erosional features (e.g., gullies and small washes characterized by low volume and infrequent or short-duration flow)
- Ditches (including roadside ditches) excavated wholly in uplands and draining only uplands that do not carry a relatively permanent flow of water

Preliminary Jurisdictional Determinations

USACE issued Regulatory Guidance Letter No. 08-02 on June 26, 2008, allowing USACE to issue preliminary JDs for a project. A Preliminary JD is a non-binding written indication that there may be WoUS, including wetlands, on a project site and identifies the approximate location of these features. Preliminary JDs are used when a landowner, permit applicant, or other affected party elects to voluntarily waive or set aside questions regarding CWA jurisdiction over a particular site, usually in the interest of allowing the landowner to move ahead expeditiously to obtain Section 404 authorization where the party determines that it is in his or her best interest to do so. A Preliminary JD is not an official determination regarding the jurisdictional status of potentially jurisdictional features and has no bearing on Approved JDs. A Preliminary JD cannot be used to confirm the absence of jurisdictional waters or wetlands, is advisory in nature, and cannot be appealed. It is considered “preliminary” because a recipient can later request an Approved JD if one is necessary or appropriate.

A Preliminary JD is documented using the Preliminary JD Form. For purposes of impact calculations, compensatory mitigation requirements, and other resource protection measures, a permit decision made on the basis of a Preliminary JD treats all waters and wetlands that would be affected in any way, except by the permitted activity, as if they are jurisdictional. Although a Preliminary JD may be chosen by the applicant, the district engineer reserves the right to use an Approved JD where warranted.

2011 Draft Clean Water Act Guidance

On April 27, 2011, USACE and EPA issued draft guidance for determining jurisdiction under the CWA. The guidance supersedes the previous guidance from 2003 regarding *SWANCC* (68 *Federal Register* 1991–1995) and 2007 *Rapanos* guidance. This document reiterated the guidance issued under the *Rapanos* decision, asserting that the following waters are protected by the CWA.

- TNWs
- Interstate waters
- Wetlands adjacent to either TNWs or interstate waters
- Nonnavigable tributaries to TNWs that are relatively permanent (meaning they contain water at least seasonally)
- Wetlands that directly abut RPWs

The guidance further clarifies the criteria for defining TNWs, primarily consistent with previous guidance. In addition, a significant nexus evaluation is required for the “other waters” category of the regulations. The guidance divides these waters into two categories—those that are physically proximate to other jurisdictional waters and those that are not—and discusses how each category should be evaluated.

Finally, the guidance reiterated that certain aquatic areas are generally not considered WoUS.

- Wet areas that are not tributaries or open waters and do not meet the agencies’ regulatory definition of “wetlands”
- Waters excluded from coverage under the CWA by existing regulations
- Waters that lack a “significant nexus” where one is required for a water to be protected by the CWA
- Artificially irrigated areas that would revert to upland should irrigation cease
- Artificial lakes or ponds created by excavating and/or diking dry land and used exclusively for such purposes as stock watering, irrigation, settling basins, or rice growing
- Artificial reflecting pools or swimming pools created by excavating and/or diking dry land
- Small ornamental waters created by excavating and/or diking dry land for primarily aesthetic reasons
- Water-filled depressions created incidental to construction activity
- Groundwater drained through subsurface drainage systems
- Erosional features (gullies and rills), and swales and ditches that are not tributaries or wetlands

Activities Regulated by the State

Section 401 of the Clean Water Act

A federal permit or license cannot be issued that may result in a discharge to WoUS unless certification under Section 401 of the CWA is granted or waived by EPA, the state, or the tribe where the discharge would originate (EPA 2010). Within the proposed project boundary, the ability to grant, grant with conditions, deny, or waive certification falls to two separate parties: RWQCB (or SWRCB) and EPA.

Pursuant to Section 401 of the CWA:

...any applicant for a federal permit for activities that involve a discharge to waters of the United States shall provide the federal permitting agency a certification from the state in which the discharge is proposed that states that the discharge will comply with the applicable provisions under the federal Clean Water Act.

Therefore, before USACE will issue a Section 404 permit, applicants must apply for and receive a Section 401 water quality certification or waiver, as applicable. Under Section 401 of the CWA, all activities that are regulated at the federal level by USACE are also regulated at the state level. Therefore, state jurisdiction usually includes all waters or tributaries to waters that are determined to be WoUS and, similar to WoUS, are typically delineated at the OHWM.

However, if waters are determined not to be WoUS, they may still be subject to state jurisdiction based on the Porter-Cologne Act.

Porter-Cologne Water Quality Control Act

The state also regulates activities that would involve “discharging waste, or proposing to discharge waste, within any region that could affect waters of the state” (California Water Code 13260(a)), pursuant to provisions of the state Porter-Cologne Act. WoS are defined as “any surface water or groundwater, including saline waters, within the boundaries of the state” (California Water Code 13050(e)). Such waters may include waters not subject to regulation under Section 404 (i.e., isolated features). These waters may include isolated vernal pools, isolated wetlands, or other aquatic habitats not normally subject to federal regulation under Section 404 of the CWA.

Regulating Agencies

State Water Resources Control Board/Regional Water Quality Control Board Regulated Activities

In California, the SWRCB and the nine RWQCBs regulate activities within state and federal waters under Section 401 of the CWA and the state Porter-Cologne Act. The SWRCB is responsible for setting statewide policy, coordinating and supporting RWQCB efforts, and reviewing petitions that contest RWQCB actions. Each semi-autonomous RWQCB sets water quality standards, issues Section 401 certifications and waste discharge requirements, and takes enforcement action for projects occurring within its boundary. However, when a project crosses multiple RWQCB

jurisdictional boundaries, the SWRCB becomes the regulating agency for both of these acts and issues project permits.

California Department of Fish and Wildlife Regulated Activities

Pursuant to Sections 1600–1616 of the California Fish and Game Code, CDFW regulates any activity that will substantially divert or obstruct the natural flow—or substantially change or use any material from the bed, channel, or bank—of any river, stream, or lake. CDFW also regulates any activity that will deposit or dispose of debris, wastewater, or other material containing crumbled, flaked, or ground pavement that may pass into any river, stream, or lake. The applicant must notify CDFW prior to such activities and obtain a Lake or Streambed Alteration Agreement.

California Department of Fish and Wildlife Jurisdiction

CDFW jurisdiction includes ephemeral, intermittent, and perennial watercourses (including dry washes) and lakes characterized by the presence of (1) definable bed and banks, and (2) existing fish or wildlife resources. Furthermore, CDFW jurisdiction is often extended to habitats adjacent to watercourses, such as oak woodlands in canyon bottoms or willow woodlands that support hydrologic functions within the riparian system. CDFW jurisdiction typically does not include features without a discernible bed and bank, such as swales, vernal pools, or wet meadows.

Section 1602 of the California Fish and Game Code

The California Fish and Game Code mandates that:

it is unlawful for any person to substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake designated by the department, or use any material from the streambeds, without first notifying the department of such activity.

Historical court cases have further extended CDFW jurisdiction to include watercourses that seemingly disappear but re-emerge elsewhere. Under the CDFW definition, a watercourse need not exhibit evidence of an OHWM to be claimed as jurisdictional.

Water features such as vernal pools and other seasonal swales where the defined bed and bank are absent and the feature is not contiguous or closely adjacent to other jurisdictional features are generally not asserted to fall within state jurisdiction under Section 1602. CDFW generally does not assert jurisdiction over human-made water bodies unless they are located where such natural features were previously located or (importantly) where they are contiguous with existing or prior natural jurisdictional areas.

Project Research

To prepare for a field visit, surveyors obtained an aerial photograph (1 inch = 100 feet) of the site and used it to identify potential drainage features based on vegetation types, topographic changes, or visible drainage patterns within the project boundary.

In addition, the following sources were reviewed during the preparation of this report:

- Water Resources Map (Appendix A, Figure 3) – includes National Hydrography Dataset (USGS 2018), National Wetlands Inventory (USFWS 2018), and Federal Emergency Management Agency 100-Year Floodplain Mapping (FEMA 2018).
- Watersheds Map (Appendix A, Figure 4) – includes Hydrologic Unit Codes (HUCs) 8 and 10 (California Natural Resources Agency 2018).
- Soils Map (Appendix A, Figure 5) – includes U.S. Department of Agriculture, Natural Resources Conservation Service Soil Survey Geographic (SSURGO) database (USDA/NRCS 2018a).

Field Investigation

ICF biologists Marissa Maggio and Paul Schwartz performed the jurisdictional delineation on June 21, 2018. The entire project boundary was surveyed to determine the presence/absence of any potential jurisdictional features. Any potential features identified were then investigated further to determine whether they met the criteria for federal or state jurisdictional wetlands or non-wetland WoUS/WoS and state streambed and associated riparian habitat. All features were delineated following USACE, RWQCB, and CDFW guidance.

The survey was conducted on foot, and jurisdictional limits were recorded using high-resolution aerial imagery in combination with an iPad and sub-meter accuracy global positioning system (GPS) receiver with all data collected with the Environmental Systems Research Institute (ESRI) Collector Application. All aquatic and riparian resources were reviewed in the field and existing conditions were documented with field notes and site photographs.

Common plant species observed were identified by visual characteristics and morphology in the field. Taxonomic nomenclature for plants follows the *Arid West 2016 Regional Wetland Plant List* (Lichvar et al. 2016) and, where appropriate, the *Jepson Manual: Vascular Plants of California*, 2nd edition (Baldwin et al. 2012).

U.S. Army Corps of Engineers Jurisdiction

Potential WoUS and wetlands were delineated using methods established in the *Wetland Delineation Manual* (Environmental Laboratory 1987), the *Regional Supplement to the Corps of Engineers*

Wetland Delineation Manual: Arid West Region (USACE 2008a), *A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States* (USACE 2008b), 2007/2008 *Rapanos Guidance* (USACE/EPA 2008), and *Draft Guidance on Identifying Waters Protected by the Clean Water Act* (USACE/EPA 2011). Non-wetland waters were delineated based on the presence of OHWM indicators. At each evaluation area, several parameters were considered to determine whether the sample point was within a wetland. Three criteria normally must be fulfilled in order to classify an area as a jurisdictional USACE wetland: (1) a predominance of hydrophytic vegetation; (2) the presence of hydric soils; and (3) the presence of wetland hydrology. Details of the application of these criteria are provided below.

- **Hydrophytic Vegetation:** Hydrophytic vegetation is present when the plant community is dominated by species that can tolerate prolonged inundation or soil saturation during the growing season (USACE 2008a). The following definitions are used by USACE to define a plant's likelihood of tolerating prolonged inundation or soil saturation during the growing season (Lichvar et al. 2016).
 - Obligate (OBL): Almost always occurs in wetlands
 - Facultative Wetland (FACW): Usually occurs in wetlands, but may occur in non-wetlands
 - Facultative (FAC): Occurs in wetlands and non-wetlands
 - Facultative Upland (FACU): Usually occurs in non-wetlands, but may occur in wetlands
 - Upland (UPL): Almost never occurs in wetlands

The presence of hydrophytic vegetation is determined by either the dominance test or, if not satisfied, the prevalence test. The dominance test addresses dominant species in the community being sampled and is satisfied at a location if greater than 50 percent of all the dominant species present within the community have a wetland indicator status of OBL, FACW, or FAC (Environmental Laboratory 1987). The prevalence test addresses all species in the community being sampled and is a weighted average wetland indicator status of all species where each indicator status is given a numeric code (OBL = 1, FACW = 2, FAC = 3, FACU = 4, UPL = 5) and weighting is by absolute percentage cover. A prevalence index of 3.0 or less indicates that hydrophytic vegetation is present. The wetland indicator status used for the field efforts follows the *Arid West 2016 Regional Wetland Plant List* (Lichvar et al. 2016).

- **Hydric Soils:** The definition of a hydric soil is a soil that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (USDA/NRCS 1994). This determination is made based on various field indicators detailed in the *Arid West Supplement* (USACE 2008a).
- **Wetland Hydrology:** Wetland hydrology is determined using indicators of inundation or saturation (flooding, ponding, or tidally influenced) detailed in the *Wetland Delineation Manual* (Environmental Laboratory 1987) and the *Arid West Supplement* (USACE 2008a).

Where appropriate, a soil pit was dug to examine soil color and texture. Paired soil pits were dug where the wetland boundary was not abrupt. Wetland data forms are attached as Appendix C and include areas where soil pit examinations were conducted and where soils were assumed hydric.

ICF methods for the delineation of non-wetland WoUS were based on the limits of indicators for OHWM, following established criteria outlined in the *U.S. Army Corps of Engineers Wetlands*

Delineation Manual (Environmental Laboratory 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (USACE 2008a).

The field guide describes physical evidence that should be used to ascertain the lateral limits of jurisdiction; generally more than one physical indicator or other means for determining the OHWM is used. The following physical indicators of OHWM were used in the field:

- Presence of litter and debris
- Wracking
- Bed and banks

When documenting the OHWM width within the stream, surveyors took measurements of stream width at various locations using a survey measuring tape. Distinct changes in channel width or riparian vegetation were recorded.

State Water Resources Control Board/Regional Water Quality Control Board

Evaluation of state jurisdiction followed guidance from Section 401 of the CWA and typically follows the same jurisdictional areas as USACE. In addition, the study area was evaluated for resources potentially regulated under the Porter-Cologne Act (i.e., isolated features).

California Department of Fish and Wildlife Jurisdiction

CDFW jurisdiction typically includes water features with a defined bed and bank. Evaluation of potentially jurisdictional areas followed the guidance of relevant standard practices by CDFW personnel. CDFW jurisdiction was delineated by mapping the outer width and length boundaries of potentially jurisdictional areas, consisting of the greater of either the top of bank measurement or the extent of associated riparian or wetland vegetation.

This chapter describes the existing conditions on the project site, including existing land use, topography, hydrology, soils, and vegetation within the project boundary.

Land Use and Topography

The project boundary lies between two residential communities. The Creekside Terrace residential development is approximately 50–75 feet above the creek bed north and east of the project boundary, and the Canyon Crest Village Apartment complex is to the south and west of the drainages. Land use in the area mainly consists of residential communities, parks and recreational spaces, and UCR-owned orchards approximately 800 feet to the north. The majority of the project boundary consists of a soft-bottom, perennial creek containing a mix of riparian and nonnative vegetation. The terraces on the north and east sides of the project boundary are routinely mowed for site access; however, the banks of the creek are experiencing substantial erosion in several locations. Disturbances within the project boundary include small amounts of trash, human encroachment, high density of invasive plant species, and domestic animals. An approximately 75-foot-tall, brick-terraced retaining wall bounds the northern and eastern project boundaries. An approximately 10-foot-wide (variable) dirt access path exists between the stream and retaining wall. Several sections of the eastern bank slope are experiencing erosion, leaving a vertical stream bank and approximately 6-foot separation from stream and retaining wall. The project is at an approximate elevation range from 940 to 959 feet above mean sea level.

Hydrology

Precipitation

Average precipitation for the general area is 6.42 inches per year (2000–2017) based on data obtained between 2000 and 2018 at the nearby “Riverside Municipal Airport, California” weather station (National Weather Service 2018). Table 1 summarizes the average precipitation per month and annually for the general project area based on this station. The project boundary and surrounding watershed receive adequate precipitation expected to create and maintain indicators of surface water flow used when conducting jurisdictional delineation fieldwork.

Table 1. Regional Rainfall Data Summary for the Project Boundary (in inches)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
2016	2.59	0.24	0.78	0.49	0.18	T	0.00	0.00	T	0.96	0.96	3.34	9.54
2017	5.48	2.19	0.16	0.10	0.02	0.00	0.01	0.28	0.22	T	0.03	T	8.49
2018	1.10	0.32	1.23	0.05	0.08	0.00	M	M	M	M	M	M	N/A
2000–2017 Average	1.45	1.86	0.74	0.47	0.12	0.00	0.16	0.08	0.14	0.51	0.67	1.54	6.42

Source: Western Regional Climate Center 2018

T = trace; M = missing

Hydrologic Units

The project site is within the Middle Santa Ana River HUC 10 watershed, which is a sub-watershed of the larger Santa Ana River Watershed HUC 8 watershed (Appendix A, Figure 4). The Middle Santa Ana River Watershed drains 480 square miles to the Santa Ana River through the major tributaries of Temescal Creek, Day Creek, San Sevaine Channel, Box Springs Channel, and Anza Channel. Cities within the Middle Santa Ana River Watershed include Riverside, Corona, Norco, Eastvale, and Jurupa Valley.

Vegetation Summary

Vegetation classifications for plant communities were derived from the criteria and definitions in Holland (1986). Only one vegetation community is composed of natural vegetation: disturbed southern willow scrub. The remaining land cover types consist of exotic, ruderal, and developed lands.

Disturbed Southern Willow Scrub

Approximately 0.64 acre of disturbed southern willow scrub was mapped within the project boundary. This riparian community is composed of arroyo willow (*Salix lasiolepis*), Gooding's willow (*Salix goodingii*), mulefat (*Baccharis salicifolia*), western sycamore (*Platanus racemosa*), elderberry (*Sambucus mexicana*), and stinging nettle (*Urtica dioica*). There is a high percentage of nonnative vegetation, such as ornamental ash (*Fraxinus* sp.), castor bean (*Ricinus communis*), Mexican fan palm (*Washingtonia robusta*), date palm (*Phoenix canariensis*), Peruvian peppertree (*Schinus molle*), tamarisk (*Tamarix ramosissima*), and tree tobacco (*Nicotiana glauca*). There is a low cover of riparian herbaceous species under the canopy, including cocklebur (*Xanthium strumarium*), willow weed (*Persicaria lapathifolia*), and mugwort (*Artemisia douglasiana*).

Exotic

Approximately 0.23 acre of exotic vegetation was mapped within the project boundary. These include areas on the south side of the drainage and consist of nonnative eucalyptus trees (*Eucalyptus* sp.), ornamental plants, and areas of lawn associated with the adjacent apartment complex.

Ruderal

Approximately 0.25 acre of ruderal land was mapped within the project boundary. Ruderal lands include the flat terrace areas and the exposed rip-rap sides of the channel adjacent to Chicago Avenue. The exposed rip-rap areas of the channel contain little to no vegetation. Vegetation on the flat terrace area consists of nonnative ruderal plants and is dominated by wild lettuce (*Lactuca serriola*), common horseweed (*Conyza canadensis*), cheeseweed (*Malva parviflora*), black mustard (*Brassica nigra*), and nonnative grasses such as red brome (*Bromus madritensis* ssp. *rubens*), rigput brome (*Bromus diandrus*), and Mediterranean grass (*Schismus barbatus*). The flat terrace appeared to have been recently mowed at the time of the site visit.

Developed

Developed areas include all portions of the residential developments (Canyon Crest Village Apartments and Creekside Terrace) surrounding the creek, including the brick-terraced retaining wall and concrete drainages associated with the retaining wall and houses above (approximately 0.01 acre). These areas are unvegetated and are mostly composed of the parking lot edges directly adjacent to the southern and western banks of the creek.

Soils

Map Units

The Natural Resources Conservation Service has mapped soil series as occurring within the study area based on the SSURGO database (USDA/NRCS 2018a). Soils mapped within the study area (Appendix A, Figure 5) include Hanford coarse sandy loam, 2 to 8 percent (HcC) and Terrace Escarpments (TeG). Neither of these soil types are listed as hydric soils (USDA/NRCS 2018b).

Chapter 5

Jurisdictional Delineation Results

This chapter describes the delineated features and expected jurisdictional status within the project boundary. Detailed information, including maps of jurisdictional features within the project boundary and site photographs, are provided in Appendices A and B, respectively. Appendix C contains wetland data forms, Appendix D contains the OHWM data form, and Appendix E contains the Preliminary JD Form.

Feature Descriptions

Two features are located within the project boundary. All features within the project boundary were delineated with the understanding that a request for a Preliminary JD would be submitted for the project. As such, all features with an OHWM are considered USACE jurisdictional WoUS and subject to state jurisdiction. In addition, all identified features were determined to be subject to CDFW jurisdiction. Table 2 summarizes the jurisdictional water resources within the project boundary.

Table 2. Summary of Potential USACE, RWQCB, and CDFW Jurisdictional Water Resources

Drainage Feature	Descriptions	USACE/RWQCB		CDFW	
		Non-Wetland WoUS/WoS (acres/linear feet)	Wetland WoUS/WoS (acres)	Unvegetated Streambed (acres/linear feet)	Riparian (acres)
Feature 1	Perennial; earthen; wetland portions exhibit hydrophytic vegetation, hydric soils (sandy redox and muck), and hydrology (debris wrack, drainage patterns). Sample Points SP-1 through 7.	0.239/650	0.013	0.056/430	0.641
Feature 2	Ephemeral; concrete-lined v-ditch	0.000/2	0.000	0.001/2	0.00
Total		0.239/652	0.013	0.057/432	0.641

Feature 1

Feature 1 is a small, perennial creek and narrow riparian corridor in the eastern section of the city of Riverside. The streambed is confined between an apartment complex and the Creekside Terrace housing development. This drainage is tributary to the Tequesquite Arroyo and Santa Ana River. The creek's width ranges from 15–25 feet (OHWM) and 35–54 feet for CDFW top of bank. The banks are steep and the channel is over 10 feet deep. The

stream enters the site through a culvert in the southeast corner of the project boundary, proceeds 650 feet northwest through the site with a gradient of less than 2 percent, and exits steeply through a 6-foot-diameter culvert on the western end of the project boundary. At the time of the field visit, the upstream culvert was under water but appeared to be partially filled with sediment. Rip-rap is present and partially buried by soil on the west and south banks. The east and north bank are primarily earthen and non-reinforced, although there is some rip-rap within the banks adjacent to the upstream culvert. The creek exhibits high sedimentation in the upstream portion and increased incision in the downstream portion. This is believed to be caused by increased flow velocity due to a slight gradient change before exiting the downstream culvert.

Wetland sample points (SPs) were taken within the creek. The areas that met all three wetland criteria were located on sandy bars adjacent to the flowing perennial creek. Indicators of hydric soils included sandy, mucky material and sandy redox observed from soil pit samples (SP-1, SP-4, and SP-7). Hydrophytic vegetation within the creek included arroyo willow, Gooding's willow, mulefat, western sycamore, elderberry, and stinging nettle. There is a high percentage of nonnative vegetation, such as ornamental ash, castor bean, Mexican fan palm, date palm, Peruvian peppertree, tamarisk, and tree tobacco. There is a low cover of riparian herbaceous species under the canopy, including cocklebur, willow weed, and mugwort.

There is 0.239 acre (650 linear feet) of non-wetland WoUS/WoS and 0.013 acre of wetland WoUS/WoS. In addition, there is 0.056 acre (430 linear feet) of CDFW unvegetated streambed and 0.641 acre of CDFW riparian habitat within Feature 1. Feature 1 is illustrated on Figures 7a and 7b (Appendix A).

Feature 2

Feature 2 is an ephemeral, concrete-lined V-ditch located along the northern edge of the project boundary. The V-ditch drains runoff from the brick retaining wall north of the creek and discharges into Feature 1 through an underground 8-inch polyvinyl chloride (PVC) pipe. Feature 2 lacks definitive staining, sediment deposits, or other OHWM indicators. The OHWM was determined to be 0.5 foot wide and the top of bank was determined to be 2 feet wide. The concrete drainage itself will not be affected by the project; however, the underground pipe will likely need to be replaced due to project activities. No vegetation is associated with Feature 2.

Less than 0.001 acre (2 linear feet) of non-wetland WoUS/WoS and 0.001 acre (2 linear feet) of CDFW streambeds occur in the project boundary. There are no wetlands or riparian vegetation within Feature 2. Feature 2 is depicted on Figure 7a (Appendix A).

Chapter 6

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Appendix A

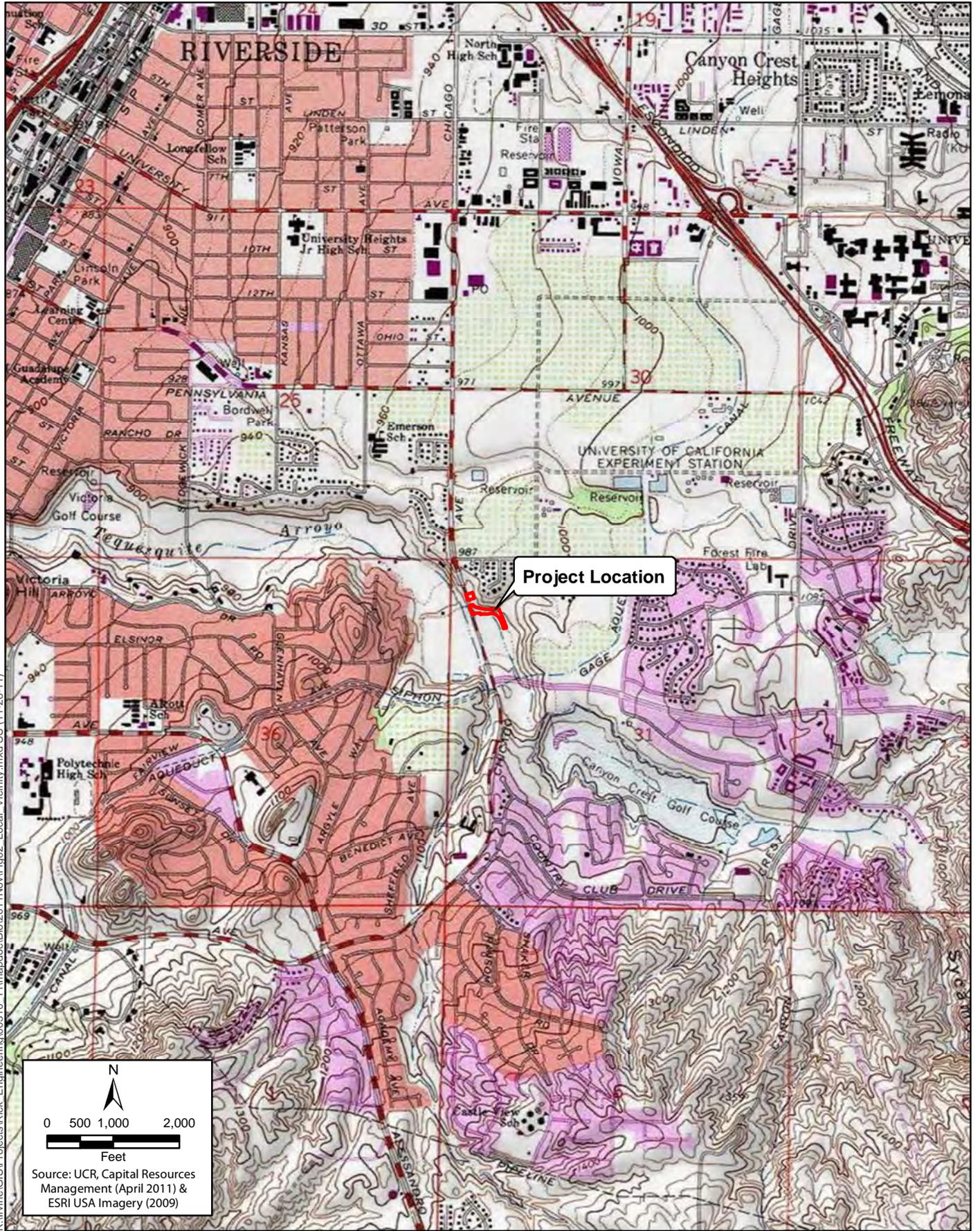
Figures



K:\Irvine\GIS\Projects\Rick_Engineering\00310_11\mapdoc\Bio\Fig01_Regional_Map.MXD SW (05-26-11)



Figure 1
Regional Vicinity Map
UCR Creekside Drainage Project



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Figure 2
Vicinity/USGS Topographic
UCR Creekside Drainage Project



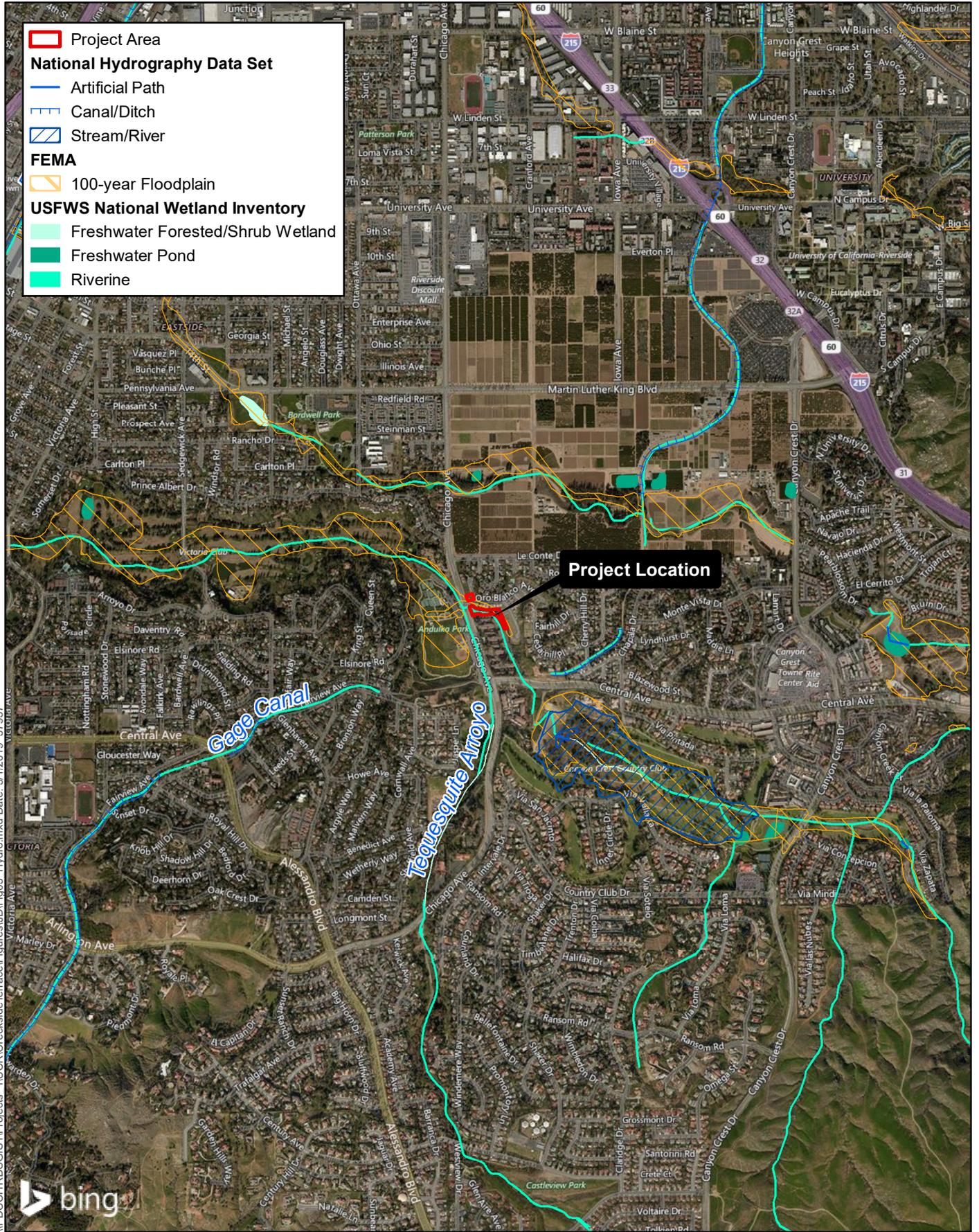


Figure 3
Water Resources Map
UCR Creekside Drainage Project

Source: Bing Imagery (2017); FEMA Floodplains (2014);
 USFWS NWI Wetlands (2017); NHD (2017)

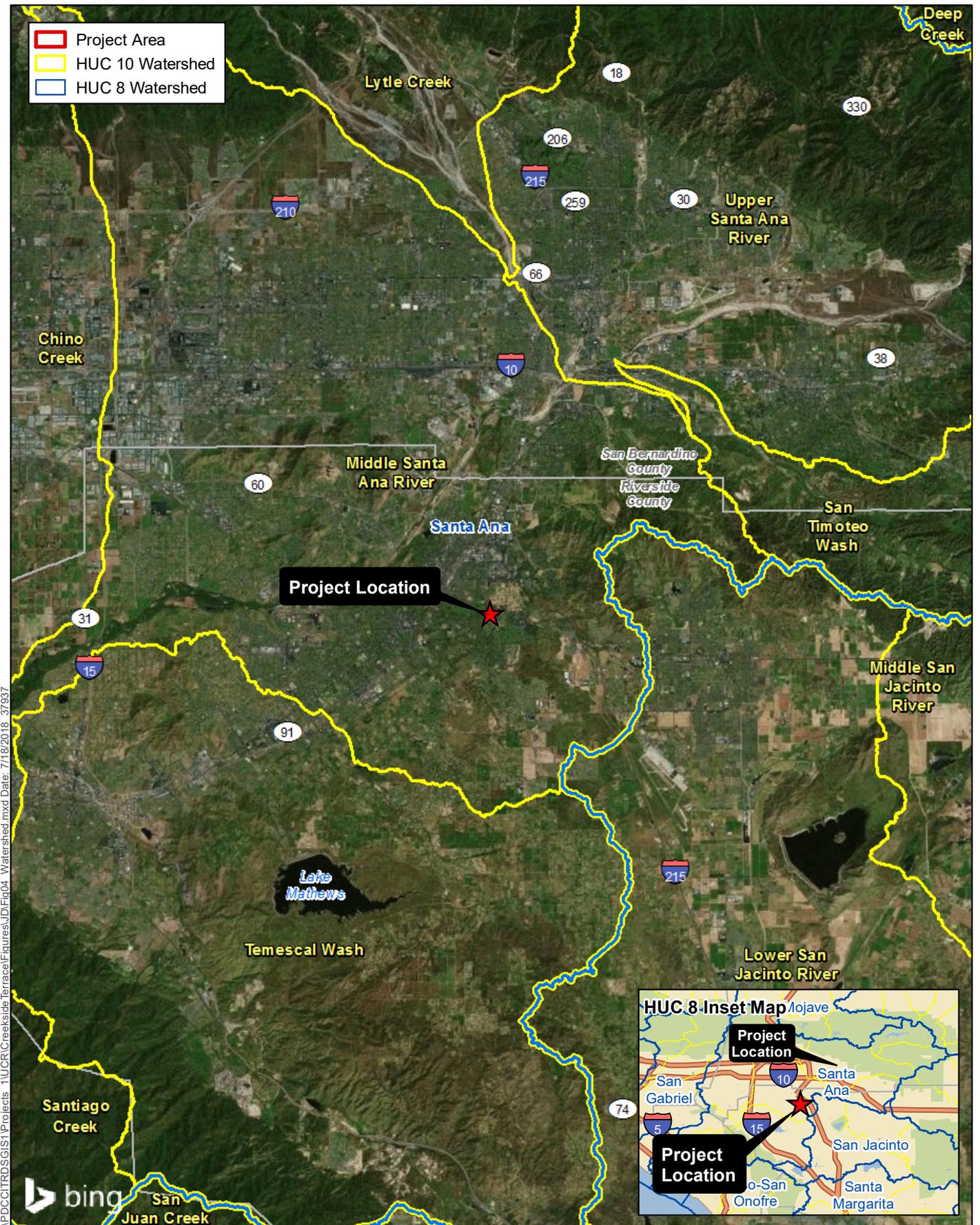
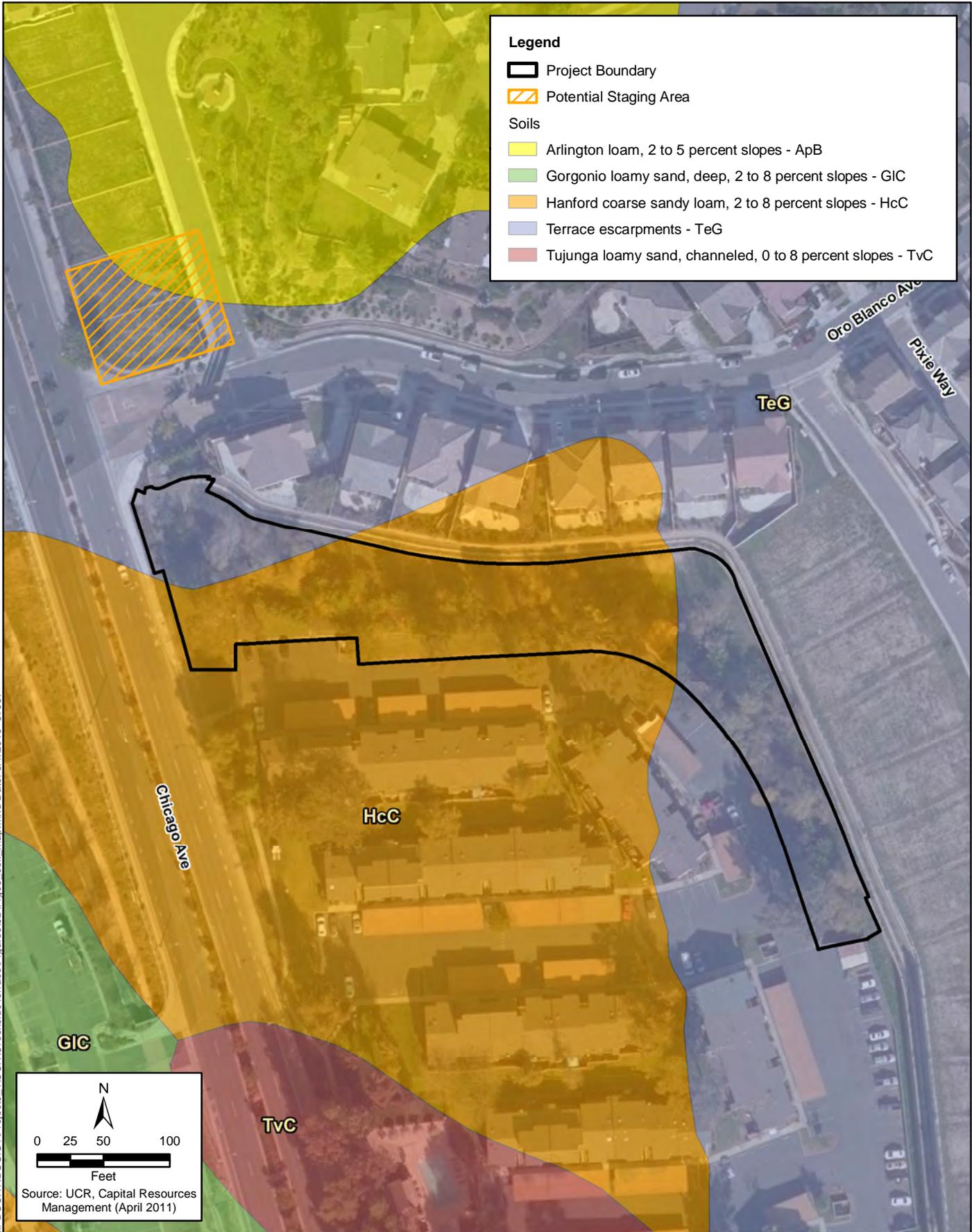


Figure 4
Watersheds
UCR Creekside Drainage Project

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Figure 5
Soil Map
UCR Creekside Drainage Project

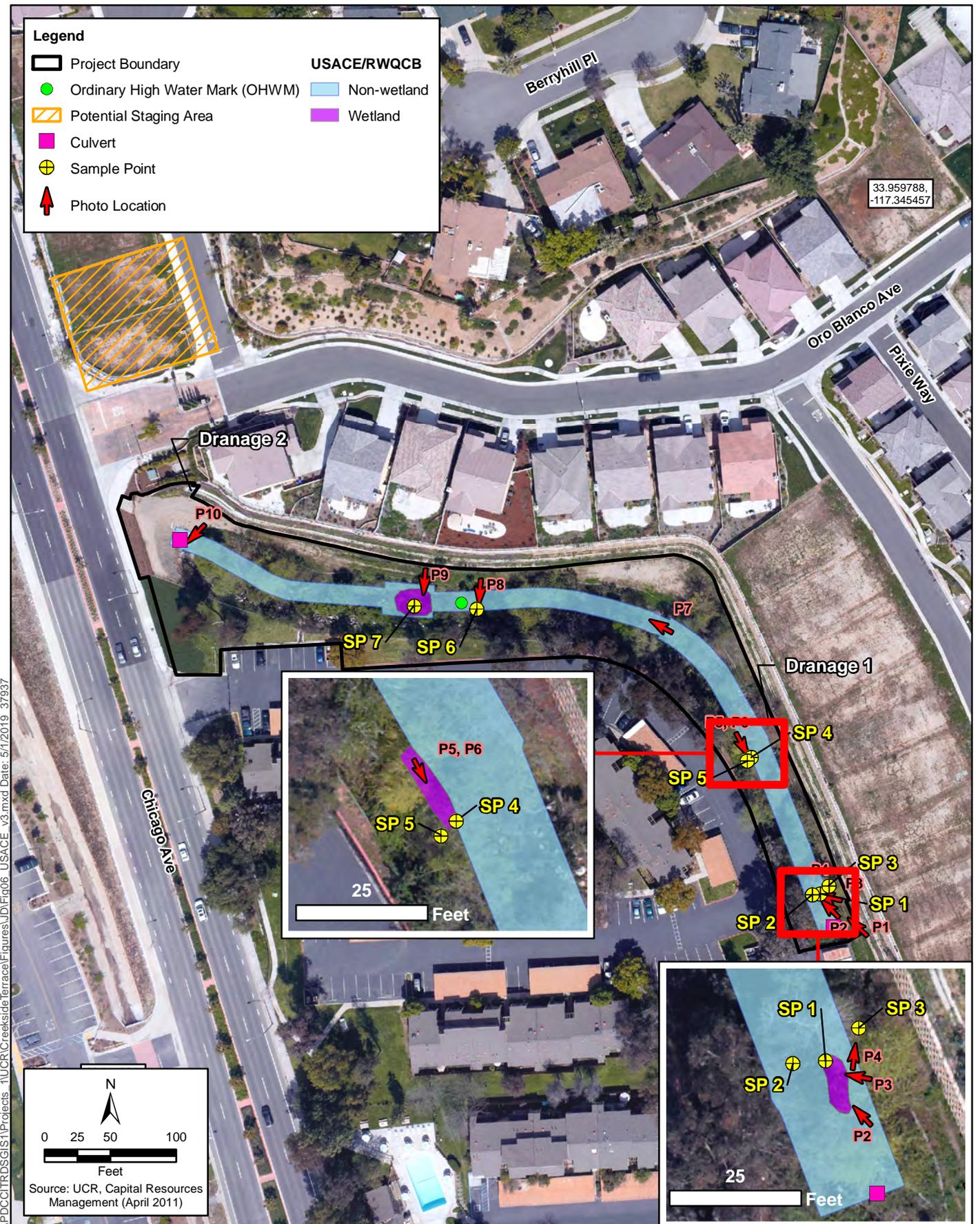


Figure 6
USACE/RWQCB Jurisdiction
UCR Creekside Drainage Project



Figure 7
CDFW Jurisdiction
UCR Creekside Drainage Project



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Appendix B

Site Photographs

<p>Photo 1.</p> <p>Date: June 21, 2018</p> <p>Feature #: 1</p> <p>Direction: West</p> <p>Description: View of sand bar along streambed and riparian vegetation along the banks.</p>	
<p>Photo 2.</p> <p>Date: June 21, 2018</p> <p>Feature #: 1</p> <p>Direction: West</p> <p>Description: View of SP-1 (wetland) on sandy bar below the stream bank. Riparian canopy is dominated by Goodding's black willow, eucalyptus, and Mexican fan palm.</p>	

<p>Photo 3.</p> <p>Date: June 21, 2018</p> <p>Feature #: 1</p> <p>Direction: West</p> <p>Description: View of SP-2 (non-wetland) on bank of creek. Riparian canopy is dominated by Goodding's black willow, eucalyptus, and Mexican fan palm. Understory dominated by castor bean.</p>	
<p>Photo 4.</p> <p>Date: June 21, 2018</p> <p>Feature #: 1</p> <p>Direction: North</p> <p>Description: View of SP-3 (non-wetland) above rip-rap on top of bank. Riparian canopy dominated by Goodding's black willow, with an understory of rippgut brome (<i>Bromus diandrus</i>).</p>	

<p>Photo 5.</p> <p>Date: June 21, 2018</p> <p>Feature #: 1</p> <p>Direction: South</p> <p>Description: View of SP-4 (wetland) on bank near low-flow channel. Riparian canopy dominated by Goodding’s black willow and fig tree, with an understory of Mexican fan palm and rabbit’s foot grass (<i>Polypogon monspeliensis</i>).</p>	
<p>Photo 6.</p> <p>Date: June 21, 2018</p> <p>Feature #: 1</p> <p>Direction: North</p> <p>Description: View of SP-5 (non-wetland) halfway up bank. Riparian canopy dominated by Goodding’s black willow, Mexican fan palm, and ash, with an understory of smilgrass (<i>Stipa miliaceum</i>).</p>	

<p>Photo 7.</p> <p>Date: June 21, 2018</p> <p>Feature #: 1</p> <p>Direction: North</p> <p>Description: View of flowing channel and surrounding vegetation and rip-rap. Understory dominated by invasive species, including castor bean and Mexican fan palm.</p>	
<p>Photo 8.</p> <p>Date: June 21, 2018</p> <p>Feature #: 1</p> <p>Direction: South</p> <p>Description: View of SP-6 (non-wetland) on the bank but below the rip-rap. This SP is dominated by ash and fig, both invasive species.</p>	

<p>Photo 9.</p> <p>Date: June 21, 2018</p> <p>Feature #: 1</p> <p>Direction: South</p> <p>Description: View of SP-7 (wetland) on sandy vegetated island in middle of low-flow channel. Riparian canopy dominated by ash and fig. Understory is dominated by hydrophytes, including willow weed, water speed well (<i>Veronica anagallis-aquatica</i>), and watercress (<i>Nasturtium officinale</i>).</p>	
<p>Photo 10.</p> <p>Date: June 21, 2018</p> <p>Feature #: 1</p> <p>Direction: Southwest</p> <p>Description: View of 6-foot culvert at the downstream end of creek. Banks occur on a steep slope vegetated with upland grass. Tamarisk, mulefat, and Mexican fan palm occur in the creek bottom.</p>	

Appendix C
Wetland Data Forms

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Creekside Drainage City/County: Riverside, Riverside Sampling Date: 6/21/18
 Applicant/Owner: UC Riverside State: CA Sampling Point: 1
 Investigator(s): HTS MCM Section, Township, Range: 31 T25 R4W
 Landform (hillslope, terrace, etc.): bank of creek Local relief (concave, convex, none): none Slope (%): 0
 Subregion (LRR): C-Med Lat: 2294085.817 Long: 4229421.72 Datum: ZONE4
 Soil Map Unit Name: HcC, TCG NWI classification: Rivine

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? No 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 <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Remarks: <u>sandy bar on river right, deep below rip rap at edge water</u> <u>Photo</u>	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. <u>Salix goodingii</u>	<u>50</u>	<input checked="" type="checkbox"/>	<u>FACW</u>	Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A)
2. <u>Eucalyptus sp.</u>	<u>10</u>		<u>UPL</u>	Total Number of Dominant Species Across All Strata: <u>4</u> (B)
3. <u>Washingtonia robusta</u>	<u>10</u>		<u>FAC</u>	
4. <u>Shinus molle</u>	<u>2</u>		<u>UPL</u>	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
<u>72</u> = Total Cover				
Sapling/Shrub Stratum (Plot size: <u>10</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Prevalence Index worksheet:
1. <u>Washingtonia robusta</u>	<u>10</u>	<input checked="" type="checkbox"/>	<u>FAC</u>	Total % Cover of: <u>10</u> Multiply by: <u>10</u>
2.				OBL species <u>10</u> x 1 = <u>10</u>
3.				FACW species <u>60</u> x 2 = <u>120</u>
4.				FAC species <u>10</u> x 3 = <u>30</u>
5.				FACU species <u>7</u> x 4 = <u>28</u>
<u>15</u> = Total Cover				UPL species <u> </u> x 5 = <u> </u>
<u>15</u> = Total Cover				Column Totals: <u>87</u> (A) <u>188</u> (B)
Herb Stratum (Plot size: <u>5</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Prevalence Index = B/A = <u> </u>
1. <u>Polygonum persicaria</u>	<u>10</u>	<input checked="" type="checkbox"/>	<u>FACW</u>	Hydrophytic Vegetation Indicators: <input checked="" type="checkbox"/> Dominance Test is >50% <input checked="" type="checkbox"/> Prevalence Index is ≤3.0' <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)
2. <u>Nasturtium officinale</u>	<u>10</u>	<input checked="" type="checkbox"/>	<u>OBL</u>	
3. <u>Xanthium strumarium</u>	<u>5</u>		<u>UPL</u>	
4.				
5.	<u>5</u>			
6.				
7.				
8.				
<u>25</u> = Total Cover				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
Woody Vine Stratum (Plot size: <u> </u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1.				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
2.				
<u> </u> = Total Cover				
% Bare Ground in Herb Stratum <u>71</u> % Cover of Biotic Crust <u>0</u>				

Remarks:

SOIL

Sampling Point: 1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-6	10YR 3/3	100						
6-15	N2.5/-	100						oily texture muck

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

Indicators for Problematic Hydric Soils³:

- 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)

- 1 cm Muck (A9) (LRR C)
- 2 cm Muck (A10) (LRR B)
- Reduced Vertic (F18)
- Red Parent Material (TF2)
- Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type:
Depth (inches):

Hydric Soil Present? Yes No

Remarks:

oily muck several inches thick (no water smell)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

Secondary Indicators (2 or more required)

- | | | |
|--|--|--|
| <input checked="" type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Salt Crust (B11) | <input type="checkbox"/> Water Marks (B1) (Riverine) |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Biotic Crust (B12) | <input type="checkbox"/> Sediment Deposits (B2) (Riverine) |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Aquatic Invertebrates (B13) | <input type="checkbox"/> Drift Deposits (B3) (Riverine) |
| <input type="checkbox"/> Water Marks (B1) (Nonriverine) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) | <input type="checkbox"/> Drainage Patterns (B10) |
| <input type="checkbox"/> Sediment Deposits (B2) (Nonriverine) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) | <input type="checkbox"/> Dry-Season Water Table (C2) |
| <input type="checkbox"/> Drift Deposits (B3) (Nonriverine) | <input type="checkbox"/> Presence of Reduced Iron (C4) | <input type="checkbox"/> Crayfish Burrows (C8) |
| <input type="checkbox"/> Surface Soil Cracks (B6) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Thin Muck Surface (C7) | <input type="checkbox"/> Shallow Aquitard (D3) |
| <input type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Other (Explain in Remarks) | <input type="checkbox"/> FAC-Neutral Test (D5) |

Field Observations:

Surface Water Present? Yes No Depth (inches): 6 inches
 Water Table Present? Yes No Depth (inches):
 Saturation Present? Yes No Depth (inches):
 (includes capillary fringe)

Wetland Hydrology Present? Yes No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Creekside Drainage City/County: Riverside Riverside Sampling Date: 6-21-2018
 Applicant/Owner: UCR State: CA Sampling Point: 2
 Investigator(s): PIS, MCM Section, Township, Range: 31 T25, R11W
 Landform (hillslope, terrace, etc.): bank of creek Local relief (concave, convex, none): none Slope (%): 1-2
 Subregion (LRR): C-Med Lat: 229 4 082 083 Long: 10229912.681 Datum: Zone 10
 Soil Map Unit Name: Hic TCH NWI classification: riverine

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? No 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 <input checked="" type="checkbox"/> No <input type="checkbox"/>	Hydic Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		

Remarks: Sample point located on small bench of river left (facing downstream)
Bench comprised of sand + sandy loam. Sample point approx 2-feet above surface of water.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>4</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>75</u> (A/B)
1. <u>Eucalyptus sp.</u>	<u>50</u>	<u>Y</u>	<u>UPL</u>	
2. <u>Saxifraga goodingii</u>	<u>25</u>	<u>Y</u>	<u>FACW</u>	
3. <u>Washingtonia robusta</u>	<u>20</u>	<u>N</u>	<u>FAC</u>	
4. _____	<u>95</u> = Total Cover			
Sapling/Shrub Stratum (Plot size: <u>10</u>)				Hydrophytic Vegetation Indicators: <input checked="" type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)
1. <u>Washingtonia robusta</u>	<u>30</u>	<u>Y</u>	<u>FAC</u>	
2. _____				
3. _____				
4. _____				
5. _____	<u>30</u> = Total Cover			
Herb Stratum (Plot size: <u>5</u>)				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
1. <u>Ricinus communis</u>	<u>25</u>	<u>Y</u>	<u>FACW</u>	
2. <u>Polygonum monspeliensis</u>	<u>5</u>	<u>N</u>	<u>FACW</u>	
3. <u>Anemopsis californica</u>	<u>3</u>	<u>N</u>	<u>OBL</u>	
4. <u>Nasturtium officinale</u>	<u>2</u>	<u>N</u>	<u>OBL</u>	
5. _____				
6. _____				
7. _____				
8. _____	<u>35</u> = Total Cover			
Woody Vine Stratum (Plot size: <u>-</u>)				
1. _____				
2. _____				
_____ = Total Cover				
% Bare Ground in Herb Stratum <u>20</u> % Cover of Biotic Crust <u>-</u>				

Remarks:

SOIL

Sampling Point: 2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	% ¹	Color (moist)	%	Type ¹	Loc ²		
0-6	7.5YR 4/3	100					sand	
6-8	10YR 2/2	100					sandy loam	
8-13	10YR 3/3	100					sand	
13+	7.5YR 3/1	93	7.5YR 4/6	7	CS	M	sandy loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Vernal Pools (F9)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)		

Indicators for Problematic Hydric Soils³:

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):
 Type: None
 Depth (inches): N/A

Hydric Soil Present? Yes No

Remarks: Does not meet for sandy redox due to depth of redox layer (>6").

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (2 or more required)
<input checked="" type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Water Marks (B1) (Riverine)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)	<input checked="" type="checkbox"/> Sediment Deposits (B2) (Riverine)
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input checked="" type="checkbox"/> Drift Deposits (B3) (Riverine)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes <input type="checkbox"/> No <input type="checkbox"/>	Depth (inches): <u>4" *</u>	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Water Table Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): _____	
Saturation Present? (includes capillary fringe)	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Depth (inches): <u>~15"</u>	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: * surface water present in creek ~ 3' from pit.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Creekside Drainage City/County: Riverside Riverside Sampling Date: 6/21/18
 Applicant/Owner: UCR State: CA Sampling Point: 3
 Investigator(s): PTS, MCM Section, Township, Range: 31, T55, R4W
 Landform (hillslope, terrace, etc.): streambank Local relief (concave, convex, none): none Slope (%): 10%
 Subregion (LRR): C-Med Lat: 2294089.713 Long: 6229425.212 Datum: Zone 10
 Soil Map Unit Name: HCC, TEG NWI classification: Ricrine
 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? NO 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 <input type="checkbox"/> No <input checked="" type="checkbox"/> Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks: <u>above rip rap at the top of bank, as close as pit could be 8' above surface water</u>	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. <u>Salix gooddingii</u>	<u>70</u>	<input checked="" type="checkbox"/>	<u>FAC</u>	Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)
2. <u>Washingtonia robusta</u>	<u>5</u>		<u>FAC</u>	Total Number of Dominant Species Across All Strata: <u>2</u> (B)
3. <u>Eucalyptus Sp.</u>	<u>5</u>		<u>UPL</u>	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50</u> (A/B)
4. _____				
<u>80</u> = Total Cover				
Sapling/Shrub Stratum (Plot size: <u>10</u>)				Prevalence Index worksheet:
1. _____				Total % Cover of: _____ Multiply by: _____
2. _____				OBL species _____ x 1 = _____
3. _____				FACW species _____ x 2 = _____
4. _____				FAC species <u>75</u> x 3 = <u>225</u>
5. _____				FACU species _____ x 4 = _____
<u>0</u> = Total Cover				UPL species <u>75</u> x 5 = <u>375</u>
				Column Totals: <u>150</u> (A) <u>600</u> (B)
				Prevalence Index = B/A = <u>4.0</u>
Herb Stratum (Plot size: <u>5</u>)				Hydrophytic Vegetation Indicators:
1. <u>Bromus diandrus</u>	<u>70</u>		<u>UPL</u>	<input type="checkbox"/> Dominance Test is >50%
2. _____				<input type="checkbox"/> Prevalence Index is ≤3.0 ¹
3. _____				<input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
4. _____				<input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)
5. _____				
6. _____				
7. _____				
8. _____				
<u>70</u> = Total Cover				
Woody Vine Stratum (Plot size: _____)				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. _____				
2. _____				
_____ = Total Cover				
% Bare Ground in Herb Stratum <u>0</u>		% Cover of Biotic Crust <u>0</u>		Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>

Remarks: mowed herb layer

SOIL

Sampling Point: 3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-14"	10YR 4/3	100%					sandy loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Vernal Pools (F9)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)		

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):
 Type: NONE
 Depth (inches):

Hydric Soil Present? Yes No

Remarks:
rocky fill material in profile, no hydric indicators present
8' feet above surface water

HYDROLOGY

Wetland Hydrology Indicators:

<u>Primary Indicators (minimum of one required; check all that apply)</u>		<u>Secondary Indicators (2 or more required)</u>
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Water Marks (B1) (Riverine)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Drift Deposits (B3) (Riverine)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): <u> </u>	Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Water Table Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): <u> </u>	
Saturation Present? (includes capillary fringe)	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): <u> </u>	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Pit located at top of bank no wetland hydrology present

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: creek-side Drainage City/County: Riverside, Riverside Sampling Date: 6/21/18
 Applicant/Owner: UCR State: CA Sampling Point: 4
 Investigator(s): PTS, MCM Section, Township, Range: 31, T5, R4W
 Landform (hillslope, terrace, etc.): streambank Local relief (concave, convex, none): none Slope (%): 1%
 Subregion (LRR): C-Med Lat: 2294188.25 Long: 6229367.30 Datum: Zone 6
 Soil Map Unit Name: HCC TEG NWI classification: Ruemic

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? No 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 <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Is the Sampled Area within a Wetland?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Hydric Soil Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>			
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>			

Remarks: Sample point directly on streambank above small sandy bar, photo 11

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:																																						
1. <u>Salix gooddingii</u>	<u>70</u>	<input checked="" type="checkbox"/>	<u>FACW</u>	Number of Dominant Species That Are OBL, FACW, or FAC:	<u>3</u> (A)																																					
2. <u>Ficus carica</u>	<u>25</u>	<input type="checkbox"/>	<u>UPL</u>	Total Number of Dominant Species Across All Strata:	<u>4</u> (B)																																					
3. <u>Platanus racemosa</u>	<u>5</u>	<input type="checkbox"/>	<u>FAC</u>	Percent of Dominant Species That Are OBL, FACW, or FAC:	<u>75</u> (A/B)																																					
4. _____				Prevalence Index worksheet:																																						
<u>100</u> = Total Cover				Total % Cover of:																																						
<table border="0"> <tr> <td>1. <u>Washingtonia robusta</u></td> <td><u>20</u></td> <td><input checked="" type="checkbox"/></td> <td><u>FAC</u></td> <td>OBL species</td> <td><u>0</u> x 1 = <u>0</u></td> </tr> <tr> <td>2. _____</td> <td></td> <td></td> <td></td> <td>FACW species</td> <td><u>80</u> x 2 = <u>160</u></td> </tr> <tr> <td>3. _____</td> <td></td> <td></td> <td></td> <td>FAC species</td> <td><u>25</u> x 3 = <u>75</u></td> </tr> <tr> <td>4. _____</td> <td></td> <td></td> <td></td> <td>FACU species</td> <td><u>0</u> x 4 = <u>0</u></td> </tr> <tr> <td>5. _____</td> <td></td> <td></td> <td></td> <td>UPL species</td> <td><u>30</u> x 5 = <u>150</u></td> </tr> <tr> <td colspan="4"></td> <td>Column Totals:</td> <td><u>135</u> (A) <u>285</u> (B)</td> </tr> </table>				1. <u>Washingtonia robusta</u>	<u>20</u>	<input checked="" type="checkbox"/>	<u>FAC</u>	OBL species	<u>0</u> x 1 = <u>0</u>	2. _____				FACW species	<u>80</u> x 2 = <u>160</u>	3. _____				FAC species	<u>25</u> x 3 = <u>75</u>	4. _____				FACU species	<u>0</u> x 4 = <u>0</u>	5. _____				UPL species	<u>30</u> x 5 = <u>150</u>					Column Totals:	<u>135</u> (A) <u>285</u> (B)	Prevalence Index = B/A = <u>2.85</u>		
1. <u>Washingtonia robusta</u>	<u>20</u>	<input checked="" type="checkbox"/>	<u>FAC</u>	OBL species	<u>0</u> x 1 = <u>0</u>																																					
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% Bare Ground in Herb Stratum <u>~5</u> % Cover of Biotic Crust <u>—</u>																																										

Remarks:

SOIL

Sampling Point: 4

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-14+	10YR 3/2	90	7.5YR 5/10	10	C	M	Sandy loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input checked="" type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Vernal Pools (F9)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)		

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):
 Type: None
 Depth (inches): _____

Hydric Soil Present? Yes No

Remarks: Soil profile has ~10% redox throughout.

HYDROLOGY

Wetland Hydrology Indicators:		Secondary Indicators (2 or more required)
Primary Indicators (minimum of one required; check all that apply)		
<input checked="" type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Water Marks (B1) (Riverine)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)	<input checked="" type="checkbox"/> Sediment Deposits (B2) (Riverine)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input checked="" type="checkbox"/> Drift Deposits (B3) (Riverine)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> FAC-Neutral Test (D5)

Field Observations:
 Surface Water Present? Yes No Depth (inches): 1.5
 Water Table Present? Yes No Depth (inches): _____
 Saturation Present? (includes capillary fringe) Yes No Depth (inches): _____

Wetland Hydrology Present? Yes No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Sample point located ~ 2 feet from edge of running water.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Creekside Drainage City/County: Riverside, Riverside Sampling Date: 10/21/18
 Applicant/Owner: UCR State: CA Sampling Point: 5
 Investigator(s): PTS, MCM Section, Township, Range: 31, T2S, R4W
 Landform (hillslope, terrace, etc.): Stream bank Local relief (concave, convex, none): concave Slope (%): ~2
 Subregion (LRR): C-Med Lat: 2194187, 45 Long: 6229158 Datum: Zoned
 Soil Map Unit Name: HCC, TEG NWI classification: Riverine
 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? No 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 <input checked="" type="checkbox"/> No <input type="checkbox"/>	Hydic Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		

Remarks: Paired pit w/ SP4. Sample point located ~ 3 feet above surface water and 5-6 ft. from edge of bank, but below OHWM, photo 12.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A)
1. <u>Salix goodingii</u>	<u>80</u>	<u>Y</u>	<u>FACW</u>	
2. <u>Fraxinus sp.</u>	<u>10</u>	<u>N</u>	<u>UPL</u>	
3. <u>Washingtonia robusta</u>	<u>5</u>	<u>N</u>	<u>FAC</u>	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>67</u> (A/B)
4. <u>Platanus racemosa</u>	<u>5</u>	<u>N</u>		
	<u>100</u>	= Total Cover		
Sapling/Shrub Stratum (Plot size: <u>10'</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Prevalence Index worksheet: Total % Cover of: <u>0</u> Multiply by: <u>1</u> OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>90</u> x 2 = <u>180</u> FAC species <u>75</u> x 3 = <u>225</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>60</u> x 5 = <u>300</u> Column Totals: <u>175</u> (A) <u>300</u> (B) Prevalence Index = B/A = <u>3.17</u>
1. <u>Fraxinus sp.</u>	<u>20</u>	<u>Y</u>	<u>UPL</u>	
2. <u>Washingtonia robusta</u>	<u>20</u>	<u>Y</u>	<u>FAC</u>	
3.				
4.				
5.				
	<u>40</u>	= Total Cover		
Herb Stratum (Plot size: <u>5'</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Indicators: <input checked="" type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is ≤3.0' <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)
1. <u>Stipa miliaceum</u>	<u>30</u>	<u>Y</u>	<u>UPL</u>	
2. <u>Polygonum monspeliensis</u>	<u>10</u>	<u>Y</u>	<u>FACW</u>	¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
3.				
4.				
5.				
6.				
7.				
8.				
	<u>40</u>	= Total Cover		
Woody Vine Stratum (Plot size: <u>10'</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
1. <u>Vitis giandra</u>	<u>5</u>	<u>Y</u>	<u>FAC</u>	
2.	<u>5</u>			
	<u>5</u>	= Total Cover		
% Bare Ground in Herb Stratum <u>10</u>		% Cover of Biotic Crust <u>-</u>		

Remarks:

SOIL

Sampling Point: 5

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-14+	10YR 4/3	100	-	-	-	-	sandy loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Vernal Pools (F9)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)		

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):
 Type: None
 Depth (inches): -

Hydric Soil Present? Yes No

Remarks: No redox or hydric soil indicators present.

HYDROLOGY

Wetland Hydrology Indicators:		
Primary Indicators (minimum of one required; check all that apply)	Secondary Indicators (2 or more required)	
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Water Marks (B1) (Riverine)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)	<input checked="" type="checkbox"/> Sediment Deposits (B2) (Riverine)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input checked="" type="checkbox"/> Drift Deposits (B3) (Riverine)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> FAC-Neutral Test (D5)

Field Observations:
 Surface Water Present? Yes No Depth (inches): _____
 Water Table Present? Yes No Depth (inches): _____
 Saturation Present? (includes capillary fringe) Yes No Depth (inches): _____

Wetland Hydrology Present? Yes No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Sample point located below OHWM.

15/40

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Creekside Drainage City/County: Riverside, Riverside Sampling Date: 6/21/18
 Applicant/Owner: UCR State: CA Sampling Point: 6
 Investigator(s): PTS, MCM Section, Township, Range: 31, T2S, R4W
 Landform (hillslope, terrace, etc.): creek bank Local relief (concave, convex, none): convex Slope (%): 2%
 Subregion (LRR): C-Med Lat: 2294300.019 Long: 6229158.019 Datum: ZONE 10
 Soil Map Unit Name: HCC, Reg NWI classification: Riverine
 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? 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 <input checked="" type="checkbox"/> No <input type="checkbox"/>	Hydic Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks: <u>within 4 feet of water, below ordinary high, 1-2 feet above surface water</u>			

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. <u>Fraxinus pennsylvanica</u>	<u>80</u>	<input checked="" type="checkbox"/>	<u>FACW</u>	Number of Dominant Species That Are OBL, FACW, or FAC: <u>121</u> (A)
2. <u>Salix laevigata</u>	<u>20</u>		<u>FACW</u>	Total Number of Dominant Species Across All Strata: <u>3</u> (B)
3. <u>Sambucus nigra</u>	<u>20</u>		<u>FACU</u>	
4. _____				
			<u>120</u> = Total Cover	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0.66</u> (A/B)
Sapling/Shrub Stratum (Plot size: <u>10</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Prevalence Index worksheet:
1. <u>Alnus calica</u>	<u>40</u>	<input checked="" type="checkbox"/>	<u>FACU</u>	Total % Cover of: _____ Multiply by: _____ OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>117</u> x 2 = <u>234</u> FAC species <u>5</u> x 3 = <u>15</u> FACU species <u>60</u> x 4 = <u>240</u> UPL species <u>5</u> x 5 = <u>25</u> Column Totals: <u>127</u> (A) _____ (B) Prevalence Index = B/A = <u>2.79</u>
2. <u>Fraxinus sp.</u>	<u>5</u>		<u>UPL</u>	
3. <u>Washingtonia robusta</u>	<u>5</u>		<u>FAC</u>	
4. _____				
5. _____				
			<u>50</u> = Total Cover	
Herb Stratum (Plot size: <u>5</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Xanthium strumarium</u>	<u>2</u>	<input checked="" type="checkbox"/>	<u>FAC</u>	
2. _____				
3. _____				
4. _____				
5. _____				
6. _____				
7. _____				
8. _____				
			_____ = Total Cover	
Woody Vine Stratum (Plot size: <u>—</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____				
2. _____				
			_____ = Total Cover	
% Bare Ground in Herb Stratum <u>98</u> % Cover of Biotic Crust _____				
Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>				

Remarks:

SOIL

Sampling Point: 6

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-2	10YR3/2	100					SANDY lam	
2-8	10YR5/3	100					CLD	
8-13	10YR3/2	100					Sandy loam	NO MUCK
13+	N2.5/-	100						

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Vernal Pools (F9)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)		

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):
 Type: _____
 Depth (inches): _____

Hydric Soil Present? Yes _____ No

Remarks:
 extreme dark layer at 12 inches, NO muck present, No indicators. Dark soil doesn't have oily muck feel like other muck. chitic had

HYDROLOGY

Wetland Hydrology Indicators:	
Primary Indicators (minimum of one required; check all that apply)	Secondary Indicators (2 or more required)
<input checked="" type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)
	<input type="checkbox"/> Water Marks (B1) (Riverine)
	<input checked="" type="checkbox"/> Sediment Deposits (B2) (Riverine)
	<input type="checkbox"/> Drift Deposits (B3) (Riverine)
	<input checked="" type="checkbox"/> Drainage Patterns (B10)
	<input type="checkbox"/> Dry-Season Water Table (C2)
	<input type="checkbox"/> Crayfish Burrows (C8)
	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
	<input type="checkbox"/> Shallow Aquitard (D3)
	<input type="checkbox"/> FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes No _____ Depth (inches): 3

Water Table Present? Yes _____ No Depth (inches): _____

Saturation Present? Yes _____ No Depth (inches): _____

(includes capillary fringe)

Wetland Hydrology Present? Yes No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: UCR Creekside Drainage City/County: Riverside, Riverside Sampling Date: 4/21/18
 Applicant/Owner: UCR State: CA Sampling Point: 7
 Investigator(s): PTS, MCM Section, Township, Range: 31, T25, R4W
 Landform (hillslope, terrace, etc.): Island Local relief (concave, convex, none): CONVEX Slope (%): 1-2%
 Subregion (LRR): C-Med Lat: 2294302.237 Long: 6729110.216 Datum: ZONELO
 Soil Map Unit Name: HCC, TEG NWI classification: Riverine
 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? No Are "Normal Circumstances" present? Yes No
 Are Vegetation , Soil , or Hydrology naturally problematic? (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 <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Remarks: <u>Island in center of creek channel near area where bank has slumped into creek. No out/paired pit conducted</u>	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. <u>FRAXINUS PENNSYLVANICA</u>	<u>60</u>	<input checked="" type="checkbox"/>	<u>FACW</u>	Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A)
2. <u>FICUS CARICA</u>	<u>20</u>	<input type="checkbox"/>	<u>UPL</u>	Total Number of Dominant Species Across All Strata: <u>4</u> (B)
3. _____	_____	<input type="checkbox"/>	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>75%</u> (A/B)
4. _____	_____	<input type="checkbox"/>	_____	
<u>80</u> = Total Cover				
Sapling/Shrub Stratum (Plot size: <u>10</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Prevalence Index worksheet:
1. <u>FICUS CARICA</u>	<u>35</u>	<input checked="" type="checkbox"/>	<u>UPL</u>	Total % Cover of: _____ Multiply by: _____
2. _____	_____	<input type="checkbox"/>	_____	OBL species <u>45</u> x 1 = <u>45</u>
3. _____	_____	<input type="checkbox"/>	_____	FACW species <u>90</u> x 2 = <u>180</u>
4. _____	_____	<input type="checkbox"/>	_____	FAC species <u>0</u> x 3 = <u>0</u>
5. _____	_____	<input type="checkbox"/>	_____	FACU species <u>10</u> x 4 = <u>40</u>
<u>35</u> = Total Cover				UPL species <u>55</u> x 5 = <u>275</u>
				Column Totals: <u>200</u> (A) <u>540</u> (B)
				Prevalence Index = B/A = <u>2.70</u>
Herb Stratum (Plot size: <u>5</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Indicators:
1. <u>RICHTHIA COMMUNIS</u>	<u>10</u>	<input type="checkbox"/>	<u>FACU</u>	<input type="checkbox"/> Dominance Test is >50%
2. <u>PERSICARIA LAPATHIFOLIA</u>	<u>30</u>	<input checked="" type="checkbox"/>	<u>FACW</u>	<input type="checkbox"/> Prevalence Index is ≤3.0 ¹
3. <u>NAUSTRUM OFFICINALE</u>	<u>20</u>	<input checked="" type="checkbox"/>	<u>OBL</u>	<input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
4. <u>VERONICA ANAGALLIS ACUTATA</u>	<u>5</u>	<input type="checkbox"/>	<u>OBL</u>	<input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)
5. <u>APINUM GRAVEOLENS</u>	<u>5</u>	<input type="checkbox"/>	<u>OBL</u>	
6. <u>MIMULUS GUTTATUS</u>	<u>5</u>	<input type="checkbox"/>	<u>OBL</u>	
7. _____	_____	<input type="checkbox"/>	_____	
8. _____	_____	<input type="checkbox"/>	_____	
<u>85</u> = Total Cover				
Woody Vine Stratum (Plot size: <u>0</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Present?
1. _____	_____	<input type="checkbox"/>	_____	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
2. _____	_____	<input type="checkbox"/>	_____	
<u>0</u> = Total Cover				
% Bare Ground in Herb Stratum <u>15</u> % Cover of Biotic Crust _____				

Remarks: _____

SOIL

Sampling Point: 7

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-8	10YR 5/3	100					Sandy	
8-14+	N 2.5/-	100					loamy sand/muck	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Depleted Matrix (F3)	<input checked="" type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Vernal Pools (F9)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)		

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):
 Type: none
 Depth (inches): —

Hydric Soil Present? Yes No

Remarks:
 Almost meets S1; but dark layer is 2 inches too deep, However wetland conditions assumed due to wetland vegetation presence on sandy bar problematic wetland

HYDROLOGY

Wetland Hydrology Indicators:	
Primary Indicators (minimum of one required; check all that apply)	Secondary Indicators (2 or more required)
<input checked="" type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)
	<input type="checkbox"/> Water Marks (B1) (Riverine)
	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)
	<input type="checkbox"/> Drift Deposits (B3) (Riverine)
	<input type="checkbox"/> Drainage Patterns (B10)
	<input type="checkbox"/> Dry-Season Water Table (C2)
	<input type="checkbox"/> Crayfish Burrows (C8)
	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
	<input type="checkbox"/> Shallow Aquitard (D3)
	<input type="checkbox"/> FAC-Neutral Test (D5)

Field Observations:
 Surface Water Present? Yes No Depth (inches): 3
 Water Table Present? Yes No Depth (inches): —
 Saturation Present? (includes capillary fringe) Yes No Depth (inches): <1

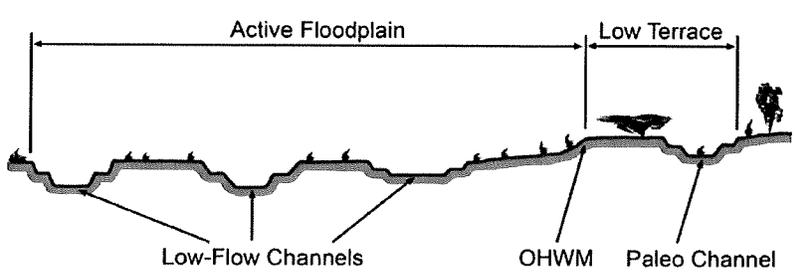
Wetland Hydrology Present? Yes No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
 Sandy island not present in 2011 JD. likely due to bank slumps

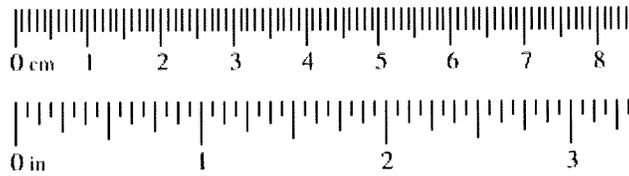
Appendix D
OHW M Data Form

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Creeside Drainage Project Number: 25318 Stream: unnamed creek Investigator(s): PTS	Date: 11/1/18 Town: Riverside Photo begin file#: see log Time: 0900 State: CA Photo end file#: N/A see log				
Y <input checked="" type="checkbox"/> / N <input type="checkbox"/> Do normal circumstances exist on the site? Y <input type="checkbox"/> / N <input checked="" type="checkbox"/> Is the site significantly disturbed?	Location Details: off Chicago Ave, see figures Projection: 33,958922 Datum: Coordinates: -117.3412543 WGS84				
Potential anthropogenic influences on the channel system: dry weather run off including excess nutrients from landscape and trash.					
Brief site description: partially riprapped perennial creek with a mix of native riparian and non-native and invasive plant species. The creek is suffering from erosion issues.					
Checklist of resources (if available): <input checked="" type="checkbox"/> Aerial photography image from Feb 2018 Google Earth Pro <input type="checkbox"/> Stream gage data <input checked="" type="checkbox"/> Topographic maps <input type="checkbox"/> Geologic maps <input type="checkbox"/> Geologic maps <input type="checkbox"/> History of recent effective discharges <input type="checkbox"/> Vegetation maps <input type="checkbox"/> Results of flood frequency analysis <input checked="" type="checkbox"/> Soils maps <input type="checkbox"/> Most recent shift-adjusted rating <input checked="" type="checkbox"/> Rainfall/precipitation maps <input type="checkbox"/> Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event <input checked="" type="checkbox"/> Existing delineation(s) for site 2011 <input checked="" type="checkbox"/> Global positioning system (GPS) <input type="checkbox"/> Other studies					
Hydrogeomorphic Floodplain Units 					
Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM: <ol style="list-style-type: none"> Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site. Select a representative cross section across the channel. Draw the cross section and label the floodplain units. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units. <ol style="list-style-type: none"> Record the floodplain unit and GPS position. Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit. Identify any indicators present at the location. Repeat for other points in different hydrogeomorphic floodplain units across the cross section. Identify the OHWM and record the indicators. Record the OHWM position via: <table style="width: 100%; margin-left: 20px;"> <tr> <td><input type="checkbox"/> Mapping on aerial photograph</td> <td><input checked="" type="checkbox"/> GPS</td> </tr> <tr> <td><input type="checkbox"/> Digitized on computer</td> <td><input type="checkbox"/> Other:</td> </tr> </table> 		<input type="checkbox"/> Mapping on aerial photograph	<input checked="" type="checkbox"/> GPS	<input type="checkbox"/> Digitized on computer	<input type="checkbox"/> Other:
<input type="checkbox"/> Mapping on aerial photograph	<input checked="" type="checkbox"/> GPS				
<input type="checkbox"/> Digitized on computer	<input type="checkbox"/> Other:				

Wentworth Size Classes

Millimeters (mm)	Inches (in)	Wentworth size class
10.08	256	Boulder
2.56	64	Cobble
0.157	4	Pebble
0.079	2.00	Granule
0.039	1.00	Very coarse sand
0.020	0.50	Coarse sand
1/2 0.0098	0.25	Medium sand
1/4 0.005	0.125	Fine sand
1/8 0.0025	0.0625	Very fine sand
1/16 0.0012	0.031	Coarse silt
1/32 0.00061	0.0156	Medium silt
1/64 0.00031	0.0078	Fine silt
1/128 0.00015	0.0039	Very fine silt
		Clay



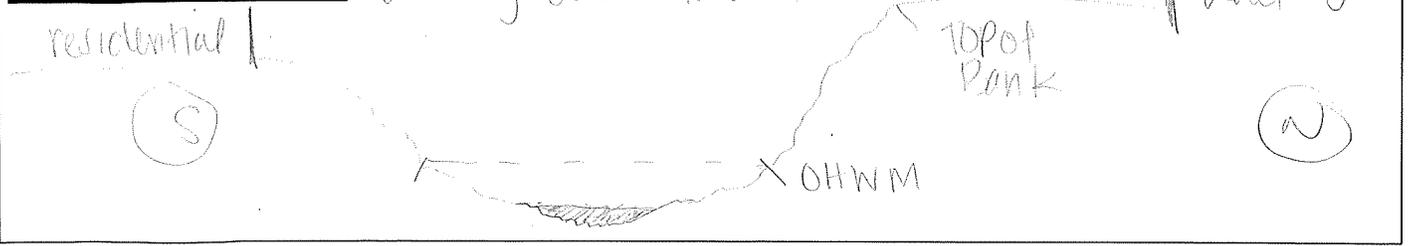
Creekside Drainage

Project ID: Project

Cross section ID:

Date: 6/23/18 Time: —

Cross section drawing: looking downstream



OHWM

GPS point: see figure for location points

Indicators:

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

Comments:

earthen slope on south side of drainage was typically used for visual indicators of OHWM

Floodplain unit: Low-Flow Channel Active Floodplain Low Terrace

GPS point: see figures

Characteristics of the floodplain unit:

Average sediment texture: —
 Total veg cover: 85 % Tree: 100 % Shrub: 10 % Herb: 15 %
 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:

low flow channel consists of most vegetation of project site
Perennial flowing.

Appendix E
Preliminary JD Form

PRELIMINARY JURISDICTIONAL DETERMINATION FORM

This preliminary JD finds that there "may be" waters of the United States on the subject project site, and identifies all aquatic features on the site that could be affected by the proposed activity, based on the following information:

District Office File/ORM # PJD Date:

State City/County
Nearest Waterbody:
Location: TRS,
LatLong or UTM:

Name/
Address of
Person
Requesting
PJD

Identify (Estimate) Amount of Waters in the Review Area:

Non-Wetland Waters: linear ft width acres Stream Flow:
Wetlands: acre(s) Cowardin Class:

Name of Any Water Bodies on the Site Identified as
Section 10 Waters: Tidal:
Non-Tidal:
 Office (Desk) Determination
 Field Determination: Date of Field Trip:

SUPPORTING DATA: Data reviewed for preliminary JD (check all that apply - checked items should be included in case file and, where checked and requested, appropriately reference sources below):

- Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant:
- Data sheets prepared/submitted by or on behalf of the applicant/consultant.
 - Office concurs with data sheets/delineation report.
 - Office does not concur with data sheets/delineation report.
- Data sheets prepared by the Corps
- Corps navigable waters' study:
- U.S. Geological Survey Hydrologic Atlas:
 - USGS NHD data.
 - USGS 8 and 12 digit HUC maps.
- U.S. Geological Survey map(s). Cite quad name:
- USDA Natural Resources Conservation Service Soil Survey. Citation:
- National wetlands inventory map(s). Cite name:
- State/Local wetland inventory map(s):
- FEMA/FIRM maps:
- 100-year Floodplain Elevation is:
- Photographs: Aerial (Name & Date):
 Other (Name & Date):
- Previous determination(s). File no. and date of response letter:
- Other information (please specify):

IMPORTANT NOTE: The information recorded on this form has not necessarily been verified by the Corps and should not be relied upon for later jurisdictional determinations.

Signature and Date of Regulatory Project Manager
(REQUIRED)

Signature and Date of Person Requesting Preliminary JD
(REQUIRED, unless obtaining the signature is impracticable)

EXPLANATION OF PRELIMINARY AND APPROVED JURISDICTIONAL DETERMINATIONS:

1. The Corps of Engineers believes that there may be jurisdictional waters of the United States on the subject site, and the permit applicant or other affected party who requested this preliminary JD is hereby advised of his or her option to request and obtain an approved jurisdictional determination (JD) for that site. Nevertheless, the permit applicant or other person who requested this preliminary JD has declined to exercise the option to obtain an approved JD in this instance and at this time.

2. In any circumstance where a permit applicant obtains an individual permit, or a Nationwide General Permit (NWP) or other general permit verification requiring "preconstruction notification" (PCN), or requests verification for a non-reporting NWP or other general permit, and the permit applicant has not requested an approved JD for the activity, the permit applicant is hereby made aware of the following: (1) the permit applicant has elected to seek a permit authorization based on a preliminary JD, which does not make an official determination of jurisdictional waters; (2) that the applicant has the option to request an approved JD before accepting the terms and conditions of the permit authorization, and that basing a permit authorization on an approved JD could possibly result in less compensatory mitigation being required or different special conditions; (3) that the applicant has the right to request an individual permit rather than accepting the terms and conditions of the NWP or other general permit authorization; (4) that the applicant can accept a permit authorization and thereby agree to comply with all the terms and conditions of that permit, including whatever mitigation requirements the Corps has determined to be necessary; (5) that undertaking any activity in reliance upon the subject permit authorization without requesting an approved JD constitutes the applicant's acceptance of the use of the preliminary JD, but that either form of JD will be processed as soon as is practicable; (6) accepting a permit authorization (e.g., signing a proffered individual permit) or undertaking any activity in reliance on any form of Corps permit authorization based on a preliminary JD constitutes agreement that all wetlands and other water bodies on the site affected in any way by that activity are jurisdictional waters of the United States, and precludes any challenge to such jurisdiction in any administrative or judicial compliance or enforcement action, or in any administrative appeal or in any Federal court; and (7) whether the applicant elects to use either an approved JD or a preliminary JD, that JD will be processed as soon as is practicable. Further, an approved JD, a proffered individual permit (and all terms and conditions contained therein), or individual permit denial can be administratively appealed pursuant to 33 C.F.R. Part 331, and that in any administrative appeal, jurisdictional issues can be raised (see 33 C.F.R. 331.5(a)(2)). If, during that administrative appeal, it becomes necessary to make an official determination whether CWA jurisdiction exists over a site, or to provide an official delineation of jurisdictional waters on the site, the Corps will provide an approved JD to accomplish that result, as soon as is practicable.

PRELIMINARY JURISDICTIONAL DETERMINATION FORM

This preliminary JD finds that there "may be" waters of the United States on the subject project site, and identifies all aquatic features on the site that could be affected by the proposed activity, based on the following information:

Appendix A - Sites

District Office File/ORM # PJD Date:
State City/County Person Requesting PJD

Site Number	Latitude	Longitude	Cowardin Class	Est. Amount of Aquatic Resource in Review Area	Class of Aquatic Resource
1	33.958917	-117.346676	Riverine	0.013	Non-Section 10 wetland
1	33.958917	-117.346676	Riverine	0.239	Non-Section 10 non-wetland
2	33.9859161	-117.347250	Riverine	<0.001	Non-Section 10 non-wetland

Notes:

Appendix C

Special-Status Species Potential to Occur

Introduction

This appendix addresses all species with applicable special regulatory or management status whose general range includes the study area or whose habitat occurs within or near the study area and/or vicinity. Information provided includes: 1) definitions of terms to describe likelihood of occurrence, 2) a table of special-status codes and their meanings, and 3) a species information table listing the English and scientific names, current special-status, likelihood of occurrence within the project site, and specific notes relevant to likelihood of occurrence.

Conclusions provided in this report are limited to biology, and do not address regulatory or management issues. For interpretation of this information under applicable laws, regulations, and court precedent, see the relevant portion(s) of the report. Judgments regarding likelihood of occurrence are based on evaluation of available biological information regarding regional and local conditions, species biology, available evaluations of the study area and vicinity, and professional experience conducting field investigations across California over many years. Though professional, such judgments are necessarily subjective at least in part.

Specific factors substantially affect likelihood of occurrence for individual species on any particular study area. These factors are relevant at multiple scales, including regionally, locally, and within the study area. These factors include the presence or absence of other particular species (e.g., predators, prey), climate, ongoing disturbances, historical land use, and other past disturbances such as fire history, surface and subsurface hydrology, soil texture and chemistry, study area and habitat size and topology (i.e., shape and fragmentation), past population fluctuations of the species in response to random and nonrandom events, and many other factors, including many not readily visible. Note that some species, including some amphibians and many birds and bats, can occur in multiple roles. Thus, likelihood of occurrence, habitat use, and abundance may vary accordingly.

Finally, note that likelihood of occurrence for a given species refers to a time scale of a few years up to perhaps 10 years under current or assumed resources and conditions.

Terms for Likelihood of Occurrence in the Study Area

Confirmed Absent

If the likelihood of occurrence is *confirmed absent*, the species is confirmed to be absent on the study area as a formal and/or practical matter. Most often, this is a determination based on negative results of a focused survey for the species conducted in appropriate habitat at appropriate time(s) of year, using biologically sound methods and qualified personnel. In the remaining cases, it may be based on a simple study area examination, where it is easily determined that the species is absent because of the study area context. For example, a tidal marsh insect would not occur in a dry mountainside study area, or a disturbance-intolerant chaparral shrub would not occur in a long-standing, degraded grassland study area located far from chaparral. When a species is confirmed absent, the relevant fieldwork in all cases was conducted within a time frame sufficiently recent to

conclude that the species remains absent, based on study area conditions and the species' known ecology. In most cases a specific, established survey protocol and/or guidelines have been followed.

Less than Reasonable

If the potential to occur is *less than reasonable*, the likelihood of occurrence, although remotely possible, is less than that required for any potentially applicable regulatory threshold. Further, the likelihood that the site is meaningfully valuable to any population(s) of this taxon is less than reasonable. The species may or may not include the study area within its current, general range. However, no appropriate, or adequately extensive, or effectively connected habitat is present. Neither the species nor any indication of its presence was detected. In some cases, based on the best available information, this likelihood may indicate that, the study area has a very high probability of being outside of the species' current range. In all of the above cases, the species may not be definitively ruled out but is strongly believed to be absent based on professional evaluation of all available evidence. In some cases, the species may occur on rare occasions and in low numbers, but with no more than brief, incidental use of the study area; that is, the site is also judged to lack any important function for the species. Certainly, there are no substantial populations directly utilizing the study area at any time of year. Further evaluation should not normally be required.

Low

If the potential to occur is *low*, occurrence of the species is reasonable but unlikely because of some combination of facts. For example, 1) the study area was the subject of unsuccessful searches conducted under relevant and reasonable circumstances, 2) potential habitat present is marginal or minimal in extent, 3) the best available information suggests the species is absent from the study area, and/or 4) available information sheds no clear light on the species likelihood on the study area, but it is known to be rare at best in the vicinity. Neither the species nor any indication of its presence was detected. Although individuals may have been missed, it is unlikely that substantial populations are present. Further evaluation should usually not be required for individual species except, in most cases, for biologically threatened or endangered species. Note however, that where several non-listed species hold this status, a higher likelihood of occurrence for "one or more" will generally hold. This is due both to the increased number of species and the fact that an array of possibilities often correlates with greater site biodiversity and lower relevant (but not readily detected) disturbance levels.

Moderate

If the potential to occur is *moderate*, the study area is within the range of the species, and contains potentially appropriate habitat. Neither individuals nor diagnostic sign were detected. It is nevertheless reasonable that some individuals may have been overlooked. The best available information on the species with regard to the study area is either very uncertain, or may be equally weighted for and against occurrence. Depending upon local and special legal status, extent of habitat, and the nature and sensitivity of the project, focused surveys for the species may be warranted or presence may be assumed.

High

If the potential to occur is *high*, the study area is known to be within the range of the species, and contains potential habitat with a high likelihood of occupancy. Although no individuals or diagnostic sign were detected during current fieldwork by a qualified observer, the species is likely to be present to some degree given the best available information. Depending upon regulatory status, local rarity, public interest, extent of habitat on the study area, and the nature of potential project impacts, a substantial basis may exist for either conducting focused surveys for the species or for assuming presence.

Confirmed Present

If the likelihood of occurrence is *confirmed present*, a qualified biologist or other reliable source has confirmed the presence of the species and there is no specific evidence that the species has subsequently become absent. Depending on the species and other information available, it may or may not be possible to determine, without further studies, what portions of the study area are currently in use.

Sensitive Plant Species

Scientific Name	Common Name	Status	General Habitat Description	Habitat Present/Absent	WRC MSHCP Covered Species	Rationale
Lichens						
<i>Texosporium sanctijacobi</i>	Woven-spored lichen	None	Found on soil, typically associated with rootballs of <i>Poa secunda</i> . Mainly found in sage scrub communities that have not been disturbed for 20 years or more. Restricted to growing on organic material, including small mammal scat.	HA	No	Less than reasonable potential to occur. The project site lacks sage scrub community.
Plants						
<i>Abronia villosa</i> var. <i>aurita</i>	Chaparral sand-verbena	CNPS 1B.1	Sandy areas in chaparral and coastal sage scrub.	HA	No	Less than reasonable potential to occur. The project site lacks chaparral and sage scrub communities.
<i>Allium munzii</i>	Munz' onion	FE, ST, CNPS 1B.1	Moist grassy to bare openings within chaparral, coastal sage scrub, and cismontane woodland. Typically found associated at or near vernal pools, swales, or drainages. Generally associated with mesic clay and gabbroic outcrops.	HA	Yes (Narrow Endemic Plant Species)	Less than reasonable potential to occur. The project site lacks chaparral, sage scrub, vernal pool and/or cismontane woodland habitats. The project site also lacks clay or gabbroic outcrops.

Scientific Name	Common Name	Status	General Habitat Description	Habitat Present/ Absent	WRC MSHCP Covered Species	Rationale
<i>Ambrosia pumila</i>	San Diego Ambrosia	FE, CNPS 1B.1	Open habitats with coarse substrates near drainages, and in upland areas on clay slopes or on the margins of vernal pools.	HA	Yes (Narrow Endemic Plant Species)	Less than reasonable potential to occur. Although the project site consists of a drainage, it lacks suitable clay and alkaline soils and vernal pools.
<i>Arenaria paludicola</i>	Marsh sandwort	FE, SE, CNPS 1B.1	Freshwater marshes and swamps. Last known southern California record is from 1899.	HA	No	Less than reasonable potential to occur. The project site lacks freshwater marshes and swamp habitat.
<i>Astragalus hornii</i> var. <i>hornii</i>	Horn's milk-vetch	CNPS 1B.1	Meadows and seeps, alkaline areas adjacent to lake margins.	HA	No	Less than reasonable potential to occur. The project site lacks meadow and seep and alkaline lake margin habitat.
<i>Atriplex coronata</i> var. <i>notatior</i>	San Jacinto Valley Crownscale	FE, CNPS 1B.1	Playas, alkaline flats, chenopod scrub, valley and foothill grasslands and vernal pools. Known from the San Jacinto River basin, Riverside County, CA.	HA	Yes (Criteria Area Plant Species)	Less than reasonable potential to occur. The project site lacks alkaline flats, chenopod scrub, valley and foothill grasslands and vernal pool habitats.
<i>Atriplex pacifica</i>	South coast saltscale	CNPS 1B.2	Alkaline soils of coastal sage scrub, playas, coastal bluff scrub, coastal dunes and chenopod scrub.	HA	No	Less than reasonable potential to occur. The project site lacks coastal sage scrub, playas, coastal bluff scrub, coastal dunes and chenopod scrub.

Scientific Name	Common Name	Status	General Habitat Description	Habitat Present/ Absent	WRC MSHCP Covered Species	Rationale
<i>Atriplex parishii</i>	Parish's saltscale	CNPS 1B.1	Alkaline meadows, vernal pools, chenopod scrub and playas. Usually on drying alkaline flats with fine soils.	HA	Yes (Criteria Area Plant Species)	Less than reasonable potential to occur. The project site lacks alkaline meadows, vernal pools, chenopod scrub and playas.
<i>Atriplex serenana</i> <i>var. davidsonii</i>	Davidson's saltscale	CNPS 1B.2	Alkaline soils within coastal bluff and coastal scrub	HA	Yes (Criteria Area Plant Species)	Less than reasonable potential to occur. The project site lacks alkaline conditions and coastal scrub communities.
<i>Berberis nevini</i>	Nevin's barberry	FE, SE, CNPS 1B.1	Gravelly wash margins in alluvial scrub or coarse soils in chaparral.	HA	Yes (Criteria Area Plant Species)	Less than reasonable potential to occur. The project site lacks gravelly wash margins, alluvial scrub and chaparral.
<i>Brodiaea filifolia</i>	Thread-leaved brodiaea	FT, SE, CNPS 1B.1	Clay loamy sand or alkaline soils within open grasslands at edges or vernal pools or floodplains.	HA	Yes (Criteria Area Plant Species)	Less than reasonable potential to occur. The project site lacks open grasslands, vernal pools or floodplain habitat.
<i>Brodiaea orcuttii</i>	Orcutt's brodiaea	CNPS 1B.1	Clay and serpentine soils within grasslands near vernal pools and streams, also known from cismontane woodlands, chaparral, and coniferous woodlands.	HA	Yes	Less than reasonable potential to occur. The project site lacks, grassland, cismontane woodland, chaparral and coniferous woodland habitat.

Scientific Name	Common Name	Status	General Habitat Description	Habitat Present/ Absent	WRC MSHCP Covered Species	Rationale
<i>California macrophylla</i>	Round-leaved filaree	CNPS 1B.1	Clay soils in cismontane woodland and valley and foothill grassland communities	HA	Yes (Criteria Area Plant Species)	Less than reasonable potential to occur. The project site lacks cismontane woodland and valley and foothill grassland habitats.
<i>Calochortus plummerae</i>	Plummer's mariposa lily	CNPS 1B.2	Sandy or rocky sites of granitic or alluvial material in valley and foothill grassland, coastal scrub, chaparral, cismontane woodland and lower coniferous forests.	HA	No (Species specific objectives must be met prior to being considered adequately conserved)	Less than reasonable potential to occur. The project site lacks valley and foothill grassland, coastal sage scrub, chaparral, cismontane woodlands and coniferous forest habitats.
<i>Carex comosa</i>	Bristly sedge	CNPS 2.1	Coastal prairie, marshes and swamps and valley and foothill grasslands.	HA	No	Less than reasonable potential to occur. The project site lacks coastal prairie, marsh and swamp and valley and foothill grassland habitats.
<i>Caulanthus simulans</i>	Payson's jewel-flower	CNPS 4.2	Pinyon-juniper woodland, chaparral and coastal sage scrub communities with sandy and granitic soils. Typically associated with north-facing slopes and ridgelines.	HA	Yes	Less than reasonable potential to occur. The project site lacks pinyon-juniper woodland, chaparral and coastal sage scrub habitats.

Scientific Name	Common Name	Status	General Habitat Description	Habitat Present/ Absent	WRC MSHCP Covered Species	Rationale
<i>Centromadia pungens</i> ssp. <i>laevis</i>	Smooth tarplant	CNPS 1B.1	Occurs in alkali soils in seasonally wet chenopod scrub, meadows and seeps, playas, riparian woodland, fallow fields, drainage ditches, and moist situations in grasslands below approximately 1,575 feet. Tolerates some disturbance, nonnative plants, and moderate soil compaction.	HA	Yes (Criteria Area Plant Species)	Less than reasonable potential to occur. The project site contains southern willow scrub, however, it does not contain alkaline soils.
<i>Chorizanthe parryi</i> var. <i>parryi</i>	Parry's spineflower	CNPS 1B.1	Sandy openings in coastal scrub, alluvial fan sage scrub, juniper woodland, and chaparral communities.	HA	No (Species specific objectives must be met prior to being considered adequately conserved)	Less than reasonable potential to occur. The project site lacks coastal sage scrub, alluvial fan sage scrub, juniper woodlands and chaparral habitats.
<i>Chorizanthe polygonoides</i> var. <i>longispina</i>	Long-spined spineflower	CNPS 1B.2	Grasslands, coastal sage scrub, and chaparral communities, often with clay soils.	HA	Yes	Less than reasonable potential to occur. The project site lacks grasslands, coastal sage scrub and chaparral habitats.
<i>Chloropyron maritimus</i> ssp. <i>maritimus</i>	Salt marsh birds' beak	FE, SE, CNPS 1B.2	Coastal dunes and salt marshes.	HA	No	Less than reasonable potential to occur. The project site lacks coastal dunes and salt marshes.

Scientific Name	Common Name	Status	General Habitat Description	Habitat Present/ Absent	WRC MSHCP Covered Species	Rationale
<i>Cuscuta obtusiflora</i> var. <i>glandulosa</i>	Peruvian dodder	CNPS 2B.2	Found in freshwater marsh and swamps.	HA	No	Less than reasonable potential to occur. The project site lacks suitable freshwater marsh habitat.
<i>Deinandra mohavensis</i>	Mojave tarplant	SE, CNPS 1B.3	Sand bars and riparian areas in river beds, ephemeral grassy areas, riparian scrub and mesic chaparral. Known from above 2,800 feet.	HA	No (Species specific objectives must be met prior to being considered adequately conserved)	Less than reasonable potential to occur. The project site does contain riparian scrub habitat, however, the project site does not contain sand bars, grassy areas or other in stream habitat requirements. Additionally, the project site is below the known elevational range of the species.
<i>Dodecahema leptoceras</i>	Slender-horned spineflower	FE, SE, CNPS 1B.1	Gravelly soils (arkose deposits) in openings of chamise chaparral in the Vail Lake area or in sandy soils in openings of alluvial late seral stage scrub on floodplain terraces and benches that receive overbank deposits every 50 to 100 years.	HA	Yes (Narrow Endemic Plant Species)	Less than reasonable potential to occur. The project site lacks chamise chaparral and alluvial late seral stage scrub.
<i>Dudleya multicaulis</i>	Many-stemmed dudleya	CNPS 1B.2	Often on clay soils around granitic outcrops in chaparral, coastal sage scrub and grasslands.	HA	Yes (Narrow Endemic Plant Species)	Less than reasonable potential to occur. The project site lacks chaparral, coastal sage scrub and grassland habitats.

Scientific Name	Common Name	Status	General Habitat Description	Habitat Present/ Absent	WRC MSHCP Covered Species	Rationale
<i>Eriastrum densifolium</i> ssp. <i>sanctorum</i>	Santa Ana River woollystar	FE, SE, CNPS 1B.1	Sandy soils of floodplains and terraced fluvial deposits of the Santa Ana River and larger tributaries.	HA	Yes	Less than reasonable potential to occur. The project site lacks terraced fluvial deposits and the drainage is not considered a larger tributary to the Santa Ana River.
<i>Eryngium aristulatum</i> var. <i>parishii</i>	San Diego button celery	FE, SE, CNPS 1B.1	Vernal pools.	HA	Yes	Less than reasonable potential to occur. The project site lacks vernal pool habitat.
<i>Galium californicum</i> ssp. <i>primum</i>	Alvin Meadow bedstraw	CNPS 1B.2	Chaparral and sandy openings within lower montane coniferous woodlands.	HA	No	Less than reasonable potential to occur. The project site lacks chaparral and lower montane coniferous woodland.
<i>Harpagonella palmeri</i>	Palmer's grapplinghook	CNPS 4.2	Dry slopes and clay soils in valley grasslands, coastal sage scrub and chaparral communities	HA	Yes	Less than reasonable potential to occur. The project site lacks dry slopes, clay soils, valley and foothill grasslands and chaparral habitats.
<i>Helianthus nuttallii</i> ssp. <i>parishii</i>	Los Angeles sunflower	CNPS 1A	Saltwater and freshwater marshes and swamps.	HA	No	Less than reasonable potential to occur. The project site lacks saltwater or freshwater marshes and swamps.

Scientific Name	Common Name	Status	General Habitat Description	Habitat Present/ Absent	WRC MSHCP Covered Species	Rationale
<i>Holocarpha virgata</i> ssp. <i>elongata</i>	Graceful tarplant	CNPS 4.2	Mesic habitat or seasonally wet habitats within chaparral, cismontane woodland, vernal pools in coastal scrub or valley and foothill grasslands.	HA	No	Less than reasonable potential to occur. The project site does not contain chaparral, cismontane woodlands or vernal pool habitat.
<i>Hordeum intercedens</i>	Vernal barley	CNPS 3.2	Coastal dunes, coastal sage scrub, saline flats and depressions within valley and foothill grasslands, and vernal pools.	HA	Yes	Less than reasonable potential to occur. The project site does not contain coastal dunes, coastal sage scrub, or vernal areas with the potential to support this species.
<i>Horkelia cuneata</i> ssp. <i>puberula</i>	Mesa horkelia	CNPS 1B.1	Sandy or gravelly soils in chaparral or rarely in cismontane woodlands or coastal scrub.	HA	No	Less than reasonable potential to occur. The project site lacks chaparral, cismontane woodlands or coastal sage scrub.
<i>Imperata brevifolia</i>	California satintail	CNPS 2.1	Chaparral, coastal sage scrub, Mojavean desert scrub, meadows and seeps and riparian scrub.	HP	No	Low potential to occur. The project site does contain southern willow scrub habitat. As such it was determined that this species has a low potential to occur on site.
<i>Juglans californica</i> var. <i>californica</i>	California walnut	CNPS 4.2	Chaparral, cismontane woodland, coastal scrub, riparian areas.	HP	Yes	Confirmed absent. The project site contains riparian scrub, However, this tree species was not detected during the site visit.

Scientific Name	Common Name	Status	General Habitat Description	Habitat Present/ Absent	WRC MSHCP Covered Species	Rationale
<i>Lasthenia glabrata</i> <i>ssp. coulteri</i>	Coulter's goldfields	CNPS 1B.1	Marshes, playas, vernal pools and grasslands. Usually associated with alkaline soils.	HA	Yes (Criteria Area Plant Species)	Less than reasonable potential to occur. The project site lacks marshes, playas, vernal pools and grasslands.
<i>Lepidium virginicum</i> var. <i>robinsonii</i>	Robinson's pepper-grass	CNPS 1B.2	Dry soils in coastal sage scrub and chaparral.	HA	No	Less than reasonable potential to occur. The project site lacks coastal sage scrub and chaparral.
<i>Lilium humboldtii</i> <i>ssp. ocellatum</i>	Ocellated Humboldt lily	CNPS 4.2	Chaparral, cismontane woodland, coastal scrub and valley and foothill grasslands.	HA	No (MOU with Forest Service is required prior to be considered adequately conserved)	Less than reasonable potential to occur. The project site lacks chaparral, cismontane woodlands, coastal sage scrub and valley and foothill grasslands.
<i>Lilium parryi</i>	Lemon lily	CNPS 1B.2	Meadows, riparian forest, lower montane coniferous woodland, upper montane coniferous forest. Known to be above 4,300 feet in elevation.	HA	No (MOU with Forest Service is required prior to be considered adequately conserved)	Less than reasonable potential to occur. The project site contains riparian woodland, however, the site is below the known elevation range of the species.
<i>Limnanthes gracilis</i> ssp. <i>parishii</i>	Parish's meadowfoam	CNPS 1B.2	Seasonally wet meadows lower cismontane forest and vernal pools.	HA	Yes	Less than reasonable potential to occur. The project site lacks meadow, cismontane forest and vernal pool habitat.

Scientific Name	Common Name	Status	General Habitat Description	Habitat Present/ Absent	WRC MSHCP Covered Species	Rationale
<i>Lycium parishii</i>	Parish's desert-thorn	CNPS 2.3	Coastal sage scrub and Sonoran desert scrub.	HA	No	Less than reasonable potential to occur. The project site lacks coastal sage scrub and Sonoran desert scrub.
<i>Malacothamnus parishii</i>	Parish's bush mallow	CNPS 1A	Chaparral and coastal sage scrub.	HA	No	Less than reasonable potential to occur. The project site lacks chaparral and coastal sage scrub.
<i>Monardella pringlei</i>	Pringle's monardella	CNPS 1A	Sandy areas within coastal sage scrub.	HA	No	Less than reasonable potential to occur. The project site lacks coastal sage scrub.
<i>Myosurus minimus</i> var. <i>apus</i>	Little mousetail	CNPS 3.1	Wet habitats in valley and foothill grasslands with alkaline affinities, alkali playas and alkaline vernal pools.	HA	Yes (Criteria Area Plant Species)	Less than reasonable potential to occur. The project site lacks valley and foothill grasslands, playas and vernal pools.
<i>Nama stenocarpum</i>	Mud nama	CNPS 2.2	Muddy banks of lakes, river banks and seasonally wet places.	HA	Yes (Criteria Area Plant Species)	Less than reasonable potential to occur. The project site lacks suitable muddy shoreline and river bank habitat required for this species.
<i>Nasturtium gambelii</i>	Gambel's water cress	FE, SE, CNPS 1B.1	Freshwater and brackish marshes and swamps.	HA	No	Less than reasonable potential to occur. The project site lacks freshwater and brackish marshes and swamps.

Scientific Name	Common Name	Status	General Habitat Description	Habitat Present/ Absent	WRC MSHCP Covered Species	Rationale
<i>Navarretia fossalis</i>	Spreading navarretia	FT, CNPS 1B.1	Vernal pools, chenopod scrub, marshes, swamps and playas.	HA	Yes (Narrow Endemic Plant Species)	Less than reasonable potential to occur. The project site lacks vernal pools, chenopod scrub, marsh, swamp and playa habitat.
<i>Navarretia prostrata</i>	Prostrate navarretia	CNPS 1B.1	Vernal pools.	HA	Yes (Criteria Area Plant Species)	Less than reasonable potential to occur. The project site lacks vernal pool habitat.
<i>Orcuttia californica</i>	Orcutt's grass	FE, SE, CNPS 1B.1	Vernal pools.	HA	Yes (Narrow Endemic Plant Species)	Less than reasonable potential to occur. The project site lacks vernal pool habitat.
<i>Phacelia stellaris</i>	Brand's phacelia	CNPS 1B.1	Sandy openings, sandy benches, dunes, sandy river washes or river floodplains in coastal sage scrub.	HA	Yes (Narrow Endemic Plant Species)	Less than reasonable potential to occur. The project site lacks suitable sandy or floodplain habitat.
<i>Polygala cornuta</i> var. <i>fishiae</i>	Fish's milkwort	CNPS 4.3	Shaded rocky areas in canyons, chaparral and oak woodlands.	HA	No (Species specific objectives must be met prior to being considered adequately conserved)	Less than reasonable potential to occur. The project site lacks canyon, chaparral and oak woodland habitat.
<i>Pseudognaphalium leucocephalum</i>	White rabbit-tobacco	CNPS 2B.2	Found in riparian woodland, coastal scrub, chaparral, cismontane woodland with gravelly and sandy soils	HA	No	Less than reasonable potential to occur. The project site lacks sandy and gravelly soils

Scientific Name	Common Name	Status	General Habitat Description	Habitat Present/ Absent	WRC MSHCP Covered Species	Rationale
<i>Quercus engelmannii</i>	Engelmann oak	CNPS 4.2	Chaparral, cismontane woodland, riparian woodland and valley and foothill grasslands.	HP	Yes	Confirmed absent. The project site does contain riparian woodlands, however, this tree species was not detected during the site visit.
<i>Ribes divaricatum</i> var. <i>parishii</i>	Parish's gooseberry	CNPS 1A	Riparian woodlands.	HP	No	Less than reasonable potential to occur. The project site does contain southern willow scrub, however, this species is considered extirpated from California.
<i>Romneya coulteri</i>	Coulter's matilija poppy	CNPS 4.2	Dry washes and canyons, chaparral and coastal sage scrub.	HP	No (Species specific objectives must be met prior to being considered adequately conserved)	Confirmed absent. This perennial species was confirmed to be absent from the project site during the site visit.
<i>Satureja chandleri</i>	San Miguel Savory	CNPS 1B.2	Rocky areas in chaparral or oak woodland or at the margins of these communities with coastal sage scrub and grassland habitat.	HA	Yes(Narrow Endemic Plant Species)	Less than reasonable potential to occur. The project site lacks chaparral, oak woodland, coastal sage scrub and grassland habitat.

Scientific Name	Common Name	Status	General Habitat Description	Habitat Present/ Absent	WRC MSHCP Covered Species	Rationale
<i>Senecio aphanactis</i>	Chaparral ragwort	CNPS 2.2	Chaparral, cismontane woodland, and coastal sage scrub. Usually affiliated with alkaline soils.	HA	No	Less than reasonable potential to occur. The project site lacks chaparral, cismontane woodland and coastal sage scrub.
<i>Sidalcea neomexicana</i>	Salt spring checkerbloom	CNPS 2.2	Chaparral, coastal sage scrub, lower montane coniferous forest, Mojavean desert scrub and playas.	HA	No	Less than reasonable potential to occur. The project site lacks chaparral, coastal sage scrub, lower montane coniferous forest, Mojavean desert scrub and playas.
<i>Sphenopholis obtusata</i>	Prairie wedge grass	CNPS 2.2	Cismontane woodlands and meadows and seeps.	HA	No	Less than reasonable potential to occur. The project site lacks cismontane woodlands and meadows and seeps.
<i>Symphotrichum defoliatum</i>	San Bernardino aster	CNPS 1B.2	Cismontane woodland, sage scrub, coniferous forest, meadows and seeps, marshes and swamps, and mesic grassland near water.	HA	No	Less than reasonable potential to occur. The project site lacks cismontane woodlands, coniferous forest, meadows, seeps, swamps and marsh and grasslands habitat.
<i>Trichocoronis wrightii</i> var. <i>wrightii</i>	Wright's trichocoronis	CNPS 2.1	Meadows, vernal pools and alkaline soils. Known from Riverside County.	HA	Yes (Narrow Endemic Plant Species)	Less than reasonable potential to occur. The project site lacks meadows and vernal pools.

Scientific Name	Common Name	Status	General Habitat Description	Habitat Present/Absent	WRC MSHCP Covered Species	Rationale
Abbreviations/Notes:						
U.S. Fish and Wildlife Service:		California Department of Fish and Wildlife:		California Native Plant Society:		CH Critical Habitat
FE	Federal Endangered	SE	State Endangered	1A	Plants presumed extinct in California.	P Species is present
FT	Federal Threatened	ST	State Threatened	1B	Plants rare, threatened, or endangered in California and elsewhere.	A Habitat absent
PE	Proposed Endangered	SR	State Rare	1	Seriously endangered in California	HP Habitat is, or may be present
PT	Proposed Threatened	SSC	California Species of Concern	2	Plants rare, threatened, or endangered in California, but more common elsewhere.	
FC	Federal Candidate			3	Plants about which we need more information.	
				4	Plants of limited distribution.	

Sensitive Wildlife Species

Scientific Name	Common Name	Status	General Habitat Description	Habitat Present/Absent	Covered Species	Rationale
Invertebrates						
Branchiopods**						
<i>Branchinecta lynchi</i>	Vernal pool fairy shrimp	FT	Vernal pools and swales within grasslands. Known from the Santa Rosa Plateau and Skunk Hollow areas of Western Riverside County.	HA	Yes (Vernal Pool Species)	Less than reasonable potential to occur. The project site does not contain vernal pools.
<i>Linderiella santarosae</i>	Santa Rosa Plateau fairy shrimp	---	Vernal pools known to contain water for extended periods of time. Known only from the Santa Rosa Plateau area of Western Riverside County.	HA	Yes (Vernal Pool Species)	Less than reasonable potential to occur. The project site does not contain vernal pools.
<i>Streptocephalus woottoni</i>	Riverside fairy shrimp	FE	Large, deep warm water pools that retain water into the warm season.	HA	Yes (Vernal Pool Species)	Less than reasonable potential to occur. The study area lacks large, deep warm pools that retain water into the rainy season.
Insects						
<i>Euphydryas editha quino</i>	Quino checkerspot butterfly	FE	Generally associated with vernal pools, sage scrub, chaparral, native and non-native grasslands, and open oak and juniper woodland communities. Both phases linked to presence of host species and topography. Larvae feed on <i>Plantago erecta</i> , <i>Plantago patagonica</i> , <i>Antirrhinum coulterianum</i> , <i>Cordylanthus rigidus</i> and other <i>Plantago</i> species. Adults	HA	Yes	Less than reasonable potential to occur. The project site lacks vernal pools, sage scrub, chaparral, grasslands and oak woodland habitats.

Scientific Name	Common Name	Status	General Habitat Description	Habitat Present/ Absent	Covered Species	Rationale
			require small annuals. The species seems to require varying topography (including ridges and hilltops), loamy soils with moderate to high clay quantities.			
<i>Rhaphiomidas terminatus abdominalis</i>	Delhi sands flower-loving fly	FE	Found on fine, sandy soils often with wholly or partially consolidated sand dunes generally classified within the "Delhi" series. Restricted to Riverside and San Bernardino Counties.	HA	Yes	Less than reasonable potential to occur. The project site lacks "Delhi" soils or fine, sandy soils.
Vertebrates						
Fish						
<i>Catostomus santaanae</i>	Santa Ana Sucker	FT, SSC	Inhabits shallow, cool, running waters with coarse gravelly to muddy substrates and developed pools. Known from the Santa Ana River in western Riverside County	HA	Yes	Less than reasonable potential to occur. The project site lacks suitable pool habitat for this species. Additionally, the site is located outside of the currently known waters occupied by the species.
<i>Gila orcuttii</i>	Arroyo chub	SSC	Warm fluctuating streams with slow moving back water sections with sandy and/or muddy substrates.	HA	Yes	Less than reasonable potential to occur. The project site lacks slow moving back water areas required for this species.

Scientific Name	Common Name	Status	General Habitat Description	Habitat Present/ Absent	Covered Species	Rationale
<i>Rhinichthys osculus</i> ssp. 3	Santa Ana speckled dace	SSC	Found within the cool clear headwater streams of the Santa Ana and San Gabriel rivers.	HA	No	Less than reasonable potential to occur. This species is known to occur both upstream and downstream of the project site. However, these populations are isolated from the project site due to flood control structures, i.e. dams, and fully channelized above and below ground sections of stream that do not support habitat for this species. As such, it was determined that under the current conditions, this species would have a less than reasonable potential to occur on the project site.
Amphibians						
<i>Anaxyrus californicus</i>	Arroyo toad	FE, SSC	Washes and arroyos with open water, sand and gravel beds for breeding and pools with sparse overstory vegetation	HA	Yes (Amphibian Survey Area)	Less than reasonable potential to occur. The project site lacks sand and gravel beds, and pool habitat required for this species.
<i>Rana muscosa</i>	Sierra Madre yellow-legged frog	FE, SSC	Streams and small pools within ponderosa-pine, montane hardwood-conifer and montane riparian habitat types.	HA	Yes (Amphibian Survey Area)	Less than reasonable potential to occur. The project site lacks suitable pine and montane woodland habitats.
<i>Spea hammondi</i>	Western spadefoot	SSC	Open habitats including low grasslands, open chaparral, and pine-oak woodlands, where soils are sandy or gravelly. Requires temporary rain pools that last at least three weeks. Pools must lack predators of eggs and tadpoles.	HA	Yes	Less than reasonable potential to occur. The project site lacks the required temporary rain pools for this species.

Scientific Name	Common Name	Status	General Habitat Description	Habitat Present/ Absent	Covered Species	Rationale
Reptiles						
<i>Emys marmorata</i>	Western pond turtle	SSC	Inhabits permanent or nearly permanent waters. Requires basking sites i.e. partially submerged logs, rocks or open banks.	HP	Yes	Low potential to occur. The drainage appears to maintain flows throughout the year, however, the drainage does not contain sufficient suitable micro habitat i.e. basking sites such as submerged logs, rocks and open banks. As such, it was determined that this species has a low potential to occur on the site.
<i>Anniella stebbinsi</i>	Southern California legless lizard	SSC	Sandy or loose soils under sparse vegetation on beaches, within chaparral, pine-oak woodlands, sycamore and cottonwood woodland or oaks near stream terraces.	HA	No	Less than reasonable potential to occur. The project site lacks suitable soils for this species.
<i>Aspidoscelis hyperythra</i>	Orange-throated whiptail	SSC	Mostly occurs on or adjacent to floodplains or terraces of streams in, or by, open sage scrub and chaparral communities.	HA	Yes	Less than reasonable potential to occur. The project site consists of a drainage and a terrace, however, the site lacks suitable upland habitats to support this species.
<i>Aspidoscelis tigris stejnegeri</i>	Coastal whiptail	SSC	Found in deserts and semi-arid areas with sparse or no vegetation and sometimes found in woodland and riparian areas.	HP	No	Less than reasonable potential to occur. While riparian habitat exists it is low quality and unconnected to other habitat needed by the species.
<i>Arizona elegans occidentalis</i>	California glossy snake	SSC	Typically a generalist reported to occur in a range of scrub and grassland habitats with loose or sandy soils	HA	No	Less than reasonable potential to occur. The project site lacks suitable soil to support this species.

Scientific Name	Common Name	Status	General Habitat Description	Habitat Present/ Absent	Covered Species	Rationale
<i>Coleonyx variegatus abbotti</i>	San Diego banded gecko	SSC	Found in granite or rocky outcrops in coastal scrub and chaparral.	HA	Yes	Less than reasonable potential to occur. The project site lacks suitable habitat required by the species.
<i>Crotalus ruber ruber</i>	Red-diamond rattlesnake	SSC	Tolerates a wide variety of environments from desert to dense chaparral. Prefers dense brush, including chamise chaparral. Also can occur in open areas, however generally in lower numbers. Rocky outcrops also common in occupied habitat. Prey density and availability of dens (for hibernation and gravid females) may be a great limiting factor.	HA	Yes	Less than reasonable potential to occur. The project site lacks suitable habitat to support this species.
<i>Phrynosoma blainvillii</i>	Coast horned lizard	SSC	Occurs in a variety of open plant communities where suitable soils (sandy, friable), prey, and basking areas are available.	HA	Yes	Less than reasonable potential to occur. The project site lacks suitable soils to support this species.
<i>Salvadora hexalepis virgultea</i>	Coast patch-nosed snake	SSC	Found in bushy or shrubby vegetation and requires small mammal burrows for overwintering.	HA	No	Less than reasonable potential to occur. The project site lacks shrubby or brushy vegetation as well as small mammal burrows.
<i>Thamnophis hammondi</i>	Two-striped garter snake	SSC	Highly aquatic and found in or near permanent fresh water.	HP	No	Low potential to occur. The project site contains a small amount of riparian vegetation, however, this species is normally associated with larger riparian communities. As such, it was determined that this species has a low potential to occur on site.

Scientific Name	Common Name	Status	General Habitat Description	Habitat Present/ Absent	Covered Species	Rationale
Birds						
<i>Agelaius tricolor</i>	Tricolored blackbird	SSC	Breeds near fresh water within emergent wetland habitat supporting dense, tall stands of cattails and tule and sometimes willow.	HA	Yes	Less than reasonable potential to occur. The project site lacks suitable dense cattail and tule stands preferred by this species.
<i>Asio otus</i> (nesting)	Long-eared owl	SSC	Roosts in substantial riparian and oak forests with adjacent open habitats.	HP	No	Low potential to occur. The project site contains a small amount of riparian vegetation, however, this species is normally associated with larger riparian communities. As such, it was determined that this species has a low potential to occur on site.
<i>Athene cunicularia</i>	Burrowing owl	SSC	Uses large rodent burrows or other burrows in grasslands, prairies and agricultural areas.	HA	Yes (Burrowing Owl Survey Area)	Less than reasonable potential to occur. The project site lacks suitable open grassland, prairie or agricultural habitat for this species.
<i>Buteo swainsoni</i>	Swainson's Hawk	ST	Breeds in grasslands with scattered trees, juniper-sage flats, riparian areas, savannahs, and ranch/agricultural lands lined with trees. Requires grasslands or grain fields for foraging.	HA	Yes	Less than reasonable potential to occur. The project site contains a small amount of riparian vegetation, however this species does not breed in the region. It would only occur as a migrant and no foraging habitat is present.
<i>Coccyzus americanus occidentalis</i>	Western yellow billed cuckoo	SE	Breeds and nests in extensive stands of cottonwood/willow riparian forest within large rivers with broad flood prone bottoms	HA	Yes (Riparian/ Riverine Species)	Less than reasonable potential to occur. The project site lacks marsh and meadow habitat.

Scientific Name	Common Name	Status	General Habitat Description	Habitat Present/ Absent	Covered Species	Rationale
<i>Coturnicops noveboracensis</i>	Yellow rail	SSC	Inhabits freshwater marsh, meadows and seeps.	HA	No	Less than reasonable potential to occur. The project site lacks suitable open grassland, prairie or agricultural habitat for this species.
<i>Setophaga petechia</i>	Yellow warbler	SSC	Inhabits riparian scrub, woodland and forest habitat.	HP	Yes	Confirmed present. This species was detected during least Bell's vireo surveys.
<i>Elanus leucurus</i>	White-tailed kite	FP	Inhabits open grasslands, meadows, marshes for foraging and nests in dense-topped trees.	HA	Yes	Less than reasonable potential to occur. The project site lacks suitable open grassland or dense riparian overstory for nesting.
<i>Empidonax traillii extimus</i>	Southwestern willow flycatcher	FE SE	Restricted to riparian woodlands along streams and rivers with mature, dense stands of willows, cottonwoods or smaller spring fed or boggy areas with willows or alders.	HA	Yes (Riparian/ Riverine Species)	Less than reasonable potential to occur. The project site contains riparian habitat, however, the riparian habitat is isolated and does not contain suitable canopy structure to support this species.
<i>Falco peregrinus anatum</i>	American peregrine falcon	SFP	Wetlands near high cliffs, tall buildings.	HA	Yes	Less than reasonable potential to occur. The project site and vicinity lack suitable nesting sites for this species.
<i>Haliaeetus leucocephalus</i>	Bald eagle	SE	Primarily found near the seacoast or along rivers, swamps, and large lakes. Requires large trees or snags with heavy limbs or broken tops for perching and nesting. In southern California, the species is nearly always recorded at large deep waters.	HA	Yes	Less than reasonable potential to occur. The study area lacks large bodies of water.

Scientific Name	Common Name	Status	General Habitat Description	Habitat Present/Absent	Covered Species	Rationale
<i>Icteria virens</i>	Yellow-breasted chat	SSC	Occurs in low, dense thickets in riparian habitats.	HP	Yes	Less than reasonable potential to occur. The project site contains southern willow scrub habitat. However, the species was not detected during least Bell's vireo surveys and is assumed to be absent from the site.
<i>Lanius ludovicianus</i>	Loggerhead shrike	SSC	Inhabits open fields with scattered trees, open woodland and scrub.	HA	Yes	Less than reasonable potential to occur. The project site does not contain areas of open habitat suitable to support this species.
<i>Laterallus jamaicensis coturniculus</i>	California black rail	FT, FP	Requires fresh and salt water marshes that do not have less than 1 inch of water depth through out the year and nests in dense vegetation	HA	No	Less than reasonable potential to occur. The project site lacks marsh and meadow habit
<i>Poliophtila californica californica</i>	Coastal California gnatcatcher	FT, SSC	May be found in coastal sage scrub below 2,500 ft; prefers low, coastal sage scrub in arid washes, mesas, and slopes	HA	Yes	Less than reasonable potential to occur. The project site does not contain coastal sage scrub habitat.
<i>Vireo bellii pusillus</i>	least Bell's vireo	FE, SE	Prefers dense riparian habitats but can also be found in more open riparian habitats such as mule fat scrub.	HP	Yes (Riparian/Riverine Species)	Confirmed absent. The project site contains suitable riparian habitat for this species. This species was not detected during protocol level surveys conducted during the 2011 survey season.

Scientific Name	Common Name	Status	General Habitat Description	Habitat Present/ Absent	Covered Species	Rationale
Mammals						
<i>Antrozous pallidus</i>	Pallid bat	SSC	Arid regions with suitable roosting habitat adjacent to large bodies of water to forage over. Suitable roosting habitat consists of rocky outcrops, caves, tunnels, mines, eaves and tree hollows.	HA	No	Less than reasonable potential to occur. The project site lacks suitable roosting habitat adjacent or near to large bodies of water.
<i>Chaetodipus fallax fallax</i>	Northwestern San Diego pocket mouse	SSC	Open, sandy areas in coastal sage scrub, sage scrub/grassland ecotones, and chaparral communities.	HA	Yes	Less than reasonable potential to occur. The project site lacks coastal sage scrub, grassland and chaparral habitats.
<i>Dipodomys merriami parvus</i>	San Bernardino kangaroo rat	FE, SSC	Sandy soils within mature alluvial sage scrub, Riversidean sage scrub and chaparral.	HA	Yes (Mammal Survey Area)	Less than reasonable potential to occur. The project site lacks sandy soils within suitable alluvial sage scrub, sage scrub and chaparral habitat.
<i>Dipodomys stephensi</i>	Stephen's kangaroo rat	FE, ST	Open grasslands or sparse shrubs with less than 50% cover during the summer. Requires sandy and/or loamy soils with low clay and gravel content on flat slopes (<30%).	HA	Yes (County SKR Survey Area)	Less than reasonable potential to occur. The project site lacks grassland or other suitable habitat required for this species.
<i>Eumops perotis californicus</i>	Western mastiff bat	SSC	Many open, semi-arid to arid habitats, including conifer and deciduous woodlands, coastal scrub, grasslands, chaparral. Roosts in crevices in cliff faces, high buildings, trees & tunnels.	HA	No	Less than reasonable potential to occur. The project site and general vicinity lacks woodlands coastal sage scrub, grasslands, chaparral and suitable foraging habitat. For this species.

Scientific Name	Common Name	Status	General Habitat Description	Habitat Present/ Absent	Covered Species	Rationale
<i>Lasiurus xanthinus</i>	Western yellow bat	SSC	Inhabits palm oasis and residential areas with palm trees. Roosts primarily in trees, especially in the dead fronds of palm trees. Forages over open water and among trees.	HP	No	Moderate potential for individual roosting. Moderate potential for foraging. The project site lacks substantial communal roosting habitat for this species, however the site does contain a few individual palm trees suitable for individual bat roosting. The site contains suitable foraging habitat for this species.
<i>Lepus californicus bennettii</i>	San Diego black-tailed jackrabbit	SSC	Requires extensive open space, including grasslands and open sage scrub on flat ground.	HA	Yes	Less than reasonable potential to occur. The project site lacks suitable open habitat for this species.
<i>Neotoma lepida</i> ssp. <i>intermedia</i>	San Diego desert woodrat	SSC	Variety of shrub and desert habitats, typically with rock outcrops, boulders, cacti and/or areas of dense undergrowth.	HP	Yes	Low potential to occur. The riparian area within the project site provides marginal habitat for this species. As such it was determined that the species has a low potential to occur on the project site.
<i>Nyctinomops femorosaccus</i>	Pocketed free-tailed bat	SSC	Rocky areas with high cliffs in a variety of arid areas including pine-juniper woodlands, desert scrub, palm oasis, desert wash, desert riparian.	HA	No	Less than reasonable potential to occur. The project site and general vicinity lacks suitable roosting sites for this species.
<i>Onychomys torridus ramona</i>	Southern grasshopper mouse	SSC	Inhabits arid areas, especially scrub habitat; i.e. coastal scrub and mixed chaparral, with friable soils.	HA	No	Less than reasonable potential to occur. The project site lacks coastal sage scrub and chaparral habitat.
<i>Perognathus longimembris brevinasus</i>	Los Angeles pocket mouse	SSC	Prefers sandy soils within coastal sage scrub. Less often found in gravelly washes, and rocky soils.	HA	Yes (Mammal survey area)	Less than reasonable potential to occur. The project site lacks coastal sage scrub and gravelly wash habitat.

Scientific Name	Common Name	Status	General Habitat Description	Habitat Present/Absent	Covered Species	Rationale
<i>Taxidea taxus</i>	American badger	SSC	Open plains and fields, particularly in grasslands.	HA	No	Less than reasonable potential to occur. The project site lacks open plains, fields and grasslands.
Abbreviations/Notes:						
U.S. Fish and Wildlife Service			California Department of Fish and Game		P	Species is present
FE	Federal Endangered		SE	State Endangered	A	Habitat absent
FT	Federal Threatened		ST	State Threatened	HP	Habitat is, or may be present
PE	Proposed Endangered		SR	State Rare	CH	Critical Habitat
PT	Proposed Threatened		SSC	California Species of Special Concern		
FC	Federal Candidate		SFP	State Fully Protected		
			WL	Watch List		

Sensitive Vegetation Communities

Vegetation Community	Status	General Habitat Description	Present/ Absent	Rationale
Riversidean Alluvial Fan Sage Scrub	CDFW Sensitive	An open scrub community within alluvial fans and floodplains, Dominated by drought-deciduous species and evergreen woody shrubs, including <i>Lepidospartum squamatum</i> and <i>Artemisia californica</i> . Vegetation within the community is adapted for periodic flooding and erosion. Distribution: The southern base of the Transverse and Peninsular ranges of southern California.	CA	Does not occur on site. The vegetation present at the project site is not consistent with the Riversidean Alluvial Fan Sage Scrub community.
Southern California Arroyo Chub/Santa Ana Sucker Stream	CDFW Sensitive	A permanent stream flowing through steep and rocky canyons. These streams provide suitable habitat for arroyo chub and Santa Ana sucker. Distribution: Includes portions of the Los Angeles, San Gabriel, San Luis Rey, Santa Ana, and Santa Margarita rivers, and Malibu and San Juan creeks.	CA	Does not occur on site. While the on-site stream feature supports perennial stream flows, the topography and isolated nature are not consistent with this sensitive community.
Southern Coast Live Oak Riparian Forest	CDFW Sensitive	An open to dense evergreen sclerophyllous riparian forest. Dominated by <i>Quercus agrifolia</i> with a rich herb layer and poor shrub understory compared with other riparian communities. Occurs in bottomlands and outer floodplains along larger streams, on fine-grained, rich alluvium. Distribution: Canyons and valleys of coastal southern California, south of	CA	Does not occur on site. The vegetation present at the project site is not consistent with the Southern Coast Live Oak Riparian Forest community.

Vegetation Community	Status	General Habitat Description	Present/ Absent	Rationale
		Point Conception in Santa Barbara County		
Southern Cottonwood Willow Riparian Forest	CDFW Sensitive	Tall, open, broadleaved winter-deciduous riparian forests dominated by <i>Populus fremontii</i> , <i>P. trichocarpa</i> , and several tree willows. Similar to Central Coast Cottonwood-Sycamore Riparian Forest, although apparently with less <i>Q. agrifolia</i> or <i>Alnus rhombifolia</i> (this merits further study). Understories usually are shrubby willows. Occurs on sub-irrigated and frequently overflowed lands along rivers and streams. The dominant species require moist, bare mineral soil for germination and establishment. This is provided after flood waters recede, leading to uniform-aged stands in this seral type. Distribution: Along perennially wet stream reaches of the Transverse and Peninsular ranges, from Santa Barbara County south to Baja California Norte and east to the edge of the deserts	CA	Does not occur on site. The vegetation present at the project site is not consistent with the Southern Cottonwood Willow Riparian Forest community.

Vegetation Community	Status	General Habitat Description	Present/ Absent	Rationale
Southern Riparian Forest	CDFW Sensitive	<p>Dominated by a combination of scattered <i>Q. agrifolia</i>, <i>Platanus racemosa</i>, <i>Juglans californica</i>, <i>Salix</i> species, <i>Sambucus mexicana</i>, <i>Vitis girdiana</i>, and <i>Toxicodendron diversilobum</i>. Found in valley and foothill riparian areas from sea level to the lower margins of the montane coniferous forest of cismontane California.</p> <p>Distribution: In southern California, found from Ventura County south to San Diego County and west to Riverside and San Bernardino counties.</p>	CA	Does not occur on site. The vegetation present at the project site is not consistent with the Southern Riparian Forest community.
Southern Riparian Scrub	CDFW Sensitive	<p>A dense, broad-leaved, winter-deciduous association dominated by several species of willow to an herbaceous scrub dominated by mulefat. Typical willow species include black willow (<i>Salix gooddingii</i>), arroyo willow (<i>Salix lasiolepis</i>), and sandbar willow (<i>Salix exigua</i>) and there can be a component of mulefat and/or invasive species such as giant reed (<i>Arundo donax</i>) and tamarisk (<i>Tamarix</i> spp.). Understory vegetation is typically lacking or composed of nonnative species.</p> <p>Distribution: Canyons and valleys of southern California.</p>	CA	Does not occur on site. The vegetation present at the project site is not consistent with the Southern Riparian Scrub community.

Vegetation Community	Status	General Habitat Description	Present/ Absent	Rationale
Southern Sycamore Alder Riparian Woodland	CDFW Sensitive	<p>A tall, open, broadleafed, winter-deciduous streamside woodland dominated by <i>Platanus racemosa</i> and <i>A. rhombifolia</i>. Seldom form closed canopy forests, and may appear as trees scattered in a shrubby thicket of sclerophyllous and deciduous species. Lianas include <i>Rubus ursinus</i> and <i>Toxicodendron diversilobum</i>. Distinctions between this type and Sycamore Alluvial Woodland merit additional study.</p> <p>Found on very rocky streambeds to seasonally high-intensity flooding. <i>Alnus</i> increases in abundance on more perennial streams, while <i>Platanus</i> favors more intermittent hydrographs.</p> <p>Distribution: Transverse and Peninsular ranges from Point Conception south to Baja California Norte.</p>	CA	Does not occur on site. The vegetation present at the project site is not consistent with the Southern Sycamore Alder Riparian Woodland community.
Southern Willow Scrub	CDFW Sensitive	<p>Dense, broadleafed, winter-deciduous riparian thickets dominated by several <i>Salix</i> species, with scattered emergent <i>Populus fremontii</i> and <i>Platanus racemosa</i>. Most stands are too dense to allow much understory development. Occurs on loose, sandy or fine gravelly alluvium deposited near stream channels during flood flows. This early seral type requires repeated flooding to prevent</p>	CP	Confirmed Present. The Southern Willow Scrub community was mapped within the drainage located on the project site.

Vegetation Community	Status	General Habitat Description	Present/ Absent	Rationale
		<p>succession to Southern Cottonwood-Sycamore Riparian Forest.</p> <p>Distribution: Formerly extensive along the major rivers of coastal southern California, but now reduced by urban expansion, flood control and channel improvements.</p>		
<p>Abbreviations/Notes:</p> <p>CA Vegetation Community Absent</p> <p>CP Vegetation Community Present</p>				

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Appendix D
Photo Log

The following images represent the conditions within the project boundary during the June 2018 reconnaissance survey and jurisdictional delineation study.



Photo 1. Looking north from the upstream (south) portion of project site. Streambed is located on the left-hand side with castor bean and black willow in view.



Photo 2. View of one area of erosion on the upper terrace of the project site looking north/downstream.



Photo 3. View of the banks of the streambed with severe erosion adjacent to the upper terrace. The image depicts a drainage pipe and crushed rock fill where the bank has eroded.



Photo 4. View of sandy bar (jurisdictional wetland) in the upstream portion of streambed within the low flow channel. Area dominated by Mexican fan palms.



Photo 5. View from the upper terrace looking southwest across the streambed. The vegetation within the disturbed southern willow scrub is comprised of Mexican fan palm, castor bean, black willow and nonnative ash trees.



Photo 6. View of 6-foot culvert located at downstream end of the perennial creek.



Photo 7. View of the terrace looking south. The terrace vegetation is mainly weedy herbaceous plants and non-native grasses.



Photo 8. View of the ruderal upper terrace looking west. The wall is the project boundary to the north and the creek is below view to the left of the frame.



Photo 9. View of the mature native and non-native vegetation within the creek. Nonnative trees include edible fig, Mexican fan palm, tamarisk, and Ash. One native willow is in view at the right of the frame, facing west.



Photo 10. View of exotic trees and grass planted for ornamental purposes at the housing complex that borders the project boundary to the south. Looking east from Chicago Ave.

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Avoidance, Minimization, and Mitigation Measures

The project will implement the avoidance, minimization, and compensatory mitigation measures outlined below.

Measure 1. Standard Best Management Practices and Construction Guidelines

- a) A stormwater pollution prevention plan (SWPPP) will be developed and implemented in accordance with Santa Ana Regional Water Quality Control Board (RWQCB) requirements. The SWPPP will describe sediment and hazardous materials control, dewatering or diversion structures, as applicable, fueling and equipment management practices, and erosion control measures. Plans will be reviewed and approved by the City of Riverside, if warranted, prior to construction.
- b) After construction, temporary impact areas will be restored to pre-project conditions including application of a tackifier or an erosion control seed mix to stabilize the areas. Where vegetation is temporarily affected, a one-time application of hydromulch consisting of a riparian understory seed mix will be applied.
- c) Silt fencing or other sediment trapping materials will be installed downstream of construction activity to minimize the transport of sediments off site. Care will be exercised when removing silt fences to prevent accumulated debris or sediment from returning to the channel.
- d) No erodible materials will be deposited into the channel or areas demarcated with environmentally sensitive area flagging. Vegetation, loose soils, or other debris material will not be stockpiled within the channel or on adjacent banks.
- e) The footprint of disturbance will be minimized to the maximum extent feasible. Access to sites will occur on pre-determined access routes to the greatest extent possible.
- f) The limits of disturbance, including the upstream, downstream, and lateral extents, will be clearly defined and marked in the field. Monitoring personnel will review the limits of disturbance prior to initiation of project activities.
- g) Exotic species removed during construction will be properly handled to prevent sprouting or regrowth.
- h) Dust control methods (e.g., watering, as needed) will be implemented at active construction areas to control dust and minimize impacts on the channel, vegetation, and adjacent residential communities.
- i) Equipment storage, fueling, and staging areas will be located only in designated areas of the project site, within non-sensitive upland areas away from the channel, as feasible. These designated areas will be located in such a manner as to prevent any runoff from entering the channel and will be clearly marked. Necessary precautions will be taken to prevent the release of cement or other toxic substances into surface waters. Project-related spills of hazardous materials will be reported to appropriate entities and cleaned up immediately, and contaminated soils will be removed to approved disposal areas.

- j) Waste, dirt, rubble, or trash will not be deposited in the channel or terraced area and will be removed from the project area regularly. All food-related trash items will be enclosed in sealed containers and regularly removed from the site(s).

Measure 2. Biological Monitoring and Environmental Awareness Training

A qualified biologist will monitor construction activities for the duration of the project, or, as deemed necessary by the monitoring biologist, to ensure that practicable measures are being employed to avoid incidental disturbance of aquatic resources, habitat, and species of concern within and outside the project footprint.

Prior to project implementation (e.g., staging, clearing/grubbing, grading), the biological construction monitor will perform one onsite environmental awareness training to project personnel. The training will include the following:

- a) Description of the species of concern and its habitat;
- b) General provisions of the Endangered Species Act (ESA), California Endangered Species Act (CESA), and Western Riverside County Multiple Species Habitat Conservation Plan (WRC MSHCP), the need to adhere to the provisions, and penalties associated with violating the provisions;
- c) Measures that are being implemented to conserve species of concern as they relate to the project; and
- d) Access routes and project site boundaries within which the project activities must be contained.

Measure 3. Preconstruction Roosting Bat Assessment and Survey

To ensure potential impacts on bat species are reduced, the following measure will be implemented:

- a) Prior to project initiation (e.g., staging, clearing/grubbing, grading), a daytime preliminary assessment will be conducted by a qualified bat biologist to reexamine areas suitable for bat use (i.e., palm trees). If bat sign is observed, then preconstruction roosting bat surveys will be conducted to confirm whether the areas with suitable habitat identified during the preliminary assessment are utilized by bats for day roosting and/or night roosting and to ascertain the level of bat foraging and roosting activity at each of these locations.
- b) If preconstruction roosting bat surveys are warranted, prior to tree removal or trimming, large trees and snags will be examined by a qualified bat biologist to ensure that no roosting bats are present. Palm frond trimming, if necessary, should be conducted outside the maternity season (i.e., April 15–August 31) to avoid potential mortality of flightless young.
- c) If a maternity site is identified during the preconstruction roosting bat surveys, then no construction activities at that location will be allowed during the maternity season (i.e., April

15–August 31) unless a qualified bat biologist has determined the young have been weaned. If a maternity site is present, and it is anticipated that construction activities cannot be completed outside of the maternity season, bat eviction and exclusion at maternity roost sites will be completed by a qualified bat biologist either as soon as possible after the young have been weaned, outside of the maternity season, or as otherwise approved by the qualified bat biologist in coordination with the California Department of Fish and Wildlife (CDFW).

Measure 4. Preconstruction Nesting Bird Surveys

A nesting bird survey will be conducted prior to project initiation (e.g., staging, clearing/grubbing) during the active breeding season (generally February 15 to August 31 for birds, January 15 to June 30 for raptors). Due to the urban environment, the survey would occur within a 100-foot buffer area, as accessible. If nesting birds (or raptors) are found, an avoidance buffer (300-foot avoidance buffer for raptors, 100-foot buffer for nesting birds, or as deemed appropriate by the qualified biologist) would be established, preventing project activities in the designated buffer area until the biologist determines the young have fledged or nesting activities have ceased. This measure may be superseded by any preconstruction nesting bird survey measure(s) required in the project-specific Clean Water Act (CWA) Section 401 Water Quality Certification, CWA Section 404 Nationwide Permit Verification, and California Fish and Game Code Section 1602 Streambed Alteration Agreement.

Measure 5. Compensation for Loss of Jurisdictional Waters

Compensation for the loss of 0.21 acre of U.S. Army Corps of Engineers (USACE)/RWQCB non-wetland waters of the U.S. and 0.06 acre CDFW unvegetated streambeds will occur at a minimum 1:1 ratio. The loss of 0.01 acre USACE/RWQCB wetland waters of the U.S. and 0.31 acre CDFW riparian habitat would be compensated at a minimum 2:1 ratio. This would satisfy the No-Net-Loss Policy for federal wetlands. Compensation would occur through the purchase of credits from the Riverside-Corona Resources Conservation District In-lieu Fee Program (ILFP) or other equivalent agency-approved ILFP or mitigation bank. Compensation will be coordinated during the acquisition of a CWA 401 Water Quality Certification from the RWQCB, CWA 404 Nationwide Permit Verification from USACE, and Streambed Alteration Agreement from CDFW. Final compensatory mitigation will be negotiated during the permitting process.

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Appendix F

2018 Least Bell's Vireo Protocol Survey Results



August 7, 2018

Ms. Stacey Love
U.S. Fish and Wildlife Service
2177 Salk Avenue, Suite 250
Carlsbad, CA 92008
(760) 431-9440

Subject: 2018 Least Bell's Vireo Protocol Survey Results for the University of California at Riverside's Creekside Drainage Project in Riverside County, California

Dear Ms. Love:

This report documents the results of protocol least Bell's vireo (*Vireo bellii pusillus*) (LBVI) presence/absence surveys conducted by ICF in 2018 for the University of California at Riverside's Creekside Drainage Project (herein referred to as "Project").

Project Location

The Creekside Drainage project is located within the City of Riverside, Riverside County, California (Figure 1). Specifically, the project site consists of a drainage feature located approximately 0.20 mile north of the intersection of Chicago Avenue and Central Avenue (Figure 2). The project is located within Section 31, Township 2 South, Range 4 West of the Riverside East U.S. Geological Survey (USGS) quadrangle dated 1967, photo-revised 1980 (USGS 1967). The project site is at approximately 940 feet above mean sea level as depicted on the Riverside East topographic map. The coordinates (decimal degrees) for the project site are latitude 33.958882° and longitude 117.346076°. The primary Assessor's Parcel Number (APN) associated with the project site is 254-370-003. The project boundary includes a narrow soft bottom creek that enters through a concrete culvert in the south and exits through a 6-foot concrete culvert in the northwest. The creek is bounded on either side by residential developments. A housing development is separated from the creek by a terraced brick wall standing at approximately 75 feet above the creek bed.

Project Description

The proposed project involves stabilization of approximately 650 feet of the north and east banks of the existing creek. Specifically, the creek will be reshaped and rip-rap will be placed on the north and east banks and the creek bottom to match existing conditions present on the south and west banks. Construction will require the removal of all vegetation within the impact area on the north and east banks and across the creek bottom. The proposed design provides for reestablishment of soil over the rip-rap on the creek bottom. Ongoing maintenance will involve clearing of vegetation on the north and east banks; riparian vegetation will be allowed to reestablish naturally on the creek bottom. Existing vegetation on the south and west banks will remain in place.

Existing Conditions

The study area for the LBVI focused survey includes the project boundary and a 500-foot buffer. It consists of riparian and non-native vegetation located in an unnamed, perennially-flowing creek. The creek flows from south to north, receiving runoff from the Canyon Crest Golf Course and from the underground Gage Canal. After approximately 250 feet, the creek veers west and flows for another 400 feet before going underground at Chicago Avenue. On the western side of Chicago Avenue, the creek converges with a concrete-lined ditch which serves as a tributary to the Tequesquite Arroyo, which is in turn a tributary to the Santa Ana River. No other riparian vegetation or otherwise suitable LBVI habitat is located within 500 feet of the project boundary, although somewhat dense riparian habitat is located in the wet ditch just northwest of the study area.

Four vegetation communities or land cover types were mapped within the study area: disturbed southern willow scrub, exotic, ruderal, and developed. The disturbed southern willow scrub, which occurs in the wet creek in the study area, is composed of arroyo willow (*Salix lasiolepis*), Gooding's black willow (*Salix goodingii*), mulefat (*Baccharis salicifolia*), sycamore (*Platanus racemosa*), elderberry (*Sambucus mexicana*), and stinging nettle (*Urtica dioica*). There is a high percentage of non-native vegetation, such as ornamental ash (*Fraxinus* sp.), castor bean (*Ricinus communis*), Mexican fan palm (*Washingtonia robusta*), date palm (*Phoenix canariensis*), Peruvian peppertree (*Schinus molle*), tamarisk (*Tamarix ramosissima*), and tree tobacco (*Nicotiana glauca*). There is a low cover of riparian herbaceous species under the canopy, including cocklebur (*Xanthium strumarium*), willow weed (*Persicaria lapathifolia*) and mugwort (*Artemisia douglasiana*). The study area is otherwise bounded by development on all sides: it is bounded by the Creekside Terrace neighborhood to the north and east, the Canyon Crest Village apartment community to the south/southwest, and Andulka Park opposite Chicago Avenue to the west.

Least Bell's Vireo Biology

LBVI breeds in Southern California and northwestern Baja California, with the majority of the population in San Diego County. LBVI is a small, migratory insectivore that prefers dense riparian vegetation for foraging and nesting. The California Department of Fish and Wildlife (CDFW) listed LBVI as endangered in 1980, followed by the U.S. Fish and Wildlife Service (USFWS) in 1986. Critical habitat was designated for this subspecies in 1994 along the southwestern coastline of California, below Santa Barbara (USFWS 1994).

Historically, LBVI was a common, locally abundant species in lowland riparian habitats between Northern California and coastal Southern California. However, the loss of riparian habitats, as well as brown-headed cowbird (*Molothrus ater*) parasitism, led to a large population decline. When USFWS first listed the bird in 1986, the population was estimated to be just 300 pairs. The latest five-year review, dated September 2006, reported a tenfold increase in population since the time of its listing, with an estimated 2,968 territories (USFWS 2006). The vireo population increase is largely attributed to brown-headed cowbird control along with habitat restoration and preservation (Kus 1999; Kus and Whitfield 2005).

LBVI typically begin to arrive on their breeding grounds by mid- to late March. Males tend to arrive first and establish territories; females arrive a few days later. Site fidelity is high among adult LBVI, with many birds returning to the same territory each year and even using the same shrubs as in

previous years (Kus 2002). Nests are typically placed 1 meter off the ground in dense, shrubby riparian habitat. A diverse canopy height is required for foraging, with willows (*Salix* spp.) often dominating the canopy layer. Nesting lasts from early April through July, after which some vireos may begin to depart. However, most adults and juvenile birds remain on the breeding grounds into mid- to late September.

Methods

Literature Review

Prior to beginning the survey effort, information from available databases and other documentation was reviewed for known occurrences of LBVI in the vicinity of the study area. This included the CDFW California Natural Diversity Database (CNDDB) as well as the Cornell Lab of Ornithology's eBird database. The most recent Critical Habitat designation was also reviewed for the nearest location with designated LBVI Critical Habitat (USFWS 1994).

Field Surveys

ICF biologists Mr. Ryan Winkleman, Ms. Marisa Flores, and Ms. Marissa Maggio conducted eight presence/absence surveys for LBVI in the study area between May 16 and July 30, 2017 (Table 1). Surveys followed the 2001 presence/absence protocol (USFWS 2001). All surveys were conducted between 0745 and 1100 under clear to overcast skies, with temperatures ranging from 64 to 97 degrees Fahrenheit and winds ranging from 0 to 3 mph. In each survey, ICF biologists walked slowly throughout the study area, listened quietly for LBVI vocalizations, and watched for avian activity. Because of the narrow width of the wet creek and the generally open views into the interior, it was not necessary to enter the vegetated area at any time; biologists could stay on the upland dirt path (likely formerly used as an access road but now in varying states of erosion) that runs adjacent to the creek. No taped LBVI vocalizations were used.

Table 1. Survey Dates and Weather Conditions

Date	Survey	Start-End Time	Start-End Temperature (°F)	Wind Speed (mph)	Conditions	Surveyor*
5/16/2018	#1	0915-0946	66-66	0-3	Clear	RW
5/28/2018	#2	0922-0948	65-66	0-1	Clear	RW
6/7/2018	#3	0908-0937	65-67	0-3	Mostly cloudy	RW
6/18/2018	#4	0845-0955	64-76	1-2	Overcast	MF
6/28/2018	#5	1017-1046	76-78	0-3	Clear	RW
7/9/2018	#6	0920-1045	84-97	0-3	Mostly cloudy	MF
7/19/2018	#7	1017-1053	85-85	0-3	Clear	RW
7/30/2018	#8	0745-0915	77-79	0-3	Partly cloudy	MM

*Surveyors: RW = Ryan Winkleman, MF = Marisa Flores, MM = Marissa Maggio

Results

No LBVI were detected during project surveys. While there is riparian habitat within the study area, much of the study area is low quality because it is composed of non-native vegetation and possesses very little habitat or structure that would traditionally provide a suitable nesting substrate for this species. Willows and other native riparian trees are generally confined to the overstory and canopy, while much of the understory and the vegetation low in the creek or otherwise at nesting height for this species consists of species that would not be expected to be used for nesting by LBVI, such as Mexican fan palm, castor bean, and common fig (*Ficus carica*). Some areas have no substantive understory at all. In addition, the creek is narrow and confined in this area, providing less than ideal nesting habitat for a species that traditionally favors nesting in broader floodplains and tends to avoid nesting in narrow riparian zones. In total, 25 wildlife species were detected during the surveys. A list of all detected wildlife species is provided in Appendix A.

Other Species of Note

Yellow warbler (*Setophaga petechia*), a California species of special concern, was detected during every survey. Suitable nesting habitat for this species occurs in the riparian habitat in the study area, and at least one fledgling bird was seen on-site during the July 19 survey. Southwestern willow flycatcher (*Empidonax traillii extimus*) and yellow-billed cuckoo (*Coccyzus americanus*) were not detected during any of the surveys; suitable nesting habitat for these species does not occur within the study area. Brown-headed cowbird was not detected on-site during any of the surveys.

Please feel free to contact me at 949-333-6690 if you have questions or need clarification regarding this report.

Sincerely,



Ryan Winkleman
ICF Senior Biologist

Enclosed:

Appendix A: Figures

Figure 1: Regional Vicinity Map

Figure 2: Project Vicinity/USGS Topographic Map

Figure 3: Least Bell's Vireo Study Area and Results

Appendix B: Wildlife Species Detected

Appendix C: Site Photographs

Certification

I certify that all relevant data have been accurately incorporated into the above document and that the information in this survey report and attached exhibits fully and accurately represent my work.



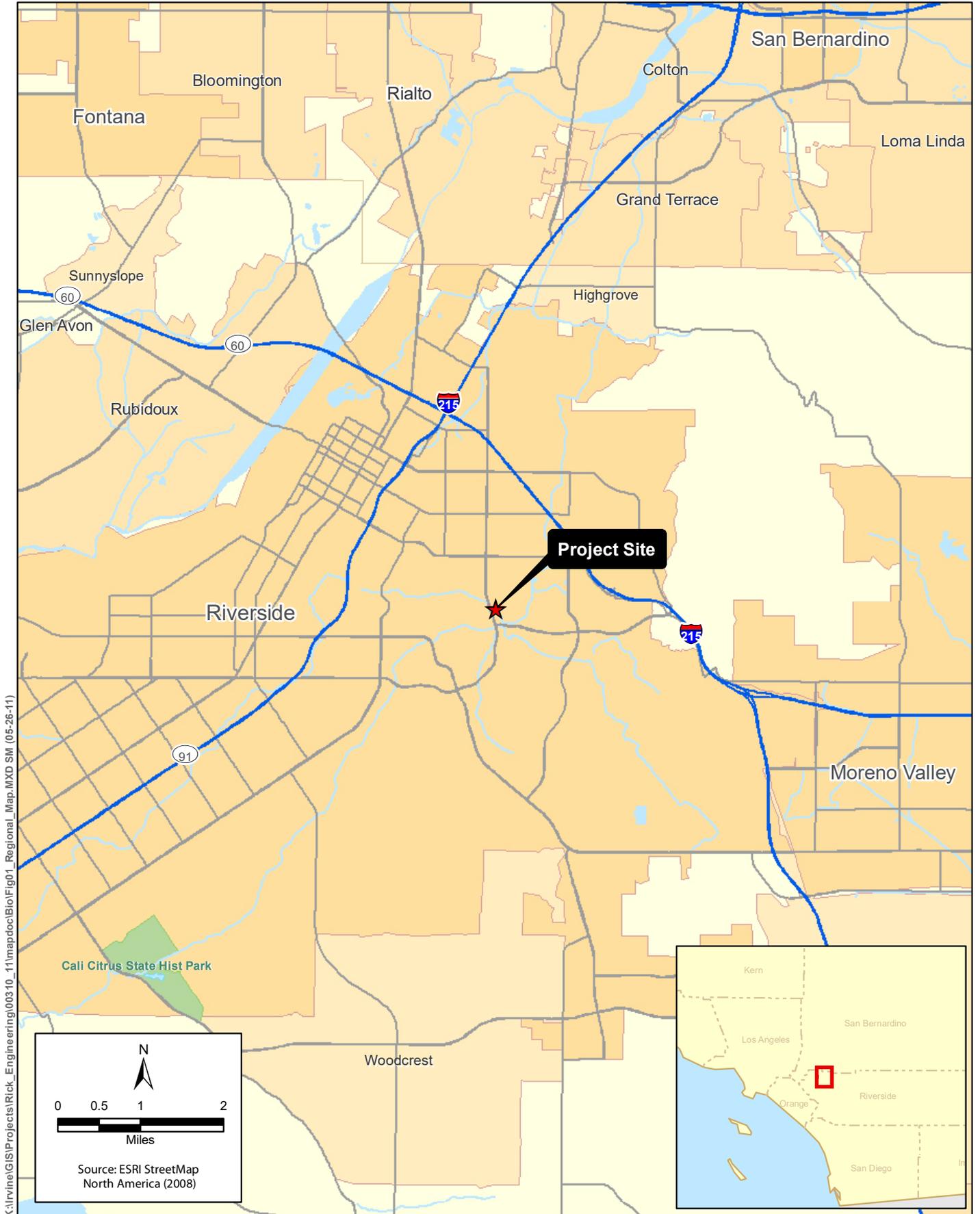
Ryan Winkleman
Wildlife Biologist
Author, Surveyor

August 7, 2018
Date

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- Kus, B. E. 1999. Impacts of Brown-headed Cowbird Parasitism on the Productivity of the Endangered Least Bell's Vireo. *Studies in Avian Biology* 18:160–166.
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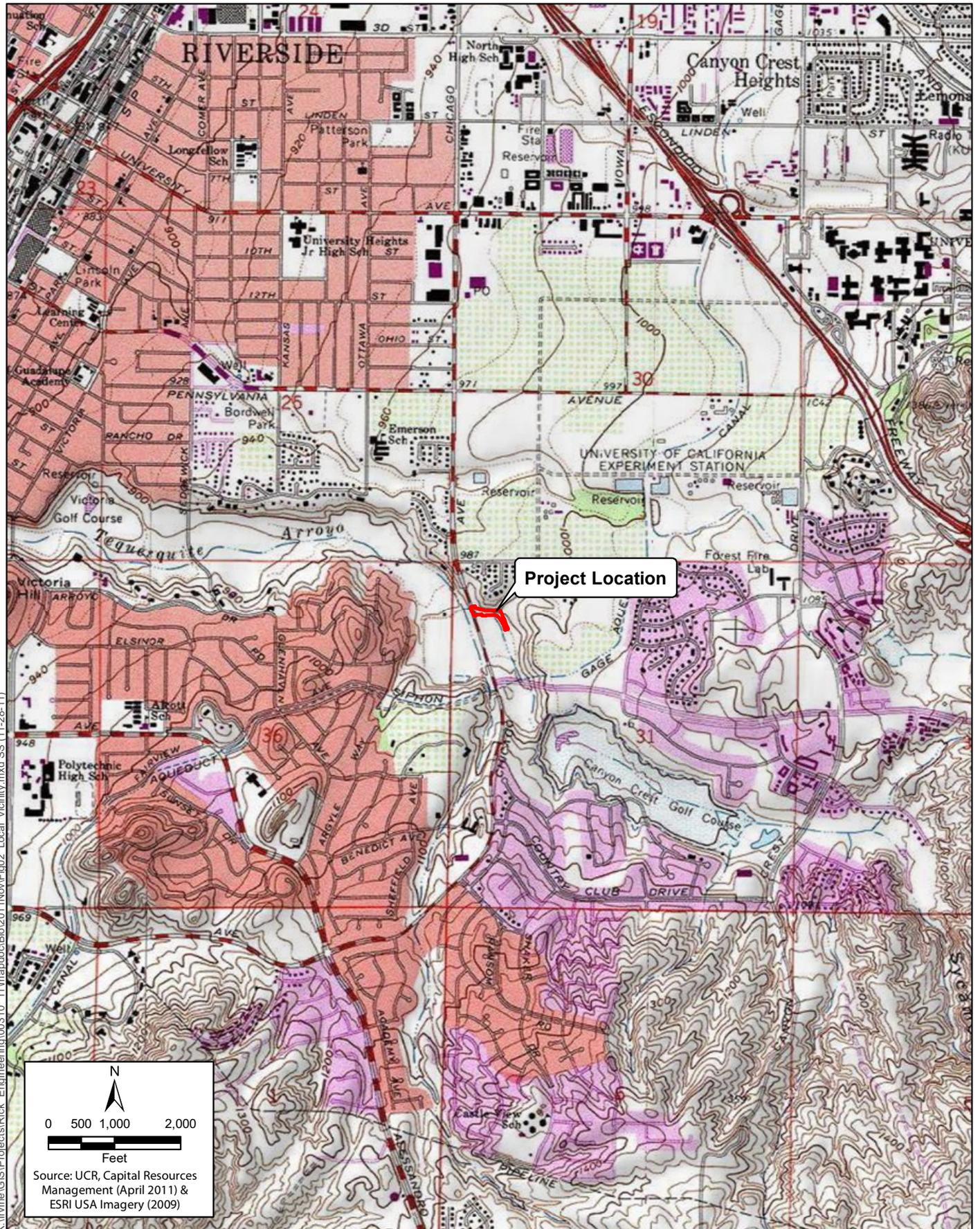
Appendix A
Figures



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Figure 1
Regional Vicinity Map
UCR Creekside Drainage Project



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Figure 2
Project Vicinity/USGS Topographic Map
UCR Creekside Drainage Project





Figure 3
Least Bell's Vireo Study Area and Results
UCR Creekside Drainage Project

Appendix B
Wildlife Species Detected

Appendix B. Wildlife Species Detected

Scientific Name	Common Name	Special Status
VERTEBRATES		
Birds		
Ardeidae - Heron Family		
<i>Ardea herodias</i>	Great Blue Heron	
Columbidae - Pigeon and Dove Family		
<i>Zenaida macroura</i>	Mourning Dove	
Trochilidae - Hummingbird Family		
<i>Archilochus alexandri</i>	Black-chinned Hummingbird	
<i>Calypte anna</i>	Anna's Hummingbird	
<i>Selasphorus sasin</i>	Allen's Hummingbird	
Falconidae - Falcon Family		
<i>Falco sparverius</i>	American Kestrel	
Tyrannidae - Tyrant Flycatcher Family		
<i>Sayornis nigricans</i>	Black Phoebe	
<i>Sayornis saya</i>	Say's Phoebe	
Vireonidae - Vireo Family		
<i>Vireo gilvus</i>	Warbling Vireo	
Corvidae - Jay and Crow Family		
<i>Corvus brachyrhynchos</i>	American Crow	
Hirundinidae - Swallow Family		
<i>Hirundo rustica</i>	Barn Swallow	
Aegithalidae - Bushtit Family		
<i>Psaltriparus minimus</i>	Bushtit	
Turdidae - Thrush Family		
<i>Catharus ustulatus</i>	Swainson's Thrush	
<i>Turdus migratorius</i>	American Robin	
Ptilogonatidae - Silky-flycatcher Family		
<i>Phainopepla nitens</i>	Phainopepla	
Parulidae - Wood-Warbler Family		
<i>Setophaga petechia</i>	Yellow Warbler	CSC
<i>Cardellina pusilla</i>	Wilson's Warbler	
Emberizidae - Sparrow Family		
<i>Melospiza crissalis</i>	California Towhee	

Scientific Name	Common Name	Special Status
<i>Melospiza melodia</i>	Song Sparrow	
Cardinalidae - Cardinals, Grosbeaks and Allies Family		
<i>Piranga ludoviciana</i>	Western Tanager	
Icteridae - Blackbird, Cowbird and Oriole Family		
<i>Icterus cucullatus</i>	Hooded Oriole	
Fringillidae - Finch Family		
<i>Haemorhous mexicanus</i>	House Finch	
<i>Carduelis psaltria</i>	Lesser Goldfinch	
Passeridae - Old World Sparrow Family		
* <i>Passer domesticus</i>	House Sparrow	
Mammals		
Felidae - Cat Family		
* <i>Felis catus</i>	Domestic Cat	

Legend

*= Non-native or invasive species

Special Status:

Federal:

FE = Endangered

FT = Threatened

State:

SE = Endangered

ST = Threatened

CSC = California Species of Special Concern

CFP = California Fully Protected Species

Appendix C
Site Photographs

Appendix C. Site Photographs

	<p>Photograph # 1</p> <p>Photo Date 5/16/2018</p> <p>Direction South</p> <p>Comment Facing south just before the southeastern terminus of the project site. Note narrow trail and generally open streambed with heavy cover of invasives.</p>
	<p>Photograph # 2</p> <p>Photo Date 5/16/2018</p> <p>Direction North</p> <p>Comment Facing north from just before the southeastern terminus of the project site (same location as Photograph 1). There is some willow cover in the foreground but much of the background is composed of exotics, particularly Mexican fan palm.</p>
	<p>Photograph # 3</p> <p>Photo Date 5/16/2018</p> <p>Direction South</p> <p>Comment Facing south from the curve in the center of the site.</p>

Appendix C. Site Photographs

	<p>Photograph # 4</p> <p>Photo Date 5/16/2018</p> <p>Direction West</p> <p>Comment Facing west from the curve in the center of the site. Much of the overstory/canopy in this area is composed of willows, but the understory is largely exotics like castor bean and common fig.</p>
	<p>Photograph # 5</p> <p>Photo Date 5/16/2018</p> <p>Direction East</p> <p>Comment Facing east from near the northwestern terminus of the project site. This area of the site has the densest concentration of native riparian habitat on the site, although this mainly applies to the canopy and overstory.</p>
	<p>Photograph # 6</p> <p>Photo Date 5/16/2018</p> <p>Direction Southeast</p> <p>Comment The understory in the creek near the northwestern terminus of the project site. While the canopy appears promising with native willow scrub, there is virtually no lower structure or suitable nesting habitat for this species, which nests close to the ground.</p>

2011 and 2013 Biological Resources Assessments

Refer to Appendix G.

Appendix E

2019 Cultural Resources Report



Creekside Drainage Project #950551

Cultural Resources Study

prepared for

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Appendices

Appendix A	Records Search Summary
Appendix B	Native American Heritage Commission

Executive Summary

The University of California, Riverside (UC Riverside) retained Rincon Consultants, Inc. (Rincon) to conduct a Phase I cultural resources assessment for the Creekside Drainage Project (project) in the city of Riverside, Riverside County, California. The project is subject to the California Environmental Quality Act (CEQA) and was prepared in accordance with Section 106 of the National Historic Preservation Act (NHPA), in the event a Section 404 permit is required for the project. The University of California, Riverside is the lead agency under CEQA. This study included a cultural resources records search, Native American scoping, a pedestrian survey of the project Area of Potential Effect (APE), and preparation of this report following the California Office of Historic Preservation's *Archaeological Resource Management Reports: Recommended Contents and Format*. It includes language for CEQA and Section 106 compliance.

Based on the results of the records search, the Sacred Lands File (SLF) search through the Native American Heritage Commission (NAHC), and the field survey, no specific cultural resources (prehistoric or historic) were identified in the project APE. Therefore, Rincon recommends a finding of ***no impact to historical resources under CEQA*** and ***no effect to historic properties under Section 106 of NHPA***. Rincon recommends the following measures as a standard best management practice in the event of an unanticipated discovery of cultural resources or human remains during project construction.

Unanticipated Discovery of Cultural Resources

If cultural resources are encountered during ground-disturbing activities, work in the immediate area must halt and an archaeologist meeting the Secretary of the Interior's Professional Qualifications Standards for archaeology (National Park Service 1983) should be contacted immediately to evaluate the find. If the discovery proves to be significant under CEQA and/or NHPA, additional work such as data recovery excavation, Native American consultation, and archaeological monitoring may be warranted to mitigate any significant impacts under CEQA and/or adverse effects under the NHPA.

The discovery of human remains is always a possibility during ground-disturbing activities. A summary of existing regulations concerning the unanticipated discovery of human remains follows.

Unanticipated Discovery of Human Remains

If human remains are found, existing regulations outlined in the State of California Health and Safety Code Section 7050.5 state that no further disturbance shall occur until the county coroner has made a determination of origin and disposition pursuant to Public Resources Code (PRC) § 5097.98. In the event of an unanticipated discovery of human remains, the county coroner must be notified immediately. If the human remains are determined to be prehistoric, the coroner will notify the NAHC, which will determine and notify a most likely descendant (MLD). The MLD shall complete the inspection of the site within 48 hours of being granted access and provide recommendations as to the treatment of the remains to the landowner.

1 Introduction

UC Riverside retained Rincon Consultants, Inc. (Rincon) to conduct a Phase I cultural resources study for the Creekside Drainage Project #950551 (project) in the city of Riverside. The project is generally located east of Chicago Avenue, north of Central Avenue in the city of Riverside (Figure 1). The project is subject to the California Environmental Quality Act (CEQA) and this report was prepared in accordance with Section 106 of the National Historic Preservation Act (NHPA), in the event a Section 404 permit is required for the project. UC Riverside is the lead agency under CEQA. This study included a cultural resources records search, Native American scoping, a pedestrian survey of the project APE, and preparation of this report following the California Office of Historic Preservation's *Archaeological Resource Management Reports: Recommended Contents and Format*. It includes language for CEQA and Section 106 compliance.

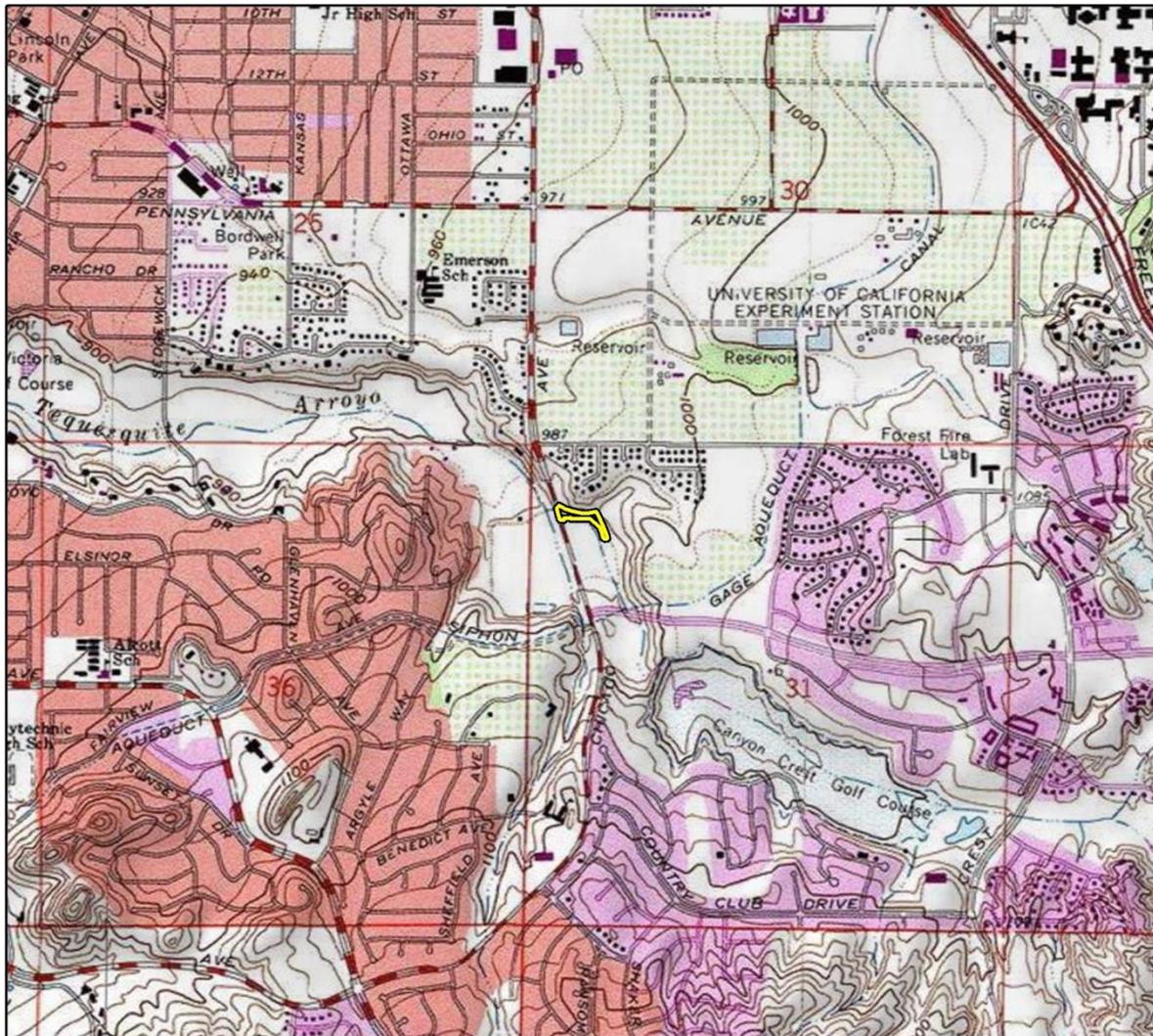
1.1 Project Description

The proposed project is located within and adjacent to an off-campus residential development known as Creekside Terrace (Tract 31671). It is generally north of Central Avenue and east of Chicago Avenue in the Canyon Crest area of the city of Riverside, California (Figure 2). The Creekside Terrace residential development was approved by the City of Riverside in 2004; the development site was graded, and utility and street improvements were constructed. Common facilities (clubhouse, pool, and playground) and 24 of the 78 approved residences were completed prior to acquisition of the property by UC Riverside in 2008. Engineering evaluations conducted during the course of the campus acquisition process identified remedial measures necessary to ensure long-term stability of the stream bank, close to substantial keystone retaining walls along the northern side of the drainage (generally the western tract boundary).

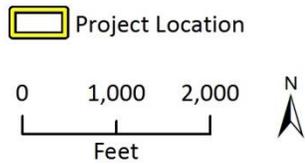
The proposed project involves the recommended remedial measures, which consist of stabilization improvements in a previously improved stream channel that lies partially inside the Creekside Terrace boundaries, but primarily within the site of an adjacent apartment development. UC Riverside and the owner of the adjacent apartment complex are in the process of renewing a legal agreement that grants access for due diligence inspections and construction of the proposed stabilization improvements. To accomplish the stabilization, the channel will be reshaped and rip-rap will be placed on the north bank to match existing conditions on the south bank. The proposed improvements will require the removal of all vegetation on the north bank and the channel bottom. Proposed ongoing activity will maintain a vegetation-free condition on the north bank to ensure channel flow capacity is maintained. Existing vegetation on the south bank will remain in place, and native vegetation will be allowed to naturally reestablish in the drainage channel bank on the south side.

Construction is anticipated to last approximately 120 days. The proposed finished conditions are intended to retain the existing hydrologic functions and values of the impacted drainage feature and to maximize post-construction biological functions as they provide for ongoing maintenance requirements for the north channel bank.

Figure 2 Project Location Map



Imagery provided by National Geographic Society, Esri and its licensors © 2018. Riverside East Quadrangle. T02S R04W S31. The topographic representation depicted in this map may not portray all of the features currently found in the vicinity today and/or features depicted in this map may have changed since the original topographic map was assembled.



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1.2 Area of Potential Effects

The APE of an undertaking is defined in 36 Code of Federal Regulations (CFR) 800.16(d) as the “geographic area or areas within which a project may directly or indirectly cause changes in the character or use of historic properties if any such property exists.” The APE encompasses all areas expected to be affected by the proposed undertaking, including staging and construction areas. The direct and indirect APE is limited to the project footprint totally approximately 1.2 acres (Figure 3). The project will stabilize the drainage and will include excavations to a maximum depth of five feet.

1.3 Personnel

Rincon Archaeological Resources Program Manager and Principal Investigator, Christopher Duran, MA, Registered Professional Archaeologist (RPA) served as the Principal Investigator for this cultural resources study. Mr. Duran meets the Secretary of the Interior’s Professional Qualifications Standards for prehistoric and historic archaeology (National Park Service 1983). Rincon Archaeologists Breana Campbell-King, MA, RPA, managed this study and served as the lead author of this report. Rincon Archaeologist, Lindsay Porras, MA, RPA, performed the cultural resources records search, and completed the field survey and Native American outreach. Geographic Information Systems Analyst Jonathon Schuhrke prepared the figures found in this report. Rincon Project Manager Sally Schifman, Rincon Senior Technical Editor, April Durham, PhD, and Rincon Vice President, Stephen Svete, AICP, reviewed this report for quality control.

Figure 3 Area of Potential Effects



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CH3g 3 Area of Potential Effects

2 Regulatory Setting

This section includes a discussion of the applicable federal, state, and local laws, ordinances, regulations, and standards governing cultural resources to which the proposed project should adhere before and during implementation.

2.1 Federal Regulations

2.1.1 National Historic Preservation Act

Cultural resources are regulated during federal undertakings chiefly through the National Environmental Policy Act and under Section 106 of the NHPA of 1966 (as amended) through one of its implementing regulations, 36 CFR 800 (Protection of Historic Properties). Properties of traditional religious and cultural importance to Native Americans are considered under Section 101(d)(6)(A) of NHPA. Other federal laws include the Archaeological and Historic Preservation Act of 1974, the American Indian Religious Freedom Act of 1978, the Archaeological Resources Protection Act of 1979, and the Native American Graves Protection and Repatriation Act of 1989, among others.

Section 106 of the NHPA (16 United States Code 470f) requires federal agencies to take into account the effects of their undertakings on any district, site, building, structure, or object included in or eligible for inclusion in the National Register of Historic Places (NRHP), and to afford the Advisory Council on Historic Preservation a reasonable opportunity to comment on such undertakings (36 CFR 800.1). Under Section 106, the significance of any adversely affected cultural resource is assessed and mitigation measures are proposed to reduce any impacts to an acceptable level. Significant cultural resources are those listed in or are eligible for listing in the NRHP per the criteria below (36 CFR 60.4).

The quality of significance in American history, architecture, archaeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association and meet one or more of the following 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 installation, 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
- d) Have yielded, or may be likely to yield, information important in prehistory or history

2.2 State Regulations

2.2.1 California Environmental Quality Act

CEQA requires a lead agency to determine if a project may have a significant effect on historical resources (PRC §21084.1) or tribal cultural resources (PRC §21074[a][1][A]-[B]). A historical resource is a resource listed, or determined to be eligible for listing in the California Register of Historical Resources (CRHR); a resource included in a local register of historical resources; or an object, building, structure, site, area, place, record, or manuscript that a lead agency determines to be *historically significant* (State CEQA Guidelines §15064.5[a][1-3]).

A resource shall be considered *historically significant* if it meets any of the following criteria:

- 1) Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage
- 2) Is associated with the lives of persons important to 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
- 4) Has yielded, or may be likely to yield, information important in prehistory or history

In addition, if it can be demonstrated that a project will cause damage to a *unique archaeological resource*, the lead agency may require reasonable efforts be made to permit any or all of these resources to be preserved in place or left in an undisturbed state. To the extent that resources cannot be left undisturbed, mitigation measures are required (PRC §§21083.2[a], [b]).

PRC §21083.2(g) defines a *unique archaeological resource* as an 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:

- 1) Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information
- 2) Has a special and particular quality such as being the oldest of its type or the best available example of its type
- 3) Is directly associated with a scientifically recognized important prehistoric or historic event or person

A historical resource is one listed in or determined to be eligible for listing in the CRHR, a resource included in a local register of historical resources or any object, building, structure, site, area, place, record, or manuscript that a lead agency determines to be historically significant (CEQA Guidelines §15064.5[a][1-3]). CEQA Guidelines §15064.5(a)(3) also states that a resource shall be considered by the lead agency to be "historically significant" if it meets the criteria for listing on the CRHR.

2.2.2 Assembly Bill 52

California Assembly Bill 52 of 2014 (AB 52) went into effect July 1, 2015 and expanded CEQA by defining a new resource category called Tribal Cultural Resources (TCR). AB 52 established that "a project with an effect that may cause a substantial adverse change in the significance of a TCR is a project that may have a significant effect on the environment" (PRC §21084.2). It further stated that

the lead agency shall establish measures to avoid impacts that would alter the significant characteristics of a TCR, when feasible (PRC §21084.3).

PRC §21074(a)(1)(A),(B) define TCRs as “sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe” that meet either of the following criteria:

- 1) Listed or eligible for listing in the CRHR, or in a local register of historical resources, as defined in PRC §5020.1(k)
- 2) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of PRC §5024.1.

In applying these criteria, the lead agency shall consider the significance of the resource to a California Native American tribe.

AB 52 also established a formal consultation process for California tribes regarding TCRs. The consultation process must be completed before a CEQA document can be certified. Under AB 52, lead agencies are required to “begin consultation with a California Native American tribe that is traditionally and culturally affiliated with the geographic area of the proposed project.” Native American tribes to be included in the process are those that have requested notice of projects subject to CEQA and proposed within the jurisdiction of the lead agency.

2.3 Local Regulations

2.3.1 UC Riverside Long Range Development Plan

UC Riverside’s 2005 Long Range Development Plan, last updated and amended in 2011, provides planning strategies, programs and practices, and mitigation measures for the treatment of cultural resources within the campus boundaries.

The following programs and practices (PP) are relevant to this project:

PP 4.5-5. In the event of the discovery of a burial, human bone, or suspected human bone, all excavation or grading in the vicinity of the find shall halt immediately and the area of the find shall be protected and the University immediately shall notify the Riverside County Coroner of the find and comply with the provisions of PRC §5097 with respect to Native American involvement, burial treatment, and re-burial, if necessary.

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3 Natural and Cultural Setting

3.1 Natural Setting

The project APE is in the city of Riverside at an elevation of 284 meters (m) above mean sea level, adjacent to a relatively new housing development to the north and east. It is bordered by Chicago Avenue to the west and an apartment complex to the south. The project is in a densely vegetated drainage channel, where vegetation in the area consists of invasive species including non-native grasses, fan palms, pepper trees, gypsum weed, eucalyptus, and tamarisk. Granite boulders are present on the edge of the drainage.

3.2 Cultural Setting

3.2.1 Prehistoric Context

During the twentieth century, many archaeologists developed chronological sequences to explain prehistoric cultural changes in all or portions of southern California (c.f., Jones and Klar 2007; Moratto 1984). Wallace (1955, 1978) devised a prehistoric chronology for the southern California region based on early studies and focused on data synthesis that included four horizons: Early Man, Milling Stone, Intermediate, and Late Prehistoric. Though initially lacking the chronological precision of absolute dates (Moratto 1984: 159), Wallace's (1955) synthesis has been modified and improved using thousands of radiocarbon dates obtained by southern California researchers over recent decades (Byrd and Raab 2007: 217; Koerper and Drover 1983; Koerper et al. 2002; Mason and Peterson 1994). The composite prehistoric chronological sequence for southern California is based on Wallace (1955), Warren (1968), and later studies including Koerper and Drover (1983).

Early Man Horizon (ca. 10,000 – 6000 BCE)

Numerous pre-8000 Before Common Era (BCE) sites have been identified along the mainland coast and Channel Islands of southern California (c.f., Erlandson 1991; Johnson et al. 2002; Jones and Klar 2007; Moratto 1984; Rick et al. 2001: 609). The Arlington Springs site on Santa Rosa Island produced human femurs dated to approximately 13,000 years ago (Arnold et al. 2004; Johnson et al. 2002). On nearby San Miguel Island, human occupation at Daisy Cave (SMI-261) has been dated to nearly 13,000 years ago and included basketry greater than 12,000 years old, the earliest on the Pacific Coast (Arnold et al. 2004).

Although few Clovis- or Folsom-style fluted points have been found in southern California (e.g., Dillon 2002; Erlandson et al. 1987), Early Man Horizon sites are associated generally with a greater emphasis on hunting than later horizons. Recent data indicate that the Early Man economy was a diverse mixture of hunting and gathering, including a significant focus on aquatic resources in coastal areas (e.g., Jones et al. 2002) and on inland Pleistocene lakeshores (Moratto 1984). A warm and dry 3,000-year period called the Altithermal began around 6000 BCE. The conditions of the Altithermal are likely responsible for the change in human subsistence patterns at this time, including a greater emphasis on plant foods and small game.

Milling Stone Horizon (6000–3000 BCE)

The Milling Stone Horizon is defined as “marked by extensive use of milling stones and mullers, a general lack of well-made projectile points, and burials with rock cairns” (Wallace 1955: 219). The dominance of such artifact types indicates a subsistence strategy oriented around collecting plant foods and small animals. A broad spectrum of food resources were consumed including small and large terrestrial mammals, sea mammals, birds, shellfish and other littoral and estuarine species, near-shore fishes, yucca, agave, and seeds and other plant products (Kowta 1969; Reinman 1964). Variability in artifact collections over time and from the coast to inland sites indicates that Milling Stone Horizon subsistence strategies adapted to environmental conditions (Byrd and Raab 2007: 220). Locally available tool stone dominates lithic artifacts associated with Milling Stone Horizon sites; ground stone tools, such as manos and metates, and chopping, scraping, and cutting tools, are common. Kowta (1969) attributes the presence of numerous scraper-plane tools in Milling Stone Horizon collections to the processing of agave or yucca for food or fiber. The mortar and pestle, associated with acorns or other foods processed through pounding, were first used during the Milling Stone Horizon and increased dramatically in later periods (Wallace 1955, 1978; Warren 1968).

Two types of artifacts that are considered diagnostic of the Milling Stone period are the cogged stone and discoidal, most of which have been found on sites dating between 4000 and 1000 BCE (Moratto 1984: 149), though possibly as far back as 5500 BCE (Couch et al. 2009). The cogged stone is a ground stone object that has gear-like teeth on the perimeter and is produced from a variety of materials. The function of cogged stones is unknown, but many scholars have postulated ritualistic or ceremonial uses (c.f., Dixon 1968: 64-65; Eberhart 1961: 367) based on the materials used and their location near to burials and other established ceremonial artifacts as compared to typical habitation debris. Similar to cogged stones, discoidals are found in the archaeological record subsequent to the introduction of the cogged stone. Cogged stones and discoidals were often buried purposefully, or “cached.” They are most common in sites along the coastal drainages from southern Ventura County southward and are particularly abundant at some Orange County sites, although a few specimens have been found inland as far east as Cajon Pass (Dixon 1968: 63; Moratto 1984: 149). Cogged stones have been collected in Riverside County and their distribution appears to center on the Santa Ana River basin (Eberhart 1961).

Intermediate Horizon (3000 BCE – CE 500)

Wallace’s Intermediate Horizon dates from approximately 3000 BCE – Common Era(CE) 500 and is characterized by a shift toward a hunting and maritime subsistence strategy, as well as greater use of plant foods. During the Intermediate Horizon, a noticeable trend occurred toward greater adaptation to local resources including a broad variety of fish, land mammal, and sea mammal remains along the coast. Tool kits for hunting, fishing, and processing food and materials reflect this increased diversity, with flake scrapers, drills, various projectile points, and shell fishhooks being manufactured.

Mortars and pestles became more common during this transitional period, gradually replacing manos and metates as the dominant milling equipment. Many archaeologists believe this change in milling stones signals a change from the processing and consuming of hard seed resources to the increasing reliance on acorn (c.f., Glassow et al. 1988; True 1993). Mortuary practices during the Intermediate typically included fully flexed burials oriented toward the north or west (Warren 1968: 2-3).

Late Prehistoric Horizon (CE 500–Historic Contact)

During Wallace's (1955, 1978) Late Prehistoric Horizon the diversity of plant food resources and land and sea mammal hunting increased even further than during the Intermediate Horizon. More classes of artifacts were observed during this period and high quality exotic lithic materials were used for small finely worked projectile points associated with the bow and arrow. Steatite containers were made for cooking and storage and an increased use of asphalt for waterproofing is noted. More artistic artifacts were recovered from Late Prehistoric sites and cremation became a common mortuary custom. Larger, more permanent villages supported an increased population size and social structure (Wallace 1955: 223).

3.2.2 Ethnographic Overview

The project APE is situated in an area near the boundaries of two Native American groups, the Cahuilla and Gabrieleño identified by anthropologists in the early 20th century (e.g. Kroeber 1908). While these boundaries are based on interviews with informants and research with records such as those of the Hispanic Catholic Missions in the region, it is likely that such boundaries were not static; rather, they were probably fluid, and may have changed through time. Below are synopses of ethnographic data for each of the four Native American groups.

Cahuilla

The project APE is situated in a region historically occupied by a Native American group known as the Cahuilla, though near the boundary with the Gabrieleño (Heizer 1978; Bean 1978; Kroeber 1925). The term Cahuilla likely derived from the native word *káwiya*, meaning “master” or “boss” (Bean 1978: 575). Traditional Cahuilla ethnographic territory extended west to east from the present-day city of Riverside to the central portion of the Salton Sea in the Colorado Desert, and south to north from the San Jacinto Valley to the San Bernardino Mountains.

The Cahuilla, like their neighbors to south and west, the Luiseño and Juaneño, and the Cupeño to the south, are speakers of a Cupan language. Cupan languages are part of the Takic linguistic subfamily of the Uto-Aztecan language family. Cahuilla social organization was hierarchical and contained three primary levels (Bean 1978: 580). The highest level was the cultural nationality, encompassing everyone speaking a common language. The next level included the two patrimoiety of the Wildcats (*tuktum*) and the Coyotes (*'istam*). Every clan of the Cahuilla was in one or the other of these moiety. The lowest level consisted of the numerous political-ritual-corporate units called *sibs*, or a patrilineal clan (Bean 1978: 580).

Cahuilla villages were usually located in canyons or on alluvial fans near a source of accessible water. Each lineage group maintained their own houses (*kish*) and granaries, and constructed ramadas for work and cooking. Sweat houses and song houses (for non-religious music) were also often present. Each community also had a separate house for the lineage or clan leader. A ceremonial house, or *kiš ámnawet*, associated with the clan leader was where major religious ceremonies were held. Houses and ancillary structures were often spaced apart, and a “village” could extend over a mile or two. Each lineage had ownership rights to various resource collecting locations, “including food collecting, hunting, and other areas. Individuals also owned specific areas or resources, e.g., plant foods, hunting areas, mineral collecting places, or sacred spots used only by shamans, healers and the like” (Bean 1990:2).

The Cahuilla hunted a variety of game, including mountain sheep, cottontail, jackrabbit, mice, and wood rats, as well as predators such as mountain lion, coyote, wolf, bobcat, and fox. Various birds

were consumed, including quail, duck, and dove, plus various types of reptiles, amphibians, and insects. The Cahuilla employed a wide variety of tools and implements to gather and collect food resources. For hunting, these included the bow and arrow, traps, nets, slings and blinds for hunting land mammals and birds, and nets for fishing. Rabbits and hares were commonly brought down by the throwing stick, but when communal hunts were organized, the Cahuilla often utilized clubs and very large nets to capture these animals.

Foodstuffs were processed using a variety of tools, including portable stone mortars, bedrock mortars and pestles, basket hopper mortars, manos and metates, bedrock grinding slicks, hammerstones and anvils, and many others. Food was consumed from a number of woven and carved wood vessels and pottery vessels. The ground meal and unprocessed hard seeds were stored in large finely woven baskets, and the unprocessed mesquite beans were stored in large granaries woven of willow branches and raised off the ground on platforms to keep it from vermin. Pottery vessels were made by the Cahuilla, and also traded from the Yuman-speaking groups across the Colorado River and to the south.

The Cahuilla had adopted limited agricultural practices by the time Euro-Americans traveled into their territory. Bean has suggested that their “proto-agricultural techniques and a marginal agriculture” consisting of beans, squash and corn may have been adopted from the Colorado River groups to the east (Bean 1978: 578). Certainly by the time of the first Romero Expedition in 1823-24, they were observed growing corn, pumpkins, and beans in small gardens localized around springs in the thermal area of the Coachella Valley (Bean and Mason 1962: 104). The introduction of European plants such as barley and other grain crops suggest an interaction with the missions or local Mexican rancheros. Despite the increasing use and diversity of crops, no evidence indicates that this small-scale agriculture was anything more than a supplement to Cahuilla subsistence, and it apparently did not alter social organization.

By 1819, several Spanish mission outposts, known as *asistencias*, were established near Cahuilla territory at San Bernardino and San Jacinto, including the asistencia near Redlands. Cahuilla interaction with Europeans at this time was not as intense as it was for native groups living along the coast, likely due to the local topography and lack of water that made the area less attractive to colonists. By the 1820s, European interaction increased as mission ranchos were established in the region and local Cahuilla were employed to work on them.

The Bradshaw Trail was established in 1862 and was the first major east-west stage and freight route through the Coachella Valley. Traversing the San Gorgonio Pass, the trail connected gold mines on the Colorado River with the coast. Bradshaw based his trail on the Cocomaricopa Trail, with maps and guidance provided by local Native Americans. Journals by early travelers along the Bradshaw Trail told of encountering Cahuilla villages and walk-in wells during their journey through the Coachella Valley. The continued influx of immigrants into the region introduced the Cahuilla to European diseases. The single worst recorded event was a smallpox epidemic that swept through Southern California in 1862-63, significantly reducing the Cahuilla population. By 1891, only 1,160 Cahuilla remained in what was left of their territory, down from an aboriginal population of 6,000–10,000 (Bean 1978: 583-584). By 1974, approximately 900 people claimed Cahuilla descent, most of whom resided on reservations.

Between 1875 and 1891, the United States established ten reservations for the Cahuilla in their traditional territory. These reservations include: Agua Caliente, Augustine, Cabazon, Cahuilla, Los Coyotes, Morongo, Ramona, Santa Rosa, Soboba, and Torres-Martinez (Bean 1978: 585). Four of the reservations are shared with other groups, including the Chemehuevi, Cupeño, Luiseño, and Serrano.

Gabrieleño/ Tongva

The project APE is within two miles of an area historically occupied by the Gabrieleño. Archaeological evidence points to the Gabrieleño arriving in the Los Angeles Basin sometime around 500 BCE; however, this has been a subject of debate. Many contemporary Gabrieleño identify themselves as descendants of the indigenous people living across the plains of the Los Angeles Basin and use the native term Tongva (King 1994). This term is used in the remainder of this section to refer to the pre-contact inhabitants of the Los Angeles Basin and their descendants. Surrounding native groups included the Chumash and Tataviam to the northwest, the Serrano and Cahuilla to the northeast, and the Juaneño and Luiseño to the southeast.

The name “Gabrieleño” denotes those people who were administered by the Spanish from the San Gabriel Mission, which included people from the Gabrieleño area proper as well as other social groups (Bean and Smith 1978: 538; Kroeber 1925: Plate 57). Therefore, in the post-Contact period, the name does not necessarily identify a specific ethnic or tribal group. The names by which Native Americans in southern California identified themselves have, for the most part, been lost. Some modern Gabrieleño identify themselves as descendants of the indigenous people living across the plains of the Los Angeles Basin and refer to themselves as the Tongva (King 1994: 12). This term is used in the remainder of this section to refer to the pre-Contact inhabitants of the Los Angeles Basin and their descendants.

Tongva lands encompassed the greater Los Angeles Basin and three Channel Islands, San Clemente, San Nicolas, and Santa Catalina. The Tongva established large, permanent villages in the fertile lowlands along rivers and streams specifically the Santa Ana River area. A total tribal population has been estimated of at least 5,000 (Bean and Smith 1978: 540), but recent ethnohistoric work suggests a number approaching 10,000 (O’Neil 2002). Houses constructed by the Tongva were large, circular, domed structures made of willow poles thatched with tule that could hold up to 50 people (Bean and Smith 1978). Other structures served as sweathouses, menstrual huts, ceremonial enclosures, and probably communal granaries. Cleared fields for races and games, such as lacrosse and pole throwing, were created adjacent to Tongva villages (McCawley 1996: 27). Archaeological sites composed of villages with various sized structures have been identified.

The Tongva subsistence economy was centered on gathering and hunting. The surrounding environment was rich and varied, and the tribe exploited mountains, foothills, valleys, deserts, riparian, estuarine, and open and rocky coastal eco-niches. Like that of most native Californians, acorns were the staple food (an established industry by the time of the early Intermediate Period). Acorns were supplemented by the roots, leaves, seeds, and fruits of a wide variety of flora (e.g., islay, cactus, yucca, sages, and agave). Fresh water and saltwater fish, shellfish, birds, reptiles, and insects, as well as large and small mammals, were also consumed (Bean and Smith 1978: 546; Kroeber 1925: 631–632; McCawley 1996: 119–123, 128–131).

A wide variety of tools and implements were used by the Tongva to gather and collect food resources. These included the bow and arrow, traps, nets, blinds, throwing sticks and slings, spears, harpoons, and hooks. Groups residing near the ocean used oceangoing plank canoes and tule balsa canoes for fishing, travel, and trade between the mainland and the Channel Islands (McCawley 1996: 7). Tongva people processed food with a variety of tools, including hammerstones and anvils, mortars and pestles, manos and metates, strainers, leaching baskets and bowls, knives, bone saws, and wooden drying racks. Food was consumed from a variety of vessels. Catalina Island steatite was used to make ollas and cooking vessels (Blackburn 1963, Kroeber 1925: 629, McCawley 1996: 129–138).

At the time of Spanish contact, the basis of Tongva religious life was the Chinigchinich cult, centered on the last of a series of heroic mythological figures. Chinigchinich gave instruction on laws and institutions, and also taught the people how to dance, the primary religious act for this society. He later withdrew into heaven, where he rewarded the faithful and punished those who disobeyed his laws (Kroeber 1925: 637–638). The Chinigchinich religion seems to have been relatively new when the Spanish arrived. It was spreading south into the Southern Takic groups even as Christian missions were being built and may represent a mixture of native and Christian belief and practices (McCawley 1996: 143–144).

Deceased Tongva were either buried or cremated, with inhumation more common on the Channel Islands and the neighboring mainland coast and cremation predominating on the remainder of the coast and in the interior (Harrington 1942; McCawley 1996: 157). At the behest of the Spanish missionaries, cremation essentially ceased during the post-Contact period (McCawley 1996: 157).

3.2.3 Historic Overview

Post-European contact history for the state of California is generally divided into three periods: the Spanish Period (1769–1822), the Mexican Period (1822–1848), and the American Period (1848–present).

Spanish Period (1769–1822)

Spanish exploration of what was then known as Alta (upper) California began when Juan Rodriguez Cabrillo led the first European expedition into the region in 1542. For more than 200 years after his initial expedition, Spanish, Portuguese, British, and Russian explorers sailed the Alta California coast and made limited inland expeditions, but they did not establish permanent settlements (Bean 1968; Rolle 2003). Spanish entry into what was to become Riverside County did not occur until 1774 when Juan Bautista de Anza led an expedition from Sonora, Mexico to Monterey in northern California (Lech 1998).

In 1769, Gaspar de Portolá and Franciscan Father Junipero Serra established the first Spanish settlement at Mission San Diego de Alcalá. This was the first of 21 missions erected by the Spanish between 1769 and 1823. The establishment of the missions marks the first sustained occupation of Alta California by the Spanish. In addition to the missions, four presidios and three pueblos (towns) were established throughout the state (State Lands Commission 1982). No missions were established in Riverside.

During this period, Spain also deeded ranchos to prominent citizens and soldiers, though very few in comparison to those deeded during the subsequent Mexican Period. To manage and expand their herds of cattle on these large ranchos, colonists enlisted the labor of the surrounding Native American population (Engelhardt 1927a). The missions were responsible for administering to the local Indians as well as converting the population to Christianity (Engelhardt 1927b). The influx of European settlers brought the local Native American population in contact with European diseases, against which they had no immunity, resulting in catastrophic reduction of native populations throughout the state (McCawley 1996).

Mexican Period (1822–1848)

The Mexican Period commenced when news of the success of the Mexican War of Independence (1810-1821) reached California in 1822. This period saw the federalization of mission lands in California with the passage of the Secularization Act of 1833, which enabled Mexican governors in

California to distribute former mission lands to individuals in the form land grants. Successive Mexican governors made more than 700 land grants (ranchos) between 1822 and 1846, putting most of the state's lands into private ownership for the first time (Shumway 2007). About 15 ranchos were located in Riverside County, but the project APE is not located within a land grant (Shumway 2007). The Mexican Period ended following the conclusion of the Mexican-American War which lasted from 1846 to 1848.

American Period (1848–Present)

The American Period officially began with the signing of the Treaty of Guadalupe Hidalgo in 1848, in which the United States agreed to pay Mexico \$15 million for ceded territory, including California, Nevada, Utah, and parts of Colorado, Arizona, New Mexico, and Wyoming, and to pay an additional \$3.25 million to settle American citizens claims against Mexico and ended the Mexican American War. Settlement of southern California increased dramatically in the early American Period. Americans bought or otherwise acquired many ranchos in the county, most of which were subdivided into agricultural parcels or towns.

The discovery of gold in northern California in 1848 led to the California Gold Rush, even though the first California gold was discovered in southern California at Placerita Canyon in 1842 (Guinn 1977; Workman 1935: 26). Southern California remained dominated by cattle ranches in the early American period, though droughts and increasing population resulted in farming and more urban professions supplanting ranching through the late nineteenth century. In 1850, California was admitted into the United States and by 1853, the population of California exceeded 300,000. Thousands of settlers and immigrants continued to move into the state, particularly after completion of the transcontinental railroad in 1869.

Local

In 1870, investors from the Southern California Colony Association, solicited by John W. North, laid out a mile-square town site. Called Jurupa originally, the town was renamed Riverside in 1871. Agriculturalists, investors, and immigrants immigrated into the area because of the success of citrus crops. Among these early emigrants were Eliza and Luther Tibbets, who left the East Coast for the Riverside area by 1873. Eliza was instrumental in the rise of California's citrus industry, introducing the Washington navel orange in 1873. After winning first prize at the 1879 Southern California Horticultural Fair, Eliza's Riverside-grown variety gained popularity among commercial growers in Southern California and the Central Valley (Fallows 2015; Sackman 2005; Boule 2016). The California Fruit Growers Exchange, later Sunkist, was founded in the late 1800s, along with the UC Citrus Experimentation Station located at UC Riverside campus, making Riverside a key center of citrus production. By the 1920s, citrus fruit had become the state's second-leading product by dollar value (Boule 2016).

Riverside was incorporated in 1883 and became a charter city in 1907, with a mayor-council form of government. A new City Charter was established in 1950, in response to population growth and city operating problems. A City Board of Freeholders was elected and a new Charter employing a council-manager form of government was implemented in 1952. Since the City's founding, Riverside has grown immensely and its economy has become more diverse and multifaceted.

UC Riverside

The history of UC Riverside is intertwined with the history of the citrus industry in Riverside County. In 1907 the UC Regents formally established the UC Citrus Experimentation Station (Station) on 23

acres of land near the eastern slope of Mount Rubidoux, approximately 3.5 miles west of center of the present-day campus. After a record freeze in 1913, the Station received \$185,000 in funding for a new 475 acre laboratory located west of Box Spring Mountain. UC Regents approved the new Station in 1914 and the Station formally began operations in 1917. The station was under the direction of Herbert John Webber who was appointed dean of the newly formed Graduate School of Tropical Agriculture and launched the Citrus Variety Collection which included 500 citrus species collected from around the world. This collection was planted on five acres of land and still exists today (UC Riverside 2011:2).

The Station continued to operate for 47 years before UC Riverside was established. In 1954, the campus opened to 65 professors and 127 students. Throughout the early years of the institution several buildings were constructed to house the students and new colleges established on campus. In 1966, the Carillon Bell Tower located near the center of the main campus was dedicated to UC Riverside from former UC regent Philip Boyd and Dorothy Boyd and still exists on the campus. In 1961, UC Riverside opened the Graduate Division and became one of the fastest growing graduate schools in the nation (UC Riverside 2011:8). Over the years new master's degree programs were offered at UC Riverside and by the 1980s the student population had doubled to 8,220 students. To accommodate the growing enrollment, the campus underwent a "building boom" during the 1990s and in 1996 UC Riverside became the first California campus to establish an LGBT center and an offer a minor in LGBT studies (UC Riverside 2011). Enrollment continued to increase over the next several decades and in 2017 enrollment reached over 23,200 students.

4 Background Research

4.1 California Historical Resource Information System

On September 12, 2018, Rincon conducted a search of cultural resource records housed at the California Historical Resources Information System, EIC located at UC Riverside, to identify all previous cultural resources work and previously recorded cultural resources within a one-mile radius of the project APE. The search included a review of the NRHP, the CRHR, the California Points of Historical Interest list, the California Historical Landmarks list, the Archaeological Determinations of Eligibility list, and the California State Historic Resources Inventory list. The records search also included a review of all available historical USGS 7.5-, 15-, and 30-minute quadrangle maps.

4.1.1 Previous Studies

The EIC records search identified 28 previous studies within a one-mile radius of the project APE. Of these studies, three were conducted in the project boundary: RI-00127, RI-03617, RI-05173. The results of the record search are summarized in **Error! Reference source not found.** located in appendix A of this report.

4.1.2 Previously Recorded Resources

The EIC records search identified 82 previously recorded cultural resources within a one-mile radius of the project APE, none of which are in the project APE. Of the 82 recorded resources, five are prehistoric milling sites, one is a prehistoric isolate, and the remaining are historic built environment resources consisting of one canal, one irrigation system, and 75 structures. Appendix A, Table 2 provides a full list of the records search results and provides a summary of the resources and their NRHP, CRHR, and local register status.

4.2 Native American Heritage Commission

UC Riverside contacted the Native American Heritage Commission (NAHC) to request an SLF search for the project. The NAHC responded via email on June 27, 2018, stating that the results of the SLF were negative for specific site information however the area is considered sensitive for cultural resources by the NAHC and included a list of Native American contacts. The SLF results were provided to Rincon and the firm prepared and mailed letters to 43 NAHC-listed Native American tribes and individuals whose contact information was provided by the NAHC. The letters requested information in writing of any known Native American religious or cultural resources on or immediately adjacent to the project APE. Rincon followed up with each contact by phone and email (when requested) to document “good faith” efforts to follow-up. Follow-up calls were placed on October 11, 2018. The responses received from the Native American scoping efforts are summarized below. Appendix B presents the full results of Rincon’s scoping efforts in tabular format. As part of this project, UC Riverside has initiated the AB 52 consultation process with interested Native American groups and individuals as a separate effort.

Michael Mirelez of the Torres-Martinez Desert Cahuilla Indians stated that the project was outside of his traditional use area and that Torres-Martinez Desert Cahuilla Indians would defer to the Soboba Band of Luiseno Indians.

Amanda Vance of the Augustine Band of Cahuilla Indians stated she had no comment on the project. Ms. Vance recommended the project contract with a monitor who is qualified in Native American cultural resources identification and who is able to be present on-site full-time during the pre-construction and construction phase of the project.

Victoria Martin of the Augustine Band of Cahuilla Indians stated that she is unaware of specific cultural resources that may be affected by the project. Ms. Martin encouraged the project to contract with a monitor who is qualified in Native American cultural resources identification and who is able to be present on-site full-time during construction and to be notified immediately should cultural resources be discovered.

Anthony Morales of the Gabrieleño/ Tongva San Gabriel Band of Mission Indians stated that the area is considered a travel route. Creeks and waterways are areas where encampments could be located. He feels that there may be unanticipated resources in the area. Mr. Morales feels that the area could be sensitive due to its proximity to the creek and that there should be archaeological or Native American monitoring or spot checking during ground disturbance. The vegetation and natural landscape could contain cultural resources. Mr. Morales stated that in the event monitoring is required, he requested that the Gabrieleño/Tongva San Gabriel Band of Mission Indians be involved.

Charles Alvarez of the Gabrieleño-Tongva Indians stated he had no comment on the project.

Destiny Colocho of the Rincon Band of Luiseño Indians stated that the project is within the Territory of the Luiseño people, and is within Rincon's specific area of Historic interest. Mr. Colocho did not have knowledge of cultural resources within or near the proposed project and recommended that an archaeological record search be conducted and requested a copy be provided to the Rincon Band.

Jessica Mauck of the San Manuel Band of Mission Indians stated that the project is located just outside of Serrano ancestral territory and, therefore, will not be requesting consulting party status with the lead agency.

Joseph Ontiveros of the Soboba Band of Luiseño Indians stated that the project is within the bounds of the Luiseño Tribal Traditional Use Areas and is in proximity to known sites and is a shared use area that was used in ongoing trade between the tribes, and is considered to be culturally sensitive by the people of Soboba. Mr. Ontiveros requested to initiate consultation with the project proponents and lead agency, the transfer of information to the Soboba Band of Luiseño Indians regarding the progress of the project, to continue to act as a consulting tribal entity, request that Native American Monitor(s) from the Soboba Band of Luiseño Indians Cultural Resource Department to be present during ground disturbing proceedings, and that proper procedures be taken and request of the tribe be honored.

Ray Teran of the Viejas Band of Kumeyaay Indians stated that the project site has little cultural significance or ties to the Viejas. Mr. Teran requested to be informed of any inadvertent discovery of cultural artifacts, cremation sites, or human remains.

Lucy Padilla of the Agua Caliente Band of Cahuilla Indians stated that the project was outside of their reservation but within their traditional use area and requested that a copy of the report be sent to them after completion.

4.3 Historical Imagery and Map Review

A review of historical aerial photographs and topographic maps depicting the APE was conducted on October 2, 2018. According to the earliest available maps, residential development south of the drainage occurred sometime after 1978 and before 1994 (NETR 2018). The drainage is depicted on topographic maps from 1955, 1960, 1969, 1974, 1980, 1984, 2012, and 2015. The drainage is not depicted on topographic maps prior to 1955 (NETR 2018).

5 Fieldwork

5.1 Pedestrian Survey Methods

Rincon Archaeologist Lindsay A. Porras, MA, RPA conducted a pedestrian survey of the project APE on September 12, 2018. The archaeologist surveyed the project APE using transects spaced no more than 10 meters apart. The survey was oriented generally northwest to southeast. A gate near the northwest limit of the APE was used for access.

The archaeologist examined all exposed ground surface for the following: artifacts (e.g., flaked stone tools, tool-making debris, stone milling tools, ceramics, fire-affected rock), ecofacts (marine shell and bone), soil discoloration that might indicate the presence of a cultural midden, soil depressions, and features indicative of the former presence of structures or buildings (e.g., standing exterior walls, postholes, foundations) or historic debris (e.g., metal, glass, ceramics). Ground disturbances such as burrows and drainages were inspected visually. The archaeologist prepared survey notes and these are available upon request. A digital camera was used to capture photographs of the project APE these are maintained electronically by Rincon.

5.2 Results

The project APE consists of one drainage channel that trends west to east for approximately 130 meters and north to south for approximately 85 meters. Ground visibility throughout the project APE varied from poor to excellent (approximately 0 to 100 percent visibility). Dense vegetation in the drainage obscured the surface and ornamental grasses in the surrounding areas contributed to poor surface visibility (Figure 3). North of the drainage surface visibility was excellent where a steep cut in the existing topography exists (figures 4 and 5). The archaeologist did not identify any previously unrecorded prehistoric or historical-period resources in the APE during the pedestrian survey.

Figure 4 Surface Visibility in the APE



Figure 5 View of Retaining Wall Adjacent to Drainage



Figure 6 Pipe Extending from Embankment



6 Management Recommendations

Based on the results of the records search, Native American scoping, and field survey, specific cultural resources (prehistoric or historic) were not identified in the project APE. No specific resource information was provided by tribal contacts for the project APE. Rincon recommends a finding of ***no impact to historical resources*** under CEQA and ***no effect to historic properties*** under Section 106 of NHPA.

However, the discovery of unanticipated cultural resources and/or human remains is always a possibility during ground-disturbing activities. Rincon recommends the following measures as best management practices in the event of the unanticipated discovery of cultural resources or human remains during project construction.

Unanticipated Discovery of Cultural Resources

If cultural resources are encountered during ground-disturbing activities, work in the immediate area must halt and an archaeologist meeting the Secretary of the Interior's Professional Qualifications Standards for archaeology (National Park Service 1983) should be contacted immediately to evaluate the find. If the discovery proves to be significant under CEQA and/or NHPA, additional work such as data recovery excavation, Native American consultation, and archaeological monitoring may be warranted to mitigate any significant impacts.

Unanticipated Discovery of Human Remains

If human remains are found, existing regulations outlined in the State of California Health and Safety Code Section 7050.5 state that no further disturbance shall occur until the county coroner has made a determination of origin and disposition pursuant to PRC Section 5097.98. In the event of an unanticipated discovery of human remains, the county coroner must be notified immediately. If the human remains are determined to be prehistoric, the coroner will notify the NAHC, which will determine and notify the MLD. The MLD shall complete the inspection of the site within 48 hours of being granted access and provide recommendations as to the treatment of the remains to the landowner.

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Appendix A

Records Search Summary

Table 1 Previous Cultural Resource Studies within a One-Mile Radius of the Project APE

Report Number	Author	Year	Title	Relationship to Project APE
RI-00127	James P. Barker	1974	Letter Report: Survey of 11 Acres in Riverside East Quadrangle	Within
RI-02023	Christopher E. Drover	1985	An Archaeological Assessment of the Bergum Preliminary Study Map, Riverside, California	Outside
RI-03190	Peak and Associates	1990	Part III, Addendum To: Cultural Resources Assessment Of AT&T's Proposed San Bernardino to San Diego Fiber Optic Cable, San Bernardino, Riverside, And San Diego Counties, California	Outside
RI-03502	Carmen A. Weber	1992	Cultural Resources Survey of 1300 Central Avenue, Riverside, California	Outside
RI-03617	Ayse Taskiran	1993	Cultural Resources Assessment: Proposed Vons Market Located in the Canyon Crest Village, City of Riverside, Riverside County, California	Within
RI-03693	John M. Foster, James J. Schmidt, Carmen A. Weber, Gwendolyn R. Romani, and Roberta S. Greenwood	1991	Cultural Resource Investigation: Inland Feeder Project, Metropolitan Water District of Southern California	Outside
RI-04404	Jones and Stokes Associates, Inc.	2000	Final Cultural Resources Inventory Report for the Williams Communications, Inc. Fiber Optic Cable System Installation Project, Riverside to San Diego, California, Vol. I-IV	Outside
RI-04799	Robert J. Wlodarski	2004	A Phase I Archaeological Study for Telacu Housing-Riverside, Inc., 1807 11th Street, City of Riverside, County of Riverside, California	Outside
RI-05056	Jeanette A. McKenna	2003	A Phase I Cultural Resources Investigation for the Proposed Corona Feeder Master Plan Project Area, Riverside County, California	Outside
RI-05173	Riordan Goodwin	2003	Results of the Cultural Resource Assessment for the Fidelity Family Holdings Four Lots in the City of Riverside, Riverside County, California	Within
RI-05556	Mark C. Robinson, Dennis McDougall David Earle, Melinda Horne, Heather Puckett, and M. Colleen Hamilton	2003	Cultural Resources Survey, Historical Property Report for the Tavaglione Property, Riverside County, California, APN 254-150-025	Outside
RI-05622	Christopher E. Drover	2000	Environmental Impact Evaluation: An Archaeological Assessment of Alternate Parking A5C, University of California, Riverside, Riverside, California	Outside

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Report Number	Author	Year	Title	Relationship to Project APE
RI-05709	Jessica Dreckman	2003	Letter Report: Proposed Cellular Tower Project in Riverside County, California, Site Name/Number: CA-7232A/ Poly Tech	Outside
RI-05807	Carolyn E. Kyle	2004	Cultural Resource Assessment For AT&T Wireless Facility 950-003- 527, Glenhaven Court, City of Riverside, Riverside County, California	Outside
RI-05996	Bai Tang, Michael Hogan, and Josh Smallwood	2003	Historical/Archaeological Resources Survey Report, APNs 221-161-002, -003, -005, -024, -025, -026, 1744-1794 12th Street, City of Riverside, Riverside County, California	Outside
RI-05997	Bai Tang, Michael Hogan, Mariam Dahdul, Casey Tibet, Daniel Ballester, Terry Jacquemain, and Scott Crull	2003	Historical/Archaeological Resources Survey Report, Assessor's Parcel Numbers 221-240- 003, -004, and -005, City of Riverside, Riverside County, California	Outside
RI-06838	Jeanette A. McKenna, Kristina Lindgren, and Darlene Harr	2006	A Phase I Cultural Resources Investigation and Historic Building Survey for the Proposed New Eastside Elementary School Site in Riverside, Riverside County, California	Outside
RI-07147	Curt Duke	2003	Cultural Resource Assessment: Cingular Wireless Facility No. SB 263-02, Riverside City and County, California	Outside
RI-07546	Seth A. Rosenberg	2007	A Phase I Archaeological Survey for the Hays Property Project, APN 222-030-03	Outside
RI-07925	Edward J. Knell and Kevin Hunt	2007	Cultural Resources Survey for the Tequesquite Arroyo Trunk Sewer Project, City of Riverside, Riverside County, California	Outside
RI-08064	Wayne H. Bonner, Marnie Aislin-Kay, and Kathleen A. Crawford	2008	Letter Report: Cultural Resource Records Search and Site Visit Results for T-Mobile USA Telecommunications Candidate IE25351G (Canyon Crest Shopping Center) 5225 Canyon Crest Drive, Riverside, Riverside County, California	Outside
RI-08274	Carla Allred	2009	Letter Report: Proposed Cellular Tower Project(s) in Riverside County, California, Site Number(s)/Name(s): CA-2500/ Chicago TCNS# 58076	Outside
RI-08333	Robert J. Wlodarski	2010	Letter Report: Conducted a Record Search and Field Reconnaissance Phase for the Proposed AT&T Wireless Telecommunications Site RS0042 (Evergreen Masonic Center) 5801 Chicago Avenue, Riverside, California 92506.	Outside

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Report Number	Author	Year	Title	Relationship to Project APE
RI-08412	Jeanette McKenna	2009	Letter Report: A Summary Report on the Proposed Improvements at the Emerson Elementary School Campus in the City of Riverside, Riverside County, California.	Outside
RI-09330	Mariam Dahdul, Daniel Ballester, and Nina Gallardo	2015	Historical/Archaeological Resources Survey Report: Tentative Tract Map No. 36703, City of Riverside, Riverside County, California	Outside
RI-09676	Carrie D. Wills, Sarah A. Williams, and Kathleen A. Crawford	2016	Cultural Resource Records Search and Site Visit Results for Cellco Partnership, 1910 Martin Luther King Boulevard, Riverside, Riverside County, California 92507	Outside
RI-09859	Molly Valasik and Sherri Gust	2010	Cultural Resources Survey and Assessment for the Arroyo Drive Project, City of Riverside, Riverside County, California	Outside
RI-09991	Roger D. Mason and Wayne H. Bonner	1998	Cultural Resources Records Search And Literature Review for a Pacific Bell Mobile Services Telecommunication Facility: CM 196- 91 City of Riverside, California	Outside

Source: EIC 2018

Appendix A

Table 2 Previously Recorded Resources within 1.0-Mile Radius of Project APE

Primary Number	Trinomial	Resource Type	Description	Recorder(s) and Year(s)	NRHP/CRHR/Local Register Status	Relationship to Project APE
P-33-004768	CA-RIV-004768	Historic	Canal	1992 (Robert J. Wlodarski)	Unknown	Outside
P-33-004904	CA-RIV-004904	Historic	Irrigation System	1992 (Carmen Weber, Chambers Group)	Unknown	Outside
P-33-005056	CA-RIV-005056	Prehistoric	Milling	1993 (Ayse Taskiran, Jill Patterson, Archeological Research Unit, UC Riverside)	Unknown	Outside
P-33-005710	-	Historic	Building	1999 (B. Tang, CRM TECH)	Unknown	Outside
P-33-011824	-	Historic	Building	1980 (Alan Curl)	Unknown	Outside
P-33-011879	-	Historic	Building	1980 (Alan Curl)	Unknown	Outside
P-33-012193	-	Historic	Building	1999 (Kenneth Olivier)	Local Register	Outside
P-33-012737	-	Prehistoric	Isolate Mano	1993 (Ayse Taskiran, J. Titus)	Presumed Ineligible	Outside
P-33-013076	-	Historic	Building	2003 (C. Tibbet)	Unknown	Outside
P-33-013105	CA-RIV-007303	Prehistoric	Milling	2003 (Daniel Ballester, Robert Porter)	Unknown	Outside
P-33-013106	CA-RIV-007304	Prehistoric	Milling	2003 (Daniel Ballester, Robert Porter)	Unknown	Outside
P-33-013303	CA-RIV-007404	Prehistoric	Milling	2004 (Riordan Goodwin)	Unknown	Outside
P-33-014099	-	Historic	Building	2005 (Bill Wilkman, Wilkman Preservation Services)	Local Register	Outside

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 Creekside Drainage Project #950551

Primary Number	Trinomial	Resource Type	Description	Recorder(s) and Year(s)	NRHP/CRHR/Local Register Status	Relationship to Project APE
P-33-014326	-	Historic	Building	2003 (Bill Wilkman, Wilkman Preservation Services)	Local Register	Outside
P-33-023957	CA-RIV-011774	Prehistoric	Milling	2014 (Daniel Ballester, CRM TECH)	Unknown	Outside
P-33-025328	-	Historic	Building	2001 (Jan Ostashay, PCR Services Corporation)	Recommended Ineligible	Outside
P-33-025329	-	Historic	Building	2001 (Jan Ostashay, PCR Services Corporation)	Recommended Ineligible	Outside
P-33-025330	-	Historic	Building	2001 (Jan Ostashay, PCR Services Corporation)	Recommended Ineligible	Outside
P-33-025331	-	Historic	Building	2001 (Jan Ostashay, PCR Services Corporation)	Recommended Ineligible	Outside
P-33-025514	-	Historic	Building	2001 (Jan Ostashay, PCR Services Corporation)	Recommended Ineligible	Outside
P-33-025515	-	Historic	Building	2001 (Jan Ostashay, PCR Services Corporation)	Recommended Ineligible	Outside
P-33-025516	-	Historic	Building	2001 (Jan Ostashay, PCR Services Corporation)	Recommended Ineligible	Outside
P-33-025545	-	Historic	Building	2001 (Jan Ostashay, PCR Services Corporation)	Recommended Ineligible	Outside
P-33-025546	-	Historic	Building	2001 (Jan Ostashay, PCR Services Corporation)	Local Register	Outside

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Primary Number	Trinomial	Resource Type	Description	Recorder(s) and Year(s)	NRHP/CRHR/Local Register Status	Relationship to Project APE
P-33-025547	-	Historic	Building	2001 (Jan Ostashay, PCR Services Corporation)	Recommended Ineligible	Outside
P-33-025548	-	Historic	Building	2001 (Jan Ostashay, PCR Services Corporation)	Recommended Ineligible	Outside
P-33-025549	-	Historic	Building	2001 (Jan Ostashay, PCR Services Corporation)	Local Register	Outside
P-33-025550	-	Historic	Building	2001 (Jan Ostashay, PCR Services Corporation)	Recommended Ineligible	Outside
P-33-025551	-	Historic	Building	2001 (Jan Ostashay, PCR Services Corporation)	Recommended Ineligible	Outside
P-33-025552	-	Historic	Building	2001 (Jan Ostashay, PCR Services Corporation)	Recommended Ineligible	Outside
P-33-025553	-	Historic	Building	2001 (Jan Ostashay, PCR Services Corporation)	Recommended Ineligible	Outside
P-33-025554	-	Historic	Building	2001 (Jan Ostashay, PCR Services Corporation)	Recommended Ineligible	Outside
P-33-025555	-	Historic	Building	2001 (Jan Ostashay, PCR Services Corporation)	Local Register	Outside
P-33-025556	-	Historic	Building	2001 (Jan Ostashay, PCR Services Corporation)	Recommended Ineligible	Outside
P-33-025557	-	Historic	Building	2001 (Jan Ostashay, PCR Services Corporation)	Local Register	Outside

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Primary Number	Trinomial	Resource Type	Description	Recorder(s) and Year(s)	NRHP/CRHR/Local Register Status	Relationship to Project APE
P-33-025558	-	Historic	Building	2001 (Jan Ostashay, PCR Services Corporation)	Recommended Ineligible	Outside
P-33-025559	-	Historic	Building	2001 (Jan Ostashay, PCR Services Corporation)	Recommended Ineligible	Outside
P-33-025560	-	Historic	Building	2001 (Jan Ostashay, PCR Services Corporation)	Recommended Ineligible	Outside
P-33-025627	-	Historic	Building	2001 (Jan Ostashay, PCR Services Corporation)	Local Register	Outside
P-33-025628	-	Historic	Building	2001 (Jan Ostashay, PCR Services Corporation)	Recommended Ineligible	Outside
P-33-025629	-	Historic	Building	2001 (Jan Ostashay, PCR Services Corporation)	Local Register	Outside
P-33-025630	-	Historic	Building	2001 (Jan Ostashay, PCR Services Corporation)	Recommended Ineligible	Outside
P-33-025631	-	Historic	Building	2001 (Jan Ostashay, PCR Services Corporation)	Local Register	Outside
P-33-025632	-	Historic	Building	2001 (Jan Ostashay, PCR Services Corporation)	Recommended Ineligible	Outside
P-33-025633	-	Historic	Building	2001 (Jan Ostashay, PCR Services Corporation)	Recommended Ineligible	Outside
P-33-025634	-	Historic	Building	2001 (Jan Ostashay, PCR Services Corporation)	Recommended Ineligible	Outside

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Primary Number	Trinomial	Resource Type	Description	Recorder(s) and Year(s)	NRHP/CRHR/Local Register Status	Relationship to Project APE
P-33-025635	-	Historic	Building	2001 (Jan Ostashay, PCR Services Corporation)	Recommended Ineligible	Outside
P-33-025636	-	Historic	Building	2001 (Jan Ostashay, PCR Services Corporation)	Recommended Ineligible	Outside
P-33-025637	-	Historic	Building	2001 (Jan Ostashay, PCR Services Corporation)	Recommended Ineligible	Outside
P-33-025638	-	Historic	Building	2001 (Jan Ostashay, PCR Services Corporation)	Local Register	Outside
P-33-025639	-	Historic	Building	2001 (Jan Ostashay, PCR Services Corporation)	Recommended Ineligible	Outside
P-33-025640	-	Historic	Building	2001 (Jan Ostashay, PCR Services Corporation)	Local Register	Outside
P-33-025641	-	Historic	Building	2001 (Jan Ostashay, PCR Services Corporation)	Recommended Ineligible	Outside
P-33-025642	-	Historic	Building	2001 (Jan Ostashay, PCR Services Corporation)	Local Register	Outside
P-33-026899	-	Historic	Building	2001 (Jan Ostashay, PCR Services Corporation)	Local Register	Outside
P-33-026920	-	Historic	Building	2001 (Jan Ostashay, PCR Services Corporation)	Recommended Ineligible	Outside
P-33-026921	-	Historic	Building	2001 (Jan Ostashay, PCR Services Corporation)	Recommended Ineligible	Outside

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 Creekside Drainage Project #950551

Primary Number	Trinomial	Resource Type	Description	Recorder(s) and Year(s)	NRHP/CRHR/Local Register Status	Relationship to Project APE
P-33-026922	-	Historic	Building	2001 (Jan Ostashay, PCR Services Corporation)	Recommended Ineligible	Outside
P-33-026923	-	Historic	Building	2001 (Jan Ostashay, PCR Services Corporation)	Recommended Ineligible	Outside
P-33-026924	-	Historic	Building	2001 (Jan Ostashay, PCR Services Corporation)	Recommended Ineligible	Outside
P-33-026925	-	Historic	Building	2001 (Jan Ostashay, PCR Services Corporation)	Recommended Ineligible	Outside
P-33-026926	-	Historic	Building	2001 (Jan Ostashay, PCR Services Corporation)	Local Register	Outside
P-33-026951	-	Historic	Building	2001 (Jan Ostashay, PCR Services Corporation)	Recommended Ineligible	Outside
P-33-026952	-	Historic	Building	2001 (Jan Ostashay, PCR Services Corporation)	Recommended Ineligible	Outside
P-33-026953	-	Historic	Building	2001 (Jan Ostashay, PCR Services Corporation)	Recommended Ineligible	Outside
P-33-026954	-	Historic	Building	2001 (Jan Ostashay, PCR Services Corporation)	Recommended Ineligible	Outside
P-33-026955	-	Historic	Building	2001 (Jan Ostashay, PCR Services Corporation)	Recommended Ineligible	Outside
P-33-026956	-	Historic	Building	2001 (Jan Ostashay, PCR Services Corporation)	Recommended Ineligible	Outside

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Primary Number	Trinomial	Resource Type	Description	Recorder(s) and Year(s)	NRHP/CRHR/Local Register Status	Relationship to Project APE
P-33-026957	-	Historic	Building	2001 (Jan Ostashay, PCR Services Corporation)	Recommended Ineligible	Outside
P-33-026958	-	Historic	Building	2001 (Jan Ostashay, PCR Services Corporation)	Recommended Ineligible	Outside
P-33-026959	-	Historic	Building	2001 (Jan Ostashay, PCR Services Corporation)	Recommended Ineligible	Outside
P-33-026960	-	Historic	Building	2001 (Jan Ostashay, PCR Services Corporation)	Recommended Ineligible	Outside
P-33-026979	-	Historic	Building	2001 (Jan Ostashay, PCR Services Corporation)	Recommended Ineligible	Outside
P-33-026980	-	Historic	Building	2001 (Jan Ostashay, PCR Services Corporation)	Recommended Ineligible	Outside
P-33-026981	-	Historic	Building	2001 (Jan Ostashay, PCR Services Corporation)	Local Register	Outside
P-33-026982	-	Historic	Building	2001 (Jan Ostashay, PCR Services Corporation)	Local Register	Outside
P-33-026983	-	Historic	Building	2001 (Jan Ostashay, PCR Services Corporation)	Local Register	Outside
P-33-026984	-	Historic	Building	2001 (Jan Ostashay, PCR Services Corporation)	Recommended Ineligible	Outside
P-33-026985	-	Historic	Building	2001 (Jan Ostashay, PCR Services Corporation)	Local Register	Outside

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Primary Number	Trinomial	Resource Type	Description	Recorder(s) and Year(s)	NRHP/CRHR/Local Register Status	Relationship to Project APE
P-33-027473	-	Historic	Building	2001 (Jan Ostashay, PCR Services Corporation)	Recommended Ineligible	Outside
P-33-027669	-	Historic	Building	2001 (Jan Ostashay, PCR Services Corporation)	Recommended Ineligible	Outside
P-33-027670	-	Historic	Building	2001 (Jan Ostashay, PCR Services Corporation)	Recommended Ineligible	Outside

Source: EIC 2018

Appendix B

Native American Heritage Commission

NATIVE AMERICAN HERITAGE COMMISSION

Cultural and Environmental Department
1550 Harbor Blvd., Suite 100
West Sacramento, CA 95691
(916) 373-3710



June 27, 2018

Jaime Engrecht
University of California, Riverside

Sent by E-mail: Jaime.engbrecht@ucr.edu

RE: Proposed UCR Creekside Terrace Slope Protection Project, City of Riverside; Riverside East USGS Quadrangle, Riverside County, California

Dear Mr. Engbrecht:

A record search of the Native American Heritage Commission (NAHC) *Sacred Lands File* was completed for the area of potential project effect (APE) referenced above with negative results however the area within the APE provided is sensitive for cultural resources. Please note that the absence of specific site information in the *Sacred Lands File* does not indicate the absence of Native American cultural resources in any APE.

Attached is a list of tribes culturally affiliated to the project area. I suggest you contact all of the listed Tribes. If they cannot supply information, they might recommend others with specific knowledge. The list should provide a starting place to locate areas of potential adverse impact within the APE. By contacting all those on the list, your organization will be better able to respond to claims of failure to consult. If a response has not been received within two weeks of notification, the NAHC requests that you follow-up with a telephone call to ensure that the project information has been received.

If you receive notification of change of addresses and phone numbers from any of these individuals or groups, please notify me. With your assistance we are able to assure that our lists contain current information. If you have any questions or need additional information, please contact via email: gayle.totton@nahc.ca.gov.

Sincerely,

A handwritten signature in cursive script that reads "Gayle Totton".

Gayle Totton, M.A., PhD.
Associate Governmental Program Analyst
(916) 373-3714

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**Native American Heritage Commission
Native American Contact List
Riverside County
6/27/2018**

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Gabrieleno Band of Mission Indians - Kizh Nation

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Gabrieleno/Tongva San Gabriel Band of Mission Indians

Anthony Morales, Chairperson
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San Gabriel, CA, 91778
Phone: (626) 483 - 3564
Fax: (626) 286-1262
GTtribalcouncil@aol.com

Gabrielino /Tongva Nation

Sandonne Goad, Chairperson
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#231
Los Angeles, CA, 90012
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sgoad@gabrielino-tongva.com

Gabrielino Tongva Indians of California Tribal Council

Robert Dorame, Chairperson
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gtongva@gmail.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 Resource Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources assessment for the proposed UCR Creekside Terrace Slope Protection Project, Riverside County.

**Native American Heritage Commission
Native American Contact List
Riverside County
6/27/2018**

Gabrielino-Tongva Tribe

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Gabrielino

Jamul Indian Village

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Kumeyaay

**La Jolla Band of Luiseno
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Luiseno

**La Posta Band of Mission
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Nation**

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Cupeno
Luiseno

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This list is only applicable for contacting local Native Americans with regard to cultural resources assessment for the proposed UCR Creekside Terrace Slope Protection Project, Riverside County.

**Native American Heritage Commission
Native American Contact List
Riverside County
6/27/2018**

**Pauma Band of Luiseno Indians
- Pauma & Yuima Reservation**

Temet Aguilar, Chairperson
P.O. Box 369 Luiseno
Pauma Valley, CA, 92061
Phone: (760) 742 - 1289
Fax: (760) 742-3422
bennaecalac@aol.com

Rincon Band of Mission Indians

Bo Mazzetti, Chairperson
1 West Tribal Road Luiseno
Valley Center, CA, 92082
Phone: (760) 749 - 1051
Fax: (760) 749-5144
bomazzetti@aol.com

**Pechanga Band of Mission
Indians**

Mark Macarro, Chairperson
P.O. Box 1477 Luiseno
Temecula, CA, 92593
Phone: (951) 770 - 6000
Fax: (951) 695-1778
epreston@pechanga-nsn.gov

Rincon Band of Mission Indians

Jim McPherson, Tribal Historic
Preservation Officer
1 West Tribal Road Luiseno
Valley Center, CA, 92082
Phone: (760) 749 - 1051
Fax: (760) 749-5144
vwhipple@rincontribe.org

**Pechanga Band of Mission
Indians**

Paul Macarro, Cultural Resources
Coordinator
P.O. Box 1477 Luiseno
Temecula, CA, 92593
Phone: (951) 770 - 6306
Fax: (951) 506-9491
pmacarro@pechanga-nsn.gov

**San Fernando Band of Mission
Indians**

Donna Yocum, Chairperson
P.O. Box 221838 Kitanemuk
Newhall, CA, 91322 Serrano
Phone: (503) 539 - 0933 Tataviam
Fax: (503) 574-3308
ddyocum@comcast.net

**Ramona Band of Cahuilla
Mission Indians**

Joseph Hamilton, Chairperson
P.O. Box 391670 Cahuilla
Anza, CA, 92539
Phone: (951) 763 - 4105
Fax: (951) 763-4325
admin@ramonatribe.com

**San Manuel Band of Mission
Indians**

Lee Clauss, Director of Cultural
Resources
26569 Community Center Drive Serrano
Highland, CA, 92346
Phone: (909) 864 - 8933
Fax: (909) 864-3370
lclauss@sanmanuel-nsn.gov

**Ramona Band of Cahuilla
Mission Indians**

John Gomez, Environmental
Coordinator
P. O. Box 391670 Cahuilla
Anza, CA, 92539
Phone: (951) 763 - 4105
Fax: (951) 763-4325
jgomez@ramonatribe.com

**San Pasqual Band of Mission
Indians**

Allen E. Lawson, Chairperson
P.O. Box 365 Kumeyaay
Valley Center, CA, 92082
Phone: (760) 749 - 3200
Fax: (760) 749-3876
allenl@sanpasqualtribe.org

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**Native American Heritage Commission
Native American Contact List
Riverside County
6/27/2018**

San Pasqual Band of Mission Indians

John Flores, Environmental Coordinator
P. O. Box 365
Valley Center, CA, 92082
Phone: (760) 749 - 3200
Fax: (760) 749-3876
johnf@sanpasqualtribe.org

Kumeyaay

Sycuan Band of the Kumeyaay Nation

Lisa Haws, Cultural Resources Manager
1 Kwaaypaay Court
El Cajon, CA, 92019
Phone: (619) 312 - 1935
lhaws@sycuan-nsn.gov

Kumeyaay

Santa Rosa Band of Mission Indians

Steven Estrada, Chairperson
P.O. Box 391820
Anza, CA, 92539
Phone: (951) 659 - 2700
Fax: (951) 659-2228
mflaxbeard@santarosacahuilla-nsn.gov

Cahuilla

Sycuan Band of the Kumeyaay Nation

Cody J. Martinez, Chairperson
1 Kwaaypaay Court
El Cajon, CA, 92019
Phone: (619) 445 - 2613
Fax: (619) 445-1927
ssilva@sycuan-nsn.gov

Kumeyaay

Serrano Nation of Mission Indians

Goldie Walker, Chairperson
P.O. Box 343
Patton, CA, 92369
Phone: (909) 528 - 9027

Serrano

Torres-Martinez Desert Cahuilla Indians

Michael Mirelez, Cultural Resource Coordinator
P.O. Box 1160
Thermal, CA, 92274
Phone: (760) 399 - 0022
Fax: (760) 397-8146
mmirelez@tmdci.org

Cahuilla

Soboba Band of Luiseno Indians

Joseph Ontiveros, Cultural Resource Department
P.O. BOX 487
San Jacinto, CA, 92581
Phone: (951) 663 - 5279
Fax: (951) 654-4198
jontiveros@soboba-nsn.gov

Cahuilla
Luiseno

Viejas Band of Kumeyaay Indians

Julie Hagen,
1 Viejas Grade Road
Alpine, CA, 91901
Phone: (619) 445 - 3810
Fax: (619) 445-5337
jhagen@viejas-nsn.gov

Kumeyaay

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

Viejas Band of Kumeyaay Indians

Robert Welch, Chairperson
1 Viejas Grade Road
Alpine, CA, 91901
Phone: (619) 445 - 3810
Fax: (619) 445-5337
jhagen@viejas-nsn.gov

Kumeyaay

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Rincon Consultants, Inc.

301 9th Street, Suite 310
Redlands, California 92374

909 253 0705 OFFICE AND FAX

info@rinconconsultants.com
www.rinconconsultants.com

October 2, 2018

Agua Caliente Band of Cahuilla Indians
Attn: Jeff Grubbe, Chairperson
5401 Dinah Shore Drive
Palm Springs, CA 92264

RE: Cultural Resources Assessment for the Creekside Drainage Channel Project, #950551, City of Riverside, California.

Dear Chairperson Grubbe:

Rincon Consultants, Inc. (Rincon) was retained by the University of California, Riverside (UCR), to provide cultural resources services for the Creekside Drainage Channel Project (project), #950551, generally located north of Central Avenue and east of Chicago Avenue in the Canyon Crest area of the city of Riverside, California (Figure 1). The project would include stabilization improvements within a previously-improved stream channel that lies adjacent to the University-owned residential development of Creekside Terrace. The project is subject to the requirements of the California Environmental Quality Act (CEQA). Additionally, due to the nature of the project and the presence of a stream channel, the cultural resources assessment will be prepared to comply with the requirements of CEQA and, if required, Section 106 of the National Historic Preservation Act in the event a Section 404 permit is required for the project. The lead agency under CEQA is UCR, which has initiated the separate consultation under Assembly Bill 52 of 2015.

As part of the process of identifying cultural resources for this project, UCR contacted the Native American Heritage Commission (NAHC) and requested a Sacred Lands File (SLF) search and a list of Native American tribal organizations and individuals who may have knowledge of sensitive cultural resources in or near the project area. On June 27, 2018 UCR received a response from the NAHC stating that the SLF search results were negative for site specific information and included a list of Native American tribes who may have knowledge of cultural resources in the project area.

If you have knowledge of cultural resources that may exist within or near the project site, please contact me in writing at bcampbell@rinconconsultants.com, or by telephone at (760) 918-9444, extension 217.

Sincerely,
Rincon Consultants, Inc.

A handwritten signature in black ink, appearing to read "Breana Campbell-King".

Breana Campbell-King, M.A., RPA
Archaeologist

Enclosure: Figure 1 Project Location Map



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301 9th Street, Suite 310
Redlands, California 92374

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www.rinconconsultants.com

October 2, 2018

Agua Caliente Band of Cahuilla Indians
Attn: Patricia Garcia-Plotkin, Director
5401 Dinah Shore Drive
Palm Springs, CA 92264

RE: Cultural Resources Assessment for the Creekside Drainage Channel Project, #950551, City of Riverside, California.

Dear Ms. Garcia-Plotkin:

Rincon Consultants, Inc. (Rincon) was retained by the University of California, Riverside (UCR), to provide cultural resources services for the Creekside Drainage Channel Project (project), #950551, generally located north of Central Avenue and east of Chicago Avenue in the Canyon Crest area of the city of Riverside, California (Figure 1). The project would include stabilization improvements within a previously-improved stream channel that lies adjacent to the University-owned residential development of Creekside Terrace. The project is subject to the requirements of the California Environmental Quality Act (CEQA). Additionally, due to the nature of the project and the presence of a stream channel, the cultural resources assessment will be prepared to comply with the requirements of CEQA and, if required, Section 106 of the National Historic Preservation Act in the event a Section 404 permit is required for the project. The lead agency under CEQA is UCR, which has initiated the separate consultation under Assembly Bill 52 of 2015.

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www.rinconconsultants.com

October 2, 2018

Augustine Band of Cahuilla Indians
Attn: Amanda Vance, Chairperson
P.O. Box 846
Coachella, Ca 92236

RE: Cultural Resources Assessment for the Creekside Drainage Channel Project, #950551, City of Riverside, California.

Dear Chairperson Vance:

Rincon Consultants, Inc. (Rincon) was retained by the University of California, Riverside (UCR), to provide cultural resources services for the Creekside Drainage Channel Project (project), #950551, generally located north of Central Avenue and east of Chicago Avenue in the Canyon Crest area of the city of Riverside, California (Figure 1). The project would include stabilization improvements within a previously-improved stream channel that lies adjacent to the University-owned residential development of Creekside Terrace. The project is subject to the requirements of the California Environmental Quality Act (CEQA). Additionally, due to the nature of the project and the presence of a stream channel, the cultural resources assessment will be prepared to comply with the requirements of CEQA and, if required, Section 106 of the National Historic Preservation Act in the event a Section 404 permit is required for the project. The lead agency under CEQA is UCR, which has initiated the separate consultation under Assembly Bill 52 of 2015.

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October 2, 2018

Cabazon Band of Mission Indians
Attn: Doug Welmas, Chairperson
84-245 Indio Springs Parkway
Indio, CA 92203

RE: Cultural Resources Assessment for the Creekside Drainage Channel Project, #950551, City of Riverside, California.

Dear Chairperson Welmas:

Rincon Consultants, Inc. (Rincon) was retained by the University of California, Riverside (UCR), to provide cultural resources services for the Creekside Drainage Channel Project (project), #950551, generally located north of Central Avenue and east of Chicago Avenue in the Canyon Crest area of the city of Riverside, California (Figure 1). The project would include stabilization improvements within a previously-improved stream channel that lies adjacent to the University-owned residential development of Creekside Terrace. The project is subject to the requirements of the California Environmental Quality Act (CEQA). Additionally, due to the nature of the project and the presence of a stream channel, the cultural resources assessment will be prepared to comply with the requirements of CEQA and, if required, Section 106 of the National Historic Preservation Act in the event a Section 404 permit is required for the project. The lead agency under CEQA is UCR, which has initiated the separate consultation under Assembly Bill 52 of 2015.

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www.rinconconsultants.com

October 2, 2018

Campo Band of Mission Indians
Ralph Goff, Chairperson
36190 Church Road, Suite 1
Campo, CA, 91906

RE: Cultural Resources Assessment for the Creekside Drainage Channel Project, #950551, City of Riverside, California.

Dear Chairperson Goff:

Rincon Consultants, Inc. (Rincon) was retained by the University of California, Riverside (UCR), to provide cultural resources services for the Creekside Drainage Channel Project (project), #950551, generally located north of Central Avenue and east of Chicago Avenue in the Canyon Crest area of the city of Riverside, California (Figure 1). The project would include stabilization improvements within a previously-improved stream channel that lies adjacent to the University-owned residential development of Creekside Terrace. The project is subject to the requirements of the California Environmental Quality Act (CEQA). Additionally, due to the nature of the project and the presence of a stream channel, the cultural resources assessment will be prepared to comply with the requirements of CEQA and, if required, Section 106 of the National Historic Preservation Act in the event a Section 404 permit is required for the project. The lead agency under CEQA is UCR, which has initiated the separate consultation under Assembly Bill 52 of 2015.

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October 2, 2018

Cahuilla Band of Indians
Attn: Daniel Salgado, Chairperson
52701 U.S. Highway 371
Anza, CA 92539

RE: Cultural Resources Assessment for the Creekside Drainage Channel Project, #950551, City of Riverside, California.

Dear Chairperson Salgado:

Rincon Consultants, Inc. (Rincon) was retained by the University of California, Riverside (UCR), to provide cultural resources services for the Creekside Drainage Channel Project (project), #950551, generally located north of Central Avenue and east of Chicago Avenue in the Canyon Crest area of the city of Riverside, California (Figure 1). The project would include stabilization improvements within a previously-improved stream channel that lies adjacent to the University-owned residential development of Creekside Terrace. The project is subject to the requirements of the California Environmental Quality Act (CEQA). Additionally, due to the nature of the project and the presence of a stream channel, the cultural resources assessment will be prepared to comply with the requirements of CEQA and, if required, Section 106 of the National Historic Preservation Act in the event a Section 404 permit is required for the project. The lead agency under CEQA is UCR, which has initiated the separate consultation under Assembly Bill 52 of 2015.

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Archaeologist

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October 2, 2018

Ewiiapaayp Tribal Office
Attn: Michael Garcia, Vice Chairperson
4054 Willows Road
Alpine, CA 91901

RE: Cultural Resources Assessment for the Creekside Drainage Channel Project, #950551, City of Riverside, California.

Dear Vice Chairperson Garcia:

Rincon Consultants, Inc. (Rincon) was retained by the University of California, Riverside (UCR), to provide cultural resources services for the Creekside Drainage Channel Project (project), #950551, generally located north of Central Avenue and east of Chicago Avenue in the Canyon Crest area of the city of Riverside, California (Figure 1). The project would include stabilization improvements within a previously-improved stream channel that lies adjacent to the University-owned residential development of Creekside Terrace. The project is subject to the requirements of the California Environmental Quality Act (CEQA). Additionally, due to the nature of the project and the presence of a stream channel, the cultural resources assessment will be prepared to comply with the requirements of CEQA and, if required, Section 106 of the National Historic Preservation Act in the event a Section 404 permit is required for the project. The lead agency under CEQA is UCR, which has initiated the separate consultation under Assembly Bill 52 of 2015.

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Archaeologist

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October 2, 2018

Ewiiapaayp Tribal Office
Attn: Robert Pinto, Chairperson
4054 Willows Road
Alpine, CA, 91901

RE: Cultural Resources Assessment for the Creekside Drainage Channel Project, #950551, City of Riverside, California.

Dear Chairperson Pinto:

Rincon Consultants, Inc. (Rincon) was retained by the University of California, Riverside (UCR), to provide cultural resources services for the Creekside Drainage Channel Project (project), #950551, generally located north of Central Avenue and east of Chicago Avenue in the Canyon Crest area of the city of Riverside, California (Figure 1). The project would include stabilization improvements within a previously-improved stream channel that lies adjacent to the University-owned residential development of Creekside Terrace. The project is subject to the requirements of the California Environmental Quality Act (CEQA). Additionally, due to the nature of the project and the presence of a stream channel, the cultural resources assessment will be prepared to comply with the requirements of CEQA and, if required, Section 106 of the National Historic Preservation Act in the event a Section 404 permit is required for the project. The lead agency under CEQA is UCR, which has initiated the separate consultation under Assembly Bill 52 of 2015.

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October 2, 2018

Gabrieleno Band of Mission Indians – Kizh Nation
Attn: Andrew Salas, Chairperson
P.O. Box 393
Covina, CA 91723

RE: Cultural Resources Assessment for the Creekside Drainage Channel Project, #950551, City of Riverside, California.

Dear Chairperson Salas:

Rincon Consultants, Inc. (Rincon) was retained by the University of California, Riverside (UCR), to provide cultural resources services for the Creekside Drainage Channel Project (project), #950551, generally located north of Central Avenue and east of Chicago Avenue in the Canyon Crest area of the city of Riverside, California (Figure 1). The project would include stabilization improvements within a previously-improved stream channel that lies adjacent to the University-owned residential development of Creekside Terrace. The project is subject to the requirements of the California Environmental Quality Act (CEQA). Additionally, due to the nature of the project and the presence of a stream channel, the cultural resources assessment will be prepared to comply with the requirements of CEQA and, if required, Section 106 of the National Historic Preservation Act in the event a Section 404 permit is required for the project. The lead agency under CEQA is UCR, which has initiated the separate consultation under Assembly Bill 52 of 2015.

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October 2, 2018

Gabrieleno/Tongva San Gabriel Band of Mission Indians
Attn: Anthony Morales, Chairperson
P.O. Box 693
San Gabriel, CA, 91778

RE: Cultural Resources Assessment for the Creekside Drainage Channel Project, #950551, City of Riverside, California.

Dear Chairperson Morales:

Rincon Consultants, Inc. (Rincon) was retained by the University of California, Riverside (UCR), to provide cultural resources services for the Creekside Drainage Channel Project (project), #950551, generally located north of Central Avenue and east of Chicago Avenue in the Canyon Crest area of the city of Riverside, California (Figure 1). The project would include stabilization improvements within a previously-improved stream channel that lies adjacent to the University-owned residential development of Creekside Terrace. The project is subject to the requirements of the California Environmental Quality Act (CEQA). Additionally, due to the nature of the project and the presence of a stream channel, the cultural resources assessment will be prepared to comply with the requirements of CEQA and, if required, Section 106 of the National Historic Preservation Act in the event a Section 404 permit is required for the project. The lead agency under CEQA is UCR, which has initiated the separate consultation under Assembly Bill 52 of 2015.

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October 2, 2018

Gabrielino /Tongva Nation
Attn: Sandonne Goad, Chairperson
106 1/2 Judge John Aiso St. #231
Los Angeles, CA, 90012

RE: Cultural Resources Assessment for the Creekside Drainage Channel Project, #950551, City of Riverside, California.

Dear Chairperson Goad:

Rincon Consultants, Inc. (Rincon) was retained by the University of California, Riverside (UCR), to provide cultural resources services for the Creekside Drainage Channel Project (project), #950551, generally located north of Central Avenue and east of Chicago Avenue in the Canyon Crest area of the city of Riverside, California (Figure 1). The project would include stabilization improvements within a previously-improved stream channel that lies adjacent to the University-owned residential development of Creekside Terrace. The project is subject to the requirements of the California Environmental Quality Act (CEQA). Additionally, due to the nature of the project and the presence of a stream channel, the cultural resources assessment will be prepared to comply with the requirements of CEQA and, if required, Section 106 of the National Historic Preservation Act in the event a Section 404 permit is required for the project. The lead agency under CEQA is UCR, which has initiated the separate consultation under Assembly Bill 52 of 2015.

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If you have knowledge of cultural resources that may exist within or near the project site, please contact me in writing at bcampbell@rinconconsultants.com, or by telephone at (760) 918-9444, extension 217.

Sincerely,

Rincon Consultants, Inc.

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Breana Campbell-King, M.A., RPA
Archaeologist

Enclosure: Figure 1 Project Location Map



Rincon Consultants, Inc.

301 9th Street, Suite 310
Redlands, California 92374

909 253 0705 OFFICE AND FAX

info@rinconconsultants.com
www.rinconconsultants.com

October 2, 2018

Gabrielino Tongva Indians of California Tribal Council
Attn: Robert Dorame, Chairperson
P.O. Box 490
Bellflower, CA, 90707

RE: Cultural Resources Assessment for the Creekside Drainage Channel Project, #950551, City of Riverside, California.

Dear Chairperson Dorame:

Rincon Consultants, Inc. (Rincon) was retained by the University of California, Riverside (UCR), to provide cultural resources services for the Creekside Drainage Channel Project (project), #950551, generally located north of Central Avenue and east of Chicago Avenue in the Canyon Crest area of the city of Riverside, California (Figure 1). The project would include stabilization improvements within a previously-improved stream channel that lies adjacent to the University-owned residential development of Creekside Terrace. The project is subject to the requirements of the California Environmental Quality Act (CEQA). Additionally, due to the nature of the project and the presence of a stream channel, the cultural resources assessment will be prepared to comply with the requirements of CEQA and, if required, Section 106 of the National Historic Preservation Act in the event a Section 404 permit is required for the project. The lead agency under CEQA is UCR, which has initiated the separate consultation under Assembly Bill 52 of 2015.

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October 2, 2018

Gabrielino-Tongva Tribe
Attn: Charles Alvarez
23454 Vanowen Street
West Hills, CA, 91307

RE: Cultural Resources Assessment for the Creekside Drainage Channel Project, #950551, City of Riverside, California.

Dear Mr. Alvarez:

Rincon Consultants, Inc. (Rincon) was retained by the University of California, Riverside (UCR), to provide cultural resources services for the Creekside Drainage Channel Project (project), #950551, generally located north of Central Avenue and east of Chicago Avenue in the Canyon Crest area of the city of Riverside, California (Figure 1). The project would include stabilization improvements within a previously-improved stream channel that lies adjacent to the University-owned residential development of Creekside Terrace. The project is subject to the requirements of the California Environmental Quality Act (CEQA). Additionally, due to the nature of the project and the presence of a stream channel, the cultural resources assessment will be prepared to comply with the requirements of CEQA and, if required, Section 106 of the National Historic Preservation Act in the event a Section 404 permit is required for the project. The lead agency under CEQA is UCR, which has initiated the separate consultation under Assembly Bill 52 of 2015.

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October 2, 2018

Jamul Indian Village
Attn: Erica Pinto, Chairperson
P.O. Box 612
Jamul, CA, 91935

RE: Cultural Resources Assessment for the Creekside Drainage Channel Project, #950551, City of Riverside, California.

Dear Chairperson Pinto:

Rincon Consultants, Inc. (Rincon) was retained by the University of California, Riverside (UCR), to provide cultural resources services for the Creekside Drainage Channel Project (project), #950551, generally located north of Central Avenue and east of Chicago Avenue in the Canyon Crest area of the city of Riverside, California (Figure 1). The project would include stabilization improvements within a previously-improved stream channel that lies adjacent to the University-owned residential development of Creekside Terrace. The project is subject to the requirements of the California Environmental Quality Act (CEQA). Additionally, due to the nature of the project and the presence of a stream channel, the cultural resources assessment will be prepared to comply with the requirements of CEQA and, if required, Section 106 of the National Historic Preservation Act in the event a Section 404 permit is required for the project. The lead agency under CEQA is UCR, which has initiated the separate consultation under Assembly Bill 52 of 2015.

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October 2, 2018

La Jolla Band of Luiseño Indians
Attn: Thomas Rodriguez, Chairperson
22000 Highway 76
Pauma Valley, CA, 92061

RE: Cultural Resources Assessment for the Creekside Drainage Channel Project, #950551, City of Riverside, California.

Dear Chairperson Rodriguez:

Rincon Consultants, Inc. (Rincon) was retained by the University of California, Riverside (UCR), to provide cultural resources services for the Creekside Drainage Channel Project (project), #950551, generally located north of Central Avenue and east of Chicago Avenue in the Canyon Crest area of the city of Riverside, California (Figure 1). The project would include stabilization improvements within a previously-improved stream channel that lies adjacent to the University-owned residential development of Creekside Terrace. The project is subject to the requirements of the California Environmental Quality Act (CEQA). Additionally, due to the nature of the project and the presence of a stream channel, the cultural resources assessment will be prepared to comply with the requirements of CEQA and, if required, Section 106 of the National Historic Preservation Act in the event a Section 404 permit is required for the project. The lead agency under CEQA is UCR, which has initiated the separate consultation under Assembly Bill 52 of 2015.

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October 2, 2018

La Posta Band of Mission Indians
Attn: Javaughn Miller, Tribal Administrator
8 Crestwood Road,
Boulevard, CA, 91905

RE: Cultural Resources Assessment for the Creekside Drainage Channel Project, #950551, City of Riverside, California.

Dear Tribal Administrator Miller:

Rincon Consultants, Inc. (Rincon) was retained by the University of California, Riverside (UCR), to provide cultural resources services for the Creekside Drainage Channel Project (project), #950551, generally located north of Central Avenue and east of Chicago Avenue in the Canyon Crest area of the city of Riverside, California (Figure 1). The project would include stabilization improvements within a previously-improved stream channel that lies adjacent to the University-owned residential development of Creekside Terrace. The project is subject to the requirements of the California Environmental Quality Act (CEQA). Additionally, due to the nature of the project and the presence of a stream channel, the cultural resources assessment will be prepared to comply with the requirements of CEQA and, if required, Section 106 of the National Historic Preservation Act in the event a Section 404 permit is required for the project. The lead agency under CEQA is UCR, which has initiated the separate consultation under Assembly Bill 52 of 2015.

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October 2, 2018

La Posta Band of Mission Indians
Attn: Gwendolyn Parada, Chairperson
8 Crestwood Road,
Boulevard, CA, 91905

RE: Cultural Resources Assessment for the Creekside Drainage Channel Project, #950551, City of Riverside, California.

Dear Chairperson Parada:

Rincon Consultants, Inc. (Rincon) was retained by the University of California, Riverside (UCR), to provide cultural resources services for the Creekside Drainage Channel Project (project), #950551, generally located north of Central Avenue and east of Chicago Avenue in the Canyon Crest area of the city of Riverside, California (Figure 1). The project would include stabilization improvements within a previously-improved stream channel that lies adjacent to the University-owned residential development of Creekside Terrace. The project is subject to the requirements of the California Environmental Quality Act (CEQA). Additionally, due to the nature of the project and the presence of a stream channel, the cultural resources assessment will be prepared to comply with the requirements of CEQA and, if required, Section 106 of the National Historic Preservation Act in the event a Section 404 permit is required for the project. The lead agency under CEQA is UCR, which has initiated the separate consultation under Assembly Bill 52 of 2015.

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October 2, 2018

Los Coyotes Band of Mission Indians
Attn: Shane Chapparosa, Chairperson
P. O. Box 189
Warner Springs, CA, 92086

RE: Cultural Resources Assessment for the Creekside Drainage Channel Project, #950551, City of Riverside, California.

Dear Chairperson Chapparosa:

Rincon Consultants, Inc. (Rincon) was retained by the University of California, Riverside (UCR), to provide cultural resources services for the Creekside Drainage Channel Project (project), #950551, generally located north of Central Avenue and east of Chicago Avenue in the Canyon Crest area of the city of Riverside, California (Figure 1). The project would include stabilization improvements within a previously-improved stream channel that lies adjacent to the University-owned residential development of Creekside Terrace. The project is subject to the requirements of the California Environmental Quality Act (CEQA). Additionally, due to the nature of the project and the presence of a stream channel, the cultural resources assessment will be prepared to comply with the requirements of CEQA and, if required, Section 106 of the National Historic Preservation Act in the event a Section 404 permit is required for the project. The lead agency under CEQA is UCR, which has initiated the separate consultation under Assembly Bill 52 of 2015.

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October 2, 2018

Los Coyotes Band of Mission Indians
Attn: John Perada, Environmental Director
P. O. Box 189
Warner Springs, CA, 92086

RE: Cultural Resources Assessment for the Creekside Drainage Channel Project, #950551, City of Riverside, California.

Dear Mr. Perada:

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October 2, 2018

Manzanita Band of Kumeyaay Nation
Attn: Angela Elliott Santos, Chairperson
P.O. Box 1302
Boulevard, CA, 91905

RE: Cultural Resources Assessment for the Creekside Drainage Channel Project, #950551, City of Riverside, California.

Dear Chairperson Santos:

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October 2, 2018

Morongo Band of Mission Indians
Attn: Denisa Torres, Cultural Resources Manager
12700 Pumarra Road
Banning, CA, 92220

RE: Cultural Resources Assessment for the Creekside Drainage Channel Project, #950551, City of Riverside, California.

Dear Ms. Torres:

Rincon Consultants, Inc. (Rincon) was retained by the University of California, Riverside (UCR), to provide cultural resources services for the Creekside Drainage Channel Project (project), #950551, generally located north of Central Avenue and east of Chicago Avenue in the Canyon Crest area of the city of Riverside, California (Figure 1). The project would include stabilization improvements within a previously-improved stream channel that lies adjacent to the University-owned residential development of Creekside Terrace. The project is subject to the requirements of the California Environmental Quality Act (CEQA). Additionally, due to the nature of the project and the presence of a stream channel, the cultural resources assessment will be prepared to comply with the requirements of CEQA and, if required, Section 106 of the National Historic Preservation Act in the event a Section 404 permit is required for the project. The lead agency under CEQA is UCR, which has initiated the separate consultation under Assembly Bill 52 of 2015.

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October 2, 2018

Morongo Band of Mission Indians
Attn: Robert Martin, Chairperson
12700 Pumarra Road
Banning, CA 92220

RE: Cultural Resources Assessment for the Creekside Drainage Channel Project, #950551, City of Riverside, California.

Dear Chairperson Martin:

Rincon Consultants, Inc. (Rincon) was retained by the University of California, Riverside (UCR), to provide cultural resources services for the Creekside Drainage Channel Project (project), #950551, generally located north of Central Avenue and east of Chicago Avenue in the Canyon Crest area of the city of Riverside, California (Figure 1). The project would include stabilization improvements within a previously-improved stream channel that lies adjacent to the University-owned residential development of Creekside Terrace. The project is subject to the requirements of the California Environmental Quality Act (CEQA). Additionally, due to the nature of the project and the presence of a stream channel, the cultural resources assessment will be prepared to comply with the requirements of CEQA and, if required, Section 106 of the National Historic Preservation Act in the event a Section 404 permit is required for the project. The lead agency under CEQA is UCR, which has initiated the separate consultation under Assembly Bill 52 of 2015.

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October 2, 2018

Pala Band of Mission Indians
Attn: Shasta Gaughen, Tribal Historic Preservation Officer
PMB 50, 35008 Pala Temecula Road
Pala, CA 92059

RE: Cultural Resources Assessment for the Creekside Drainage Channel Project, #950551, City of Riverside, California.

Dear Ms. Gaughen:

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October 2, 2018

Pauma Band of Luiseño Indians- Pauma & Yuima Reservation
Attn: Temet Aguilar, Chairperson
P.O. Box 369
Pauma Valley, CA, 92061

RE: Cultural Resources Assessment for the Creekside Drainage Channel Project, #950551, City of Riverside, California.

Dear Chairperson Aguilar:

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October 2, 2018

Pechanga Band of Mission Indians
Attn: Mark Macarro, Chairperson
P.O. Box 1477
Temecula, CA, 92593

RE: Cultural Resources Assessment for the Creekside Drainage Channel Project, #950551, City of Riverside, California.

Dear Chairperson Macarro:

Rincon Consultants, Inc. (Rincon) was retained by the University of California, Riverside (UCR), to provide cultural resources services for the Creekside Drainage Channel Project (project), #950551, generally located north of Central Avenue and east of Chicago Avenue in the Canyon Crest area of the city of Riverside, California (Figure 1). The project would include stabilization improvements within a previously-improved stream channel that lies adjacent to the University-owned residential development of Creekside Terrace. The project is subject to the requirements of the California Environmental Quality Act (CEQA). Additionally, due to the nature of the project and the presence of a stream channel, the cultural resources assessment will be prepared to comply with the requirements of CEQA and, if required, Section 106 of the National Historic Preservation Act in the event a Section 404 permit is required for the project. The lead agency under CEQA is UCR, which has initiated the separate consultation under Assembly Bill 52 of 2015.

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If you have knowledge of cultural resources that may exist within or near the project site, please contact me in writing at bcampbell@rinconconsultants.com, or by telephone at (760) 918-9444, extension 217.

Sincerely,
Rincon Consultants, Inc.

A handwritten signature in black ink, appearing to read "Breana Campbell-King".

Breana Campbell-King, M.A., RPA
Archaeologist

Enclosure: Figure 1 Project Location Map



Rincon Consultants, Inc.

301 9th Street, Suite 310
Redlands, California 92374

909 253 0705 OFFICE AND FAX

info@rinconconsultants.com
www.rinconconsultants.com

October 2, 2018

Pechanga Band of Mission Indians
Attn: Paul Macarro, Cultural Resources Coordinator
P.O. Box 1477
Temecula, CA, 92593

RE: Cultural Resources Assessment for the Creekside Drainage Channel Project, #950551, City of Riverside, California.

Dear Mr. Macarro:

Rincon Consultants, Inc. (Rincon) was retained by the University of California, Riverside (UCR), to provide cultural resources services for the Creekside Drainage Channel Project (project), #950551, generally located north of Central Avenue and east of Chicago Avenue in the Canyon Crest area of the city of Riverside, California (Figure 1). The project would include stabilization improvements within a previously-improved stream channel that lies adjacent to the University-owned residential development of Creekside Terrace. The project is subject to the requirements of the California Environmental Quality Act (CEQA). Additionally, due to the nature of the project and the presence of a stream channel, the cultural resources assessment will be prepared to comply with the requirements of CEQA and, if required, Section 106 of the National Historic Preservation Act in the event a Section 404 permit is required for the project. The lead agency under CEQA is UCR, which has initiated the separate consultation under Assembly Bill 52 of 2015.

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October 2, 2018

Ramona Band of Cahuilla Mission Indians
Attn: Joseph Hamilton
P.O. Box 391670
Anza, CA, 92539

RE: Cultural Resources Assessment for the Creekside Drainage Channel Project, #950551, City of Riverside, California.

Dear Mr. Hamilton:

Rincon Consultants, Inc. (Rincon) was retained by the University of California, Riverside (UCR), to provide cultural resources services for the Creekside Drainage Channel Project (project), #950551, generally located north of Central Avenue and east of Chicago Avenue in the Canyon Crest area of the city of Riverside, California (Figure 1). The project would include stabilization improvements within a previously-improved stream channel that lies adjacent to the University-owned residential development of Creekside Terrace. The project is subject to the requirements of the California Environmental Quality Act (CEQA). Additionally, due to the nature of the project and the presence of a stream channel, the cultural resources assessment will be prepared to comply with the requirements of CEQA and, if required, Section 106 of the National Historic Preservation Act in the event a Section 404 permit is required for the project. The lead agency under CEQA is UCR, which has initiated the separate consultation under Assembly Bill 52 of 2015.

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October 2, 2018

Ramona Band of Cahuilla Mission Indians
Attn: John Gomez, Environmental Coordinator
P.O. Box 391670
Anza, CA, 92539

RE: Cultural Resources Assessment for the Creekside Drainage Channel Project, #950551, City of Riverside, California.

Dear Mr. Gomez:

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October 2, 2018

Rincon Band of Mission Indians
Attn: Bo Mazetti, Chairperson
1 West Tribal Road
Valley Center, CA, 92082

RE: Cultural Resources Assessment for the Creekside Drainage Channel Project, #950551, City of Riverside, California.

Dear Chairperson Mazetti:

Rincon Consultants, Inc. (Rincon) was retained by the University of California, Riverside (UCR), to provide cultural resources services for the Creekside Drainage Channel Project (project), #950551, generally located north of Central Avenue and east of Chicago Avenue in the Canyon Crest area of the city of Riverside, California (Figure 1). The project would include stabilization improvements within a previously-improved stream channel that lies adjacent to the University-owned residential development of Creekside Terrace. The project is subject to the requirements of the California Environmental Quality Act (CEQA). Additionally, due to the nature of the project and the presence of a stream channel, the cultural resources assessment will be prepared to comply with the requirements of CEQA and, if required, Section 106 of the National Historic Preservation Act in the event a Section 404 permit is required for the project. The lead agency under CEQA is UCR, which has initiated the separate consultation under Assembly Bill 52 of 2015.

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October 2, 2018

Rincon Band of Mission Indians
Attn: Jim McPherson, Tribal Historic Preservation Officer
1 West Tribal Road
Valley Center, CA, 92082

RE: Cultural Resources Assessment for the Creekside Drainage Channel Project, #950551, City of Riverside, California.

Dear Mr. McPherson:

Rincon Consultants, Inc. (Rincon) was retained by the University of California, Riverside (UCR), to provide cultural resources services for the Creekside Drainage Channel Project (project), #950551, generally located north of Central Avenue and east of Chicago Avenue in the Canyon Crest area of the city of Riverside, California (Figure 1). The project would include stabilization improvements within a previously-improved stream channel that lies adjacent to the University-owned residential development of Creekside Terrace. The project is subject to the requirements of the California Environmental Quality Act (CEQA). Additionally, due to the nature of the project and the presence of a stream channel, the cultural resources assessment will be prepared to comply with the requirements of CEQA and, if required, Section 106 of the National Historic Preservation Act in the event a Section 404 permit is required for the project. The lead agency under CEQA is UCR, which has initiated the separate consultation under Assembly Bill 52 of 2015.

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October 2, 2018

San Fernando Band of Mission Indians
Attn: Donna Yocum, Chairperson
P.O. Box 221838
Newhall, CA 91322

RE: Cultural Resources Assessment for the Creekside Drainage Channel Project, #950551, City of Riverside, California.

Dear Chairperson Yocum:

Rincon Consultants, Inc. (Rincon) was retained by the University of California, Riverside (UCR), to provide cultural resources services for the Creekside Drainage Channel Project (project), #950551, generally located north of Central Avenue and east of Chicago Avenue in the Canyon Crest area of the city of Riverside, California (Figure 1). The project would include stabilization improvements within a previously-improved stream channel that lies adjacent to the University-owned residential development of Creekside Terrace. The project is subject to the requirements of the California Environmental Quality Act (CEQA). Additionally, due to the nature of the project and the presence of a stream channel, the cultural resources assessment will be prepared to comply with the requirements of CEQA and, if required, Section 106 of the National Historic Preservation Act in the event a Section 404 permit is required for the project. The lead agency under CEQA is UCR, which has initiated the separate consultation under Assembly Bill 52 of 2015.

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October 2, 2018

San Manuel Band of Mission Indians
Attn: Lee Clauss, Director of Cultural Resources
26569 Community Center Drive
Highland, CA, 92346

RE: Cultural Resources Assessment for the Creekside Drainage Channel Project, #950551, City of Riverside, California.

Dear Director of Cultural Resources Clauss:

Rincon Consultants, Inc. (Rincon) was retained by the University of California, Riverside (UCR), to provide cultural resources services for the Creekside Drainage Channel Project (project), #950551, generally located north of Central Avenue and east of Chicago Avenue in the Canyon Crest area of the city of Riverside, California (Figure 1). The project would include stabilization improvements within a previously-improved stream channel that lies adjacent to the University-owned residential development of Creekside Terrace. The project is subject to the requirements of the California Environmental Quality Act (CEQA). Additionally, due to the nature of the project and the presence of a stream channel, the cultural resources assessment will be prepared to comply with the requirements of CEQA and, if required, Section 106 of the National Historic Preservation Act in the event a Section 404 permit is required for the project. The lead agency under CEQA is UCR, which has initiated the separate consultation under Assembly Bill 52 of 2015.

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October 2, 2018

San Pasqual Band of Mission Indians
Attn: John Flores, Environmental Coordinator
P.O. Box 365
Valley Center, CA, 92082

RE: Cultural Resources Assessment for the Creekside Drainage Channel Project, #950551, City of Riverside, California.

Dear Mr. Flores:

Rincon Consultants, Inc. (Rincon) was retained by the University of California, Riverside (UCR), to provide cultural resources services for the Creekside Drainage Channel Project (project), #950551, generally located north of Central Avenue and east of Chicago Avenue in the Canyon Crest area of the city of Riverside, California (Figure 1). The project would include stabilization improvements within a previously-improved stream channel that lies adjacent to the University-owned residential development of Creekside Terrace. The project is subject to the requirements of the California Environmental Quality Act (CEQA). Additionally, due to the nature of the project and the presence of a stream channel, the cultural resources assessment will be prepared to comply with the requirements of CEQA and, if required, Section 106 of the National Historic Preservation Act in the event a Section 404 permit is required for the project. The lead agency under CEQA is UCR, which has initiated the separate consultation under Assembly Bill 52 of 2015.

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October 2, 2018

San Pasqual Band of Mission Indians
Attn: Allen E. Lawson, Chairperson
P.O. Box 365
Valley Center, CA, 92082

RE: Cultural Resources Assessment for the Creekside Drainage Channel Project, #950551, City of Riverside, California.

Dear Chairperson Lawson:

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October 2, 2018

Santa Rosa Band of Mission Indians
Attn: Steven Estrada, Chairperson
P.O. Box 391820
Anza, CA 92539

RE: Cultural Resources Assessment for the Creekside Drainage Channel Project, #950551, City of Riverside, California.

Dear Chairperson Estrada:

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October 2, 2018

Serrano Nation of Mission Indians
Attn: Goldie Walker, Chairperson
P.O. Box 343
Patton, CA 92369

RE: Cultural Resources Assessment for the Creekside Drainage Channel Project, #950551, City of Riverside, California.

Dear Chairperson Walker:

Rincon Consultants, Inc. (Rincon) was retained by the University of California, Riverside (UCR), to provide cultural resources services for the Creekside Drainage Channel Project (project), #950551, generally located north of Central Avenue and east of Chicago Avenue in the Canyon Crest area of the city of Riverside, California (Figure 1). The project would include stabilization improvements within a previously-improved stream channel that lies adjacent to the University-owned residential development of Creekside Terrace. The project is subject to the requirements of the California Environmental Quality Act (CEQA). Additionally, due to the nature of the project and the presence of a stream channel, the cultural resources assessment will be prepared to comply with the requirements of CEQA and, if required, Section 106 of the National Historic Preservation Act in the event a Section 404 permit is required for the project. The lead agency under CEQA is UCR, which has initiated the separate consultation under Assembly Bill 52 of 2015.

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October 2, 2018

Soboba Band of Luiseño Indians
Attn: Scott Cozart, Chairperson
P.O. Box 487
San Jacinto, CA, 92583

RE: Cultural Resources Assessment for the Creekside Drainage Channel Project, #950551, City of Riverside, California.

Dear Chairperson Cozart:

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October 2, 2018

Soboba Band of Luiseño Indians
Attn: Joseph Ontiveros, Cultural Resource Department
P.O. Box 487
San Jacinto, CA, 92583

RE: Cultural Resources Assessment for the Creekside Drainage Channel Project, #950551, City of Riverside, California.

Dear Mr. Ontiveros:

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October 2, 2018

Sycuan Band of the Kumeyaay Nation
Attn: Cody J. Martinez, Chairperson
1 Kwaaypaay Court
El Cajon, CA, 92019

RE: Cultural Resources Assessment for the Creekside Drainage Channel Project, #950551, City of Riverside, California.

Dear Chairperson Martinez:

Rincon Consultants, Inc. (Rincon) was retained by the University of California, Riverside (UCR), to provide cultural resources services for the Creekside Drainage Channel Project (project), #950551, generally located north of Central Avenue and east of Chicago Avenue in the Canyon Crest area of the city of Riverside, California (Figure 1). The project would include stabilization improvements within a previously-improved stream channel that lies adjacent to the University-owned residential development of Creekside Terrace. The project is subject to the requirements of the California Environmental Quality Act (CEQA). Additionally, due to the nature of the project and the presence of a stream channel, the cultural resources assessment will be prepared to comply with the requirements of CEQA and, if required, Section 106 of the National Historic Preservation Act in the event a Section 404 permit is required for the project. The lead agency under CEQA is UCR, which has initiated the separate consultation under Assembly Bill 52 of 2015.

As part of the process of identifying cultural resources for this project, UCR contacted the Native American Heritage Commission (NAHC) and requested a Sacred Lands File (SLF) search and a list of Native American tribal organizations and individuals who may have knowledge of sensitive cultural resources in or near the project area. On June 27, 2018 UCR received a response from the NAHC stating that the SLF search results were negative for site specific information and included a list of Native American tribes who may have knowledge of cultural resources in the project area.

If you have knowledge of cultural resources that may exist within or near the project site, please contact me in writing at bcampbell@rinconconsultants.com, or by telephone at (760) 918-9444, extension 217.

Sincerely,
Rincon Consultants, Inc.

A handwritten signature in black ink, appearing to read "Breana Campbell-King".

Breana Campbell-King, M.A., RPA
Archaeologist

Enclosure: Figure 1 Project Location Map



Rincon Consultants, Inc.

301 9th Street, Suite 310
Redlands, California 92374

909 253 0705 OFFICE AND FAX

info@rinconconsultants.com
www.rinconconsultants.com

October 2, 2018

Sycuan Band of the Kumeyaay Nation
Attn: Lisa Haws, Cultural Resources Manager
1 Kwaaypaay Court
El Cajon, CA, 92019

RE: Cultural Resources Assessment for the Creekside Drainage Channel Project, #950551, City of Riverside, California.

Dear Ms. Haws:

Rincon Consultants, Inc. (Rincon) was retained by the University of California, Riverside (UCR), to provide cultural resources services for the Creekside Drainage Channel Project (project), #950551, generally located north of Central Avenue and east of Chicago Avenue in the Canyon Crest area of the city of Riverside, California (Figure 1). The project would include stabilization improvements within a previously-improved stream channel that lies adjacent to the University-owned residential development of Creekside Terrace. The project is subject to the requirements of the California Environmental Quality Act (CEQA). Additionally, due to the nature of the project and the presence of a stream channel, the cultural resources assessment will be prepared to comply with the requirements of CEQA and, if required, Section 106 of the National Historic Preservation Act in the event a Section 404 permit is required for the project. The lead agency under CEQA is UCR, which has initiated the separate consultation under Assembly Bill 52 of 2015.

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October 2, 2018

Torres-Martinez Desert Cahuilla Indians
Attn: Michael Mirelez, Cultural Resource Coordinator
P.O. Box 1160
Thermal, CA 92274

RE: Cultural Resources Assessment for the Creekside Drainage Channel Project, #950551, City of Riverside, California.

Dear Mr. Mirelez:

Rincon Consultants, Inc. (Rincon) was retained by the University of California, Riverside (UCR), to provide cultural resources services for the Creekside Drainage Channel Project (project), #950551, generally located north of Central Avenue and east of Chicago Avenue in the Canyon Crest area of the city of Riverside, California (Figure 1). The project would include stabilization improvements within a previously-improved stream channel that lies adjacent to the University-owned residential development of Creekside Terrace. The project is subject to the requirements of the California Environmental Quality Act (CEQA). Additionally, due to the nature of the project and the presence of a stream channel, the cultural resources assessment will be prepared to comply with the requirements of CEQA and, if required, Section 106 of the National Historic Preservation Act in the event a Section 404 permit is required for the project. The lead agency under CEQA is UCR, which has initiated the separate consultation under Assembly Bill 52 of 2015.

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Breana Campbell-King, M.A., RPA
Archaeologist

Enclosure: Figure 1 Project Location Map



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October 2, 2018

Viejas Band of Kumeyaay Indians
Attn: Julie Hagen
1 Viejas Grade Road
Alpine, CA, 91901

RE: Cultural Resources Assessment for the Creekside Drainage Channel Project, #950551, City of Riverside, California.

Dear Ms. Hagen:

Rincon Consultants, Inc. (Rincon) was retained by the University of California, Riverside (UCR), to provide cultural resources services for the Creekside Drainage Channel Project (project), #950551, generally located north of Central Avenue and east of Chicago Avenue in the Canyon Crest area of the city of Riverside, California (Figure 1). The project would include stabilization improvements within a previously-improved stream channel that lies adjacent to the University-owned residential development of Creekside Terrace. The project is subject to the requirements of the California Environmental Quality Act (CEQA). Additionally, due to the nature of the project and the presence of a stream channel, the cultural resources assessment will be prepared to comply with the requirements of CEQA and, if required, Section 106 of the National Historic Preservation Act in the event a Section 404 permit is required for the project. The lead agency under CEQA is UCR, which has initiated the separate consultation under Assembly Bill 52 of 2015.

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Sincerely,
Rincon Consultants, Inc.

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Breana Campbell-King, M.A., RPA
Archaeologist

Enclosure: Figure 1 Project Location Map



Rincon Consultants, Inc.

301 9th Street, Suite 310
Redlands, California 92374

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info@rinconconsultants.com
www.rinconconsultants.com

October 2, 2018

Viejas Band of Kumeyaay Indians
Attn: Robert Welch, Chairperson
1 Viejas Grade Road
Alpine, CA, 91901

RE: Cultural Resources Assessment for the Creekside Drainage Channel Project, #950551, City of Riverside, California.

Dear Chairperson Welch:

Rincon Consultants, Inc. (Rincon) was retained by the University of California, Riverside (UCR), to provide cultural resources services for the Creekside Drainage Channel Project (project), #950551, generally located north of Central Avenue and east of Chicago Avenue in the Canyon Crest area of the city of Riverside, California (Figure 1). The project would include stabilization improvements within a previously-improved stream channel that lies adjacent to the University-owned residential development of Creekside Terrace. The project is subject to the requirements of the California Environmental Quality Act (CEQA). Additionally, due to the nature of the project and the presence of a stream channel, the cultural resources assessment will be prepared to comply with the requirements of CEQA and, if required, Section 106 of the National Historic Preservation Act in the event a Section 404 permit is required for the project. The lead agency under CEQA is UCR, which has initiated the separate consultation under Assembly Bill 52 of 2015.

As part of the process of identifying cultural resources for this project, UCR contacted the Native American Heritage Commission (NAHC) and requested a Sacred Lands File (SLF) search and a list of Native American tribal organizations and individuals who may have knowledge of sensitive cultural resources in or near the project area. On June 27, 2018 UCR received a response from the NAHC stating that the SLF search results were negative for site specific information and included a list of Native American tribes who may have knowledge of cultural resources in the project area.

If you have knowledge of cultural resources that may exist within or near the project site, please contact me in writing at bcampbell@rinconconsultants.com, or by telephone at (760) 918-9444, extension 217.

Sincerely,
Rincon Consultants, Inc.

A handwritten signature in black ink, appearing to read "Breana Campbell-King". The signature is fluid and cursive, written over a white background.

Breana Campbell-King, M.A., RPA
Archaeologist

Enclosure: Figure 1 Project Location Map

VIEJAS

TRIBAL GOVERNMENT

P.O. Box 908
Alpine, CA 91903
#1 Viejas Grade Road
Alpine, CA 91901

Phone: 6194453810
Fax: 6194455337
viejas.com

October 9, 2018

Breana Campbell-King
Archaeologist
Rincon Consultants, Inc.
301 9th Street, Suite 310
Redlands, CA 92374

Re: Creekside Drainage Channel Project

Dear Ms. Campbell-King,

The Viejas Band of Kumeyaay Indians ("Viejas") has reviewed the proposed project and at this time we have determined that the project site has little cultural significance or ties to Viejas. We further recommend that you contact the tribe(s) closest to the cultural resources. We, however, request to be informed of any new developments such as inadvertent discovery of cultural artifacts, cremation sites, or human remains in order for us to reevaluate our participation in the government-to-government consultation process.

Please do not hesitate to contact me if you have further questions. Please call Ernest Pingleton at 619-659-2314 or me at 619-659-2312, or email, epingleton@viejas-nsn.gov or rteran@viejas-nsn.gov. Thank you.

Sincerely,



Ray Teran, Resource Management
VIEJAS BAND OF KUMEYAAY INDIANS

Breana Campbell

From: Jessica Mauck <JMauck@sanmanuel-nsn.gov>
Sent: Wednesday, October 10, 2018 9:33 AM
To: Breana Campbell
Subject: Creekside Drainage Channel Project, #950551, City of Riverside, California

Hi Breana,

Thank you for contacting the San Manuel Band of Mission Indians (SMBMI) regarding the above referenced project. SMBMI appreciates the opportunity to review the project documentation, which was received by our Cultural Resources Management Department on 8 October 2018. The proposed project is located just outside of Serrano ancestral territory and, as such, SMBMI will not be requesting consulting party status with the lead agency or requesting to participate in the scoping, development, and/or review of documents created pursuant to these legal and regulatory mandates.

Regards,

Jessica Mauck

CULTURAL RESOURCES ANALYST

O: (909) 864-8933 x3249

M: (909) 725-9054

26569 Community Center Drive Highland California 92346



THIS MESSAGE IS INTENDED ONLY FOR THE USE OF THE INDIVIDUAL OR ENTITY TO WHICH IT IS ADDRESSED AND MAY CONTAIN INFORMATION THAT IS PRIVILEGED, CONFIDENTIAL AND EXEMPT FROM DISCLOSURE UNDER APPLICABLE LAW. If the reader of this message is not the intended recipient or agent responsible for delivering the message to the intended recipient, you are hereby notified that any dissemination or copying of this communication is strictly prohibited. If you have received this electronic transmission in error, please delete it from your system without copying it and notify the sender by reply e-mail so that the email address record can be corrected. Thank You



AUGUSTINE BAND OF CAHUILLA INDIANS

PO Box 846 84-481 Avenue 54 Coachella CA 92236

Telephone: (760) 398-4722

Fax (760) 369-7161

Tribal Chairperson: Amanda Vance

Tribal Vice-Chairperson: William Vance

Tribal Secretary: Victoria Martin

October 16, 2018

Breana Campbell-King
Rincon Consultants, Inc.
301 9th Street, Suite 310
Redlands, CA 92374

**Re: Cultural Resources Assessment for the Creekside Drainage Channel Project,
#950551, City of Riverside, California**

Dear Mrs. King–

Thank you for the opportunity to offer input concerning the development of the above-identified project. We appreciate your sensitivity to the cultural resources that may be impacted by your project, and the importance of these cultural resources to the Native American peoples that have occupied the land surrounding the area of your project for thousands of years. Unfortunately, increased development and lack of sensitivity to cultural resources has resulted in many significant cultural resources being destroyed or substantially altered and impacted. Your invitation to consult on this project is greatly appreciated.

At this time we are unaware of specific cultural resources that may be affected by the proposed project. We encourage you to contact other Native American Tribes and individuals within the immediate vicinity of the project site that may have specific information concerning cultural resources that may be located in the area. We also encourage you to contract with a monitor who is qualified in Native American cultural resources identification and who is able to be present on-site full-time during the pre-construction and construction phase of the project. Please notify us immediately should you discover any cultural resources during the development of this project.

Very truly yours,

Victoria Martin
Tribal Secretary



02-032-2018-003

November 07, 2018

[VIA EMAIL TO:bcampbell@rinconconsultants.com]
Rincon Consultants, Inc.
Ms. Breana Campbell
301 9th Street, Suite 201
Redlands, CA 92374

Re: Creekside Drainage Channel, #950551

Dear Ms. Breana Campbell,

The Agua Caliente Band of Cahuilla Indians (ACBCI) appreciates your efforts to include the Tribal Historic Preservation Office (THPO) in the Creekside Drainage Project project. The project area is not located within the boundaries of the ACBCI Reservation. However, it is within the Tribe's Traditional Use Area. For this reason, the ACBCI THPO requests the following:

- *A copy of the records search with associated survey reports and site records from the information center.
- *A cultural resources inventory of the project area by a qualified archaeologist prior to any development activities in this area.
- *Copies of any cultural resource documentation (report and site records) generated in connection with this project.

Again, the Agua Caliente appreciates your interest in our cultural heritage. If you have questions or require additional information, please call me at (760)699-6956. You may also email me at ACBCI-THPO@aguacaliente.net.

Cordially,

Lacy Padilla
Archaeological Technician
Tribal Historic Preservation Office
AGUA CALIENTE BAND
OF CAHUILLA INDIANS



Native American Contact Table
Creekside Drainage Project, #950551, University of California, Riverside, California

Native American Contact	Tribal Affiliation	Mailing Address	Email Address	Phone Number	Contact Attempt	Follow Up	Results
Jeff Grubbe, Chairperson	Agua Caliente Band of Cahuilla Indians (ACBCI)	5401 Dinah Shore Drive Palm Springs, CA 92264	n/a	760-699-6800	10/2/2018 Rincon sent a letter.	10/11/2018 Follow-up phone call	10/11/2018 Rincon was transferred to Laura Aviles who stated she had not received the letter yet. Ms. Aviles requested Rincon send a copy of the letter and map via email to laviles@aguacaliente.net Rincon sent the email 10/11/2018.
Patricia Garcia-Plotkin, Director	Agua Caliente Band of Cahuilla Indians	5401 Dinah Shore Drive Palm Springs, CA, 92264	ACBCI-THPO@aguacaliente.net	760-699-6907	10/2/2018 Rincon sent a letter.	10/11/2018 Follow-up phone call	10/11/2018 Rincon left a voice message. 11/07/2018 sent response via email requesting the report be sent to them after it is completed.



Native American Contact	Tribal Affiliation	Mailing Address	Email Address	Phone Number	Contact Attempt	Follow Up	Results
Amanda Vance, Chairperson	Augustine Band of Cahuilla Indians	P.O. Box 846 Coachella, Ca 92236	hhaines@augustine-tribe.com	760-398- 4722	10/2/2018 Rincon sent a letter.	10/11/2018 Follow-up phone call	10/11/2018 Rincon was transferred to Heather Haines who stated she had no comments regarding the project. 10/25/2018 Rincon received a letter dated 10/16/2018 from Victoria Martin who stated that Augustine is unaware of specific cultural resources that may be affected by the project and encouraged project to contract with a monitor.
Doug Welmas, Chairperson	Cabazon Band of Mission Indians	84-245 Indio Springs Parkway Indio, CA 92203	dstapp@cabazonindians-nsn.gov	760-342- 2593	10/2/2018 Rincon sent a letter.	10/11/2018 Follow-up phone call	10/11/2018 Rincon left a voice message.
Ralph Goff, Chairperson	Campo Band of Mission Indians	36190 Church Road, Suite 1 Campo, CA, 91906	rgoff@camp-nsn.gov	619-478- 9046	10/2/2018 Rincon sent a letter.	10/11/2018 Follow-up phone call	10/11/2018 Rincon left a voice message.



Native American Contact	Tribal Affiliation	Mailing Address	Email Address	Phone Number	Contact Attempt	Follow Up	Results
Daniel Salgado, Chairperson	Cahuilla Band of Indians	52701 U.S. Highway 371 Anza, CA 92539	chairman@cahuilla.net	951-763-5549	10/2/2018 Rincon sent a letter.	10/11/2018 Follow-up phone call	10/11/2018 Rincon left a voice message.
Michael Garcia, Vice Chairperson	Ewiiapaayp Tribal Office	4054 Willows Road, Alpine, CA, 91901	michaelg@leaningrock.net	619-445-6315	10/2/2018 Rincon sent a letter.	10/11/2018 Follow-up phone call	10/11/2018 Rincon left a voice message.
Robert Pinto, Chairperson	Ewiiapaayp Tribal Office	4054 Willows Road, Alpine, CA, 91901	wmicklin@leaningrock.net	619-445-6315	10/2/2018 Rincon sent a letter.	10/11/2018 Follow-up phone call	10/11/2018 Rincon left a voice message.
Andrew Salas, Chairperson	Gabrieleno Band of Mission Indians – Kizh Nation	P.O. Box 393 Covina, CA 91723	admin@gabrielenoindians.org	626-926-4131	10/2/2018 Rincon sent a letter.	10/11/2018 Follow-up phone call	10/11/2018 Rincon left a voice message.



Native American Contact	Tribal Affiliation	Mailing Address	Email Address	Phone Number	Contact Attempt	Follow Up	Results
Anthony Morales, Chairperson	Gabrieleno/Tongva San Gabriel Band of Mission Indians	P.O. Box 693 San Gabriel, CA, 91778	GTtribalcouncil@aol.com	626-483-3564	10/2/2018 Rincon sent a letter.	10/11/2018 Follow-up phone call	10/11/2018 Mr. Morales stated that the area is considered a travel route. Creeks and waterways are areas where encampments could be located. He feels that there may be unanticipated resources in the area. Mr. Morales feels that the area could be sensitive because of its proximity to the creek and that there should be archaeological or Native American monitoring or spot checking during ground disturbance. The vegetation and natural landscape could contain cultural resources. Mr. Morales stated that in the event monitoring is required, he requested that the Gabrieleno/Tongva San Gabriel Band of Mission Indians be involved.



Native American Contact	Tribal Affiliation	Mailing Address	Email Address	Phone Number	Contact Attempt	Follow Up	Results
Sandonne Goad, Chairperson	Gabrielino /Tongva Nation	106 1/2 Judge John Aiso St., #231 Los Angeles, CA, 90012	sgoad@gabrielino-tongva.com	951-807-0479	10/2/2018 Rincon sent a letter.	10/11/2018 Follow-up phone call	10/11/2018 Rincon left a voice message.
Robert Dorame, Chairperson	Gabrielino Tongva Indians of California Tribal Council	P.O. Box 490 Bellflower, CA, 90707	gtongva@gmail.com	562-761-6417	10/2/2018 Rincon sent a letter.	10/11/2018 Follow-up phone call	10/11/2018 Rincon left a voice message.
Charles Alvarez	Gabrielino-Tongva Tribe	23454 Vanowen Street West Hills, CA, 91307	roadkingcharles@aol.com	310-403-6048	10/2/2018 Rincon sent a letter.	10/11/2018 Follow-up phone call	10/11/2018 Mr. Alvarez stated that he has no comments regarding the project.
Erica Pinto, Chairperson	Jamul Indian Village	P.O. Box 612, Jamul, CA, 91935	mohusky@jiv-nsn.gov	619-669-4785	10/2/2018 Rincon sent a letter.	10/11/2018 Follow-up phone call	10/11/2018 Rincon left a voice message.
Thomas Rodriquez, Chairperson	La Jolla Band of Luiseño Indians	22000 Highway 76, Pauma Valley, CA, 92061	n/a	760-742-3771	10/2/2018 Rincon sent a letter.	10/11/2018 Follow-up phone call	10/11/2018 Rincon left a voice message.



Native American Contact	Tribal Affiliation	Mailing Address	Email Address	Phone Number	Contact Attempt	Follow Up	Results
Javaughn Miller, Tribal Administrator	La Posta Band of Mission Indians	8 Crestwood Road, Boulevard, CA, 91905	jmiller@LPtribe.net	619-478-2113	10/2/2018 Rincon sent a letter.	10/11/2018 Follow-up phone call	10/11/2018 Rincon left a voice message.
Gwendolyn Parada, Chairperson	La Posta Band of Mission Indians	8 Crestwood Road, Boulevard, CA, 91905	LP13boots@aol.com	619-478-2113	10/2/2018 Rincon sent a letter.	10/11/2018 Follow-up phone call	10/11/2018 Rincon left a voice message
Shane Chapparosa, Chairperson	Los Coyotes Band of Mission Indians	P. O. Box 189 Warner Springs, CA, 92086	Chapparosa@msn.com	760-782-0711	10/2/2018 Rincon sent a letter.	10/11/2018 Follow-up phone call	10/11/2018 Rincon left a voice message
John Perada, Environmental Director	Los Coyotes Band of Mission Indians	P. O. Box 189 Warner Springs, CA, 92086	n/a	760-782-0712	10/2/2018 Rincon sent a letter.	10/11/2018 Follow-up phone call	10/11/2018 Rincon left a voice message
Angela Elliott Santos, Chairperson	Manzanita Band of Kumeyaay Nation	P.O. Box 1302 Boulevard, CA, 91905	n/a	619-766-4930	10/2/2018 Rincon sent a letter.	10/11/2018 Follow-up phone call	10/11/2018 Rincon left a voice message
Denisa Torres, Cultural Resources Manager	Morongo Band of Mission Indians	12700 Pumarra Rroad Banning, CA, 92220	dtorres@morongo-nsn.gov	951-849-8807	10/2/2018 Rincon sent a letter.	10/11/2018 Follow-up phone call	10/11/2018 Rincon left a voice message



Native American Contact	Tribal Affiliation	Mailing Address	Email Address	Phone Number	Contact Attempt	Follow Up	Results
Robert Martin, Chairperson	Morongo Band of Mission Indians	12700 Pumarra Road Banning, CA 92220	dtorres@morongo-nsn.gov	951-849- 8807	10/2/2018 Rincon sent a letter.	10/11/2018 Follow-up phone call	10/11/2018 Rincon left a voice message
Shasta Gaughen, Tribal Historic Preservation Officer	Pala Band of Mission Indians	PMB 50, 35008 Pala Temecula Rd, Pala, CA 92059	sgaughen@pala-tribe.com	760-891- 3515	10/2/2018 Rincon sent a letter.	10/11/2018 Follow-up phone call	10/11/2018 Rincon left a voice message
Temet Aguilar, Chairperson	Pauma Band of Luiseño Indians- Pauma & Yulma Reservation	P.O. Box 369 Pauma Valley, CA, 92061	bennaecalac@aol.com	760-742- 1289	10/2/2018 Rincon sent a letter.	10/11/2018 Follow-up phone call	10/11/2018 Rincon left a voice message.
Mark Macarro, Chairperson	Pechanga Band of Mission Indians	P.O. Box 1477 Temecula, CA, 92593	epreston@pechanga-nsn.gov	951-770- 6000	10/2/2018 Rincon sent a letter.	10/11/2018 Follow-up phone call	10/11/2018 Rincon left a voice message.
Paul Macarro, Cultural Resources Coordinator	Pechanga Band of Mission Indians	P.O. Box 1477 Temecula, CA, 92593	pmacarro@pechanga-nsn.gov	951-770- 6306	10/2/2018 Rincon sent a letter.	10/11/2018 Follow-up phone call	10/11/2018 Rincon left a voice message.
Joseph Hamilton	Ramona Band of Cahuilla Mission Indians	P.O. Box 391670 Anza, CA, 92539	admin@ramonatribe.com	951-763- 4105	10/2/2018 Rincon sent a letter.	10/11/2018 Follow-up phone call	10/11/2018 Rincon left a voice message.



Native American Contact	Tribal Affiliation	Mailing Address	Email Address	Phone Number	Contact Attempt	Follow Up	Results
John Gomez, Environmental Coordinator	Ramona Band of Cahuilla Mission Indians	P. O. Box 391670 Anza, CA, 92539	jgomez@ramonatribe.com	951-763- 4105	10/2/2018 Rincon sent a letter.	10/11/2018 Follow-up phone call	10/11/2018 Rincon left a voice message.
Bo Mazetti, Chairperson	Rincon Band of Mission Indians	1 West Tribal Road, Valley Center, CA, 92082	bomazzetti@aol.com	760-749- 1051	10/2/2018 Rincon sent a letter.	10/11/2018 Follow-up phone call	10/11/2018 Rincon spoke with Deneen Polpon who stated she would review the letter and respond if they would like to comment.
Jim McPherson, Tribal Historic Preservation Officer	Rincon Band of Mission Indians	1 West Tribal Road, Valley Center, CA, 92082	vwhipple@rincontribe.org	760-749- 1051	10/2/2018 Rincon sent a letter.	10/11/2018 Follow-up phone call	10/11/2018 Rincon left a voice message.
Donna Yocum, Chairperson	San Fernando Band of Mission Indians	P.O. Box 221838 Newhall, CA 91322	ddyocum@comcast.net	503-539- 0933	10/2/2018 Rincon sent a letter.	10/11/2018 Follow-up phone call	10/11/2018 Rincon left a voice message.



Native American Contact	Tribal Affiliation	Mailing Address	Email Address	Phone Number	Contact Attempt	Follow Up	Results
Lee Clauss, Director of Cultural Resources	San Manuel Band of Mission Indians	26569 Community Center Drive Highland, CA, 92346	lclauss@sanmanuel-nsn.gov	909-864- 8933	10/2/2018 Rincon sent a letter.	10/11/2018 Follow-up phone call	10/11/2018 Rincon left a voice message. 10/10/2018 Jessica Mauck responded stating that the project is located outside of Serrano ancestral territory and, as such, will not be requesting consulting party status with the lead agency.
John Flores, Environmental Coordinator	San Pasqual Band of Mission Indians	P.O. Box 365 Valley Center, CA, 92082	johnf@sanpasqualtribe.org	760-749- 3200	10/2/2018 Rincon sent a letter.	10/11/2018 Follow-up phone call	10/11/2018 Rincon left a voice message.
Allen E. Lawson, Chairperson	San Pasqual Band of Mission Indians	P.O. Box 365, Valley Center, CA, 92082	allenl@sanpasqualtribe.org	760-749- 3200	10/2/2018 Rincon sent a letter.	10/11/2018 Follow-up phone call	10/11/2018 Rincon left a voice message.
Steven Estrada, Chairperson	Santa Rosa Band of Mission Indians	P.O. Box 391820 Anza, CA 92539	mflaxbeard@santarosacahuillansn.gov	951-659- 2700	10/2/2018 Rincon sent a letter.	10/11/2018 Follow-up phone call	10/11/2018 Rincon left a voice message.
Goldie Walker, Chairperson	Serrano Nation of Mission Indians	P.O. Box 343 Patton, CA 92369	n/a	909-528- 9027	10/2/2018 Rincon sent a letter.	10/11/2018 Follow-up phone call	10/11/2018 Follow-up call attempted no voicemail set up



Native American Contact	Tribal Affiliation	Mailing Address	Email Address	Phone Number	Contact Attempt	Follow Up	Results
Scott Cozart, Chairperson	Soboba Band of Luiseño Indians	P.O. Box 487 San Jacinto, CA, 92583	jontiveros@ soboba- nsn.gov	951-654- 2765	10/2/2018 Rincon sent a letter.	10/11/2018 Follow-up phone call	10/11/2018 Rincon left a voice message.



Native American Contact	Tribal Affiliation	Mailing Address	Email Address	Phone Number	Contact Attempt	Follow Up	Results
Joseph Ontiveros, Cultural Resource Department	Soboba Band of Luiseño Indians	P.O. Box 487 San Jacinto, CA, 92583	jontiveros@soboba-nsn.gov	951-663-5279	10/2/2018 Rincon sent a letter.	10/11/2018 Follow-up phone call	<p>10/11/2018 Rincon left a voice message.</p> <p>10/11/2018 Mr. Ontiveros called back and requested the letter be sent via email. Email sent 10/12/2018.</p> <p>12/3/2018 Rincon received a letter from Mr. Ontiveros dated 11/28/2018 stating that although the project is outside the existing reservation, the project is in the bound of their Tribal Traditional Use Areas and is in proximity to known sites. Soboba requested the following: Initiate consultation with the lead agency; Transfer of information to Soboba regarding the progress of the project; Native American monitoring by Soboba; Proper procedures are taken and requests of the tribe are honored.</p>



Native American Contact	Tribal Affiliation	Mailing Address	Email Address	Phone Number	Contact Attempt	Follow Up	Results
Cody J. Martinez, Chairperson	Sycuan Band of the Kumeyaay Nation	1 Kwaaypaay Court, El Cajon, CA, 92019	ssilva@sycuan-nsn.gov	619-445-2613	10/2/2018 Rincon sent a letter.	10/11/2018 Follow-up phone call	10/11/2018 Rincon left a voice message.
Lisa Haws, Cultural Resources Manager	Sycuan Band of the Kumeyaay Nation	1 Kwaaypaay Court, El Cajon, CA, 92019	lhaws@sycuan-nsn.gov	619-312-1935	10/2/2018 Rincon sent a letter.	10/11/2018 Follow-up phone call	10/11/2018 Rincon left a voice message.
Michael Mirelez, Cultural Resource Coordinator	Torres-Martinez Desert Cahuilla Indians	P.O. Box 1160 Thermal, CA 92274	mmirelez@tmdci.org	760-399-0022	10/2/2018 Rincon sent a letter.	10/11/2018 Follow-up phone call	10/11/2018 Rincon left a voice message.
Julie Hagen/ Ray Terran	Viejas Band of Kumeyaay Indians	1 Viejas Grade Road, Alpine, CA, 91901	jhagen@viejas-nsn.gov	619-445-3810	10/2/2018 Rincon sent a letter.	10/11/2018 Follow-up phone call	10/11/2018 Rincon left a voice message. 10/25/2018 Rincon received a letter dated 10/9/2018 from Ray Teran, who stated that the project site has little cultural significance or ties to Viejas and requested to be informed of any developments such as inadvertent discovery of cultural resources.



Native American Contact	Tribal Affiliation	Mailing Address	Email Address	Phone Number	Contact Attempt	Follow Up	Results
Robert Welch, Chairperson	Viejas Band of Kumeyaay Indians	1 Viejas Grade Road, Alpine, CA, 91901	jhagen@viejas-nsn.gov	619-445- 3810	10/2/2018 Rincon sent a letter.	10/11/2018 Follow-up phone call	10/11/2018 Rincon left a voice message. 10/25/2018 Rincon received a letter dated 10/9/2018 from Ray Teran, who stated that the project site has little cultural significance or ties to Viejas and requested to be informed of any developments such as inadvertent discovery of cultural resources.

Appendix F

Noise Impact Analysis Technical Memorandum

Refer to Appendix G.

Appendix G

DRAFT INITIAL STUDY/ MITIGATED NEGATIVE DECLARATION FOR THE CREEKSIDE TERRACE SLOPE PROTECTION PROJECT

UNIVERSITY OF CALIFORNIA, RIVERSIDE PROJECT No. 950503

PREPARED FOR:

University of California, Riverside
Capital Planning
1223 University Avenue, Suite 200
Riverside, CA 92507
Tricia D. Thrasher, ASLA, LEED AP
Principal Environmental Project Manager
951/827-1484

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Debra Leight, Senior Project Manager
951/683-3238

August 2014



This statement is prepared in compliance with the California Environmental Quality Act

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Appendix H Noise Impact Analysis Technical Memorandum

Acronyms and Abbreviations

AB	Assembly Bill
APN	Assessor's Parcel Number
AQMP	Air Quality Management Plan
ARB	California Air Resources Board
Basin	South Coast Air Basin
BAU	business as usual
BMPs	best management practices
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CO ₂	carbon dioxide
CO ₂ e	carbon dioxide equivalent
CUP	Conditional Use Permit
cy	cubic yards
dba	A-weighted decibels
EIR	environmental impact report
GHG	greenhouse gas
HMMP	Habitat Mitigation and Monitoring Program
LBV	least Bell's vireo
L _{eq}	equivalent sound level
LRDP	Long Range Development Plan
MM	Mitigation Measure
MMRP	Mitigation Monitoring and Reporting Program
MMT	million metric tons
MSHCP	Multiple Species Habitat Conservation Plan
MT	metric tons
NO _x	nitrogen oxide
NPDES	National Pollutant Discharge Elimination System
PM	particulate matter
PM10	particulate matter greater than 10 microns in diameter
PM2.5	particulate matter greater than 2.5 microns in diameter
PP	Programs and Practices
Project	University of California, Riverside Creekside Terrace Slope Protection Project
RCRPOSD	Riverside County Regional Parks and Open Space District
ROC	reactive organic compounds
RWQCB	Regional Water Quality Control Board
SCAQMD	South Coast Air Quality Management District
SKR	Stephens' Kangaroo Rat
SWPPP	Stormwater Pollution Prevention Plan
UCR	University of California, Riverside
USACE	U.S. Army Corps of Engineers
USGS	U.S. Geological Survey

Project Location

The University of California, Riverside (UCR) Creekside Terrace Slope Protection Project (herein referred to as “Project”) is located partially on property owned by the University of California, approximately 770 feet from the southern boundary of the west campus area of the Riverside campus, and partially located on property owned by others within the City of Riverside, Riverside County, California. The site is generally east of Chicago Avenue and south of Le Conte Drive. Specifically, the project site consists of a drainage feature approximately 0.20 mile north of the intersection of Chicago and Central Avenues. The Project is within Section 31, Township 2 South, Range 4 West of the Riverside East U.S. Geological Survey (USGS) quadrangle dated 1967, photorevised 1980 (USGS 1967). The primary Assessor’s Parcel Number (APN) associated with the project site is 254-370-003.

Project History

The Creekside Terrace residential development was approved by the City of Riverside in 2004; the site was graded, utility and street improvements were constructed, and common facilities (clubhouse, pool, and playground) and 24 of the 78 approved residences were completed prior to acquisition of the property by the University in 2008.

Engineering evaluations conducted during the course of the campus acquisition process identified remedial measures necessary to ensure long-term stability of the stream bank close to substantial keystone retaining walls along the northern side of the drainage (generally the western tract boundary).

The proposed Project involves the recommended remedial measures, which consist of stabilization improvements within a previously improved stream channel that lies partially within the Creekside Terrace boundaries, but primarily within the site of an adjacent apartment development. The apartment site owner has entered a legal agreement with the University that grants access for due diligence inspections and construction of the proposed stabilization improvements.

Relationship to the UCR Long Range Development Plan and EIR

The Creekside Terrace development is on University-owned property, but outside the contiguous UCR campus boundaries that define the planning area in the UCR Long Range Development Plan (LRDP) and that frame the analysis in the associated program environmental impact report (EIR). On this basis, the environmental analysis for the Creekside Terrace Slope Protection Project may not be tiered from the LRDP EIR, as is typical with campus development and improvement projects.

Even though this analysis is not tiered from the LRDP EIR, it is University policy to extend established campus avoidance, minimization, and mitigation measures as contained in the adopted

Mitigation Monitoring and Reporting Program (MMRP) for the LRDP EIR to relevant off-campus activities. Applicable LRDP EIR MMRP provisions are recognized throughout the impact discussion section of this document (beginning on page 14).

Project Location

The project site is within and adjacent to an off-campus residential development known as Creekside Terrace. Creekside Terrace is generally north of Central Avenue and east of Chicago Avenue in the Canyon Crest area of the City of Riverside. Figure 1 identifies the project location in the regional context.

Project Site and Environmental Setting

The drainage channel is a previously improved remnant feature confined by two major roads, an established apartment development, and a residential subdivision. The surrounding area to the north, south, and east is characterized by residential development. The City of Riverside's Andulka Park and further residential development are situated to the west. Figure 2 identifies the project site and vicinity and Figure 3 provides a closer aerial view of the project site. Figure 4 depicts the property ownership for land included in the project site. This includes land owned by the University and property belonging to the adjacent apartment complex. The riparian area within the proposed project site lies primarily within the legal parcels associated with the apartments bordering the south and west banks.

Project Objectives

The proposed Project is intended to stabilize the stream bank in accordance with the recommendations of the University's consulting engineer, based upon accepted design standards.

The proposed finished conditions are intended to retain the existing hydrologic functions and values of the impacted drainage feature and to maximize post-construction biological functions while providing for ongoing maintenance requirements for the north¹ channel bank.

Project Description

The proposed Project involves stabilization of the north bank of an existing drainage channel adjacent to the University-owned Creekside Terrace residential development (Tract 31671).

Specifically, the channel would be reshaped and rip-rap would be placed on the north bank to match existing conditions on the south bank. The proposed improvements would require the removal of all vegetation on the north bank as well as the channel bottom. Proposed ongoing activity would maintain a vegetation-free condition on the north bank to ensure channel flow capacity is

¹ The drainage channel includes a bend within the project limits, with a portion of the channel oriented generally north/south and a portion oriented generally east/west. For this report, the bank adjacent to the University-owned property is referred to as the *north bank*, while the bank adjacent to the privately owned apartment site is referred to as the *south bank*.

maintained. Existing vegetation on the south bank would remain in place, and native vegetation would be allowed to naturally reestablish within the drainage channel bank on the south side. In addition to clearing vegetation from the work limits, the proposed improvements would include removal of non-native plants throughout the riparian area.

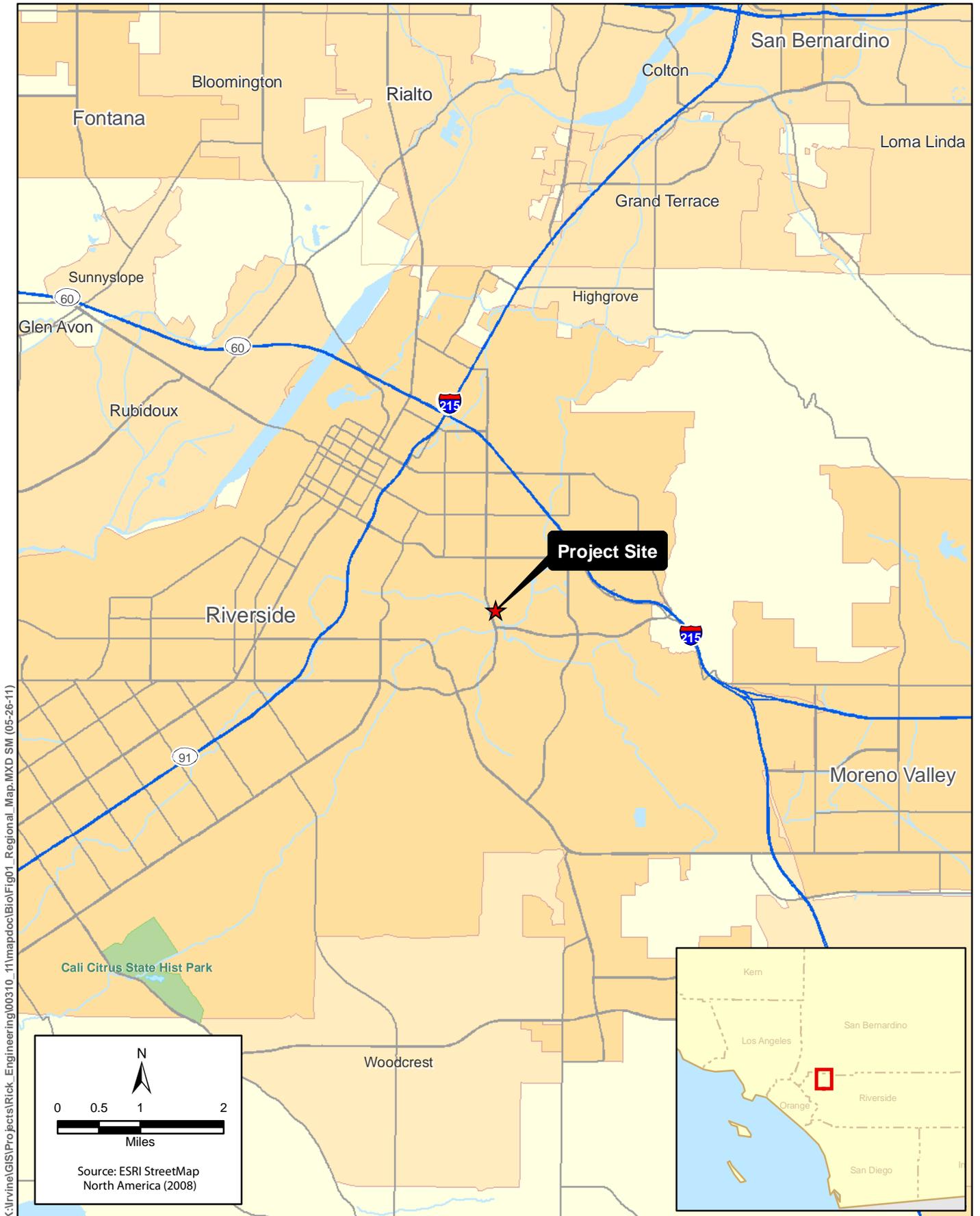
The proposed design would excavate the channel to expose the lower extent of the existing rip-rap cover on the south bank. Work would be conducted from the existing access path along the north side of the channel. A series of 34 small-diameter drains extending from the north bank would be protected in place (these are the outlets for the subdrain system for the Creekside Terrace retaining walls). Bottom sediments would be stockpiled for replacement in the reconstructed drainage channel. The excavated area would be graded to establish a v-channel with uniform slope face extending between the existing top of the bank on the Creekside Terrace side of the channel and the existing toe of rip-rap cover on the opposite bank. UngROUTED rip-rap with a filter fabric underlay would be placed over the newly graded slope and the subdrain system outlet pipes would be trimmed so that they do not extend beyond the rock surface. Stockpiled sediments would be replaced within the channel bottom and finished surface elevations would be established to create a functional flow regime between the existing culverts at each end of the Project. Rip-rap pads (5 feet wide and 10 feet long) would be established at the existing inlet and outlet for energy dissipation.

The subject drainage channel flows year-round; therefore, diversion would be necessary during construction. Considering the nature of the tributary flows and the constrained conditions along the work limits, feasible diversion methods are limited. The entire work limits would need to be dewatered for the duration of construction. This would require a piped diversion from the existing culvert outlet at the upstream end of the work limits to the existing culvert inlet at the downstream end of the work limits. The diversion pipe is expected to be placed along the south bank or perhaps within landscaped areas within the adjacent apartment development. Considering the relative grade between the culvert outlet at the upstream end of the work limits and the likely bypass pipeline location, pumping is expected to be required. A portable generator may be required as a power source.

Construction is anticipated to last approximately 120 days. Project improvement plans are presented in Appendix A.

Summary of Impacts

The review and analysis contained herein recognizes compliance with established local, state, and federal regulations and UCR standard procedures as the basis for a determination that impacts are less than significant for aesthetics, agricultural and forest resources, air quality, cultural resources, geology and soils, greenhouse gas emissions, hazards and hazardous materials, and transportation/traffic. No project impacts are anticipated for mineral resources, population and housing, public services, and recreation. The environmental review and analysis contained herein indicates that the proposed Project presents the potential for project-level environmental impacts related to biological resources, hydrology and water quality, land use and planning, noise, and utilities and service systems. Project impacts are summarized below.



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Figure 1
Regional Vicinity Map
UCR Creekside Terrace Slope Protection Project

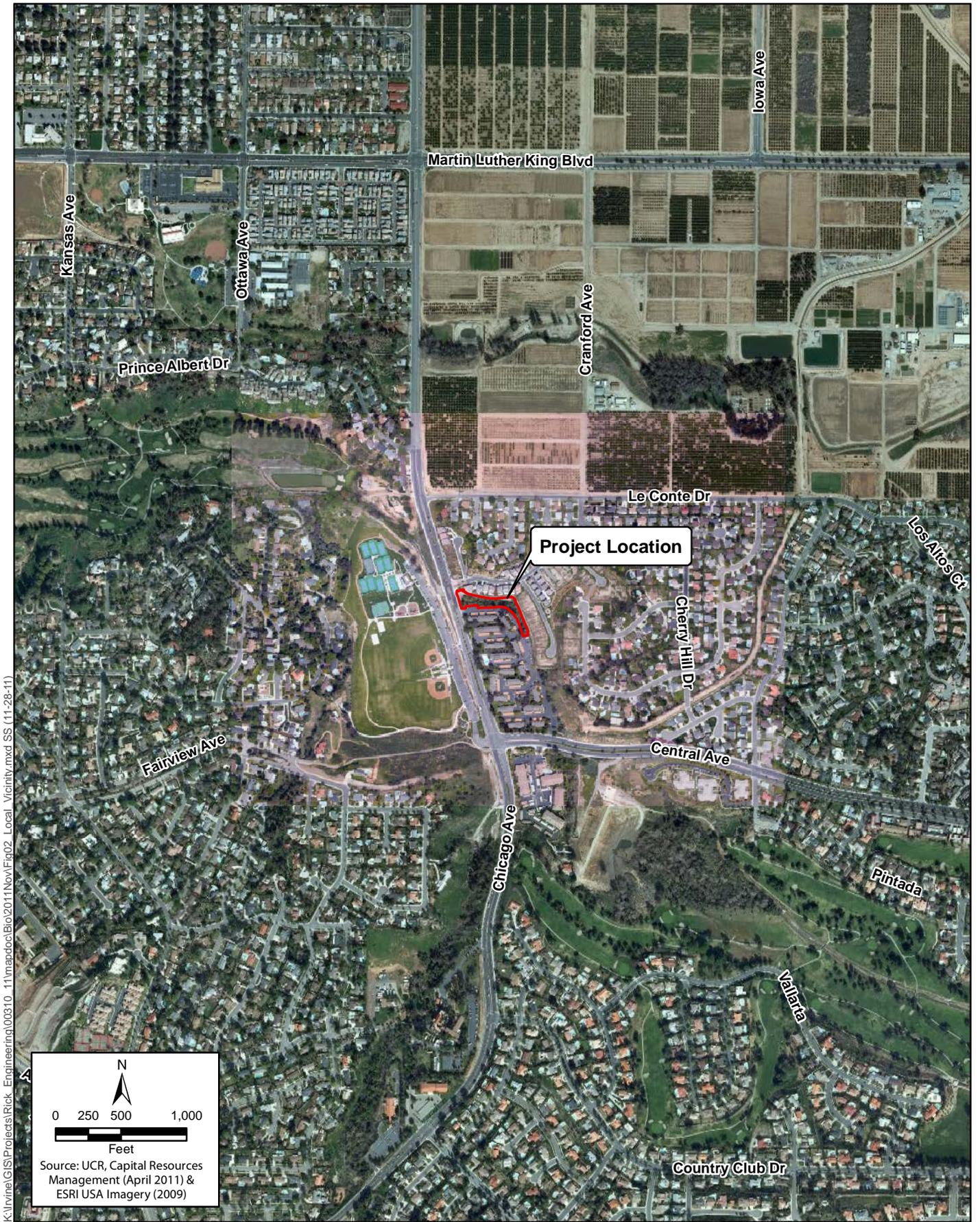


Figure 2
Local Vicinity Map
UCR Creekside Terrace Slope Protection Project

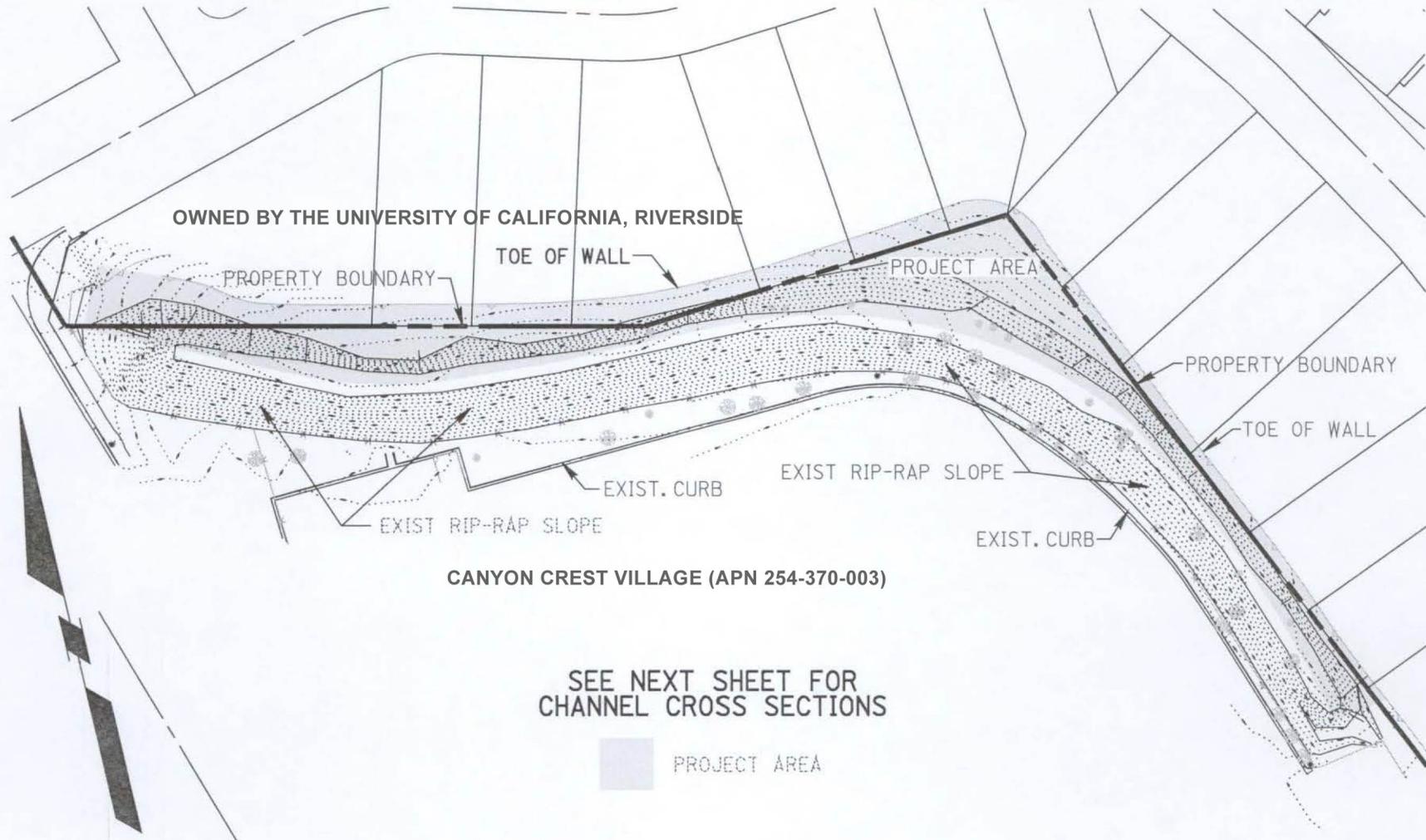


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Figure 3
Project Site
UCR Creekside Terrace Slope Protection Project

CREEK STABILIZATION PROJECT AREA DETAIL



RICKTM
ENGINEERING COMPANY
Riverside

1223 UNIVERSITY AVENUE - SUITE 240
RIVERSIDE, CA 92507
951.782.0707
(FAX)951.782.0723

rickengineering.com

San Diego - Orange - San Luis Obispo - Bakersfield - Sacramento - Phoenix - Tucson

NOT TO SCALE

ICF
INTERNATIONAL

Figure 4
Property Ownership
UCR Creekside Terrace Slope Protection Project

Project Level Impacts Requiring Mitigation Measures

1. Biological Resources. The proposed Project would impact a previously channelized stream feature that meets jurisdictional criteria under state and federal programs governing streams and riparian resources. The riparian habitat within the stream area is suitable habitat for the federally listed as endangered least Bell's vireo, although focused surveys determined the species' habitat to be absent. The riparian habitat within the stream area is also suitable habitat for numerous species of birds protected under state and federal law. Collectively, the proposed improvements and post-construction treatments are judged to provide a finished condition of comparable, or better, biological function.

Even though the Project would not be within the contiguous UCR campus boundaries that define the planning area in the UCR LRDP, the following project-specific mitigation measures provide a mechanism for implementation of the LRDP EIR MMRP measures below and provided in Appendix C, to reduce environmental impacts:

- Planning Strategy Conservation 1 (protect natural resources),
- Planning Strategy Conservation 2 (development to minimize site disturbance),
- Programs and Practices 4.4-1(a) (reduce impacts to Natural Open Spaces Reserve area),
- Programs and Practices 4.4-1(b) (reduce disturbance to Natural Open Spaces Reserve area),
- Programs and Practices 4.4-2(a) (avoid impacts to riparian and wetland habitats or evaluate),
- Mitigation Measure 4.4-3(b) (habitat regulated by Clean Water Act),
- Mitigation Measure 4.4-3(c) (wetland creation or enhancement),
- Mitigation Measure 4.4-4(a) (nesting special status avian species surveys during construction), and
- Mitigation Measure 4.4-4(b) (delay construction if active nests for avian species are found).

The following measures also establish means to verify successful implementation of the riparian habitat restoration aspects of the proposed improvements as characterized in the project description, as they may be adjusted through the required state and federal permit processes.

With implementation of these measures, potential impacts on biological resources would be less than significant.

BIO 1 – Minimize Direct Impacts on Riparian Habitat. Prior to initiation of ground disturbance activities, disturbance limits shall be clearly defined at the construction site and demarcated on site plans (refer to Appendix A). Access and staging shall be limited to the existing gated entrance from Chicago Avenue, the existing maintenance path along the north bank, or paved/landscaped areas within the adjoining apartment development. Protection measures for riparian habitat on the south bank will be established in consultation with the biological monitor.

BIO 2 – Conduct Biological Monitoring During Construction. A qualified biologist shall monitor construction for compliance with best management practices outlined in LRDP Programs and Practices (PP) 4.4-1(b) (reduce disturbance to Natural Open Space areas). Such measures may include minimizing vehicular access and parking in undisturbed areas or drainages; avoiding removal of native shrub or disturbance of

drainages, except where necessary; avoiding overwatering; and not harassing wildlife species, as provided in full detail in Appendix C. Considering the nature of the work area and proximity of protected resources to the work limits, monitoring shall be continuous during the initial preparation and excavation phases. Once work transitions to placement of rip-rap, the frequency of monitoring may be reduced, as recommended by the monitoring biologist (taking into consideration the nature of the proposed work and time of year).

BIO 3 – Provide Worker Education Pamphlet. To ensure compliance with best management practices identified in LRDP PP 4.4-1(b) (reduce disturbance to Natural Open Space areas), a biologist shall provide the construction contractor field supervisor with a worker education pamphlet to be provided to all construction personnel prior to personnel initiating ground disturbance activities. The education pamphlet will include a discussion of the importance of the stream and associated riparian habitat, areas to be avoided (including during parking and staging of equipment), a discussion of native wildlife with the potential to occur, and education on not harassing native wildlife.

BIO 4 – Remove Exotic Species. During the construction phase, exotic plant species shall be removed from the riparian zone, including the protected south bank area. Exotic plant material shall be properly handled to prevent sprouting or regrowth. Construction equipment shall be cleaned of mud or other debris that may contain invasive plants/seed and inspected to reduce the potential of spreading noxious weeds before mobilizing to the work area and before leaving the work area. Cleaning of equipment shall occur outside the work area where the wastewater stream is contained so as to prevent any invasive plant material from entering natural areas. During project operations, exotic species shall be removed periodically in accordance with the Habitat Mitigation and Monitoring Program (HMMP) and agency approval subject to the conditions established by the approved permits.

BIO 5 – Monitor Post-construction Revegetation. Native riparian vegetation shall be allowed to reestablish through natural recruitment within the work limits. Prior to initiation of ground disturbance activities, a monitoring plan shall be prepared and submitted to the relevant agencies (i.e., U.S. Army Corps of Engineers [USACE], California Department of Fish and Wildlife [CDFW]). Prior to removal of vegetation, a qualified biologist shall conduct an assessment of functions and values for the stream and associated riparian habitat. The assessment will focus upon characterization of existing functions and values as a benchmark for evaluation of success of the post-construction effort. The performance criteria shall include functions and values that are of equal or greater value than existing conditions. During project operations, exotic species shall be removed periodically in accordance with the HMMP and agency approval subject to the conditions established by the approved permits. The plan should be sufficient to meet agency requirements and at a minimum shall include the following:

- a map and acreage of vegetation to be temporarily affected,
- location of monitoring area,
- functions and values assessment of pre-construction condition,

- performance criteria,
- monitoring guidelines, and
- contingency measures.

BIO 6 – Purchase Mitigation Bank Credits to Replace Residual Mitigation Obligation under Prior Permits. The University shall purchase credits from the Santa Ana River Mitigation Bank operated by Riverside County Regional Parks and Open Space District (RCRPOSD), or other bank or in-lieu fee program approved by the permitting agencies (i.e., USACE and CDFW). Based upon the anticipated difference in riparian cover in the post-construction condition (0.2 acre) and minimum purchase requirements for this bank, a minimum purchase of 0.25-acre credit from the RCRPOSD bank would be required. The final credit purchase requirement will be determined through the regulatory permit process with USACE and CDFW.

BIO 7 – Pre-construction Nesting Bird Surveys. Prior to the onset of construction activities that would result in vegetation removal between February 15 and September 15, nesting bird surveys shall be conducted by a qualified biologist a maximum of 7 days prior to initiation of ground disturbance activities. The survey area shall include the direct disturbance limits and a 250-foot buffer zone. If nesting birds are encountered within the survey area, the qualified biologist will flag an avoidance buffer zone around the nest. No ground disturbance activities shall occur within the avoidance buffer zone until the qualified biologist has determined that the nest is no longer active and the young are not dependent on the nest.

The project site is within the plan areas of two regional conservation efforts—the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP) and the Long-term Habitat Conservation Plan for the Stephens’ Kangaroo Rat (SKR). Implementation of the SKR plan is at a stage in which all conservation lands have been acquired. For projects outside the reserve areas, plan conformance is achieved through payment of mitigation fees that support ongoing management of the reserve lands. The campus is not within an SKR reserve and the University is exempt from payment of SKR mitigation fees.

Under the MSHCP, the stream feature and associated riparian habitat are subject to plan provisions for riverine and riparian resources. For riparian habitat, the plan requires consideration of suitability for three protected bird species: least Bell’s vireo, southwestern willow flycatcher, and western yellow-billed cuckoo. The habitat at the project site is not suitable for southwestern willow flycatcher, and western yellow-billed cuckoo and least Bell’s vireo are assumed to be absent on the basis of negative focused surveys.

The MSHCP stipulates that riparian habitat is to be avoided to the greatest extent practicable. If riparian habitat is affected, mitigation must demonstrate equal or superior functions and values. The proposed stabilization improvements would affect a highly constrained stream feature that is removed from MSHCP reserve areas. **Mitigation Measures BIO 1 through BIO 4 and BIO 7** provide for implementation of various measures during construction to ensure individual least Bell’s vireos are not impacted and to ensure that impacts on the stream and riparian habitat are minimized. **Mitigation Measures BIO 5 and BIO 6** provide for post-construction monitoring and purchase of mitigation bank credits to ensure that riverine and riparian habitat functions and values are equal or superior to pre-project conditions. **With implementation of Mitigation Measures BIO 1 through BIO 6, proposed activities and improvements would not conflict**

with MSHCP provisions for riparian and riverine resources, and a less-than-significant impact would result.

2. Hydrology and Water Quality. Temporary diversion of the existing stream would be required for the approximately 120-day construction period. Considering the proposed work limits, the constrained nature of the stream, and the proximity of developed private property and public improvements, the options for diversion are limited. It is expected that diversion would involve a contained method, such as pipes or hoses, extending from the existing inlet to the existing outlet and placed along the south bank or within adjacent landscaped areas.

With the assumed contained diversion, there is potential for flooding due to an upset condition involving a breach in the pipe or hose. An approximately 0.92-acre area that contains the existing stream channel has been zoned as Watercourse by the City of Riverside. This roughly corresponds to the fenced area between the apartment site parking lot and the Creekside Terrace development. As long as the potential overflow boundaries are confined to the existing Watercourse-zoned area, there would be no change in anticipated inundation boundaries and, therefore, no potential for significant impacts due to flooding from the temporary change in the stream course. **The following mitigation measure provides a means to ensure that the temporary diversion does not result in flooding on or off site, and impacts in this regard would be less than significant.**

HYD 1 – Temporary Diversion Design. The temporary diversion works shall be designed such that the inundation limits (including those resulting from an inadvertent breach of flows contained in a pipe or hose) are confined to the existing Watercourse overlay zone boundary. The University shall ensure that construction contracts provide sufficient detail for the design and method of temporary diversion.

3. Land Use and Planning. Potential impacts in regard to land use and planning relate to project consistency with the adopted regional conservation plans. The discussion of Biological Resources above explains that, with implementation of recommended **Mitigation Measures BIO 1 through BIO 6**, the proposed Project would not conflict with applicable provisions of the two adopted habitat conservation plans that apply within the project area. **Therefore, a less-than-significant impact would result with implementation of mitigation.**
4. Noise. The project-specific noise analysis evaluated potential construction-period noise from operation of heavy equipment and of a generator and pump for the temporary stream diversion. Predicted noise levels at the nearest residential receptors exceed applicable standards established under the City of Riverside Municipal Code.

For all noise sources except the generator/pump for the stream diversion, construction activity may be limited to adhere to the provisions of Riverside Municipal Code Section 7.35.10(b)(5). Recommended **Mitigation Measure NOI 1** provides a means to enforce this restriction and, with implementation of this measure, impacts in this regard would be less than significant. This measure is consistent with, and more restrictive than, the construction hour limits typically applied to campus projects under LRDP EIR MMRP PP 4.10-2 (hour limits for construction activities).

Generator and/or pump operations for streamflow diversion would be continuous, and it would not be feasible to conform to the hour limitations under **Mitigation Measure NOI 1**. Recommended **Mitigation Measure NOI 2** requires implementation of attenuation features to

achieve noise levels not exceeding applicable Riverside Municipal Code standards. **With implementation of this measure, impacts in this regard would be less than significant.**

NOI 1 – Restrict Construction Hours. The University will ensure that the construction contractor limits construction activities to occurring between 7:00 a.m. and 9:00 p.m. Monday through Friday and 8:00 a.m. and 6:00 p.m. on Saturday. An exception is made as to operation of a generator and/or pump for temporary stream diversion, subject to Mitigation Measure NOI 2, below.

NOI 2 – Attenuation for diversion pump and generator. The University will ensure construction contracts specify that any generator or diversion pump will be equipped with mufflers, silencers, shrouds, shields, or other noise-reducing features so as to achieve a maximum exterior operational noise level not exceeding 45 A-weighted decibels (dBA) (one-hour equivalent sound level [L_{eq}]) at exterior locations of nearby noise-sensitive land uses. Measures that can be implemented to achieve this include but are not limited to:

- enclosing equipment in solid wall structures,
- using low-noise equipment, and
- placing sound barriers (earth berms or constructed barriers) around equipment.

5. **Utilities and Service Systems.** Potential impacts on utilities and service systems relate to the function of the subject stream feature as a component of the City of Riverside storm water drainage system. The proposed bank stabilization improvements would temporarily disturb the existing stream channel and associated riparian vegetation, which presents the potential for significant environmental effects related to biological resources, temporary flooding, and noise, as noted above. **Mitigation Measures BIO 1 through BIO 8, HYD 1, NOI 1, and NOI 2** have been identified to reduce these potential impacts to below a level of significance. **With implementation of the recommended mitigation measures and City (for cultural resources) and campus standard practices noted above, the potential environmental effects of the proposed storm water facility improvements would be less than significant.**

Environmental Checklist

I. Project Information

1. **Project Title:** Creekside Terrace Slope Protection Project
UCR Project Number 950503
2. **Lead Agency Name and Address:** University of California, Riverside
Capital Planning
1223 University Avenue, Suite 200
Riverside, CA 92507
3. **Contact Person and Phone Number:** Tricia D. Thrasher, ASLA, LEED AP
Principal Environmental Project Manager
(951) 827-1484
4. **Project Location:** Northeast of Central and Chicago Avenues in the City of Riverside.
5. **Project Sponsor's Name and Address:** See items 2 and 3, above
6. **Custodian of the administrative record for this project (if different from response to item 3 above.):** See item 3, above
7. **Identification of previous EIRs relied upon for tiering purposes (including all applicable LRDP and project EIRs and address where a copy is available for inspection.)** LRDP EIR and LRDP MMRP incorporated by reference

II. Project Location and Description

1. **Description of Project:** (Describe the whole action involved, including but not limited to physical characteristics, site, later phases of the project, and any secondary, support, or off-site features necessary for its implementation and site selection process. Attach additional sheets if necessary.)

The proposed Project involves stabilization of the north bank of an existing drainage channel adjacent to the University-owned Creekside Terrace residential development (Tract 31671). See *Project Description* in the preceding *Summary* section for a complete description.

2. Project Objectives:

The proposed Project is intended to stabilize the existing stream bank in accordance with the recommendations of the University's consulting engineer based upon accepted design standards.

The proposed finished conditions are intended to retain the existing hydrologic functions and values of the impacted drainage feature and to maximize post-construction biological functions while providing for ongoing maintenance requirements for the north channel bank.

3. Surrounding land uses and environmental setting (Briefly describe the project's surroundings):

The project site is within a developed area of the City of Riverside. Residential development is located to the north, south, and east. Chicago Avenue, Andulka Park, and residential development are located to the west.

4. Discretionary approval authority and other public agencies whose approval is required (e.g., permits, financing approval, or participation agreement.)

Primary approval authority resides with The Regents of University of California or its delegate (the University).

Approvals may also be required from the City of Riverside Public Works and/or Planning departments (the campus has been in contact with City representatives, and determinations as to any required approvals by the City of Riverside are pending).

The proposed construction would also be subject to approvals from CDFW, the California Regional Water Quality Control Board, and USACE under various programs governing work within jurisdictional streams. Applications are pending with each agency: USACE file number 2012-004340JEM, Regional Board File Number 332012-01, and CDFW reference number 1600-2005-0093-R6.

5. Consistency with the LRDP: (Describe the project's consistency with: the scope of development projected in the LRDP; campus and community population levels projected in the LRDP; LRDP designation for this type of project; and applicable policy objectives and goals of the LRDP).

The Creekside Terrace development is located off-campus, outside of the LRDP planning area. While the LRDP does not specifically address this location, the analysis in this document takes into account LRDP planning strategies, programs and practices, and mitigation measures that are applicable to resources potentially impacted by the proposed Project.

III. Environmental Factors Potentially Affected

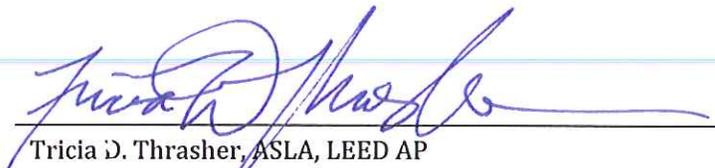
The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages.

- | | | |
|--|---|--|
| <input type="checkbox"/> Aesthetics | <input type="checkbox"/> Agriculture and Forest Resources | <input type="checkbox"/> Air Quality |
| <input checked="" type="checkbox"/> Biological Resources | <input type="checkbox"/> Cultural Resources | <input type="checkbox"/> Geology/Soils |
| <input type="checkbox"/> Greenhouse Gas Emissions | <input type="checkbox"/> Hazards and Hazardous Materials | <input checked="" type="checkbox"/> Hydrology/Water Quality |
| <input checked="" type="checkbox"/> Land Use/Planning | <input type="checkbox"/> Mineral Resources | <input checked="" type="checkbox"/> Noise |
| <input type="checkbox"/> Population/Housing | <input type="checkbox"/> Public Services | <input type="checkbox"/> Recreation |
| <input type="checkbox"/> Transportation/Traffic | <input checked="" type="checkbox"/> Utilities/Service Systems | <input checked="" type="checkbox"/> Mandatory Findings of Significance |

IV. Determination

On the basis of this initial evaluation that follows:

- I find that the proposed project WOULD 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 that will avoid or reduce any potential significant effects to a less than significant level. A MITIGATED NEGATIVE DECLARATION will be prepared.
- I find that the proposed project MAY have a significant effect on the environment. An ENVIRONMENTAL IMPACT REPORT will be prepared.


 Tricia D. Thrasher, ASLA, LEED AP

University of California, Riverside

Principal Environmental Project Manager

8-22-14

Date

V. Evaluation of Environmental Impacts

During the completion of the environmental evaluation, the lead agency relied on the following categories of impact noted as column headings in the initial study checklist:

- A) “Potentially Significant Impact” is appropriate if there is substantial evidence that the project’s effect may be significant. If there are one or more “Potentially Significant Impacts” a Project EIR will be prepared.
- B) “Less Than Significant With Mitigation Incorporated” applies where the incorporation of project-specific mitigation measures will reduce an effect from “Potentially Significant Impact” to a “Less Than Significant Impact.” All mitigation measures must be described, including a brief explanation of how the measures reduce the effect to a less-than-significant level.
- C) “Less Than Significant Impact” applies where the Project will not result in any significant effects. The project impact is less than significant without the incorporation of mitigation.
- D) “No Impact” applies where the Project would not result in any impact in the category or the category does not apply. “No Impact” answers need to be adequately supported by the information sources cited, which show that the impact does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A “No Impact” answer should be explained where it is based on project-specific factors as well as general standards (e.g., the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis).

I. Aesthetics	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
<p>Would the project:</p>				
<p>a. Have a substantial adverse effect on a scenic vista?</p>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<p>The project site is situated at the interface of an existing apartment development and an existing single-family residential subdivision, at the bottom of an approximately 40-foot bluff. The existing terrain and the apartment buildings limit public views of the project site to only a very limited window along Chicago Avenue. While the proposed improvements would remove mature riparian vegetation within the work limits, the existing mature vegetation on the south bank would be retained, and riparian vegetation would be allowed to reestablish within the channel bottom. Physical conditions at the project site, together with the nature of the proposed improvements, preclude the potential for substantial adverse effects upon scenic vistas.</p>				
<p>b. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?</p>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<p>While the project site is not within the viewshed of a designated or eligible state scenic highway, Central Avenue between Chicago Avenue and Canyon Crest Drive is designated as a Scenic Boulevard in the City of Riverside General Plan, Circulation and Community Mobility Element (Figure CCM-4, Master Plan of Roadways). The proposed Project would remove mature trees and other vegetation within the stream channel. Views of the project limits from Central Avenue would be blocked by existing topography and the apartment development. Since the improvement area is not visible from Central Avenue and would be removed from a designated or eligible state scenic highway, the proposed Project does not present the potential for significant impacts upon scenic roadways.</p>				
<p>c. Substantially degrade the existing visual character or quality of the site and its surroundings?</p>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<p>The project site is characterized by a remnant natural drainage feature isolated within a residential area within the City of Riverside. The riparian zone is visible from parking areas within the adjacent apartment development and from a very limited window along Chicago Avenue. The visual character of the project area and its surroundings could be affected in the short term by construction activity, including excavation, stockpiling, and presence of construction materials and equipment. Such conditions would cease once construction is complete and are not considered to represent a substantial degradation of the visual character of the site or its surroundings.</p> <p>The proposed improvements would require removal of all vegetation on the north bank of the channel, as well as the channel bottom. The existing mature vegetation on the south bank, adjacent to the apartments, would be retained, and riparian vegetation would be allowed to reestablish within the channel bottom. While the proposed Project may diminish the extent of riparian cover, the essential look and function as perceived from the existing public perspectives would not change substantially. Therefore, potential impacts on the visual character and quality of the site and its surroundings would be less than significant.</p>				

I. Aesthetics	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
d. Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

The proposed channel improvements do not include temporary or permanent lighting elements or reflective construction materials. The proposed Project, by its nature, would not produce any new sources of light or glare.

II. Agriculture and Forest Resources	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
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 CA Resources Agency, to non-agricultural use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

The project site itself is developed and is surrounded by developed lands and existing roads within the City of Riverside. The project site is not designated as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, as shown on maps prepared pursuant to the Farmland Mapping and Monitoring Program. The resource of concern is absent and there is no potential for adverse impacts.

b. Conflict with existing zoning for agricultural use, or a Williamson Act contract?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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The project site is not subject to a Williamson Act contract (City of Riverside General Plan Figure OS-3, Williamson Act Preserves). While agricultural uses are permitted within the Watercourse overlay zone that applies within the drainage channel, multiple physical constraints at this particular location would not accommodate agricultural uses (access, slopes, trees, perennial water flows).

II. Agriculture and Forest Resources	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
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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))?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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The project site is in a developed area of the City of Riverside. The site and surrounding area do not contain forest land or timberland. The resources of concern are absent and there is no potential for adverse impacts.

d. Result in the loss of forest land or conversion of forest land to non-forest use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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The project site is in a developed area of the City of Riverside. The site and surrounding area do not contain forest land. The resource of concern is absent and there is no potential for adverse impacts.

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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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The project site is in a developed setting. The site and surrounding area do not contain forest land or farmland. The resources of concern are absent and there is no potential for adverse impacts.

III. Air Quality	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
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Where available, the significance criteria established by the applicable air quality management 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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The project site is within the South Coast Air Basin (Basin), which is a subregion of the South Coast Air Quality Management District (SCAQMD). Development within the Basin is subject to a comprehensive program of pollution control strategies detailed in SCAQMD's Air Quality Management Plan (AQMP) and implementing Rules. The AQMP and implementing Rules are directed at reducing emissions in order to achieve state and federal air quality standards.

The limited activities associated with ongoing operation and maintenance of the completed improvements would generate a negligible volume of air pollutant emissions. Therefore,

III. Air Quality	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
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assessment of air quality impacts for this Project is limited to the construction phase.

AQMP provisions and rules applicable to the proposed stabilization work include those pertaining to fugitive dust control (Rules 403, 404, and 405), visibility of emissions (Rule 401), and nuisance activities (Rule 402) (SCAQMD 2013c). PP 4.3-2(a) (construction contract specifications measures to reduce emissions) and 4.3-2(b) (dust control measures) under the UCR LRDP EIR MMRP require compliance with SCAQMD rules and regulations applicable to this Project, and LRDP EIR MMRP Mitigation Measures (MM) 4.3-1(a) (particulate matter [PM] control measures), 4.3-1(b) (construction emissions control plan), and 4.3-2 (use of low nitrogen oxide [NO_x] diesel fuel) detail project-specific actions to ensure implementation of measures at construction sites and through construction contract specifications, as provided in Appendix C. Such measures include but are not limited to: incorporating into construction contract specifications measures to reduce emissions (compliance with SCAQMD Rules and regulations, maintenance programs, avoid idling, use of alternative fuels, provision of electrical on-site eliminating generators); implementing dust control measures to reduce fugitive dust (apply water or soil stabilizers, replace ground cover, suspend grading when wind speeds exceed 25 miles per hour, cover loose material within haul trucks, sweep streets, install wheel washers, post and enforce speed limits); providing contact information for notification of dust complaints; use of California Air Resources Board (ARB)-certified equipment during construction; prohibiting vehicle and engine idling in excess of 5 minutes; providing temporary traffic controls; scheduling construction activities to off-peak times to not affect traffic flows; maintaining construction equipment to specification; and use of low NO_x diesel fuel and construction equipment. Campus procedures for project design development and contract administration provide an established mechanism for implementation of LRDP EIR MMRP provisions, including those related to implementation of applicable SCAQMD Rules for individual construction projects. Because project emissions would be restricted to the construction phase and established campus programs would ensure compliance with applicable SCAQMD Rules, the proposed Project would not conflict with or obstruct implementation of the SCAQMD AQMP. This would be considered a less-than-significant impact.

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|--|--------------------------|--------------------------|-------------------------------------|--------------------------|
| b. Violate any air quality standard or contribute substantially to an existing or projected air quality violation? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
|--|--------------------------|--------------------------|-------------------------------------|--------------------------|

The proposed Project would generate air pollutant emissions during construction. Estimated emissions from combustion sources and fugitive dust (particulate matter greater than 10 microns in diameter [PM10] and greater than 2.5 microns in diameter [PM2.5]) were compiled using CalEEMod, an emissions estimation/evaluation model developed by SCAQMD in collaboration with other air quality management districts within California. Appendix B contains the air quality and greenhouse gas emission impact analysis, including assumptions and model output.

Table 1 in Appendix B summarizes the emissions estimates for project construction and compares the estimated emissions to the regional and localized significance thresholds established by SCAQMD. Estimated emissions are all substantially below the applicable thresholds. Emissions estimates for PM10 and PM2.5 take into account compliance with SCAQMD Rule 403. As noted in the response to item III.a, above, PP 4.3-2(a) (construction contract specifications measures to reduce emissions) and 4.3-2(b) (dust control measures) under the LRDP EIR MMRP require compliance with SCAQMD Rules and regulations applicable to this Project, and LRDP EIR MMRP MM 4.3-1(a) (PM control measures), MM 4.3-1(b) (construction emissions control plan), and

III. Air Quality

	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
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MM 4.3-2 (use of low NO_x diesel fuel) detail project-specific actions to ensure implementation of measures at construction sites and through construction contract specifications (see item III.a, above, for additional detail). Campus procedures for project design development and contract administration provide an established mechanism for implementation of LRDP EIR MMRP provisions, including those related to implementation of applicable SCAQMD Rules for individual construction projects. Because estimated emissions are below applicable SCAQMD thresholds and established campus programs provide for incorporation of SCAQMD Rule 403 controls for particulate emissions assumed in the impact analysis, the proposed Project would not violate any air quality standard or contribute substantially to an existing or projected air quality violation. Potential impacts in this regard would be less than significant. The applicable standard campus practices detailed in the LRDP EIR MMRP are provided in Appendix C.

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|---|--------------------------|--------------------------|-------------------------------------|--------------------------|
| c. 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 (including releasing emissions which exceed quantitative thresholds for ozone precursors)? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
|---|--------------------------|--------------------------|-------------------------------------|--------------------------|

The Basin is in nonattainment status for ozone, PM10, and PM2.5. Ozone is regulated by way of its precursors—reactive organic compounds (ROC) and NO_x. SCAQMD guidelines suggest that construction-related or operational emissions that exceed thresholds for individual projects would also be considered cumulatively considerable net increases in pollutants. As discussed under item III.b above, proposed construction is subject to standard construction-period control measures governed by SCAQMD Rules and regulations and LRDP EIR MMRP PP 4.3-2(a) (construction contract specifications measures to reduce emissions) and 4.3-2(b) (dust control measures) and MM 4.3-1(a) (PM control measures), MM 4.3-1(b) (construction emissions control plan), and MM 4.3-2 (use of low NO_x diesel fuel), provided in Appendix C. Estimated emissions for the approximately 120-day construction period are below the applicable SCAQMD daily significance thresholds, as provided in Appendix B. In the long term, the Project would involve only limited operation and maintenance activities that would not generate appreciable emissions. As such, the proposed Project would not result in a cumulatively considerable net increase of any criteria pollutant for which the region is in nonattainment.

- | | | | | |
|--|--------------------------|--------------------------|-------------------------------------|--------------------------|
| d. Expose sensitive receptors to substantial pollutant concentrations? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
|--|--------------------------|--------------------------|-------------------------------------|--------------------------|

Diesel particulate matter, which is classified as a carcinogenic toxic air contaminant by ARB, is the primary pollutant of concern with respect to health risks to sensitive receptors. Cancer health risks associated with exposures to diesel exhaust are typically associated with chronic exposure, in which a 70-year exposure period is assumed. Because construction would be of short duration (approximately 4 months), project construction is not anticipated to result in an elevated cancer risk to exposed sensitive receptors. In addition, localized construction emissions estimates would be well below SCAQMD localized emissions thresholds for applicable criteria pollutants (see Table 1, Appendix B). Considering the limited scale and duration of the proposed stabilization improvements, the proposed Project would not present the potential for significant sources of carbon monoxide, diesel particulate matter, or other toxic air pollutants that are of potential

III. Air Quality	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
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concern with respect to sensitive receptors. Potential impacts would be less than significant.

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|---|--------------------------|--------------------------|-------------------------------------|--------------------------|
| e. Create objectionable odors affecting a substantial number of people? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
|---|--------------------------|--------------------------|-------------------------------------|--------------------------|

Considering the nature and scale of the proposed stabilization improvements, potential sources of objectionable odors would be exhaust from vehicles and construction equipment during the approximately 120-day construction period. Construction at the project site would be of limited scale and duration, and the project site would be located at a major street intersection where such sources of odors are an element of the baseline condition. The proposed Project would not materially change the exposure to sources of odors in the project vicinity.

IV. Biological Resources	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
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Would the project:

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|--|--------------------------|-------------------------------------|--------------------------|--------------------------|
| 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? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|--|--------------------------|-------------------------------------|--------------------------|--------------------------|

In furtherance of LRDP EIR MMRP MM 4.4-1(a) (reduce impacts to Natural Open Space areas), biological surveys (Appendices D and E) evaluated habitat within and adjoining the project limits. A total of 58 special-status plant species and 41 special-status animal species identified through inquiry of established databases and literature resources were evaluated for potential to occur within the project limits. Two additional sensitive animal species were observed in the course of survey work (Cooper’s hawk and downy woodpecker). For 57 of the plant species, absence was confirmed during the site visit, or key habitat characteristics are absent. The lone remaining plant species, California satintail, was deemed to have low potential to occur. No satintail plants were observed during the site survey, and the biologist concluded that impacts to any limited number of plants that may be present would be considered less than significant.

For 34 of the special-status animal species, key habitat characteristics are absent. For seven additional species—western pond turtle, San Diego desert woodrat, long-eared owl, yellow warbler, yellow-breasted chat, downy woodpecker and Cooper’s hawk—regional conservation efforts have, and will, conserve sufficient habitat for these species. These regional conservation efforts, under the Western Riverside County MSHCP, are focused on habitat outside of the project site and surrounding area. On the basis of the regional conservation efforts, potential impacts, if any, to these seven species as a result of the proposed stabilization improvements would be considered less than significant.

The following addresses potential for substantial adverse effects for the two remaining special-status animal species for which suitable habitat is present:

Western Yellow Bat: individual palm trees within the stream and adjoining area are suitable

IV. Biological Resources

Potentially Significant Impact	Less-than- Significant with Mitigation Incorporated	Less-than- Significant Impact	No Impact
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roosting habitat for this species; the trees and stream within the riparian feature are potential foraging habitat. Because (1) the few large palm trees within the project limits provide limited habitat suitable only for individual bats (rather than communal roosting habitat), (2) there are many additional such individual roost sites in the general project vicinity, and (3) suitability of the stream area as foraging habitat would be largely unchanged as a result of the proposed Project, potential impacts on western yellow bat are considered less than significant.

Least Bell’s Vireo (LBV): While the riparian habitat within the stream area is suitable for this species, focused surveys (Appendix F) did not detect any individuals of this species and the project site is a considerable distance from known occurrences (approximately 4 miles to the nearest known occurrence). On this basis, currently it is assumed to be absent from the site, with no potential for significant impacts to occur.

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|--|--------------------------|-------------------------------------|--------------------------|--------------------------|
| b. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or US Fish and Wildlife Service? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|--|--------------------------|-------------------------------------|--------------------------|--------------------------|

The project site is characterized by a remnant reach of stream completely encompassed by existing residential development and major streets. The stream supports approximately 0.6 acre of riparian habitat in a highly constrained, previously channelized feature. The on-site riparian community includes numerous exotic plant species including edible fig, Mexican Fan Palm, salt-cedar, tree tobacco, and castor bean.

Several LRDP EIR MMRP provisions have been taken into account in the campus design and development process for the proposed improvements, namely:

PS Conservation 1 – Protect natural resources, including native habitat, remnant arroyos, and mature trees, identified as in good health as determined by a qualified arborist, to the extent feasible.

PS Conservation 2 – Site buildings and plan site development to minimize site disturbance, reduce erosion and sedimentation, reduce storm water runoff, and maintain existing landscapes, including healthy mature trees whenever possible.

PP 4.1-2(d) – To reduce disturbance of Natural and Naturalistic Open Space areas:

- (i) Unnecessary driving in sensitive or otherwise undisturbed areas shall be avoided. New roads or construction access roads would not be created where adequate access already exists.
- (ii) Removal of native shrub or brush shall be avoided, except where necessary.
- (iii) Drainages shall be avoided, except where required for construction. Limit activity to crossing drainages rather than using the lengths of drainage courses for access.
- (iv) Excess fill or construction waste shall not be dumped in washes.
- (v) Vehicles or other equipment shall not be parked in washes or other drainages.
- (vi) Overwatering shall be avoided in washes and other drainages.
- (vii) Wildlife including species such as fox, coyote, snakes, etc. shall not be harassed. Harassment includes shooting, throwing rocks, etc.

IV. Biological Resources

Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
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PP 4.4-2(a) – Impacts to riparian and wetland habitats shall be avoided, wherever feasible. If avoidance is not feasible, then the impacts will be evaluated as part of the Clean Water Act section 404 and California Fish and Game Code section 1602 permit application process. If mitigation is required, the University of California will develop and implement a resource mitigation program to be reviewed and approved by the ACOE [USACE] and CDFG [CDFW] through the State and federal permit process. The permit shall mitigate the habitats such that they are consistent with the Clean Water Act and CDFG policy of “no net loss” of wetland. Furthermore, impacted wetlands and/or riparian vegetation that cannot be avoided would be replaced at a ratio approved by the ACOE and CDFG. If replacement within the area is not feasible, then an approved mitigation bank or other off-site area will be used. The revegetation of impacted areas or mitigation parcels will be performed by a qualified restoration specialist and shall be conducted only on sites where soils, hydrology, and microclimate conditions are suitable for riparian habitat. First priority will be given to areas that are adjacent to existing patches of native habitat.

MM 4.4-3(b) – If wetland or riparian habitat would be removed as a result of project development, the University shall restore or enhance wetland or riparian habitat as required by the applicable State and/or federal resource agencies.

MM 4.4-3(c) – Any proposal for wetland creation or enhancement (pursuant to MM 4.4-3(b) above) will be based upon the completion of soils, hydrologic and other studies confirming the feasibility of the creation or enhancement proposal and shall include United States Army Corps of Engineers (USACE)–approved measures intended to promote occupancy by special status and other wetland-dependent species (e.g., plantings, collection of topsoil and inoculation of target areas).

Aside from temporary diversions required during construction, the proposed improvements would not alter the existing hydrologic regime—flows would continue to enter through the upstream culvert and exit through the downstream culvert. Tributary area limits and characteristics would not be altered.

The potential for adverse effects on riparian habitat relates to the direct removal that would be required to construct the stabilization improvements and the ongoing maintenance activities that would restrict reestablishment of riparian vegetation within the new rip-rap on the north bank. Construction is expected to remove 0.4 acre of riparian habitat consisting of plant material rooted within the channel bottom and the north bank. After construction, riparian vegetation would be allowed to naturally reestablish within the channel bottom, mostly in the southern half of the work limits. Over time, the permanent loss of riparian cover is expected to be approximately 0.2 acre (an amount to be determined through the regulatory permit process with USACE and CDFW). Riparian habitat is considered a sensitive biological resource; therefore, the temporary and permanent impacts on riparian vegetation represent a significant impact. **Mitigation Measures BIO 1 through 5**, below, would provide a means to document compliance with project commitments to minimize impacts on riparian habitat within the work area, and to confirm that the post-construction conditions are achieved as anticipated.

The on-site riparian area is the approved mitigation site under previously issued regulatory permits for the existing Creekside Terrace development. An enhancement program to establish 0.7 acre of riparian habitat was approved to compensate for loss of an ephemeral tributary feature that was filled with the grading for the homes at the top of the retaining walls. This stabilization

IV. Biological Resources	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
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Project would also provide for long-term protection of this riparian zone, but would not support the full program of enhancement required under the previous permits. The University proposes that any gap in mitigation obligation from the prior permits be compensated through the established Santa Ana River mitigation bank operated by RCRPOSD. This mitigation bank provides regional improvements to riparian systems through removal of invasive plant species within the Santa Ana River, to which the project stream is tributary. As of August 14, 2014, there are approximately 28 acres of credits available in the RCRPOSD bank (Personal communication, Rhonda Long, RCRPOSD, August 14, 2014). **Mitigation Measure BIO 6** below establishes the project commitment to offset any gap in the prior mitigation obligation.

With implementation of measures **BIO 1 through BIO 6**, project impacts on riparian habitat would be less than significant.

BIO 1 – Minimize Direct Impacts on Riparian Habitat. Prior to initiation of ground disturbance activities, disturbance limits shall be clearly defined at the construction site and demarcated on site plans (refer to Appendix A). Access and staging shall be limited to the existing gated entrance from Chicago Avenue, the existing maintenance path along the north bank, or paved/landscaped areas within the adjoining apartment development. Protection measures for riparian habitat on the south bank will be established in consultation with the biological monitor.

BIO 2 – Conduct Biological Monitoring During Construction. A qualified biologist shall monitor construction for compliance with best management practices outlined in LRDP EIR MMRP Programs and Practices (PP) 4.4-1(b) (reduce disturbance to Natural Open Space areas). Such measures may include minimizing vehicular access and parking in undisturbed areas or drainages; avoiding removal of native shrub or disturbance of drainages, except where necessary; avoiding overwatering; and not harassing wildlife species, as provided in full detail in Appendix C. Considering the nature of the work area and proximity of protected resources to the work limits, monitoring shall be continuous during the initial preparation and excavation phases. Once work transitions to placement of rip-rap, the frequency of monitoring may be reduced, as recommended by the monitoring biologist (taking into consideration the nature of the proposed work and time of year).

BIO 3 – Provide Worker Education Pamphlet. To ensure compliance with best management practices identified in LRDP EIR MMRP PP 4.4-1(b) (reduce disturbance to Natural Open Space areas), a biologist shall provide the construction contractor field supervisor with a worker education pamphlet to be provided to all construction personnel prior to personnel initiating ground disturbance activities. The education pamphlet will include a discussion of the importance of the stream and associated riparian habitat, areas to be avoided (including during parking and staging of equipment), a discussion of native wildlife with the potential to occur, and education on not harassing native wildlife.

BIO 4 – Remove Exotic Species. During the construction phase, exotic plant species shall be removed from the riparian zone, including the protected south bank area. Exotic plant material shall be properly handled to prevent sprouting or regrowth. Construction equipment shall be cleaned of mud or other debris that may contain invasive plants/seed and inspected to reduce the potential of spreading noxious

IV. Biological Resources	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
<p>weeds before mobilizing to the work area and before leaving the work area. Cleaning of equipment shall occur outside the work area where the wastewater stream is contained so as to prevent any invasive plant material from entering natural areas. During project operations, exotic species shall be removed periodically in accordance with the HMMP and agency approval subject to the conditions established by the approved permits.</p>				
<p><u>BIO 5 – Monitor Post-construction Revegetation.</u> Native riparian vegetation shall be allowed to reestablish through natural recruitment within the work limits. Prior to initiation of ground disturbance activities, a monitoring plan shall be prepared and submitted to the relevant agencies (i.e., U.S. Army Corps of Engineers [USACE], California Department of Fish and Wildlife [CDFW]). Prior to removal of vegetation, a qualified biologist shall conduct an assessment of functions and values for the stream and associated riparian habitat. The assessment will focus upon characterization of existing functions and values as a benchmark for evaluation of success of the post-construction effort. The performance criteria shall include functions and values that are of equal or greater value than existing conditions. During project operations, exotic species shall be removed periodically in accordance with the HMMP and agency approval subject to the conditions established by the approved permits. The plan should be sufficient to meet agency requirements and at a minimum shall include the following:</p>				
<ul style="list-style-type: none"> • a map and acreage of vegetation to be temporarily affected, • location of monitoring area, • functions and values assessment of pre-construction condition, • performance criteria, • monitoring guidelines, and • contingency measures. 				
<p><u>BIO 6 – Purchase Mitigation Bank Credits to Replace Residual Mitigation Obligation under Prior Permits.</u> The University shall purchase credits from the Santa Ana River Mitigation Bank operated by Riverside County Regional Parks and Open Space District (RCRPOSD), or other bank or in-lieu fee program approved by the permitting agencies (i.e., USACE and CDFW). Based upon the anticipated difference in riparian cover in the post-construction condition (0.2 acre) and minimum purchase requirements for this bank, a minimum purchase of 0.25-acre credit from the RCRPOSD bank would be required. The final credit purchase requirement will be determined through the regulatory permit process with the USACE and CDFW.</p>				

IV. Biological Resources	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
<p>c. Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?</p> <p>A delineation of jurisdictional waters and wetlands was conducted for the subject stream feature, in accordance with LRDP EIR MMRP MM 4.4-3(a) (jurisdictional delineation assessment) (Appendix G). The on-site drainage does not meet the criteria to be classified as wetlands. With the resource of concern absent, the proposed Project does not present the potential for adverse impacts in this regard.</p> <p>See item IV.b above regarding potential impacts on the on-site stream feature, which is protected under the broader category of “waters of the United States” under Section 404 of the Clean Water Act.</p>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<p>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?</p> <p>The riparian stream feature that is the subject of the proposed stabilization work is confined between buried storm drains at each end and is closely constrained by development. These conditions constrain the value of this stream for wildlife movement or nursery functions. While the extent of riparian habitat on site would be diminished as a result of the proposed improvements, the finished site conditions would retain a flowing channel with riparian canopy and would not substantially affect any limited movement or nursery functions that may exist. The resulting impacts would be less than significant.</p>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

IV. Biological Resources	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
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| e. Conflict with any applicable policies protecting biological resources? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
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See items IV.a and IV.b, above, relative to policies protecting sensitive species and riparian habitat, and item IV.f, below, regarding regional conservation plans.

The proposed Project would remove riparian vegetation and ruderal vegetation and would involve construction activity close to remaining riparian vegetation, ruderal vegetation, and residential landscaping that provides nesting habitat for bird species protected under the federal Migratory Bird Treaty Act and the California Fish and Game Code. Disturbance of active nests as a result of vegetation removal or construction activity would be in conflict with these state and federal biological resources protection policies. LRDP EIR MMRP provisions MM 4.4-4(a) (nesting special status avian species surveys during construction) and MM 4.4-4(b) (delay construction if active nests for avian species are found) establish standard campus practices to comply with these protection programs by avoiding impacts to active nests. The following mitigation measure (**Mitigation Measure BIO 7**) for the proposed Project reflects the requirements of these LRDP EIR MMRP provisions and would serve to reduce potential impacts in this regard on protected bird species to below a level of significance.

BIO 7 – re-construction Nesting Bird Surveys. Prior to the onset of construction activities that would result in vegetation removal between February 15 and September 15, nesting bird surveys shall be conducted by a qualified biologist a maximum of 7 days prior to initiation of ground disturbance activities. The survey area shall include the direct disturbance limits and a 250-foot buffer zone. If nesting birds are encountered within the survey area, the qualified biologist will flag an avoidance buffer zone around the nest. No ground disturbance activities shall occur within the avoidance buffer zone until the qualified biologist has determined that the nest is no longer active and the young are not dependent on the nest.

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| f. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other applicable habitat conservation plan? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
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The project site is within the plan areas of two regional conservation efforts—the Western Riverside County MSHCP and the Long-term Habitat Conservation Plan for the SKR. Implementation of the SKR plan is at a stage in which all conservation lands have been acquired. For projects outside the reserve areas, plan conformance is achieved through payment of mitigation fees that support ongoing management of the reserve lands. The project site is not within an SKR reserve and the University is exempt from payment of SKR mitigation fees.

The project site is outside of the MSHCP Criteria Area, which identifies areas potentially subject to acquisition for long-term conservation. Beyond the evaluation of potential involvement of Criteria Area lands, determination that a particular activity is consistent with the MSHCP also entails consideration of a variety of plan policies directed at protection of specific species and resources. Plan policies potentially applicable to consistency evaluation for the project site are those related to burrowing owl and riparian/riverine/vernal pool resources. The biological survey conducted in support of this initial study (Appendix D) documents the absence of habitat suitable for burrowing owls and the absence of vernal pools, so these MSHCP provisions do not apply.

IV. Biological Resources

Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
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However, the stream feature and associated riparian habitat are subject to the plan provisions for riverine and riparian resources. For riparian habitat, the plan requires consideration of suitability for three protected bird species—LBV, southwestern willow flycatcher, and western yellow-billed cuckoo. The biological survey conducted in support of this initial study (Appendix D) documents the absence of suitable habitat for southwestern willow flycatcher and western yellow-billed cuckoo. A focused survey was conducted for LBV (Appendix F). No individuals of these species were identified, and it is assumed to be absent.

The MSHCP stipulates that riparian habitat is to be avoided to the greatest extent practicable. If riparian habitat is affected, mitigation must demonstrate equal or superior functions and values. The proposed stabilization improvements would affect a highly constrained stream feature that is removed from MSHCP reserve areas. **Mitigation Measures BIO 1 through BIO 4** (see item IV.b, above) provide for implementation of various measures during construction to ensure impacts on the stream and riparian habitat are minimized. **Mitigation Measures BIO 5 and BIO 6** (see item IV.b, above) provide for post-construction monitoring and purchase of mitigation bank credits to ensure that riverine and riparian habitat functions and values are equal or superior to pre-project conditions. With implementation of **Mitigation Measures BIO 1 through BIO 6**, proposed activities and improvements would not conflict with MSHCP provisions for riparian and riverine resources.

As the proposed Project, including **Mitigation Measures BIO 1 through BIO 6**, would not conflict with applicable provisions of the two adopted habitat conservation plans that apply within the project area, potential impacts in this regard would be less than significant with mitigation incorporated.

V. Cultural Resources	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
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Would the project:

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| a. Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
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The proposed work limits and adjacent areas have been previously disturbed with construction of the existing apartments (in the 1980s) and the Creekside Terrace residential tract (in the early 2000s). There are no standing historic structures within or near the project limits. A cultural resource assessment prepared for the Creekside Terrace project in June 2003 determined that no historic resources were evident in site surveys and that no further evaluation was warranted. Considering the existing setting, prior survey results, and prior disturbances, there is no reasonable potential for the proposed improvements to cause a substantial adverse change in the significance of an historical resource.

LRDP EIR MMRP PP 4.5-3 (procedures and when to survey and perform measures related to archaeological resources) and established campus construction contracting procedure provide for a standard provision in construction contracts requiring the contractor to report any unexpected discoveries of buried resources. In the event of unexpected discoveries, work must be halted until an archaeologist is retained to assess the significance of any find and to develop and implement appropriate measures to protect or collect the find. This campus procedure is consistent with City of Riverside practices under General Plan EIR Mitigation Measure Cultural 4 (discovery of archaeological resources and Native American human remains), provided in Appendix C.

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| b. Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
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The proposed work limits and adjacent areas have been previously disturbed with construction of the existing apartments (in the 1980s) and the Creekside Terrace residential tract (in the early 2000s). A cultural resource assessment prepared for the Creekside Terrace project in June 2003 determined that no archaeological resources were evident in site surveys and that no further evaluation was warranted. Considering the existing setting, prior survey results, and prior disturbances, there is no reasonable potential for the proposed improvements to cause a substantial adverse change in the significance of an archaeological resource.

LRDP EIR MMRP PP 4.5-3 (procedures and when to survey and perform measures related to archaeological resources) and established campus construction contracting procedure provide for a standard provision in construction contracts requiring the contractor to report any unexpected discoveries of buried resources. In the event of unexpected discoveries, work must be halted until an archaeologist is retained to assess the significance of any find and to develop and implement appropriate measures to protect or collect the find. This campus procedure is consistent with City of Riverside practices under General Plan EIR Mitigation Measure Cultural 4 (discovery of archaeological resources and Native American human remains).

V. Cultural Resources	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
<p>c. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?</p> <p>The proposed work limits and adjacent areas have been previously disturbed with construction of the existing apartments (in the 1980s) and the Creekside Terrace residential tract (in the early 2000s). Considering the existing setting and prior disturbances, there is no reasonable potential for the proposed improvements to cause a substantial adverse change in the significance of a paleontological resource or unique geologic feature.</p> <p>LRDP EIR MMRP PP 4.5-5 (discovery of buried human remains) and established campus construction contracting procedure provide for a standard provision in construction contracts requiring the contractor to report any unexpected discoveries of buried resources. In the event of unexpected discoveries, work must be halted until a paleontologist is retained to assess the significance of any find and to develop and implement appropriate measures to protect or collect the find. This campus procedure is consistent with City of Riverside practices under General Plan EIR Mitigation Measure Cultural 4 (discovery of archaeological resources and Native American human remains).</p>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

<p>d. Disturb any human remains, including those interred outside of formal cemeteries?</p> <p>The proposed improvement limits have been previously disturbed. There is no reasonable basis to anticipate that the proposed construction would disturb human remains.</p> <p>LRDP EIR MMRP PP 4.5-5 (discovery of buried human remains) and established campus procedure require a halt to excavation or grading in the event of the discovery of a burial, human bone, or suspected human bone. The procedure requires that the area of the find is protected and the University is to immediately notify authorities for evaluation as to whether the find is human remains and determination as to any ensuing course of action pursuant to California Health and Safety Code (for all human remains) and/or Public Resources Code (for Native American human remains). This campus procedure is consistent with City of Riverside practices under General Plan EIR Mitigation Measure Cultural 4 (discovery of archaeological resources and Native American human remains).</p>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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VI. Geology and Soils

	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
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Would the project:

a. Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:

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| 1. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
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The project site is not within a mapped earthquake fault zone (City of Riverside 2007c). The proposed improvements would stabilize an eroded stream bank by reconstructing the bank and establishing a non-erodible surface. Considering the absence of known faults and the nature of the proposed improvements, the proposed Project would not alter conditions that expose people or structures to adverse effects in this regard.

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| 2. Strong seismic ground shaking? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
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There are several active earthquake faults within Southern California that could affect the project area in terms of ground shaking. The San Andreas, San Jacinto, and Elsinore faults are the more prominent due to their proximity and relatively high seismic potential (City of Riverside 2007c). The proposed improvements would stabilize an eroded stream bank by reconstructing the bank and providing a non-erodible surface treatment. The proposed improvements would not involve new structures and, therefore, would not alter exposure of people or structures to potential adverse effects in this regard.

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| 3. Seismic-related ground failure, including liquefaction? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
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The due diligence investigations conducted prior to the University's purchase of the Creekside Terrace residential development identified potentially liquefiable soils at the foot of the existing retaining walls along the north side of the stream (C.H.J. Incorporated 2007b and 2008a). Pressure grouting, as recommended by the geotechnical engineer (C.H.J. Incorporated 2008b), was completed in 2009 (John R. Byerly Incorporated 2009) to alleviate the risk of damage due to this condition. The proposed improvements would stabilize an eroded stream bank by reconstructing the bank and providing a non-erodible surface. The proposed improvements would not alter the exposure of people or structures to potential adverse effects in this regard.

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| 4. Landslides? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
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The proposed work is directed at protection of the Creekside Terrace retaining walls from potential stability hazards resulting from erosion of the north channel bank by water flowing within the stream. The proposed improvements would not alter the exposure of people or structures to potential adverse effects in this regard.

VI. Geology and Soils	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
b. Result in substantial soil erosion or the loss of topsoil?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<p>The proposed improvements may present the potential for soil erosion during construction. Soils within the work limits and temporary stockpiles may be prone to erosion due to exposure to both wind and rain. Established programs of the SCAQMD and the California Regional Water Quality Control Board (RWQCB) require implementation of known best management practices (BMPs) during construction. The Stormwater Pollution Prevention Plan (SWPPP) required under the RWQCB regulations details applicable measures, location of application, timing of application, and responsibility for monitoring and maintenance of erosion control measures. UCR LRDP EIR MMRP measures PP 4.4-2(b) (National Pollutant Discharge Elimination System [NPDES] compliance) and PP 4.8-1 (compliance with applicable water quality requirements) state the campus commitment to compliance with all applicable requirements of the RWQCB, including incorporation of BMPs in project design and construction. Established campus programs and procedures ensure that SWPPP requirements are incorporated into construction bid specifications, the SWPPP is prepared and notices are filed prior to start of construction, and that BMPs are implemented during construction.</p> <p>In the operation phase, the proposed Project would incorporate rip-rap cover on the north bank (to match existing conditions on the south bank) and at the existing storm drain inlet and outlet at each end of the stream. These design features would minimize potential for soil erosion in the operation phase and support the conclusion that impacts in this regard would be less than significant. Established campus procedures ensure that such design features are incorporated into project plans and that improvements are constructed in accordance with the plans.</p>				

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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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The proposed work is directed at correcting a stability hazard identified in the course of the University’s acquisition of the Creekside Terrace development. The proposed improvements would protect the existing retaining walls from potential stability hazards due to erosion of the north channel bank by water flowing within the stream. The existing wall improvements include a series of 34 small-diameter pipes that extend from the north stream bank and discharge small quantities of water from the soil behind the retaining walls. These existing pipes would be protected in place during reconstruction of the north bank. The proposed improvements would not alter the exposure of people or property to stability hazards in a manner that presents the potential for new or more severe adverse impacts.

VI. Geology and Soils	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
d. Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<p>The proposed work is directed at protection of the Creekside Terrace retaining walls from potential stability hazards resulting from erosion of the north channel bank by water flowing within the stream. Materials testing as part of the 2008 geotechnical investigation (C.H.J. Incorporated 2008a) characterized site soils as having “very low” potential for expansion. The proposed reconstruction of the north stream bank and covering of the bank with rip-rap would not alter the exposure of people or structures to potential adverse effects in this regard.</p>				
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<p>The proposed stabilization improvements would not generate waste water or affect any existing septic or alternative waste water disposal system. There is no potential for impacts of this nature.</p>				

VII. Greenhouse Gas Emissions	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
<p>Would the project:</p>				
a. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<p>Project greenhouse gas (GHG) emissions were estimated using the CalEEMod emissions estimation model (Appendix B). The Project’s contribution to GHG emissions would be limited to the construction phase and is estimated to be 102 metric tons (MT) of carbon dioxide (CO₂) equivalent (CO₂e).</p>				
<p>The SCAQMD has not adopted quantitative GHG emissions thresholds for non-industrial development projects. However, in its <i>Interim CEQA</i> [California Environmental Quality Act] <i>GHG Significance Threshold for Stationary Sources, Rules and Plans</i> documentation, SCAQMD suggests that a screening-level threshold of 1,400 MT per year of CO₂e emissions for commercial projects is appropriate. While the proposed Project is not technically a commercial project, the suggested screening-level thresholds for all other land use types are higher than 1,400 MT CO₂e per year. As such, the 1,400 MT CO₂e per year significance criteria was used for this analysis. Estimated CO₂e emissions resulting from project construction would be temporary and substantially below this threshold. Impacts would be less than significant.</p>				

VII. Greenhouse Gas Emissions	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
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b. Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

The State of California has identified a year 2020 target level for statewide GHG emissions of 427 million metric tons (MMT) of CO₂e, which is approximately 28.5% less than the year 2020 business as usual (BAU) emissions estimate of 596 MMT CO₂e. ARB has adopted the Assembly Bill (AB) 32 Scoping Plan, which details specific GHG emission reduction measures for specific GHG emissions sources. The Scoping Plan considers a range of actions including regulations, alternative compliance mechanisms, monetary and non-monetary incentives, voluntary actions, and market-based mechanisms. This small construction Project would not conflict with any AB 32 Scoping Plan measures, nor be inconsistent in any way with the AB 32 goal of reducing statewide GHG emissions to 1990 levels by year 2020.

Both UCR and the City of Riverside have adopted programs to reduce GHG emissions. Because emissions for the proposed Project would be limited to the construction phase, relevant aspects of both the UCR and City GHG emission reduction programs are limited to those establishing objectives for substantial diversion of construction waste. Goal 6 of the UCR Sustainability Action Plan (University of California, Riverside 2009) requires that all new construction projects recover construction waste and divert materials from entering landfills, at a minimum diversion rate of 75% for all campus projects. The campus operates a very successful landscape waste recycling program that diverts 99% of green waste from landfills, with much of the green waste generated on the main campus composted at Agricultural Operations, a field station dedicated to plant sciences research on the West Campus. For the proposed Project, much of the construction waste would involve green waste and removal of existing vegetation to stabilize the slope. No operational waste, aside from the periodic removal of small amounts of exotic species of vegetation, would be required. Standard campus contracting provisions, to be included in contract specifications for implementation by the construction contractor, include green waste recycling and other requirements for implementation and monitoring of waste diversion practices in all campus construction projects. These campus provisions address both City and County GHG reduction policies in this regard.

On this basis, the proposed Project would not conflict with any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing GHG emissions.

VIII. Hazards and Hazardous Materials	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<p>The proposed construction may include short-term use of petroleum-based fuels, lubricants, pesticides, and other similar materials. Transport and use of similar materials for ongoing maintenance would be unchanged from current conditions. LRDP EIR MMRP PP 4.7-1 (hazardous materials safety plans) acknowledges established campus programs to administer federal, state, and local laws regulating the management and use of hazardous materials. Considering the limited duration of construction activity and established programs governing transport, use, and disposal of hazardous materials, the proposed Project does not present the potential for a significant hazard to the public or to the environment through the routine transport, use, or disposal of hazardous materials.</p>				
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Refer to item VIII.a, above.				
c. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
There are no existing or proposed schools within 0.25 mile of the site.				
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

A Preliminary Environmental Site Assessment was conducted for the Creekside Terrace project as part of the University’s acquisition process (C.H.J. Incorporated 2007a). This assessment included a site inspection, records search, interviews, and review of similar documentation prepared for the homebuilder that developed the Creekside Terrace tract. The assessment documents that the site is not on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and that there is no evidence of recognized hazardous conditions affecting the property.

VIII. Hazards and Hazardous Materials	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
<p>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 for people residing or working in the project area?</p>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<p>The project site is within the land use planning area for the airport operations at March Air Reserve Base/Inland Port. The proposed stream bank stabilization work does not present the potential for any change with respect to airport safety hazards for people residing or working in the project area.</p>				
<p>f. For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?</p>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<p>There are no private airstrips in the project vicinity.</p>				
<p>g. Impair implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan?</p>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<p>Central Avenue is designated as an arterial evacuation route in the City of Riverside Emergency Operations Plan (City of Riverside 2007c, Figure PS-8.1, Evacuation Routes). While it is expected that Central Avenue may be utilized for construction deliveries and access, there is no reason to expect that project activities would block through-traffic or require a road closure. On this basis, the proposed Project does not present the potential to impair implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan.</p>				
<p>h. Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?</p>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<p>The project site is in a developed area of the City of Riverside not affected by wildland fire hazard (City of Riverside 2007c, Figure PS-7, Fire Hazard Area). Considering the absence of contributing factors for such risk, the proposed Project would not present potential impacts in this regard.</p>				

IX. Hydrology and Water Quality	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
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Would the project:

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| a. Violate any water quality standards or waste discharge requirements? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
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The proposed Project would entail clearing, grading, and construction activity within and adjacent to a perennial stream channel. Temporary stockpiling of excavated soil material and construction materials may occur within the bench area along the north side of the stream area or at other nearby locations, most likely within previously graded lots within the Creekside Terrace development or within the parking lot and landscape areas of the adjacent apartments. Without proper safeguards, project construction could result in a discharge of pollutants into the stream or the local storm drain system.

As required under the State General Permit for Discharge of Storm Water Associated with Construction Activity, the campus Stormwater Management Plan, and LRDP EIR MMRP PP 4.4-2(b) (NPDES compliance) and PP 4.8-1 (compliance with applicable water quality requirements), project contractors would prepare and implement a SWPPP detailing project-specific BMPs to limit the potential for the discharge of polluted water during construction. Typical BMPs anticipated to be included in the SWPPP include stream flow diversion, preservation of existing vegetation, temporary soil stabilization, track-out control, street sweeping, storm drain inlet protections, and general good housekeeping practices to separate sources of pollutants from runoff. Additional standard SWPPP provisions include requirements for implementation of control measures 48 hours prior to predicted rain events (i.e., 50% or greater chance of precipitation) and both visual monitoring and stormwater quality monitoring to ensure that BMPs are functioning properly throughout construction.

Considering the limited scale and duration of construction activity and established state and campus programs governing construction-period storm water discharges, the proposed Project does not present the potential to violate any water quality standards or waste discharge requirements. Potential impacts would be less than significant.

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| b. Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
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The proposed bank stabilization improvements, by their scale and nature, do not present the potential to affect groundwater recharge or deplete groundwater supplies. No impacts would occur.

IX. Hydrology and Water Quality	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
<p>c. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?</p> <p>The Project would involve a previously channelized, remnant drainage feature confined by two major roads (Chicago Avenue and Central Avenue), an established apartment development, and a residential subdivision within a developed area of the City of Riverside. Temporary diversion of the existing stream within the work limits would be required for the approximately 120-day construction period. See item IX.a, above, regarding the standard requirement for a SWPPP to minimize potential for erosion and siltation due to this temporary alteration of the stream.</p> <p>The completed improvements would not alter the existing inlet, outlet, or basic channel configuration and capacity. Tributary area limits and characteristics would not be altered. Added rip-rap protection on the north bank, channel bottom, and at the inlet and outlet are expected to reduce any erosion and resultant siltation that may occur under existing conditions.</p> <p>Considering the limited scale and duration of construction activity, established state and campus programs governing construction-period storm water discharges, and the stabilized finished conditions, the proposed Project does not present the potential for substantial erosion or siltation. Potential impacts would be less than significant.</p>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<p>d. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?</p> <p>The completed improvements would not alter the basic channel configuration and capacity. The existing inlet and outlet would remain as is and the tributary area limits and characteristics would not be altered. With essentially no change from relevant pre-project conditions, the proposed finished conditions do not present the potential to increase the rate or amount of surface runoff in a manner that would result in flooding, on or off site.</p> <p>Temporary diversion of the existing stream would be required for the approximately 120-day construction period. Considering the proposed work limits, the constrained nature of the stream, and the proximity of developed private property and public improvements, the options for diversion are limited. It is expected that diversion would involve a contained method, such as pipes or hoses, extending from the existing inlet to the existing outlet and placed along the south bank or within adjacent landscaped areas.</p> <p>With the assumed contained diversion, there is potential for flooding due to an upset condition involving a breach in the pipe or hose. An approximately 0.92-acre area that contains the existing stream channel has been zoned as Watercourse by the City of Riverside. This roughly corresponds to the fenced area between the apartment site parking lot and the Creekside Terrace development. As long as the potential overflow boundaries are confined to the existing Watercourse-zoned area,</p>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

IX. Hydrology and Water Quality	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
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there would be no change in anticipated inundation boundaries and, therefore, no potential for significant impacts due to flooding from the temporary change in the stream course. **Mitigation Measure HYD 1** provides a means to ensure that the temporary diversion does not result in flooding on or off site:

HYD 1 – Temporary Diversion Design. The temporary diversion works shall be designed such that the inundation limits (including those resulting from an inadvertent breach of flows contained in a pipe or hose) are confined to the existing Watercourse overlay zone boundary. The University shall ensure that construction contracts provide sufficient detail for the design and method of temporary diversion.

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| e. 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? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
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The proposed improvements would stabilize an existing stream bank with ungrouted rip-rap. There are no aspects of the construction process or the finished improvements that would increase runoff volumes. On this basis, there is no potential impact in this regard with respect to stormwater drainage system capacity.

See item IX.a, above, regarding potential construction-period impacts associated with polluted runoff.

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| f. Otherwise substantially degrade water quality? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
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The proposed improvements would stabilize an existing stream bank with ungrouted rip-rap. There are no apparent aspects of the construction process or the finished improvements that present the potential for substantial degradation of water quality.

See item IX.a, above, for discussion of potential water quality concerns during the construction period.

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| g. Place housing 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? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
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The proposed Project does not involve housing.

IX. Hydrology and Water Quality	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
h. Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<p>The existing stream channel is within the 100-year floodplain (FIRM Panel 06065C0728G, Zone AE, Base Flood Elevations determined). In the finished condition, the proposed channel configuration would be essentially unchanged. The proposed finished improvements would not present the potential to impede or redirect flood flows.</p> <p>The construction process would entail temporary placement of structures within the 100-year flood hazard zone to divert stream flows from the construction area. With implementation of Mitigation Measure HYD 1 (see item IX.d, above), the temporarily diverted stream flows would be confined to an area already recognized as susceptible to flood hazard. With this requirement, impacts in this regard would be less than significant.</p>				
i. Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<p>The project site is within the dam inundation area for the Sycamore Canyon Dam (City of Riverside 2007c, Figure PS-4, Flood Hazard Areas) and is also within the 100-year floodplain (see item IX.h, above). The proposed Project would alter the existing setting by grading the stream bank and placing rip-rap on the finished surface. This nominal change in the existing setting would not alter the existing exposure to risk of loss, injury, or death associated with the existing 100-year floodplain and dam inundation limits.</p> <p>The construction process would require temporary diversion of stream flows, which presents limited potential for exposure of people and structures in the immediate vicinity to risk of loss or injury due to flooding (see item IX.d, above). With implementation of Mitigation Measure HYD 1, the temporarily diverted stream flows would be confined to an area already recognized as susceptible to flood hazard. With this requirement, impacts in this regard would be less than significant.</p>				
j. Inundation by seiche, tsunami, or mudflow?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<p>The project site is at an inland location and there are no confined water bodies in the project vicinity; therefore, there is no potential for impacts related to seiche or tsunami. The surrounding area consists of relatively level paved and landscaped surfaces and retaining walls. Conditions contributing to mudflow hazard are similarly absent, with no potential for impacts in this regard.</p>				

X. Land Use and Planning	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a. Physically divide an established community?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
The Project would stabilize one bank of a stream situated within a fenced easement between two existing residential developments. There is no potential for impacts in this regard.				
b. Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the LRDP, general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

While the University is exempt from local land use controls pursuant to its constitutional authority, the University has nonetheless analyzed the Project’s consistency with local zoning and permitting requirements. The City of Riverside provides a zoning designation for the Creekside Terrace residential development of R-1-8500 for single family residential, and the apartment complex is designated as R-3-3000 for multi-family residential. The drainage channel and adjacent lands totaling 0.92 acre are within the Watercourse overlay zone (roughly corresponds to the existing fenced area along the stream at the interface of the apartments and the Creekside Terrace development). This zoning designation is in recognition of the existing stream channel and periodic flooding hazards. Such areas are to be kept free of particular structures or improvements that may endanger life or property or significantly restrict the carrying capacity of the designated floodway or stream channel (Riverside Municipal Code, Chapter 19.230.010). Riverside Municipal Code Section 19.230.020.C provides that grading within the Watercourse overlay zone is subject to a Conditional Use Permit (CUP).

The proposed improvements would stabilize the north stream bank and maintain the existing channel capacity; the Project would not compromise the water course protection objectives of the Municipal Code zoning provisions. On this basis, there is no potential for conflict with this land use policy adopted to avoid effects on water courses and associated flood zones.

University coordination with the City to date has indicated that a CUP would not be required in this case—ostensibly due to the limited nature of the proposed grading and temporary nature of changes in channel flow conditions. Should the City’s position change regarding the need for such an approval, the University is amenable to processing the necessary application. Such a requirement is an administrative matter that does not alter the conclusion regarding potential impacts or the magnitude thereof.

X. Land Use and Planning	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
c. Conflict with any applicable habitat conservation plan or natural community conservation plan?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<p>Refer to item IV.f, above, for discussion of project conformance to the Western Riverside County MSHCP and the Long-term Habitat Conservation Plan for the SKR. With implementation of recommended Mitigation Measures BIO 1 through BIO 6, the proposed Project would not conflict with applicable provisions of the two adopted habitat conservation plans that apply within the project area.</p>				

d. Create other land use impacts?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<p>The proposed stabilization work would not involve a change in land use. There are no apparent aspects of the proposed construction or finished conditions that present the potential for creation of other land use impacts.</p>				

XI. Mineral Resources	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<p>The project site and surrounding area are committed to development that precludes the potential for loss of availability of a known mineral resource of value to the region and the residents of the state.</p>				
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

There are no locally important mineral resource recovery sites in the City of Riverside (General Plan 2025 Draft EIR (City of Riverside 2007d, page 5.10-6).

XII. Noise	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
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Would the project result in:

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| a. Exposure of persons to or generation of noise levels in excess of standards established in any applicable plan or noise ordinance, or applicable standards of other agencies? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
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Potential noise impacts of the proposed Project would be limited to the construction phase. The City of Riverside Municipal Code (Section 7.35.10(b)(5)) addresses construction noise and identifies timeframes in which operation of construction equipment would be considered to result in excessive noise levels. On the basis of this City Municipal Code provision, noise emanating from construction activity adhering to hours of 7:00 a.m. to 9:00 p.m. on weekdays, and 8:00 am to 6:00 p.m. on Saturdays is not considered excessive or in violation of the Municipal Code.

Chapter 7.25 of the Riverside Municipal Code establishes exterior and interior performance standards for residential properties. During the daytime (7 a.m. to 10 p.m.), the noise level standard is 55 decibels for exterior use areas and 45 decibels for interior locations. During nighttime hours (10 p.m. to 7 a.m.), these limits are lowered to 45 decibels for exterior use areas and 35 decibels for interior locations. Section 7.25.010 further defines a series of time periods for which the noise standard may be exceeded without violating the ordinance—ranging from 15 minutes per hour for noise exceeding the performance standard by 5 decibels to 1 minute for noise levels exceeding the performance standard by 15 decibels. An exceedance of 20 decibels or more for any duration is considered a violation. Since construction noise during certain hours of the day is not considered to be in violation of the Municipal Code, these noise limits apply to construction noise between the hours of 9 p.m. and 7 a.m. on weekdays and 6 p.m. and 8 a.m. on Saturdays.

Campus standard practices for minimizing construction noise are detailed in the following LRDP EIR MMRP provisions and will be included for the proposed Project:

PP 4.10-7(b) – The campus shall continue to require by contract specifications that construction equipment be required to be muffled or otherwise shielded. Contract shall specify that engine-driven equipment be fitted with appropriate noise mufflers.

PP 4.10-7(c) – The campus shall continue to require that stationary construction equipment, material and vehicle staging to be placed to direct noise away from sensitive receptors.

PP 4.10-8 – The campus shall continue to conduct meetings, as needed, with off-campus constituents that are affected by campus construction to provide advance notice of construction activities and ensure that mutual needs of the particular construction project and of those impacted by construction noise are met, to extent feasible.

An analysis of projected noise levels resulting from project construction is presented as Appendix H. The predicted maximum combined sound level of simultaneously operating equipment is 83 decibels at 50 feet. Sensitive receptors that may be affected by construction noise are nearby residences within the adjacent apartment project and the Creekside Terrace development, as well as recreation areas within Andulka Park. Accounting for attenuation provided by the distance to the nearest residential uses in the adjacent apartment complex, the maximum exterior noise level is predicted to be 79 decibels. Accounting for the distance and vertical separation to the nearest residential uses in the Creekside Terrace development, the maximum exterior noise level is predicted to be 70 decibels. Construction noise levels at Andulka Park would up to 66 decibels, but

XII. Noise	Potentially Significant Impact	Less-than- Significant with Mitigation Incorporated	Less-than- Significant Impact	No Impact
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in most outdoor use locations in the park, construction noise would be overshadowed by noise from traffic on Chicago Avenue.

The noise analysis also considers noise from operation of a generator and pump for the temporary stream diversion. It is anticipated that the pump would need to be situated at the upstream end of the project limits near the existing inlet culvert. This location is approximately 50 feet from the nearest residences within the apartment site; the predicted exterior noise level at these sensitive receptors is approximately 82 decibels. The nearest receptors within the Creekside Terrace development are farther away and separated vertically from the noise source; the predicted maximum exterior noise level at the nearest receptor is 66 decibels. Accounting for attenuation provided by the buildings, interior noise levels could be as high as 57 decibels at adjacent apartment units and 41 decibels at residences in Creekside Terrace.

For all noise sources except the generator/pump for the stream diversion, construction activity may be limited to adhere to the provisions of Riverside Municipal Code Section 7.35.10(b)(5). Recommended **Mitigation Measure NOI 1** provides a means to enforce this restriction and, with implementation of this measure, impacts in this regard would be less than significant. This measure is consistent with the construction hour limits typically applied to campus projects under LRDP EIR MMRP PP 4.10.2 (hour limits for construction activities).

Continuous operation of a generator and/or pump for streamflow diversion during the construction period would result in noise levels exceeding the standards within Riverside Municipal Code Chapter 7.25, which would constitute a significant impact. Recommended **Mitigation Measure NOI 2** requires implementation of attenuation features to achieve noise levels not exceeding the Municipal Code standards. With implementation of this measure, impacts in this regard would be less than significant.

NOI 1 – Restrict Construction Hours. The University will ensure that the construction contractor limits construction activities to occurring between 7:00 a.m. and 9:00 p.m. Monday through Friday and 8:00 a.m. and 6:00 p.m. on Saturday. An exception is made as to operation of a generator and/or pump for temporary stream diversion, subject to Mitigation Measure NOI 2, below.

NOI 2 – Attenuation for diversion pump and generator. The University will ensure construction contracts specify that any generator or diversion pump will be equipped with mufflers, silencers, shrouds, shields, or other noise-reducing features so as to achieve a maximum exterior operational noise level not exceeding 45 A-weighted decibels (dBA) (one-hour equivalent sound level [L_{eq}]) at exterior locations of nearby noise-sensitive land uses. Measures that can be implemented to achieve this include but are not limited to:

- enclosing equipment in solid wall structures,
- using low-noise equipment, and
- placing sound barriers (earth berms or constructed barriers) around equipment.

XII. Noise	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
<p>b. Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?</p> <p>The proposed Project would entail stabilization of the slopes of a drainage feature that has previously been channelized along its natural alignment. Project construction activities may result in some minor amount of ground vibration. However, the proposed stabilization work would not include use of equipment or processes that are significant sources of groundborne noise and vibration. Additionally, vibration from these activities would be short term and would end when construction is completed. Because construction activity would not involve high-impact activities, such as blasting and pile driving, this potential impact is considered less than significant.</p>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<p>c. A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?</p> <p>The finished bank stabilization improvements would not entail any new permanent sources of noise.</p>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<p>d. A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project (including construction)?</p> <p>See item XII.a, above.</p>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<p>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 expose people residing or working in the project area to excessive noise levels?</p> <p>The project site is within the land use planning area for airport operations at March Air Reserve Base/Inland Port. The proposed stream bank stabilization does not present the potential for any change with respect to exposure to aircraft noise for people residing or working in the project area.</p>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<p>f. For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?</p> <p>There are no private airstrips in the project vicinity.</p>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

XIII. Population and Housing	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a. Induce substantial 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)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
The proposed Project would not involve new homes or businesses and would not extend new infrastructure to an undeveloped area.				
b. Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
The proposed Project would not displace any existing housing.				
c. Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
The proposed Project would not displace any existing housing.				

XIV. Public Services	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
a. Fire protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
The proposed Project would entail stabilization of the slopes of a drainage feature situated within an area of existing residential development. There are no aspects of the construction process or the finished improvements that would alter demand for fire protection services or affect existing physical facilities associated with provision of fire protection services.				

XIV. Public Services	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
b. Police protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<p>The proposed Project would entail stabilization of the slopes of a drainage feature situated within an area of existing residential development. There are no aspects of the construction process or the finished improvements that would alter demand for police protection services or affect existing physical facilities associated with provision of police protection services.</p>				
c. Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<p>The proposed Project would entail stabilization of the slopes of a drainage feature situated within an area of existing residential development. There are no aspects of the construction process or the finished improvements that would alter demand for school services or affect existing physical facilities associated with provision of school services.</p>				
d. Parks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<p>The proposed Project would entail stabilization of the slopes of a drainage feature situated within an area of existing residential development. The project site is separated from nearby Andulka Park by an existing major thoroughfare, Chicago Avenue, and, in the finished condition, the Project would not alter the volume or nature of flows that are received in existing downstream storm drain improvements along the park boundary. There are no aspects of the construction process or the finished improvements that would alter demand for park services or affect existing physical facilities associated with provision of park services.</p>				
e. Other public facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<p>Considering the location and the general nature and limited scale of the proposed improvements, improvements, the proposed Project does not present the potential for substantial adverse impacts associated with increased demand for public services or the need for additional public facilities.</p>				
f. Create other public service impacts?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<p>Considering the location and the general nature and limited scale of the proposed improvements, the proposed Project does not present the potential for substantial adverse impacts associated with increased demand for public services or the need for additional public facilities.</p>				

XV. Recreation	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a. Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<p>The proposed Project would entail stabilization of the slopes of a drainage feature situated within an area of existing residential development. There are no aspects of the construction process or the finished improvements that would alter demand for parks or recreational facilities services or affect existing physical facilities due to increased use of existing parks or recreational facilities.</p> <p>The subject drainage feature outlets through an existing 72-inch concrete storm drain pipe that passes under Chicago Avenue and discharges to an open channel along the perimeter of Andulka Park. The proposed bank stabilization improvements would not alter stream flow or tributary area conditions and, therefore, do not present the potential for changes in discharge characteristics that could contribute to physical deterioration of the existing downstream improvements.</p>				
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<p>The proposed Project would not include recreational facilities and would not require the construction or expansion of recreational facilities.</p>				

XVI. Transportation/Traffic	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a. Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<p>Both Chicago Avenue and Central Avenue are fully improved as four-lane, divided arterials. The City of Riverside service standard for arterials is Level of Service D (City of Riverside 2007a, page CCM-11). Level of Service D corresponds to a volume to capacity ratio not exceeding 1.0; therefore,</p>				

XVI. Transportation/Traffic	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
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roadways in the City of Riverside are considered to operate over capacity when the daily traffic volume exceeds the daily capacity value (City of Riverside 2007e, page 12). The most recent traffic counts (City of Riverside 2013) available from the City’s website indicate daily traffic volumes of approximately 17,000 to 25,000 vehicles per day on the segments of Chicago Avenue and Central Avenue near the project site. The General Plan EIR traffic study indicates a daily capacity of 33,000 per day for 110-foot arterials such as Central Avenue and Chicago Avenue. Under existing conditions, there is capacity to add an additional 8,000 to 16,000 daily trips before reaching the City’s service standard for arterials and exceeding the allowed volume to capacity ratio.

Temporary construction-related trips would result in an increase in trips on the surrounding roadway network. Specifically, construction-related trips would include daily trips for construction workers, delivery of equipment, delivery of materials, and removal of debris and excavated soil. No more than 18 construction worker trips are anticipated on any given day during the 4-month construction period. A total of 15 pieces of off-road equipment would be used throughout the four phases of construction, and no more than six pieces would be delivered during any given phase. As such, the number of construction trips related to the delivery of equipment would be minimal. A total of 4,360 cubic yards (cy) of materials would be delivered or removed from the project site, including 1,460 cy of rip-rap delivered to the site and 300 cy of excavated soil and 2,600 cy of vegetation debris taken from the site. At a capacity of about 16 cy of materials per truck trip, a total of about 545 round trips would account for material delivery and removal of debris and excavated soil over the 4-month construction period. The adjacent roadway network would be able to accommodate the additional short-term construction trips, and a less-than-significant impact would result.

Upon completion of construction, long-term traffic associated with ongoing maintenance would not differ from the current situation. While the proposed Project would temporarily increase the number of vehicle trips in the immediate vicinity, the proposed Project does not present the potential to conflict with City of Riverside policy regarding performance of the circulation system.

b. Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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See item XVI.a, above.

c. Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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The project site is within the land use planning area for the airport operations at March Air Reserve Base/Inland Port. The proposed stream bank stabilization work would not present the potential for any change with respect to air traffic patterns.

XVI. Transportation/Traffic	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
<p>d. Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?</p> <p>Access to the work area is by way of a gated entry off Chicago Avenue immediately south of the entrance drive to the Creekside Terrace development. There is a continuous raised median separating the northbound and southbound travel lanes along this section of Chicago Avenue, which has a posted speed limit of 45 miles per hour and a striped bike lane adjacent to the outside curb. The signalized intersection at Central Avenue is approximately 1,100 feet to the south. Two driveways serving the apartment complex are located between Central Avenue and the work area access point.</p> <p>It is not expected that temporary closures of the traffic lanes on Chicago Avenue between the northern apartment driveway and the Creekside Terrace entrance would be required during the anticipated 120-day construction period. However, in the event that traffic lane closures may be required during construction, at least one through lane of traffic would be maintained at all times, consistent with LRDP PP 4.14-5 (maintaining access during construction), which requires the campus to maintain at least one unobstructed lane in both directions on campus roadways; in this case, the measure would apply to off-campus streets to be affected by the proposed campus Project. Standard provisions of the required City encroachment permit would also ensure that appropriate signage and traffic control measures are implemented to provide for safety of vehicles, bikes, and pedestrians.</p> <p>Once construction is complete, the road and access conditions would be unchanged. With no change from existing conditions, there is no potential for increased hazards due to design features or incompatible uses.</p>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<p>e. Result in inadequate emergency access?</p> <p>See item XVI.d, above. As stated previously, at least one through lane would be maintained at all times, consistent with LRDP PP 4.14-5 (maintaining access during construction), and no lane closures on Chicago Avenue are anticipated. In the finished condition, there would be no change potentially affecting emergency access.</p>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<p>f. Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?</p> <p>See items XVI.d and XVI.e, above. The bus stop on the east side of Chicago Avenue just north of Central Avenue is several hundred feet south of the proposed Project and would not be adversely affected by proposed construction activity with compliance with LRDP PP 4.14-5 (maintaining access during construction). In the finished condition, there would be no change potentially affecting public transit, bicycle, or pedestrian facilities.</p>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

XVII. Utilities and Service Systems	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a. Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
The proposed bank stabilization improvements would not generate wastewater or require wastewater treatment services.				
b. Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
The proposed bank stabilization improvements would not generate new demand for water or wastewater services or otherwise require or result in the construction of expansion of water or wastewater treatment facilities.				
c. Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<p>The proposed Project would modify a segment of open channel that functions as a component of the City’s storm water drainage system. The proposed bank stabilization improvements would entail temporary disturbance of the existing stream channel and associated riparian vegetation, which presents the potential for significant environmental effects related to biological resources, temporary flooding, and noise, as discussed in preceding sections of this checklist (see sections IV, IX and XII). Mitigation Measures BIO 1 through BIO 7, HYD 1, NOI 1, and NOI 2 have been identified to reduce these potential impacts to below a level of significance. In addition, the environmental analysis presented throughout this initial study acknowledges established campus and City programs and practices that contribute to avoidance and minimization of potential environmental effects, including those related to construction-period air emissions, discovery of unknown cultural resources, erosion, construction-period noise, construction-period hazardous materials use and transport, and construction-period traffic safety (see sections II, V, VI, VII, VII, IX, XII, and XVI, above). With implementation of the recommended mitigation measures and implementation of City and campus standard practices, the potential environmental effects of the proposed storm water facility improvements would be less than significant.</p>				

XVII. Utilities and Service Systems	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
d. Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Refer to item XVII.a, above. The proposed Project would require comparatively limited volumes of water only during the construction phase. There are no known circumstances with existing water supplies that suggest such temporary demand would require new or expanded entitlements or resources.				
e. 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
The proposed bank stabilization improvements would not require wastewater service.				
f. Be served by a landfill with sufficient permitted capacity to accommodate the project’s solid waste disposal needs?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Project construction activities would generate a one-time volume of demolition waste, consisting of approximately 2,600 cubic yards of vegetation and 300 cubic yards of soil. As stated previously in item VII.b., both UCR and the City of Riverside have adopted programs requiring substantial diversion of construction waste. Standard campus contracting provisions include requirements for implementation and monitoring of waste diversion practices in all campus construction projects. These campus provisions address both City and County reduction policies in this regard. For the proposed Project, much of the construction waste would involve green waste and removal of existing vegetation to stabilize the slope. No operational waste, aside from the periodic removal of small amounts of exotic species of vegetation, would be required. Standard campus contracting provisions, to be included in contract specifications for implementation by the construction contractor, include green waste recycling and other requirements for implementation and monitoring of waste diversion practices in all campus construction projects. Ongoing operation would generate limited volumes of waste consisting of vegetation cleared from the north bank and adjacent access area.

Solid waste from the City of Riverside is disposed of at one of three local landfills—Badlands, El Sobrante, and Lamb Canyon. The Riverside General Plan 2025 (City of Riverside 2007b, page PF-21) reports local landfill capacity of more than 56 million tons, correlating to a 9 to 15 year lifespan, with opportunity for expansion at both the Badlands and Lamb Canyon landfills. Considering the limited nature of project waste generation and established practices for substantial diversion from landfill disposal, the Project does not present the potential to generate solid waste in excess of local landfill capacity.

XVII. Utilities and Service Systems	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
g. Comply with applicable federal, state, and local statutes and regulations related to solid waste?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<p>Applicable statutes related to solid waste are those addressing reduction of the volume of waste sent to landfills. As stated previously in items VII.b and XVII.f., above, both UCR and the City of Riverside have adopted programs and established standard implementation programs for substantial diversion of waste. Considering the limited nature of project waste generation and established programs for diversion from landfill disposal, the proposed Project would comply with all applicable federal, state, and local statutes and regulations related to solid waste, and there would be no impact in this regard.</p>				
h. Create other utility and service system impacts?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Considering the location and the general nature and limited scale of the proposed improvements, the proposed Project does not present the potential for adverse impacts on utility and service systems.

XVIII. Mandatory Findings of Significance	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
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The lead agency shall find that a project may have a significant effect on the environment and thereby require an EIR to be prepared for the project where there is substantial evidence, in light of the whole record, that any of the following conditions may occur. Where prior to commencement of the environmental analysis a project proponent agrees to mitigation measures or project modifications that would avoid any significant effect on the environment or would mitigate the significant environmental effect, a lead agency need not prepare an EIR solely because without mitigation the environmental effects would have been significant (per Section 15065 of the State CEQA Guidelines):

- | | | | | |
|---|--------------------------|-------------------------------------|--------------------------|--------------------------|
| <p>a. Does the project have the potential to 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?</p> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|---|--------------------------|-------------------------------------|--------------------------|--------------------------|

The proposed Project would stabilize the slopes of highly constrained, previously channelized drainage feature in an area of residential development. The recommended mitigation measures (**Mitigation Measures BIO-1, BIO 2, and BIO 3**) establish requirements to minimize impacts on the stream and associated riparian habitat and provide a framework for implementation of on-site and off-site riparian habitat restoration (**Mitigation Measures BIO 4, BIO 5 and BIO 6**). In the finished condition, the overall quality of the environment and the value of the channel as habitat would not be substantially altered from pre-project conditions.

Project-specific surveys have documented the limited presence of wildlife within the work limits and the absence of rare, threatened, or endangered species. Mitigation measures (**Mitigation Measures BIO 2 and BIO 7**) have been recommended to avoid significant impacts should any sensitive or otherwise protected bird species be identified within the work limits as construction proceeds.

The project site is previously disturbed and supports a perennial stream. No cultural resources were discovered in conjunction with prior development and there is no reasonable expectation that cultural resources would be discovered in the course of the proposed work.

XVIII. Mandatory Findings of Significance	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
<p>b. Does the project have impacts that are individually limited, but cumulatively considerable? (“Cumulatively considerable” means that the incremental effects of a project are significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of past, present and probable future projects)?</p>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Impacts resulting from the proposed bank stabilization improvements as identified in the discussion of checklist sections I through XVII would be isolated to the work limits or immediately surrounding environs within an established residential neighborhood in the City of Riverside. Potential impacts would be substantially limited to the approximately 120-day construction period. The review and analysis contained herein recognizes compliance with established local, state, and federal regulations and UCR standard procedures as the basis for a determination that impacts are less than significant for aesthetics, agricultural and forest resources, air quality, cultural resources, geology and soils, greenhouse gas emissions, hazards and hazardous materials, and transportation/traffic. The environmental review and analysis contained herein also indicates that the proposed Project presents the potential for project-level environmental impacts related to biological resources, hydrology and water quality, land use and planning, noise, and utilities and service systems, and mitigation is proposed to reduce those impacts. All identified direct impacts of the proposed improvements would be mitigated to below a level of significance with implementation of the recommended mitigation measures and standard City and University programs and practices. Therefore, no significant cumulatively considerable impacts would result under the proposed Project.

<p>c. Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?</p>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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Aspects of the Project presenting the potential for adverse impacts on human beings are associated with construction-related air emissions, flooding, noise, traffic, and hazardous materials use and transport. The discussion presented in the respective sections of this checklist (see discussion under sections III, VIII, IX, XII, and XVI) supports the conclusion that the proposed Project would not cause substantial adverse effects on human beings.

Fish and Wildlife Determination

Based on consultation with the California Department of Fish and Wildlife, there is no evidence that the Project has a potential for a change that would adversely affect wildlife resources or the habitat upon which the wildlife depends.

 Yes (No Effect)

 X No (Pay fee)

VI. Supporting Information Sources

Unless noted, all documents are available for review at the University of California Riverside, Capital Resource Management, University Village, 1223 University Avenue, Suite 200, Riverside California, 92507

C.H.J. Incorporated. 2007a. Preliminary Environmental Site Assessment Tract No. 31671 Creekside Terrace Riverside California, Prepared for University of California, Riverside (Job No. 07616-9). August 10. Colton, CA.

_____. 2007b. Summary of Preliminary Findings Due Diligence Investigation, Tract No. 31671, Chicago Avenue, North of Central Avenue, Riverside California, Prepared for University of California, Riverside (Job No. 07615-3). November 14. Colton, CA.

_____. 2008a. Due Diligence Investigation Tract No. 31671 Creekside Terrace Riverside California, Prepared for University of California, Riverside (Job No. 07615-3). February 7. Colton, CA.

_____. 2008b. Supplemental Investigation Tract No. 31671 Creekside Terrace Riverside California, Prepared for University of California, Riverside (Job No. 07615-3). March 14. Colton, CA.

John R. Byerly Incorporated. 2009. Geotechnical Observation of Compaction Grouting. June 8. Bloomington, CA.

Riverside, City of. 2007. *City of Riverside General Plan 2025*, Riverside, CA. November. Available: <http://riversideca.gov/planning/gp2025program/general-plan.asp>.

_____. 2007a. Circulation and Community Mobility Element.

_____. 2007b. Public Facilities and Infrastructure Element.

_____. 2007c. Public Safety Element.

_____. 2007d. City of Riverside General Plan 2025 Program Documents, Final Programmatic Environmental Impact Report, Volume 2, Section 5.10 – Mineral Resources.. Riverside, CA. November. Available: http://www.riversideca.gov/planning/2008-0909/FPEIR/Volume_2/5-10_Mineral_Resources.pdf.

_____. 2007e. City of Riverside General Plan 2025 Program Documents, Final Programmatic Environmental Impact Report, Volume 3, Appendix H – Transportation Study. Riverside, CA. November. Available: http://www.riversideca.gov/planning/2008-0909/FPEIR/Volume_3/Appendix_H.pdf

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South Coast Air Quality Management District (SCAQMD). 2013. SCAQMD Rules and Regulations. Available: <http://www.aqmd.gov/rules/rulesreg.html>.

University of California, Riverside. 2009. UCR Sustainability Action Plan. Available: <http://sustainability.ucr.edu/docs/plan.pdf>.

U.S. Geological Survey (USGS). 1967. 7.5-minute, Riverside East quadrangle map. Photorevised 1980.

Documents Incorporated by Reference

California Department of Conservation, Division of Land Resources Protection. 2012. Farmland Mapping and Monitoring Program. Riverside County Important Farmland 2010, Sheet 1 of 3. January. Available: ftp://ftp.consrv.ca.gov/pub/dlrp/FMMP/pdf/2010/riv10_west.pdf

Federal Emergency Management Agency. Flood Insurance Rate Map FIRM Map Number 06065C0728G. August 28. Available: <http://map1.msc.fema.gov>. Accessed: December 2, 2013.

Rick Engineering Company. 2008. Preliminary Due Diligence Investigation for Tract 31671, Creekside Terrance, City of Riverside California, (Job No. 15707), February 5. Riverside, CA.

Riverside, City of. 2013. City of Riverside Municipal Code, Chapter 7.25. Riverside, CA. Available: <http://www.riversideca.gov/municode/pdf/07/7-25.pdf>.

_____. 2013. City of Riverside Municipal Code, Section 7.3510(b)(5). Riverside, CA. Available: <http://www.riversideca.gov/municode/pdf/07/7-35.pdf>.

_____. 2013. City of Riverside Municipal Code. Section 19.230. Water Course Overlay Zone. Riverside, CA. Available: <http://www.riversideca.gov/municode/pdf/19/article-6/19-230.pdf>

University of California, Riverside. 2005. Long Range Development Plan Final Environmental Impact Report Mitigation Monitoring and Reporting Program. Available: <http://lrpd.ucr.edu/UCR%20LRDP%20Volume%20III%20FEIR%20November.pdf> (MMRP is Chapter D of Volume III, Final EIR)

University of California, Riverside. 2005. Long Range Development Plan Amendment 2 Final Environmental Impact Report Mitigation Monitoring and Reporting Program. Available: <http://lrpd.ucr.edu/Final%20EIR%20Volume%20III.pdf> (MMRP is Chapter 4 of Volume III, Final EIR)

VII. Initial Study Preparers

Kathleen Dale, Project Manager and Regulatory Specialist (former)

Debra Leight, Project Manager and Environmental Planner

Steve Bossi, Environmental Planner

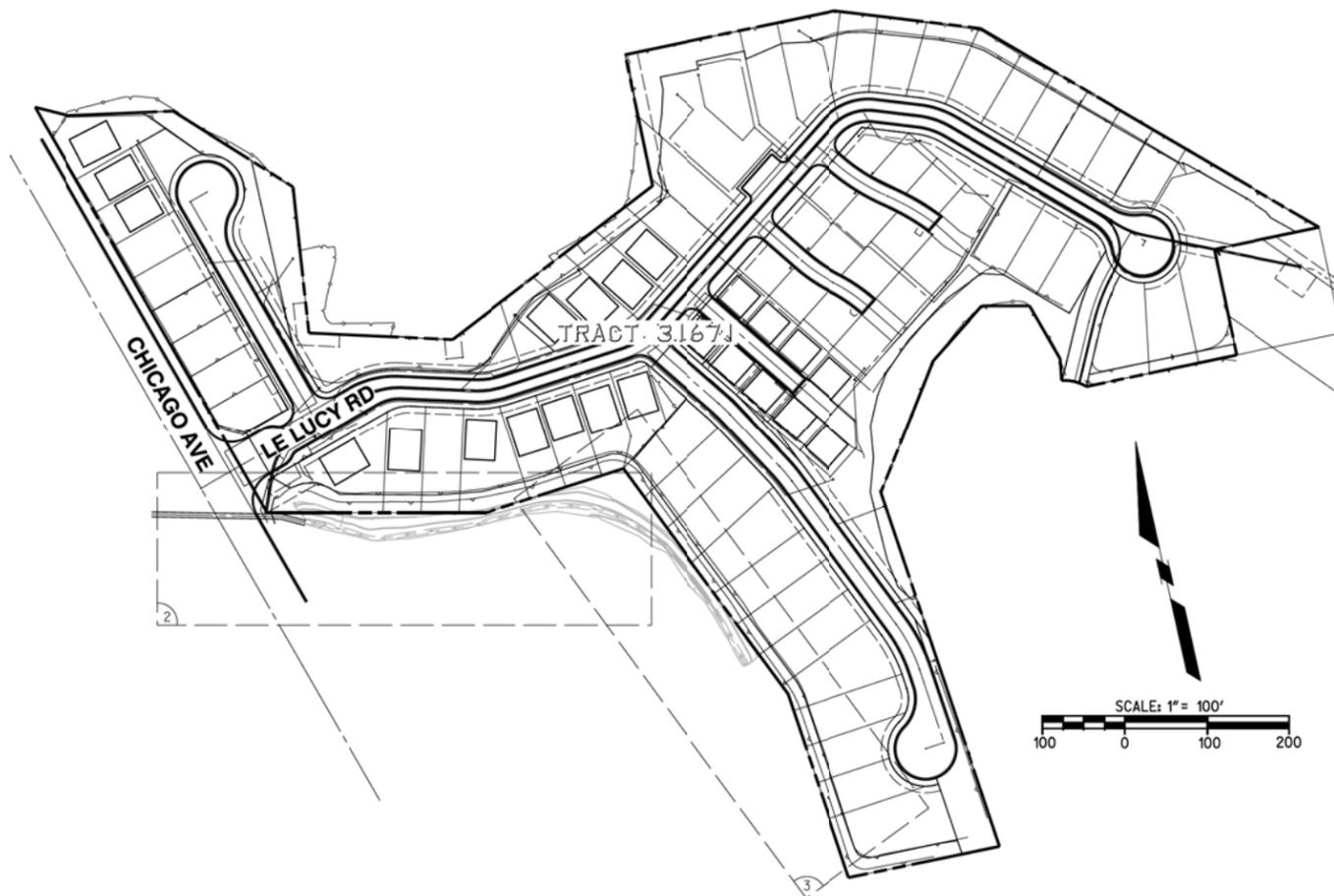
Tamseel Mir, Environmental Planner

Appendix A
Project Plans

GENERAL NOTES

- IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO CLEAR THE RIGHT-OF-WAY IN ACCORDANCE WITH THE PROVISIONS OF LAW AS IT AFFECTS EACH UTILITY INCLUDING IRRIGATION LINES AND APPURTENANCES.
- CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE CITY OF RIVERSIDE DEPARTMENT OF PUBLIC WORKS, STANDARD DRAWINGS, ITS SUPPLEMENTAL NOTES AND THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, CURRENT EDITION.
- ALL FLAGGED ELEVATIONS SHOWN ON THE PLANS SHALL BE STAKED IN THE FIELD EXCEPT FOR ELEVATIONS SHOWN IN PARENTHESIS WHICH DENOTE EXISTING GRADES.
- NO PERSON SHALL PERFORM ANY CONSTRUCTION ACTIVITY OR INSTALL ANY OBJECTS WITHIN THE PUBLIC RIGHT OF WAY OR EASEMENTS OF THE CITY OF RIVERSIDE WITHOUT A VALID CONSTRUCTION PERMIT OR A STREET OPENING PERMIT OR AN ENCROACHMENT PERMIT ISSUED BY THE CITY'S PUBLIC WORKS DEPARTMENT.
- THE CONTRACTOR SHALL CALL IN A LOCATION REQUEST TO UNDERGROUND SERVICE ALERT (USA), PHONE # 1-800-227-2600, TWO WORKING DAYS BEFORE STARTING CONSTRUCTION. NO CONSTRUCTION PERMIT WILL BE ISSUED BY THE PUBLIC WORKS DEPARTMENT UNLESS THE APPLICANT HAS BEEN PROVIDED AN INQUIRY IDENTIFICATION NUMBER BY U.S.A.
- QUANTITIES SHOWN ARE FOR INFORMATION ONLY AND THE CITY OF RIVERSIDE IS NOT RESPONSIBLE FOR THEIR ACCURACY.
- THE EXISTENCE AND LOCATION OF ANY UNDERGROUND UTILITY PIPES OR STRUCTURES SHOWN ON THESE PLANS WERE OBTAINED BY A SEARCH OF AVAILABLE RECORDS. TO THE BEST OF OUR KNOWLEDGE THERE ARE NO EXISTING UTILITIES EXCEPT AS SHOWN ON THESE PLANS. THE CONTRACTOR IS REQUIRED TO TAKE PRECAUTIONARY MEASURES TO PROTECT THE UTILITY LINES SHOWN AND ANY OTHER LINES NOT OF RECORD OR NOT SHOWN ON THESE PLANS.
- THE PRIVATE ENGINEER SIGNING THESE PLANS IS RESPONSIBLE FOR ASSURING THE ACCURACY AND ACCEPTABILITY OF THE WORK HEREON. IN THE EVENT OF DISCREPANCIES ARISING DURING CONSTRUCTION, THE PRIVATE ENGINEER SHALL BE RESPONSIBLE FOR DETERMINING AN ACCEPTABLE SOLUTION AND REVISING THE PLANS FOR APPROVAL BY THE CITY.
- THE DEVELOPER SHALL BE RESPONSIBLE FOR PRESERVING OR RE-ESTABLISHING AND REFERENCING SURVEY MONUMENTS DESTROYED, DISTURBED OR BURIED AS A RESULT OF CONSTRUCTION SHOWN HEREON.
- ALL EMBANKMENT FILL SHALL BE COMPACTED TO A MINIMUM 90% MAXIMUM DRY DENSITY AND SHALL BE OF AN APPROVED QUALITY.
- BEFORE THE RIP-RAP IS ACCEPTED BY THE CITY, AS PLACED, AT THE OUTLET OF ANY DRAINAGE STRUCTURE, IT SHALL BE TESTED UNDER FLOWS CLOSE AS POSSIBLE TO THE DESIGN CONDITIONS WITH WATER OBTAINED FROM FIRE HYDRANTS IN THE IMMEDIATE AREA.
- CONTRACTOR IS TO VERIFY EXISTING STORM DRAIN ELEVATIONS PRIOR TO CONSTRUCTION.

IN THE CITY OF RIVERSIDE, CALIFORNIA
CREEK IMPROVEMENT PLANS
 TRACT 31671 CHANNEL IMPROVEMENTS



WORK TO BE DONE

THESE IMPROVEMENTS CONSIST OF THE FOLLOWING WORK TO BE DONE ACCORDING TO THESE PLANS, THE CURRENT ***COUNTY/CITY*** STANDARDS AND SPECIFICATIONS, AND THE LATEST EDITION OF THE STANDARD SPECIFICATIONS FOR PUBLIC WORK CONSTRUCTION ("GREEN BOOK").

PRIVATE ENGINEER'S NOTE TO CONTRACTOR

ALL CONTRACTORS AND SUBCONTRACTORS PERFORMING WORK SHOWN ON OR RELATED TO THESE PLANS SHALL CONDUCT THEIR OPERATIONS SO THAT ALL EMPLOYEES ARE PROVIDED A SAFE PLACE TO WORK AND THE PUBLIC IS PROTECTED. ALL CONTRACTORS AND SUBCONTRACTORS SHALL COMPLY WITH THE OCCUPATIONAL SAFETY AND HEALTH REGULATIONS OF THE U.S. DEPARTMENT OF LABOR AND THE STATE OF CALIFORNIA DEPARTMENT OF INDUSTRIAL RELATIONS CONSTRUCTION SAFETY ORDERS. THE CIVIL ENGINEER SHALL NOT BE RESPONSIBLE IN ANY WAY FOR THE CONTRACTOR'S AND SUBCONTRACTOR'S COMPLIANCE WITH SAID REGULATIONS AND ORDERS.

CONTRACTOR FURTHER AGREES THAT HE SHALL ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB-SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THIS PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY. THAT THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS, AND THAT THE CONTRACTOR SHALL DEFEND, INDEMNIFY AND HOLD THE OWNER AND CIVIL ENGINEER HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT, EXCEPT FOR LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF THE OWNER OR ENGINEER.

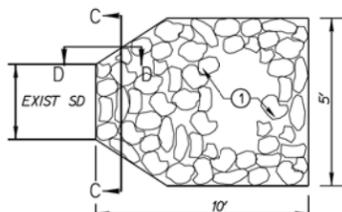
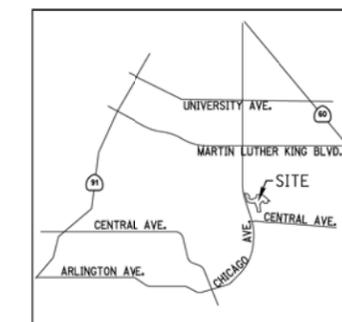
THE EXISTENCE AND APPROXIMATE LOCATIONS OF ANY UNDERGROUND UTILITIES OR STRUCTURES SHOWN ON THESE PLANS ARE OBTAINED BY A SEARCH OF THE AVAILABLE RECORDS. THE CIVIL ENGINEER ASSUMES NO LIABILITY AS TO THE EXACT LOCATION OF SAID LINES NOR FOR UTILITY OR IRRIGATION LINES WHOSE LOCATIONS ARE NOT SHOWN. THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING ALL UTILITY AND IRRIGATION COMPANIES PRIOR TO WORK OR EXCAVATION TO DETERMINE THE EXACT LOCATIONS OF ALL LINES AFFECTING THIS WORK, WHETHER OR NOT SHOWN HERE ON, AND FOR ANY DAMAGE OR PROTECTION TO THESE LINES.

OWNER/DEVELOPER

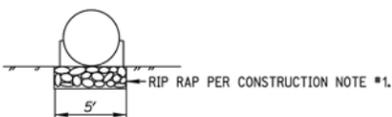
UNIVERSITY OF CALIFORNIA, RIVERSIDE
 326 SURGE BUILDING
 900 UNIVERSITY AVE.
 RIVERSIDE, CA 92521

CIVIL ENGINEER

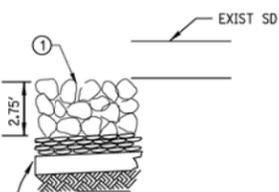
RICK ENGINEERING COMPANY
 1770 IOWA AVE., SUITE 100
 RIVERSIDE, CA 92507
 ATTN: RICHARD O'NEILL
 951-782-0707



TYPICAL RIP RAP PAD
 N.T.S.

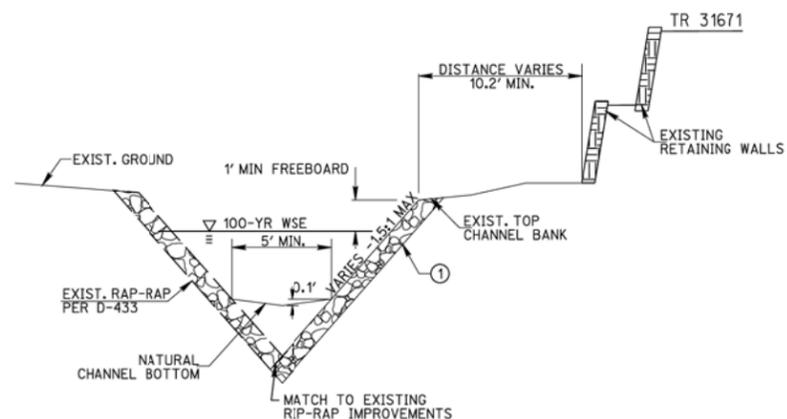


SECTION C-C
 N.T.S.



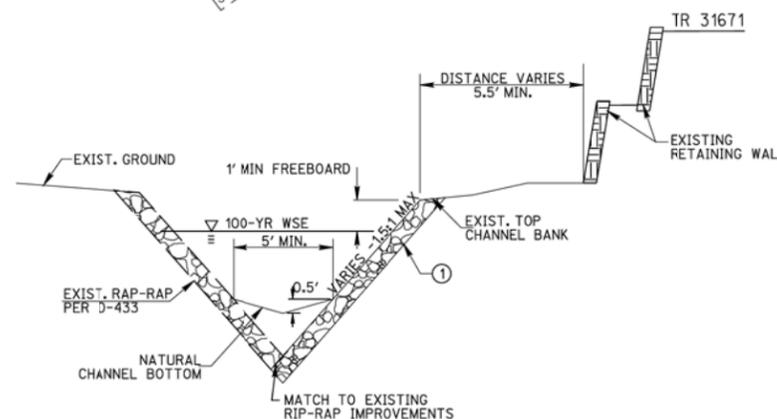
SECTION D-D
 N.T.S.

ALL RIP RAP SHALL BE PLACED ON MIRAFI 1100N/15/300 FILTER FABRIC OR EQUAL IN ACCORDANCE WITH CALTRANS STANDARD SPECIFICATION SECTION 88.



TYPICAL CREEK CROSS SECTION
 10+40.39 TO 14+20.55

INSTALL RIP-RAP ALONG CREEK BANK. REMOVE VEGETATION AND TEMPORARILY DISTURB CHANNEL BOTTOM.



TYPICAL CREEK CROSS SECTION
 14+55.75 TO 16+31.79

INSTALL RIP-RAP ALONG CREEK BANK. REMOVE VEGETATION AND TEMPORARILY DISTURB CHANNEL BOTTOM.

LEGEND

- 100-YR WATER SURFACE
- EXISTING STORM DRAIN
- RIP-RAP
- EXISTING RIP-RAP

CONSTRUCTION NOTES

- PLACE 1/4-TON RIPRAP AT 2.75" THICKNESS. 1460 CY ALL RIP RAP SHALL BE PLACED ON MIRAFI 1100N/15/300 FILTER FABRIC OR EQUAL IN ACCORDANCE WITH CALTRANS STANDARD SPECIFICATION SECTION 88. PLACE RIPRAP PER SECTION 72, AND AS APPROVED BY THE GEOTECHNICAL ENGINEER.

CAUTION:
 EXACT LOCATION OF EXISTING UNDERGROUND FACILITIES IS UNKNOWN. CONTRACTOR TO VERIFY IN FIELD.

DIG ALERT
 CALL BEFORE YOU DIG!
 1-800-227-2600
 UNDERGROUND SERVICE ALERT
 Call at least 2 working days prior to excavating.

REGISTERED PROFESSIONAL ENGINEER
 ROBERT A. STOCKTON
 No. C033591
 Exp. 6-30-12
 CIVIL
 STATE OF CALIFORNIA

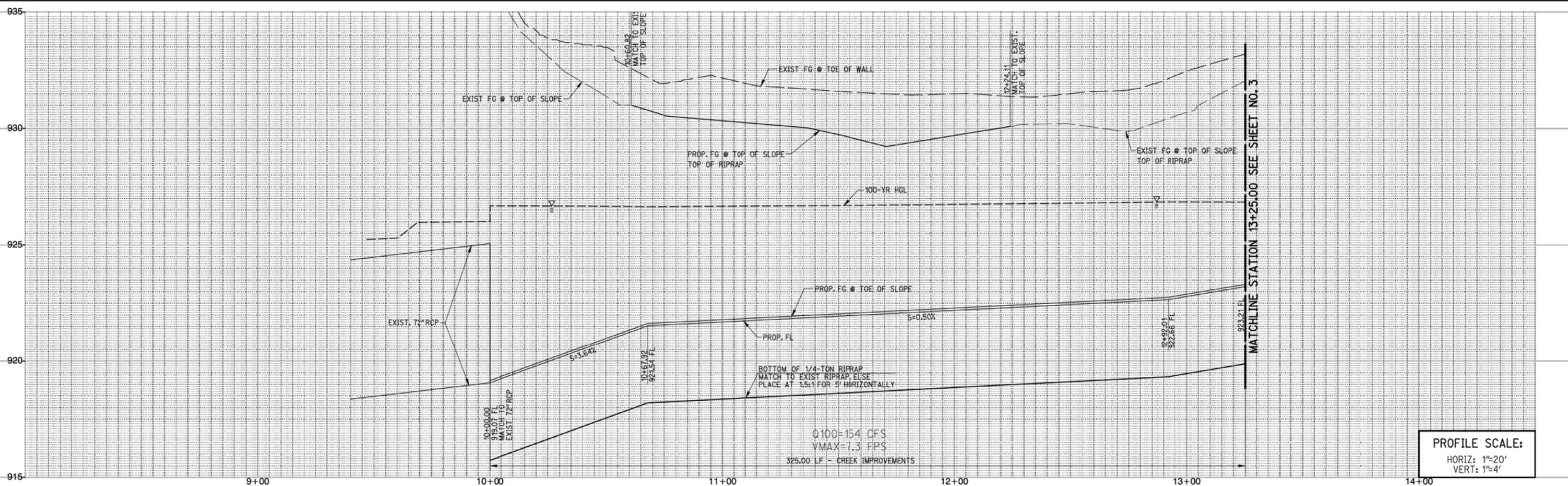
PREPARED UNDER THE DIRECTION OF
 ROBERT A. STOCKTON
 REGISTERED CIVIL ENGINEER NO. 33591
 EXPIRATION DATE 6-30-12
 APPROVED BY

RICK ENGINEERING COMPANY
 1770 IOWA AVENUE-SUITE 100
 RIVERSIDE, CA 92507
 951.782.0707
 FAX 951.782.0723
 rickengineering.com
 San Diego - Chicago - San Luis Obispo - Bakersfield - Sacramento - Phoenix - Tucson
 CITY BUSINESS TAX CERTIFICATE NO. 35225 EXP. 7-20-12
 BENCH MARK REFERENCE NUMBER F887/64 ELEVATION=984.9 ONVC 290
 BRASS DISK IN CONCRETE ON A SMALL RAISED EARTH MOUND ON THE WESTERLY SIDE OF CHICAGO AVE. AT LE CLUTE AVE. POINT IS 35 FEET SOUTHERLY OF A POINT #1953 J AND 35.4 FEET WESTERLY OF THE EXISTING BERM OF CHICAGO AVE.
 SCALE: H: 1"=100'
 DATE: 10-NOV-2011

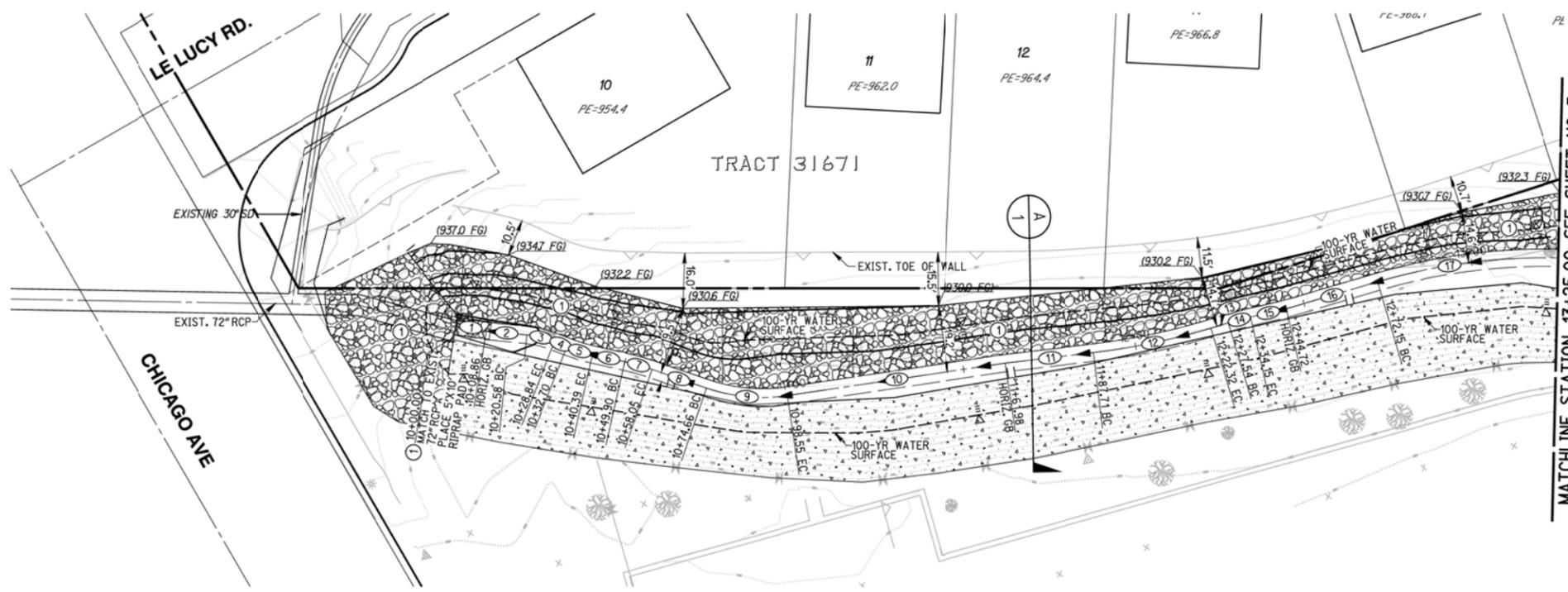
DESIGNED BY REC DRAWN BY REC CHECKED BY RAS

CITY OF RIVERSIDE
 PUBLIC WORKS DEPARTMENT
 APPROVED BY DATE
 PRINCIPAL ENGINEER
 PARK DEPARTMENT
 TRAFFIC DIVISION
 CHIEF R/W ENGR.
 APPROVED BY DATE
 DIRECTOR OF PUBLIC WORKS

PRELIMINARY
 NOT FOR CONSTRUCTION
 TRACT 31671
 CREEK IMPROVEMENT PLANS
 PROJECT NO.
 SHEET 1 OF 3
 HORIZ. SCALE 1"=100' VERT. SCALE N/A
 FILE NO.
 PLOT DATE: 10-NOV-2011 JN 15707A

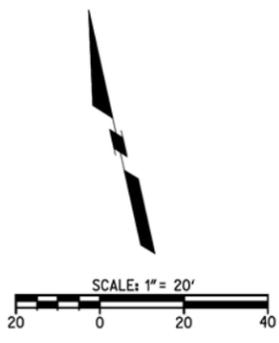


PROFILE SCALE:
 HORIZ: 1"=20'
 VERT: 1"=4'



CENTERLINE DATA				
NO.	DELTA OR BRG.	RADIUS	LENGTH	TANGENT
1	N 68°23'48" W		8.86'	
2	N 71°47'02" W		11.71'	
3	15°47'13"	30.00'	8.27'	4.16'
4	N 55°59'50" W		3.86'	
5	8°48'34"	50.00'	7.69'	3.85'
6	N 64°48'24" W		9.51'	
7	6°13'22"	75.00'	8.15'	4.08'
8	N 58°35'02" W		16.61'	
9	27°22'34"	50.00'	23.89'	12.18'
10	N 85°57'36" W		63.44'	
11	N 84°17'56" W		25.73'	
12	9°54'54"	200.00'	34.61'	17.35'
13	N 85°47'10" E		5.22'	
14	3°47'16"	100.00'	6.61'	3.31'
15	N 89°34'26" E		10.57'	
16	N 86°03'01" E		27.43'	
17	17°38'50"	171.60'	52.85'	26.64'

CONSTRUCTION NOTES
 ① PLACE 1/4-TON RIPRAP AT 2.75' THICKNESS. ALL RIP RAP SHALL BE PLACED ON MIRAFI 1100N/15/300 FILTER FABRIC OR EQUAL IN ACCORDANCE WITH CALTRANS STANDARD SPECIFICATION SECTION 88. PLACE RIPRAP PER SECTION 72 AND AS APPROVED BY THE GEOTECHNICAL ENGINEER.



DIG ALERT
 CALL BEFORE YOU DIG!
 1-800-227-2600
 UNDERGROUND SERVICE ALERT
 Call at least 2 working days prior to excavating.

REGISTERED PROFESSIONAL ENGINEER
 ROBERT A. STOCKTON
 No. C033591
 Exp. 6-30-12
 CIVIL
 STATE OF CALIFORNIA

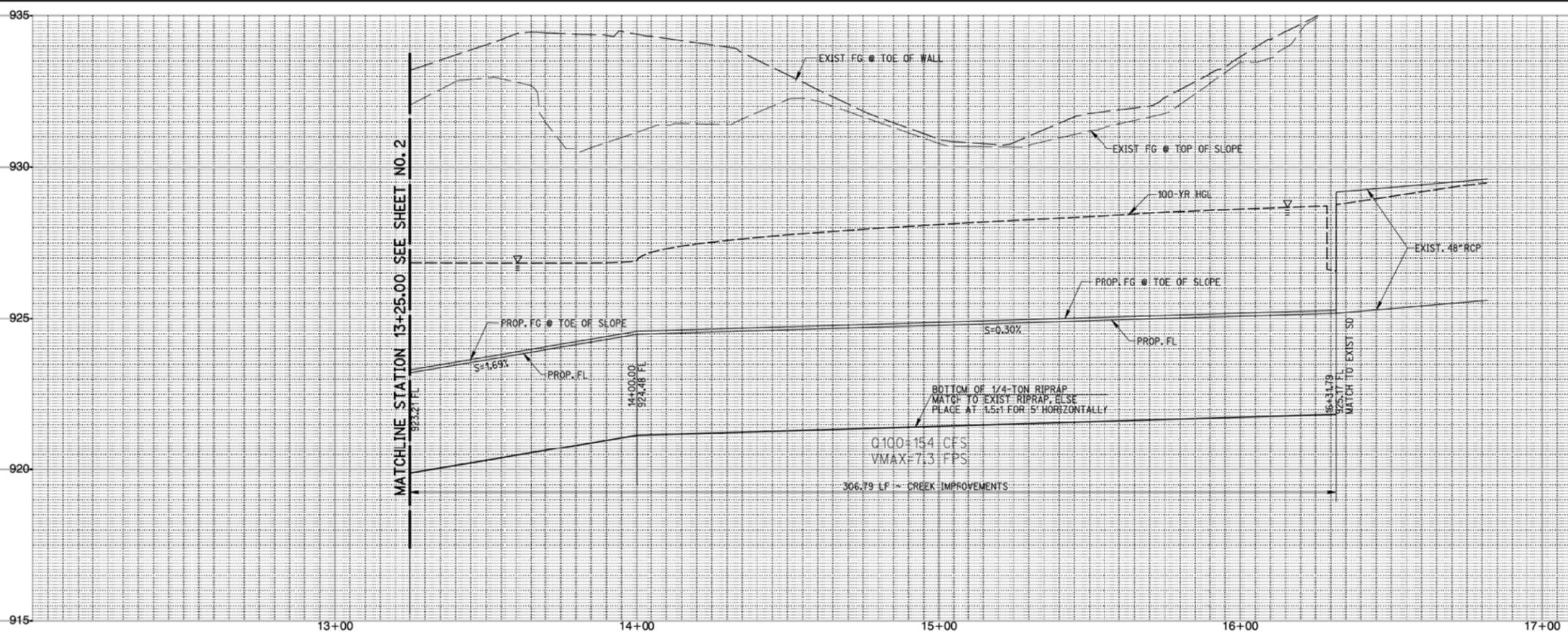
PREPARED UNDER THE DIRECTION OF
 ROBERT A. STOCKTON
 REGISTERED CIVIL ENGINEER NO. 33591
 EXPIRATION DATE 6-30-12
 APPROVED BY

RICK ENGINEERING COMPANY
 1770 KIMIA AVENUE-SUITE 100
 RIVERSIDE, CA 92507
 951.782.0707
 FAX 951.782.0723
 rickengineering.com
 San Diego - Chicago - San Luis Obispo - Bakersfield - Sacramento - Phoenix - Tucson
 CITY BUSINESS TAX CERTIFICATE NO. 35225 EXP. 7-20-12
 BENCH MARK REFERENCE NUMBER F857/64 ELEVATION=984.9 (NGVC 29)
 BRASS DISK IN CONCRETE ON A SMALL RAISED EARTH MOUND ON THE WESTERLY SIDE OF CHICAGO AVE. AT LE CENTER AVE. POINT IS 35 FEET SOUTHERLY OF A POINT #1957 J AND 38.4 FEET WESTERLY OF THE EXISTING BERM OF CHICAGO AVE.
 SCALE: H: 1"=20'
 V: 1"=4'
 DATE: 10-NOV-2011

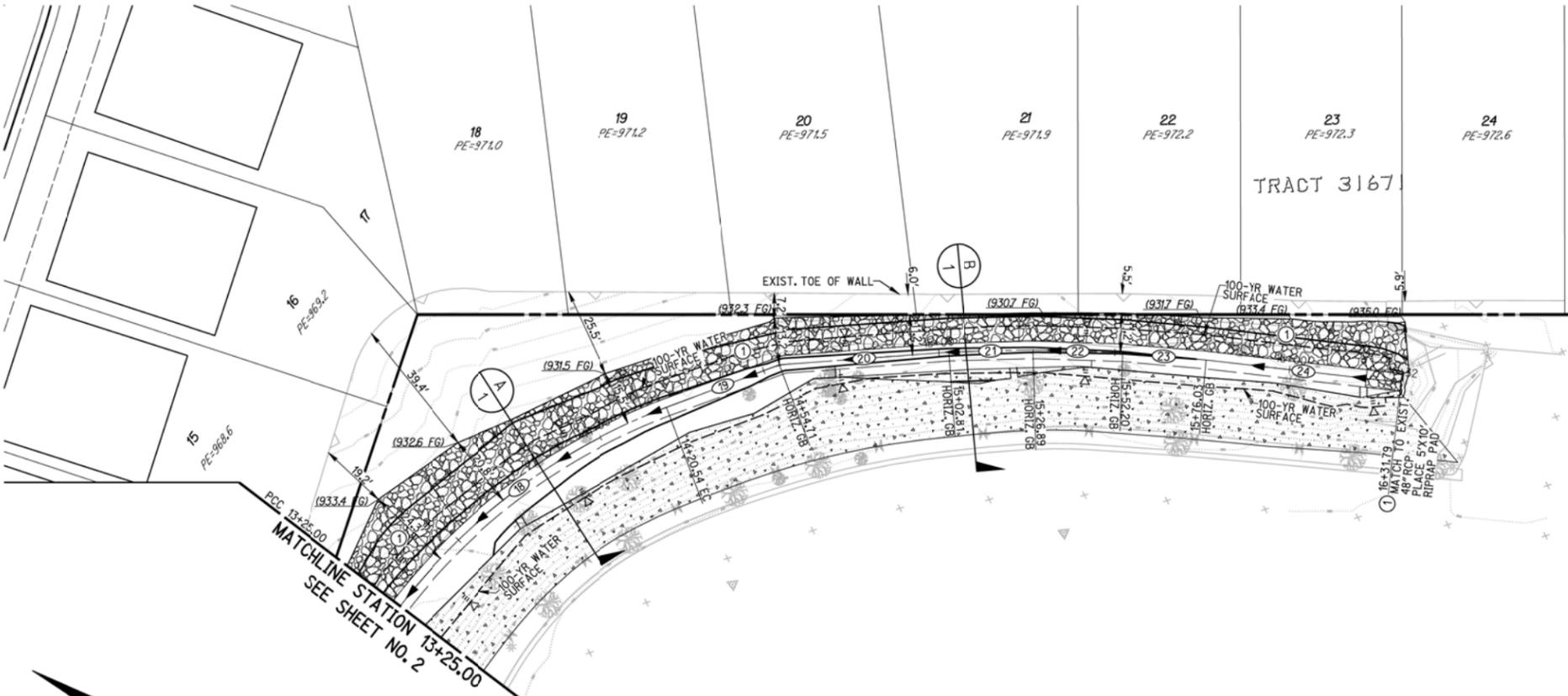
DESIGNED BY: REC DRAWN BY: REC CHECKED BY: RAS

CITY OF RIVERSIDE
 PUBLIC WORKS DEPARTMENT
 APPROVED BY: [Signature] DATE: []
 PRINCIPAL ENGINEER
 PARK DEPARTMENT
 TRAFFIC DIVISION
 CHIEF R/W ENGR.
 APPROVED BY: [Signature] DATE: []
 DIRECTOR OF PUBLIC WORKS

PRELIMINARY
 NOT FOR CONSTRUCTION
 TRACT 31671
 CREEK
 IMPROVEMENT PLANS
 PROJECT NO. []
 SHEET 2 OF 3
 FILE NO. []
 HORIZ. SCALE 1"=20' VERT. SCALE 1"=4'
 PLOT DATE: 10-NOV-2011 JUN 15707A



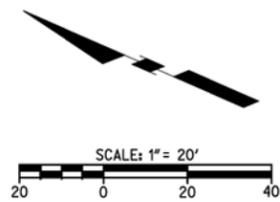
PROFILE SCALE:
 HORIZ: 1"=20'
 VERT: 1"=4'



CENTERLINE DATA				
NO.	DELTA OR BRG.	RADIUS	LENGTH	TANGENT
18	31° 54' 00"	171.60'	95.54'	49.04'
19	N 44° 18' 18" W		34.17'	
20	N 27° 54' 58" W		48.10'	
21	N 25° 16' 43" W		24.08'	
22	N 21° 47' 23" W		25.31'	
23	N 18° 39' 13" W		23.83'	
24	N 17° 08' 35" W		55.76'	

CONSTRUCTION NOTES

1 PLACE 1/4-TON RIPRAP AT 2.75' THICKNESS. ALL RIP RAP SHALL BE PLACED ON MIRAFI 1100N/15300 FILTER FABRIC OR EQUAL IN ACCORDANCE WITH CALTRANS STANDARD SPECIFICATION SECTION 88. PLACE RIPRAP PER SECTION 72 AND AS APPROVED BY THE GEOTECHNICAL ENGINEER.



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 UNDERGROUND SERVICE ALERT
 Call at least 2 working days prior to excavating.



PREPARED UNDER THE DIRECTION OF
 ROBERT A. STOCKTON
 REGISTERED CIVIL ENGINEER NO. 33591
 EXPIRATION DATE 6-30-12

RICK ENGINEERING COMPANY
 1770 KOWA AVENUE-SUITE 100
 RIVERSIDE, CA 92507
 951.782.0707
 FAX 951.782.0723
 rickengineering.com

CITY BUSINESS TAX CERTIFICATE NO. 35225 EXP. 7-20-12

SCALE: H: 1"=20'
 V: 1"=4'

DATE: 10-NOV-2011

BENCH MARK REFERENCE NUMBER F887/64 ELEVATION=984.9 INVC 291
 BRASS DISK IN CONCRETE ON A SMALL RAISED EARTH MOUND ON THE WESTERLY SIDE OF CHICAGO AVE. AT LE. CENTER AVE. POINT IS 35 FEET SOUTHERLY OF A POINT 4'19.57' L AND 36.4 FEET WESTERLY OF THE EXISTING BERM OF CHICAGO AVE.

MARK	REVISIONS	APPR.	DATE

DESIGNED BY: REC DRAWN BY: REC CHECKED BY: RAS

CITY OF RIVERSIDE
 PUBLIC WORKS DEPARTMENT

APPROVED BY: _____ DATE: _____

PRINCIPAL ENGINEER: _____

PARK DEPARTMENT: _____

TRAFFIC DIVISION: _____

CHIEF R/W ENGR.: _____

TRACT 31671
 CREEK
 IMPROVEMENT PLANS

HORIZ. SCALE 1"=20' VERT. SCALE 1"=4'

PROJECT NO. _____

SHEET 3 OF 3

FILE NO. _____

PRELIMINARY
 NOT FOR CONSTRUCTION

Appendix B
**Air Quality and Greenhouse Gas
Technical Memorandum**



Technical Memorandum

Air Quality and Greenhouse Gas Emissions Impact Analysis

Date:	November 25, 2013
To:	Kathleen Dale
From:	Keith Cooper
Subject:	UCR Creekside Terrace Slope Protection Project

Introduction and Results Summary

This memorandum provides an analysis of criteria pollutant and greenhouse gas (GHG) emissions resulting from implementation of the UCR Creekside Terrace Slope Protection project, or proposed project. This air quality and GHG emissions assessment includes a discussion of applicable significance criteria and analysis methodologies outlined in the following South Coast Air Quality Management District (SCAQMD) guidance documents:

- CEQA Air Quality Handbook (1993),¹
- Localized Significance Threshold Methodology for CEQA Evaluations (2003), and
- Particulate Matter (PM) 2.5 Significance Thresholds and Calculation Methodology (2006).

Based on these above-referenced guidance documents, this assessment evaluates the construction-period impacts to regional and local air quality that would result with construction of the proposed improvements.

The SCAQMD has not adopted quantitative GHG emissions thresholds for non-industrial development projects. However, in its *Interim CEQA GHG Significance Threshold for Stationary Sources, Rules and Plans* documentation, SCAQMD suggests that a screening-level threshold of 1,400 metric tons (MT) per year of carbon dioxide equivalent (CO₂e) emissions for commercial projects is appropriate. While the proposed project is not technically a commercial project, the suggested screening-level thresholds for all other land use types are higher than 1,400 MT CO₂e per year. As such, the 1,400 MT CO₂e per year significance criteria was used for this analysis.

The impact analyses demonstrates that (1) criteria pollutant emissions during construction would remain below SCAQMD regional and localized daily mass emissions thresholds; and (2) GHG emissions during construction would be less-than-significant.

¹ Used subject to the limitations described on the SCAQMD website (www.aqmd.gov/ceqa/oldhdbk.html).

Air Quality Impact Assessment

a. Would the project conflict with or obstruct implementation of the applicable air quality plan?

No Impact. SCAQMD is required, pursuant to the federal CAA, to reduce emissions of criteria pollutants for which the Basin is in nonattainment (i.e., O₃, PM₁₀, and PM_{2.5}). The project would be subject to SCAQMD's AQMP, which contains a comprehensive list of pollution control strategies directed at reducing emissions and achieving ambient air quality standards.

With respect to the proposed project, there would be no emissions following conclusion of construction activity. As such, only AQMP strategies directed at reducing construction-period emissions would apply to the proposed. As a matter of law, all project construction activities must comply with AQMP regulatory measures, including SCAQMD rules pertaining to fugitive dust control (Rules 403, 404, and 405), visibility of emissions (Rule 401), nuisance activities (Rule 402), and limiting VOC content in both asphalt and architectural coatings (Rules 1108 and 1113). The proposed project would not conflict with or obstruct implementation of the AQMP .

b. Would the project violate any air quality standard or contribute substantially to an existing or projected air quality violation?

Less-than-Significant Impact. The proposed project would contribute to regional air pollutant emissions during construction. Mass daily combustion emissions and fugitive dust (PM₁₀ and PM_{2.5},) emissions were compiled using CalEEMod, which is an emissions estimation/evaluation model developed in collaboration with SCAQMD, among other air quality management districts of California.

Assumptions regarding construction phasing and equipment use were developed based on information provided by the project applicant. Key assumptions included the following: excavation volume would be 300 cubic yards (CY), rip rap materials in the amount of 1,460 CY would be hauled in and placed within the channel, and construction duration would be four months. A complete listing of the construction equipment by phase, construction phase duration assumptions, and changes to modeling default values used in this analysis is included within the CalEEMod printout sheets that are attached to this technical memorandum.

Summarized in Table 1, construction-period emissions would not exceed the SCAQMD local or regional significance thresholds.

Table 1. Conservative Estimate of Maximum Daily Construction Emissions

	Criteria Pollutant Emissions (pounds per day)					
	ROG	NO _x	CO	SO _x	PM ₁₀ ^a	PM _{2.5}
Regional Emissions						
Project Emissions	5	48	31	<1	4	3
Regional Significance Threshold	75	100	550	150	150	55
Exceed Regional Significance Threshold?	No	No	No	No	No	No
Localized Emissions						
Project Emissions	5	42	26	<1	3.5	2.9
Localized Significance Threshold ^b	n/a	118	602	n/a	4	3
Exceed Localized Significance Threshold?	No	No	No	No	No	No
Notes: Construction emission calculation worksheets are attached to this technical memorandum. These estimates of maximum daily emissions are for all construction phases (i.e., highest emissions from all phases for each pollutant presented). ^a PM ₁₀ emissions estimates take into account compliance with SCAQMD Rule 403 requirements for fugitive dust suppression, which require that no visible dust be present beyond the site boundaries. ^b Localized thresholds derived from SCAQMD Localized Significance Threshold Tables and are based on the project location (Source Receptor Area [SRA] 23, Metropolitan Riverside County), project area disturbed in any given day (1 acre), and the distance to the nearest sensitive receptor (25 meters).						

- c. ***Would the project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is a nonattainment area for an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors)?***

Less-than-Significant Impact. The SCAQMD’s approach for assessing cumulative impacts is based on the AQMP forecasts of attainment of ambient air quality standards in accordance with the requirements of the federal and state Clean Air Acts. As discussed earlier, the proposed project would be consistent with the AQMP, which is intended to bring the Basin into attainment for all criteria pollutants.² In addition, the mass regional emissions calculated for the proposed project presented earlier in Table 1 are less than the applicable SCAQMD daily significance thresholds. As such, cumulative impacts would be less than significant and no mitigation measures are necessary.

² CEQA Guidelines Section 15064(h)(3) states “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.”

d. *Would the project expose sensitive receptors to substantial pollutant concentrations?*

Less-than-Significant Impact. Diesel Particulate Matter (DPM), which is classified as a carcinogenic Toxic Air Contaminant (TAC) by CARB, is the primary pollutant of concern with respect to health risks to sensitive receptors. Cancer health risks associated with exposures to diesel exhaust are typically associated with chronic exposure, in which a 70-year exposure period is assumed. Because construction would be of short duration (approximately 4 months), project construction is not anticipated to result in an elevated cancer risk to exposed sensitive receptors. In addition, localized construction emissions would not exceed SCAQMD localized emissions thresholds for any criteria pollutant. Impacts would be less than significant and no mitigation measures are necessary.

e. *Would the project create objectionable odors affecting a substantial number of people?*

No Impact. According to the SCAQMD *CEQA Air Quality Handbook*, land uses associated with odor complaints typically include agricultural uses, wastewater treatment plants, food processing plants, chemical plants, composting, refineries, landfills, dairies, and fiberglass molding. The proposed project does not include any uses identified by the SCAQMD as being associated with odors and therefore would not produce objectionable odors.

Greenhouse Gas Emissions Impact Assessment

a. *Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?*

Less-than-Significant Impact. Project GHG emissions were estimated using the CalEEMod emissions estimation/evaluation model. Modeling assumptions regarding construction phasing and equipment use were developed based on information provided by the project applicant. Key assumptions included the following: excavation volume would be 300 cubic yards (CY), rip rap materials in the amount of 1,460 CY would be hauled in and placed within the channel, and construction duration would be four months. A complete listing of the construction equipment by phase, construction phase duration assumptions, and changes to modeling default values used in this analysis is included within the CalEEMod printout sheets that are attached to this technical memorandum.

The proposed project's contribution to GHG emissions is estimated to be 102 MT of CO₂e, total. To put this number into perspective, statewide CO₂ equivalent emissions for year 2011 were estimated to be 448.1 million metric tons. In addition, total CO₂e emissions resulting from project development would be far less than the 1,400 MT CO₂e per year significance criteria identified above. Impacts would be less than significant and no mitigation measures are necessary.

b. *Would the project conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?*

Less-than-Significant Impact. With Assembly Bill (AB) 32, the State of California identified a year 2020 target level for state-wide GHG emissions of 427 million metric tons (MMT) of CO₂e, which is

approximately 28.5% less than the year 2020 business as usual (BAU) emissions estimate of 596 MMT CO₂e. To achieve these GHG reductions there will have to be widespread reductions of GHG emissions across California. Some of those reductions will need to come in the form of changes in vehicle emissions and mileage standards, changes in the sources of electricity, and increases in energy efficiency by existing facilities. The remainder will need to come from requiring new facility development to have lower carbon intensity than BAU conditions. Therefore, this analysis uses a threshold of significance that is in conformance with the state's goals.

On December 12, 2008, California Air Resources Board (ARB) adopted the AB 32 Scoping Plan, which details specific GHG emission reduction measures that target specific GHG emissions sources. The Scoping Plan considers a range of actions that include direct regulations, alternative compliance mechanisms, monetary and non-monetary incentives, voluntary actions, and market based mechanisms (e.g., cap-and-trade system. Some examples include the following:

- Mobile-source GHG emissions reduction measures
 - Pavley emissions standards (19.8% reduction)
 - Low carbon fuel standard (7.2% reduction)
 - Vehicle efficiency measures (2.8% reduction)
- Energy production related GHG emissions reduction measures
 - Natural gas transmission and distribution efficiency measures (7.4% reduction)
 - Natural gas extraction efficiency measures (1.6% reduction)
 - Renewables (electricity) portfolio standard (33.0% reduction)

The proposed project would not frustrate any AB 32 Scoping Plan measures, nor be inconsistent in any way with the AB 32 goal of reducing state-wide GHG emissions to 1990 levels by year 2020. Both UCR and the City of Riverside have prepared plans to reduce greenhouse gas emissions. Because emissions for the proposed project are limited to the construction phase, relevant aspects of both the UCR and City GHG emission reduction programs are limited to those establishing objectives for substantial diversion of construction waste. Standard campus contracting provisions include requirements for implementation and monitoring of waste diversion practices in all campus construction projects. These campus provisions address both City and County GHG reduction policies in this regard. As such, the proposed project would not conflict with any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases.

References

- California Climate Change Center (CCCC). 2006. *Our Changing Climate: Assessing the Risks to California*. July.
- California Air Resources Board (ARB). 2013. Inventory of California Greenhouse Gas Emissions and Sinks 2000 to 2011. August. Available at: http://www.arb.ca.gov/cc/inventory/data/tables/ghg_inventory_scopingplan_00-11_2013-08-01.pdf
- City of Riverside. General Plan 2025. Air Quality Element. Adopted November 7, 2007. Available at http://riversideca.gov/planning/gp2025program/GP/13_Air_Quality_Element.pdf
- City of Riverside Green Action Plan. 2012. Available at http://www.greenriverside.com/userfiles/Green_Action_Plan-2012.pdf
- South Coast Air Quality Management District. 1993. *CEQA air quality handbook*. November.
- . 2008. Interim CEQA GHG Significance Threshold for Stationary Sources, Rules and Plans. December
- . 2003. *Localized significance threshold methodology for CEQA evaluations*. June.
- . 2006. *Particulate matter (PM) 2.5 significance thresholds and calculation methodology*. October.
- University of California Riverside. 2010. *Climate Action Plan*. December. Available at http://sustainability.ucr.edu/docs/ucr_cap_12_2010.pdf

UCR Creekside Terrace Slope Protection Project
Riverside-South Coast County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Non-Asphalt Surfaces	2.00	1000sqft	0.50	2,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.4	Precipitation Freq (Days)	28
Climate Zone	10			Operational Year	2015
Utility Company	Riverside Public Utilities				
CO2 Intensity (lb/MWhr)	1325.65	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 Only

Construction Phase - Establish Diversion: 1/1/2014 - 1/14/2014

Vegetation Removal: 1/15/2014 - 1/22/2014

Excavation: 1/23/2014 - 2/22/2014

Riprap Placement: 2/23/2014 - 4/22/2014

Remove Diversion: 4/23/2014 - 4/30/2014

Off-road Equipment - Establish Diversion

1 generator for diversion pump 24 hrs/day

1 tractor/loader/backhoe 6 hrs/day

1 off-highway tractor 6 hrs/day

Off-road Equipment - Vegetation Removal

1 generator for diversion pump 24 hours/day, plus

Default Site Prep

Off-road Equipment - Excavation

1 generator for diversion pump 24 hours/day, plus

Default Excavation

Off-road Equipment - Riprap Placement

1 generator for diversion pump 24 hours/day

4 tractor/loader/backhoes 8 hrs/day

Off-road Equipment - Remove Diversion

2 tractor/loader/backhoes 6 hrs/day

Grading - 300 CY excavation export

1,460 CY riprap import

Trips and VMT - 38 total excavation truck trips

183 total rewrap import trips

Construction Off-road Equipment Mitigation - Rule 403 only

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	50
tblConstructionPhase	NumDays	1.00	10.00
tblConstructionPhase	NumDays	1.00	6.00
tblConstructionPhase	NumDays	1.00	22.00
tblConstructionPhase	NumDays	1.00	42.00
tblConstructionPhase	PhaseEndDate	2/21/2014	2/22/2014
tblGrading	AcresOfGrading	3.00	0.50
tblGrading	AcresOfGrading	21.00	0.50
tblGrading	MaterialExported	0.00	300.00
tblGrading	MaterialImported	0.00	1,460.00
tblLandUse	LotAcreage	0.05	0.50
tblOffRoadEquipment	OffRoadEquipmentType		Generator Sets
tblOffRoadEquipment	OffRoadEquipmentType		Generator Sets
tblOffRoadEquipment	OffRoadEquipmentType		Tractors/Loaders/Backhoes
tblOffRoadEquipment	OffRoadEquipmentType		Generator Sets
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	4.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblProjectCharacteristics	OperationalYear	2014	2015
tblTripsAndVMT	HaulingTripNumber	38.00	0.00
tblTripsAndVMT	HaulingTripNumber	183.00	38.00
tblTripsAndVMT	HaulingTripNumber	0.00	183.00
tblTripsAndVMT	WorkerTripNumber	15.00	13.00
tblTripsAndVMT	WorkerTripNumber	8.00	5.00

2.0 Emissions Summary

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	0.0523	0.0000	2.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		4.4000e-004	4.4000e-004	0.0000		4.6000e-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
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	0.0523	0.0000	2.1000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		4.4000e-004	4.4000e-004	0.0000	0.0000	4.6000e-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	lb/day										lb/day					
Area	0.0523	0.0000	2.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		4.4000e-004	4.4000e-004	0.0000		4.6000e-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
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	0.0523	0.0000	2.1000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		4.4000e-004	4.4000e-004	0.0000	0.0000	4.6000e-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	N2O	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	Riprap Replacement	Site Preparation	1/1/2014	1/14/2014	5	10	
2	Excavation	Site Preparation	1/15/2014	1/22/2014	5	6	
3	Remove Diversion	Site Preparation	1/23/2014	2/22/2014	5	22	
4	Vegetation Removal	Site Preparation	2/23/2014	4/22/2014	5	42	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Vegetation Removal	Generator Sets	1	24.00	84	0.74
Excavation	Graders	1	8.00	174	0.41
Excavation	Generator Sets	1	24.00	84	0.74
Riprap Replacement	Generator Sets	1	24.00	84	0.74
Remove Diversion	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Riprap Replacement	Graders	1	8.00	174	0.41
Vegetation Removal	Graders	1	8.00	174	0.41
Remove Diversion	Graders	1	8.00	174	0.41
Riprap Replacement	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Excavation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Vegetation Removal	Tractors/Loaders/Backhoes	1	8.00	97	0.37

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
Vegetation Removal	3	8.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Excavation	3	8.00	0.00	38.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Riprap Replacement	6	13.00	0.00	183.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Remove Diversion	3	5.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Clean Paved Roads

3.2 Riprap Replacement - 2014

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					0.5303	0.0000	0.5303	0.0573	0.0000	0.0573			0.0000			0.0000
Off-Road	4.9109	42.0077	26.2780	0.0385		2.9908	2.9908		2.8528	2.8528		3,857.4960	3,857.4960	0.8014		3,874.3248
Total	4.9109	42.0077	26.2780	0.0385	0.5303	2.9908	3.5210	0.0573	2.8528	2.9101		3,857.4960	3,857.4960	0.8014		3,874.3248

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	0.3543	6.3292	3.5562	0.0131	0.3192	0.1377	0.4569	0.0874	0.1266	0.2141		1,349.1361	1,349.1361	0.0106		1,349.3585
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	0.0622	0.0741	0.9207	1.7500e-003	0.1453	1.0200e-003	0.1463	0.0385	9.3000e-004	0.0395		155.9413	155.9413	7.5600e-003		156.1000
Total	0.4165	6.4032	4.4768	0.0149	0.4645	0.1387	0.6032	0.1260	0.1276	0.2535		1,505.0773	1,505.0773	0.0182		1,505.4585

3.2 Riprap Replacement - 2014

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					0.2068	0.0000	0.2068	0.0223	0.0000	0.0223			0.0000			0.0000
Off-Road	4.9109	42.0077	26.2780	0.0385		2.9908	2.9908		2.8528	2.8528	0.0000	3,857.4960	3,857.4960	0.8014		3,874.3248
Total	4.9109	42.0077	26.2780	0.0385	0.2068	2.9908	3.1976	0.0223	2.8528	2.8751	0.0000	3,857.4960	3,857.4960	0.8014		3,874.3248

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	0.3543	6.3292	3.5562	0.0131	0.1982	0.1377	0.3359	0.0577	0.1266	0.1844		1,349.1361	1,349.1361	0.0106		1,349.3585
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	0.0622	0.0741	0.9207	1.7500e-003	0.0822	1.0200e-003	0.0832	0.0230	9.3000e-004	0.0240		155.9413	155.9413	7.5600e-003		156.1000
Total	0.4165	6.4032	4.4768	0.0149	0.2804	0.1387	0.4191	0.0808	0.1276	0.2083		1,505.0773	1,505.0773	0.0182		1,505.4585

3.3 Excavation - 2014**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					0.1192	0.0000	0.1192	0.0142	0.0000	0.0142			0.0000			0.0000
Off-Road	3.8054	31.4099	19.0102	0.0291		2.1583	2.1583		2.0869	2.0869		2,864.3008	2,864.3008	0.5079		2,874.9661
Total	3.8054	31.4099	19.0102	0.0291	0.1192	2.1583	2.2774	0.0142	2.0869	2.1011		2,864.3008	2,864.3008	0.5079		2,874.9661

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	0.1226	2.1904	1.2307	4.5400e-003	0.1105	0.0477	0.1581	0.0303	0.0438	0.0741		466.9141	466.9141	3.6700e-003		466.9911
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	0.0383	0.0456	0.5666	1.0800e-003	0.0894	6.3000e-004	0.0901	0.0237	5.7000e-004	0.0243		95.9639	95.9639	4.6500e-003		96.0616
Total	0.1609	2.2360	1.7973	5.6200e-003	0.1999	0.0483	0.2482	0.0540	0.0444	0.0984		562.8780	562.8780	8.3200e-003		563.0526

3.3 Excavation - 2014**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					0.0465	0.0000	0.0465	5.5400e-003	0.0000	5.5400e-003			0.0000			0.0000
Off-Road	3.8054	31.4099	19.0102	0.0291		2.1583	2.1583		2.0869	2.0869	0.0000	2,864.3008	2,864.3008	0.5079		2,874.9661
Total	3.8054	31.4099	19.0102	0.0291	0.0465	2.1583	2.2047	5.5400e-003	2.0869	2.0924	0.0000	2,864.3008	2,864.3008	0.5079		2,874.9661

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	0.1226	2.1904	1.2307	4.5400e-003	0.0686	0.0477	0.1163	0.0200	0.0438	0.0638		466.9141	466.9141	3.6700e-003		466.9911
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	0.0383	0.0456	0.5666	1.0800e-003	0.0506	6.3000e-004	0.0512	0.0142	5.7000e-004	0.0148		95.9639	95.9639	4.6500e-003		96.0616
Total	0.1609	2.2360	1.7973	5.6200e-003	0.1192	0.0483	0.1674	0.0342	0.0444	0.0786		562.8780	562.8780	8.3200e-003		563.0526

3.4 Remove Diversion - 2014

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					0.5303	0.0000	0.5303	0.0573	0.0000	0.0573			0.0000			0.0000
Off-Road	1.6183	16.2480	8.6049	0.0109		1.0308	1.0308		0.9483	0.9483		1,160.7296	1,160.7296	0.3430		1,167.9328
Total	1.6183	16.2480	8.6049	0.0109	0.5303	1.0308	1.5610	0.0573	0.9483	1.0055		1,160.7296	1,160.7296	0.3430		1,167.9328

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	0.0239	0.0285	0.3541	6.7000e-004	0.0559	3.9000e-004	0.0563	0.0148	3.6000e-004	0.0152		59.9774	59.9774	2.9100e-003		60.0385
Total	0.0239	0.0285	0.3541	6.7000e-004	0.0559	3.9000e-004	0.0563	0.0148	3.6000e-004	0.0152		59.9774	59.9774	2.9100e-003		60.0385

3.4 Remove Diversion - 2014

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					0.2068	0.0000	0.2068	0.0223	0.0000	0.0223			0.0000			0.0000
Off-Road	1.6183	16.2480	8.6049	0.0109		1.0308	1.0308		0.9483	0.9483	0.0000	1,160.7296	1,160.7296	0.3430		1,167.9328
Total	1.6183	16.2480	8.6049	0.0109	0.2068	1.0308	1.2376	0.0223	0.9483	0.9706	0.0000	1,160.7296	1,160.7296	0.3430		1,167.9328

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	0.0239	0.0285	0.3541	6.7000e-004	0.0316	3.9000e-004	0.0320	8.8600e-003	3.6000e-004	9.2200e-003		59.9774	59.9774	2.9100e-003		60.0385
Total	0.0239	0.0285	0.3541	6.7000e-004	0.0316	3.9000e-004	0.0320	8.8600e-003	3.6000e-004	9.2200e-003		59.9774	59.9774	2.9100e-003		60.0385

3.5 Vegetation Removal - 2014

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					0.0135	0.0000	0.0135	1.5000e-003	0.0000	1.5000e-003			0.0000			0.0000
Off-Road	3.8054	31.4099	19.0102	0.0291		2.1583	2.1583		2.0869	2.0869		2,864.3008	2,864.3008	0.5079		2,874.9661
Total	3.8054	31.4099	19.0102	0.0291	0.0135	2.1583	2.1718	1.5000e-003	2.0869	2.0884		2,864.3008	2,864.3008	0.5079		2,874.9661

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	0.0383	0.0456	0.5666	1.0800e-003	0.0894	6.3000e-004	0.0901	0.0237	5.7000e-004	0.0243		95.9639	95.9639	4.6500e-003		96.0616
Total	0.0383	0.0456	0.5666	1.0800e-003	0.0894	6.3000e-004	0.0901	0.0237	5.7000e-004	0.0243		95.9639	95.9639	4.6500e-003		96.0616

3.5 Vegetation Removal - 2014

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					5.2800e-003	0.0000	5.2800e-003	5.9000e-004	0.0000	5.9000e-004			0.0000			0.0000
Off-Road	3.8054	31.4099	19.0102	0.0291		2.1583	2.1583		2.0869	2.0869	0.0000	2,864.3008	2,864.3008	0.5079		2,874.9661
Total	3.8054	31.4099	19.0102	0.0291	5.2800e-003	2.1583	2.1635	5.9000e-004	2.0869	2.0875	0.0000	2,864.3008	2,864.3008	0.5079		2,874.9661

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	0.0383	0.0456	0.5666	1.0800e-003	0.0506	6.3000e-004	0.0512	0.0142	5.7000e-004	0.0148		95.9639	95.9639	4.6500e-003		96.0616
Total	0.0383	0.0456	0.5666	1.0800e-003	0.0506	6.3000e-004	0.0512	0.0142	5.7000e-004	0.0148		95.9639	95.9639	4.6500e-003		96.0616

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

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	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

Land Use	Miles			Trip %			Trip Purpose %		
	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

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.463772	0.070121	0.176196	0.171120	0.044771	0.007404	0.012633	0.041363	0.000985	0.001063	0.006436	0.000905	0.003230

5.0 Energy Detail

4.4 Fleet Mix

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

5.2 Energy by Land Use - NaturalGas

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	0.0523	0.0000	2.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		4.4000e-004	4.4000e-004	0.0000		4.6000e-004
Unmitigated	0.0523	0.0000	2.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		4.4000e-004	4.4000e-004	0.0000		4.6000e-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	lb/day										lb/day					
Architectural Coating	0.0127					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0396					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	2.0000e-005	0.0000	2.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		4.4000e-004	4.4000e-004	0.0000		4.6000e-004
Total	0.0523	0.0000	2.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		4.4000e-004	4.4000e-004	0.0000		4.6000e-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	lb/day										lb/day					
Consumer Products	0.0396					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	2.0000e-005	0.0000	2.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		4.4000e-004	4.4000e-004	0.0000		4.6000e-004
Architectural Coating	0.0127					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	0.0523	0.0000	2.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		4.4000e-004	4.4000e-004	0.0000		4.6000e-004

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
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10.0 Vegetation

UCR Creekside Terrace Slope Protection Project
Riverside-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Non-Asphalt Surfaces	2.00	1000sqft	0.50	2,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.4	Precipitation Freq (Days)	28
Climate Zone	10			Operational Year	2015
Utility Company	Riverside Public Utilities				
CO2 Intensity (lb/MWhr)	1325.65	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 Only

Construction Phase - Establish Diversion: 1/1/2014 - 1/14/2014

Vegetation Removal: 1/15/2014 - 1/22/2014

Excavation: 1/23/2014 - 2/22/2014

Riprap Placement: 2/23/2014 - 4/22/2014

Remove Diversion: 4/23/2014 - 4/30/2014

Off-road Equipment - Establish Diversion

1 generator for diversion pump 24 hrs/day

1 tractor/loader/backhoe 6 hrs/day

1 off-highway tractor 6 hrs/day

Off-road Equipment - Vegetation Removal

1 generator for diversion pump 24 hours/day, plus

Default Site Prep

Off-road Equipment - Excavation

1 generator for diversion pump 24 hours/day, plus

Default Excavation

Off-road Equipment - Riprap Placement

1 generator for diversion pump 24 hours/day

4 tractor/loader/backhoes 8 hrs/day

Off-road Equipment - Remove Diversion

2 tractor/loader/backhoes 6 hrs/day

Grading - 300 CY excavation export

1,460 CY riprap import

Trips and VMT - 38 total excavation truck trips

183 total rewrap import trips

Construction Off-road Equipment Mitigation - Rule 403 only

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	50
tblConstructionPhase	NumDays	1.00	10.00
tblConstructionPhase	NumDays	1.00	6.00
tblConstructionPhase	NumDays	1.00	22.00
tblConstructionPhase	NumDays	1.00	42.00
tblConstructionPhase	PhaseEndDate	2/21/2014	2/22/2014
tblGrading	AcresOfGrading	3.00	0.50
tblGrading	AcresOfGrading	21.00	0.50
tblGrading	MaterialExported	0.00	300.00
tblGrading	MaterialImported	0.00	1,460.00
tblLandUse	LotAcreage	0.05	0.50
tblOffRoadEquipment	OffRoadEquipmentType		Generator Sets
tblOffRoadEquipment	OffRoadEquipmentType		Generator Sets
tblOffRoadEquipment	OffRoadEquipmentType		Tractors/Loaders/Backhoes
tblOffRoadEquipment	OffRoadEquipmentType		Generator Sets
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	4.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblProjectCharacteristics	OperationalYear	2014	2015
tblTripsAndVMT	HaulingTripNumber	38.00	0.00
tblTripsAndVMT	HaulingTripNumber	183.00	38.00
tblTripsAndVMT	HaulingTripNumber	0.00	183.00
tblTripsAndVMT	WorkerTripNumber	15.00	13.00
tblTripsAndVMT	WorkerTripNumber	8.00	5.00

2.0 Emissions Summary

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	9.5500e-003	0.0000	3.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	5.0000e-005	5.0000e-005	0.0000	0.0000	5.0000e-005
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	9.5500e-003	0.0000	3.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	5.0000e-005	5.0000e-005	0.0000	0.0000	5.0000e-005

2.2 Overall Operational

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	9.5500e-003	0.0000	3.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	5.0000e-005	5.0000e-005	0.0000	0.0000	5.0000e-005
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	9.5500e-003	0.0000	3.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	5.0000e-005	5.0000e-005	0.0000	0.0000	5.0000e-005

	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
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	Riprap Replacement	Site Preparation	1/1/2014	1/14/2014	5	10	
2	Excavation	Site Preparation	1/15/2014	1/22/2014	5	6	
3	Remove Diversion	Site Preparation	1/23/2014	2/22/2014	5	22	
4	Vegetation Removal	Site Preparation	2/23/2014	4/22/2014	5	42	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Vegetation Removal	Generator Sets	1	24.00	84	0.74
Excavation	Graders	1	8.00	174	0.41
Excavation	Generator Sets	1	24.00	84	0.74
Riprap Replacement	Generator Sets	1	24.00	84	0.74
Remove Diversion	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Riprap Replacement	Graders	1	8.00	174	0.41
Vegetation Removal	Graders	1	8.00	174	0.41
Remove Diversion	Graders	1	8.00	174	0.41
Riprap Replacement	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Excavation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Vegetation Removal	Tractors/Loaders/Backhoes	1	8.00	97	0.37

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
Vegetation Removal	3	8.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Excavation	3	8.00	0.00	38.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Riprap Replacement	6	13.00	0.00	183.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Remove Diversion	3	5.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Clean Paved Roads

3.2 Riprap Replacement - 2014

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					2.6500e-003	0.0000	2.6500e-003	2.9000e-004	0.0000	2.9000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0246	0.2100	0.1314	1.9000e-004		0.0150	0.0150		0.0143	0.0143	0.0000	17.4973	17.4973	3.6300e-003	0.0000	17.5736
Total	0.0246	0.2100	0.1314	1.9000e-004	2.6500e-003	0.0150	0.0176	2.9000e-004	0.0143	0.0146	0.0000	17.4973	17.4973	3.6300e-003	0.0000	17.5736

3.2 Riprap Replacement - 2014

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	1.8400e-003	0.0334	0.0197	7.0000e-005	1.5700e-003	6.9000e-004	2.2600e-003	4.3000e-004	6.3000e-004	1.0700e-003	0.0000	6.1133	6.1133	5.0000e-005	0.0000	6.1143
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	2.8000e-004	4.1000e-004	4.1400e-003	1.0000e-005	7.1000e-004	1.0000e-005	7.2000e-004	1.9000e-004	0.0000	1.9000e-004	0.0000	0.6553	0.6553	3.0000e-005	0.0000	0.6560
Total	2.1200e-003	0.0338	0.0238	8.0000e-005	2.2800e-003	7.0000e-004	2.9800e-003	6.2000e-004	6.3000e-004	1.2600e-003	0.0000	6.7686	6.7686	8.0000e-005	0.0000	6.7704

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					1.0300e-003	0.0000	1.0300e-003	1.1000e-004	0.0000	1.1000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0246	0.2100	0.1314	1.9000e-004		0.0150	0.0150		0.0143	0.0143	0.0000	17.4973	17.4973	3.6300e-003	0.0000	17.5736
Total	0.0246	0.2100	0.1314	1.9000e-004	1.0300e-003	0.0150	0.0160	1.1000e-004	0.0143	0.0144	0.0000	17.4973	17.4973	3.6300e-003	0.0000	17.5736

3.2 Riprap Replacement - 2014

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	1.8400e-003	0.0334	0.0197	7.0000e-005	9.8000e-004	6.9000e-004	1.6700e-003	2.9000e-004	6.3000e-004	9.2000e-004	0.0000	6.1133	6.1133	5.0000e-005	0.0000	6.1143
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	2.8000e-004	4.1000e-004	4.1400e-003	1.0000e-005	4.0000e-004	1.0000e-005	4.1000e-004	1.1000e-004	0.0000	1.2000e-004	0.0000	0.6553	0.6553	3.0000e-005	0.0000	0.6560
Total	2.1200e-003	0.0338	0.0238	8.0000e-005	1.3800e-003	7.0000e-004	2.0800e-003	4.0000e-004	6.3000e-004	1.0400e-003	0.0000	6.7686	6.7686	8.0000e-005	0.0000	6.7704

3.3 Excavation - 2014

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					3.6000e-004	0.0000	3.6000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0114	0.0942	0.0570	9.0000e-005		6.4700e-003	6.4700e-003		6.2600e-003	6.2600e-003	0.0000	7.7954	7.7954	1.3800e-003	0.0000	7.8244
Total	0.0114	0.0942	0.0570	9.0000e-005	3.6000e-004	6.4700e-003	6.8300e-003	4.0000e-005	6.2600e-003	6.3000e-003	0.0000	7.7954	7.7954	1.3800e-003	0.0000	7.8244

3.3 Excavation - 2014**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	3.8000e-004	6.9300e-003	4.0900e-003	1.0000e-005	3.3000e-004	1.4000e-004	4.7000e-004	9.0000e-005	1.3000e-004	2.2000e-004	0.0000	1.2694	1.2694	1.0000e-005	0.0000	1.2696
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	1.0000e-004	1.5000e-004	1.5300e-003	0.0000	2.6000e-004	0.0000	2.7000e-004	7.0000e-005	0.0000	7.0000e-005	0.0000	0.2420	0.2420	1.0000e-005	0.0000	0.2422
Total	4.8000e-004	7.0800e-003	5.6200e-003	1.0000e-005	5.9000e-004	1.4000e-004	7.4000e-004	1.6000e-004	1.3000e-004	2.9000e-004	0.0000	1.5114	1.5114	2.0000e-005	0.0000	1.5119

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					1.4000e-004	0.0000	1.4000e-004	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0114	0.0942	0.0570	9.0000e-005		6.4700e-003	6.4700e-003		6.2600e-003	6.2600e-003	0.0000	7.7953	7.7953	1.3800e-003	0.0000	7.8244
Total	0.0114	0.0942	0.0570	9.0000e-005	1.4000e-004	6.4700e-003	6.6100e-003	2.0000e-005	6.2600e-003	6.2800e-003	0.0000	7.7953	7.7953	1.3800e-003	0.0000	7.8244

3.3 Excavation - 2014**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	3.8000e-004	6.9300e-003	4.0900e-003	1.0000e-005	2.0000e-004	1.4000e-004	3.5000e-004	6.0000e-005	1.3000e-004	1.9000e-004	0.0000	1.2694	1.2694	1.0000e-005	0.0000	1.2696
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	1.0000e-004	1.5000e-004	1.5300e-003	0.0000	1.5000e-004	0.0000	1.5000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.2420	0.2420	1.0000e-005	0.0000	0.2422
Total	4.8000e-004	7.0800e-003	5.6200e-003	1.0000e-005	3.5000e-004	1.4000e-004	5.0000e-004	1.0000e-004	1.3000e-004	2.3000e-004	0.0000	1.5114	1.5114	2.0000e-005	0.0000	1.5119

3.4 Remove Diversion - 2014**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					5.8300e-003	0.0000	5.8300e-003	6.3000e-004	0.0000	6.3000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0178	0.1787	0.0947	1.2000e-004		0.0113	0.0113		0.0104	0.0104	0.0000	11.5830	11.5830	3.4200e-003	0.0000	11.6548
Total	0.0178	0.1787	0.0947	1.2000e-004	5.8300e-003	0.0113	0.0172	6.3000e-004	0.0104	0.0111	0.0000	11.5830	11.5830	3.4200e-003	0.0000	11.6548

3.4 Remove Diversion - 2014**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	2.4000e-004	3.5000e-004	3.5000e-003	1.0000e-005	6.0000e-004	0.0000	6.1000e-004	1.6000e-004	0.0000	1.6000e-004	0.0000	0.5545	0.5545	3.0000e-005	0.0000	0.5551
Total	2.4000e-004	3.5000e-004	3.5000e-003	1.0000e-005	6.0000e-004	0.0000	6.1000e-004	1.6000e-004	0.0000	1.6000e-004	0.0000	0.5545	0.5545	3.0000e-005	0.0000	0.5551

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					2.2700e-003	0.0000	2.2700e-003	2.5000e-004	0.0000	2.5000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0178	0.1787	0.0947	1.2000e-004		0.0113	0.0113		0.0104	0.0104	0.0000	11.5829	11.5829	3.4200e-003	0.0000	11.6548
Total	0.0178	0.1787	0.0947	1.2000e-004	2.2700e-003	0.0113	0.0136	2.5000e-004	0.0104	0.0107	0.0000	11.5829	11.5829	3.4200e-003	0.0000	11.6548

3.4 Remove Diversion - 2014

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	2.4000e-004	3.5000e-004	3.5000e-003	1.0000e-005	3.4000e-004	0.0000	3.5000e-004	1.0000e-004	0.0000	1.0000e-004	0.0000	0.5545	0.5545	3.0000e-005	0.0000	0.5551
Total	2.4000e-004	3.5000e-004	3.5000e-003	1.0000e-005	3.4000e-004	0.0000	3.5000e-004	1.0000e-004	0.0000	1.0000e-004	0.0000	0.5545	0.5545	3.0000e-005	0.0000	0.5551

3.5 Vegetation Removal - 2014

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					2.8000e-004	0.0000	2.8000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0799	0.6596	0.3992	6.1000e-004		0.0453	0.0453		0.0438	0.0438	0.0000	54.5675	54.5675	9.6800e-003	0.0000	54.7706
Total	0.0799	0.6596	0.3992	6.1000e-004	2.8000e-004	0.0453	0.0456	3.0000e-005	0.0438	0.0439	0.0000	54.5675	54.5675	9.6800e-003	0.0000	54.7706

3.5 Vegetation Removal - 2014

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	7.3000e-004	1.0600e-003	0.0107	2.0000e-005	1.8500e-003	1.0000e-005	1.8600e-003	4.9000e-004	1.0000e-005	5.0000e-004	0.0000	1.6938	1.6938	9.0000e-005	0.0000	1.6956
Total	7.3000e-004	1.0600e-003	0.0107	2.0000e-005	1.8500e-003	1.0000e-005	1.8600e-003	4.9000e-004	1.0000e-005	5.0000e-004	0.0000	1.6938	1.6938	9.0000e-005	0.0000	1.6956

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					1.1000e-004	0.0000	1.1000e-004	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0799	0.6596	0.3992	6.1000e-004		0.0453	0.0453		0.0438	0.0438	0.0000	54.5674	54.5674	9.6800e-003	0.0000	54.7706
Total	0.0799	0.6596	0.3992	6.1000e-004	1.1000e-004	0.0453	0.0454	1.0000e-005	0.0438	0.0438	0.0000	54.5674	54.5674	9.6800e-003	0.0000	54.7706

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	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

Land Use	Miles			Trip %			Trip Purpose %		
	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

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.463772	0.070121	0.176196	0.171120	0.044771	0.007404	0.012633	0.041363	0.000985	0.001063	0.006436	0.000905	0.003230

5.0 Energy Detail

~~4.4 Fleet Mix~~

Historical Energy Use: N

5.1 Mitigation Measures Energy

5.2 Energy by Land Use - NaturalGas

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							

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

5.3 Energy by Land Use - Electricity

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	9.5500e-003	0.0000	3.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	5.0000e-005	5.0000e-005	0.0000	0.0000	5.0000e-005
Unmitigated	9.5500e-003	0.0000	3.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	5.0000e-005	5.0000e-005	0.0000	0.0000	5.0000e-005

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	2.3200e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	7.2300e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	3.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	5.0000e-005	5.0000e-005	0.0000	0.0000	5.0000e-005
Total	9.5500e-003	0.0000	3.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	5.0000e-005	5.0000e-005	0.0000	0.0000	5.0000e-005

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					
Consumer Products	7.2300e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	3.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	5.0000e-005	5.0000e-005	0.0000	0.0000	5.0000e-005
Architectural Coating	2.3200e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	9.5500e-003	0.0000	3.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	5.0000e-005	5.0000e-005	0.0000	0.0000	5.0000e-005

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

7.2 Water by Land Use

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
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10.0 Vegetation

Appendix C

**Standard Practices from the LRDP EIR MMRP Measures
and City of Riverside General Plan**

Appendix C: Standard Practices from the UCR Long Range Development Plan
Mitigation Monitoring and Reporting Programs and the City of Riverside General Plan that are
Applicable to the Creekside Terrace Slope Stabilization Project

UCR Long Range Development Plan

Air Quality

Programs and Practices (PP) 4.3-2(a) Construction contract specifications shall include the following:

- (i) Compliance with all SCAQMD rules and regulations
- (ii) Maintenance programs to assure vehicles remain in good operating condition
- (iii) Avoid unnecessary idling of construction vehicles and equipment
- (iv) Use of alternative fuel construction vehicles
- (v) Provision of electrical power to the site, to eliminate the need for on-site generators

PP 4.3-2(b) The campus shall continue to implement dust control measures consistent with South Coast Air Quality Management District (SCAQMD) Rule 403—Fugitive Dust during the construction phases of new project development. The following actions are currently recommended to implement Rule 403 and have been quantified by the SCAQMD as being able to reduce dust generation between 30 and 85 percent depending on the source of the dust generation. The Campus shall implement these measures as necessary to reduce fugitive dust. Individual measures shall be specified in construction documents and require implementation by construction contractor:

- (i) Apply water and/or approved non-toxic chemical soil stabilizers according to manufacturer's specification to all inactive construction areas (previously graded areas that have been inactive for 10 or more days)
- (ii) Replace ground cover in disturbed areas as quickly as possible
- (iii) Enclose, cover, water twice daily, or apply approved chemical soil binders to exposed piles with 5 percent or greater silt content
- (iv) Water active grading sites at least twice daily
- (v) Suspend all excavating and grading operations when wind speeds (as instantaneous gusts) exceed 25 miles per hour over a 30-minute period
- (vi) All trucks hauling dirt, sand, soil, or other loose materials are to be covered or should maintain at least two feet of freeboard (i.e., minimum (vertical distance between top of the load and the top of the trailer), in accordance with Section 23114 of the California Vehicle Code
- (vii) Sweep streets at the end of the day if visible soil material is carried over to adjacent roads
- (viii) Install wheel washers where vehicles enter and exit unpaved roads onto paved roads, or wash off trucks and any equipment leaving the site each trip
- (ix) Apply water three times daily or chemical soil stabilizers according to manufacturers' specifications to all unpaved parking or staging areas or unpaved road surfaces
- (x) Post and enforce traffic speed limits of 15 miles per hour or less on all unpaved roads.

Mitigation Measure (MM) 4.3-1a For each construction project on campus, the project contractor will implement Programs and Practices 4.3-2(a) and 4.3-2(b). In addition, the following PM10 and PM2.5 control measure shall be implemented for each construction project.

- Post a publicly visible sign with telephone number and person to contact at the lead agency regarding dust complaints. This person shall respond to corrective action within 48 hours. The phone number of the District shall also be visible to ensure compliance.

**Appendix C: Standard Practices from the UCR Long Range Development Plan
Mitigation Monitoring and Reporting Programs and the City of Riverside General Plan that are
Applicable to the Creekside Terrace Slope Stabilization Project**

MM 4.3-1b For each construction project on the campus, the University shall require that the project include a construction emissions control plan that includes a comprehensive inventory of all off-road construction equipment, equal to or greater than 50 horsepower, that will be used for an aggregate of 40 or more hours during any portion of the construction project. During construction activity, the contractor shall utilize CARB certified equipment or better for all on-site construction equipment according to the following schedule:

- January 1, 2011 to December 31, 2011: All off-road diesel-powered construction equipment greater than 50 hp shall meet Tier 2 off-road emissions standards. In addition, all construction equipment shall be outfitted with the BACT devices certified by CARB. Any emissions control device used by the contractor shall achieve emissions reductions that are no less than what could be achieved by a Level 2 or Level 3 diesel emissions control strategy for a similarly sized engine as defined by CARB regulations.
- January 1, 2012 to December 31, 2014: All off-road diesel-powered construction equipment greater than 50 hp shall meet Tier 3 off-road emissions standards. In addition, all construction equipment shall be outfitted with BACT devices certified by CARB. Any emissions control device used by the contractor shall achieve emissions reductions that are no less than what could be achieved by a Level 3 diesel emissions control strategy for a similarly sized engine as defined by CARB regulations.
- Post January 1, 2015: All off-road diesel-powered construction equipment greater than 50 hp shall meet the Tier 4 emission standards, where available. In addition, all construction equipment shall be outfitted with BACT devices certified by CARB. Any emissions control device used by the contractor shall achieve emissions reductions that are no less than what could be achieved by a Level 3 diesel emissions control strategy for a similarly sized engine as defined by CARB regulations.
- A copy of each unit's certified specification, BACT documentation and CARB or SCAQMD operating permit shall be provided at the time of mobilization of each applicable unit or equipment.
- Encourage construction contractors to apply for AQMD "SOON" funds. Incentives could be provided for those construction contractors who apply for AQMD "SOON" funds. The "SOON" program provides funds to accelerate clean-up of off-road diesel vehicles, such as heavy duty construction equipment. More information on this program can be found at the following website: <http://www.aqmd.gov/tao/implementation/soonprogram.htm>

The contractor shall also implement the following measures during construction:

- Prohibit vehicle and engine idling in excess of 5 minutes and ensure that all off-road equipment is compliant with the California Air Resources Board's (CARB) in-use off-road diesel vehicle regulation and SCAQMD Rule 2449.
- Configure construction parking to minimize traffic interference.
- Provide temporary traffic controls such as a flag person, during all phases of construction to maintain smooth traffic flow.
- Provide dedicated turn lanes for movement of construction trucks and equipment on- and off site.
- Schedule construction activities that affect traffic flow on the arterial system to off-peak hour to the extent practicable.
- Improve traffic flow by signal synchronization, and ensure that all vehicles and equipment will be properly tuned and maintained according to manufacturers' specifications.
- Use diesel-powered construction vehicles and equipment that operate on low-NOx fuel where possible.
- Reroute construction trucks away from congested streets or sensitive receptor areas.
- Maintain and tune all vehicles and equipment according to manufacturers' specifications

MM 4.3-2 Programs and Practices 4.3-2(a), (b), and (c), or their equivalent, shall be included in construction contract specifications. The contract specifications shall require the use of low NOx diesel fuel and construction equipment to the extent that is readily available at the time of development.

Appendix C: Standard Practices from the UCR Long Range Development Plan
Mitigation Monitoring and Reporting Programs and the City of Riverside General Plan that are
Applicable to the Creekside Terrace Slope Stabilization Project

Biological Resources

Planning Strategy (PS) Conservation 1 Protect natural resources, including native habitat; remnant arroyos, and mature trees, identified as in good health as determined by a qualified arborist, to the extent feasible.

PS Conservation 2 Site buildings and plan site development to minimize site disturbance, reduce erosion and sedimentation, reduce storm water runoff, and maintain existing landscapes, including healthy mature trees whenever possible.

PP 4.4-1(b) To reduce disturbance of Natural and Naturalistic Open Space areas:

- (i) Unnecessary driving in sensitive or otherwise undisturbed areas shall be avoided. New roads or construction access roads would not be created where adequate access already exists.
- (ii) Removal of native shrub or brush shall be avoided, except where necessary.
- (iii) Drainages shall be avoided, except where required for construction. Limit activity to crossing drainages rather than using the lengths of drainage courses for access.
- (iv) Excess fill or construction waste shall not be dumped in washes.
- (v) Vehicles or other equipment shall not be parked in washes or other drainages.
- (vi) Overwatering shall be avoided in washes and other drainages.
- (vii) Wildlife including species such as fox, coyote, snakes, etc. shall not be harassed. Harassment includes shooting, throwing rocks, etc.

PP 4.4-1(a) To reduce impacts to the Natural Open Space Reserve area:

- (i) If any construction is proposed within the Open Space Reserve, conduct surveys for threatened and endangered species at an appropriate time of year. If these species are located in this area, the site or sites shall be protected from damage by either protective fencing or some other means of restricting access.
- (ii) Landscaping around development areas adjacent to the Open Space Reserve shall emphasize native or historically significant plant material that provides wildlife value and a sensitive transition from developed areas to natural open spaces. A qualified native landscape specialist shall be retained to develop an appropriate native landscape plan for the development areas.

PP 4.4-2(a) Impacts to riparian and wetland habitats shall be avoided, wherever feasible. If avoidance is not feasible, then the impacts will be evaluated as part of the Clean Water Act section 404 and California Fish and Game Code section 1602 permit application process. If mitigation is required, the University of California will develop and implement a resource mitigation program to be reviewed and approved by the ACOE and CDFG through the State and federal permit process. The permit shall mitigate the habitats such that they are consistent with the Clean Water Act and CDFG policy of “no net loss” of wetland. Furthermore, impacted wetlands and/or riparian vegetation that cannot be avoided would be replaced at a ratio approved by the ACOE and CDFG. If replacement within the area is not feasible, then an approved mitigation bank or other off-site area will be used. The revegetation of impacted areas or mitigation parcels will be performed by a qualified restoration specialist and shall be conducted only on sites where soils, hydrology, and microclimate conditions are suitable for riparian habitat. First priority will be given to areas that are adjacent to existing patches of native habitat.

PP 4.4-2(b) In compliance with NPDES, the campus would continue to implement Best Management Practices, as identified in the UCR Stormwater Management Plan (UCR 2003):

- (i) Public education and outreach on stormwater impacts
- (ii) Public involvement/participation

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Applicable to the Creekside Terrace Slope Stabilization Project

- (iii) Illicit discharge detection and elimination
- (iv) Pollution prevention/good housekeeping for facilities
- (v) Construction site stormwater runoff control
- (vi) Post-construction stormwater management in new development and redevelopment

MM 4.4-3(a) When habitat that could be regulated by the Clean Water Act (Section 404) would be impacted, either directly or indirectly, the University shall perform a jurisdictional and/or wetland delineation to assess the extent of the jurisdictional area(s).

MM 4.4-3(b) If wetland or riparian habitat would be removed as a result of project development, the University shall restore or enhance wetland or riparian habitat as required by the applicable State and/or federal resource agencies.

MM 4.4-3(c) Any proposal for wetland creation or enhancement (pursuant to MM 4.4-3(b) above) will be based upon the completion of soils, hydrologic and other studies confirming the feasibility of the creation or enhancement proposal and shall include United States Army Corps of Engineers (USACE)-approved measures intended to promote occupancy by special status and other wetland-dependent species (e.g., plantings, collection of topsoil and inoculation of target areas).

Cultural Resources

PP 4.5-3 If construction would occur within the southeast hills or within the portion of the West Campus north of Martin Luther King Boulevard, a surface field survey shall be conducted in conjunction with a project specific environmental analysis in accordance with CEQA. Depending on the results of the survey, the following measures shall be implemented:

- a. If no evidence of surface archaeological resources is discovered, or if development would occur in areas not designated as sensitive for archaeological resources:
 - › Prior to site preparation or grading activities, construction personnel shall be informed of the potential for encountering unique archaeological resources and taught how to identify these resources if encountered. This shall include the provision of written materials to familiarize personnel with the range of resources that might be expected, the type of activities that may result in impacts, and the legal framework of cultural resources protection. Construction specifications shall require that all construction personnel shall be instructed to stop work in the vicinity of a potential discovery until a qualified, non-University archaeologist assesses the significance of the find and implements appropriate measures to protect or scientifically remove the find. Construction personnel shall also be informed that unauthorized collection of archaeological resources is prohibited.
 - › The campus shall require the site project contractor to report any evidence of archaeological resources unearthed during development excavation to the campus.
 - › The archaeologist shall then be present during the grading and shall have the authority to halt disturbance of any archaeological resources long enough to assess the situation, conduct testing, and implement mitigation measures that would reduce impacts in accordance with Section 21083.2 of CEQA.
- b. If any evidence of archaeological materials is discovered on the surface during field survey, then:

Appendix C: Standard Practices from the UCR Long Range Development Plan
Mitigation Monitoring and Reporting Programs and the City of Riverside General Plan that are
Applicable to the Creekside Terrace Slope Stabilization Project

- › A qualified archaeologist shall prepare a recovery plan for the resources.
- › An archaeologist shall also be present during grading and shall have the authority to halt disturbance of any archaeological resources long enough to assess the situation, conduct testing, and implement mitigation measures that would reduce impacts in accordance with Section 21083.2 of CEQA.

PP 4.5-5 In the event of the discovery of a burial, human bone, or suspected human bone, all excavation or grading in the vicinity of the find shall halt immediately and the area of the find shall be protected and the University immediately shall notify the Riverside County Coroner of the find and comply with the provisions of P.R.C. Section 5097 with respect to Native American involvement, burial treatment, and re-burial, if necessary.

Geology and Soils

PP 4.4-2(b) provided previously.

PP 4.8-1 The campus will continue to comply with all applicable water quality requirements established by the SARWQCB.

Hazards and Hazardous Materials

PP 4.7-1 The campus shall continue to implement the current (or equivalent) health and safety plans, programs, and practices related to the use, storage, disposal, or transportation of hazardous materials, including, but not necessarily limited to, the Business Plan, the Broadscope Radioactive Materials License, and the following programs: Biosafety, Emergency Management, Environmental Health, Hazardous Materials, Industrial Hygiene and Safety, Laboratory/Research Safety, Radiation Safety, and Integrated Waste Management. These programs may be subject to modification as more stringent standards are developed or if the programs are replaced by other programs that incorporate similar health and safety protection measures.

Hydrology and Water Quality

PP 4.4-2(b) and PP 4.8-1 provided previously.

Noise

PP 4.10-2 The UCR campus shall limit the hours of exterior construction activities from 7:00 a.m. to 9:00 p.m. Monday through Friday and 8:00 a.m. to 6:00 p.m. on Saturday when necessary. Construction traffic shall follow transportation routes prescribed for all construction traffic to minimize the impact of this traffic (including noise impacts) on the surrounding community.

Appendix C: Standard Practices from the UCR Long Range Development Plan
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PP 4.10-7(b) The campus shall continue to require by contract specifications that construction equipment be required to be muffled or otherwise shielded. Contract shall specify that engine-driven equipment be fitted with appropriate noise mufflers.

PP 4.10-7(c) The campus shall continue to require that stationary construction equipment, material and vehicle staging to be placed to direct noise away from sensitive receptors.

PP 4.10-8 The campus shall continue to conduct meetings, as needed, with off-campus constituents that are affected by campus construction to provide advance notice of construction activities and ensure that mutual needs of the particular construction project and of those impacted by construction noise are met, to extent feasible.

Traffic and Transportation

PP 4.14-5 To the extent feasible, the campus shall maintain at least one unobstructed lane in both directions on campus roadways. At any time only a single lane is available, the campus shall provide a temporary traffic signal, signal carriers (i.e., flagpersons), or other appropriate traffic controls to allow travel in both directions. If construction activities require the complete closure of a roadway segment, the campus shall provide alternate routes and appropriate signage.

City of Riverside General Plan

Mitigation Measure Cultural 4: The following mitigation measures should be implemented to reduce project-related adverse impacts to archaeological resources and sites containing Native American human remains that may be inadvertently discovered during construction of projects proposed in the City's General Plan Update:

- a. In areas of archaeological sensitivity, including those that may contain buried Native American human remains, a registered professional archaeologist and a representative of the culturally affiliated Native American Tribe, with knowledge in cultural resources, should monitor all project-related ground disturbing activities that extend into natural sediments in areas determined to have high archaeological sensitivity.
- b. If buried archaeological resources are uncovered during construction, all work must be halted in the vicinity of the discovery until a registered professional archaeologist can visit the site of discovery and assess the significance and origin of the archaeological resource. If the resource is determined to be of Native American origin, the Tribe shall be consulted. If the archaeological resource is determined to be a potentially significant cultural resource, the City, in consultation with the project archaeologist and the Tribe, shall determine the course of action which may include data recovery, retention in situ, or other appropriate treatment and mitigation depending on the resources discovered.
- c. In the event of an accidental discovery of any human remains in a location other than a dedicated cemetery, the steps and procedures specified in Health and Safety Code 7050.5, State CEQA Guidelines 15064.5(e), and Public Resources Code 5097.98 must be implemented. Specifically, in accordance with Public Resources Code (PRC) Section 5097.98, the Riverside County Coroner must be notified within 24 hours of the discovery of potentially human remains. The Coroner will then determine within two working days of being notified if the remains are subject to his or her authority. If the Coroner recognizes the remains to be Native American, he or she shall contact the Native American Heritage Commission (NAHC) by phone within 24 hours, in accordance with PRC Section 5097.98. The NAHC will then designate a Most Likely Descendant (MLD) with respect to the human remains within 48 hours of notification. The MLD then has the opportunity to

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recommend to the property owner or the person responsible for the excavation work means for treating or disposing, with appropriate dignity, the human remains and associated grave goods within 24 hours of notification. Whenever the NAHC is unable to identify a MLD, or the MLD fails to make a recommendation, or the landowner or his or her authorized representative rejects the recommendation of the MLD and the mediation provided for in subdivision (k) of PRC Section 5097.94 fails to provide measures acceptable to the landowner, the landowner or his or her authorized representative shall re-inter the human remains and items associated with Native American burials with appropriate dignity on the property in a location not subject to further subsurface disturbance.

Appendix D
Biological Resources Assessment

BIOLOGICAL RESOURCES ASSESSMENT FOR THE UCR CREEKSIDE TERRACE SLOPE PROTECTION PROJECT

**CITY OF RIVERSIDE
RIVERSIDE COUNTY, CALIFORNIA**

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November 2011



ICF International. 2011. *Biological Resources Assessment for the UCR Creekside Terrace Slope Protection Project*. City of Riverside, Riverside County, CA. November. (ICF 00310.11.) Riverside, CA.

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APPENDICES

Appendix A WRC MSHCP Conservation Report

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This report is intended to provide information about existing biological resources within the proposed UCR Creekside Terrace Slope Protection project footprint and surrounding areas and analysis of temporary and permanent impacts to those resources in the context of federal, State, and local regulatory compliance programs. Additionally, this report includes an evaluation of significance pursuant to the California Environmental Quality Act (CEQA), and recommends mitigation measures to offset potential impacts.

1.1 Project Location

The UCR Creekside Terrace Slope Protection project (herein referred to as “Project”) is located within the City of Riverside, Riverside County, California (Figure 1). Specifically, the project site consists of a drainage feature located approximately 0.20 miles north of the intersection of Chicago and Central Avenues (Figure 2). The project is located within Section 31, Township 2 South, Range 4 West of the Riverside East U.S. Geological Survey (USGS) quadrangle dated 1967, photorevised 1980 (USGS 1967). The project site is at approximately 940 feet above mean sea level (MSL) as depicted on the Riverside East USGS topographic map. The coordinates (decimal degrees) for the project site are latitude 33.958882° and longitude 117.346076°. The primary Assessor’s Parcel Number (APN) associated with the project site is 254-370-003.

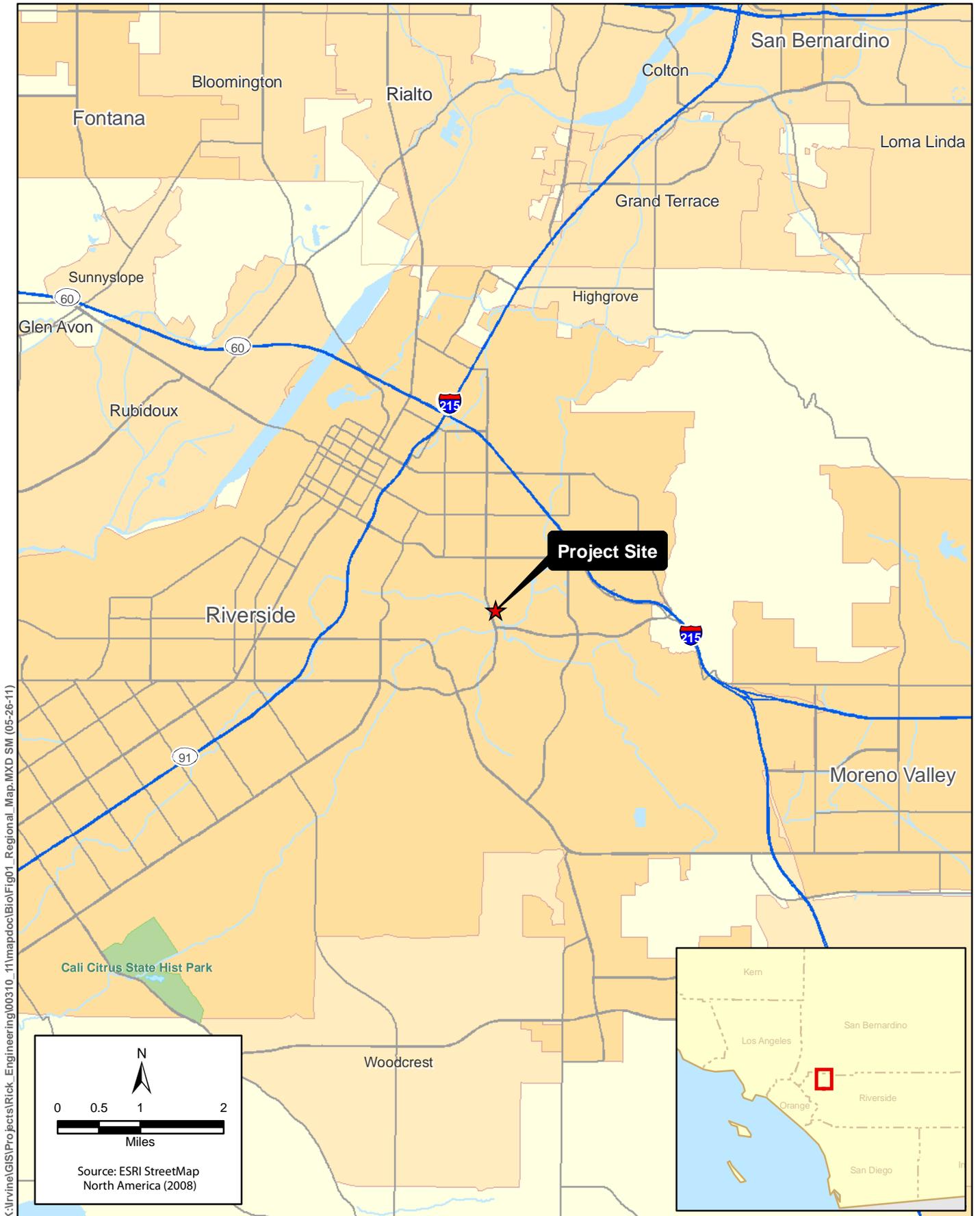
1.2 Project Description

The proposed project involves stabilization of approximately 650 feet of the north and east banks of the existing drainage. Specifically, the channel will be reshaped and rip-rap will be placed on the north and east banks and the channel bottom to match existing conditions present on the south and west banks. Construction will require the removal of all vegetation within the impact area on the north and east banks and across the channel bottom. The proposed design provides for reestablishment of soil over the rip-rap on the channel bottom. Ongoing maintenance will involve clearing of vegetation on the north and east banks; riparian vegetation will be allowed to reestablish naturally on the channel bottom. Existing vegetation on the south and west banks will remain in place.

1.3 Project History

The proposed project involves stabilization of the existing stream banks due to concerns regarding the stability of massive retaining walls adjoining the north and east edges of the stream within the Creekside Terrace residential development. Cause for such concern is evidenced by damage to the east bank in the winter storms of 2010/2011.

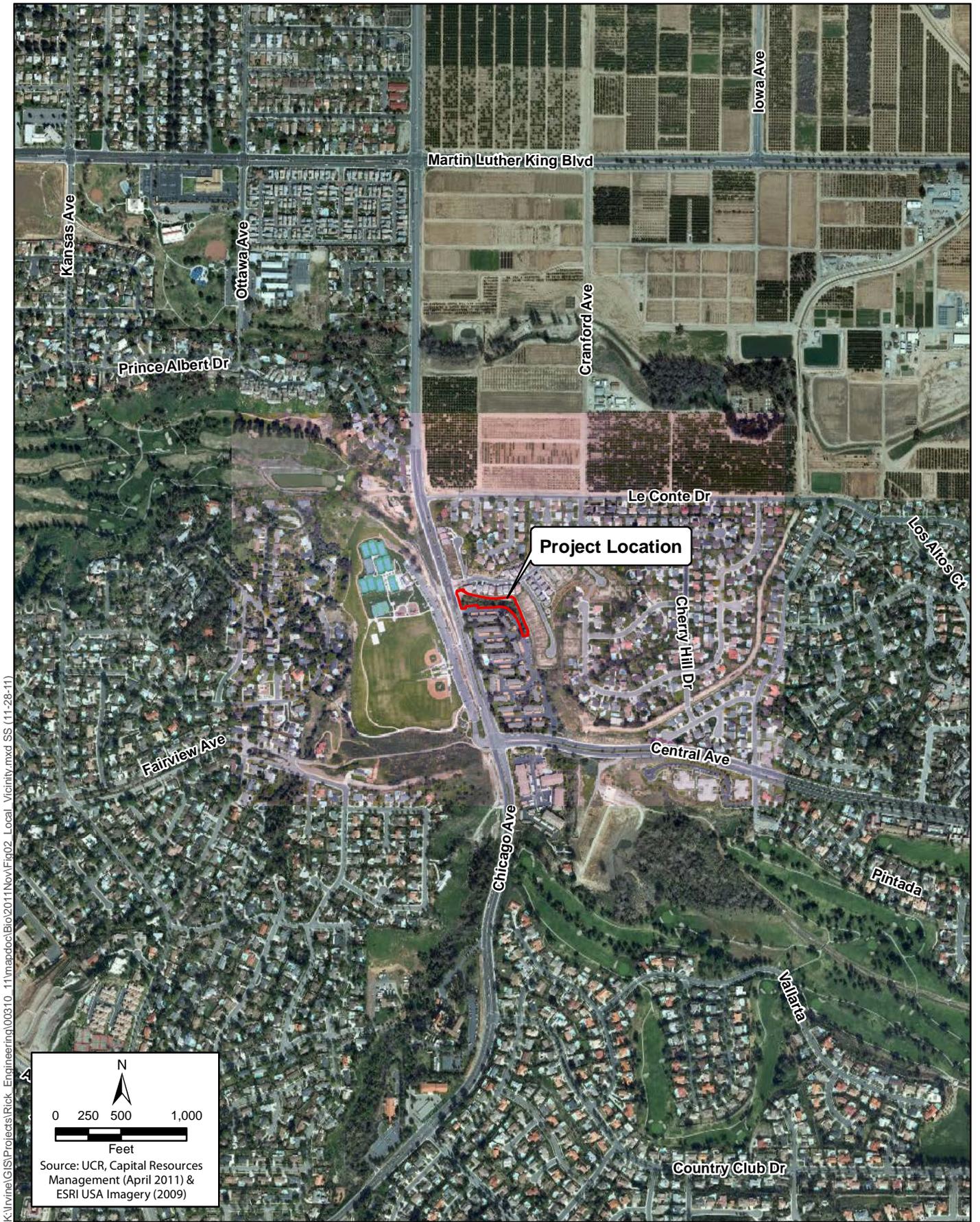
The partially completed Creekside Terrace development was approved by the City of Riverside in September 2004, following the adoption of a Mitigated Negative Declaration pursuant to CEQA. The



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Figure 1
Regional Vicinity Map
UCR Creekside Terrace Slope Protection Project



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Figure 2
Local Vicinity Map
UCR Creekside Terrace Slope Protection Project

approved Creekside Terrace project required the undergrounding of a tributary to the stream that is the subject of this report. The Creekside Terrace developer obtained permits from appropriate regulatory agencies for undergrounding of the tributary feature (USACE/RWQCB Reference Number 200400635-DPS and CDFG 1600 Agreement 1600-2005-0093-R6, Revision 1). These permits included a condition requiring a riparian restoration program and long-term conservation of the stream area that is the subject of this report. Implementation of the restoration program was delayed due to obstacles with obtaining cooperation of the neighboring apartment landowner (the riparian area was not owned by the Creekside Terrace developer, but lies primarily within the legal parcels associated with the apartments bordering the south and west banks) and then was suspended when the Creekside Terrace developer lost their project in foreclosure. The Creekside Terrace property was acquired by UCR for use as staff and faculty housing in 2008.

The existing channelized condition of the stream was effected in conjunction with development of the adjoining apartment complex (sometime between 1977 and 1989 based upon historic aerial photographs; permitting history unknown). The plans prepared for the apartment project depict full rip-rap lining of the channel. The chain of events resulting in the current condition in which rip-rap is present on the south and west banks only, is not known.

The University has recently reached agreement with the neighboring apartment owners to work cooperatively on the channel improvements described in Section 1.2. The University has also been in contact with the regulatory agencies, the local resource conservation agency, and Riverside County Parks and Open Space District to explore options to authorize and compensate for the currently proposed improvements, while also fulfilling the permits conditions for the Creekside Terrace project requiring a riparian restoration program and long-term conservation within the subject riparian area.

1.4 WRC MSHCP

The Western Riverside County Multiple Species Habitat Conservation plan (WRC MSHCP) (Dudek & Associates 2003) is a comprehensive, multi-jurisdictional habitat-conservation planning program for western Riverside County, California. The purpose of the WRC MSHCP is to preserve native habitats, and to this end, the plan focuses on the habitat needs of multiple species rather than one species at a time. The WRC MSHCP provides coverage/take authorization for some species listed under the federal or State Endangered Species Act as well as non-listed special-status plant and wildlife species. It also provides mitigation for impacts on special-status species and their associated habitats.

Through agreements with the U.S. Fish and Wildlife Service (FWS) and California Department of Fish and Game (CDFG), 146 listed and special-status plant and animal species receive some level of coverage under the WRC MSHCP. Of the 146 covered species, the majority of these species have no additional survey needs or conservation requirements. Furthermore, the WRC MSHCP provides mitigation for project-specific impacts on these species, thereby reducing the degree of impact to below a level of significance, pursuant to the California Environmental Quality Act (CEQA).

Several of the species covered under the WRC MSHCP have additional survey requirements. These include the riparian communities and associated species addressed in Section 6.1.2 of the WRC MSHCP document (Protection of Species Associated with Riparian/Riverine Areas and Vernal Pools),

plants identified in Section 6.1.3 (Narrow Endemic Plant Species); and plants and animal species addressed in Section 6.3.2 (Additional Survey Needs and Procedures).

1.4.1 Project Relationship to the WRC MSHCP

The project site is located within the plan area for the WRC MSHCP. UCR is not a permittee under the WRC MSHCP and, therefore, is not afforded coverage under the State or federal Endangered Species Acts for impacts upon listed species covered by the plan. Even though the University is not a participant in the WRC MSHCP, it is necessary to address project consistency with the provisions of the plan in the context of the California Environmental Quality Act significance criteria regarding project consistency with adopted habitat conservation plans. Additionally, while the University is exempt from local planning and building regulations, the Creekside Terrace project requires improvements adjacent to but outside of the campus property and, therefore, may be subject to additional review by the City of Riverside. If this is the case, the City would be required to document consistency with the WRC MSHCP in conjunction with any City discretionary approval for the project. As such, this report was prepared to provide all necessary information required to determine project consistency with the WRC MSHCP.

The project site is located within the “Cities of Riverside and Norco Area Plan” of the WRC MSHCP. The project site is not located within a criteria cell, a linkage area, or public-quasi public (PQP) lands. The project is not located within any plan-defined areas requiring surveys for narrow endemic plant species, criteria area plant species, amphibian species, or mammalian species.

The project site is within the WRC MSHCP burrowing owl (*Athene cunicularia*) survey area. A habitat assessment has determined that the site does not provide suitable habitat for burrowing owl.

The stream and associated riparian habitat meet the definition of WRC MSHCP riparian/riverine resources; however, no vernal pool or seasonal pool resources (fairy shrimp habitat) are located on site. The on-site riparian habitat has been evaluated with respect to WRC MSHCP provisions related to focused survey requirements for the associated covered riparian bird species: least Bell’s vireo (*Vireo bellii pusillus*), southwestern willow flycatcher (*Empidonax trailii extimus*), and western yellow-billed cuckoo (*Coccyzus americanus occidentalis*). On the basis of the habitat assessment, focused surveys for least Bell’s vireo were completed.

Projects adversely impacting WRC MSHCP riparian/riverine resources as they benefit the 34 covered plant and animal species identified in the plan documents (under Section 6.1.2, “Purpose”, on pages 6-20 and 6-21) are subject to preparation of a Determination of Biologically Equivalent or Superior Preservation (DBESP) report. The DBESP details project impacts to the WRC MSHCP riparian/riverine resources and identifies measures to ensure replacement of any lost functions and values as they relate to the 34 focus species. The DBESP is subject to review by the local permittee and concurrence by the U.S. Fish and Wildlife Service and the California Department of Fish and Game.

Chapter 2

METHODOLOGY

2.1 Literature Review

A comprehensive literature review was conducted to evaluate the environmental setting of the project site and identify potential special-status species that may be found on the site. The review included a search of the California Natural Diversity Database (CNDDDB) (CDFG 2011) and the California Native Plant Society (CNPS) Inventory of Rare and Endangered Plants (CNPS 2011) for the Riverside East, San Bernardino South, Redlands, Sunnymead, Perris, Steele Peak, Lake Mathews, Riverside West and Fontana, 7.5-minute USGS quadrangles. Additionally, the U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) Web Soil Survey (NRCS 2011) for the project area, literature detailing the habitat requirements of special-status species; Volumes I and II of the WRC MSHCP document, and the most recent FWS critical habitat maps were reviewed.

2.2 Field Visit

The field visit was conducted on May 2, 2011 by ICF biologists Paul Schwartz and Dale Ritenour. The field visit was conducted between 0820 and 1250 hours. Weather conditions during the field visit consisted of temperatures ranging from 19.4 to 29.4 °C (67 to 85°F), winds ranging from 0-3 kilometers per hour (km/h)[0-2 miles per hour (mph)] with clear skies with 0% cloud cover. The field visit focused on mapping vegetation and conducting habitat assessments for special status plants and wildlife. In addition, a jurisdictional delineation was conducted for the project area. Results of the jurisdictional delineation are presented under separate cover (ICF 2011a).

All plant and wildlife species observed during the site visit were recorded in field notes. Plants were detected and identified through direct sight. Plants were identified to species based on previous experience with the species or identified to species using the *Jepson Manual, Higher Plants of California* (Hickman 1993). Nomenclature and common names were taken from *The Vascular Plants of Western Riverside County, California: An Annotated Checklist* (Roberts et al., 2004). Special-status rankings for plant species were identified through a review of the CDFG *Special Plants, Bryophytes and Lichens List* (CDFG 2011b).

Wildlife species were detected by sight, calls, tracks, scat, or other sign. Field guides were used to assist with identification of species during the site visit and included the *National Geographic Birds of North America, 4rd ed.* (National Geographic 2002), *Butterflies Through Binoculars, The West* (Glassberg 2001), *A Field Guide to Western Reptiles and Amphibians* (Stebbins 2003), and the *Field Guide to the Mammals of North America* (Reid 2006). Special-status rankings for wildlife were identified through a review of the CDFG *Special Animals List* (CDFG 2011c).

2.3 Vegetation Mapping

Vegetation mapping was conducted in the field using a map with the scale of 1":60'. WRC MSHCP vegetation types were used to the greatest extent possible. During the vegetation mapping, areas of special-status habitat pursuant to CDFG and the U.S. Army Corps of Engineers (USACE) were noted. Additionally, the study area was evaluated for the presence of WRC MSHCP riparian/riverine areas and vernal pools subject to Section 6.1.2 of the WRC MSHCP.

The WRC MSHCP defines riparian/riverine areas as:

"Lands which contain habitat dominated by trees, shrubs, persistent emergent mosses and lichens, which occur close to or which depend upon soils moisture from a nearby fresh water source; or areas with fresh water flow during all or a portion of the year."

The WRC MSHCP defines vernal pools as:

"Seasonal wetlands that occur in depression areas that have wetlands 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."

The existing drainage feature falls within the MSHCP definition of riparian/riverine resources. The site does not; however, support any conditions that would be characterized as vernal pools.

2.4 Habitat Assessments

Habitat assessments were conducted for all special status species documented as historically occurring in the vicinity of the project site in the CNDDDB and CNPS Inventory of Rare and Endangered Plants, as well as for burrowing owl, and all riparian/riverine species discussed under "Purpose" in Section 6.1.2 of the MSHCP including least Bell's vireo (*Vireo bellii pusillus*), southwestern willow flycatcher (*Empidonax trailii extimus*) and western yellow-billed cuckoo (*Coccyzus americanus occidentalis*). The project site lacks basins or ponded areas that would provide habitat for the fairy shrimp species protected under the WRC MSHCP. Habitat assessments for all special status species known to historically occur in the general vicinity are provided in Appendix D.

2.4.1 Burrowing Owl

The burrowing owl in southern California occurs in a variety of habitats including grasslands, scrub, agricultural areas and desert areas. The burrowing owl requires sparsely vegetated open expanses of gently rolling or relatively level terrain that has an abundance of active small mammal burrows. In southern California this species requires the use of rodent or other burrows for roosting and nesting cover. They may also use pipes, culverts, rip-rap and any other structures that provide suitable cover.

The WRC MSHCP conservation report generator identifies all associated parcels as potentially subject to plan provisions for burrowing owl (Appendix A). A Step I burrowing owl habitat assessment was conducted pursuant to the WRC MSHCP Burrowing Owl Survey Instructions

(County of Riverside, 2005). Specifically, the entire site was walked and inspected for the presence of suitable burrowing owl habitat and potential burrow features.

2.4.2 Riparian/Riverine Bird Species

Least Bell's Vireo

The least Bell's vireo primarily occupies riparian habitat that features low, dense growth. This species is associated with a variety of riparian communities including southern willow scrub, cottonwood forest, mule fat scrub and coast live oak riparian forest below 460 meters (1,500 feet) in elevation.

The least Bell's vireo primarily nests within vegetation typically dominated by willows (*Salix* sp.) and mule fat (*Baccharis salicifolia*) but has also been recorded nesting in a variety of shrubs, trees, and vines. The most critical habitat component for nesting least Bell's vireo appears to be areas with a dense shrub layer and nests which are typically built 1-2 meters (3-6 feet) off the ground.

The project site contains southern willow scrub and disturbed southern willow scrub riparian habitat which meets the criteria of a WRC MSHCP riparian/riverine area. As such, a qualified biologist walked the entire project site to determine the suitability for least Bell's vireo.

Southwestern Willow Flycatcher

The southwestern willow flycatcher typically occupies riparian woodlands along streams and rivers that support mature, dense stands of willow and cottonwood (*Populus fremontii*). This species has also been observed occupying smaller, spring fed or boggy areas that support willows or alders (*Alnus* sp.). Favored breeding habitat for this species includes areas with extensive riparian habitat along low gradient streams with fairly wide floodplains. Specifically, the southwestern willow flycatcher is known to breed in relatively even-aged structurally homogenous dense riparian habitat and builds nests in thickets of trees approximately 4 to 7 meters (13 to 23 feet) in height with a high percentage of canopy cover. Nests are typically built within 4 meters (13 feet) of the ground.

Several subspecies of willow flycatcher are known to occur in southern California, however, only one (*Empidonax trailii extimus*) is known to breed. The remaining subspecies are considered migrants. As such, timing of observation and observed breeding behavior is key in identifying *E. trailii extimus*.

The project site contains southern willow scrub and disturbed southern willow scrub riparian habitat which meets the criteria of a WRC MSHCP riparian/riverine area. As such, a qualified biologist walked the entire project site to determine the suitability for southwestern willow flycatcher.

Western Yellow-billed Cuckoo

In California, the western yellow-billed cuckoo occurs in dense, extensive riparian woodlands with well-developed understory vegetation. Breeding habitat for this species is restricted to larger river

bottoms with wide floodplain areas supporting a dense understory adjacent to slow-moving watercourses. Willows are a primary component of the vegetation. In Riverside County, this species is historically known to occur within the Prado Basin or adjacent reaches of the Santa Ana River.

The project site contains southern willow scrub and disturbed southern willow scrub riparian habitat which meets the criteria of a WRC MSHCP riparian/riverine area. As such, a qualified biologist walked the entire project site to determine the suitability for western yellow-billed cuckoo.

Chapter 3

RESULTS and IMPACT ANALYSIS

3.1 Results of Literature Search

The CNDDDB and CNPS Inventory of Rare and Threatened Plants was reviewed for the project site and surrounding quadrangles. All special status plants, wildlife and vegetation communities recorded for the project site and surrounding quadrangles were evaluated for their potential to occur on the project site. Additionally, the 34 WRC MSHCP riparian/riverine species discussed under “Purpose” in Section 6.1.2 of the WRC MSHCP document were reviewed for their potential to occur on the project site. Habitat assessments for all special status species and WRC MSHCP riparian/riverine species historically occurring or potentially occurring in the vicinity of the project site are presented in Appendix D.

The USDA NRCS Web Soil Survey was reviewed for the project site. The following soil types are mapped within the project area: Hanford Coarse Sandy Loam, 2 to 8 percent slopes (HcC) and Terrace Escarpments (TeG). None of these soils are known to support sensitive plants or designated as WRC MSHCP sensitive soils.

As indicated above, the WRC MSHCP was also reviewed to determine if the project site is within any areas proposed for conservation. It was determined that the project site is not within any criteria cells, criteria cell groups, special linkage areas or PQP lands proposed for conservation. In addition, U.S. Fish and Wildlife Service critical habitat maps were reviewed for the project site and general vicinity. No critical habitat is mapped within or in the immediate vicinity of the project site.

The project site is subject to a unique conservation requirement in conjunction with previously issued permits for the Creekside Terrace project as they relate to commitments to enhance and conserve the stream and associated riparian vegetation.

3.2 Existing Conditions

The project site consists of an area between two residential complexes and contains a small terrace area and drainage that supports riparian vegetation. The terrace area is dominated by non-native ruderal (weedy) vegetation. The drainage contains areas meeting the definition of Southern Willow Scrub. Portions of the Southern Willow Scrub contain substantial cover of non-native invasive plants and were mapped as Disturbed Southern Willow Scrub. Additional vegetation communities/land uses mapped within the project site include Exotic, Open Water and Disturbed. Appendix B contains photographs of the project site. Appendix C contains a list of all plant and animal species observed during the site visit.

3.3 Results of Vegetation Mapping

Five vegetation types were mapped within the 1.11 acre project site: Disturbed, Exotic, Southern Willow Scrub, Disturbed Southern Willow Scrub, and Open Water. These vegetation types are described below and depicted in Figure 3.

Disturbed

Approximately 0.28 acre of disturbed land was mapped within the project site. Disturbed lands include the flat terrace areas and the exposed rip-rap sides of the channel adjacent to Chicago Avenue. The exposed rip-rap areas of the channel contain little to no vegetation. Vegetation on the flat terrace area consists of non-native ruderal plants and is dominated by wild lettuce (*Lactuca serriola*), yellow sweet clover (*Melilotus indicus*), sand bur (*Ambrosia acanthicarpa*), common horseweed (*Conyza canadensis*), cheeseweed (*Malva parviflora*), pineapple weed (*Chamomilla suaveolens*), black mustard (*Brassica nigra*), as well as non-native grasses such as red brome (*Bromus madritensis* ssp. *rubens*), ripgut brome (*Bromus diandrus*) and Mediterranean grass (*Schismus barbatus*).

With the exception of the rip-rap area adjacent to Chicago Avenue, the areas of disturbed vegetation will be temporarily impacted through project implementation. This area is expected to be used for equipment access to the channel and possibly for storage of construction equipment. No mitigation is required to offset impacts to areas of disturbed habitat. Activity in areas of disturbed vegetation that entail removal of vegetation or use of heavy construction equipment would be subject to recommendations in Section 3.5, below, regarding nesting birds.

Exotic

Approximately 0.23 acre of exotic vegetation was mapped within the project site. These include areas located on the south side of the drainage and consist of non-native eucalyptus trees (*Eucalyptus* sp.) and areas of lawn associated with the adjacent apartment complex.

At this time it is anticipated that all work will be conducted from the north and east sides of the channel and that areas containing exotic vegetation would not be directly impacted. In the event disturbance of these areas is necessary, no mitigation is required to offset impacts to areas of exotic vegetation. Activity in areas of exotic vegetation that entail removal of vegetation or use of heavy construction equipment would be subject to recommendations in Section 3.5, below, regarding nesting birds.

Southern Willow Scrub

Approximately 0.48 acre of Southern Willow Scrub was mapped within the project site. These areas are dominated by arroyo willow (*Salix lasiolepis*), Gooding's willow (*Salix goodingii*), mulefat (*Baccharis salicifolia*), sycamore (*Platanus racemosa*), elderberry (*Sambucus mexicana*), and stinging nettle (*Urtica dioica*). Southern Willow Scrub is designated as a sensitive community by CDFG. Additionally, this vegetation community meets the definition of a WRC MSHCP riparian/riverine area.

Based upon work limits involving the entire creek bottom, approximately 0.32 acre of Southern Willow Scrub will be impacted through project implementation. Impacts to this habitat will be addressed during the regulatory permitting process under the Clean Water Act and California Fish



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Figure 3
Vegetation Map
UCR Creekside Terrace Slope Protection Project

and Game Code. Based upon current CDFG practice, mitigation can be expected at a minimum of 3:1. Ramifications of the existing restoration and conservation obligations under the previous authorizations for the Creekside Terrace development may also affect the ultimate mitigation requirements. Several options for off-site mitigation are available through the Riverside-Corona Resource Conservation (RCD) District, Riverside County Regional Parks and Open Space District, and the Santa Ana Watershed Trust for Arundo Eradication (under Santa Ana Watershed Association - SAWA).

Disturbed Southern Willow Scrub

Approximately 0.11 acre of Disturbed Southern Willow Scrub was mapped within the project site. This area contains the same vegetation as areas mapped as Southern Willow Scrub but also contains a high percentage of non-native vegetation such as ornamental ash (*Fraxinus* sp.), castor bean (*Ricinus communis*), Mexican fan palm (*Washingtonia robusta*), date palm (*Phoenix canariensis*), pepper tree (*Schinus molle*), tamarisk (*Tamarix ramosissima*) and tree tobacco (*Nicotiana glauca*). Disturbed Southern Willow Scrub is designated as a sensitive community by CDFG. Additionally, this vegetation community meets the definition of a WRC MSHCP riparian/riverine area.

Based upon work limits involving the entire creek bottom, approximately 0.07 acre of Disturbed Southern Willow Scrub will be impacted through project implementation. Impacts to this habitat will be addressed through the permitting process as discussed in conjunction with impacts to Southern Willow Scrub, above.

Open Water

Approximately 0.01 acre of open water was mapped at the culvert inlet immediately east of Chicago Avenue. No vegetation is associated with this area.

Areas of Open Water may need to be impacted in order to access the creek bottom to install rip-rap. Impacts to Open Water habitat will be addressed through the permitting process as discussed in conjunction with impacts to Southern Willow Scrub, above.

3.4 Results of Habitat Assessments

Habitat assessments were conducted for all special status species recorded as historically occurring in the project vicinity, burrowing owl and all riparian/riverine species discussed under "Purpose" in Section 6.1.2 of the WRC MSHCP.

3.4.1 Burrowing Owl

A Step I burrowing owl habitat assessment was conducted for the entire project site. The site was walked and it was determined that the project site does not contain the potential for burrowing owl to occur due to a lack of suitable burrowing owl habitat (i.e., open sparsely vegetated areas) and the lack of potential burrow features (i.e., small mammal burrows).

3.4.2 Least Bell's Vireo

The project site was evaluated for the suitability to support least Bell's vireo. It was determined that the Southern Willow Scrub on the project site does have the potential to support this species due to suitable canopy structure. Protocol surveys for least Bell's vireo were conducted between May 9, 2011 and July 25, 2011. No vireos were observed during the protocol surveys. This species can be considered absent at this time. The methods and results of the least Bell's vireo surveys are reported under separate cover (ICF 2011b).

3.4.3 Southwestern Willow Flycatcher

The project site was evaluated for the suitability to support southwestern willow flycatcher. It was determined that the project site does not contain suitable habitat for the southwestern willow flycatcher due to the relatively small size of the riparian habitat, the lack of extensive riparian vegetation with dense canopy within wide floodplain areas, and the fairly isolated nature of the riparian community.

3.4.4 Western Yellow-billed Cuckoo

The project site was evaluated for the suitability to support western yellow-billed cuckoo. It was determined that the project site does not contain suitable habitat for the western yellow-billed cuckoo due to the small size of the riparian habitat, the lack of extensive areas of riparian vegetation within large floodplain areas, and the fairly isolated nature of the riparian community.

3.4.5 Additional Species Observed or Identified with the Potential to Occur

Special Status Species and WRC MSHCP Covered Species Observed

One special status species was observed at the project site during several of the least Bells' vireo surveys: yellow warbler (*Dendroica petechia*). Yellow warbler is designated as a CDFG Species of Special Concern (SSC) and is a species considered to be adequately conserved and covered under the WRC MSHCP. Two other MSHCP covered species were observed during least Bell's vireo surveys conducted for the site: downy woodpecker (*Picoides pubescens*) and Cooper's hawk (*Accipiter cooperii*). Cooper's hawk is designated as a CDFG watch list species. Downy woodpecker is not afforded any non-MSHCP sensitive status. These two species are considered adequately conserved and covered under the WRC MSHCP.

Regional conservation efforts focused on areas located outside of the project site have, and will, conserve sufficient habitat for these species. As such, in a regional context, impacts to these species would be considered less than significant.

Species Identified as Having a Low Potential to Occur

Through the review of the CNDDDB and CNPS data, six additional special status species were identified as having some potential to occur. Four species were determined to have a low potential to occur in the project area: California satintail (*Imperata brevifolia*), western pond turtle (*Actinemys marmorata*), San Diego desert woodrat (*Neotoma lepida intermedia*) and long-eared owl (*Asio otus*).

California Satintail

California satintail is designated as a CNPS List 2.1 species. This species is not designated as a State or federal listed species or a species receiving coverage under the WRC MSHCP. No individuals of California satintail were observed during site visits. It was determined that this species has a low potential to occur on the site, however if it does occur on site it occurs in low numbers and project related impacts would be considered less than significant.

Western Pond Turtle

Western pond turtle is designated as a CDFG Species of Special Concern (SSC) as well as a WRC MSHCP species considered adequately conserved. This species is not a State or federal listed species. The western pond turtle was determined to have a low potential to occur on the site due to the presence of stream habitat, however, it is not expected to occur on site due to a lack of sufficient suitable basking sites. No individuals or any sign of presence of this species was detected during the site visits.

Regional conservation efforts focused on areas located outside of the project site have conserved sufficient habitat for this species. As such, in a regional context, impacts to this species would be considered less than significant.

San Diego Desert Woodrat

The San Diego desert woodrat is designated as a CDFG SSC as well as a WRC MSHCP species considered adequately conserved. This species is not a State or federal listed species. The San Diego desert woodrat was determined to have a low potential to occur on site due to the presence of riparian habitat, however, it is not expected due to a lack of substantial shrub cover and the narrow nature of the riparian corridor on the site. No individuals or any sign of presence of this species was detected during the site visits.

Regional conservation efforts focused on areas located outside of the project site have conserved sufficient habitat for this species to be considered adequately conserved in the region. As such, in a regional context, impacts to this species would be considered less than significant.

Long-eared Owl

The long-eared owl is designated as a CDFG SSC as well as a WRC MSHCP species considered adequately conserved. Additionally, this species is not a State or federal listed species. The long-eared owl was determined to have a low potential to occur on site due to the presence of riparian habitat, however, it is not expected due to a lack of substantial riparian coverage on the project site. No individuals or any sign of presence of this species was detected during the site visits.

Regional conservation efforts focused on areas located outside of the project site have conserved sufficient habitat for this species to be considered adequately conserved in the region. As such, in a regional context, impacts to this species would be considered less than significant.

Species Identified as Having a Moderate Potential to Occur

In addition to least Bell's vireo, the western yellow bat was identified as having a moderate potential to occur on the project site.

The western yellow bat is designated as a CDFG SSC. The western yellow bat is not covered under the WRC MSHCP nor is it designated as a State or federal listed species. This species is known to roost in the dead fronds of palm trees within palm oases or residential areas and forages over water and among trees. Due to the lack of extensive palm coverage within the project site it was determined that the project site lacks suitable communal roosting habitat for this species. However, due to the presence of a few individual palm trees it was determined that the site does have the potential to support individual roosting western yellow bats. As such it was determined that this species has a moderate potential for individual western yellow bats to roost and forage on site.

Project related impacts to roosting western yellow bats would be considered less than significant given that the project site only contains a few large palm trees with the potential to provide habitat for non-communal, individual roosting western yellow bats. Additionally, the amount of individual roosting habitat on site is relatively insignificant compared to the relatively large amount of habitat for individual roosting western yellow bats in the general project vicinity. As such, project impacts to individual roosting western yellow bats would be considered less than significant.

Due to the large amount of palm trees and additional potential roosting areas in the vicinity of the project site it was determined that there is a moderate potential for this species to forage within the project site. Due to the relatively small amount of potential foraging habitat the project site provides in relation to the relatively large amount of potential foraging habitat in the general vicinity, potential project impacts to foraging activities for western yellow bat would also be considered less than significant.

3.5 Nesting Birds

In addition to the species-specific analysis provided above, vegetation within the project site provides habitat for a variety of nesting birds that are protected under State and federal laws. Migratory nongame native bird species are protected under the federal Migratory Bird Treaty Act. Additionally, Sections 3503, 3503.5 and 3513 of the California Fish and Game Code prohibit take of all birds and their active nests. If vegetation removal and other ground disturbance activities can be conducted outside of the recognized nesting bird season (February 15 through September 15), compliance with these regulations is not an issue.

If work cannot be avoided during the nesting bird season, prior to initiation of project activities that would remove vegetation or otherwise disturb nesting activity (for instance, mobilization of heavy equipment), a qualified biologist should conduct a pre-construction nesting bird survey within all areas of breeding/nesting habitat within and adjacent to the project site. Surveys should be conducted not more than 7 days prior to initiation of activities. If nesting birds are encountered, the qualified biologist will flag an avoidance buffer zone around the nest (buffer zones vary according to species involved and shall be determined by the qualified biologist). No activities that would

adversely affect the nest shall occur within the buffer zone until the qualified biologist has determined the nest is no longer active and the young are not dependent on the nest.

Chapter 4

WRC MSHCP CONSISTENCY ANALYSIS

4.1 Relationship of the Project Site to the WRC MSHCP

The project site is located within the plan area for the WRC MSHCP. As previously noted in Section 1, UCR is not a permittee under the WRC MSHCP. Even though the University is not a participant in the WRC MSHCP, it is necessary to address project consistency with the provisions of the plan in the context of the California Environmental Quality Act significance criteria dealing with project consistency with adopted habitat conservation plans. Also, the proposed project may entail a discretionary approval from the City of Riverside. As a permittee, the City would be required to make a formal determination of project consistency with the WRC MSHCP. As such, this report was prepared to provide all necessary information required to determine WRC MSHCP consistency.

The project site is located within the “Cities of Riverside and Norco Area Plan” of the WRC MSHCP. The project site is not located within a criteria cell, a linkage area, or public-quasi public (PQP) lands; therefore, the project is not subject to the Habitat Acquisition Negotiation Process (HANS). In addition, the project is not located within plan-defined areas requiring surveys for narrow endemic plant species, criteria area plant species, amphibian species, or mammalian species. The project site is within the WRC MSHCP burrowing owl survey area pursuant to Section 6.3.2 of the WRC MSHCP. In addition, the project site contains areas meeting the definition of a WRC MSHCP riparian/riverine area pursuant to Section 6.1.2 of the WRC MSHCP.

4.2 Protection of Species Associated With Riparian/Riverine Areas and Vernal Pools

The project site contains 0.48 acre of Southern Willow Scrub, 0.11 acre of Disturbed Southern Willow Scrub and 0.01 acre of Open Water areas which meet the WRC MSHCP definition of a riparian/riverine area pursuant to Section 6.1.2 of the WRC MSHCP. The project site does not support vernal pools or seasonal pools, or associated species.

The WRC MSHCP policies for the protection of riparian/riverine resources are intended to ensure that the biological functions and values of such resources throughout the MSHCP plan area are maintained such that habitat values for species inside the MSHCP Conservation area are maintained. For locations such as the subject site that are well-removed from the Conservation Area, the assessment of impacts upon riparian/riverine resources is focused upon functions and values with respect to conservation of covered species within the Conservation Area. The MSHCP defines functions and values as including hydrologic regime, flood storage and flood flow modification, nutrient retention and transformation, sediment trapping and transport, toxicant trapping, public use, wildlife habitat, and aquatic habitat.

The subject stream feature is a highly constrained, previously channelized surface feature in an urban setting. The upstream tributary area encompasses more than 15 square miles in the Canyon Crest and Sycamore Canyon communities within the City of Riverside that are characterized by residential commercial, and industrial development, and Sycamore Canyon Wilderness Park. The immediate upstream reaches of the historic drainage feature (Sycamore Canyon) are occupied by the Riverside County Flood Control and Water Conservation District Sycamore Dam and Canyon Crest Country Club golf course. The immediate downstream reaches of the historic drainage feature (Tequesquite Arroyo) consist of a concrete-lined ditch along the edge of the City's Andulka Park and a maintained feature through the Victoria Country Club golf course. A short segment of disturbed surface drainage exists within the Tequesquite Arroyo downstream of Victoria Golf Course to State Route 91 (approximately one-half mile). Continuing downstream, the historic drainage feature is conveyed in buried storm drains through developed areas in the City of Riverside, emerging at the Santa Ana River approximately 3 miles downstream.

Considering the project setting, the nature of the proposed improvements, and the results of the current surveys, the function and values that are relevant to the current evaluation are the hydrologic regime and wildlife habitat. Aside from any temporary diversions that may be required to complete the proposed improvements, the existing hydrologic regime will not be altered – flows will continue to enter through the upstream culvert and exit through the downstream culvert and tributary area limits or characteristics will not be altered.

With respect to wildlife habitat, the proposed improvements will remove approximately 0.60 acres of southern willow scrub habitat at an isolated location outside the Conservation Area that is constrained by existing developed edge conditions. The limited consequences of removal of this habitat is supported by the comparatively limited number and range of species observed in the current surveys. The nearest Conservation Area lands lie within the Santa Ana River, Sycamore Canyon and the Box Springs Mountains, all of which are separated from the project site by areas of established urban development within the City of Riverside. Offsets for loss of riparian habitat as a result of the proposed improvements will be required in conjunction with the regulatory permits under the Clean Water Act and Fish and Game Code. The campus has identified the Riverside County Parks and Open Space District mitigation bank for riparian enhancement in the Santa Ana River as the mitigation vehicle for the proposed improvements, including replacement mitigation for the previously-issued regulatory permits for the Creekside Terrace development. It is anticipated that mitigation required under these permitting programs will also be deemed “biologically superior or equivalent” under the MSHCP provisions.

In the event a discretionary approval from the City of Riverside is required, a formal DBESP report will have to be prepared and reviewed by FWS and CDFG. Approval of the DBESP, if required, will provide an official record of project consistency with the MSHCP Riparian/Riverine policies.

4.3 Protection of Narrow Endemic Plant Species

The project site is not located within the WRC MSHCP Narrow Endemic Plant Species Survey Area (NEPSSA) pursuant to *Section 6.1.3* of the MSHCP. Therefore, the NEPSSA requirements are not applicable to the project and the project is consistent with the WRC MSHCP Narrow Endemic Plant Species policies.

4.4 Guidelines Pertaining to the Urban/Wildlands Interface

The project site is not located within or adjacent to a WRC MSHCP Conservation Area, therefore the project site is not required to address Section 6.1.4 (Guidelines Pertaining to the Urban/Wildlands Interface) of the WRC MSHCP.

In addition to the direct application under this WRC MSHCP provision, the Urban/Wildlands Interface policies also apply to riparian/riverine areas as part of the avoidance and minimization process for areas not to be included in the MSHCP Conservation Area. Considering the existing developed nature of surrounding properties and the highly constrained nature of the subject stream feature, there is limited opportunity for application of the majority of the recommended treatments. Project activities should take into consideration provisions related to invasive, non-native plant species in the context of any revegetation element, or opportunities to remove invasive species from riparian areas that will not be disturbed.

4.5 Additional Survey Needs and Procedures

The project site is not located within the WRC MSHCP Criteria Area Plant Species Survey Area (CAPSSA) pursuant to *Section 6.3.2* of the WRC MSHCP. Therefore, the CAPSSA requirements are not applicable to the project.

In addition, the project site is not located within the WRC MSHCP Additional Survey Areas for Amphibians, Survey Areas for Mammals, or any Special Linkage Areas; however, the project site is located within the WRC MSHCP burrowing owl survey area (see Section 3.4.1 above). It was determined that the project site does not have the potential to support burrowing owl. As such, no focused burrowing owl surveys are required and the project is consistent with the WRC MSHCP Additional Survey Needs and Procedures policies for this species.

4.6 Fuels Management

The project site is not located within or adjacent to the WRC MSHCP Conservation Area, therefore the project site is not required to address Section 6.4 (Fuels Management) of the WRC MSHCP, and the project is consistent with the WRC MSHCP Fuels Management policies.

Chapter 5

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Appendix A
WRC MSHCP Conservation Report

 Riverside County Transporation and Land Management Agency - TLMA

Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP)

APN	Cell	Cell Group	Acres	Area Plan	Sub Unit
254020054	Not A Part	Independent	0.28	Cities of Riverside and Norco	Not a Part
254020055	Not A Part	Independent	0.14	Cities of Riverside and Norco	Not a Part
254020056	Not A Part	Independent	0.14	Cities of Riverside and Norco	Not a Part
254020057	Not A Part	Independent	0.2	Cities of Riverside and Norco	Not a Part
254020058	Not A Part	Independent	0.13	Cities of Riverside and Norco	Not a Part
254020059	Not A Part	Independent	0.13	Cities of Riverside and Norco	Not a Part
254020060	Not A Part	Independent	0.13	Cities of Riverside and Norco	Not a Part
254020061	Not A Part	Independent	0.1	Cities of Riverside and Norco	Not a Part
254351033	Not A Part	Independent	0.13	Cities of Riverside and Norco	Not a Part
254351034	Not A Part	Independent	0.13	Cities of Riverside and Norco	Not a Part
254351035	Not A Part	Independent	0.15	Cities of Riverside and Norco	Not a Part
254351036	Not A Part	Independent	0.16	Cities of Riverside and Norco	Not a Part
254351037	Not A Part	Independent	0.14	Cities of Riverside and Norco	Not a Part
254351038	Not A Part	Independent	0.14	Cities of Riverside and Norco	Not a Part
254351039	Not A Part	Independent	0.14	Cities of Riverside and Norco	Not a Part
254370003	Not A Part	Independent	6.88	Cities of Riverside and Norco	Not a Part

HABITAT ASSESSMENTS

Habitat assessment shall be required and should address at a minimum potential habitat for the following species:

APN	Amphibia Species	Burrowing Owl	Criteria Area Species	Mammalian Species	Narrow Endemic Plant Species	Special Linkage Area
254020054	NO	YES	NO	NO	NO	NO
254020055	NO	YES	NO	NO	NO	NO
254020056	NO	YES	NO	NO	NO	NO
254020057	NO	YES	NO	NO	NO	NO
254020058	NO	YES	NO	NO	NO	NO
254020059	NO	YES	NO	NO	NO	NO
254020060	NO	YES	NO	NO	NO	NO
254020061	NO	YES	NO	NO	NO	NO
254351033	NO	YES	NO	NO	NO	NO
254351034	NO	YES	NO	NO	NO	NO
254351035	NO	YES	NO	NO	NO	NO
254351036	NO	YES	NO	NO	NO	NO
254351037	NO	YES	NO	NO	NO	NO

254351038	NO	YES	NO	NO	NO	NO
254351039	NO	YES	NO	NO	NO	NO
254370003	NO	YES	NO	NO	NO	NO

Burrowing Owl

Burrowing owl.

If potential habitat for these species is determined to be located on the property, focused surveys may be required during the appropriate season.

Background

The final MSHCP was approved by the County Board of Supervisors on June 17, 2003. The federal and state permits were issued on June 22, 2004 and implementation of the MSHCP began on June 23, 2004.

For more information concerning the MSHCP, contact your local city or the County of Riverside for the unincorporated areas. Additionally, the Western Riverside County Regional Conservation Authority (RCA), which oversees all the cities and County implementation of the MSHCP, can be reached at:

Western Riverside County Regional Conservation Authority
3403 10th Street, Suite 320
Riverside, CA 92501

Phone: 951-955-9700
Fax: 951-955-8873

www.wrc-rca.org

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Appendix B

Photographs



Photo 1: This photograph depicts the riparian habitat within the western portion of the project site. Also depicted is the access road located on the north side of the drainage. Photograph looking southeast from Chicago Avenue. Photograph taken on 05-02-2011.



Photo 2: This photograph depicts the access road located on the north side of the drainage. The access road is dominated by non-native ruderal vegetation. Photograph looking southeast. Photograph taken on 05-02-2011.

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Photo 3: This photograph depicts a portion of the drainage that is considered disturbed southern willow scrub. Non-native species depicted in the photograph consist of castor bean (*Ricinus communis*), tamarix (*Tamarix ramosissima*), and an ornamental ash (*Fraxinus* sp.). Photograph looking southeast. Photograph taken on 05-02-2011.



Photo 4: This photograph depicts the southeastern portion of the project site. Photograph taken from behind the apartment complex located south of the project site. Photograph looking north. Photograph taken on 05-02-2011.

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Appendix C

Species Lists

Appendix C. Wildlife Species Detected

Scientific Name	Common Name	Special Status
INVERTEBRATES		
Moths, Skippers and Butterflies		
<i>Papilio zelicaon</i>	Anise Swallowtail	
<i>Pontia protodice</i>	Checkered White	
* <i>Pieris rapae</i>	Cabbage White	
<i>Nymphalis antiopa</i>	Mourning Cloak	
<i>Vanessa atalanta</i>	Red Admiral	
<i>Vanessa annabella</i>	West Coast Lady	
<i>Junonia coenia</i>	Common Buckeye	
VERTEBRATES		
Birds		
<i>Accipiter cooperii</i>	Cooper's Hawk	
<i>Buteo jamaicensis</i>	Red-tailed Hawk	
<i>Falco sparverius</i>	American Kestrel	
* <i>Columba livia</i>	Rock Pigeon	
<i>Zenaidura macroura</i>	Mourning Dove	
<i>Archilochus alexandri</i>	Black-chinned Hummingbird	
<i>Calypte anna</i>	Anna's Hummingbird	
<i>Selasphorus sasin</i>	Allen's Hummingbird	
<i>Picoides nuttallii</i>	Nuttall's Woodpecker	
<i>Picoides pubescens</i>	Downy Woodpecker	
<i>Contopus sordidulus</i>	Western Wood-Pewee	
<i>Empidonax difficilis</i>	Pacific-slope Flycatcher	
<i>Sayornis nigricans</i>	Black Phoebe	
<i>Tyrannus verticalis</i>	Western Kingbird	
<i>Corvus brachyrhynchos</i>	American Crow	
<i>Corvus corax</i>	Common Raven	
<i>Stelgidopteryx serripennis</i>	Northern Rough-winged Swallow	
<i>Petrochelidon pyrrhonota</i>	Cliff Swallow	
<i>Hirundo rustica</i>	Barn Swallow	
<i>Psaltriparus minimus</i>	Bushtit	
<i>Thryomanes bewickii</i>	Bewick's Wren	

Scientific Name	Common Name	Special Status
<i>Turdus migratorius</i>	American Robin	
<i>Mimus polyglottos</i>	Northern Mockingbird	
<i>Dendroica petechia</i>	Yellow Warbler	CSC
<i>Melospiza crissalis</i>	California Towhee	
<i>Melospiza melodia</i>	Song Sparrow	
<i>Pheucticus melanocephalus</i>	Black-headed Grosbeak	
<i>Euphagus cyanocephalus</i>	Brewer's Blackbird	
<i>Icterus cucullatus</i>	Hooded Oriole	
<i>Carpodacus mexicanus</i>	House Finch	
<i>Carduelis psaltria</i>	Lesser Goldfinch	
<i>Carduelis tristis</i>	American Goldfinch	
* <i>Passer domesticus</i>	House Sparrow	
Mammals		
* <i>Felis catus</i>	Domestic Cat	

Legend

*= Non-native or invasive species

Special Status:

Federal:

FE = Endangered

FT = Threatened

State:

SE = Endangered

ST =Threatened

CSC = California Species of Special Concern

CFP = California Fully Protected Species

Appendix C. Plant Species Detected

Scientific Name	Common Name
Dicot	
Anacardiaceae - Sumac Or Cashew Family	
* <i>Schinus molle</i>	Peruvian Pepper Tree
Asteraceae - Sunflower Family	
<i>Ambrosia acanthicarpa</i>	Annual Bur-Sage
<i>Artemisia douglasiana</i>	Douglas Sagewort
<i>Baccharis salicifolia</i>	Mule-Fat, Seep-Willow
* <i>Chamomilla suaveolens</i>	Common Pineapple-weed
* <i>Cirsium vulgare</i>	Bull Thistle
<i>Conyza canadensis</i>	Horseweed
<i>Gnaphalium californicum</i>	California Everlasting
* <i>Gnaphalium luteo-album</i>	Fragrant Everlasting
* <i>Lactuca serriola</i>	Prickly Lettuce
* <i>Senecio vulgaris</i>	Common Groundsel
* <i>Sonchus asper</i>	Spiny Sow-Thistle
<i>Xanthium strumarium</i>	Cocklebur
Brassicaceae - Mustard Family	
* <i>Brassica nigra</i>	Black Mustard
<i>Lepidium didymus</i>	Lesser Wartcress
<i>Rorippa nasturtium-aquaticum</i>	Water-Cress
* <i>Sisymbrium irio</i>	London Rocket
Capripoliaceae - Honeysuckle Family	
<i>Sambucus mexicana</i>	Blue Elderberry
Caryophyllaceae - Pink Family	
* <i>Spergularia bocconii</i>	Boccone's Sand Spurry
Chenopodiaceae - Goosefoot Family	
* <i>Chenopodium album</i>	Lamb's Quarters
* <i>Salsola tragus</i>	Prickly Russian-Thistle
Crassulaceae - Stonecrop Family	
<i>Crassula connata</i>	Sand Pygmyweed
Cucurbitaceae - Gourd Family	
<i>Marah macrocarpus</i>	Wild Cucumber

Scientific Name	Common Name
Euphorbiaceae - Spurge Family	
<i>Chamaesyce albomarginata</i>	Whitemargin Sandmat
* <i>Euphorbia peplus</i>	Petty Spurge
* <i>Ricinus communis</i>	Castor Bean
Fabaceae - Legume Family	
* <i>Medicago polymorpha</i>	California Burelover
* <i>Melilotus indicus</i>	Annual Yellow Sweetclover
Geraniaceae - Geranium Family	
* <i>Erodium cicutarium</i>	Red-Stemmed Filaree
<i>Geranium dissectum</i>	Cut-leaved Geranium
Hydrophyllaceae - Waterleaf Family	
<i>Phacelia ramosissima</i>	Branching Phacelia
Lamiaceae - Mint Family	
<i>Stachys ajugoides</i>	Hedge Nettle
Malvaceae - Mallow Family	
* <i>Malva parviflora</i>	Cheeseweed
Moraceae - Mulberry Family	
* <i>Ficus carica</i>	Edible Fig
Myrtaceae - Myrtle Family	
* <i>Eucalyptus sp.</i>	Gum
Oleaceae - Olive Family	
<i>Fraxinus sp.</i>	Ash
Papaveraceae - Poppy Family	
<i>Eschscholzia californica</i>	California Poppy
Platanaceae - Plane Tree, Sycamore Family	
<i>Platanus racemosa</i>	Western Sycamore
Polygonaceae - Buckwheat Family	
<i>Polygonum arenastrum</i>	Common knotweed
* <i>Rumex crispus</i>	Curly Dock
Salicaceae - Willow Family	
<i>Populus fremontii ssp. fremontii</i>	Freemont's Cottonwood
<i>Salix gooddingii</i>	Goodding's Black Willow
<i>Salix laevigata</i>	Red Willow
<i>Salix lasiolepis</i>	Arroyo Willow
Scrophulariaceae - Figwort Family	
<i>Mimulus guttatus</i>	Seep Monkey Flower

Scientific Name	Common Name
* <i>Veronica anagallis-aquatica</i>	Water Speedwell
Solanaceae - Nightshade Family	
<i>Datura wrightii</i>	Western Jimson Weed
* <i>Nicotiana glauca</i>	Tree Tobacco
<i>Solanum americanum</i>	White Nightshade
Tamaricaceae - Tamarisk Family	
* <i>Tamarix ramosissima</i>	Tamarisk
Urticaceae - Nettle Family	
<i>Urtica dioica ssp. gracilis</i>	American Stinging Nettle
Zygophyllaceae - Caltrop Family	
* <i>Tribulus terrestris</i>	Puncture Vine
Monocot	
Areaceae - Palm Family	
* <i>Phoenix canariensis</i>	Canary Island Date Palm
* <i>Washingtonia robusta</i>	Mexican Fan Palm
Cyperaceae - Sedge Family	
* <i>Cyperus involucratus</i>	Umbrella Plant
Poaceae - Grass Family	
<i>Bromus carinatus</i>	California Brome
* <i>Bromus diandrus</i>	Ripgut Grass
* <i>Bromus madritensis ssp. rubens</i>	Foxtail Chess, Red Brome
* <i>Cynodon dactylon</i>	Bermuda Grass
* <i>Hordeum vulgare</i>	Common Barley
* <i>Piptatherum miliaceum</i>	Smilo Grass
* <i>Schismus barbatus</i>	Common Mediterranean Grass
Typhaceae - Cattail Family	
<i>Typha domingensis</i>	Southern Cattail

Scientific Name**Common Name**

Legend

*= Non-native or invasive species

Appendix D
Special Status Species

Appendix D

Special-Status Species Information

This appendix addresses all species with applicable special regulatory or management status whose general range includes the study area or whose habitat occurs within or near the study area and/or vicinity. Information provided includes: 1) definitions of terms to describe likelihood of occurrence, 2) a table of special-status codes and their meanings, and 3) a species information table listing the English and scientific names, current special-status, likelihood of occurrence within the project site, and specific notes relevant to likelihood of occurrence.

Conclusions provided in this report are limited to biology, and do not address regulatory or management issues. For interpretation of this information under applicable laws, regulations, and court precedent, see the relevant portion(s) of the report. Judgments regarding likelihood of occurrence are based on evaluation of available biological information regarding regional and local conditions, species biology, available evaluations of the study area and vicinity, and professional experience conducting field investigations across California over many years. Though professional, such judgments are necessarily subjective at least in part.

Specific factors substantially affect likelihood of occurrence for individual species on any particular study area. These factors are relevant at multiple scales, including regionally, locally, and within the study area. These factors include the presence or absence of other particular species (e.g., predators, prey), climate, ongoing disturbances, historical land use, and other past disturbances such as fire history, surface and subsurface hydrology, soil texture and chemistry, study area and habitat size and topology (i.e., shape and fragmentation), past population fluctuations of the species in response to random and nonrandom events, and many other factors, including many not readily visible. Note that some species, including some amphibians and many birds and bats, can occur in multiple roles. Thus, likelihood of occurrence, habitat use, and abundance may vary accordingly.

Finally, note that likelihood of occurrence for a given species refers to a time scale of a few years up to perhaps 10 years under current or assumed resources and conditions.

Terms for Likelihood of Occurrence in the Study Area

Confirmed Absent

If the likelihood of occurrence is *confirmed absent*, the species is confirmed to be absent on the study area as a formal and/or practical matter. Most often, this is a determination based on negative results of a focused survey for the species conducted in appropriate habitat at appropriate time(s) of year, using biologically sound methods and qualified personnel. In the remaining cases, it may be based on a simple study area examination, where it is easily determined that the species is absent because of the study area context. For example, a tidal marsh insect would not occur in a dry mountainside study area, or a disturbance-intolerant chaparral shrub would not occur in a long-standing, degraded grassland study area located far from chaparral. When a species is confirmed absent, the relevant fieldwork in all cases was conducted within a time frame sufficiently recent to conclude that the species remains absent, based on study area conditions and the species' known ecology. In most cases a specific, established survey protocol and/or guidelines have been followed.

Less than Reasonable

If the potential to occur is *less than reasonable*, the likelihood of occurrence, although remotely possible, is less than that required for any potentially applicable regulatory threshold. Further, the likelihood that the site is meaningfully valuable to any population(s) of this taxon is less than reasonable. The species may or may not include the study area within its current, general range. However, no appropriate, or adequately extensive, or effectively connected habitat is present. Neither the species nor any indication of its presence was detected. In some cases, based on the best available information, this likelihood may indicate that, the study area has a very high probability of being outside of the species' current range. In all of the above cases, the species may not be definitively ruled out but is strongly believed to be absent based on professional evaluation of all available evidence. In some cases, the species may occur on rare occasions and in low numbers, but with no more than brief, incidental use of the study area; that is, the site is also judged to lack any important function for the species. Certainly, there are no substantial populations directly utilizing the study area at any time of year. Further evaluation should not normally be required.

Low

If the potential to occur is *low*, occurrence of the species is reasonable but unlikely because of some combination of facts. For example, 1) the study area was the subject of unsuccessful searches conducted under relevant and reasonable circumstances, 2) potential habitat present is marginal or minimal in extent, 3) the best available information suggests the species is absent from the

study area, and/or 4) available information sheds no clear light on the species likelihood on the study area, but it is known to be rare at best in the vicinity. Neither the species nor any indication of its presence was detected. Although individuals may have been missed, it is unlikely that substantial populations are present. Further evaluation should usually not be required for individual species except, in most cases, for biologically threatened or endangered species. Note however, that where several non-listed species hold this status, a higher likelihood of occurrence for “one or more” will generally hold. This is due both to the increased number of species and the fact that an array of possibilities often correlates with greater site biodiversity and lower relevant (but not readily detected) disturbance levels.

Moderate

If the potential to occur is *moderate*, the study area is within the range of the species, and contains potentially appropriate habitat. Neither individuals nor diagnostic sign were detected. It is nevertheless reasonable that some individuals may have been overlooked. The best available information on the species with regard to the study area is either very uncertain, or may be equally weighted for and against occurrence. Depending upon local and special legal status, extent of habitat, and the nature and sensitivity of the project, focused surveys for the species may be warranted or presence may be assumed.

High

If the potential to occur is *high*, the study area is known to be within the range of the species, and contains potential habitat with a high likelihood of occupancy. Although no individuals or diagnostic sign were detected during current fieldwork by a qualified observer, the species is likely to be present to some degree given the best available information. Depending upon regulatory status, local rarity, public interest, extent of habitat on the study area, and the nature of potential project impacts, a substantial basis may exist for either conducting focused surveys for the species or for assuming presence.

Confirmed Present

If the likelihood of occurrence is *confirmed present*, a qualified biologist or other reliable source has confirmed the presence of the species and there is no specific evidence that the species has subsequently become absent. Depending on the species and other information available, it may or may not be possible to determine, without further studies, what portions of the study area are currently in use.

Sensitive Plant Species

Scientific Name	Common Name	Status	General Habitat Description	Habitat Present/ Absent	WRC MSHCP Covered Species	Rationale
Lichens						
<i>Texosporium sanctijacobi</i>	Woven-spored lichen	None	Found on soil, typically associated with rootballs of <i>Poa secunda</i> . Mainly found in sage scrub communities that have not been disturbed for 20 years or more. Restricted to growing on organic material, including small mammal scat.	HA	No	Less than reasonable potential to occur. The project site lacks sage scrub community.
Plants						
<i>Abronia villosa</i> var. <i>aurita</i>	Chaparral sand-verbena	CNPS 1B.1	Sandy areas in chaparral and coastal sage scrub.	HA	No	Less than reasonable potential to occur. The project site lacks chaparral and sage scrub communities.
<i>Allium munzii</i>	Munz' onion	FE, ST, CNPS 1B.1	Moist grassy to bare openings within chaparral, coastal sage scrub, and cismontane woodland. Typically found associated at or near vernal pools, swales, or drainages. Generally associated with mesic clay and gabbroic outcrops.	HA	Yes (Narrow Endemic Plant Species)	Less than reasonable potential to occur. The project site lacks chaparral, sage scrub, vernal pool and/or cismontane woodland habitats. The project site also lacks clay or gabbroic outcrops.
<i>Ambrosia pumila</i>	San Diego Ambrosia	FE, CNPS 1B.1	Open habitats with coarse substrates near drainages, and in upland areas on clay slopes or on the margins of vernal pools.	HA	Yes (Narrow Endemic Plant Species)	Less than reasonable potential to occur. Although the project site consists of a drainage, it lacks suitable clay and alkaline soils and vernal pools.

Scientific Name	Common Name	Status	General Habitat Description	Habitat Present/ Absent	WRC MSHCP Covered Species	Rationale
<i>Arenaria paludicola</i>	Marsh sandwort	FE, SE, CNPS 1B.1	Freshwater marshes and swamps. Last known southern California record is from 1899.	HA	No	Less than reasonable potential to occur. The project site lacks freshwater marshes and swamp habitat.
<i>Astragalus hornii</i> var. <i>hornii</i>	Horn's milk-vetch	CNPS 1B.1	Meadows and seeps, alkaline areas adjacent to lake margins.	HA	No	Less than reasonable potential to occur. The project site lacks meadow and seep and alkaline lake margin habitat.
<i>Atriplex coronata</i> var. <i>notatior</i>	San Jacinto Valley Crownscale	FE, CNPS 1B.1	Playas, alkaline flats, chenopod scrub, valley and foothill grasslands and vernal pools. Known from the San Jacinto River basin, Riverside County, CA.	HA	Yes (Criteria Area Plant Species)	Less than reasonable potential to occur. The project site lacks alkaline flats, chenopod scrub, valley and foothill grasslands and vernal pool habitats.
<i>Atriplex pacifica</i>	South coast saltscale	CNPS 1B.2	Alkaline soils of coastal sage scrub, playas, coastal bluff scrub, coastal dunes and chenopod scrub.	HA	No	Less than reasonable potential to occur. The project site lacks coastal sage scrub, playas, coastal bluff scrub, coastal dunes and chenopod scrub.
<i>Atriplex parishii</i>	Parish's saltscale	CNPS 1B.1	Alkaline meadows, vernal pools, chenopod scrub and playas. Usually on drying alkaline flats with fine soils.	HA	Yes (Criteria Area Plant Species)	Less than reasonable potential to occur. The project site lacks alkaline meadows, vernal pools, chenopod scrub and playas.
<i>Berberis nevinii</i>	Nevin's barberry	FE, SE, CNPS 1B.1	Gravelly wash margins in alluvial scrub or coarse soils in chaparral.	HA	Yes (Criteria Area Plant Species)	Less than reasonable potential to occur. The project site lacks gravelly wash margins, alluvial scrub and chaparral.
<i>Brodiaea filifolia</i>	Thread-leaved brodiaea	FT, SE, CNPS 1B.1	Clay loamy sand or alkaline soils within open grasslands at edges or vernal pools or floodplains.	HA	Yes (Criteria Area Plant Species)	Less than reasonable potential to occur. The project site lacks open grasslands, vernal pools or floodplain habitat.

Scientific Name	Common Name	Status	General Habitat Description	Habitat Present/ Absent	WRC MSHCP Covered Species	Rationale
<i>Brodiaea orcuttii</i>	Orcutt's brodiaea	CNPS 1B.1	Clay and serpentine soils within grasslands near vernal pools and streams, also known from cismontane woodlands, chaparral, and coniferous woodlands.	HA	Yes	Less than reasonable potential to occur. The project site lacks, grassland, cismontane woodland, chaparral and coniferous woodland habitat.
<i>California macrophylla</i>	Round-leaved filaree	CNPS 1B.1	Clay soils in cismontane woodland and valley and foothill grassland communities	HA	Yes (Criteria Area Plant Species)	Less than reasonable potential to occur. The project site lacks cismontane woodland and valley and foothill grassland habitats.
<i>Calochortus plummerae</i>	Plummer's mariposa lily	CNPS 1B.2	Sandy or rocky sites of granitic or alluvial material in valley and foothill grassland, coastal scrub, chaparral, cismontane woodland and lower coniferous forests.	HA	No (Species specific objectives must be met prior to being considered adequately conserved)	Less than reasonable potential to occur. The project site lacks valley and foothill grassland, coastal sage scrub, chaparral, cismontane woodlands and coniferous forest habitats.
<i>Carex comosa</i>	Bristly sedge	CNPS 2.1	Coastal prairie, marshes and swamps and valley and foothill grasslands.	HA	No	Less than reasonable potential to occur. The project site lacks coastal prairie, marsh and swamp and valley and foothill grassland habitats.
<i>Caulanthus simulans</i>	Payson's jewel-flower	CNPS 4.2	Pinyon-juniper woodland, chaparral and coastal sage scrub communities with sandy and granitic soils. Typically associated with north-facing slopes and ridgelines.	HA	Yes	Less than reasonable potential to occur. The project site lacks pinyon-juniper woodland, chaparral and coastal sage scrub habitats.

Scientific Name	Common Name	Status	General Habitat Description	Habitat Present/ Absent	WRC MSHCP Covered Species	Rationale
<i>Centromadia pungens</i> ssp. <i>laevis</i>	Smooth tarplant	CNPS 1B.1	Occurs in alkali soils in seasonally wet chenopod scrub, meadows and seeps, playas, riparian woodland, fallow fields, drainage ditches, and moist situations in grasslands below approximately 1,575 feet. Tolerates some disturbance, nonnative plants, and moderate soil compaction.	HA	Yes (Criteria Area Plant Species)	Less than reasonable potential to occur. The project site contains southern willow scrub, however, it does not contain alkaline soils.
<i>Chorizanthe parryi</i> var. <i>parryi</i>	Parry's spineflower	CNPS 1B.1	Sandy openings in coastal scrub, alluvial fan sage scrub, juniper woodland, and chaparral communities.	HA	No (Species specific objectives must be met prior to being considered adequately conserved)	Less than reasonable potential to occur. The project site lacks coastal sage scrub, alluvial fan sage scrub, juniper woodlands and chaparral habitats.
<i>Chorizanthe polygonoides</i> var. <i>longispina</i>	Long-spined spineflower	CNPS 1B.2	Grasslands, coastal sage scrub, and chaparral communities, often with clay soils.	HA	Yes	Less than reasonable potential to occur. The project site lacks grasslands, coastal sage scrub and chaparral habitats..
<i>Cordylanthus maritimus</i> ssp. <i>maritimus</i>	Salt marsh birds' beak	FE, SE, CNPS 1B.2	Coastal dunes and salt marshes.	HA	No	Less than reasonable potential to occur. The project site lacks coastal dunes and salt marshes.

Scientific Name	Common Name	Status	General Habitat Description	Habitat Present/ Absent	WRC MSHCP Covered Species	Rationale
<i>Dienandra mohavensis</i>	Mojave tarplant	SE, CNPS 1B.3	Sand bars and riparian areas in river beds, ephemeral grassy areas, riparian scrub and mesic chaparral. Known from above 2,800 feet.	HA	No (Species specific objectives must be met prior to being considered adequately conserved)	Less than reasonable potential to occur. The project site does contain riparian scrub habitat, however, the project site does not contain sand bars, grassy areas or other in stream habitat requirements. Additionally, the project site is below the known elevational range of the species.
<i>Dodecahema leptoceras</i>	Slender-horned spineflower	FE, SE, CNPS 1B.1	Gravelly soils (arkose deposits) in openings of chamise chaparral in the Vail Lake area or in sandy soils in openings of alluvial late seral stage scrub on floodplain terraces and benches that receive overbank deposits every 50 to 100 years.	HA	Yes (Narrow Endemic Plant Species)	Less than reasonable potential to occur. The project site lacks chamise chaparral and alluvial late seral stage scrub.
<i>Dudleya multicaulis</i>	Many-stemmed dudleya	CNPS 1B.2	Often on clay soils around granitic outcrops in chaparral, coastal sage scrub and grasslands.	HA	Yes (Narrow Endemic Plant Species)	Less than reasonable potential to occur. The project site lacks chaparral, coastal sage scrub and grassland habitats.
<i>Eriastrum densifolium</i> ssp. <i>sanctorum</i>	Santa Ana River woollystar	FE, SE, CNPS 1B.1	Sandy soils of floodplains and terraced fluvial deposits of the Santa Ana River and larger tributaries.	HA	Yes	Less than reasonable potential to occur. The project site lacks terraced fluvial deposits and the drainage is not considered a larger tributary to the Santa Ana River.
<i>Eryngium aristulatum</i> var. <i>parishii</i>	San Diego button celery	FE, SE, CNPS 1B.1	Vernal pools.	HA	Yes	Less than reasonable potential to occur. The project site lacks vernal pool habitat.

Scientific Name	Common Name	Status	General Habitat Description	Habitat Present/ Absent	WRC MSHCP Covered Species	Rationale
<i>Galium californicum</i> ssp. <i>primum</i>	Alvin Meadow bedstraw	CNPS 1B.2	Chaparral and sandy openings within lower montane coniferous woodlands.	HA	No	Less than reasonable potential to occur. The project site lacks chaparral and lower montane coniferous woodland.
<i>Harpagonella palmeri</i>	Palmer's grapplinghook	CNPS 4.2	Dry slopes and clay soils in valley grasslands, coastal sage scrub and chaparral communities	HA	Yes	Less than reasonable potential to occur. The project site lacks dry slopes, clay soils, valley and foothill grasslands and chaparral habitats.
<i>Helianthus nuttallii</i> ssp. <i>parishii</i>	Los Angeles sunflower	CNPS 1A	Saltwater and freshwater marshes and swamps.	HA	No	Less than reasonable potential to occur. The project site lacks saltwater or freshwater marshes and swamps.
<i>Holocarpha virgata</i> ssp. <i>elongata</i>	Graceful tarplant	CNPS 4.2	Mesic habitat or seasonally wet habitats within chaparral, cismontane woodland, vernal pools in coastal scrub or valley and foothill grasslands.	HA	No	Less than reasonable potential to occur. The project site does not contain chaparral, cismontane woodlands or vernal pool habitat.
<i>Hordeum intercedens</i>	Vernal barley	CNPS 3.2	Coastal dunes, coastal sage scrub, saline flats and depressions within valley and foothill grasslands, and vernal pools.	HA	Yes	Less than reasonable potential to occur. The project site does not contain coastal dunes, coastal sage scrub, or vernal areas with the potential to support this species.
<i>Horkelia cuneata</i> ssp. <i>puberula</i>	Mesa horkelia	CNPS 1B.1	Sandy or gravelly soils in chaparral or rarely in cismontane woodlands or coastal scrub.	HA	No	Less than reasonable potential to occur. The project site lacks chaparral, cismontane woodlands or coastal sage scrub.

Scientific Name	Common Name	Status	General Habitat Description	Habitat Present/ Absent	WRC MSHCP Covered Species	Rationale
<i>Imperata brevifolia</i>	California satintail	CNPS 2.1	Chaparral, coastal sage scrub, Mojavean desert scrub, meadows and seeps and riparian scrub.	HP	No	Low potential to occur. The project site does contain southern willow scrub habitat. As such it was determined that this species has a low potential to occur on site.
<i>Juglans californica</i> var. <i>californica</i>	California walnut	CNPS 4.2	Chaparral, cismontane woodland, coastal scrub, riparian areas.	HP	Yes	Confirmed Absent. The project site contains riparian scrub, However, this tree species was not detected during the site visit.
<i>Lasthenia glabrata</i> ssp. <i>coulteri</i>	Coulter's goldfields	CNPS 1B.1	Marshes, playas, vernal pools and grasslands. Usually associated with alkaline soils.	HA	Yes (Criteria Area Plant Species)	Less than reasonable potential to occur. The project site lacks marshes, playas, vernal pools and grasslands.
<i>Lepidium virginicum</i> var. <i>robinsonii</i>	Robinson's pepper-grass	CNPS 1B.2	Dry soils in coastal sage scrub and chaparral.	HA	No	Less than reasonable potential to occur. The project site lacks coastal sage scrub and chaparral.
<i>Lilium Humboldtii</i> ssp. <i>ocellatum</i>	Ocellated Humboldt lily	CNPS 4.2	Chaparral, cismontane woodland, coastal scrub and valley and foothill grasslands.	HA	No (MOU with Forest Service is required prior to be considered adequately conserved)	Less than reasonable potential to occur. The project site lacks chaparral, cismontane woodlands, coastal sage scrub and valley and foothill grasslands.
<i>Lilium parryi</i>	Lemon lily	CNPS 1B.2	Meadows, riparian forest, lower montane coniferous woodland, upper montane coniferous forest. Known to be above 4,300 feet in elevation.	HA	No (MOU with Forest Service is required prior to be considered adequately conserved)	Less than reasonable potential to occur. The project site contains riparian woodland, however, the site is below the known elevation range of the species.

Scientific Name	Common Name	Status	General Habitat Description	Habitat Present/ Absent	WRC MSHCP Covered Species	Rationale
<i>Limnanthes gracilis</i> ssp. <i>parishii</i>	Parish's meadowfoam	CNPS 1B.2	Seasonally wet meadows lower cismontane forest and vernal pools.	HA	Yes	Less than reasonable potential to occur. The project site lacks meadow, cismontane forest and vernal pool habitat.
<i>Lycium parishii</i>	Parish's desert-thorn	CNPS 2.3	Coastal sage scrub and Sonoran desert scrub.	HA	No	Less than reasonable potential to occur. The project site lacks coastal sage scrub and Sonoran desert scrub.
<i>Malacothamnus parishii</i>	Parish's bush mallow	CNPS 1A	Chaparral and coastal sage scrub.	HA	No	Less than reasonable potential to occur. The project site lacks chaparral and coastal sage scrub.
<i>Monardella pringlei</i>	Pringle's monardella	CNPS 1A	Sandy areas within coastal sage scrub.	HA	No	Less than reasonable potential to occur. The project site lacks coastal sage scrub.
<i>Myosurus minimus</i> var. <i>apus</i>	Little mousetail	CNPS 3.1	Wet habitats in valley and foothill grasslands with alkaine affinities, alkali playas and alkaline vernal pools.	HA	Yes (Criteria Area Plant Species)	Less than reasonable potential to occur. The project site lacks valley and foothill grasslands, playas and vernal pools.
<i>Nama stenocarpum</i>	Mud nama	CNPS 2.2	Muddy banks of lakes, river banks and seasonally wet places.	HA	Yes (Criteria Area Plant Species)	Less than reasonable potential to occur. The project site lacks suitable muddy shoreline and river bank habitat required for this species.
<i>Nasturtium gambelii</i>	Gambel's water cress	FE, SE, CNPS 1B.1	Freshwater and brackish marshes and swamps.	HA	No	Less than reasonable potential to occur. The project site lacks freshwater and brackish marshes and swamps.

Scientific Name	Common Name	Status	General Habitat Description	Habitat Present/ Absent	WRC MSHCP Covered Species	Rationale
<i>Navarretia fossalis</i>	Spreading navarretia	FT, CNPS 1B.1	Vernal pools, chenopod scrub, marshes, swamps and playas.	HA	Yes (Narrow Endemic Plant Species)	Less than reasonable potential to occur. The project site lacks vernal pools, chenopod scrub, marsh, swamp and playa habitat.
<i>Navarretia prostrata</i>	Prostrate navarretia	CNPS 1B.1	Vernal pools.	HA	Yes (Criteria Area Plant Species)	Less than reasonable potential to occur. The project site lacks vernal pool habitat.
<i>Orcuttia californica</i>	Orcutt's grass	FE, SE, CNPS 1B.1	Vernal pools.	HA	Yes (Narrow Endemic Plant Species)	Less than reasonable potential to occur. The project site lacks vernal pool habitat.
<i>Phacelia stellaris</i>	Brand's phacelia	CNPS 1B.1	Sandy openings, sandy benches, dunes, sandy river washes or river floodplains in coastal sage scrub.	HA	Yes (Narrow Endemic Plant Species)	Less than reasonable potential to occur. The project site lacks suitable sandy or floodplain habitat.
<i>Polygala cornuta</i> var. <i>fishiae</i>	Fish's milkwort	CNPS 4.3	Shaded rocky areas in canyons, chaparral and oak woodlands.	HA	No (Species specific objectives must be met prior to being considered adequately conserved)	Less than reasonable potential to occur. The project site lacks canyon, chaparral and oak woodland habitat.
<i>Quercus engelmannii</i>	Engelmann oak	CNPS 4.2	Chaparral, cismontane woodland, riparian woodland and valley and foothill grasslands.	HP	Yes	Confirmed absent. The project site does contain riparian woodlands, however, this tree species was not detected during the site visit.

Scientific Name	Common Name	Status	General Habitat Description	Habitat Present/ Absent	WRC MSHCP Covered Species	Rationale
<i>Ribes divaricatum</i> var. <i>parishii</i>	Parish's gooseberry	CNPS 1A	Riparian woodlands.	HP	No	Less than reasonable potential to occur. The project site does contain southern willow scrub, however, this species is considered extirpated from California.
<i>Romneya coulteri</i>	Coulter's matilija poppy	CNPS 4.2	Dry washes and canyons, chaparral and coastal sage scrub.	HP	No (Species specific objectives must be met prior to being considered adequately conserved)	Confirmed absent. This perennial species was confirmed to be absent from the project site during the site visit.
<i>Satureja chandleri</i>	San Miguel Savory	CNPS 1B.2	Rocky areas in chaparral or oak woodland or at the margins of these communities with coastal sage scrub and grassland habitat.	HA	Yes(Narrow Endemic Plant Species)	Less than reasonable potential to occur. The project site lacks chaparral, oak woodland, coastal sage scrub and grassland habitat.
<i>Senecio aphanactis</i>	Chaparral ragwort	CNPS 2.2	Chaparral, cismontane woodland, and coastal sage scrub. Usually affiliated with alkaline soils.	HA	No	Less than reasonable potential to occur. The project site lacks chaparral, cismontane woodland and coastal sage scrub.
<i>Sidalcea neomexicana</i>	Salt spring checkerbloom	CNPS 2.2	Chaparral, coastal sage scrub, lower montane coniferous forest, Mojavean desert scrub and playas.	HA	No	Less than reasonable potential to occur. The project site lacks chaparral, coastal sage scrub, lower montane coniferous forest, Mojavean desert scrub and playas.
<i>Sphenopholis obtusata</i>	Prairie wedge grass	CNPS 2.2	Cismontane woodlands and meadows and seeps.	HA	No	Less than reasonable potential to occur. The project site lacks cismontane woodlands and meadows and seeps.

Scientific Name	Common Name	Status	General Habitat Description	Habitat Present/ Absent	WRC MSHCP Covered Species	Rationale
<i>Symphytotrichum defoliatum</i>	San Bernardino aster	CNPS 1B.2	Cismontane woodland, sage scrub, coniferous forest, meadows and seeps, marshes and swamps, and mesic grassland near water.	HA	No	Less than reasonable potential to occur. The project site lacks cismontane woodlands, coniferous forest, meadows, seeps, swamps and marsh and grasslands habitat.
<i>Trichocoronis wrightii</i> var. <i>wrightii</i>	Wright's trichocoronis	CNPS 2.1	Meadows, vernal pools and alkaline soils. Known from Riverside County.	HA	Yes (Narrow Endemic Plant Species)	Less than reasonable potential to occur. The project site lacks meadows and vernal pools.
Abbreviations/Notes:						
U.S. Fish and Wildlife Service:		California Department of Fish and Game:		California Native Plant Society:		CH Critical Habitat
FE	Federal Endangered	SE	State Endangered	1A	Plants presumed extinct in California.	P Species is present
FT	Federal Threatened	ST	State Threatened	1B	Plants rare, threatened, or endangered in California and elsewhere.	A Habitat absent
PE	Proposed Endangered	SR	State Rare	1	Seriously endangered in California	HP Habitat is, or may be present
PT	Proposed Threatened	SSC	California Species of Concern	2	Plants rare, threatened, or endangered in California, but more common elsewhere.	
FC	Federal Candidate			3	Plants about which we need more information.	
				4	Plants of limited distribution.	

Sensitive Wildlife Species

Scientific Name	Common Name	Status	General Habitat Description	Habitat Present/Absent	Covered Species	Rationale
Invertebrates						
Branchipods**						
<i>Branchinecta lynchi</i>	Vernal pool fairy shrimp	FT	Vernal pools and swales within grasslands. Known from the Santa Rosa Plateau and Skunk Hollow areas of Western Riverside County.	HA	Yes (Vernal Pool Species)	Less than reasonable potential to occur. The project site does not contain vernal pools.
<i>Linderiella santarosae</i>	Santa Rosa Plateau fairy shrimp	---	Vernal pools known to contain water for extended periods of time. Known only from the Santa Rosa Plateau area of Western Riverside County.	HA	Yes (Vernal Pool Species)	Less than reasonable potential to occur. The project site does not contain vernal pools.
<i>Streptocephalus woottoni</i>	Riverside fairy shrimp	FE	Large, deep warm water pools that retain water into the warm season.	HA	Yes (Vernal Pool Species)	Less than reasonable potential to occur. The study area lacks large, deep warm pools that retain water into the rainy season.
Insects						
<i>Euphydryas editha quino</i>	Quino checkerspot butterfly	FE	Generally associated with vernal pools, sage scrub, chaparral, native and non-native grasslands, and open oak and juniper woodland communities. Both phases linked to presence of host species and topography. Larvae feed on <i>Plantago erecta</i> , <i>Plantago patagonia</i> , <i>Antirrhinum coulterianum</i> , <i>Cordylanthis rigidus</i> and other <i>Plantago</i> species. Adults require small annuals. The species seems to require varying topography (including	HA	Yes	Less than reasonable potential to occur. The project site lacks vernal pools, sage scrub, chaparral, grasslands and oak woodland habitats.

Scientific Name	Common Name	Status	General Habitat Description	Habitat Present/Absent	Covered Species	Rationale
			ridges and hilltops), loamy soils with moderate to high clay quantities.			
<i>Rhaphiomidas terminatus abdominalis</i>	Delhi sands flower-loving fly	FE	Found on fine, sandy soils often with wholly or partially consolidated sand dunes generally classified within the "Delhi" series. Restricted to Riverside and San Bernardino Counties.	HA	Yes	Less than reasonable potential to occur. The project site lacks "Delhi" soils or fine, sandy soils.
Vertebrates						
Fish						
<i>Catostomus santaanae</i>	Santa Ana Sucker	FT, SSC	Inhabits shallow, cool, running waters with coarse gravelly to muddy substrates and developed pools. Known from the Santa Ana River in western Riverside County	HA	Yes	Less than reasonable potential to occur. The project site lacks suitable pool habitat for this species. Additionally, the site is located outside of the currently known waters occupied by the species.
<i>Gila orcuttii</i>	Arroyo chub	SSC	Warm fluctuating streams with slow moving back water sections with sandy and/or muddy substrates.	HA	Yes	Less than reasonable potential to occur. The project site lacks slow moving back water areas required for this species.
<i>Rhinichthys osculus</i> ssp. 3	Santa Ana speckled dace	SSC	Found within the cool clear headwater streams of the Santa Ana and San Gabriel rivers.	HA	No	Less than reasonable potential to occur. This species is known to occur both upstream and downstream of the project site. However, these populations are isolated from the project site due to flood control structures, i.e. dams, and fully channeled above and below ground sections of stream that do not support habitat for this species. As such, it was determined that under the current conditions, this species would have a less than reasonable potential to occur on the project site.

Scientific Name	Common Name	Status	General Habitat Description	Habitat Present/ Absent	Covered Species	Rationale
Amphibians						
<i>Anaxyrus californicus</i>	Arroyo toad	FE, SSC	Washes and arroyos with open water, sand and gravel beds for breeding and pools with sparse overstory vegetation	HA	Yes (Amphibian Survey Area)	Less than reasonable potential to occur. The project site lacks sand and gravel beds, and pool habitat required for this species.
<i>Rana draytonii</i>	California red-legged frog	FT, SSC	Streams with slow moving flows, deep pools and dense shrubby riparian vegetation at pool edges	HA	Yes (Amphibian Survey Area)	Less than reasonable potential to occur. The project site lacks suitable stream habitat for this species.
<i>Rana muscosa</i>	Sierra Madre yellow-legged frog	FE, SSC	Streams and small pools within ponderosa-pine, montane hardwood-conifer and montane riparian habitat types.	HA	Yes (Amphibian Survey Area)	Less than reasonable potential to occur. The project site lacks suitable pine and montane woodland habitats.
<i>Spea hammondi</i>	Western spadefoot	SSC	Open habitats including low grasslands, open chaparral, and pine-oak woodlands, where soils are sandy or gravelly. Requires temporary rain pools that last at least three weeks. Pools must lack predators of eggs and tadpoles.	HA	Yes	Less than reasonable potential to occur. The project site lacks the required temporary rain pools for this species.
Reptiles						
<i>Actinemys marmorata</i>	Western pond turtle	SSC	Inhabits permanent or nearly permanent waters. Requires basking sites i.e. partially submerged logs, rocks or open banks.	HP	Yes	Low potential to occur. The drainage appears to maintain flows throughout the year, however, the drainage does not contain sufficient suitable micro habitat i.e. basking sites such as submerged logs, rocks and open banks. As such, it was determined that this species has a low potential to occur on the site.

Scientific Name	Common Name	Status	General Habitat Description	Habitat Present/ Absent	Covered Species	Rationale
<i>Anniella pulchra pulchra</i>	Silvery legless lizard	SSC	Sandy or loose soils under sparse vegetation on beaches, within chaparral, pine-oak woodlands, sycamore and cottonwood woodland or oaks near stream terraces.	HA	No	Less than reasonable potential to occur. The project site lacks suitable soils for this species.
<i>Aspidoscelis hyperythra beldingi</i>	Belding's orange-throated whiptail	SSC	Mostly occurs on or adjacent to floodplains or terraces of streams in, or by, open sage scrub and chaparral communities.	HA	Yes	Less than reasonable potential to occur. The project site consists of a drainage and a terrace, however, the site lacks suitable upland habitats to support this species.
<i>Crotalus ruber ruber</i>	Red-diamond rattlesnake	SSC	Tolerates a wide variety of environments from desert to dense chaparral. Prefers dense brush, including chamise chaparral. Also can occur in open areas, however generally in lower numbers. Rocky outcrops also common in occupied habitat. Prey density and availability of dens (for hibernation and gravid females) may be a great limiting factor.	HA	Yes	Less than reasonable potential to occur. The project site lacks suitable habitat to support this species.
<i>Phrynosoma coronatum blainvillei</i>	Coast (San Diego) horned lizard	SSC	Occurs in a variety of open plant communities where suitable soils (sandy, friable), prey, and basking areas are available.	HA	Yes	Less than reasonable potential to occur. The project site lacks suitable soils to support this species.
Birds						
<i>Agelaius tricolor</i>	Tricolored blackbird	SSC	Breeds near fresh water within emergent wetland habitat supporting dense, tall stands of cattails and tule and sometimes willow.	HA	Yes	Less than reasonable potential to occur. The project site lacks suitable dense cattail and tule stands preferred by this species.

Scientific Name	Common Name	Status	General Habitat Description	Habitat Present/Absent	Covered Species	Rationale
<i>Asio otus</i> (nesting)	Long-eared owl	SSC	Roosts in substantial riparian and oak forests with adjacent open habitats.	HP	No	Low potential to occur. The project site contains a small amount of riparian vegetation, however, this species is normally associated with larger riparian communities. As such, it was determined that this species has a low potential to occur on site.
<i>Athene cunicularia</i>	Burrowing owl	SSC	Uses large rodent burrows or other burrows in grasslands, prairies and agricultural areas.	HA	Yes (Burrowing Owl Survey Area)	Less than reasonable potential to occur. The project site lacks suitable open grassland, prairie or agricultural habitat for this species.
<i>Coccyzus americanus occidentalis</i>	Western yellow billed cuckoo	SE	Breeds and nests in extensive stands of cottonwood/willow riparian forest within large rivers with broad flood prone bottoms	HA	Yes (Riparian/Riverine Species)	Less than reasonable potential to occur. The project site lacks extensive stands of cottonwood/willow riparian forests with broad flood prone bottoms.
<i>Dendroica petechia</i>	Yellow warbler	SSC	Inhabits riparian scrub, woodland and forest habitat.	HP	Yes	Confirmed present. This species was detected during least Bell's vireo surveys.
<i>Empidonax traillii extimus</i>	Southwestern willow flycatcher	FE SE	Restricted to riparian woodlands along streams and rivers with mature, dense stands of willows, cottonwoods or smaller spring fed or boggy areas with willows or alders.	HA	Yes (Riparian/Riverine Species)	Less than reasonable potential to occur. The project site contains riparian habitat, however, the riparian habitat is isolated and does not contain suitable canopy structure to support this species.
<i>Falco peregrinus anatum</i>	American peregrine falcon	SFP	Wetlands near high cliffs, tall buildings.	HA	Yes	Less than reasonable potential to occur. The project site and vicinity lack suitable nesting sites for this species.

Scientific Name	Common Name	Status	General Habitat Description	Habitat Present/ Absent	Covered Species	Rationale
<i>Haliaeetus leucocephalus</i>	Bald eagle	SE	Primarily found near the seacoast or along rivers, swamps, and large lakes. Requires large trees or snags with heavy limbs or broken tops for perching and nesting. In southern California, the species is nearly always recorded at large deep waters.	HA	Yes	Less than reasonable potential to occur. The study area lacks large bodies of water.
<i>Icteria virens</i>	Yellow-breasted chat	SSC	Occurs in low, dense thickets in riparian habitats.	HP	Yes	Less than reasonable potential to occur. The project site contains southern willow scrub habitat. However, the species was not detected during least Bell's vireo surveys and is assumed to be absent from the site.
<i>Lanius ludovicianus</i>	Loggerhead shrike	SSC	Inhabits open fields with scattered trees, open woodland and scrub.	HA	Yes	Less than reasonable potential to occur. The project site does not contain areas of open habitat suitable to support this species.
<i>Polioptila californica californica</i>	Coastal California gnatcatcher	FT, SSC	May be found in coastal sage scrub below 2,500 ft; prefers low, coastal sage scrub in arid washes, mesas, and slopes	HA	Yes	Less than reasonable potential to occur. The project site does not contain coastal sage scrub habitat.
<i>Vireo bellii pusillus</i>	least Bell's vireo	FE, SE	Prefers dense riparian habitats but can also be found in more open riparian habitats such as mule fat scrub.	HP	Yes (Riparian/ Riverine Species)	Confirmed absent. The project site contains suitable riparian habitat for this species. This species was not detected during protocol level surveys conducted during the 2011 survey season.

Scientific Name	Common Name	Status	General Habitat Description	Habitat Present/Absent	Covered Species	Rationale
Mammals						
<i>Antrozous pallidus</i>	Pallid bat	SSC	Arid regions with suitable roosting habitat adjacent to large bodies of water to forage over. Suitable roosting habitat consists of rocky outcrops, caves, tunnels, mines, eaves and tree hollows.	HA	No	Less than reasonable potential to occur. The project site lacks suitable roosting habitat adjacent or near to large bodies of water.
<i>Chaetodipus fallax fallax</i>	Northwestern San Diego pocket mouse	SSC	Open, sandy areas in coastal sage scrub, sage scrub/grassland ecotones, and chaparral communities.	HA	Yes	Less than reasonable potential to occur. The project site lacks coastal sage scrub, grassland and chaparral habitats.
<i>Dipodomys merriami parvus</i>	San Bernardino kangaroo rat	FE, SSC	Sandy soils within mature alluvial sage scrub, riversidean sage scrub and chaparral.	HA	Yes (Mammal Survey Area)	Less than reasonable potential to occur. The project site lacks sandy soils within suitable alluvial sage scrub, sage scrub and chaparral habitat.
<i>Dipodomys stephensi</i>	Stephen's kangaroo rat	FE, ST	Open grasslands or sparse shrubs with less than 50% cover during the summer. Requires sandy and/or loamy soils with low clay and gravel content on flat slopes (<30%).	HA	Yes (County SKR Survey Area)	Less than reasonable potential to occur. The project site lacks grassland or other suitable habitat required for this species.
<i>Eumops perotis californicus</i>	Western mastiff bat	SSC	Many open, semi-arid to arid habitats, including conifer and deciduous woodlands, coastal scrub, grasslands, chaparral. Roosts in crevices in cliff faces, high buildings, trees & tunnels.	HA	No	Less than reasonable potential to occur. The project site and general vicinity lacks woodlands coastal sage scrub, grasslands, chaparral and suitable foraging habitat for this species.

Scientific Name	Common Name	Status	General Habitat Description	Habitat Present/ Absent	Covered Species	Rationale
<i>Lasiurus xanthinus</i>	Western yellow bat	SSC	Inhabits palm oasis and residential areas with palm trees. Roosts primarily in trees, especially in the dead fronds of palm trees. Forages over open water and among trees.	HP	No	Moderate potential for individual roosting. Moderate potential for foraging. The project site lacks substantial communal roosting habitat for this species, however the site does contain a few individual palm trees suitable for individual bat roosting. The site contains suitable foraging habitat for this species.
<i>Lepus californicus bennettii</i>	San Diego black-tailed jackrabbit	SSC	Requires extensive open space, including grasslands and open sage scrub on flat ground.	HA	Yes	Less than reasonable potential to occur. The project site lacks suitable open habitat for this species.
<i>Neotoma lepida ssp. intermedia</i>	San Diego desert woodrat	SSC	Variety of shrub and desert habitats, typically with rock outcrops, boulders, cacti and/or areas of dense undergrowth.	HP	Yes	Low potential to occur. The riparian area within the project site provides marginal habitat for this species. As such it was determined that the species has a low potential to occur on the project site.
<i>Nyctinomops femorosaccus</i>	Pocketed free-tailed bat	SSC	Rocky areas with high cliffs in a variety of arid areas including pine-juniper woodlands, desert scrub, palm oasis, desert wash, desert riparian.	HA	No	Less than reasonable potential to occur. The project site and general vicinity lacks suitable roosting sites for this species.
<i>Onychomys torridus ramona</i>	Southern grasshopper mouse	SSC	Inhabits arid areas, especially scrub habitat; i.e. coastal scrub and mixed chaparral, with friable soils.	HA	No	Less than reasonable potential to occur. The project site lacks coastal sage scrub and chaparral habitat.
<i>Perognathus longimembris brevinasus</i>	Los Angeles pocket mouse	SSC	Prefers sandy soils within coastal sage scrub. Less often found in gravelly washes, and rocky soils.	HA	Yes (Mammal survey area)	Less than reasonable potential to occur. The project site lacks coastal sage scrub and gravelly wash habitat.

Scientific Name	Common Name	Status	General Habitat Description	Habitat Present/Absent	Covered Species	Rationale
<i>Taxidea taxus</i>	American badger	SSC	Open plains and fields, particularly in grasslands.	HA	No	Less than reasonable potential to occur. The project site lacks open plains, fields and grasslands.
Abbreviations/Notes:						
U.S. Fish and Wildlife Service		California Department of Fish and Game		P	Species is present	
FE	Federal Endangered	SE	State Endangered	A	Habitat absent	
FT	Federal Threatened	ST	State Threatened	HP	Habitat is, or may be present	
PE	Proposed Endangered	SR	State Rare	CH	Critical Habitat	
PT	Proposed Threatened	SSC	California Species of Special Concern			
FC	Federal Candidate	SFP	State Fully Protected			
		WL	Watch List			

Sensitive Vegetation Communities

Vegetation Community	Status	General Habitat Description	Present/Absent	Rationale
Riversidean Alluvial Fan Sage Scrub	CDFG Sensitive	An open scrub community within alluvial fans and floodplains, Dominated by drought-deciduous species and evergreen woody shrubs, including <i>Lepidospartum squamatum</i> and <i>Artemisia californica</i> . Vegetation within the community is adapted for periodic flooding and erosion. Distribution: The southern base of the Transverse and Peninsular ranges of southern California	CA	Does not occur on site. The vegetation present at the project site is not consistent with the Riversidean Alluvial Fan Sage Scrub community.

Vegetation Community	Status	General Habitat Description	Present/ Absent	Rationale
Southern California Arroyo Chub/Santa Ana Sucker Stream	CDFG Sensitive	<p>A permanent stream flowing through steep and rocky canyons. These streams provide suitable habitat for arroyo chub and Santa Ana sucker.</p> <p>Distribution: Includes portions of the Los Angeles, San Gabriel, San Luis Rey, Santa Ana, and Santa Margarita rivers, and Malibu and San Juan creeks.</p>	CA	<p>Does not occur on site. While the on-site stream feature supports perennial stream flows, the topography and isolated nature are not consistent with this sensitive community.</p>
Southern Coast Live Oak Riparian Forest	CDFG Sensitive	<p>An open to dense evergreen sclerophyllous riparian forest. Dominated by <i>Quercus agrifolia</i> with a rich herb layer and poor shrub understory compared with other riparian communities. Occurs in bottomlands and outer floodplains along larger streams, on fine-grained, rich alluvium.</p> <p>Distribution: Canyons and valleys of coastal southern California, south of Point Conception in Santa Barbara County</p>	CA	<p>Does not occur on site. The vegetation present at the project site is not consistent with the Southern Coast Live Oak Riparian Forest community.</p>

Vegetation Community	Status	General Habitat Description	Present/ Absent	Rationale
Southern Cottonwood Willow Riparian Forest	CDFG Sensitive	<p>Tall, open, broadleaved winter-deciduous riparian forests dominated by <i>Populus fremontii</i>, <i>P. trichocarpa</i>, and several tree willows. Similar to Central Coast Cottonwood-Sycamore Riparian Forest, although apparently with less <i>Q.agrifolia</i> or <i>Alnus rhombifolia</i> (this merits further study). Understories usually are shrubby willows. Occurs on sub-irrigated and frequently overflowed lands along rivers and streams. The dominant species require moist, bare mineral soil for germination and establishment. This is provided after flood waters recede, leading to uniform-aged stands in this seral type.</p> <p>Distribution: Along perennially wet stream reaches of the Transverse and Peninsular ranges, from Santa Barbara County south to Baja California Norte and east to the edge of the deserts</p>	CA	Does not occur on site. The vegetation present at the project site is not consistent with the Southern Cottonwood Willow Riparian Forest community.

Vegetation Community	Status	General Habitat Description	Present/ Absent	Rationale
Southern Riparian Forest	CDFG Sensitive	<p>Dominated by a combination of scattered <i>Q. agrifolia</i>, <i>Platanus racemosa</i>, <i>Juglans californica</i>, <i>Salix</i> species, <i>Sambucus mexicana</i>, <i>Vitis girdiana</i>, and <i>Toxicodendron diversilobum</i>. Found in valley and foothill riparian areas from sea level to the lower margins of the montane coniferous forest of cismontane California.</p> <p>Distribution: In southern California, found from Ventura County south to San Diego County and west to Riverside and San Bernardino counties</p>	CA	Does not occur on site. The vegetation present at the project site is not consistent with the Southern Riparian Forest community.
Southern Riparian Scrub	CDFG Sensitive	<p>A dense, broad-leafed, winter-deciduous association dominated by several species of willow to an herbaceous scrub dominated by mulefat. Typical willow species include black willow (<i>Salix gooddingii</i>), arroyo willow (<i>Salix lasiolepis</i>), and sandbar willow (<i>Salix exigua</i>) and there can be a component of mulefat and/or invasive species such as giant reed (<i>Arundo donax</i>) and tamarisk (<i>Tamarix</i> spp.). Understory vegetation is typically lacking or composed of nonnative species.</p> <p>Distribution: Canyons and valleys of southern California</p>	CA	Does not occur on site. The vegetation present at the project site is not consistent with the Southern Riparian Scrub community.

Vegetation Community	Status	General Habitat Description	Present/ Absent	Rationale
Southern Sycamore Alder Riparian Woodland	CDFG Sensitive	<p>A tall, open, broadleaved, winter-deciduous streamside woodland dominated by <i>Platanus racemosa</i> and <i>A. rhombifolia</i>. Seldom form closed canopy forests, and may appear as trees scattered in a shrubby thicket of sclerophyllous and deciduous species. Lianas include <i>Rubus ursinus</i> and <i>Toxicodendron diversilobum</i>. Distinctions between this type and Sycamore Alluvial Woodland merit additional study.</p> <p>Found on very rocky streambeds to seasonally high-intensity flooding. <i>Alnus</i> increases in abundance on more perennial streams, while <i>Platanus</i> favors more intermittent hydrographs.</p> <p>Distribution: Transverse and Peninsular ranges from Point Conception south to Baja California Norte</p>	CA	<p>Does not occur on site. The vegetation present at the project site is not consistent with the Southern Sycamore Alder Riparian Woodland community.</p>

Vegetation Community	Status	General Habitat Description	Present/ Absent	Rationale
Southern Willow Scrub	CDFG Sensitive	<p>Dense, broadleaved, winter-deciduous riparian thickets dominated by several <i>Salix</i> species, with scattered emergent <i>Populus fremontii</i> and <i>Platanus racemosa</i>. Most stands are too dense to allow much understory development. Occurs on loose, sandy or fine gravelly alluvium deposited near stream channels during flood flows. This early seral type requires repeated flooding to prevent succession to Southern Cottonwood-Sycamore Riparian Forest.</p> <p>Distribution: Formerly extensive along the major rivers of coastal southern California, but now reduced by urban expansion, flood control and channel improvements.</p>	CP	Confirmed Present. The Southern Willow Scrub community was mapped within the drainage located on the project site.
<p>Abbreviations/Notes: CA Vegetation Community Absent CP Vegetation Community Present</p>				

Appendix E

Biological Resources Assessment Update



December 5, 2013

Tricia D. Thrasher, ASLA, LEED AP
University of Riverside
Capital Resources Management
1223 University Avenue, Suite 200
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Subject: Biological Resources Update for the UCR Creekside Terrace Slope Protection Project

In November 2011, a biological resources assessment report was prepared in order to provide information about existing biological resources within the proposed UCR Creekside Terrace Slope Protection project footprint and surrounding areas and an analysis of temporary and permanent impacts to those resources in the context of federal, State, and local regulatory compliance programs, including the Western Riverside County Multiple Species Habitat Conservation plan (WRC MSHCP).

This purpose of this memo is to present the findings of a subsequent general biological survey conducted for the proposed UCR Creekside Terrace Slope Protection project. This survey was conducted in order to update the biological findings for this Project due to the more than 2-year lapse since the last studies were performed in May 2011. Updated focused surveys for least Bell's vireo were not required due to the negative findings of focused surveys conducted in 2011, the distance of the project site from known occurrences of this species (approximately 4 miles to the nearest known occurrence), and because the mitigation measures proposed in the biological resources assessment report would effectively avoid impacts to this species.

Project Information

The UCR Creekside Terrace Slope Protection project (herein referred to as "Project") is located within the City of Riverside, Riverside County, California (Figure 1). Specifically, the project site consists of a drainage feature located approximately 0.20 miles north of the intersection of Chicago and Central Avenues (Figure 2). The project is located within Section 31, Township 2 South, Range 4 West of the Riverside East U.S. Geological Survey (USGS) quadrangle dated 1967, photorevised 1980 (USGS 1967). The project site is at approximately 940 feet above mean sea level (MSL) as depicted on the Riverside East USGS topographic map. The coordinates (decimal degrees) for the project site are latitude 33.958882° and longitude 117.346076°. The primary Assessor's Parcel Number (APN) associated with the project site is 254-370-003.

The proposed project involves stabilization of approximately 650 feet of the north and east banks of the existing drainage. Specifically, the channel will be reshaped and rip-rap will be placed on the north and east banks and the channel bottom to match existing conditions present on the south and west banks. Construction will require the removal of all vegetation within the impact area on the north and east banks and across the channel bottom. The proposed design provides for reestablishment of soil over the rip-rap on the channel bottom. Ongoing maintenance will involve clearing of vegetation on the north and east banks; riparian vegetation will be allowed to reestablish naturally on the channel bottom. Existing vegetation on the south and west banks will remain in place.

Survey Methods

The biological survey was conducted on November 20, 2013 by ICF biologist Erika Eidson. The survey was conducted between the hours of 1030 and 1200 and weather conditions consisted of air temperature ranging from 61 to 64 °F, 0 to 1 mile per hour winds, and overcast skies. During the survey all plant species and wildlife species detected within the project boundary were recorded. The map of vegetation communities was updated to reflect changes in vegetation composition.

Survey Results

Southern willow scrub has expanded in the northwestern portion of the project boundary which previously supported open water. Southern willow scrub has increased from 0.48 acre to 0.49 acre and open water has decreased from 0.01 to 0.001. All other acreages for vegetation communities within the project boundary have remained unchanged since the 2011 survey (Table 1).

Table 1. Vegetation Communities within the Project Boundary

Vegetation Types	Current Acreage	Previous Acreage	Difference
Disturbed	0.28	0.28	0.0
Exotic	0.23	0.23	0.0
Southern Willow Scrub	0.49	0.48	+0.01
Disturbed Southern Willow Scrub	0.11	0.11	0.0
Open Water	0.001	0.01	-0.009
Total	1.11	1.11	

Plant species composition has remained mostly unchanged. Several annual plant species that were detected in the May 2011 survey were not present during the November 2013 survey due to the seasonality of the species. Common tule (*Schoenoplectus acutus* var. *occidentalis*) was the only plant species that was detected during the November 2013 survey that had not been detected during the May 2011 survey. The nomenclature and phylogeny of a few plant species have changed since 2011. The scientific name for blue elderberry (*Sambucus nigra* ssp. *caerulea*) as well as the families for branching phacelia (*Phacelia ramosissima*) and blue elderberry have changed.

The 2013 survey was conducted in the fall when migratory bird species are no longer present in southern California; consequently, the wildlife list is shorter than the 2011 wildlife list which included

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birds detected during the spring. Similarly, yellow-rumped warbler (*Dendroica coronata*), a species that would only occur on site during the fall and winter, was only detected during the 2013 survey.

The habitat assessments for special-status species and WRC MSHCP-covered species presented in the November 2011 report are still accurate. The WRC MSHCP consistency analysis presented in the November 2011 report is also still accurate.

Please contact me at (858) 444-3915, or Kathleen Dale at (951) 683-2741 if you have any questions.

Sincerely,



Erika Eidson
Senior Biologist

Enclosures:

Figures

Figure 1: Regional Location

Figure 2: Project Location

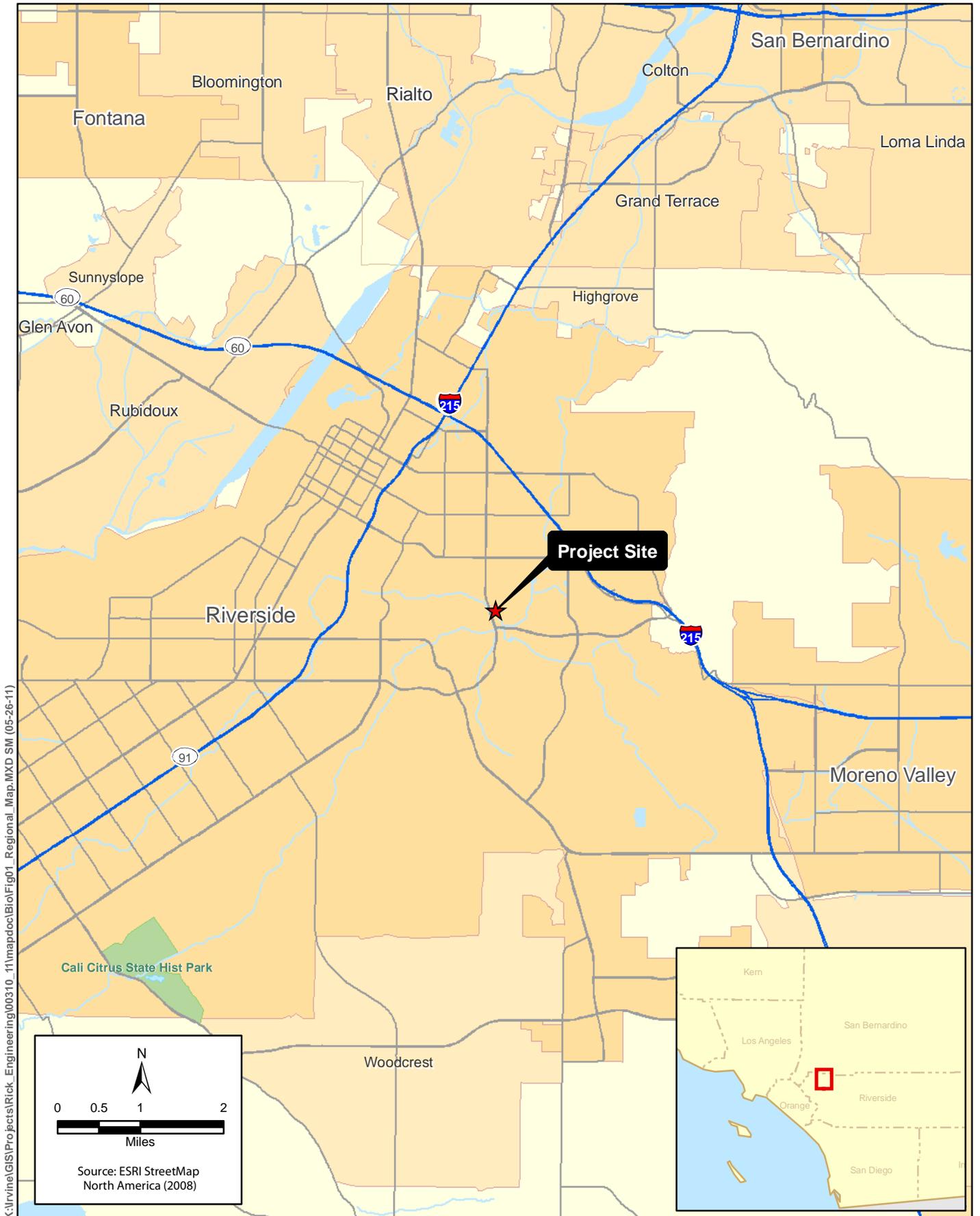
Figure 3: Vegetation Map

Photo Log

Plants Species Detected in the Work Area

Wildlife Species Detected in the Work Area

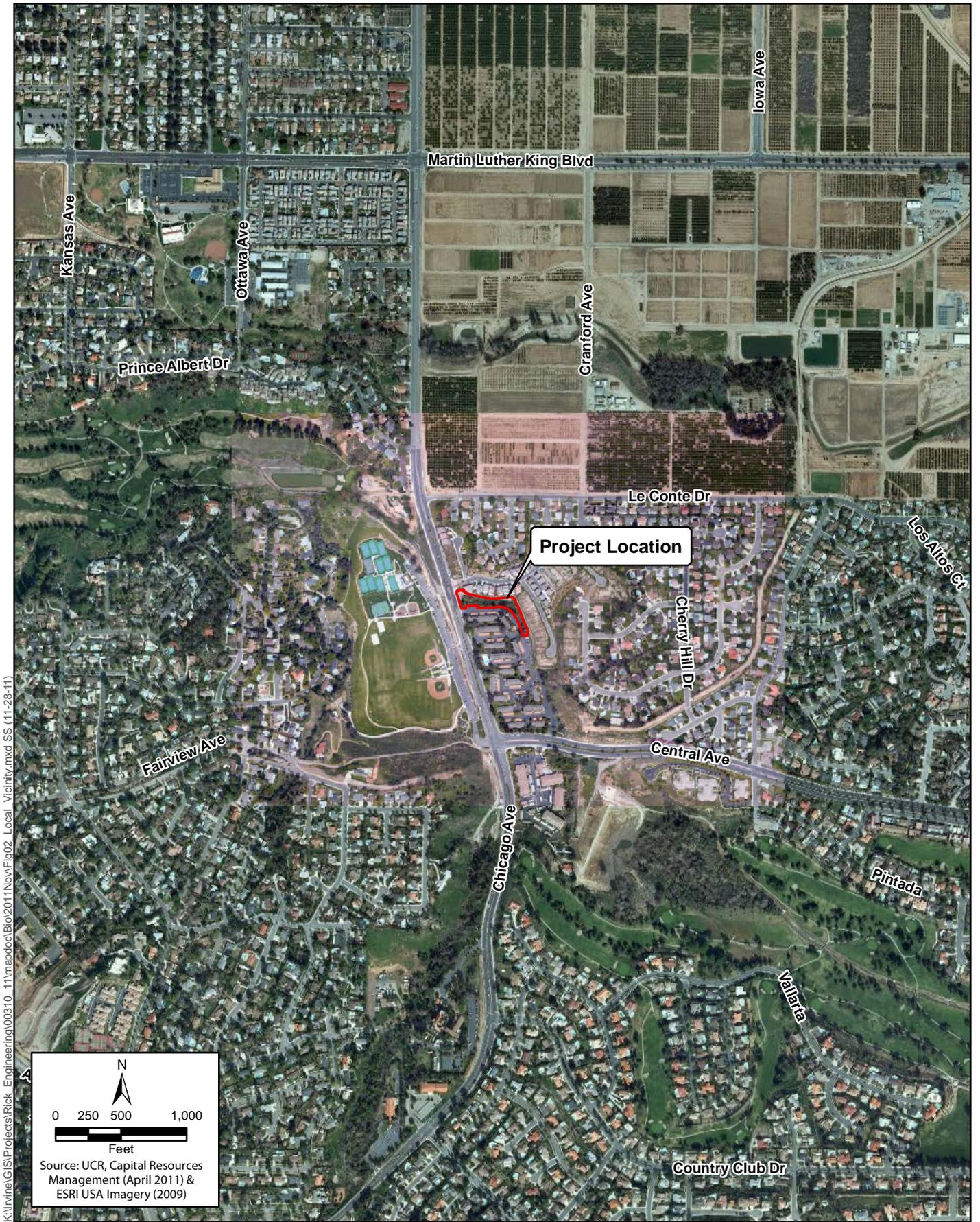
Figures



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Figure 1
Regional Vicinity Map
UCR Creekside Terrace Slope Protection Project



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Figure 2
Local Vicinity Map
UCR Creekside Terrace Slope Protection Project



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Figure 3
Vegetation Map
UCR Creekside Terrace Slope Protection Project

Photo Log



Photo 1
Riparian habitat within
the western portion of
the project site, facing
southeast

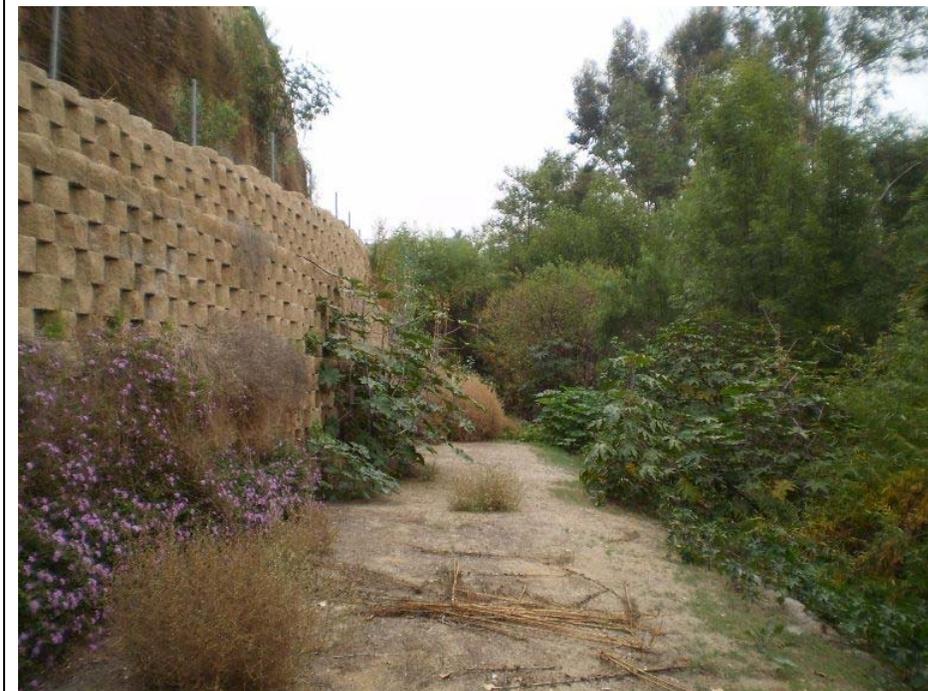


Photo 2
Access road located on
the north side of the
drainage, facing
southeast



Photo 3
Portion of the drainage
that is considered
disturbed southern
willow scrub. facing
southeast



Photo 4
Southeastern portion
of the project site,
facing north

Plant Species Detected On Site

Attachment B. Plant Species Detected On Site

Scientific Name	Common Name	Special Status
EUDICOTS		
Adoxaceae - Muskroot family		
<i>Sambucus nigra ssp. caerulea</i>	Blue elderberry	
Amaranthaceae - Amaranth family		
* <i>Amaranthus albus</i>	Tumbleweed	
Anacardiaceae - Sumac Or Cashew family		
* <i>Schinus molle</i>	Pepper tree	
Asteraceae - Sunflower family		
<i>Baccharis salicifolia ssp. salicifolia</i>	Mule fat	
<i>Erigeron canadensis</i>	Horseweed	
* <i>Lactuca serriola</i>	Prickly lettuce	
* <i>Sonchus asper ssp. asper</i>	Prickly sow thistle	
<i>Stephanomeria sp.</i>	Wire lettuce	
<i>Xanthium strumarium</i>	Cocklebur	
Boraginaceae - Borage family		
<i>Phacelia ramosissima</i>	Branching phacelia	
Brassicaceae - Mustard family		
* <i>Brassica nigra</i>	Black mustard	
* <i>Hirschfeldia incana</i>	Shortpod mustard	
<i>Nasturtium officinale</i>	Water cress	
Chenopodiaceae - Goosefoot family		
* <i>Salsola tragus</i>	Russian thistle	
Euphorbiaceae - Spurge family		
<i>Chamaesyce albomarginata</i>	Rattlesnake weed	
* <i>Ricinus communis</i>	Castorbean	
Geraniaceae - Geranium family		
* <i>Erodium cicutarium</i>	Redstem filaree	
* <i>Erodium moschatum</i>	Greenstem filaree	
Malvaceae - Mallow family		
* <i>Malva parviflora</i>	Cheeseweed, little mallow	
Moraceae - Mulberry family		
* <i>Ficus carica</i>	Edible fig	
Myrtaceae - Myrtle family		
<i>Eucalyptus sp.</i>	Gum	
Oleaceae - Olive family		
<i>Fraxinus sp.</i>	Ash	
Platanaceae - Plane Tree, Sycamore family		

Scientific Name	Common Name	Special Status
<i>Platanus racemosa</i>	Western sycamore	
Salicaceae - Willow family		
<i>Populus fremontii ssp. fremontii</i>	Fremont cottonwood	
<i>Salix gooddingii</i>	Goodding's black willow	
<i>Salix laevigata</i>	Red willow	
<i>Salix lasiolepis</i>	Arroyo willow	
Solanaceae - Nightshade family		
<i>Datura wrightii</i>	Sacred thorn-apple	
* <i>Nicotiana glauca</i>	Tree tobacco	
<i>Solanum americanum</i>	American black nightshade	
Tamaricaceae - Tamarisk family		
* <i>Tamarix ramosissima</i>	Saltcedar	
Urticaceae - Nettle family		
<i>Urtica dioica</i>	Stinging nettle	
<i>Urtica dioica ssp. gracilis</i>	American stinging nettle	
MONOCOTS		
Arecaceae - Palm family		
* <i>Phoenix canariensis</i>	Canary Island palm	
* <i>Washingtonia robusta</i>	Mexican fan palm	
Cyperaceae - Sedge family		
* <i>Cyperus involucratus</i>	Umbrella plant	
<i>Schoenoplectus acutus var. occidentalis</i>	Common tule	
Poaceae - Grass family		
* <i>Bromus diandrus</i>	Ripgut grass	
* <i>Hordeum murinum</i>	Wall barley	
* <i>Pennisetum setaceum</i>	Crimson fountain grass	
* <i>Stipa miliacea var. miliacea</i>	Smilo grass	
Typhaceae - Cattail family		
<i>Typha domingensis</i>	Southern cattail	

Scientific Name

Common Name

Special Status

Legend

*= Non-native or invasive species

Wildlife Species Detected On Site

Attachment C. Wildlife Species Detected On Site

Scientific Name	Common Name	Special Status
INVERTEBRATES		
Moths, Skippers and Butterflies		
<i>Pyrgus albescens</i>	White Checkered-Skipper	
VERTEBRATES		
Birds		
<i>Zenaida macroura</i>	Mourning Dove	
<i>Calypte anna</i>	Anna's Hummingbird	
<i>Picoides nuttallii</i>	Nuttall's Woodpecker	
<i>Sayornis nigricans</i>	Black Phoebe	
<i>Psaltriparus minimus</i>	Bushtit	
<i>Mimus polyglottos</i>	Northern Mockingbird	
<i>Setophaga coronata</i>	Yellow-rumped Warbler	
<i>Melospiza crissalis</i>	California Towhee	
<i>Melospiza melodia</i>	Song Sparrow	
<i>Haemorhous mexicanus</i>	House Finch	
<i>Carduelis tristis</i>	American Goldfinch	

Appendix F
Least Bell's Vireo Survey

RESULTS OF LEAST BELL'S VIREO SURVEYS FOR THE UNIVERSITY OF CALIFORNIA, RIVERSIDE CREEKSIDE TERRACE SLOPE PROTECTION PROJECT

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August 2011



ICF International. 2011. Results of Least Bell's Vireo Surveys for the UC Riverside Creekside Terrace Slope Protection Project. August. (ICF 00310.11.) San Diego, CA. Prepared for Rick Engineering Company, Riverside, CA.

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Summary

ICF International was retained by Rick Engineering to conduct focused surveys for least Bell's vireo (*Vireo bellii pusillus*) at the site of the University of California, Riverside (UCR) Creekside Terrace Slope Protection project. The project site is located within the City of Riverside, Riverside County, California. Specifically, the project site consists of a drainage feature located approximately 0.20 miles north of the intersection of Chicago and Central Avenues. This drainage supports southern willow scrub and disturbed southern willow scrub.

The focused surveys for least Bell's vireo followed the USFWS (2001) protocol. Eight separate surveys were conducted along the entire survey area at least 10 days apart between April 10 and July 31, 2011, and during suitable weather conditions. The survey area was comprised of all areas of southern willow scrub and disturbed southern willow scrub in the project site. Surveys were conducted on May 9, 19, June 3, 15, and 25, and July 5, 15, and 25, 2011. All visits were performed during morning hours prior to 1100, when vireos are most active and included frequent stops to look and listen for least Bell's vireo vocalizations (songs and/or scolds). Surveys were not conducted during inclement weather, such as extreme hot or cold temperatures, fog, high winds, or rain. At this time, no special permits are required to perform focused surveys for least Bell's vireo in accordance with the recommended guidelines.

No least Bell's vireo individuals were detected during the eight focused surveys. The southern willow scrub within the survey area represents moderate quality habitat for least Bell's vireo and the disturbed southern willow scrub habitat represent low quality habitat. The southern willow scrub is predominated by arroyo willow and Goodding's willow and has a shrubby midstory, which is required by least Bell's vireo for foraging and nesting. The understory for this habitat type ranges from dense to sparse. The disturbed southern willow scrub, which is predominated by edible fig, castor bean, and blue elderberry, lacks the shrubby midstory and dense understory required by the species. Least Bell's vireo typically occupy habitat with large amounts of shrub and tree cover, a large degree of vertical stratification, and small amounts of aquatic and herbaceous cover.

Project Description

ICF International was retained by Rick Engineering to conduct focused surveys for least Bell's vireo (*Vireo bellii pusillus*) at the site of the University of California, Riverside (UCR) Creekside Terrace Slope Protection project. A habitat assessment conducted by ICF Biologists on May 2, 2011 determined the need for focused surveys for least Bell's vireo at the project site.

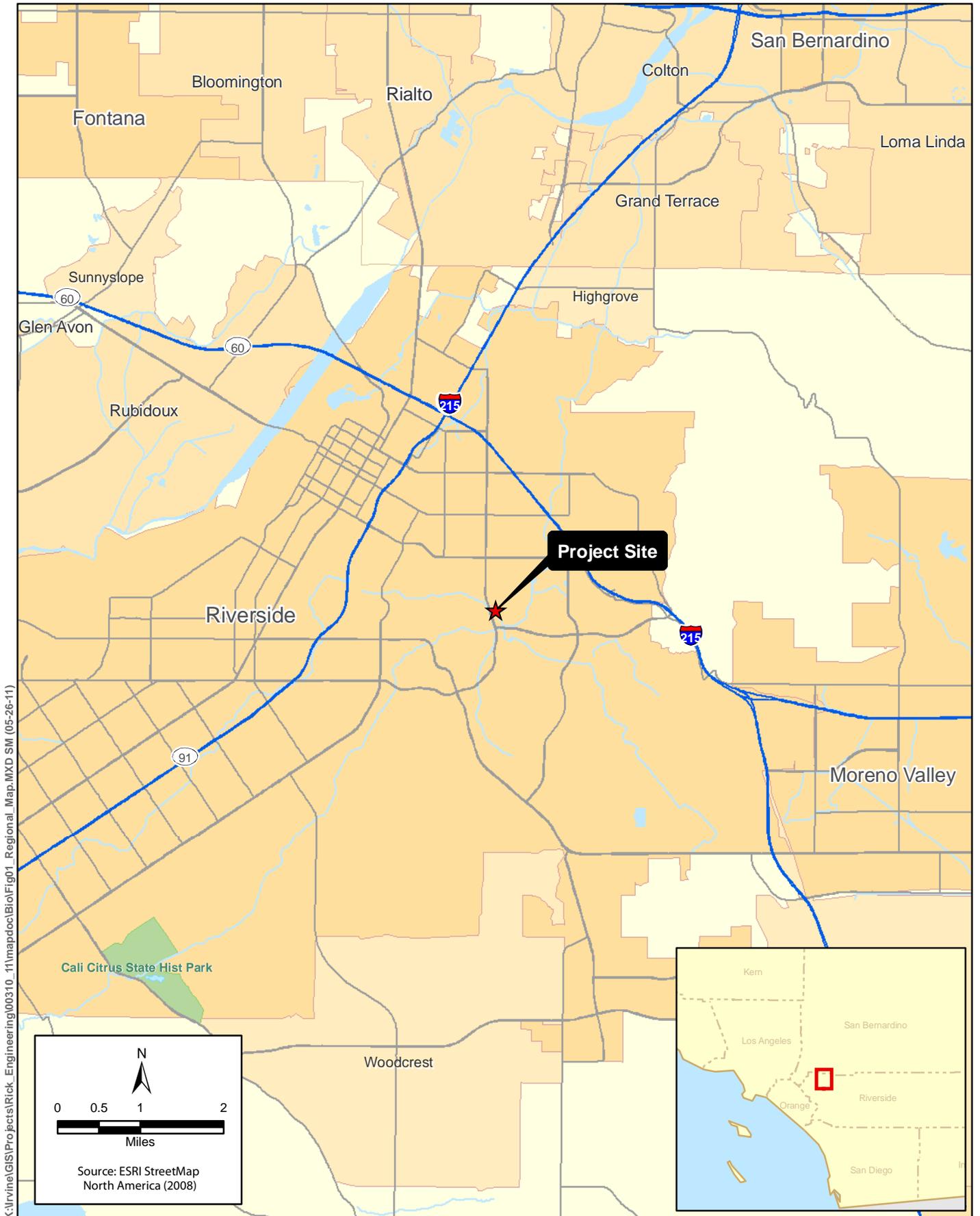
The project site is located within the City of Riverside, Riverside County, California (Figure 1). Specifically, the project site consists of a drainage feature located approximately 0.20 miles north of the intersection of Chicago and Central Avenues (Figure 2).

The proposed project involves stabilization of the north and east banks associated with the drainage. Rip-rap will be placed on the north and east slopes of the drainage to match the existing conditions of the south and west slopes.

Environmental Setting

The project site consists of a drainage that supports riparian vegetation. The drainage is situated between two residential complexes and is isolated from other riparian habitats. The flow of water enters the drainage through a culvert in the southeast corner of the site and exits through a culvert on the northwest side of the site. The drainage supports southern willow scrub and disturbed southern willow scrub (Figure 3). Southern willow scrub on site supports arroyo willow (*Salix lasiolepis*), Goodding's willow (*Salix gooddingii*), mule fat (*Baccharis salicifolia*), western sycamore (*Platanus racemosa*), Mexican elderberry (*Sambucus mexicana*), Mexican fan palm (*Washingtonia robusta*) and hoary nettle (*Urtica dioica*). Disturbed southern willow scrub supports similar species in addition to ornamental ash (*Fraxinus* sp.), castor-bean (*Ricinus communis*), edible fig (*Ficus carica*), Peruvian pepper tree (*Schinus molle*), Mediterranean tamarisk (*Tamarix ramosissima*) and tree tobacco (*Nicotiana glauca*).

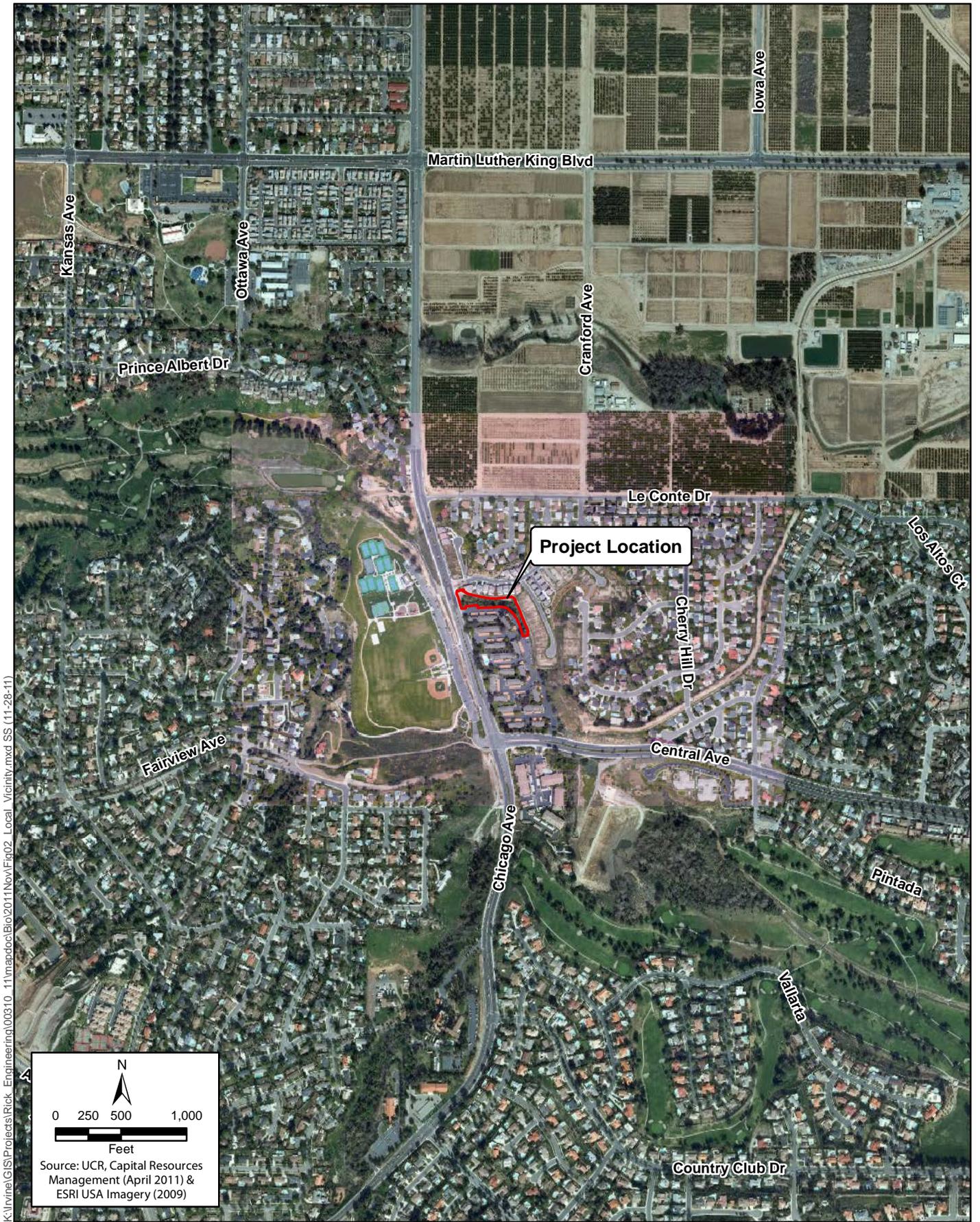
Areas immediately adjacent to the drainage support disturbed areas dominated by non-native herbaceous species and exotic areas dominated by ornamental species (Figure 3). Elevation at the site is approximately 940 feet above mean sea level (MSL). The following soil types are mapped within the project site: Hanford Coarse Sandy Loam, 2 to 8 percent slopes (HcC) and Terrace escarpments (TeG) (NRCS 2011).



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Figure 1
Regional Vicinity Map
UCR Creekside Terrace Slope Protection Project



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Figure 2
Local Vicinity Map
UCR Creekside Terrace Slope Protection Project



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Figure 3
Vegetation Map
UCR Creekside Terrace Slope Protection Project

Species Description

Least Bell's Vireo

There are four subspecies of the Bell's vireo (*Vireo bellii*); the westernmost—the least Bell's vireo (*V.b. pusillus*)—breeds in California and northern Baja California. The least Bell's vireo is a small, migratory insectivore that prefers dense riparian vegetation for foraging and nesting. The California Department of Fish and Game (CDFG) listed the least Bell's vireo as endangered in 1980. The U. S. Fish and Wildlife Service (USFWS) followed suit in 1986. Critical habitat was designated for this subspecies in 1994 along the southwestern coastline of California below Santa Barbara (USFWS 1994).

Historically, least Bell's vireo was a common to locally abundant species found in lowland riparian habitats between northern California and coastal southern California. However, loss of riparian habitats and brown-headed cowbird (*Molothrus ater*) parasitism led to a large population decline. When USFWS first listed the bird in 1986, the population was estimated to be a mere 300 pairs. The latest Five Year Review, dated September 2006, reported an almost 10-fold increase in population size since the time of its listing to an estimated 2,968 territories (USFWS 2006). Least Bell's vireo is found only in mid- to southern California, with the majority occurring in San Diego County.

Least Bell's vireos typically begin to arrive on their breeding grounds by mid to late March and begin to depart by late July; most having left by September. Males tend to arrive first and establish territories; females arrive a few days later. Site fidelity is high among adult least Bell's vireo, with many birds returning to the same territory each year and even using the same shrub as previous years (Salata 1983, Kus 2002). Nests are typically placed within 1 meter of the ground in dense shrubby riparian habitat, and a diverse canopy height is required for foraging, with willows often dominating the canopy layer (Salata 1983). In southern California, least Bell's vireo nest sites were most frequently located in riparian stands between 5 and 10 years old (SANDAG and RECON 1990). Based on rigorous statistical analysis of least Bell's vireo habitat structure and composition, this species appears to preferentially select sites with large amounts of shrub and tree cover, a large degree of vertical stratification, and small amounts of aquatic and herbaceous cover (SANDAG and RECON 1990).

Chapter 2 Methods

A record search of the California Natural Diversity Database (CNDDDB 2011) was conducted in order to review historical occurrence of least Bell's vireo in the area. The search parameters included the Riverside East quadrangle as well as the eight surrounding quadrangles (Riverside East, Riverside West, Fontana, San Bernardino South, Redlands, Sunnymead, Perris, Steele Peak, and Lake Mathews).

The focused surveys for least Bell's vireo followed the USFWS (2001) protocol. Eight separate surveys were conducted along the entire survey area at least 10 days apart between April 10 and July 31, 2011, and during suitable weather conditions. The survey area was comprised of all areas of southern willow scrub and disturbed southern willow scrub in the project site. Surveys were conducted on May 9, 19, June 3, 15, and 25, and July 5, 15, and 25, 2011 (Table 1). All visits were performed during morning hours prior to 1100, when vireos are most active and included frequent stops to look and listen for least Bell's vireo vocalizations (songs and/or scolds). Surveys were not conducted during inclement weather, such as extreme hot or cold temperatures, fog, high winds, or rain. At this time, no special permits are required to perform focused surveys for least Bell's vireo in accordance with the recommended guidelines.

Table 1. Survey Conditions

Survey No.	Date	Start Time	End Time	Temp. (°F)	Wind Speed (mph)	Sky Condition	Surveyor
1	May 9, 2011	0845	0955	61-65	0-3	80% cloud cover	Erika Eidson
2	May 19, 2011	0915	1030	65-68	0-5	50% cloud cover	Erika Eidson
3	June 3, 2011	0900	1035	68-74	0-1	Clear skies	Erika Eidson
4	June 15, 2011	0915	1045	75-80	0-1	Clear skies	Erika Eidson
5	June 25, 2011	0900	1025	75-80	0-1	Clear skies	Erika Eidson
6	July 5, 2011	0900	1030	86-90	0-1	Clear skies	Erika Eidson
7	July 15, 2011	0900	1030	68-75	0-5	90% cloud cover	Erika Eidson
8	July 25, 2011	0915	1030	75-78	0-2	10% cloud cover	Erika Eidson

Least Bell's Vireo

No least Bell's vireo individuals were detected during the eight focused surveys. The southern willow scrub within the survey area represents moderate quality habitat for least Bell's vireo and the disturbed southern willow scrub habitat represent low quality habitat. The southern willow scrub is predominated by arroyo willow and Goodding's willow and has a shrubby midstory, which is required by least Bell's vireo for foraging and nesting. The understory for this habitat type ranges from dense to sparse. The disturbed southern willow scrub, which is predominated by edible fig, castor bean, and blue elderberry, lacks the shrubby midstory and dense understory required by the species. Least Bell's vireo typically occupy habitat with large amounts of shrub and tree cover, a large degree of vertical stratification, and small amounts of aquatic and herbaceous cover.

The closest occurrences reported by the CNDDDB were from 2007 from the Santa Ana River approximately 4 miles northwest of the survey area and from Poorman's Reservoir approximately 5 miles east of the survey area. Three other occurrences were reported between 2004 and 2008 from the Santa Ana River, all of these were approximately 6 miles from the survey area (CNDDDB 2011).

Other Special-Status Species

In total, 36 wildlife species were detected during the surveys, including five invertebrates, 30 birds, and one mammal. Yellow warbler (*Dendroica petechia*), a State species of special concern, was detected in the survey area. A complete list of wildlife species detected during the surveys is presented in Appendix A.

Chapter 4 Certification

I certify that the information in this survey report and attached exhibits fully and accurately represent my work.



Erika Eidson
Biologist – *Field Surveys, Primary Author*

August 3, 2011
Date

Chapter 5 References

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Appendix A
Wildlife Species Detected On Site

Appendix A. Wildlife Species Detected On Site

Scientific Name	Common Name	Special Status
INVERTEBRATES		
Moths, Skippers and Butterflies		
<i>Papilio zelicaon</i>	Anise Swallowtail	
<i>Pontia protodice</i>	Checkered White	
* <i>Pieris rapae</i>	Cabbage White	
<i>Vanessa atalanta</i>	Red Admiral	
<i>Junonia coenia</i>	Common Buckeye	
VERTEBRATES		
Birds		
<i>Accipiter cooperii</i>	Cooper's Hawk	
<i>Buteo jamaicensis</i>	Red-tailed Hawk	
<i>Falco sparverius</i>	American Kestrel	
* <i>Columba livia</i>	Rock Pigeon	
<i>Zenaida macroura</i>	Mourning Dove	
<i>Archilochus alexandri</i>	Black-chinned Hummingbird	
<i>Calypte anna</i>	Anna's Hummingbird	
<i>Selasphorus sasin</i>	Allen's Hummingbird	
<i>Picoides nuttallii</i>	Nuttall's Woodpecker	
<i>Picoides pubescens</i>	Downy Woodpecker	
<i>Contopus sordidulus</i>	Western Wood-Pewee	
<i>Sayornis nigricans</i>	Black Phoebe	
<i>Tyrannus verticalis</i>	Western Kingbird	
<i>Corvus brachyrhynchos</i>	American Crow	
<i>Corvus corax</i>	Common Raven	
<i>Stelgidopteryx serripennis</i>	Northern Rough-winged Swallow	
<i>Petrochelidon pyrrhonota</i>	Cliff Swallow	
<i>Hirundo rustica</i>	Barn Swallow	
<i>Psaltiriparus minimus</i>	Bushtit	
<i>Thryomanes bewickii</i>	Bewick's Wren	
<i>Mimus polyglottos</i>	Northern Mockingbird	
<i>Dendroica petechia</i>	Yellow Warbler	CSC
<i>Melospiza crissalis</i>	California Towhee	

Scientific Name	Common Name	Special Status
<i>Melospiza melodia</i>	Song Sparrow	
<i>Pheucticus melanocephalus</i>	Black-headed Grosbeak	
<i>Euphagus cyanocephalus</i>	Brewer's Blackbird	
<i>Icterus cucullatus</i>	Hooded Oriole	
<i>Carpodacus mexicanus</i>	House Finch	
<i>Carduelis psaltria</i>	Lesser Goldfinch	
<i>Carduelis tristis</i>	American Goldfinch	
* <i>Passer domesticus</i>	House Sparrow	
Mammals		
* <i>Felis catus</i>	Domestic Cat	

Legend

*= Non-native or invasive species

Special Status:

Federal:

FE = Endangered

FT = Threatened

State:

SE = Endangered

ST = Threatened

CSC = California Species of Special Concern

CFP = California Fully Protected Species

Appendix G
Jurisdictional Delineation

PRELIMINARY JURISDICTIONAL DELINEATION REPORT FOR THE UCR CREEKSIDE TERRACE SLOPE PROTECTION PROJECT

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November 2011



ICF International. 2011. Preliminary Jurisdictional Delineation Report for the UCR Creekside Terrace Slope Protection Project. (ICF 00310.11.) Prepared for Rick Engineering for University of California Riverside. November

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Acronyms and Abbreviations

CDFG	California Department of Fish and Game
CFR	Code of Federal Regulations
CWA	federal Clean Water Act
EPA	U.S. Environmental Protection Agency
JDs	jurisdictional delineations
NRCS	Natural Resources Conservation Service
NWP	Nationwide Permit
OHWM	ordinary high-water mark
Porter Cologne	Porter-Cologne Water Quality Control Act
RGL	Regulatory Guidance Letter
RPW	Relatively permanent water
RWQCB	Regional Water Quality Control Board
SS	State streambeds
SWANCC	Solid Waste Agency of North Cook County
TNW	traditional navigable water
UCR	University of California Riverside
USC	United States Code
USACE	U.S. Army Corps of Engineers
USDA	U.S. Department of Agriculture
USGS	U.S. Geological Survey
WS	Waters of the State
WUS	Waters of the U.S.

Executive Summary

ICF International was retained by Rick Engineering to conduct a routine-level delineation of jurisdictional waters and wetlands potentially affected by the proposed University of California Riverside (UCR) Creekside Terrace Slope Protection Project. The delineation supports the regulatory permitting process under Sections 401 and 404 of the Clean Water Act (CWA) and Section 1602 of the California Fish and Game Code. The purpose of this delineation was to identify the extent of jurisdictional waters within the project site. Relevant jurisdictions include federal waters regulated by the United States Army Corps of Engineers (USACE) as Waters of the U.S. (WUS), State waters regulated by the Regional Water Quality Control Board (RWQCB) as Waters of the State (WS), and State streambeds (SS) regulated by the California Department of Fish and Game (CDFG).

The drainage was evaluated and determined to be to be a USACE non-wetland Waters of the United States (WUS), and contain CDFG and RWQCB jurisdictional features. The drainage did not meet the wetland criteria for USACE jurisdictional wetlands.

The project site supports approximately 0.4 acre of USACE jurisdictional non-wetland WUS and 0.6 acre of CDFG jurisdictional State streambed. The proposed project would temporarily impact approximately 0.25 acre of USACE jurisdictional resources and 0.4 acre of CDFG jurisdictional resources. Permanent impacts to USACE jurisdictional resources would be approximately 0.1 acre and permanent impacts to CDFG jurisdictional streambed would be approximately 0.2 acre.

This report documents a preliminary jurisdictional delineation performed for proposed slope protection for the University of California Riverside (UCR) Creekside Terrace development. The purpose of the delineation was to identify potential Section 404 wetlands, State Wetlands, Waters of the United States (WUS), Waters of the State (WS), and Streams and Lakes subject to California Fish and Game Code Section 1600 within and adjacent to the project site.

This jurisdictional delineation report describes the project site and existing conditions, discusses the regulations that govern the site, outlines the methodology used to conduct the delineation, and presents the results of the study. These results show the potentially jurisdictional resources found within the project site that may be subject to regulation by the U.S. Army Corps of Engineers (USACE), Regional Water Control Board (RWQCB), and California Department of Fish and Game (CDFG).

Project Location

The UCR Creekside Terrace Slope Protection project (herein referred to as the “Project”) is located within the City of Riverside, Riverside County, California (Figure 1, Appendix A). Specifically, the project site consists of a stream that is transitional below Sycamore Canyon to the Tequesquite Arroyo system and which is located approximately 0.20 miles north of the intersection of Chicago and Central Avenues (Figure 2, Appendix A). The project is located within Section 31, Township 2 South, Range 4 West of the Riverside East U.S. Geological Survey (USGS) quadrangle dated 1967, photorevised 1980. The project site is located at approximately 940 feet above mean sea level (MSL) as depicted on the Riverside East USGS topographic map. The coordinates (decimal degrees) for the project site are latitude 33.958882°W and longitude 117.346076°N. The primary Assessor’s Parcel Number (APN) associated with the project site is 254-370-003.

Project Description

The proposed project involves stabilization of the existing stream banks due to concerns regarding the stability of massive retaining walls adjoining the north and east edges of the stream within the Creekside Terrace development. This partially-constructed residential development was acquired by UCR for use as staff and faculty housing. The existing channelized condition of the stream was effected in conjunction with development of the adjoining apartment complex (sometime between 1977 and 1989 based upon historic aerial photographs; permitting history unknown). Subsequently, a riparian restoration program and long-term conservation program for this feature were established as a mitigation obligation of the Creekside Terrace development in 2006 (USACE/RWQCB Reference Number 200400635-DPS and CDFG 1600 Agreement 1600-2005-0093-R6 (Revision 1)).

The proposed improvements consist of reshaping the existing channel and establishment of rip-rap protection along the channel bottom and the north and east banks. This will establish a condition consistent with the original design plans and existing conditions on the south and west slopes,

which are characterized by rip-rap under a canopy of native and non-native riparian tree species. Construction will require the removal of all vegetation within the impact area on the north and east banks and across the channel bottom. The proposed design provides for reestablishment of soil over the rip-rap on the channel bottom. Ongoing maintenance will involve clearing of vegetation on the north and east banks; riparian vegetation will be allowed to reestablish naturally on the channel bottom. Impacts are not proposed for the south and west banks.

The following sections summarize the regulations imposed on each type of jurisdictional feature potentially present within the proposed project area.

U.S. Army Corps of Engineers Regulated Activities

USACE-regulated activities under Section 404 of the CWA involve a discharge of dredged or fill material into Waters of the U.S. (WUS). A discharge of fill material includes, but is not limited to, grading, placing rip-rap for erosion control, pouring concrete, laying sod, and stockpiling excavated material into WUS. Activities that generally do not involve a regulated discharge (if performed specifically in a manner to avoid discharges) include driving pilings, performing some drainage channel maintenance activities, constructing temporary mining and farm/forest roads, and excavating without stockpiling.

Waters of the U.S.

WUS, as defined in the Code of Federal Regulations (CFR) Title 33, Section 328.3, include all waters or tributaries to waters, such as lakes, rivers, intermittent and perennial streams, mudflats, sand flats, natural ponds, wetlands, wet meadows, and other aquatic habitats.

Frequently, a WUS (with at least intermittently flowing water or tidal influences) is demarcated by the ordinary high-water mark (OHWM), defined in CFR 328.3(e) as:

that line on the shore established by the fluctuations of water and indicated by physical characteristics such as [a] clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas.

Where an OHWM is present, waters may be defined as WUS when connectivity is determined to be present.

Wetlands

According to the *Corps of Engineers Wetland Delineation Manual* (Environmental Laboratory 1987), three criteria must be satisfied to classify an area as a jurisdictional wetland: (1) a predominance of plant life that is adapted to life in wet conditions (hydrophytic vegetation); (2) soils that saturate, flood, or pond long enough during the growing season to develop anaerobic conditions in the upper part (hydric soils); and (3) permanent or periodic inundation or soils saturation, at least seasonally (wetland hydrology).

Solid Waste Agency of Northern Cook County v. United States Army Corps of Engineers

In 1986, in an attempt to clarify the reach of its jurisdiction, USACE stated that Section 404(a) extends to intrastate waters that:

(a) are or would be used as habitat by birds protected by migratory bird treaties, or (b) are or would be used as habitat by other migratory birds which cross state lines, or (c) are or would be used as habitat for endangered species, or (d) used to irrigate crops sold in interstate commerce (51 *Federal Register* 41217).

As a result of the 2001 *Solid Waste Agency of North Cook County (SWANCC)* case, the U.S. Supreme Court held that USACE may not rely on the Migratory Bird Rule to establish a significant nexus to interstate or foreign commerce. Although no formal guidance was issued by USACE interpreting the extent to which the *SWANCC* decision would limit jurisdictional determinations, in practice USACE considers intrastate waters as WUS where there is an appropriate connection to a navigable water or other clear interstate commerce connection. Therefore, WUS, including jurisdictional wetlands, must show connectivity with (be tributary to) traditionally navigable waters (TNW) for such a feature to be considered jurisdictional.

Rapanos v. United States and Carabell v. U.S. Army Corps of Engineers

In 2006, the U.S. Supreme Court again issued an opinion regarding the extent of USACE jurisdiction over certain waters under Section 404 of the CWA. The *Rapanos-Carabell* consolidated decisions addressed the question of jurisdiction over attenuated tributaries to WUS as well as wetlands adjacent to those tributaries. In a plurality decision, five of the nine justices remanded both cases to the lower courts for re-evaluation. However, those five justices disagreed as to what the test for determining jurisdiction should be.

The first approach (Justices Scalia, Roberts, Thomas, and Alito) held that “waters of the United States” include only those relatively permanent, standing, or continuously flowing bodies of water “forming geographic features” that are described in ordinary phrasing as “streams, oceans, river and lakes” (i.e., with surface water connection to navigable waters). This would not exclude streams, rivers, or lakes that might dry up in extraordinary circumstances, such as drought, or seasonal rivers that contain continuous flow during some months of the year but no flow during dry months (*Rapanos et ux. et al. v. United States*, 547 U.S. 04-1034 [2006]).

The second approach (Justice Kennedy) concluded that Congress enacted the CWA to “restore and maintain the chemical, physical, and biological integrity of the nation’s waters” (33 United States Code [USC] Section 1250(a)). Therefore, if the tributaries and adjacent wetlands, alone or in combination with similarly situated lands in the region, significantly affect the chemical, physical, and biological integrity of other covered waters understood as navigable in the traditional sense, these waters come within the statutory phrase “navigable waters.” USACE’s jurisdiction under the CWA reaches tributaries and other waters and wetlands with a significant nexus to waters that are in fact navigable or could reasonably be made so. However, USACE must establish a significant nexus on a case-by-case basis when seeking to regulate wetlands based on adjacency to nonnavigable tributaries to avoid unreasonable applications of the CWA.

USACE and the U.S. Environmental Protection Agency (EPA) issued guidance related to the *Rapanos* decision on June 5, 2007. The guidance identifies those waters over which the agencies (USACE and EPA) will assert jurisdiction categorically and on a case-by-case basis, based on the reasoning of the *Rapanos* opinions. To summarize, USACE will continue to assert jurisdiction over:

1. traditional navigable waters (TNWs) and their adjacent wetlands;
2. nonnavigable tributaries of TNWs that are relatively permanent (e.g., tributaries that typically flow year-round or have a continuous flow at least seasonally) and wetlands that directly abut such tributaries (e.g., not separated by uplands, berm, dike, or similar feature) (note: relatively permanent waters [RPWs] do not include ephemeral tributaries, which flow only in response to precipitation, and intermittent streams, which do not typically flow year-round or have continuous flow at least seasonally [e.g., typically three months]); and
3. non-RPWs if determined (in a fact-specific analysis) to have a significant nexus with a TNW, including nonnavigable tributaries that do not typically flow year-round or have continuous flow at least seasonally, wetlands adjacent to such tributaries, and wetlands adjacent to but not directly abutting a relatively permanent nonnavigable tributary. Absent a significant nexus, jurisdiction is lacking.

A significant nexus exists if the tributary, in combination with all of its adjacent wetlands, has more than a speculative or insubstantial effect on the chemical, physical, and/or biological integrity of a TNW. Principal considerations when evaluating significant nexus include volume, duration, and frequency of the flow of water in the tributary and the proximity of the tributary to a TNW, plus hydrologic, ecologic, and other functions performed by the tributary and all of its adjacent wetlands. Certain ephemeral waters in the arid west are distinguishable from the geographic features described above where such ephemeral waters are tributaries and have a significant nexus to downstream TNWs. For example, these ephemeral tributaries may serve as a transitional area between the upland environment and the TNW. Such ephemeral tributaries may provide habitat for wildlife and aquatic organisms in downstream TNWs and support nutrient cycling, sediment retention and transport, pollutant trapping and filtration, and improvement of water quality.

Swales or erosional features (e.g., gullies and small washes characterized by low volume and infrequent or short-duration flow) are generally not WUS because they are not tributaries or they do not have a significant nexus to downstream TNWs. In addition, ditches (including roadside ditches) excavated wholly in uplands and draining only uplands that do not carry a relatively permanent flow of water are generally not WUS because they are not tributaries or they do not have a significant nexus to downstream TNWs. Even when not jurisdictional under Section 404 of the CWA, these features may still be jurisdictional at State or local levels, such as under Section 401 of the CWA, the Porter-Cologne Water Quality Control Act (Porter-Cologne), and/or Section 1602 of the California Fish and Game Code.

Approved Jurisdictional Determinations

Prior to the *Rapanos* guidance, USACE required districts to request concurrence for only those jurisdictional delineations (JDs) where the district was planning to assert jurisdiction over a nonnavigable, intrastate, isolated water, and/or wetland. Under *Rapanos*, the agencies require that all determinations for nonnavigable, isolated waters be evaluated by USACE and EPA headquarters prior to USACE making a final decision on the JD (an “approved JD”).

An approved JD is an official USACE determination that jurisdictional or navigable WUS are either present or absent on a particular site. The approved JD precisely identifies the limits of those waters on the project site. Approved JDs are documented in accordance with Regulatory Guidance Letter (RGL) 07-01 and require the use of the approved JD form (*Rapanos* form). An approved JD form is completed for each reach of each tributary on the project site and is reviewed by USACE and EPA. Legally, an approved JD represents USACE official determination that the JD's findings are correct, is valid for 5 years, can be used and relied upon in a CWA citizen's lawsuit if its legitimacy is challenged (except under extraordinary circumstances), and can be immediately appealed (33 CFR Part 331).

Preliminary Jurisdictional Determinations

Under RGL 08-02, dated June 26, 2008, USACE established an alternative to the approved JD process: the "preliminary JD." A preliminary JD is a non-binding written indication that there may be WUS, including wetlands, on a project site and identifies the approximate location of these features. Preliminary JDs are used when a landowner, permit applicant, or other affected party elects to voluntarily waive or set aside questions regarding CWA jurisdiction over a particular site, usually in the interest of allowing the landowner to move ahead expeditiously to obtain 404 authorization where the party determines that it is in his or her best interest to do so. A preliminary JD is not an official determination regarding the jurisdictional status of potentially jurisdictional features and has no bearing on approved JDs. A preliminary JD cannot be used to confirm the absence of jurisdictional waters or wetlands, is advisory in nature, and cannot be appealed. It is considered "preliminary" because a recipient can later request an approved JD if one is necessary or appropriate.

Finally, although a preliminary JD may be chosen by the applicant, the district engineer reserves the right to use an approved JD where warranted. A preliminary JD is documented using the preliminary JD form, provided as Attachment 1 to RGP 08-02. For purposes of computation of impacts, compensatory mitigation requirements, and other resource protection measures, a permit decision made on the basis of a preliminary JD treats all waters and wetlands that would be affected in any way except by the permitted activity as if they are jurisdictional.

State Water Resources Control Board Regulated Activities/Regional Water Quality Control Board

In California, the SWRCB and nine Regional Water Quality Control Boards (RWQCB) regulate activities within State and federal waters under Section 401 of the CWA and the State Porter-Cologne Act. The SWRCB is responsible for setting statewide policy, coordinating and supporting the RWQCB efforts, and reviewing petitions that contest RWQCB actions. Each semi-autonomous RWQCB sets water quality standards, issues 401 certifications and waste discharge requirements, and take enforcement action for projects occurring within their boundary. However, when a project crosses multiple RWQCB jurisdictional boundaries, the SWRCB becomes the regulating agency for both of these acts and issues project permits.

Section 401 of the Clean Water Act

Section 401 of the CWA requires that

any applicant for a federal permit for activities that involve a discharge to waters of the United States shall provide the federal permitting agency a certification from the state in which the discharge is proposed that states that the discharge will comply with the applicable provisions under the federal Clean Water Act.

Therefore, in California, before USACE will issue a Section 404 permit, applicants must apply for and receive Section 401 water quality certification or waiver from the RWQCB or SWRCB, as applicable. Under Section 401 of the CWA, the SWRCB/RWQCB regulates at the State level all activities that are regulated at the federal level by USACE. Therefore, SWRCB/RWQCB jurisdiction usually matches the jurisdictional boundaries for WUS (mapped at the OHWM). However, if waters are determined not to be WUS, they may still be subject to SWRCB/RWQCB jurisdiction based on the Porter-Cologne Act.

Porter-Cologne Act

Under the Porter-Cologne Act, the SWRCB/RWQCB regulates all such activities—as well as dredging, filling, or discharging materials into Waters of the State (WS)—that are not regulated by USACE because of a lack of connectivity with a navigable water body or lack of an OHWM. The SWRCB/RWQCB regulates actions that would involve “discharging waste, or proposing to discharge waste, within any region that could affect waters of the state” (California Water Code 13260[a]), pursuant to provisions of the State Porter-Cologne Act. WS are defined as “any surface water or groundwater, including saline waters, within the boundaries of the state” (California Water Code 13050 [e]). Such waters may include waters not subject to regulation under Section 404, such as swales or isolated vernal pools.

California Department of Fish and Game Regulated Activities

Under California Fish and Game Code, Sections 1600–1616, CDFG has the authority to regulate work that will substantially divert or obstruct the natural flow—or substantially change or use any material from the bed, channel, or bank—of any river, stream, or lake. CDFG also has the authority to regulate work that will deposit or dispose of debris, wastewater, or other material containing crumbled, flaked, or ground pavement that may pass into any river, stream, or lake. This regulation takes the form of a requirement for a Lake or Streambed Alteration Agreement and is applicable to all work involving State or local government discretionary approvals.

Section 1602 of the California Fish and Game Code

The California Fish and Game Code mandates that

it is unlawful for any entity to substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake designated by the department, or use any material from the streambeds, without first notifying the department of such activity.

CDFG jurisdiction includes ephemeral, intermittent, and perennial watercourses (including dry washes) and lakes characterized by the presence of (1) definable bed and banks and (2) existing fish or wildlife resources. Furthermore, CDFG jurisdiction is often extended to habitats adjacent to watercourses, such as oak woodlands in canyon bottoms or willow woodlands that function

hydrologically as part of the riparian system. Historical court cases have further extended CDFG jurisdiction to include watercourses that seemingly disappear but re-emerge elsewhere. Under the CDFG definition, a watercourse need not exhibit evidence of an OHWM to be claimed as jurisdictional.

Water features such as vernal pools and other seasonal swales where the defined bed and bank are absent and the feature is not contiguous or closely adjacent to other jurisdictional features are generally not asserted to fall within State jurisdiction under Section 1602. CDFG generally does not assert jurisdiction over human-made water bodies unless they are located where such natural features were previously located or (importantly) where they are contiguous with existing or prior natural jurisdictional areas.

Western Riverside County MSHCP

Riparian habitats are afforded protections in western Riverside County by the Western Riverside Multiple Species Habitat Conservation Plan (MSHCP). Section 6.1.2, "Protection of Species Associated with Riparian/Riverine Areas and Vernal Pools," of the MSHCP defines *riparian/riverine* areas as:

lands which 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 fresh water source; or areas with fresh water flow during all or a portion of the year. With the exception of wetlands created for the purposes of providing wetlands habitat or resulting from human actions to create open waters or from the alteration of natural stream courses, areas demonstrating characteristics as described above which are artificially created are not included in these definitions.

Implementing provisions of the MSHCP may require preparation of a Determination of Biologically Equivalent or Superior Preservation (DBESP) report for projects that involve impacts to riparian/riverine resources. The purpose of the DBESP report is to ensure replacement of any lost functions and values of habitat as it relates to specific animal species protected under the MSHCP.

Project Research

To prepare for a field visit, surveyors obtained an aerial photograph (1 inch = 100 feet) of the site and used it to identify potential site features such as vegetation types, topographic changes, or visible drainage patterns.

Additionally, the relevant U.S. Department of Agriculture (USDA) soil survey map was reviewed to identify the soil series that occur on the project site. These mapped soil series were compared with the Field Office Official List of Hydric Soil Map Units (U.S. Department of Agriculture 2011) and the pertinent USDA Natural Resources Conservation Service (NRCS) Soil Survey online map to determine the presence or absence, and location, of hydric soils within the project site (USDA 2011).

Field Investigation

ICF International biologists Dale Ritenour and Paul Schwartz performed the jurisdictional delineation on May 2, 2011. The entire project boundary was surveyed to determine the presence/absence of any potential jurisdictional features; any potential features identified were then investigated further to determine whether they met the criteria for federal, State, or local jurisdiction. All features were delineated following USACE, RWQCB, and CDFG guidance.

Delineated boundaries of all features identified within the project site were mapped on an aerial photograph. A Wetland Determination data form was completed for the sample point (Appendix B).

Delineation Methods

USACE, CDFG, and RWQCB have differing criteria for delineation of jurisdictional water features. The following sections describe the methods for delineation of jurisdictional limits for each agency.

Delineation of U.S. Army Corps of Engineers Jurisdictional Limits

ICF International methods for delineating USACE jurisdictional features follow the guidelines set forth in the *U.S. Army Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (Arid West Regional Supplement, USACE 2008a). USACE takes jurisdiction over wetlands with connectivity to relatively permanent and traditionally navigable waterways, and over non-wetland waters including streambeds, rivers, and open water.

Three criteria normally must be fulfilled in order to classify an area as a jurisdictional USACE wetland: (1) a predominance of hydrophytic vegetation, (2) the presence of hydric soils, and (3) the presence of wetland hydrology. Details of the application of these techniques are described below.

- **Hydrophytic Vegetation.** The hydrophytic vegetation criterion is satisfied at a location if greater than 50% of all the dominant species present within the vegetation unit have a wetland indicator status of obligate (OBL), facultative wetland (FACW), or facultative (FAC) (USACE 1987). An *OBL indicator status* refers to plants that have a 99% probability of occurring in wetlands under natural conditions. A *FACW indicator status* refers to plants that usually occur in wetlands (67 to 99% probability) but are occasionally found elsewhere. A *FAC indicator status* refers to plants that are equally likely to occur in wetlands or elsewhere (estimated probability 34 to 66% for each). The wetland indicator status used for this report follows the *National List of Plant Species that Occur in Wetlands: California (Region 0)* (U.S. Fish and Wildlife Service 1988).
- **Hydric Soils.** The hydric soil criterion is satisfied at a location if soils in the area can be inferred or observed to have a high groundwater table, if there is evidence of prolonged soil saturation, or if there are any indicators suggesting a long-term reducing environment in the upper 18 inches of the soil profile. Reducing conditions are most easily assessed using soil color. Soil colors were evaluated using the *Munsell Soil Color Charts* (Kollmorgen Corporation 1975).
- **Wetland Hydrology.** The wetland hydrology criterion is satisfied at a location based upon conclusions inferred from field observations that indicate an area has a high probability of being inundated or saturated (flooded, ponded, or tidally influenced) long enough during the growing season to develop anaerobic conditions in the surface soil environment, especially the root zone (U.S. Army Corps of Engineers 1987, 2006).

Areas meeting all three of these parameters are generally designated as USACE wetlands.

ICF International methods for the delineation of non-wetland WUS were based on the limits of indicators for OHWM, following established criteria outlined in the *U.S. Army Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (Arid West Regional Supplement, USACE 2008a).

The field guide describes physical evidence that should be used to ascertain the lateral limits of jurisdiction; generally more than one physical indicator or other means for determining the OHWM is used. The following physical indicators of OHWM were used in the field:

- Presence of litter and debris
- Wracking
- Bed and banks

When documenting the OHWM width within the stream, surveyors took measurements of stream width at various locations using a survey measuring tape. Distinct changes in channel width or riparian vegetation width were recorded.

Delineation of Regional Water Quality Control Board Jurisdictional Limits

The RWQCB jurisdiction generally follows the delineation of USACE jurisdictional wetland or nonwetland waters of the U.S. Since this site has bed-and-bank OHWM and connectivity to RPW and TNW, the boundaries of the RWQCB jurisdiction will match that of USACE.

Delineation of California Department of Fish and Game Jurisdictional Limits

Evaluation of California Fish and Game Code jurisdiction followed the guidance of related CDFG materials and standard practices by CDFG personnel. CDFG generally exerts jurisdiction over streambeds and to habitats adjacent to watercourses, such as willow woodlands that function hydrologically as part of the riparian system. CDFG jurisdiction was delineated by measuring outer boundaries of the greater of either the top of bank measurement (bank full width) or the extent of associated riparian or wetland vegetation.

Site Description

The site consists of a stream and narrow riparian corridor in the eastern section of the City of Riverside. The streambed is confined between an apartment complex and the Creekside Terrace housing development. The upstream tributary area is characterized by Sycamore Canyon Wilderness Park and established residential neighborhoods, with the immediate upstream area characterized by Canyon Crest golf course and Sycamore Dam (with associated flood control basin). This stream is tributary to the Tequesquite Arroyo and Santa Ana River.

Onsite, the stream channel averages approximately 25 feet in width; the banks are steep and the channel is over ten feet deep. The stream enters the site through a culvert in the southeast corner of the site, proceeds 650 feet through the site with a gradient of less than 2 percent, and exits steeply through a 6-foot diameter culvert on the west side of the site. At the time of the current field work, approximately 2/3 of the culvert at the upstream end of the stream was filled with sediment. Rip-rap is present and partially buried by soil on the west/south bank. The east/north bank is primarily earthen and non-reinforced. A massive retaining wall exists to the north/east of the stream, supporting the Creekside Terrace development on the bluff above. An approximately 10-foot wide dirt access path exists on the north/east side of the stream, between the stream and retaining wall. A section of the east slope has been eroded by the stream, leaving a vertical stream bank and approximately 6-foot separation from stream and retaining wall. Representative photos of the site are presented in Appendix C.

Soils mapped within the study area include Hanford coarse sandy loam, 2 to 8 percent (HcC) and Terrace Escarpments (TeG). Neither of these soil types are listed as hydric soils (UDSA 2011).

Sample Point

One sample point was taken within the study area to evaluate potential presence of USACE wetlands. The location of the sample point is shown on Figure 3 (Appendix A) and was located immediately adjacent to the inundated channel at the west end of the site. While the open overstory was dominated by trees found normally in wetlands, including western cottonwood (*Populus fremontii*) and black willow (*Salix gooddingii*), only three of the six dominant plant species were hydrophytes (FAC or wetter), so the point did not meet the vegetation dominance test of over 50 percent wetland species. The point was adjacent to surface water (a primary hydrology indicator), and had two secondary riverine hydrology indicators including sediment deposits and drift deposits, so the point met the wetland hydrology criterion. The soil pit dug to 14 inches did not present any indicators of hydric soils. Since only one of three wetland indicators was met, the point is not a USACE wetland. The site has an OHWM and is connected to RPW, so the site is a USACE non-wetland Waters of the U.S.

Connection to Navigable Water

This stream is a perennial non-wetland WUS (RPW) which is tributary to the Santa Ana River (RPW), which is tributary to the Pacific Ocean (TNW). This connectivity provides a nexus for regulation of the non-wetland WUS by the USACE.

Jurisdictional Limits

Descriptions of onsite jurisdictional limits are provided below, and are mapped on Figures 3 and 4 (Appendix A).

U.S. Army Corps of Engineers Jurisdictional Limits

The streambed constitutes USACE jurisdictional non-wetland Waters of the U.S. The low-flow streambed varies from approximately 10 to 14 feet in width at the base of the channel, and the jurisdictional streambed channel (OHWM at top of bank) averages 25 feet in width. The linear distance along the flowline between the two culverts is approximately 650 feet. The total area of jurisdictional non-wetland WUS within the OHWM of the survey area is 0.377 acre.

Regional Water Quality Control Board Jurisdictional Limits

This streambed has an OHWM and connectivity to RPW, so the limits of RWQCB jurisdiction equal the limits of USACE jurisdiction. The total area of jurisdictional RWQCB Waters of the State within the survey area is 0.377 acre.

California Department of Fish and Game Jurisdictional Limits

CDFG jurisdictional limits extend beyond the OHWM and top of bank to the limits of associated riparian habitat. Jurisdictional limits onsite includes riparian associated southern willow scrub and disturbed southern willow scrub.

Southern willow scrub onsite is dominated by willows (*Salix gooddingii* and *S. lasiolepis*) and cottonwoods. The willows average 15 to 25 feet tall with trunk width (diameter at breast height) of 4 to 8 inches. Cottonwoods average 20 to 30 feet tall. The limits of southern willow scrub are regarded as CDFG jurisdiction, with 0.476 acre of southern willow scrub onsite.

Disturbed Southern Willow Scrub onsite consists of southern willow scrub (as described above) which has been invaded by exotic trees including edible fig (*Ficus carica*), Mexican fan palm (*Washingtonia robusta*), and salt-cedar (*Tamarix ramossissima*). The limits of disturbed southern willow scrub are regarded as CDFG jurisdiction and 0.115 acre occurs onsite.

CDFG jurisdictional State streambed totals 0.591 acre.

IMPACTS

The proposed project entails improvements to establish a channel configuration and reinforcement consistent with the original design plans. Construction is expected to require complete removal of the existing vegetation along the north/east bank and the channel bottom. Upon completion of construction, soil cover will be reestablished over the channel bottom and riparian vegetation will be allowed to reestablish naturally. To ensure stability of the banks at the foot of the retaining walls, the north and east banks will be regularly maintained to clear any vegetation.

Based upon construction limits encompassing the entire channel bottom and north/east bank, the proposed project would temporarily impact approximately 0.25 acre of the 0.4 acre of USACE jurisdictional non-wetland WUS and RWQCB jurisdictional WS present onsite. Considering natural reestablishment of riparian cover on the channel bottom, permanent impacts would be approximately 0.1 acre.

The project would temporarily impact approximately 0.4 acre of the 0.6 acre of CDFG jurisdictional resources present onsite. Considering natural reestablishment of riparian cover on the channel bottom, permanent impacts would be approximately 0.2 acres.

Impacts to riparian/riverine resources that adversely affect covered animal species are subject to a process under the MSHCP that documents offset of impacts (Determination of Biologically Equivalent or Superior Preservation, or DBESP). The DBESP is subject to review by the local permittee and concurrence by the USFWS and the CDFG. At this juncture a determination as to whether the project will be subject to formal compliance with the MSHCP is pending ongoing coordination with the City of Riverside regarding the need for discretionary action by the City. While the University is not a local permittee and is not subject to formal compliance with the riparian/riverine policies under the MSHCP, consistency with the MSHCP is addressed in conjunction with California Environmental Quality Act documentation for campus projects. The campus has identified the Riverside County Parks and Open Space District mitigation bank for riparian enhancement in the Santa Ana River as the mitigation vehicle for the proposed improvements, including replacement mitigation for the previously-issued regulatory permits for the Creekside Terrace development.

Chapter 5

References

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Appendix A

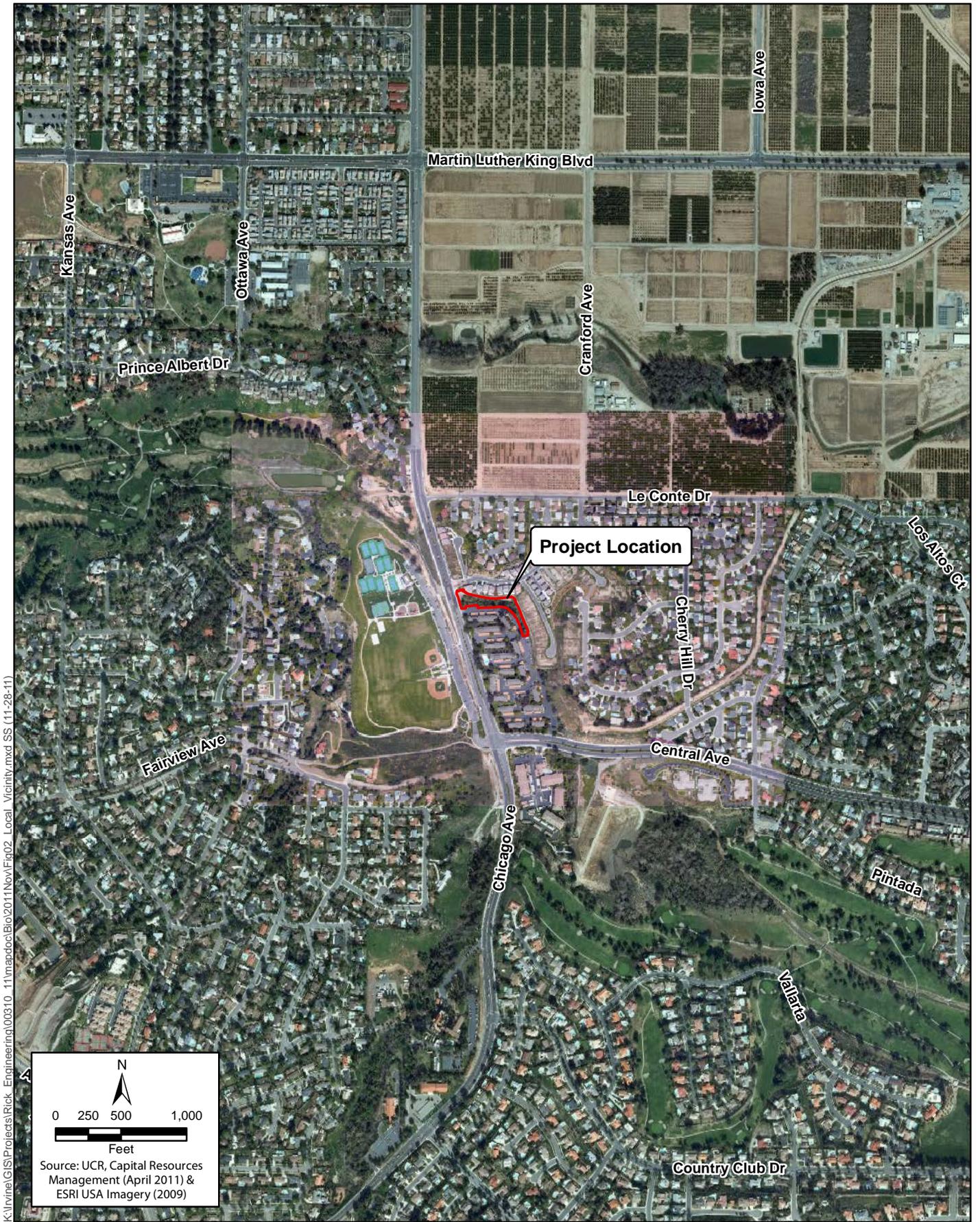
Figures



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Figure 1
Regional Vicinity Map
UCR Creekside Terrace Slope Protection Project



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Figure 2
Local Vicinity Map
UCR Creekside Terrace Slope Protection Project



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Figure 3
USACE Jurisdictional Features and Impacts
UCR Creekside Terrace Slope Protection Project



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Figure 4
CDFG Jurisdictional Features
UCR Creekside Terrace Slope Protection Project

Appendix B
Data Form

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: UCR Creekside Terrace City/County: Riverside Sampling Date: 5/2/2011
 Applicant/Owner: UC, Riverside State: CA Sampling Point: 1
 Investigator(s): Dale Ritenour, Paul Schwartz Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): slope Local relief (concave, convex, none): drainage Slope (%): 2
 Subregion (LRR): _____ Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: HcC, TeG NWI classification: not hydric

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? N Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? N (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 <input checked="" type="checkbox"/> Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Remarks: _____	

VEGETATION

Tree Stratum (Use scientific names.) ^{30"}	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. <u>Populus fremontii</u>	<u>25</u>	<u>Y</u>	<u>FAC</u>	Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A)
2. <u>Salix gooddingii</u>	<u>20</u>	<u>Y</u>	<u>FACW</u>	Total Number of Dominant Species Across All Strata: <u>6</u> (B)
3. <u>Tamarix remossissima</u>	<u>5</u>	<u>N</u>	<u>FAC</u>	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50</u> (A/B)
4. _____				
Total Cover: <u>50</u>				
Sapling/Shrub Stratum ^{15"}	Absolute % Cover	Dominant Species?	Indicator Status	Prevalence Index worksheet:
1. <u>Typha latifolia</u>	<u>40</u>	<u>Y</u>	<u>OBL</u>	Total % Cover of: _____ Multiply by: _____
2. <u>Ricinus communis</u>	<u>2</u>	<u>N</u>	<u>FACU</u>	OBL species <u>40</u> x 1 = <u>40</u>
3. <u>Urtica dioica</u>	<u>5</u>	<u>N</u>	<u>FACW</u>	FACW species <u>20</u> x 2 = <u>40</u>
4. _____				FAC species <u>25</u> x 3 = <u>75</u>
5. _____				FACU species <u>12</u> x 4 = <u>48</u>
Total Cover: <u>47</u>				UPL species <u>20</u> x 5 = <u>100</u>
				Column Totals: <u>117</u> (A) <u>303</u> (B)
				Prevalence Index = B/A = <u>2.59</u>
Herb Stratum ^{"s"}	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Indicators:
1. <u>Nasturium off. (Rorippa)</u>	<u>8</u>	<u>N</u>	<u>OBL</u>	<input checked="" type="checkbox"/> Dominance Test is >50%
2. <u>Piptatherum milliaceum</u>	<u>10</u>	<u>Y</u>	<u>UPL</u>	<input checked="" type="checkbox"/> Prevalence Index is ≤3.0 ¹
3. <u>Ricinus communis</u>	<u>12</u>	<u>Y</u>	<u>FACU</u>	____ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
4. <u>Bromus diandrus</u>	<u>10</u>	<u>Y</u>	<u>UPL</u>	____ Problematic Hydrophytic Vegetation ¹ (Explain)
5. <u>Bromus madritensis</u>	<u>5</u>	<u>N</u>	<u>UPL</u>	
6. _____				
7. _____				
8. _____				
Total Cover: <u>45</u>				
Woody Vine Stratum	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Present?
1. _____				Yes _____ No <input checked="" type="checkbox"/>
2. _____				
Total Cover: _____				
% Bare Ground in Herb Stratum _____	% Cover of Biotic Crust _____			
Remarks: _____				

SOIL

Sampling Point: 1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-12	10 yr 3/2	100						
12-14	2.5 yr 3/1	100						

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix. ²Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

<p>Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)</p> <ul style="list-style-type: none"> <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) (LRR C) <input type="checkbox"/> 1 cm Muck (A9) (LRR D) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> Sandy Gleyed Matrix (S4) 	<ul style="list-style-type: none"> <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Vernal Pools (F9) 	<p>Indicators for Problematic Hydric Soils³:</p> <ul style="list-style-type: none"> <input type="checkbox"/> 1 cm Muck (A9) (LRR C) <input type="checkbox"/> 2 cm Muck (A10) (LRR B) <input type="checkbox"/> Reduced Vertic (F18) <input type="checkbox"/> Red Parent Material (TF2) <input type="checkbox"/> Other (Explain in Remarks)
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³Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):
 Type: _____
 Depth (inches): _____

Hydric Soil Present? Yes _____ No N

Remarks:

HYDROLOGY

<p>Wetland Hydrology Indicators:</p> <p><u>Primary Indicators (any one indicator is sufficient)</u></p> <ul style="list-style-type: none"> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) (Nonriverine) <input type="checkbox"/> Sediment Deposits (B2) (Nonriverine) <input type="checkbox"/> Drift Deposits (B3) (Nonriverine) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9) 	<ul style="list-style-type: none"> <input type="checkbox"/> Salt Crust (B11) <input type="checkbox"/> Biotic Crust (B12) <input type="checkbox"/> Aquatic Invertebrates (B13) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Plowed Soils (C6) <input type="checkbox"/> Other (Explain in Remarks) 	<p><u>Secondary Indicators (2 or more required)</u></p> <ul style="list-style-type: none"> <input type="checkbox"/> Water Marks (B1) (Riverine) <input checked="" type="checkbox"/> Sediment Deposits (B2) (Riverine) <input checked="" type="checkbox"/> Drift Deposits (B3) (Riverine) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5)
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Field Observations:

Surface Water Present? Yes _____ No _____ Depth (inches): _____

Water Table Present? Yes _____ No _____ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No _____ Depth (inches): _____

Wetland Hydrology Present? Yes Y No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Surface water within 2' but no saturation within pit.

Appendix C

Feature Photographs



Photograph 1 Overview of the west side of the project site from gate at Chicago Avenue. Looking East



Photograph 2 Overview of the east side of the Project from the southeast corner. Looking North.



Photograph 3 Sample point 1 beside the stream.



Photograph 4 Undercutting of slope by stream flows along eastern bank, immediately adjacent to retaining wall.



Photograph 5 Typical streamside riparian habitat. Area dominated by willows (*Salix* spp.) with exotic castor bean (*Ricinus communis*) and Mexican fan palm (*Washingtonia robusta*) in understory. Located near center of site.

Appendix H

Noise Impact Analysis Technical Memorandum



Technical Memorandum Noise Impact Analysis

Date:	May 7, 2013
To:	Kathleen Dale, Debra Leight
From:	Jason Volk
Subject:	UCR Creekside Terrace Project noise Analysis

This memorandum provides an analysis of construction noise resulting from implementation of the UCR Creekside Terrace Slope Protection project (Project, or proposed project).

Noise Terminology

The following are brief definitions of noise terminology used in this evaluation:

Sound. A vibratory disturbance created by a vibrating object, which, when transmitted by pressure waves through a medium such as air, is capable of being detected by a receiving mechanism, such as the human ear or a microphone.

Noise. Sound that is loud, unpleasant, unexpected, or otherwise undesirable.

Decibel (dB). A unitless measure of sound on a logarithmic scale, which indicates the squared ratio of sound pressure amplitude to a reference sound pressure amplitude. The reference pressure is 20 micropascals.

A-Weighted Decibel (dBA). An overall frequency-weighted sound level in decibels, which approximates the frequency response of the human ear.

Equivalent Sound Level (L_{eq}). The average of sound energy occurring over a specified period. In effect, L_{eq} is the steady-state sound level that in a stated period would contain the same acoustical energy as the time-varying sound that occurs during the same period.

Maximum Sound Level (L_{max}). The maximum sound level measured during a measurement period.

In general, humans commonly hear a sound level increase of 3 dB as a perceptible increase in noise. Sound level increases of less than 3 dB are generally not noticeable. An increase of 5 dB is clearly noticeable, and an increase of 10 dB is perceived as twice as loud.

Existing Conditions

The existing noise environment in the project area is characteristic of a densely populated suburban environment (e.g., local traffic, aircraft overflights) with noise levels typically in the range of 50–60 dBA (Cowan 1984; Hoover and Keith 2000). Noise measurements were not conducted as part of this study.

Noise-Sensitive Land Uses

The northern boundary of the Project site adjoins the University-owned Creekside Terrace residential subdivision. The homes and yard areas sit atop a massive retaining wall at elevations approximately 20 to 40 feet above the ground elevation of the creek site.

There is a complex of apartment residences along the southern boundary of the project site. The nearest building façade is about 60 feet away. The apartment building is surrounded by an asphalt parking lot, and outdoor use areas are located behind apartment building structures relative to the project site.

The City of Riverside Andulka Park is located about 225 feet away from the project site across the four lanes of Chicago Avenue to the west, and includes outdoor recreational uses such as multi-use playing fields, playground and picnic areas, basketball courts and tennis courts.

Regulatory Setting

The project site is located within the City of Riverside. Applicable noise guidelines are provided in the City of Riverside Municipal Code and the General Plan EIR.

Riverside Municipal Code

Section 7.35.010(B)(5) of the Municipal Code governs construction noise, stating that construction noise under the following conditions would result in excessive noise in violation of the section: *“Operating or causing the operation of any tools or equipment used in construction, drilling, repair, alteration, grading or demolition work between the hours of 7:00 p.m. and 7:00 a.m. on weekdays and between 5 p.m. and 8 a.m. on Saturdays or at any time on Sunday or federal holidays such that the sound therefrom creates a noise disturbance across a residential or commercial property line or at any time exceeds the maximum permitted noise level for the underlying land use category, except for emergency work or by variance.”* On this basis, noise emanating from construction activity adhering to construction hours of 7:00 a.m. to 7:00 p.m. on weekdays, and 8:00 am to 5:00 p.m. on Saturdays is not considered excessive or in violation of the Municipal Code.

Chapter 7.25 of the City Municipal Code establishes exterior and interior performance standards for residential properties. During the daytime (7 a.m. to 10 p.m.), the noise level standard is 55 dBA $L_{eq(1h)}$ for exterior use areas and 45 dBA $L_{eq(1h)}$ for interior locations. During nighttime hours (10 p.m. to 7 a.m.) these limits are lowered to 45 dBA $L_{eq(1h)}$ for exterior use areas and 35 dBA $L_{eq(1h)}$ for

interior locations. Section 7.25.010 further defines a series of time periods for which the noise standard may be exceeded without violating the ordinance – ranging from 15 minutes per hour for noise exceeding the performance standard by 5 decibels to one minute for noise levels exceeding the performance standard by 15 decibels. An exceedance of 20 decibels or more for any duration is considered a violation. Since construction noise during certain hours of the day is not considered to be in violation of the Municipal Code, these noise limits apply to construction noise between the hours of 7 p.m. and 7 a.m. on weekdays, between the hours of 5 p.m. and 8 a.m. on Saturdays, and all day on Sundays and federal holidays.

Section 7.40.010 of the code defines a procedure for variances from noise limits described in the section: *“The Zoning Administrator is authorized to grant variances for exemption from any provision of this title, and may limit area of applicability, noise levels, time limits, and other terms and conditions determined appropriate to protect the public health, safety, and welfare. The provisions of this section shall in no way affect the duty to obtain any permit or license required by law for such activities.”*

Riverside General Plan EIR

The City General Plan EIR findings conclude that enforcement of the Municipal Code provisions for noise emanating from construction activities would lessen noise impacts to below a level of significance. In circumstances where construction activity cannot adhere to the “non-nuisance” hours specified in the Municipal Code, the Mitigation Monitoring and Reporting Program for the General Plan EIR (Mitigation Measure Noise 4) specifies that additional measures shall be applied, to the extent feasible, to reduce noise impacts to sensitive receptors. These measures may include locating nighttime work as far away as possible from noise-sensitive receptors, limiting the duration of work during variance periods, and ensuring equipment is fitted with mufflers (City of Riverside 2007b, pages 33 and 34).

Projected Construction Noise Levels

Mobile Construction Equipment

Construction noise sources at the Project site will include a small-format excavator and loader for the immediate creek access and typical on-road delivery trucks at the access point on the road edge. The loudest equipment type specified for the project is a truck (assumed rating of 201-400 hp), which typically produces a maximum sound level of 86 dBA at 50 feet. Small excavator/loaders (assumed rating of 40-115 hp) typically produce a maximum sound level of 80 dBA at 50 feet (Hoover and Keith 2000). Accounting for typical equipment utilization factors (i.e. each piece of would typically equipment operates for 40% of a given hour) (Thalheimer 2000), the predicted combined sound level of the equipment operating simultaneously is 83 dBA $L_{eq}(1\text{ hr})$ at 50 feet. This provides a reasonable worst-case estimate of the operating construction noise levels anticipated to occur at the project site.

Construction noise levels at exterior locations adjacent to the apartment buildings to the south are predicted to be up to 79 dBA $L_{eq(1\text{ hr})}$ at a distance of 75 feet from the source. Noise levels at exterior locations of adjacent residential properties in the Creekside Terrace subdivision would be acoustically shielded from noise at the Project site by the shielding effect of the elevation differential, with predicted noise levels of about 70 dBA $L_{eq(1\text{ hr})}$ at exterior use locations (about 50 to 75 feet away, assuming attenuation of 5 to 12 dB depending on receptor line-of-sight to operating construction equipment). Construction noise levels at Andulka Park would be up to 66 dBA $L_{eq(1\text{ hr})}$ at locations nearest to the Project site, but in most outdoor use locations in the park construction noise would be overshadowed by noise from traffic on Chicago Avenue.

Stationary Equipment

For project site dewatering and temporary diversion of drainage flows within the construction area, it is assumed that a generator-driven pump will operate continuously (24 hours a day, 7 days a week) during project construction. Actual equipment types for the Project have not been specified. This analysis is based upon typical noise levels for generators (81 dBA) and pumps (76 dBA), based on FTA guidance (Federal Transit Administration 2006). The combined sound level of the generator and pump operating simultaneously would be 82 dBA $L_{eq(1\text{ hr})}$ at 50 feet.

The location of the generator and pump is assumed to be at the upstream limits of the Project site. The nearest apartments would be about 50 feet away from the noise source, and noise levels from the generator and pump would be up to 82 dBA $L_{eq(1\text{h})}$ at exterior locations. Creekside Terrace residences would be 200 to 300 feet away from the noise source and noise levels from the generator and pump would be up to 66 dBA $L_{eq(1\text{h})}$ at exterior locations.

Interior building spaces would also be affected. Assuming 25 dB of exterior-to-interior noise reduction, interior noise levels could be as high as about 57 dBA at adjacent apartment units, and 41 dBA at residences in Creekside Terrace. Residential interior sound levels exceeding the City nighttime standard of 35 dBA $L_{eq(1\text{h})}$ could potentially result in sleep disturbance during nighttime hours (Nelson 1987).

Recommendations

The following mitigation measures are recommended to conform to City standards for construction hours and nighttime noise levels. Implementation of these measures would reduce noise impacts to a less than significant level.

Mitigation Measure NOI-1: Restrict Construction Hours

The University will ensure that the construction contract limits construction activities to occurring between 7:00 a.m. and 7:00 p.m. Monday through Friday and 8 a.m and 5 p.m. on Saturday. Construction will not be allowed on Sunday or Federal holidays. This project is anticipated to

require diversion of stream flows for the duration of construction. Operation of stationary equipment outside of these hours for the diversion is addressed in Mitigation Measure NOI-2.

Mitigation Measure NOI-2: Attenuation for diversion pump and generator

The University will ensure construction contracts specify that any generator or diversion pump will be equipped with mufflers, silencers, shrouds, shields or other noise reducing features so as to achieve a maximum exterior operational noise level not exceeding 45 dBA (one-hour L_{eq}) at exterior locations of nearby noise-sensitive land uses. Measures that can be implemented to achieve this include but are not limited to:

- enclosing equipment in solid wall structures;
- using low-noise equipment,
- placing sound barriers (earth berms or constructed barriers) around equipment

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