Appendix F
Cultural Resources Survey and Inventory for the Upper Santa Ana River Restoration Project, Riverside County, California

CULTURAL RESOURCES SURVEY AND INVENTORY FOR THE UPPER SANTA ANA RIVER TRIBUTARIES RESTORATION PROJECT, RIVERSIDE COUNTY, CALIFORNIA

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Acronyms and Abbreviations

ACS	Archaeological Consulting Services
APE	Area of Potential Effects
ATP	Archaeological Treatment Plan
CCR	California Code of Regulations
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CRHR	California Register of Historical Resources
DPR	Department of Parks and Recreation
EIC	Eastern Information Center
ESA	Environmentally Sensitive Area
GPS	global positioning system
NAGPRA	Native American Graves Protection and Repatriation Act
NAHC	Native American Heritage Commission
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NRHP	National Register of Historic Places
PRC	Public Resources Code
SHPO	State Historic Preservation Officer
SVP	Society of Vertebrate Paleontology
Upper SAR HCP	Upper Santa Ana River Habitat Conservation Plan
USC	United States Code
Valley District	San Bernardino Valley Municipal Water District

Executive Summary

ICF was retained by the San Bernardino Valley Municipal Water District (Valley District) to perform a Phase I cultural resources inventory and evaluation and paleontological study in support of the Upper Santa Ana River Tributaries Restoration Project. Valley District, as the lead agency, is proposing the Upper Santa Ana River Tributaries Restoration Project and Mitigation Reserve Program (proposed project) in the cities of Riverside and Jurupa Valley and in Riverside County. The proposed project has two components that would be implemented by Valley District: the four Santa Ana River tributaries restoration and a Mitigation Reserve Program. Valley District has identified conservation measures to improve existing conditions for endangered and threatened species along the Santa Ana River and offset future potential impacts. To initiate implementation of these conservation measures, Valley District proposes the development of four restoration sites and a Mitigation Reserve Program along the Santa Ana River in Riverside County.

The restoration sites, from east to west, are Anza Creek, Old Ranch Creek, Lower Hole Creek, and Hidden Valley Creek. The proposed Tributaries Restoration Project would improve the ecological condition of habitat for endangered and/or threatened species and jurisdictional aquatic resources by restoring existing channels, creating new channels, restoring the associated floodplain, enhancing the existing riparian and floodplain habitats, and controlling nonnative invasive species. The proposed Tributaries Restoration Project would also provide support for the existing local community environmental education and recreational opportunities. The proposed project would also include implementation of a Mitigation Reserve Program at each of the project sites to implement additional restoration opportunities that have been preliminarily identified and could be constructed once funding for these opportunities is secured.

The project components include four Tributaries Restoration Project sites, a Mitigation Reserve Program, and associated access routes and staging areas along the Santa Ana River, totaling approximately 470 acres. The study was prepared to support Valley District, the lead agency under the California Environmental Quality Act (CEQA), in preparation of an environmental impact report for the proposed project. Additionally, because of a federal nexus for regulatory permits, the study is subject to Section 106 of the National Historic Preservation Act, which requires Valley District to evaluate resources within the project study area, evaluate any identified cultural resources that have not been evaluated previously, and provide management recommendations regarding any significant or potentially significant cultural and/or paleontological resources within the project Area of Potential Effects (APE). To accomplish this objective, ICF cultural resources personnel performed a paleontological record search, a cultural resources records search, archival research, a Sacred Lands File search, Native American consultation, and a pedestrian survey within the restoration sites. The Valley District conducted Native American consultation under Assembly Bill 52. This report summarizes the results of the cultural and paleontological resources studies, reviews potential impacts on resources, and proposes management recommendations for cultural and paleontological resources identified in the project sites.

A Sacred Lands File search was initiated on July 26, 2018. The cultural resources records search was conducted on July 17, 2018 at the Eastern Information Center at the University of California, Riverside. The pedestrian surveys were conducted on August 22–23, 27–29, and February 22, 2018.

The cultural resources records search indicates that a total of 55 cultural resources studies have been conducted within the 0.5-mile radius of the proposed project, 11 of which included a portion of

the project Tributaries Restoration Project and Mitigation Reserve Program project APEs. The results of the records search indicate that 47 previously recorded resources are located within 0.5 mile of the proposed project area and 12 of these are located within the project APEs. Two new isolated artifacts were identified during the pedestrian survey, and no new archaeological sites were discovered.

A Sacred Lands File search requested from the Native American Heritage Commission (NAHC) on July 26, 2018, revealed no Sacred Lands or traditional cultural properties in proximity to the proposed project area.

On April 25, 2018, Valley District sent out Assembly Bill 52 letters to three Native American representatives to assess recommendations or concerns regarding the project. Letters were sent to Raymond Huaute representing the Morongo Band of Mission Indians, Jessica Mauck representing the San Manuel Band of Mission Indians, and Andrew Salas representing the Gabrieleño Band of Mission Indians – Kizh Nation. Mr. Raymond Huaute and Mr. Travis Armstrong responded for the Morongo Band of Mission Indians, and Ms. Jessica Mauck responded for San Manuel Band of Mission Indians. Mr. Andrew Salas of the Gabrieleño Band of Mission Indians – Kizh Nation did not respond.

On May 1, 2018, Ms. Jessica Mauck, a Cultural Resources Analyst representing the San Manuel Band of Mission Indians, responded stating that the project area is outside of the Serrano ancestral territory and, as such, did not request consulting party status or elect to participate in the project any further.

On May 9, 2018, Mr. Raymond Huaute, Tribal Historic Preservation Officer for Morongo Band of Mission Indians, responded to Valley District's request for consultation. Mr. Huaute stated that "the project is located within the Tribe's aboriginal territory or in an area considered to be a traditional use area or one in which the Tribe has cultural ties." Additionally, Mr. Huaute requested that a records search be conducted at the California Historical Resources Information System Information Center, that the results be provided to the tribe, and that tribal monitoring participation be considered during the initial pedestrian field survey of the Phase I study of the project. Mr. Huaute also requested a copy of the results of that study.

Consultation meetings were also held with Mr. Travis Armstrong, Consulting Archaeologist with the Morongo Band of Mission Indians, and ICF, on two separate occasions: June 21, 2018, and August 21, 2018. Mr. Armstrong described archaeological site P-33-000884 as a pictograph site that had been vandalized with spray-painted graffiti within the project area. He stated that the pictographs were barely visible due to the damage from vandals. Mr. Armstrong provided a photograph of the feature that had been processed using DStretch®.[1] The processed image did show some red markings, but a pattern or image could not be discerned (see Appendix B). He emphasized the importance of this resource and requested he be notified of field surveys.

Mr. Armstrong later spoke with ICF Principal Investigator Benjamin Vargas, MA, RPA, and also discussed the damage that had been done to the site and provided some ideas for how to protect the site from further damage. Mr. Armstrong suggested the planting of poison oak or some other type of vegetation that would keep people away from the feature. Mr. Armstrong also recommended further consultation to discuss potential measures for protecting the site and possibly restoring the pictographs. Mr. Armstrong also discussed that he had tried to visit other resources in the vicinity, but that a significant number of homeless people live in the area and that the area was overgrown

[1] DStretch is a tool for rock art researchers to enhance images of pictographs using a digital camera.

with brush. These impediments curtailed his ability to visit the sites. Mr. Armstrong also requested that he be informed when cultural resources surveys were to take place. Mr. Armstrong was contacted prior to conducting the surveys, but he declined to join due to other commitments. Other than consultation with Mr. Armstrong representing Morongo Band of Mission Indians, Mr. Huaute representing Morongo Band of Mission Indians, and Ms. Mauck representing San Manuel Band of Mission Indians, no other Native American individuals or tribes responded to requests for consultation by Valley District. As of the time of this report, no other responses have been received by Valley District or otherwise.

ICF found that the proposed Tributaries Restoration Project and Mitigation Reserve Program project components have the potential to affect all 12 of the archaeological sites in their project APEs. The Tributaries Restoration Project would potentially affect seven sites (P-33-000622, P-33-00884, P-33-009652, P-33-003357, P-33-008839, P-33-009651, and P-33-016848). The impacts associated with the Mitigation Reserve Program are unknown at this time, but have the potential to affect all 12 of the sites within its APE (P-33-000127, P-33-000325, P-33-000621, P-33-000622, P-33-00884, P-33-009652, P-33-003357, P-33-003361, P-33-008698, P-33-008839, P-33-009651, P-33-009652, and P-33-016848). Four of the sites that would be affected have not been formally evaluated, two sites are recommended as eligible, and six sites and two isolates are recommended as ineligible for inclusion in the CRHR and NRHP. Two isolated artifacts would potentially be affected, but are not recommended eligible for inclusion in either the California Register of Historical Resources (CRHR) or National Register of Historic Places (NRHP).

On August 2, 2018, the Natural History Museum of Los Angeles County conducted a paleontological search of the project area. The search revealed that no fossils have been recorded within the boundaries of the proposed Tributaries Restoration Project and Mitigation Reserve Program project APEs. Most of the project APEs are underlain by younger Quaternary deposits, which contain a low sensitivity for paleontological resources. However, the western margins of the Lower Hole Creek restoration area and the southernmost portion of the Anza Creek restoration area contain elevated paleontological sensitivity. Paleontological monitoring is recommended for ground-disturbing activities within the western portion of the Anza Creek/Old Ranch Creek restoration area and the western portion of the Lower Hole Creek restoration area where grading activities would be conducted along hillslopes and would affect older Quaternary deposits.

The following avoidance and mitigation measures are recommended to ensure that significant impacts on archaeological and paleontological resources are mitigated during project implementation.

Retain a Qualified Archaeologist and a Qualified Paleontologist: The applicant should retain a qualified archaeologist defined as an archaeologist who meets the Secretary of the Interior's Standards for professional archaeology to carry out all mitigation measures related to archaeological and historical resources. The applicant should retain a qualified paleontologist defined as a paleontologist who meets the requirements as a Principal Investigator, Project Paleontologist per the guidelines of the Society of Vertebrate Paleontology.

Avoidance through Establishment of Environmentally Sensitive Areas (ESAs): Avoidance is always the preferred method of treatment for archaeological sites. Impacts on cultural resources can be avoided through establishing fencing around cultural resources with a buffer and delineating these locations as ESAs. Worker training should include language to the effect that ESAs must be

avoided and cannot be entered on foot or with heavy equipment. Signage indicating the fenced area is an ESA is recommended.

Development and Implementation of an Archaeological Treatment Plan (ATP): For unevaluated archaeological sites, it is often important to understand whether or not a subsurface component exists. To properly evaluate such properties, an ATP should be developed that describes methods and procedures for conducting subsurface excavations to determine the vertical and horizontal extents of an archaeological site. Implementation of such a plan can include mechanical and/or manual excavations to provide data on the cultural constituents at the site and the depositional context of such materials (if found to exist). These data can be used to determine the integrity of the site and to make a formal evaluation based on the eligibility criteria set forth in CEQA and Section 106 of the National Historic Preservation Act for inclusion in the CRHR and NRHP. The ATP will define the parameters of archaeological testing at the site, and the extent of excavation and analysis of any materials recovered. The ATP will also include guidelines for treatment and curation of any materials recovered during the testing process. Subsequent to implementation of the ATP, a technical report describing the methods and results of archaeological testing and formal evaluations of the archaeological sites and recommendations for further treatment will be completed. The ATP should be approved by the lead agency and should involve consultation and review by interested Native American groups.

Preconstruction Worker Training: Prior to the commencement of restoration activities, at the project kickoff, the selected qualified archaeologist and paleontologist or their designee will provide a briefing to construction personnel to provide information on regulatory requirements for the protection of cultural resources. As part of this training, construction personnel will be briefed on proper procedures to follow should unanticipated cultural resources discoveries be made during construction. Workers will be provided contact information and protocols to follow in the event that unanticipated discoveries are made. Additionally, workers will be shown examples of the types of cultural resources that would require notification of the project archaeologist or paleontologist. If necessary, the project archaeologist or paleontologist can create a training video, PowerPoint presentation, or printed literature that can be shown to new workers and contractors to avoid continuous in-person training throughout the life of the project.

Provide Archaeological and Native American Monitors: If avoidance is not feasible, and project-related ground disturbance is anticipated to occur at archaeological sites identified above, it is recommended that an archaeologist be present to monitor the activity. If ground-disturbing activities are to proceed at prehistoric archaeological sites, it is recommended that a Native American monitor be retained in addition to an archaeological monitor. As part of the archaeological monitoring program, a preconstruction worker training briefing should be provided by a qualified archaeologist. Prior to the commencement of restoration activities, at the project kickoff, the selected qualified archaeologist will provide a briefing to construction personnel to provide information on regulatory requirements for the protection of cultural resources. As part of this training, construction personnel will be briefed on proper procedures to follow should unanticipated cultural resources discoveries be made during construction. Workers will be provided contact information and protocols to follow if unanticipated discoveries are made. Additionally, workers will be shown examples of the types of cultural resources that would require notification of the project archaeologist or paleontologist.

The Native American monitor should be affiliated with a local Native American tribe. If project-related ground-disturbing activities in archaeologically sensitive areas are performed

simultaneously in more than one location, and these activities are performed at a distance greater than 300 feet apart, an archaeological monitor should be present at each location. At a minimum, the archaeological monitor will meet the Society for California Archaeology professional qualification standards for an archaeological crew leader, and will work under the direction of an individual that meets the Secretary of the Interior's Standards and Guidelines for Archaeology and the Society for California Archaeology professional qualification standards for a Principal Investigator.

The archaeological monitor will have the authority to temporarily pause excavations, as needed, to examine potential archaeological discoveries. In the event of an unanticipated discovery of archaeological resources or human remains, the archaeological monitor will follow the unanticipated discovery protocols described below.

Unanticipated Discoveries: If an isolated artifact or archaeological deposit is discovered that requires salvaging, the qualified archaeologist shall have the authority to temporarily halt construction activities within 100 feet of the find and shall be given sufficient time to recover the item(s) and map its location with a global positioning system device. If buried cultural resources are discovered inadvertently during ground-disturbing activities, work should be temporarily halted in the area and within 100 feet of the find until a qualified archaeologist can assess the significance of the find and, if necessary, develop appropriate treatment measures in consultation with the lead agency. If the find is prehistoric or Native American in origin, consultation with local Native American tribes who have expressed interest and concern regarding the project should be undertaken.

If the discovery is determined to be not significant in consultation with the lead agency, work will be permitted to continue in the area. If, in consultation with the lead agency, a discovery is determined to be significant, a mitigation plan should be prepared and carried out in accordance with state and federal guidelines. If the resource cannot be avoided, a data recovery plan should be developed to ensure collection of sufficient information to address archaeological and historical research questions, with results presented in a technical report describing field methods, materials collected, and conclusions. The qualified archaeologist shall treat recovered items in accordance with current professional standards by properly determining provenance, cleaning, analyzing, researching, reporting, and curating them in a collection facility meeting the Secretary of the Interior's Standards as promulgated in 36 Code of Federal Regulations 79.

Human Remains and Associated or Unassociated Funerary Objects: The discovery of human remains is always a possibility during ground-disturbing activities. If human remains are found, the State of California Health and Safety Code Section 7050.5 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. 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 Native American Heritage Commission, which will determine and notify a most likely descendant. The most likely descendant shall complete the inspection of the site within 48 hours of notification and may recommend scientific removal and nondestructive analysis of human remains and items associated with Native American burials.

Provide a Paleontological Monitor: Paleontological monitoring is recommended for ground-disturbing activities within the western portion of the Anza Creek/Old Ranch Creek restoration area and the western portion of the Lower Hole Creek restoration area where grading activities would be conducted along hillslopes and would affect older Quaternary deposits. Paleontological monitoring

would be conducted to avoid significant impacts on potential paleontological resources and to recover significant paleontological resources should they be identified during monitoring. Paleontological monitoring should be conducted by a paleontological monitor that meets the qualifications set forth by the Society of Vertebrate Paleontology as a Paleontological Resource Monitor. Oversight of paleontological monitoring and recovery of any fossils should be conducted by a professional paleontologist that meets the requirements as a Principal Investigator, Project Paleontologist per the guidelines of the Society of Vertebrate Paleontology. Paleontological monitoring should be conducted for ground-disturbing activities conducted along the southern margins of the Anza Creek restoration area at depths of 9 feet below the ground surface or deeper. Paleontological monitoring should also be conducted for excavations in the Lower Hole Creek restoration area at all depths, as surface deposits contain older Quaternary Alluvium, which is known to contain fossils (McLeod 2018).

Table 1. Cultural Resources Identified in the Proposed Tributaries Restoration Project and Mitigation Reserve Program Project APEs

Primary Number/ Trinomial	Project Location: Mitigation Reserve Program (MRP); Tributaries Restoration Project (TRP)	Eligibility Recommendations for Inclusion on CRHR and NRHP	Recommended Measures
P-33-000127 CA-RIV-127	MRP	Appears eligible; unevaluated	Retain a qualified archaeologist; Establish an ESA; if avoidance is not feasible, provide archaeological and Native American monitoring; Unanticipated discoveries protocol
P-33-000325 CA-RIV-325	MRP	Recommended ineligible	Retain a qualified archaeologist; Unanticipated discoveries protocol
P-33-000621 CA-RIV-621	MRP	Unevaluated	Retain a qualified archaeologist; Establish an ESA; if avoidance is not feasible, develop and implement ATP
P-33-000622 CA-RIV-622	MRP and TRP	Unevaluated	Retain a qualified archaeologist; Establish an ESA; if avoidance is not feasible, develop and implement ATP
P-33-000884 CA-RIV-884	MRP and TRP	Recommended eligible	Retain a qualified archaeologist; Establish an ESA; if avoidance is not feasible, provide archaeological and Native American monitoring; Unanticipated discoveries protocol
P-33-003357 CA-RIV-3357H	MRP and TRP	Recommended ineligible	Retain a qualified archaeologist; Unanticipated discoveries protocol
P-33-003361 CA-RIV-3361H	MRP	Recommended eligible	Retain a qualified archaeologist/ architectural historian; Establish an ESA
P-33-008698	MRP	Recommended ineligible	Retain a qualified archaeologist; Unanticipated discoveries protocol
P-33-008839	MRP and TRP	Recommended ineligible	Retain a qualified archaeologist; Unanticipated discoveries protocol

Primary Number/ Trinomial	Project Location: Mitigation Reserve Program (MRP); Tributaries Restoration Project (TRP)	Eligibility Recommendations for Inclusion on CRHR and NRHP	Recommended Measures
P-33-009651	MRP and TRP	Recommended ineligible	Retain a qualified archaeologist; Unanticipated discoveries protocol
P-33-009652 CA-RIV-6452	MRP and TRP	Unevaluated	Retain a qualified archaeologist; Establish an ESA; if avoidance is not feasible, provide archaeological and Native American monitoring; Unanticipated discoveries protocol
P-33-016848	MRP and TRP	Recommended ineligible	Retain a qualified archaeologist; Unanticipated discoveries protocol
ISO-ICF-HV-01	MRP	Recommended ineligible	No further action recommended
ISO-ICF-HV-02	MRP	Recommended ineligible	No further action recommended

Chapter 1
Introduction

ICF was retained by the San Bernardino Valley Municipal Water District (Valley District) to perform a Phase I cultural resources inventory and evaluation and paleontological study in support of the Upper Santa Ana River Tributaries Restoration Project and Mitigation Reserve Program (proposed project). Valley District, as the lead agency, is proposing the project in the cities of Riverside and Jurupa Valley and in Riverside County. The objective of the study was to identify as-yet undocumented resources and update previously recorded ones within the proposed project Areas of Potential Effects (APEs) totaling approximately 470 acres. To accomplish this objective, ICF cultural resources personnel performed an archaeological records search, archival research, a Sacred Lands File search, and a pedestrian survey within the restoration sites, and a paleontological study. This report summarizes the results of the cultural resources and paleontological studies and proposes management recommendations for cultural and paleontological resources identified within the proposed project APEs for both the Tributaries Restoration Project and Mitigation Reserve Program.

An archaeological records search was conducted by Rachel Droessler of ICF on July 17, 2018, at the Eastern Information Center (EIC) at the University of California, Riverside. A Sacred Lands File search was requested from the Native American Heritage Commission (NAHC) on July 26, 2018. A paleontological record search was conducted on August 2, 2018, by the Natural History Museum of Los Angeles County.

ICF archaeologists Benjamin Vargas, M.A., RPA and Rachel Droessler, M.A., RPA conducted an archaeological pedestrian survey on August 22–23 and 27–29, 2018 and ICF archaeologists Peter Pham and Natalie Adame conducted a pedestrian survey on February 22, 2019. Due to dense vegetation, large portions of the project APEs were inaccessible or had such poor visibility they could not be intensively surveyed. Of the 12 previously recorded cultural resources identified in the cultural resources records search, 10 were relocated. Additionally, two new isolates (ICF-HV-01 and ICF-HV-02) were recorded during the pedestrian survey.

Project Purpose

The primary objectives of the proposed project are to:

- Create new or improved aquatic habitat for native aquatic species—the federally listed as threatened Santa Ana sucker (*Catostomus santaanae*), the state species of special concern Arroyo chub (*Gila orcutti*), and the Santa Ana speckled dace (*Rhinichthys osculus* ssp. *3*)—in order to improve current status and security of the populations.
- Improve long-term hydrologic function to create and enhance sustaining native fish habitat through activities such as:

  (1) creating functional spawning and refugia habitat within tributaries hydrologically connected to the mainstem Santa Ana River,

  (2) preventing backwater habitat from developing within or at the mouth of the tributaries in order to reduce the habitat suitability for nonnative predator fishes,

(3) creating hydrologic conditions that promote the availability of appropriate substrate for successful spawning and feeding,

(4) creating tributaries with a reliable source of clean water, and

(5) restoring the hydrologic connection with historic floodplains to provide additional areas to where overbank flows can spread into riparian zones

such that the project will enhance and/or create new habitat that results in resource conservation and benefits for other threatened and/or endangered species.

- Promote responsible access and use of public recreation in designated locations along the Upper Santa Ana River.
- Educate the public on responsible use and value of the natural resources on site.
- Maintain ecological value of restored sites for long-term vitality of the sites and secure funding for long-term maintenance.
- Create a Mitigation Reserve Program to create an ecologically functional, self-sustaining mosaic of aquatic and riparian habitats that are resilient to a range of natural disturbances (drought, flood, fire, etc.).
- Provide compensatory mitigation in the form of a Mitigation Reserve Program for unavoidable adverse impacts on wetlands, waters of the United States and state, riparian habitat, and special-status species that result from activities authorized under Sections 401 and 404 of the Clean Water Act, California's Porter-Cologne Act, Section 1602 of the California Fish and Game Code, the California Endangered Species Act, and the federal Endangered Species Act.

Project Description

The proposed project has two components that would be implemented by Valley District: the four Santa Ana River tributaries restoration and a Mitigation Reserve Program. To initiate implementation of these conservation measures, Valley District proposes the development of four restoration sites and a Mitigation Reserve Program along the Santa Ana River in Riverside County. The restoration sites, from east to west, are Anza Creek, Old Ranch Creek, Lower Hole Creek, and Hidden Valley Creek (Figures 1 through 3). The proposed Tributaries Restoration Project would improve the ecological condition of habitat for endangered and/or threatened species and jurisdictional aquatic resources by restoring existing channels, creating new channels, restoring the associated floodplain, enhancing the existing riparian and floodplain habitats, and controlling nonnative invasive species. The proposed Tributaries Restoration Project would also provide support for the existing local community environmental education and recreational opportunities. The proposed project would also include implementation of a Mitigation Reserve Program at each of the project sites to implement additional restoration opportunities that have been preliminarily identified and could be constructed once funding for these opportunities is secured.

Tributaries Restoration Project Components

The proposed project restoration sites would be designed to increase the amount and quality of habitat for the Santa Ana sucker and other native species and enhance jurisdictional aquatic resources; for restoration of existing channels and an existing floodplain tributary and

enhancements to existing riparian and floodplain habitats; limiting of human disturbance; and control of nonnative invasive species. The proposed study areas for the Anza Creek and Hidden Valley Creek sites are within the jurisdiction of the cities of Riverside and Jurupa Valley and the County of Riverside. The Old Ranch Creek study area is within the cities of Riverside and Jurupa Valley. The Lower Hole Creek study area is within the city of Riverside.

Proposed project details for each restoration site are described below. While each restoration area has specific restoration activities, there are some elements that are common to all locations. Portions of the Old Ranch Creek and Hidden Valley Creek restoration sites do not currently have an existing channel, or have a poorly defined channel, and thus would require new channel construction. A coarse channel liner composed of a sorted mixture of cobble, gravel, and fine sediment would be constructed under the bed of the new channel in specified reaches to limit water infiltration into the sandy and silty soils at the site, thereby limiting channel flow loss and maintaining flow depths and velocities in the new channel. The new channels would include sections constructed with pool and riffle morphology to create the topographic and hydraulic diversity necessary to sustain different habitats. Gravel would be added to new riffle sections and other areas that would have sufficient flow velocities to maintain suitable coarse substrate for Santa Ana sucker habitat.

Old Ranch Creek

This site is bounded to the north by the Santa Ana River, to the east by the closed Tequesquite Landfill, and to the south by the Santa Ana River bicycle trail. Old Ranch Creek occupies the eastern and northern portions of the larger area that is occupied in the southern and western portions by Anza Creek (below). Channel and revegetation work is proposed for 14.3 acres in the preliminary design. Approximately 2,538 linear feet of new channel would be constructed on the site. A total of 1,782 linear feet of channel would be enhanced and follow the alignment of the Old Ranch Creek drainage that used to connect with the Santa Ana River and whose topography is still visible on the landscape. Approximately 0.6 acre of floodplain bench would be created. A new riparian corridor would be created, adjacent to which nonnative plants would be removed and new native vegetation would be planted. The riparian corridor would be approximately 100 feet wide (50 feet on either side of the channel); approximately 2.5 acres would be planted with native vegetation. Approximately 12.2 acres would have selective clearing and planting.

Anza Creek

This site is bounded to the north by the Santa Ana River and to the south and west by the Santa Ana River bicycle trail and Anza Narrows Park. Anza Creek occupies the southern and western portions of the larger area that is occupied in the east and north by Old Farm Road. The preliminary design proposed a total of 14.9 acres of channel and revegetation work. Approximately 1,107 linear feet of constructed channel and 2,322 liner feet of the existing Anza Creek channel would be enhanced by adding gravel to new riffle sections that would have sufficient flow velocities to maintain suitable coarse substrate for Santa Ana sucker habitat. Approximately 1.1 acres of new floodplain bench would be created, spread out over five different areas, by excavating the high ground adjacent to the low-flow channel. The typical width of the inset floodplain areas would be 20–40 feet, and the average excavation depth would be 2–3 feet. Due to the proximity of the Old Ranch Creek and Anza Creek sites, expanding the restoration actions to include enhancement of ecological function could include an additional 321 acres.

Lower Hole Creek

This site is located just downstream of the Van Buren Boulevard Bridge and the City of Riverside's Regional Water Quality Control Plant. The preliminary design proposed channel and revegetation work for 5.5 acres for Lower Hole Creek and an additional 78 acres could be restored at this site to enhance ecological functions. Approximately 442 linear feet of existing channel downstream of Jurupa Avenue would be enhanced. Approximately 0.5 acre of new floodplain would be created, spread out over nine different areas, by excavating the high ground adjacent to the low-flow channel. The typical width of the inset floodplain areas would be 25–75 feet, and the average excavation depth would be 3–4 feet. The floodplain creation would provide additional areas where overbank flows can spread out into riparian zones and reduce the shear stress levels in the channel that contribute to channel downcutting and bank erosion. Approximately 3.5 acres would have selective clearing and planting.

Hidden Valley Creek

This site is located on the inside of a meander bend on the south side of the Santa Ana River about 0.75 mile downstream of the Van Buren Boulevard Bridge and the City of Riverside's Regional Water Quality Control Plant. The preliminary design proposed channel and revegetation work for 6.6 acres. Expanding efforts to enhance ecological functions at this site could cover as much as 112 acres including Hidden Valley Ponds. Portions of the existing canal would be restored starting near the former canal headworks near the eastern end of the site, and a new channel would be constructed, extending to the Santa Ana River confluence near the western end of the site. The total length of enhanced and created channel would be 4,200 linear feet. Approximately 18.5 acres of nonnative California annual grassland habitat occurs on site. This habitat would be treated for nonnative species and revegetated with a series of appropriate vegetation communities. Approximately 1.3 acres of floodplain bench would be created, approximately 6.3 acres of native vegetation would be planted, and 15.4 acres would have selective clearing and planting.

Mitigation Reserve Program

The second component of the proposed project includes development of a Mitigation Reserve Program. The Mitigation Reserve Program would result in the development of a combined mitigation/conservation bank and advance mitigation credit program projects. The terms "conservation bank" and "mitigation bank" are defined in California Fish and Game Code section 1797.5 as privately or publicly owned land managed for its natural resource values (CDFW 2014). In exchange for permanently protecting the land and resources and managing them according to a written agreement with the California Department of Fish and Wildlife, the bank sponsor is issued credits that it may sell to project proponents who need to satisfy legal requirements for mitigating the environmental impacts of projects, or that it may use for its own project mitigation needs (CDFW 2014). Conservation banks generally protect threatened or endangered species habitat or other sensitive resources, while mitigation banks conserve existing, restored, enhanced, or created wetland habitats that may also provide habitat for listed species (CDFW 2014).

Anza Creek and Old Ranch Creek

Eight restoration opportunities were identified within the Anza Creek and Old Ranch Creek sites. The remaining opportunities not included in the proposed project are opportunities for alkali marsh

rehabilitation, upland rehabilitation, floodplain expansion, and further management of invasive wildlife species. Control methods are as yet undetermined and may include methods such as seasonal variation in water supply or introduction of biocontrols, as well as more traditional control methods such as trapping or pesticides. In particular, the southeastern corner of this site provides an ideal opportunity for alkali marsh restoration, including control of nonnative species, planting of native species, and improvements to hydrology by connecting the area to the Old Farm Creek drainage. The northeastern corner of the site, immediately downstream of the landfill, is at a higher elevation than much of the site, with extensive areas of disturbed bare ground, invasive species, and human disturbance. The higher elevation appears to be a result of historic fill, potentially in association with past landfill practices. Removal of fill material would allow this area to reengage the active floodplain at a frequency similar to that of the riparian zone along the river. As this area is artificially armored by the presence of the landfill, there is also the opportunity to further excavate an area in the southern portion of this site to emulate a relic channel in the form of an oxbow. This would require excavation to and below groundwater levels to support a perennial water source.

Lower Hole Creek

Eleven restoration opportunities were identified for the Lower Hole Creek site, several of which are included in the proposed project. Restoring upland vegetation and further controlling nonnative invasive plant and wildlife species are other opportunities that would enhance threatened and endangered species' habitat and aquatic resources. Restoration opportunities also exist upstream of the site that could further increase the size of contiguous riparian habitat.

Hidden Valley Creek

Six restoration opportunities were identified at the Hidden Valley Creek site. The remaining opportunities not included in the proposed project are establishing an oxbow feature and further controlling nonnative invasive species. Restoration opportunities at the site are largely associated with enhancing habitat by removing nonnative plant species and planting native species. The site is in an active part of the Santa Ana River floodplain that has experienced substantial erosion and deposition from flood flows. Groundwater and surface flows currently support one large perennial pond feature in the downstream portion of the site, likely a remnant of a previous river course. Creation of a similar feature in the upstream portion of the site would increase the opportunity for wildlife to utilize this unique habitat type. Adding gently sloping shoreline habitat to the created feature would increase nesting opportunity for certain bird species and also provide benefits to pond turtle and garter snake. Due to the risk of future flooding associated with the active Santa Ana River, the proposed location for this feature is the southern portion of the floodplain outside of the regular channel migration zone.

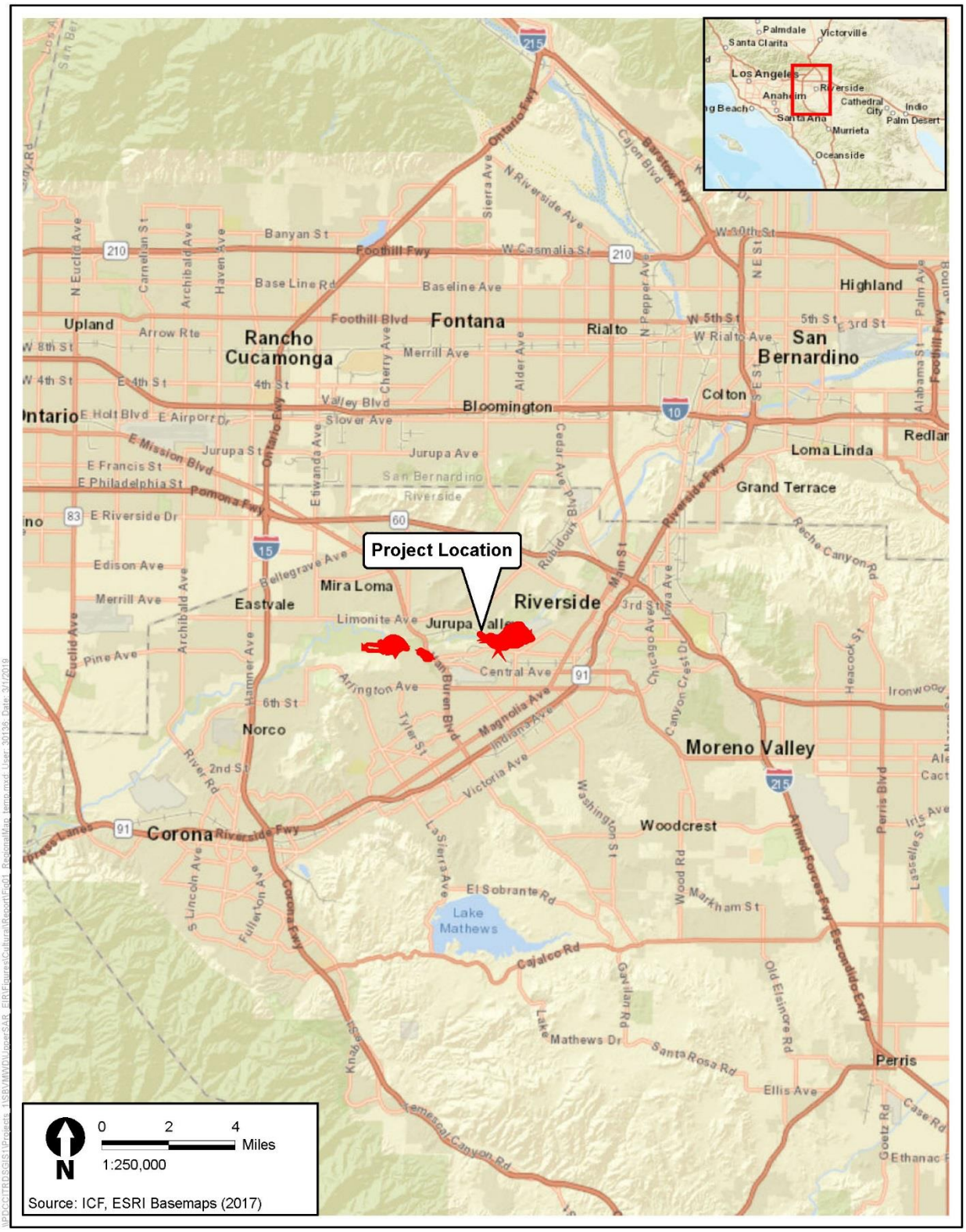

Figure 1. Project Regional Location

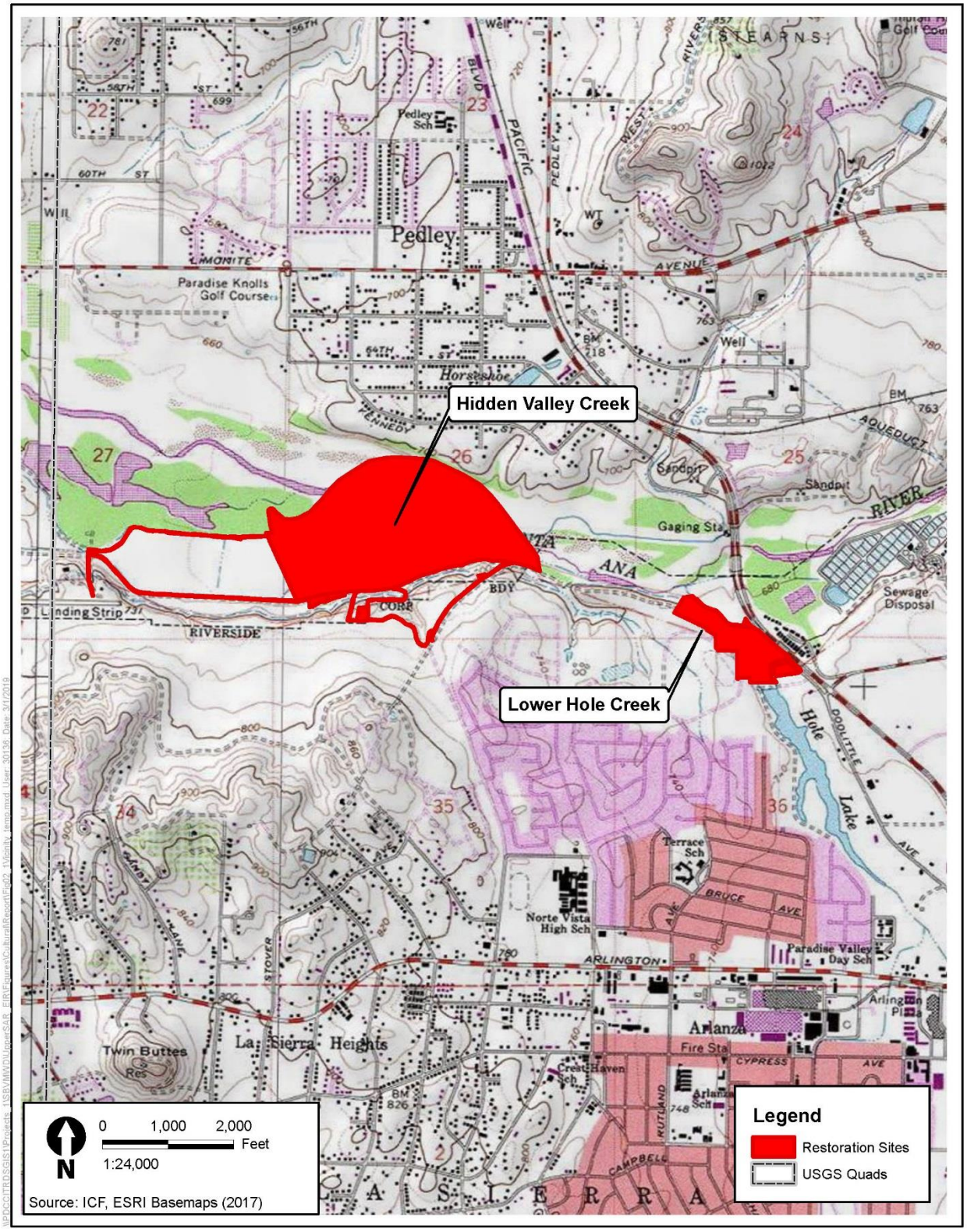

Figure 2. Hidden Valley Creek and Lower Hole Creek Restoration Areas Vicinity Map

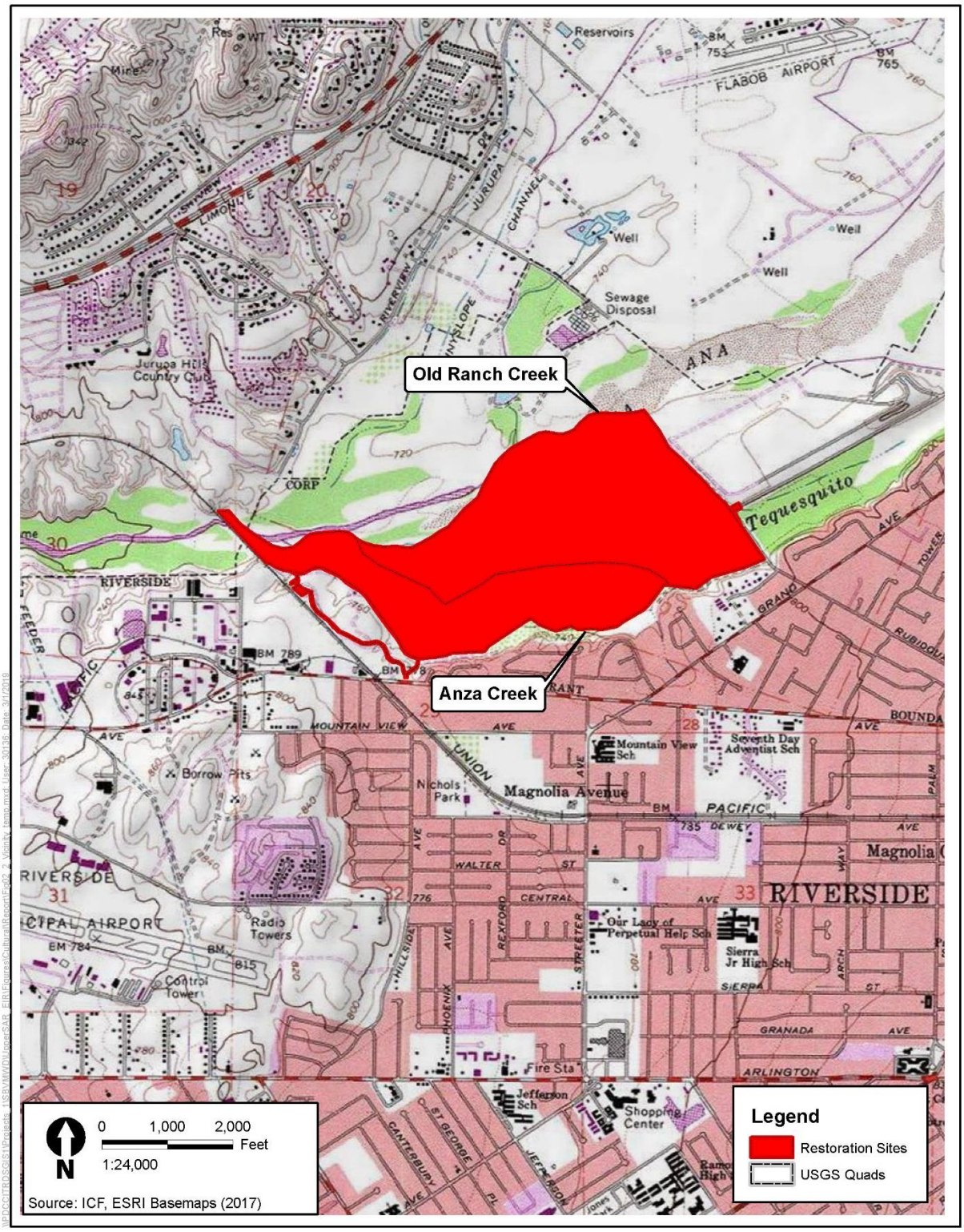

Figure 3. Old Ranch Creek and Anza Creek Restoration Areas Vicinity Map

Chapter 2
Regulatory Setting

Federal

National Environmental Policy Act

As amended, the National Environmental Policy Act (NEPA) (42 United States Code [USC] Sections 4321–4347) establishes a federal policy of protecting important historic, cultural, and natural aspects of our national heritage during federal project planning. All federal or federally assisted projects requiring action pursuant to Section 102 of NEPA must consider the effects on cultural resources. The President's Council on Environmental Quality has adopted regulations and other guidance that provide detailed procedures that federal agencies must follow to implement NEPA. However, the Council on Environmental Quality has not adopted regulations or other guidance that establish procedures specifically for addressing cultural resources. In 2013, the Council on Environmental Quality and the Advisory Council on Historic Preservation issued guidance on integrating NEPA and Section 106 of the National Historic Preservation Act (NHPA). This guidance reflects a long-standing practice of incorporating the Section 106 technical findings into NEPA to address project impacts on historic and cultural resources, and provides options for coordinating or, if planned, substituting Section 106 and NEPA reviews.

NEPA requires important natural aspects of our national heritage to be considered in assessing the environmental consequences of any proposed project and directs federal agencies to "preserve important historic, cultural, and natural aspects of our national heritage" (Section 101(b)(4)). Regulations for implementing the procedural provisions of NEPA are found in 40 CFR 1500–1508.

Section 106 of the National Historic Preservation Act

Section 106 of the NHPA (16 USC Section 470f) requires that effects on historic properties be taken into consideration in any federal undertaking. "Historic property means any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the National Register of Historic Places (NRHP) maintained by the Secretary of the Interior. This term includes artifacts, records, and remains that are related to and located within such properties. The term includes properties of traditional religious and cultural importance to an Indian tribe or Native Hawaiian organization that meet the NRHP criteria" (36 Code of Federal Regulations [CFR] Part 800.16(l)). Implementing regulations at 36 CFR Part 800 outline the process whereby federal agencies, in consultation with the State Historic Preservation Officer (SHPO) and other consulting parties, identify historic properties within the APE of the proposed project and make a finding of effect. If the project is determined to have an adverse effect on historic properties, the federal agency is required to consult further with the SHPO and the Advisory Council on Historic Preservation to develop methods to resolve the adverse effects. The Section 106 process has five basic steps.

1. Initiate the Section 106 process, including the identification of consulting parties, such as Native American tribes.

2. Identify the APE, in consultation with the SHPO and other consulting parties.
3. Assess the effects of the undertaking on historic properties within the APE.
4. If historic properties may be subject to an adverse effect, the federal agency, the SHPO, and any other consulting parties (including Native American tribes and the Advisory Council on Historic Preservation) continue consultation to seek ways to avoid, minimize, or mitigate the adverse effect. A Memorandum of Agreement is usually developed to document the measures agreed upon to resolve adverse effects. Alternatively, the federal agency may prepare and execute a Programmatic Agreement with the aforementioned parties to comply with 36 CFR Part 800, particularly in the context of complex undertakings that entail years of implementation actions or where the undertaking's effects on historic properties cannot be well characterized during the planning phase.
5. Proceed in accordance with the terms of the Memorandum of Agreement or Programmatic Agreement.

Criteria for Eligibility for the National Register of Historic Places

Cultural resources are eligible for the NRHP if they have integrity and significance as defined in the regulations for the NRHP. Four primary criteria define significance; a property may be significant if it displays one or more of the following characteristics:

A. It is associated with events that have made a significant contribution to the broad pattern of our history; or

B. It is associated with the lives of people significant in our past; or

C. It embodies the distinct characteristics of a type, period, or method of construction, or that represents the work of a master, or that possesses high artistic values, or it represents a significant and distinguishable entity whose components may lack individual distinction; or

D. It has yielded, or is likely to yield, information important in prehistory or history (36 CFR 60.4).

Some types of cultural resources are not typically eligible for the NRHP. These resources consist of cemeteries, birthplaces, graves of historical figures, properties owned by religious institutions or used for religious purposes, structures that have been moved from their original locations, reconstructed historic buildings, properties primarily commemorative in nature, and properties that have achieved significance within the past 50 years. These property types may be eligible for the NRHP, however, if they are integral parts of eligible districts of resources or meet the criteria considerations described in 36 CFR 60.4.

In addition to possessing significance, a property must also have integrity to be eligible for listing in the NRHP. The principle of integrity has seven aspects: location, design, setting, materials, workmanship, feeling, and association (36 CFR 60.4). To retain historic integrity, a property will always possess several, and usually most, of the qualities of integrity (U.S. Department of the Interior 1995:44).

Native American Graves Protection and Repatriation Act of 1990 – Code of Federal Regulations

The Native American Graves Protection and Repatriation Act (NAGPRA) provides a process for federal agencies to determine custody of Native American cultural items to lineal descendants and culturally affiliated Indian tribes. NAGPRA defines the ownership of Native American human remains and funerary materials excavated on lands owned or controlled by the federal government. NAGPRA establishes a hierarchy of ownership rights for Native American remains identified on these lands (25 USC Section 3002(a)):

- Where the lineal descendants can be found, the lineal descendants own the remains.
- Where the lineal descendants cannot be found, the remains belong to the Indian tribe or Native Hawaiian organization on whose land the remains were found.
- If the remains are discovered on other lands owned or controlled by the federal government and the lineal descendants cannot be determined, the remains belong to the Indian tribe or Native Hawaiian organization that is culturally affiliated with the remains, or the tribe that aboriginally occupied the land where the remains were discovered.

Under NAGPRA, intentional excavation of Native American human remains on lands owned or controlled by the federal government may occur (25 USC Section 3002(c)) only under the following circumstances.

- With a permit issued under the Archaeological Resources Protection Act (16 USC Section 470cc); and;
- After documented consultation with the relevant tribal or Native American groups.
- Ownership and disposition follow NAGPRA for all human remains and associated artifacts (25 1 USC Section 3001 and 43 CFR Section 10.6).

NAGPRA also provides guidance on inadvertent discoveries of Native American or Hawaiian human remains on lands owned or controlled by the federal government. When an inadvertent discovery on these lands occurs in association with construction, construction must cease. The party that discovers the remains must notify the relevant federal agency, and the remains must be transferred according to the ownership provisions above (25 USC Section 3002(d)).

National Registry of Natural Landmarks

The National Natural Landmarks Program (16 USC 461–467), established in 1962 under the authority of the Historic Sites Act of 1935, recognizes and encourages the conservation of outstanding examples of the country's natural history. As part of the only natural areas program of national scope that identifies and recognizes the best examples of biological and geological features in both public and private ownership, National Natural Landmarks are designated by the Secretary of the Interior, with the owner's concurrence, as being of national significance, defined as being one of the best examples of a biological community or geological feature within a natural region of the U.S., including terrestrial communities, landforms, geological features and processes, habitats of native plant and animal species, or fossil evidence of the development of life (36 CFR 62.2). The National Park Service administers the program, and if requested, assists National Natural Landmark owners and managers with the conservation of these important sites.

Section 4(f) of the Department of Transportation Act of 1966 (23 USC 138; 49 USC 1653)

Section 4(f) of the Department of Transportation Act does not address paleontological resources specifically; however, this section of the law restricts the ability to take publicly owned land 4(f) properties (which include parks, recreation areas, wildlife or waterfowl refuges, and NRHP eligible or listed properties). Paleontological resources are only addressed under this law if located within a 4(f) property.

Federal Land Policy and Management Act of 1976

The Federal Land Policy and Management Act (P.L. 94-579; 90 Statute 2743, 43 USC 1701–1782) requires public lands to be managed in a manner that protects their scientific values. It also authorizes inventories of paleontological resources on federal land. Permits for collecting paleontological resources (fossils) are issued to qualified individuals and entities. Paleontological resources are also afforded federal protection under 40 CFR 1508.27 as a subset of scientific resources.

Paleontological Resources Preservation Act of 2009

The Paleontological Resources Preservation Act is part of the Omnibus Public Land Management Act of 2009 (P.L. 111-011, Title VI, Subtitle D). This act directs the Secretary of the Interior or the Secretary of Agriculture to manage and protect paleontological resources on federal land and develop plans for inventorying, monitoring, and deriving the scientific and educational use of such resources. It prohibits the removal of paleontological resources from federal land without a permit issued under this act, establishes penalties for violation of this act, and establishes a program to increase public awareness about such resources. The bill imposes criminal penalties for violating this act, which includes serving up to 10 years in prison if convicted.

State

California Environmental Quality Act and Cultural Resources

The California Environmental Quality Act (CEQA) requires public agencies to evaluate the implications of their project(s) on the environment and includes significant historic resources as part of the environment. Public agencies must treat any cultural resource as significant unless the preponderance of evidence demonstrates that it is not historically or culturally significant (California Code of Regulations [CCR] Title 14 §15064.5). A historic resource is considered significant if it meets the definition of historical resource or unique archaeological resource, as defined below.

Historical Resources

The term *historical resource* includes, but is not limited to, any object, building, structure, site, area, place, record, or manuscript that is historically or archaeologically significant, or is significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or

cultural annals of the California Public Resources Code (PRC) (PRC §5020.1(j)). Historical resources may be designated as such through three different processes:

1. Official designation or recognition by a local government pursuant to local ordinance or resolution (PRC §5020.1(k))
2. A local survey conducted pursuant to PRC §5024.1(g)
3. The property is listed in or eligible for listing in the NRHP (PRC §5024.1(d)(1))

The process for identifying historical resources is typically accomplished by applying the criteria for listing in the California Register of Historical Resources (CRHR) (CCR Title 14 §4852), which states that a historical resource must be significant at the local, state, or national level under one or more of the following four criteria.

1. It is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage.
2. It is associated with the lives of persons important in our past.
3. It embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of a master or possesses high artistic values.
4. It has yielded, or may be likely to yield, information important in prehistory or history.

To be considered a historical resource for the purpose of CEQA, the resource must also have integrity, which is the authenticity of a resource's physical identity evidenced by the survival of characteristics that existed during the resource's period of significance.

Resources, therefore, must retain enough of their historic character or appearance to be recognizable as historical resources and to convey the reasons for their significance. Integrity is evaluated with regard to the retention of location, design, setting, materials, workmanship, feeling, and association. It must also be judged with reference to the particular criteria under which a resource is eligible for listing in the CRHR (CCR Title 14 §4852(c)).

Unique Archaeological Resources

A unique archaeological resource is defined in section 21083.2 of the PRC as an archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria.

- Contains information needed to answer important scientific research questions and for which there is a demonstrable public interest
- Has a special and particular quality such as being the oldest of its type or the best available example of its type
- Is directly associated with a scientifically recognized important prehistoric or historic event or person

In most situations, resources that meet the definition of a unique archaeological resource also meet the definition of historical resource. As a result, it is current professional practice to evaluate cultural resources for significance based on their eligibility for listing in the CRHR. For the purposes of this CEQA cultural resources study, a resource is considered significant if it meets the CRHR

eligibility (significance and integrity) criteria. Individual resource assessments of eligibility are provided in this report.

Even without a formal determination of significance and nomination for listing in the CRHR, the lead agency can determine that a resource is potentially eligible for such listing, to aid in determining whether a significant impact would occur. The fact that a resource is not listed in the CRHR, or has not been determined eligible for such listing, and is not included in a local register of historic resources does not preclude an agency from determining that a resource may be a historical resource for the purposes of CEQA.

Paleontological Resources

Appendix G of the State CEQA Guidelines provides an environmental checklist of questions that a lead agency should normally address if relevant to a project's environmental impacts. One of the questions to be answered in this environmental checklist (CCR Section 15063; Appendix G, Section V, c) is the following: "Would the project directly or indirectly destroy a unique paleontological resource or…site?"

Section XVII.a of the environmental checklist asks a second question, which is equally applicable to paleontological resources: "Does the project have the potential to...eliminate important examples of the major periods of California history or pre-history?" Fossils are important examples of major periods of California prehistory. To be in compliance with CEQA, environmental impact assessments, statements, and reports must answer both the questions in the environmental checklist. If the answer to either question is "yes" or "possibly," a mitigation and monitoring plan must be designed and implemented to protect significant paleontological resources.

The CEQA lead agency that has jurisdiction over a project is responsible for ensuring that paleontological resources are protected in compliance with CEQA and other applicable statutes. CEQA Section 21081.6 requires the lead agency to demonstrate project compliance with the mitigation measures developed during the environmental impact review process. Other state requirements for paleontological resource management are in California PRC Chapter 1.7, Section 5097.5 (Statutes 1965, Chapter 1136, page 2792), titled Archaeological, Paleontological, and Historical Sites. This statute declares any unauthorized disturbance or removal of a fossil site or fossil remains on public land as a misdemeanor and specifies that state agencies may undertake surveys, excavations, or other operations as necessary on publicly owned lands to preserve or record paleontological resources.

California Government Code Sections 6254(r) and 6254.10

California Government Code Section 6254(r) and Section 6254.10 of the California Public Records Act were enacted to protect archaeological sites from unauthorized excavation, looting, or vandalism. Section 6254(r) explicitly authorizes public agencies to withhold information from the public relating to "Native American graves, cemeteries, and sacred places maintained by the Native American Heritage Commission." Section 6254.10 specifically exempts from disclosure requests for "records that relate to archaeological site information and reports, maintained by, or in the possession of the Department of Parks and Recreation, the State Historical Resources Commission, the State Lands Commission, the Native American Heritage Commission, another state agency, or a local agency, including the records that the agency obtains through a consultation process between a Native American tribe and a state or local agency."

Health and Safety Code 7050.5

With respect to the potential discovery of human remains, Section 7050.5 of the California Health and Human Safety Code states the following.

a. Every person who knowingly mutilates or disinters, wantonly disturbs, or willfully removes any human remains in or from any location other than a dedicated cemetery without authority of law is guilty of a misdemeanor, except as provided in Section 5097.99 of the Public Resources Code. The provisions of this subdivision shall not apply to any person carrying out an agreement developed pursuant to subdivision (l) of Section 5097.94 of the Public Resources Code or to any person authorized to implement Section 5097.98 of the Public Resources Code.

b. In the event of discovery or recognition of any human remains in any location other than a dedicated cemetery, there shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains until the coroner of the county in which the human remains are discovered has determined, in accordance with Chapter 10 (commencing with Section 27460) of Part 3 of Division 2 of Title 3 of the Government Code, that the remains are not subject to the provisions of Section 27491 of the Government Code or any other related provisions of law concerning investigation of the circumstances, manner and cause of any death, and the recommendations concerning the treatment and disposition of the human remains have been made to the person responsible for the excavation, or to his or her authorized representative, in the manner provided in Section 5097.98 of the Public Resources Code. The coroner shall make his or her determination within two working days from the time the person responsible for the excavation, or his or her authorized representative, notifies the coroner of the discovery or recognition of the human remains.

c. If the coroner determines that the remains are not subject to his or her authority and if the coroner recognizes the human remains to be those of a Native American, or has reason to believe that they are those of a Native American, he or she shall contact, by telephone within 24 hours, the Native American Heritage Commission.

Of particular note to cultural resources is subsection (c), requiring the coroner to contact NAHC within 24 hours if discovered human remains are thought to potentially be of Native American origin. After notification, NAHC will follow the procedures outlined in PRC Section 5097.98, which include notification of most likely descendants, if possible, and recommendations for treatment of the remains. Also, knowing or willful possession of Native American human remains or artifacts taken from a grave or cairn is a felony under state law (PRC §5097.99).

Public Resources Code Section 5097

PRC Section 5097 addresses archaeological, paleontological, and historic sites on state land as well as the cooperative efforts with the NAHC that are to be undertaken as part of a project being evaluated under CEQA. PRC Section 5097 specifies the procedures to be followed in the event of the unexpected discovery of human remains on nonfederal public lands. PRC Section 5097.5 considers it a misdemeanor to knowingly and willfully excavate upon or remove, destroy, injure, or deface any historic or prehistoric ruins, burial grounds, archaeological or vertebrate paleontological site, including fossilized footprints, inscriptions made by human agency, rock art, or any other archaeological, paleontological, or historical feature situated on public lands, except with the express permission of the public agency having jurisdiction over the lands. The disposition of Native

American burials falls within the jurisdiction of the NAHC, which prohibits willfully damaging any historic, archaeological, or vertebrate paleontological site or feature on public lands (PRC Section 5097.9). PRC Section 5097.98 stipulates that whenever the NAHC receives notification of a discovery of Native American human remains from the county coroner, it shall immediate notify those people it believes to be the most likely descendants of the deceased Native American. The descendants may inspect the site of discovery and make recommendations on the removal or reburial of the remains.

Assembly Bill 52

On September 25, 2014, California Governor Jerry Brown signed into law Assembly Bill 52, which amended PRC Section 5097.94 and added Sections 21073, 21074, 21080.3.1, 21080.3.2, 21082.3, 21083.09, 21084.2, and 21084.3 to establish a new category of environmental resources that must be considered under CEQA: tribal cultural resources. Tribal cultural resources are defined as either (1) sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are included in the CRHR or a local register of historical resources, or that are determined to be eligible for inclusion in the CRHR; or (2) resources determined by the lead agency, in its discretion, to be significant based on the criteria for listing in the CRHR. For projects with applications filed on or after July 1, 2015, lead agencies are also required to consult with California Native American tribes that are traditionally and culturally affiliated with the geographic area of a proposed project, including tribes that may not be federally recognized, if the tribe requested to the lead agency, in writing, to be informed by the lead agency of proposed projects in that geographic area, and the tribe requests consultation, prior to determining whether a negative declaration, mitigated negative declaration, or environmental impact report is required for a project.

Section 6 of Assembly Bill 52 adds Section 21080.3.2 to the PRC, which states that parties may propose mitigation measures "capable of avoiding or substantially lessening potential significant impacts to a tribal cultural resource or alternatives that would avoid significant impacts to a tribal cultural resource." Furthermore, if a California Native American tribe requests consultation regarding project alternatives, mitigation measures, or significant effects on tribal cultural resources, the consultation shall include those topics (PRC Section 21080.3.2(a)). The environmental document and the mitigation monitoring and reporting program (where applicable) shall include any mitigation measures that are adopted (PRC Section 21082.3(a)).

Thresholds of Significance

According to CEQA, a project that causes a substantial adverse change in the significance of a historical resource, a unique archaeological resource, a paleontological resource, and/or a tribal cultural resource has a significant effect on the environment (CCR Title 14 §15064.5; PRC §21083.2). CEQA defines a substantial adverse change as (CCR Title 14 §15064.5(b)):

- Implementation of the proposed project could have the potential to cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5 of the State CEQA Guidelines.
- Implementation of the proposed project could have the potential to cause a substantial adverse change in the significance of an archaeological resource as defined in Section 15064.5 of the State CEQA Guidelines.

- Implementation of the proposed project could have a significant impact if it would disturb any human remains, including those interred outside of formal cemeteries.
- Implementation of the proposed project could lead to the direct or indirect destruction of a unique paleontological resource or site or unique geologic feature.
- Implementation of the proposed project could have the potential to cause a substantial adverse change in the significance of a tribal cultural resource, defined in PRC 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 listed or eligible for listing in the CRHR or in a local register of historical resources as defined in PRC section 5020.1(k).
- Implementation of the proposed project could have the potential to cause a substantial adverse change in the significance of a tribal cultural resource, defined in PRC 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 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 Section 5024.1. In applying the criteria set forth in subdivision (c) of PRC Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

Local

County of Riverside

County of Riverside General Plan

The General Plan for the County of Riverside follows both federal and state laws and guidelines for the definition of significance and sensitivity of cultural resources. Cultural resources may include objects, buildings, structures, sites, area, places, records, or manuscripts. They also may include places that have historic or traditional associations or are important for traditional cultural uses.

The cultural history of Riverside County is divided chronologically into time periods associated with European contact: before and after contact. Native American populations that predate European contact extend back over 10,000 years in history, which can be seen from numerous archaeological sites in the county.

The County of Riverside has enacted the following general plan policies in the Open Space and Conservation Element to ensure that cultural resources are appropriately considered:

> OS 19.1 Cultural resources (both prehistoric and historic) are a values part of the history of the County of Riverside.
>
> OS 19.2 The County of Riverside shall establish a cultural resources program in consultation with Tribes and the professional cultural resources consulting community. Such a program shall, at a minimum, address each of the following: application processing requirements; information database(s); confidentiality of site locations; content and review of technical studies; professional consultant qualifications and requirements; site monitoring; examples of preservation and mitigation

techniques and methods; and the descendant community consultation requirements of local, state and federal law. (AI 144)

OS 19.3 Review proposed development for the possibility of cultural resources and for compliance with the cultural resources program.

OS 19.4 To the extent feasible, designate as open space and allocate resources and/or tax credits to prioritize the protection of cultural resources preserved in place or left in an undisturbed state. (AI 145)

OS 19.5 Exercise sensitivity and respect for human remains from both prehistoric and historic time periods and comply with all applicable laws concerning such remains.

County of Riverside Municipal Code

County of Riverside Municipal Code Section 15.72.050, Establishing Historic Preservation Districts, provides details regarding how to establish a historic preservation district in the county of Riverside and the approval process for its establishment. Other details include disestablishment or modification of historic preservation districts, activities within historic preservation districts, local review board for historic preservation districts, and enforcement, violations, fines, and penalties for any offenses. The County of Riverside Municipal Code Chapter 2.100, Emergency Management Organization, includes tribal governments in emergency management organizations. This code states that the Riverside County Emergency Management Organization consists of all officers and employees of the County of Riverside; its agencies, cities, tribal governments, and special districts of Riverside County; and all volunteers and all groups, organizations, and persons commandeered under the provisions of the act; and that all equipment and material publicly owned, volunteered, commandeered, or in any way under the control of the aforementioned personnel can be used for the support of the aforementioned personnel in the conduct of emergency operations.

City of Riverside

City of Riverside General Plan 2025, Historic Preservation Element

The purpose of the Historic Preservation Element of the City of Riverside General Plan is to "provide guidance in developing and implementing activities that ensure that the identification, designation, and protection of cultural resources are part of the City of Riverside's community planning development, and permitting processes" (City of Riverside 2012). The Preservation Element acknowledges that the California SHPO has recognized Riverside's historic preservation program with a designation as a Certified Local Government. The Historic Preservation Element provides historic context with themes important for identifying and evaluating cultural resources within the city. The General Plan 2025 Final Environmental Impact Report includes two cultural resources–related sensitivity maps that use a ranking of unknown, low, medium, and high for archaeological sensitivity and prehistoric cultural resources sensitivity. The Historic Preservation Element outlines several policies called Objectives to reduce the impacts on cultural resources within the city:

Objective HP-1.0: To use historic preservation principles as an equal component in the planning and development process.

Objective HP-2.0: To continue an active program to identify, interpret and designate the City's cultural resources.

Objective HP-3.0: To promote the City's cultural resources as a means to enhance the City's identity as an important center of Southern California history.

Objective HP-4.0: To fully integrate the consideration of cultural resources as a major aspect of the City's planning, permitting and development activities.

Objective HP-5.0: To ensure compatibility between new development and existing cultural resources.

Objective HP-6.0: To actively pursue funding for a first-class historic preservation program, including money needed for educational materials, studies, surveys, staffing, and incentives for preservation by private property owners.

Objective HP-7.0: To encourage both public and private stewardship of the City's cultural resources.

City of Riverside Municipal Code

The City of Riverside Municipal Code Title 20, Cultural Resources, provides guidelines for the application, enforcement, and public awareness of the City's historic preservation regulations, as enforced by the City's planning department. The purpose of this title is to promote the public health, safety, and general welfare by providing for the identification, protection, enhancement, perpetuation, and use of improvements, buildings, structures, signs, objects, features, sites, places, areas, districts, neighborhoods, streets, works of art, natural features, and significant permanent landscaping having special historical, archaeological, cultural, architectural, community, aesthetic, or artistic value in the city of Riverside (Section 20.05.010). The criteria to designate, modify the status of, or de-designate Landmarks, Structures, or Resources of Merit and Historic Districts, and to modify or de-designate Neighborhood Conservation Areas, are set forth in their definitions in Chapter 20.50 (Ord. 7108 §1, 2010; Ord. 6263 §1 (part), 1996).

Consultant requirements for cultural resources survey, studies, and reports are outlined by the City of Riverside's Community Development Department. All consultants completing studies, surveys, or reports for cultural resources in compliance with the Planning Department's CEQA process shall include the following. This applies to prehistoric archaeological, historic archaeological, and historic resources.

1. Evaluation for eligibility for any applicable designation program:
    a. Listing in the National Level: National Register of Historic Places, National Historic Landmark, etc.
    b. Listing at the State Level: California Register of Historical Resources, California Points of Historical Interest, State Landmarks, etc.
    c. Local designation: City of Riverside Municipal Code Title 20 (Cultural Resources Ordinance), County Landmark, etc.
2. Evaluation of potential impacts to identified cultural resources.
3. Recommendation of mitigation measures where potential impacts have been identified.
4. For larger surveys a project database shall be submitted in Microsoft Access format.
5. Completion of the appropriate State of California Historic Resources Inventory (DPR) forms. Photographs shall be in digital format.
6. Completion of a final report shall include, but not be limited to: executive summary, project location with map, project description, research and field methodology, architectural description, definition of area history, statement of significance, recommendations, resumes of authors and/or contributors, DPR forms (as an appendix), list of sources, discussion of potential impacts,

proposed mitigation measures, current setting, evaluation of significance in accordance with the criteria listed in (1) above, copy of the records search from the Eastern Information Center (EIC), record of contact with appropriate Native American group(s), and contact with the Native American Heritage Commission for a Sacred Lands File (SLF) search.

7. Project Deliverables shall include:
    a. Two (2) copies of the final report.
    b. Two (2) original copies of the DPR forms.
8. Upon acceptance of the final report, one (1) copy shall be submitted to the Eastern Information Center, Department of Anthropology, University of California, Riverside, 92521.

All work shall be completed in accordance with the Secretary of the Interior's Standard. All work shall be completed in accordance with the Secretary of the Interior's Standards and Guidelines for Archaeology and Historic Preservation including standards for planning, identification, evaluation, registration, historical documentation, archaeological documentation, and professional qualifications as published in the Federal Register, September 29, 1983 (Vol. 48, No. 190 pp. 44716 et seq.).

City of Jurupa Valley

City of Jurupa Valley General Plan

The City of Jurupa Valley's Draft General Plan was adopted in April of 2017, and outlines policies for the protection and treatment of cultural and paleontological resources in the Conservation and Open Space Element. The General Plan also provides maps showing known historic resources and areas of paleontological sensitivity. In addition to a set of policies governing development within the city, the General Plan describes several historic preservation programs. The policies guiding development are as follows:

COS 7.1 Preservation of Significant Cultural Resources. Identify, protect, and, where necessary, archive significant paleontological, archaeological, and historical resources.

COS 7.2 Public Information. Encourage programs that provide public information on the City's history and cultural heritage, and participate with other agencies to help educate students about the City's rich natural and man-made environment.

COS 7.3 Development Review. Evaluate project sites for archaeological sensitivity and for a project's potential to uncover or disturb cultural resources as part of development review.

COS 7.4 Site Confidentiality. Protect the confidentiality and prevent inappropriate public exposure or release of information on locations or contents of paleontological and archaeological resource sites.

COS 7.5 Native American Consultation. Refer development projects for Native American tribal review and consultation as part of the environmental review process, in compliance with state law.

COS 7.6 Non-Development Activities. Prohibit activities that could disturb or destroy cultural resource sites, such as off-road vehicle use, site excavation or fill, mining, or other activities on or adjacent to known sites, or the unauthorized collection of artifacts.

COS 7.7 Qualified archaeologist present. Cease construction or grading activities in and around sites where archaeological resources are discovered until a qualified archaeologist knowledgeable in Native American cultures can determine the significance of the resource and recommend alternative mitigation measures.

COS 7.8 Native American Monitoring. Include Native American participation in the City's guidelines for resource assessment and impact mitigation. Native American representatives should be present

during archaeological excavation and during construction in an area likely to contain cultural resources. The Native American community shall be consulted as knowledge of cultural resources expands and as the City considers updates or significant changes to its General Plan.

COS 7.9 Archaeological Resources Mitigation. Require a mitigation plan to protect resources when a preliminary site survey finds substantial archaeological resources before permitting construction. Possible mitigation measures include presence of a qualified professional during initial grading or trenching; project redesign; covering with a layer of fill; and excavation, removal and curation in an appropriate facility under the direction of a qualified professional.

COS 7.10 Historically significant buildings. Prohibit the demolition or substantial alteration of historically significant buildings and structures unless the City Council determines that demolition is necessary to remove an imminent threat to health and safety and other means to eliminate or reduce the threat to acceptable levels are physically infeasible. Additional unlisted historic resources may also be present and must be evaluated and protected, pursuant to CEQA requirements.

City of Jurupa Valley Municipal Code

The City of Jurupa Valley established a municipal code in order to provide a system of organization for the classification and grouping of ordinances. The municipal code provides guidance for the establishment of Historic Preservation Districts (Sec. 8.55.010 and 8.55.030), a Local Review Board (8.55.040), and the Application for Certificate of Historic Appropriateness (Sec. 8.55.060).

Chapter 8.55. Historic Preservation Districts

Sec. 8.55.010. - Purpose.

It is declared as a matter of public policy that the recognition, protection, preservation, enhancement, perpetuation and use of sites and structures within the city having historic significance is necessary and required in the interest of the health, safety, prosperity and general welfare of the public. The purpose of this chapter is to:

(1) Effect and accomplish the protection, enhancement and perpetuation of such improvements which represent or reflect significant elements of the city's history;

(2) Safeguard the city's historic heritage, as embodied and reflected in specifically defined historic preservation districts;

(3) Stabilize and improve property value;

(4) Protect and enhance the city's attraction to residents, tourists and visitors, and serve as a support and stimulus to business and industry;

(5) strengthen the economy of the city;

(6) Promote the use of historic preservation districts for the education, pleasure, prosperity and welfare of the people of the city.

Sec. 8.55.030. – Historic Preservation Districts; establishment process

Sec. 8.55.040. – Local review board.

C (2) Recommend implementation guidelines and standards to be used by the local review board in the review of applications, which shall be submitted to the Planning Director for a determination of consistency with the historic and prehistoric resources section of the Jurupa Valley Comprehensive General Plan. The approved guidelines shall be used by the local review board and the Planning Department as the basis of approving or denying applications for a Certificate of Historic Appropriateness. The guidelines shall contain drawings and photographs or reproductions thereof, including a standardized survey of historic sites and structures which will serve as general guides of acceptable construction within the district;

C (4) Serve as an advisory resource to all agencies of the city in matters pertaining to the district, and to encourage efforts by, and cooperation with, individuals, private organizations and other governmental agencies concerned with preservation of the district's architectural, environmental and cultural heritage;

C (6) To encourage public understanding and appreciation of the unique architectural, environmental and cultural heritage of the community through educational and interpretative programs.

Sec. 8.55.060. – Application for Certificate of Historic Appropriateness.

(4) No application for a Certificate of Historic Appropriateness shall be approved unless the Planning Director, or, on appeal, the Planning Commission finds that the proposed construction or alteration is consistent with and conforms to the objectives and design criteria set forth in the historic and prehistoric resource section of the Jurupa Valley Comprehensive General Plan and the guidelines and standards of the local review board that relate to the specific historic preservation district in which the proposed construction is located.

Chapter 3
Environmental Setting

Physical Environment

The Upper Santa Ana River Tributaries Restoration Project and Mitigation Reserve Program comprise four sites in three locations in the Santa Ana River watershed within the larger Jurupa Valley in the cities of Riverside and Jurupa Valley, and in the County of Riverside, California. Topography, soils, vegetation communities, and historic modifications to the landscape vary somewhat for each of the locations; therefore, they are presented individually below. However, because the Anza Creek and Old Ranch Creek sites occupy the same overall area, they are discussed together.

Anza Creek/Old Ranch Creek Site

The Old Ranch Creek site and Anza Creek site occupy the same overall area on the Santa Ana River's south floodplain about 2 miles downstream of Mount Rubidoux (Figure 3). The combined area of both sites is about 294 acres. The Old Ranch Creek project location is generally the eastern half of the site while the Anza Creek site occupies the western half. Elevations at the site range from 742 feet in the southeastern corner near the bicycle trail to 712 feet in the Santa Ana River channel in the northwestern portion of the site. The upstream portion of the proposed Old Ranch Creek channel takes an alignment that generally follows the path of the 1931 Santa Ana River channel. The middle portion of the proposed channel is located on what used to be farmland on the floodplain of the inside of a large meander bend in the 1931 Santa Ana River channel. The fine-grained, sandy soils at the Old Ranch Creek site are linked to the alluvial processes of the Santa Ana River channel that used to occupy the site. The Old Ranch Creek site currently supports disturbed Southern Riparian Forest, which is composed of a mixture of native and nonnative vegetation.

Lower Hole Creek

The Lower Hole Creek site is bounded to the north by the Santa Ana River, to the east by the Pedley Landfill and Van Buren Boulevard, and to the west by a former canal, steep hillslope, and subdivisions. Elevations at the site range from 671 feet where Hole Creek empties into the Santa Ana River channel (Figure 2) to 740 feet on the plateau above the upper portion of Hole Creek upstream of Jurupa Avenue. The entire present-day Hole Creek channel upstream of Jurupa Avenue was a part of Hole Lake in 1931. Jurupa Avenue crosses Hole Creek at the same location as the former lake's spillway. The dam that created Hole Lake was constructed in 1915 by Willits J. Hole with the objective of providing irrigation water for his alfalfa and barley fields in the area now known as La Sierra and Arlanza. The Pedley Landfill that is currently located on a 13.5-acre parcel along the lowermost 1,200 feet of Hole Creek's east bank and extending over to Van Buren Boulevard did not exist in 1931. The historic floodplain had been eliminated by Pedley Landfill, and the alignment of Van Buren Boulevard now traverses farther south and closer to the creek than it did in 1931. Hole Creek upstream of Jurupa Avenue is a densely vegetated channel with bed elevations inset 25–30 feet below the top of the terrace slopes. Hole Creek is located in terrace escarpment soils for nearly its entire length in the site. The terrace escarpment soils are generally shallow, poorly developed,

and rocky in nature. The Lower Hole Creek site currently supports disturbed Southern Riparian Forest, which comprises a mixture of native and nonnative vegetation.

Hidden Valley Creek

The Hidden Valley Creek site is located on the inside of a meander bend on the south side of the Santa Ana River on an approximately 77-acre site. The Hidden Valley Creek site is bounded to the north and east by the Santa Ana River, to the south by a steep hillslope, and to the west by former wetlands. Elevations at the site range from 675 feet at the far upstream end to 655 feet at the far downstream end at the Santa Ana River's low-flow channel (Figure 2). Site elevations generally slope from upstream to downstream, elevations along the south side of the site are similar to the north, and remnant channels are visible in LiDAR images that were recorded in 2014, all which indicate the Santa Ana River has occupied positions throughout the entire site at some time in the past. The Hidden Valley Creek site does not currently have a perennial source of water. Water sources to the site are limited to storm runoff generated from the surrounding hillslopes during rain events. Reviews of historic aerial photographs show that portions of the site was farmland in 1931 and the wetlands presently at the downstream end of the site did not exist. The Santa Ana River occupied a position farther to the northwest than it presently does, but the land that was not being farmed was active floodplain as it is today. The fine-grained, sandy soils at the Hidden Valley Creek site are linked to the alluvial processes of the Santa Ana River channel that routinely shifts position and forms new channels and floodplain at the site in response to flood events. The Hidden Valley Creek site currently supports a patchy matrix of Southern Riparian Forest, which comprises a mixture of native and nonnative vegetation.

Geology

The proposed project sites are underlain primarily by younger Quaternary Alluvium with some older Quaternary deposits exposed in the southern margin of the Anza Creek and Lower Hole Creek restoration areas. Plutonic igneous rocks occur on the far western portion of Anza Creek and the southeastern margin of the Hidden Valley Creek restoration area.

Younger Quaternary Alluvium (Holocene to late Pleistocene) consists of unconsolidated cobble and sandy alluvium and is mostly gray and poorly sorted (Morton and Cox 2001). These sediments have been recently transported and deposited in the river channels and alluvial plains. Older Quaternary deposits (Pleistocene began 1.8 million years ago) are moderately consolidated and derived primarily as alluvial fan deposits from the more elevated terrain to the west. Igneous rocks are those that solidified from magma and formed below the surface of the Earth (Norris and Webb 1990). As they are trapped deep below the surface, and cool very slowly over millions of years until solid, they do not contain fossils (McLeod 2018).

Prehistory

Building on early studies and focusing on data synthesis, Wallace (1955, 1978) developed a prehistoric chronology for the Southern California coastal region that is still widely used today and is applicable to coastal and many inland areas, including southwestern San Bernardino and Riverside Counties. Four periods are presented in Wallace's prehistoric sequence: Early Man, Milling

Stone, Intermediate, and Late Prehistoric. In addition to Wallace's classic summary, a regional synthesis developed by Warren (1968) is referred to in the following discussion.

Early Man Period/San Dieguito (circa 10,000–6,000 B.C.)

When Wallace defined the Early Man Period in the mid-1950s, there was little evidence of human presence on the Southern California coast prior to 6000 B.C. Archaeological work in the intervening years has identified numerous older sites dating prior to 10,000 years ago, including ones on the coast and Channel Islands (e.g., Erlandson 1991; Rick et al. 2001:609; Johnson et al. 2002; Moratto 1984, 2004). The earliest accepted dates for occupation are from two of the northern Channel Islands off the coast of Santa Barbara. On San Miguel Island, Daisy Cave clearly establishes the presence of people in this area about 10,000 years ago (Erlandson 1991). On Santa Rosa Island, human remains have been dated from the Arlington Springs site to approximately 13,000 years ago (Johnson et al. 2002).

Recent data from inland as well as coastal sites during this period indicate that the economy was a diverse mixture of hunting and gathering. At near-coastal and inland sites, it appears that an emphasis on hunting may have been greater during the Early Man Period than in later periods; numerous Clovis-like or Folsom-like fluted points have been found in San Bernardino County along shorelines of Pleistocene lakes in the desert portion of the county. Common elements in many San Dieguito Tradition sites include leaf-shaped bifacial projectile points and knives, stemmed or shouldered projectile points (e.g., Silver Lake and Lake Mojave series), scrapers, engraving tools, and crescents (Warren 1967:174–177; Warren and True 1961:251–254). Use of the atlatl during this period facilitated launching spears with greater power and distance. Subsistence patterns shifted around 6000 B.C. coincident with the gradual desiccation associated with the onset of the Altithermal, a warm and dry period that lasted for about 3,000 years.

Milling Stone/Encinitas Period (circa 6000–3000/1000 B.C.)

The Milling Stone Period of Wallace (1955, 1978) and Encinitas Tradition of Warren (1968) are characterized by an ecological adaptation to collecting, and by the dominance of small seed grinding. Milling stones, such as metates and slabs, and handstones, such as manos and mullers, occurred in large numbers for the first time, and were even more numerous near the end of this period. As indicated by their toolkits, people during this period practiced a mixed food procurement strategy. Subsistence patterns varied somewhat as groups became better adapted to their regional or local environments. Milling Stone period sites are common in Southern California at many inland locations, including Prado Basin in western Riverside County and the Pauma Valley in northeastern San Diego County (e.g., True 1958; Herring 1968; Langenwalter and Brock 1985; Sutton 1993; Sawyer and Brock 1999).

During the Milling Stone Period and Encinitas Tradition, stone chopping, scraping, and cutting tools were abundant, and generally made from locally available raw material. Projectile points, which are rather large and generally leaf-shaped, and bone tools such as awls were generally rare. The large points are associated with the spear, and probably with an atlatl. Items made from shell, including beads, pendants, and abalone dishes, are generally rare as well. Evidence of weaving or basketry is present at a few sites. Kowta (1969) attributes the presence of numerous scraper-planes in Milling Stone sites to the preparation of agave or yucca for food or fiber. The mortar and pestle, associated

with the vertical motion of pounding foods, such as acorns, were introduced during the Milling Stone Period, but were not common.

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 within sites dating between 4000 and 1000 B.C. (Moratto 1984:149). 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 they have been attributed to ritualistic or ceremonial uses by several scholars (Eberhart 1961:367; Dixon 1968:64–65). Like cogged stones, discoidals are found in the archaeological record subsequent to the introduction of the cogged stone. Cogged stones and discoidals were often purposefully buried or "cached."

Koerper and Drover (1983) suggest that Milling Stone Period sites reflect migratory settlement patterns of hunters and gatherers who used marine resources during the winter and inland resources the remainder of the year. More recent research indicates that residential bases or camps were moved to resources in a seasonal round (de Barros 1996; Mason et al. 1997; Koerper et al. 2002), or that some sites were occupied year-round, with portions of the village population leaving at certain times of the year to exploit seasonally available resources (Cottrell and Del Chario 1981). Regardless of settlement system, subsistence strategies during the Milling Stone Period included hunting small and large terrestrial mammals, marine mammals, and birds; collecting shellfish and other shore species; extensive use of seed and plant products; the processing of yucca and agave; and near-shore fishing (Reinman 1964; Kowta 1969).

Characteristic mortuary practices during the Milling Stone Period or Encinitas Tradition included extended and loosely flexed burials interred beneath cobble or milling stone cairns. Some burials contain red ochre and few grave goods, such as shell beads and milling stones. "Killed" milling stones, exhibiting purposely made holes, may occur in the cairns.

Intermediate Period (circa 3000/1000 B.C.–A.D. 500)

Wallace's Intermediate Period and Warren's Campbell Tradition date from approximately 3000 B.C. to A.D. 500. This era is characterized by a shift toward a hunting and maritime subsistence strategy along with a wider use of plant foods. During the Intermediate Period, there was a pronounced trend toward greater adaptation to regional or local resources. For example, chipped stone tools suitable for hunting were more abundant and diversified, and shell fishhooks became part of the toolkit during this period. Larger knives, a variety of flake scrapers, and drill-like implements are common in deposits dating to this period. Projectile points include large side-notched, stemmed, and lanceolate or leaf-shaped forms. Koerper and Drover (1983) consider Gypsum Cave and Elko series points, which have a wide distribution in the Great Basin and Mojave Deserts between circa 2000 B.C. and A.D. 500, to be diagnostic of this period. Bone tools, including awls, were more numerous than in the preceding period, and the use of asphaltum adhesive was common as well.

Mortars and pestles, used for processing acorns, became more common during this period, gradually replacing manos and metates as the most abundant milling stone implements. In addition, hopper mortars and stone bowls, including steatite vessels, appear to have entered the toolkit at this time. This shift appears to be a correlate of a diversification in subsistence resources. Many archaeologists believe this change in milling tools signals a shift away from the processing and consuming of hard seed resources to the increasing importance of the acorn (e.g., Glassow et al. 1988; True 1993).

Characteristic mortuary practices during the Intermediate Period include fully flexed burials placed face down or face up and oriented toward the north or west (Warren 1968:2–3). Red ochre is common, and abalone shell dishes are infrequent. Interments sometimes occur beneath cairns or broken artifacts. Shell, bone, and stone ornaments, including charmstones, were more common than in the preceding Encinitas Tradition. Some later sites include olive shell (Olivella spp.) and steatite beads, mortars with flat bases and flaring sides, and a few small points. The broad distribution of steatite from the Channel Islands and obsidian from distant inland regions, among other items, attests to the growth of trade, particularly during the latter part of this period.

Late Prehistoric Period (circa A.D. 500–A.D. 1769)

Wallace (1955, 1978) places the beginning of the Late Prehistoric Period around A.D. 500. In all chronological schemes for Southern California, the Late Prehistoric Period lasts until European contact occurred in A.D. 1769.

During the Late Prehistoric Period, there was an increase in the use of plant food resources and an increase in land and marine mammal hunting. There was a concurrent increase in the diversity and complexity of material culture during this period, demonstrated by more classes of artifacts. The recovery of a greater number of small, finely chipped projectile points, usually stemless with convex or concave bases, indicates an increased use of the bow and arrow—rather than the atlatl and dart—for hunting. Cottonwood series triangular projectile points in particular are diagnostic of this period (Koerper and Drover 1983). Other items include steatite cooking vessels and containers, the increased presence of smaller bone and shell circular fishhooks, perforated stones, arrow shaft straighteners made of steatite, a variety of bone tools, and personal ornaments made from shell, bone, and stone. Ceramics were introduced during this time period, and pottery jugs, bowls, and smoking pipes become increasingly common.

Late Prehistoric Period sites contain complex objects of utility, art, and decoration. Ornaments include drilled whole Venus clam (Chione spp.) and drilled abalone. Steatite effigies become more common, with scallop (Pecten spp. and Argopecten spp.) shell rattles common in middens. Another feature typical of Late Prehistoric Period occupation is an increase in the frequency of obsidian in site assemblages, especially imported from the Obsidian Butte source in Imperial County. Much of the rock art found today is thought to date to this period (Whitley 2000:41). Mortuary customs were elaborate, including cremation and interment with abundant grave goods.

During this period, there was an increase in population size accompanied by the advent of larger, more permanent villages (Wallace 1955:223). Large populations and, in places, high population densities were characteristic, with some coastal and near-coastal settlements containing as many as 1,500 people. Many of the larger settlements were permanent villages where people resided year-round. The populations of these villages may have also increased seasonally.

In Warren's (1968) cultural ecological scheme, the period between A.D. 500 and European contact is divided into three regional patterns. The Chumash Tradition is present mainly in the region of Santa Barbara and Ventura counties; the Takic or Numic Tradition is present in the Los Angeles, Orange, western Riverside, and southwestern San Bernardino counties region; and the Yuman Tradition is present in the San Diego region. The seemingly abrupt changes in material culture, burial practices, and subsistence focus at the beginning of the Late Prehistoric Period are considered to be the result of a migration to the coast of peoples from inland desert regions to the east. In addition to the small triangular and triangular side-notched arrow points similar to those found in the desert regions in

the Great Basin and Lower Colorado River, Colorado River pottery and the introduction of cremation in the archaeological record are diagnostic of the Yuman Tradition in the San Diego region. This combination certainly suggests a strong influence from the Colorado Desert region.

In Los Angeles, Orange, western Riverside, and southwestern San Bernardino counties, similar changes (introduction of cremation, pottery, and small triangular arrow points) are thought to have resulted from Takic migration to the coast from inland desert regions. This Takic or Numic Tradition was formerly referred to as the "Shoshonean wedge" or "Shoshonean intrusion" (Warren 1968).

Ethnography

The project APE is located near an ethnographic transition zone between the Gabrielino/Tongva, Serrano, and Cahuilla Native American groups. All three groups are speakers of Takic languages, which are part of the Uto-Aztecan linguistic stock. Because the APE occupies a transitional zone among Gabrielino/Tongva, Serrano, and Cahuilla, it is necessary to consider all three groups to fully understand the occupation history of the APE.

Gabrielino/Tongva

The Gabrielino/Tongva are characterized as one of the most complex societies in native Southern California, second perhaps only to the Chumash, their coastal neighbors to the northwest (Bean and Smith 1978a:538; Kroeber 1925:621). The Gabrielino/Tongva language, as well as that of the Juaneno and Luiseno to the south, was derived from the Takic family. The Takic family is part of the Uto-Aztecan linguistic stock, and can be traced to the Great Basin (Mithun 2004:539). This language group represents an origin quite different from that of the Chumash to the north and Ipai and Tipai farther south. Linguistic analysis suggests that Takic-speaking immigrants from the Great Basin moved into Southern California around 500 B.C. (Kroeber 1925:579). This migration may have displaced both Chumashan- and Yuman-speaking peoples. The timing and extent of the migrations and their impact on indigenous peoples is poorly understood.

The Gabrielino/Tongva established large, permanent villages in the fertile lowlands along rivers and streams, and in sheltered areas along the coast that stretched from the foothills of the San Gabriel Mountains to the Pacific Ocean. The tribal population at contact is estimated to be at least 5,000 (Bean and Smith 1978a:540), although recent ethnohistoric work suggests a number approaching 10,000 is more likely (O'Neil 2002).

Houses constructed by the Gabrielino/Tongva were large, circular, domed structures made of willow poles thatched with tule that could hold up to 50 people (Bean and Smith 1978a). Other structures served as sweathouses, menstrual huts, ceremonial enclosures, and communal granaries. Cleared fields for races and games, such as lacrosse and pole throwing, were created adjacent to villages (McCawley 1996:27).

The fundamental economy of the Gabrielino/Tongva was one of subsistence 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 environmental zones. With a large portion of their territory situated inland, they had access to juniper, yucca, and other vegetation from higher and drier areas than exclusively coastal peoples. As with most Native American Californians, acorns were the staple food, supplemented by the roots, leaves, seeds, and fruit of a

wide variety of flora. Fresh and saltwater fish, shellfish, birds, and insects, as well as large and small mammals, were also exploited. Numerous other plants were used as medicines; as twine for the production of baskets, ornaments, and tools; and in religious ceremonies (O'Neil 2002).

A wide variety of tools and implements were used by the Gabrielino/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 ocean-going plank canoes and tule balsa canoes for fishing, travel, and trade between the mainland and the Channel Islands (McCawley 1996:7). Foods were processed 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 (Kroeber 1925:629).

Deceased individuals were either buried or cremated (Harrington 1942; McCawley 1996). Cremation was the standard practice for the mainland Gabrielino/Tongva during the contact period. Cremation ashes have been recovered from various archaeological contexts, including being buried within stone bowls and in shell dishes (Ashby and Winterbourne 1966:27). Archaeological and ethnographic data describe a wide variety of grave offerings, including seeds, stone grinding tools, otter skins, baskets, wood tools, shell beads, bone and shell ornaments, and projectile points and knives. Offerings varied with the sex and status of the deceased. Graves were sometimes marked, and in the San Pedro area headstones or boards were etched with figures.

The Gabrielino/Tongva were apparently first contacted by Europeans in 1542 when Juan Rodríguez Cabrillo entered the area. Following subsequent Spanish visits to the region, colonization began in 1769, precipitating the establishment of Missions San Gabriel (1771) and San Fernando (1797). Due in part to the introduction of Euro-American diseases and the harsh effects of mission life, the Gabrielino/Tongva population and culture suffered a gradual deterioration. Following the secularization of the missions, most surviving Gabrielino/Tongva became wage laborers on the ranchos of Mexican California. In the early 1860s, a smallpox epidemic nearly wiped out the remaining Gabrielino/Tongva. The combination of disease, forceful reduction, and poor diet contributed to the disappearance of the Gabrielino/Tongva as a culturally identifiable group in the 1900 federal census (Bean and Smith 1978a). However, persons of Gabrielino/Tongva descent have continued to live in the Los Angeles area to the present time.

Serrano

The Serrano were originally a relatively small group located within the San Bernardino and Sierra Madre Mountains, and the term "Serrano" has come to be ethnically defined as the name of the people in the San Bernardino Mountains (Kroeber 1925:611). The Vanyume, who lived along the Mojave River and associated Mojave Desert areas, also referred to as the Desert Serrano, spoke either a dialect of Serrano or a closely related language (Mithun 2004:543).

The Serrano language is part of the Serran division of a branch of the Takic family of the Uto-Aztecan linguistic stock (Mithun 2004:539, 543). The two Serran languages, Kitanemuk and Serrano, are closely related. Kitanemuk ethnographic lands were located to the northwest of the Serrano.

The Serrano occupied an area in and around the San Bernardino Mountains between approximately 1,500 and 11,000 feet above mean sea level. Their territory extended west into the Cajon Pass, east as far as Twentynine Palms, north past Victorville, and south to the Yucaipa Valley. Year-round

habitation tended to be located out on the desert floor, at the base of the mountains, and up into the foothills, with all habitation areas requiring year-round water sources (Kroeber 1908a; Bean and Smith 1978b).

Most Serrano lived in small villages near water sources (Bean and Smith 1978b:571). Houses measuring 12 to 14 feet in diameter were domed and constructed of willow branches and tule thatching. The interiors were encircled with tule mats. Each house was occupied by a single extended family, comprising a husband, wife (or wives), children, grandparents, and perhaps a widowed aunt or uncle, and was a central family unit gathering place for sleeping and storage.

Much of the daily routine occurred outdoors in the open or under square armadas constructed of at least four posts, cross-beams, and tule-thatched roofs. Many of the villages had a ceremonial house, used both as a religious center and the residence of the lineage leaders. When hunting, the men would sometimes construct individual dwellings away from the village. Additional structures within a village might include granaries and a large circular subterranean sweathouse. The sweathouses were typically built along streams or pools.

Serrano territory was a trade nexus between inland tribes and coastal tribes. Ethnohistory also suggests that the Serrano played a role in the trade of horses from the southwest to the California coast (Bean and Vane 2002). The subsistence economy of the Serrano was one of subsistence hunting and collecting plant goods, with occasional fishing (Bean and Smith 1978b:571). Large and small animals were hunted, including mountain sheep, deer, antelope, rabbits, small rodents, and various birds, particularly quail. Plant staples consisted of seeds; acorn nuts of the black oak; pinon nuts; bulbs and tubers; and shoots, blooms, and roots of various plants, including yucca, berries, barrel cacti, and mesquite. Fire was used as a management tool to increase yields of specific plants, particularly chia.

Trade and exchange was an important aspect of the Serrano economy. Those living in the lower-elevation desert floor villages traded foodstuffs with people living in the foothill villages who had access to a different variety of edible resources. In addition to intervillage trade, ritualized communal food procurement events—such as rabbit and deer hunts and pinon, acorn, and mesquite nut-gathering events—integrated the economy and helped distribute resources that were available in different ecozones.

A variety of materials were used for hunting, gathering, and processing food, many of which were also used for shelter, clothing, and ceremonial items. Shell, wood, bone, horn, stone, plant materials, animal skins, and feathers were used for making money, baskets, rabbit skin blankets, mats, nets, and bags. The Serrano made pottery and used it daily to carry and store water or foodstuffs; ceramics were also used as ceremonial objects. They also made awls, sinew-backed bows, arrows, arrow straighteners, throwing sticks (for hunting), traps, fire drills, stone pipes, musical instruments of various types (rattles, rasps, whistles, and bull-roarers), yucca fiber cordage for snares, nets and carrying bags, and clothing (Bean and Smith 1978b:571; Bean and Vane 2002). A strong tradition of basket weaving incorporated the use of juncus sedge, deergrass, and yucca fiber. Foods were cooked either in earth ovens, in watertight baskets using heated cooking rocks and constant stirring, or by parching through use of hot embers and a constant tossing motion of shallow trays containing the grains. Animal bones were boiled and then cracked for access to the marrow. A variety of methods were used in the drying and preserving of foods for later consumption.

Mainly due to the inland territory that Serrano occupied beyond Cajon Pass, contact between Serrano and Europeans was relatively minimal prior to the early 1800s. As early as 1790, Serrano

began to be drawn into mission life (Bean and Vane 2002). More Serrano were relocated to Mission San Gabriel in 1811 after a failed indigenous attack on that mission. Most of the remaining western Serrano were moved to an *asistencia* built near Redlands in 1819, where they provided much of the labor to establish the Mill Creek *Zanja* that irrigated much of the land between present day Mentone and the *asistencia* (Bean and Smith 1978b:573). By 1834, most western Serrano had been moved to the missions, with some Serrano possibly moved to the mission at San Fernando Rey (Kroeber 1908b). Only small groups of Serrano remained in the area northeast of the San Gorgonio Pass and were able to preserve some of their native culture.

In the 1860s, a smallpox epidemic decimated many indigenous Southern Californians, including the Serrano (Bean and Vane 2002). Surviving Serrano sought shelter at Morongo with their Cahuilla neighbors; Morongo later became a reservation (Bean and Vane 2002). Other survivors followed the Serrano leader Santos Manuel down from the mountains and toward the valley floors, and eventually settled what later became the San Manuel Band of Mission Indians Reservation. This reservation was established in 1891.

Cahuilla

The Cahuilla settled in a territory that 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. Evidence suggests the Cahuilla migrated to Southern California about 2,000 to 3,000 years ago, most likely from the southern Sierra Nevada ranges of east-central California with other related socio-linguistic (Takic-speaking) groups (Moratto 1984:559).

Cahuilla villages were usually located in canyons or on alluvial fans near accessible water such as springs or where large wells could be dug. Each family and lineage had houses (kish) and granaries for the storage of food, and armadas for work and cooking. Sweat houses and song houses (for nonreligious music) were typically present within the villages, and each community constructed a separate house for the lineage or clan leader. Major religious ceremonies of the clan were held in a separate ceremonial house. Houses and ancillary structures were often spaced apart, and villages typically spread over a mile or two.

The Cahuilla used more than 200 desert and mountain plants (Bean and Saubel 1972). Although 60 percent of Cahuilla territory was in the Lower Sonoran Desert environment, 75 percent of their diet came from plant resources acquired in Upper Sonoran and Transition environmental zones (Bean and Smith 1978c). Key plant foods included acorns, screwbean and honey mesquite, pinon nuts, prickly-pear cactus fruit and leaves, and yucca blossoms and stalks.

The Cahuilla employed a wide variety of tools and implements to gather and collect food resources. Hunting was achieved using the bow and arrow, traps, nets, slings, and blinds for land mammals and birds and nets for fish when Lake Cahuilla was filled. Throwing sticks were used to procure individual rabbits and hares, whereas clubs and large nets were used during communal rabbit drives. Food processing was achieved using a variety of tools: portable and bedrock mortars, basket hopper mortars, pestles, manos and mutates, bedrock grinding slicks, hammerstones and anvils, woven strainers and winnowers, leaching baskets and bowls, woven parching trays, knives, bone saws, and wooden drying racks. Food was consumed from woven, carved wood, and pottery vessels. Ground meal and unprocessed hard seeds were stored in large, finely woven baskets, whereas

unprocessed mesquite beans were stored in large granaries woven from willow branches and placed on raised platforms to protect them from vermin.

Pottery was initially introduced to the Cahuilla during the Late Prehistoric Period, and the art of ceramic production was later adopted by the Cahuilla, who used the paddle and anvil technique. Typical culinary wares included jars, cooking vessels, and ladles. Ceramic pipes were also commonly manufactured. Ceramic ollas (large, round pots with small necks) were used for storing seeds, and sealed ollas with foodstuffs were sometimes cached in caves and rock shelters for consumption during hunting and gathering forays (Bean and Smith 1978c:578–579).

Asistencias were established near Cahuilla territory at San Bernardino and San Jacinto by 1819. Interaction with Europeans was less intense in the Cahuilla region than for coastal groups because the topography and paucity of water rendered the inland area inhabited by the Cahuilla unattractive to colonists. By the 1820s, however, the Pass Cahuilla experienced consistent contact with the ranchos of Mission San Gabriel, whereas the Mountain Cahuilla frequently received employment from private rancheros and were recruited to Mission San Luis Rey.

Mexican ranchos were located near Cahuilla territory along the upper Santa Ana and San Jacinto Rivers by the 1830s, providing the opportunity for the Cahuilla to earn money ranching and to learn new agricultural techniques. The Bradshaw Trail, established in 1862, 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 to the coast. Bradshaw developed his trail using the model employed for the Cocomaricopa trail, which had maps and guides provided by local Native Americans. Journals by early travelers along the Bradshaw Trail described encounters with Cahuilla villages and walk-in wells as they journeyed through the Coachella Valley.

The expansion of immigrants into the region introduced the Cahuilla to European diseases. The single worst recorded event was a smallpox epidemic in 1862–1863. By 1891, only 1,160 Cahuilla remained within what was left of their territory, down from an aboriginal population estimated at 6,000 to 10,000 (Bean and Smith 1978c: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 within their territory: Agua Caliente, Augustine, Cabazon, Cahuilla, Los Coyotes, Morongo, Ramona, Santa Rosa, Soboba, and Torres-Martinez (Bean and Smith 1978c:585). Four of these reservations are shared with other Native American groups, including the Chemehuevi, Cupeno, and Serrano. The Cahuilla on the Morongo Reservation established the Malki Museum in 1965.

Historical-Period Background

History for the state of California is generally divided into three periods: the Spanish Period (1769–1822), Mexican Period (1822–1848), and American Period (1848–present). Some researchers subdivide the American Period in various phases, such as 19th century (1848¬–1900), Early 20th century (1900–1950), and Modern Period (1950–present).

Spanish Period (1769–1822)

Spanish explorers made sailing expeditions along the coast of Southern California between the mid-1500s and mid-1700s, although more than 200 years would pass before Spain would begin the colonization and inland exploration of Alta California. In the 18th century, the Spanish colonized present-day California, establishing a tripartite system consisting of missions, presidios, and pueblos (Bean and Rawls 1968). Franciscan Fr. Junípero Serra founded Mission San Diego de Alcalá at Presidio Hill, the first of the 21 missions that would be established in Alta California by the Spanish and the Franciscan Order between 1769 and 1823.

The string of 21 California missions paralleled the coastline between San Diego and Sonoma. Approximately 30 miles or a day's ride by horseback typically separated the missions. Near-coastal locations were preferred by the Spaniards for colonization because they were easier to defend and supply from ships, and were also bordered by populous Native American villages with potential converts. A major emphasis during the Spanish Period in California was the construction of these missions and associated presidios to integrate the Native American population into Christianity and communal enterprise. Several factors kept growth within California to a minimum, including the threat of foreign invasion, political dissatisfaction, and unrest among the indigenous population.

History records the Spaniard Pedro Fages as the first white person to pass through the San Bernardino Valley in 1772. Four years later, Fr. Francisco Hermenegildo Garcés, "the famous and revered Franciscan missionary-explorer-martyr," entered the valley, seeking to plot a road that would connect Monterey with Sonora (Beattie and Beattie 1939:3). It would be another 30 years before the Spanish returned to the region.

All of the missions contained churches, workshops, storehouses, soldier's barracks, and quarters for Native American neophytes. These new converts were used as labor, establishing and nurturing the mission orchards, gardens, vineyards, and pastures. In San Diego, for example, 1,400 Native Americans were associated with the mission by 1797. Initially, cattle and horses were raised on the pastures adjacent to that first mission. Sheep, goats, and pigs were later added to the repertoire of animals raised on mission lands. These animals ultimately provided meat, wool, tallow for candles and soap, and leather for clothing, among other uses. Ranching eventually expanded to other areas and missions within San Diego County and beyond.

As the chain of missions prospered, their livestock holdings increased and became vulnerable to theft. The Spaniards responded by planning inland missions that could provide additional security and establish a presence beyond the coast. By 1806, a formal expedition to find potential locations was mounted to the San Bernardino Valley and on May 10, 1810, Fr. Francisco Dumetz established a religious site or *capilla* at a Cahuilla rancheria called Guachama (Beattie and Beattie 1939:5). The valley received its name from this site, which Fr. Dumetz dedicated to San Bernardino de Siena in honor of the saint's feast day, traditionally celebrated on May 10. The Guachama rancheria was located in the Bryn Mawr area, southwest of Redlands, and is now listed as California State Historical Landmark No. 95.

Efforts to colonize and evangelize were continued by Mission San Gabriel Archangel, which established an estancia (rancho) at Puente at least by 1816 and further expanded its scope of operations by establishing the San Bernardino *estancia* at a site 1.5 miles east of Guachama in 1819. Other *estancias* in San Bernardino County soon followed at Agua Caliente and at the ranchos of Jucumba and Yucaipa (Beattie and Beattie 1939:12). The *estancia* at Guachama was intended to

serve several purposes, one of which was to develop farming and teach the Cahuilla Indians about European agricultural methods. To that end, a *zanja*, or irrigation ditch (now California State Historical Landmark No. 43) was constructed in 1820 that originated several miles from the *estancia*. This ditch came to be known as the Mill Creek *Zanja*. A portion of the *zanja* east of downtown Redlands is listed in the NRHP and is listed as California State Historical Landmark No. 43. According to Beattie, as many as 1,000 Native Americans were involved in learning how to cultivate crops by the spring of that year. By 1821, mail was being carried between Sonora and California on the Cocomaricopa Trail, which passed through the San Bernardino Valley.

Mexican Period (1822–1848)

Mexico proclaimed its independence from Spain in 1821 and became a federal republic in 1824, with both Baja and Alta California classified as territories (Starr 2005). The Mexican Republic began to grant private land to citizens to encourage immigration to California. Huge land grant ranchos took up large sections of land in California. Between 1835 and 1846, more than 600 land grants were made in California by the Mexican government. The dons dominated the economy and defined the society of Mexican California (Robinson 1948; Starr 2005). These men, often referred to as "Californios," practiced an agricultural pattern that included mixed stock raising and commercial agriculture on their vast landholdings (Jelinek 1999; Starr 2005).

During the early years of the Mexican Republic, the San Bernardino estancia became an *asistencia*. Although San Bernardino never had a resident priest, it did expand, and several adobe buildings were constructed by the Franciscans between 1830 and 1834. The site is now listed as California Historical Landmark No. 42.

In 1833, Mexico adopted the Secularization Act of 1833, by which the Mexican government privatized most of the Franciscan's landholdings, including their California missions. By 1836, this sweeping process effectively reduced the California missions to parish churches and released their vast properties. Although earlier secularization plans had called for redistribution of lands to the Native American neophytes, who were responsible for construction of the mission empire, the mission lands and livestock holdings were instead redistributed by the Mexican government through land grants to Mexican ranchers (Langum 1987:15–18). The Mexican citizens who received the ranchos subsequently released their neophyte "workers" to fend for themselves.

Subsequent to the abandonment of San Bernardino by the Franciscans, three brothers, Jose del Carmen, Jose Maria, and Vicente Lugo, settled the former mission lands with the intention of starting a colony. Slover Mountain, also known as El Cerrito Solo, was the natural landmark used for establishing the boundaries of the Lugos' land grant in the San Bernardino Valley. The colony was not a success; however, with some effort, they were able to retain the land, which by the early 1840s they held in common with Diego Sepulveda. Sepulveda's adobe at Yucaipa remains the oldest home in San Bernardino County and is listed as California Historical Landmark No. 528.

A small band of New Mexicans settled nearby at Politana during the same period, in 1842. Their presence was intended to help forestall attacks by Native Americans, and members of the group eventually established La Placita and Agua Mansa along the Santa Ana River. Their cemetery at Agua Mansa remains the oldest cemetery in San Bernardino County and is listed as California State Historical Landmark No. 121.

During the supremacy of the ranchos (1834–1848), landowners largely focused on the cattle industry and devoted large tracts to grazing. Cattle hides became a primary Southern California export, providing a commodity to trade for goods from the east and other areas in the United States and Mexico. The number of nonnative inhabitants increased during this period because of the influx of explorers, trappers, and ranchers associated with the land grants. The rising California population unfortunately contributed to the introduction and rise of diseases foreign to the Native American population, who had no associated immunities. Large numbers of native peoples in the Central Valley, for example, died from disease between 1830 and 1833, and disease exterminated whole tribes along the American, Merced, Tuolumme, and Yuba Rivers. The Central Valley was hit by a second epidemic in 1837, which further decimated indigenous Californians (Cook 1955).

American Period (1848–Present)

In 1848, at the end of the war between Mexico and the United States, the Treaty of Guadalupe Hidalgo was signed, giving control of California to the United States. The acquisition of California by the United States and the discovery of gold in 1849 drew many Euro-Americans into California (Robinson 1948). In 1850 California became a state and was subsequently divided into 27 counties. However, the great population influx was limited primarily to central California, San Francisco, and the Gold Rush region of the Sierra Nevada. Southern California grew slowly during this time.

Horticulture and livestock, based primarily on cattle as the currency and staple of the rancho system, continued to dominate the Southern California economy through the 1850s. Cattle were no longer desired mainly for their hides, but also as a source of meat and other goods. During the 1850s cattle boom, rancho vaqueros drove large herds from Southern to Northern California to feed that region's burgeoning mining and commercial boom. Cattle were at first driven along major trails or roads such as the Gila Trail or Southern Overland Trail, then were transported by trains where available. The cattle boom ended for Southern California as neighbor states and territories drove herds to Northern California at reduced prices. Operation of the huge ranchos became increasingly difficult, and droughts severely reduced their productivity (Cleland 1941:102–103).

Riverside County

In 1859, the first U.S. Post Office in what would become Riverside County was established at John Magee's store on Temecula Rancho (Gunther 1984:526). The first major population boom in Southern California followed completion of the Southern Pacific Railroad connection from Sacramento and the transcontinental Central Pacific Railroad route south to Los Angeles in 1874 (Lech 2012). The railroad brought land speculators, developers, and agriculturalists into the region, including Riverside and surrounding areas that seemed most fit for agricultural development.

In 1870, Judge John Wesley North and a group of associates founded the city of Riverside on part of Rancho Jurupa. Orange trees were first planted in Riverside County in 1871, but the citrus industry began 2 years later when Eliza Tibbets received two Brazilian navel orange trees from a friend at the Department of Agriculture in Washington. The trees thrived in the Southern California climate, and the navel orange industry grew rapidly, supported by extensive irrigation projects. By 1882, there were more than half a million citrus trees in California, almost half of which were in Riverside County. With the agricultural boom that the navel orange provided, the city of Riverside grew rapidly during the 1880s. On May 9, 1893, Riverside County was officially formed from portions of San Bernardino County and San Diego County (Patterson 1971). The citrus boom created a number

of fortunes in Riverside and, according to the Bradstreet Index, in 1895 the city became the wealthiest jurisdiction per capita in the United States (Patterson 1971).

During World War I, the federal government established a military presence in Riverside County. The U.S. Army constructed March Field, now March Air Reserve Base, to train aviators. The base increased in size during World War II, adding Camp Haan and a third facility, Camp Anza, now occupied by the National Veteran's Cemetery. Over the decades, new residents populated new towns such as Murrieta, Wildomar, and Lake Elsinore. Eastvale, Norco, and unincorporated areas within the county south of Corona zoned lots with enough acreage for "ranchettes" and permitted horse keeping. Civic activities with equestrian themes became a feature of towns and neighborhoods within the county area and towns south of the city of Riverside (County of Riverside 2010; March Air Reserve Base n.d.). The bulk of the county remained agricultural into the 1960s and 1970s, when real estate development activity began to occur (ICF 2012).

City of Riverside

While Native Americans inhabited the area now known as the city of Riverside for centuries, the first nonnative inhabitants of the area settled during the Mexican period. During this time, lands once owned by the Franciscan missions that had been used primarily for sheep and cattle grazing were deeded to Mexican rancheros. Vast land grants were often given, usually to retired soldiers. In 1838, Juan Bandini was granted a large tract of land by the Mexican government that included much of the Santa Ana River drainage. Bandini called this Rancho Jurupa, portions of which were later sold and renamed Rubidoux Rancho. Fewer than 10 miles to the north of what would become downtown Riverside, a group of Mexican colonists from New Mexico settled two villages on either side of the Santa Ana River known as Agua Mansa and La Placita. Juan Bandini had donated this portion of his rancho in 1845 to the colonists. The two towns thrived until the catastrophic flood of 1862 that destroyed most all of the adobe residences and other structures. While there was an attempt to rebuild, the town was not able to rebuild its former status (Holmes 1912). Rubidoux Rancho was later sold in 1859 to Abel Stearns, a land prospector and resident of Los Angeles. In 1868, Stearns then sold Jurupa Rancho to the Los Angeles Land Company (Greves 2002; Holmes 1912).

Because of the devastation wrought by the 1862 flooding and later drought years, the once-flourishing cattle industry was all but destroyed in Southern California. Land owners attempted various agricultural enterprises, most of which were unsuccessful. For a time, the silk industry exploded, and a portion of the Jurupa rancho was purchased with the intention of planting groves of mulberry trees and the establishment of a silk weaving colony. However, this enterprise was not to be, as the leader of this industry and partner in the ownership of the land, Louis Prevost, died and the newly established Silk Center Association sold its lands (Greves 2002; Holmes 1912).

While the silk industry did not take hold in Southern California, the citrus industry became highly successful due to the climate and abundance of land. In 1870 John North, E. G. Brown, A. J. Twogood, and James Greves moved to California to purchase land for the development of "a colony of industrious people to engage in the culture of semitropical fruits and grapes for the manufacture of raisins" (Greves 2002:21). After researching areas to establish this colony in Southern California, the group decided to purchase land from the Silk Culture Association in what would later become the city of Riverside (Greves 2002; Lech 2007). Construction of the first irrigation canal began in October of 1870 and was completed in July of 1871. A larger system of canals was designed and planned for the area. At a meeting of the inhabitants of the colony, the name Riverside was adopted. Within a year, a church, a schoolhouse, a hardware store, and residences had been constructed.

Growth was relatively slow but steady over the next several years with the influx of more families and entrepreneurs.

With the construction of other irrigation systems, namely the Gage Canal in in 1886, the community saw rapid expansion during the 1870s and 1880s. Eventually, the Atchison, Topeka and Santa Fe Railway and the Southern Pacific Railroad each extended lines into Riverside. The extension of rail lines into Riverside and the subsequent opening of markets to the east meant higher profits for the various agricultural enterprises as the costs of transport decreased significantly. Packing houses were erected, and the Annual Citrus Fair attracted nationwide interest. The 1884 World's Fair in New Orleans proved a windfall for the Riverside citrus industry. In this event, oranges from the city won several gold medals, boosting the prominence of the Riverside citrus industry throughout the country (Holmes 1912).

Riverside and surrounding cities had been divided between Los Angeles and San Diego counties until San Bernardino County was formed in 1853. In 1885, the city of Riverside was granted an official government and status as a city by the Secretary of State of California. Riverside was subsumed into San Bernardino County until 1893 when Riverside County was formed and confirmed by Governor Henry Markham. The city of Riverside became the county seat. The city of Riverside prospered through the 1920s with the development of the Riverside Land and Irrigation Company, construction of transportation infrastructure, and construction of numerous public works such as parks, a library, schools, hotels, and other private and municipal buildings. Fraternal organizations supported the development of such civic works and maintained strong business ties between their members. The operation of several streetcar companies allowed for the growth of suburban neighborhoods on the outskirts of downtown Riverside (Lech 2007; Tibbet 2007), and in 1926 a master plan was developed by the city to accommodate the expanding footprint of the city and the increase in automobile traffic.

While the depression of the 1930s hit the city hard, government programs such as those sponsored by the Civil Works Administration put residents to work constructing highways and improving infrastructure. The precursors to State Route 60, State Highway 395, and State Route 91 were all constructed during this time (Tibbet 2007). March Airfield was established southeast of the city in 1918 to support the Army. In 1927 it was expanded and became the Western Headquarters of Army Aviation. As a result of its proximity and the number of people employed by and supporting the base, the city of Riverside received numerous benefits such as the improvement of highways and accelerated housing construction. Personnel increased substantially at March Airfield through World War II, and the city also saw a boom in residential development with the return of veterans and the availability of Veterans Administration and Federal Housing Administration mortgages (Tibbet 2007). As with much of the rest of Southern California, the 1950s and 1960s saw large-scale residential development and a large increase in Riverside's population. In 1953, Riverside was reported as being one of the 15th fastest-growing cities in the western United States. The University of California, Riverside was opened in 1961, and La Sierra University in 1964. Eventually, the strong dependence on agriculture waned, and the vast orchards and agricultural fields that previously covered the landscape were replaced with housing tracts and industrial facilities.

City of Jurupa Valley

The city of Jurupa Valley was incorporated in 2011; however, its history dates back many centuries. The name Jurupa comes from the earliest inhabitants of the region. Native Americans are said to have referred to the plant known as California sagebrush as some variant of the word Jurupa. The

city is near the ethnohistoric boundaries of the Gabrielino and Serrano tribes who occupied the region for several thousand years prior to contact with nonnative colonists. Early recorded history of the region begins with the explorations of Colonel Juan Bautista de Anza, who camped along the Santa Ana River in 1774 and 1776, and noted the location of a Native American village in this area (Johnson 2005).

Prior to the American annexation of California, much of the Jurupa Valley was the under the domain of the Mission San Gabriel; however, secularization of the missions in 1835 meant that the area was given to private owners. The area of the Jurupa Valley was granted to Juan Bandini in 1838 by Governor Alvarado (Guinn 1902; Johnson 2005, 2012). The Rancho Jurupa spanned 32,000 acres and included a portion of the Santa Ana River within its boundaries. Portions of the Rancho Jurupa were later sold to Benjamin Wilson in 1843 who in turn sold his portion to Louis Rubidoux in 1844. The area would come to be known as the Rubidoux Rancho with a large adobe residence facing the Santa Ana River. Rubidoux built a grist mill and ran a vineyard. The Jurupa Ditch, a large irrigation canal, was built at some time during either Wilson or Rubidoux's ownership of the Rancho (Guinn 1902; Johnson 2005).

Before he died in 1868, Rubidoux sold portions of his land as small ranches to many different settlers. Abel Sterns married Juan Bandini's daughter and in 1857 purchased the remainder of Bandini's Jurupa Rancho. Much like the history of the city of Riverside, the late 1800s was a time of agricultural pursuits for most of the residents of the area that would become the city of Jurupa Valley. The expansion of the Southern Pacific Railroad into Southern California meant a growing number of immigrants to the area. However, unlike the city of Riverside, the city of Jurupa Valley did not grow quickly into a larger metropolitan area, and the population remained relatively small with a more rural and agricultural base. The area was subjected to major flooding with especially large flood episodes in 1938 and 1969, which saw vast areas under water with agricultural fields submerged and cattle and livestock drowned (Johnson 2005). Prior to incorporation, the area encompassing the city of Jurupa Valley was a conglomeration of small rural communities such as West Riverside, Mira Loma, Glen Avon, Belltown, Crestmore Heights, Sunnyslope, and Pedley (Johnson 2005). Efforts at incorporation were made many times, but eventually the city would be incorporated in 2011 to cover a 44-square-mile area that includes the communities of Jurupa Hills, Mira Loma, Glen Avon, Pedley, Indian Hills, Belltown, Sunnyslope, Crestmore Heights, and Rubidoux (City of Jurupa Valley 2018).

Methods

The effort to identify cultural resources in the APE included records searches of previous cultural resource investigations and recorded sites; background research; a review of literature relevant to the prehistory, ethnography, and history of the APE vicinity; consultation with NAHC and Native American representatives; and a pedestrian survey of the APEs of both the Tributaries Restoration Project and Mitigation Reserve Program study areas.

Records Search

The records search for the Upper Santa Ana River Habitat Conservation Plan was conducted on July 17, 2018, by ICF staff archaeologists at the EIC at the University of California, Riverside. The records search included a review of all recorded historic and prehistoric archaeological sites, as well as recorded built environment resources within 0.5 mile of the project site. The records search included a review of all available cultural resources surveys and excavation reports and site records within the four restoration sites and within a 0.5-mile radius surrounding them. In addition, the NRHP (National Park Service 2010) and documents and inventories from the California Office of Historic Preservation, including the lists of California Historical Landmarks (COHP 2010a), California Points of Historical Interest (COHP 2010b), Listing of National Register Properties (COHP 2010c), and Inventory of Historic Structures (COHP 2010d), were consulted. Historic maps including 1901, 1905, 1911, 1927, 1939, 1942, 1955, 1960, 1962, 1969, and 1975 U.S. Geological Survey quadrangle maps were also examined. Historic aerial photographs dated to 1948, 1966, 1967, 1994, and 2002 were also reviewed using NETROnline at www.historic aerials.com.

Native American Outreach

A letter was sent to NAHC on July 26, 2018, requesting a Sacred Lands File search and list of potentially interested Native American groups and individuals. NAHC responded on August 2, 2018, stating that a search of the Sacred Lands records files revealed no Sacred Lands or traditional cultural properties in proximity to the proposed project area. NAHC also provided a list of 30 Native American contacts who might have knowledge of cultural resources in the project area.

Pedestrian Survey

The field survey methods consisted of both a systematic intensive pedestrian survey and a reconnaissance survey. The intensive pedestrian survey was the preferred method and was utilized in all areas where feasible. The intensive pedestrian survey method consisted of teams of two walking 10-meter transects in areas where slope, vegetation, and/or terrain allowed transects to be maintained. In surveyed areas, team members checked all bedrock outcrops as well as areas that had been cleared of vegetation or disturbed by rodents along and between the transect lines.

The reconnaissance survey method was used in areas that could not be walked through systematically (Figures 4, 5, and 6). The topography of the river valley consists of rolling hills and

terraces above the Santa Ana River along with flat, disturbed alluvial riverbanks in the river valley. Vegetation on the various sites consisted of disturbed grasslands with sycamore woodlands near the Santa Ana River itself. Density of vegetation varied across the project sites and, in some cases, was very thick and hindered visibility and access. Although the ground surface was visible in some reconnaissance areas, transect coverage was precluded by dense and/or toxic vegetation such as poison oak. Due to these factors, some areas could not be covered consistently using 10-meter transects. Intensive pedestrian survey occurred where there were open patches of ground and areas where the vegetation was thin enough to see the ground surface. Overall visibility ranged from 10–20 percent in vegetated areas and 100 percent in areas of existing trails, paths, and roads (see Figures 7 and 8 below). The reconnaissance survey method consisted of surveying visible areas where they were present and/or accessible.

ICF archaeologists conducted pedestrian surveys on five different dates. As part of a related project, ICF archaeologists Nara Cox and Jesse Shelmire conducted a pedestrian survey of a portion of the Hidden Valley Creek site and the majority of the Lower Hole Creek site on June 21, 2017. ICF archaeologists Benjamin Vargas, M.A., RPA and Rachel Droessler, M.A., RPA conducted a cultural resources pedestrian survey on August 23–34 and 27–29, 2018; Benjamin Vargas performed an additional site visit on September 18, 2018, to collect data for the update of three archaeological sites; and ICF archaeologists Peter Pham and Natalie Adame conducted a final survey of access routes and staging areas on February 22, 2019 using 10- to 15-meter transects, when possible.

An Apple iPad equipped with an integrated global positioning system (GPS), a submeter antenna, and the ArcGIS Collector application were used to track the survey transects and coverage and record the cultural resources that were identified within the project area. Notes regarding resource details were collected to meet or exceed site recordation guidelines, based on the California Office of Historic Preservation's *California Archaeological Inventory Handbook for Completing an Archaeological Site Record* and the EIC.

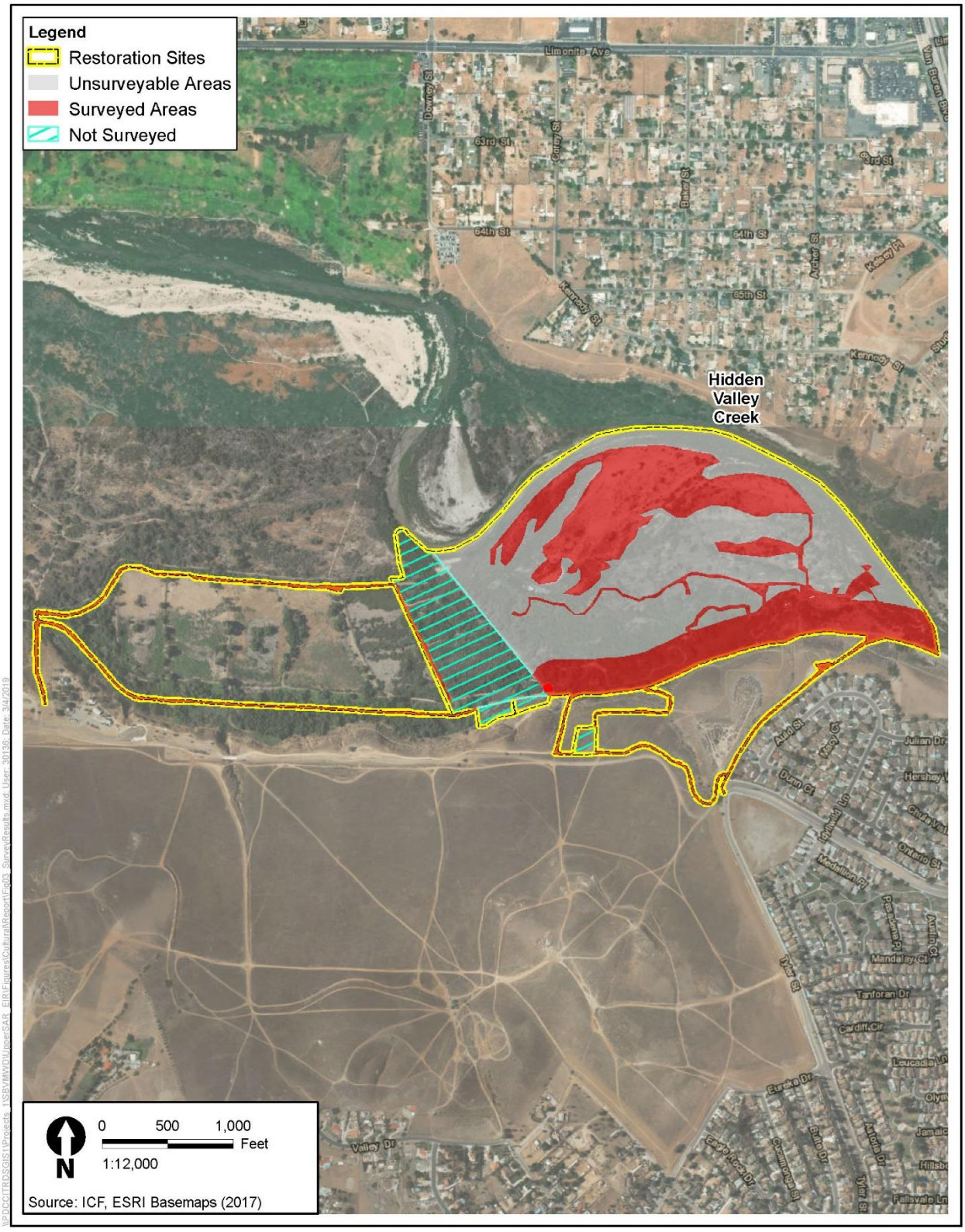

Figure 4. Survey Coverage for Tributaries Restoration Site (Hidden Valley Creek), Mitigation Reserve Program, and Associated Access Roads and Staging Areas (Map 1)

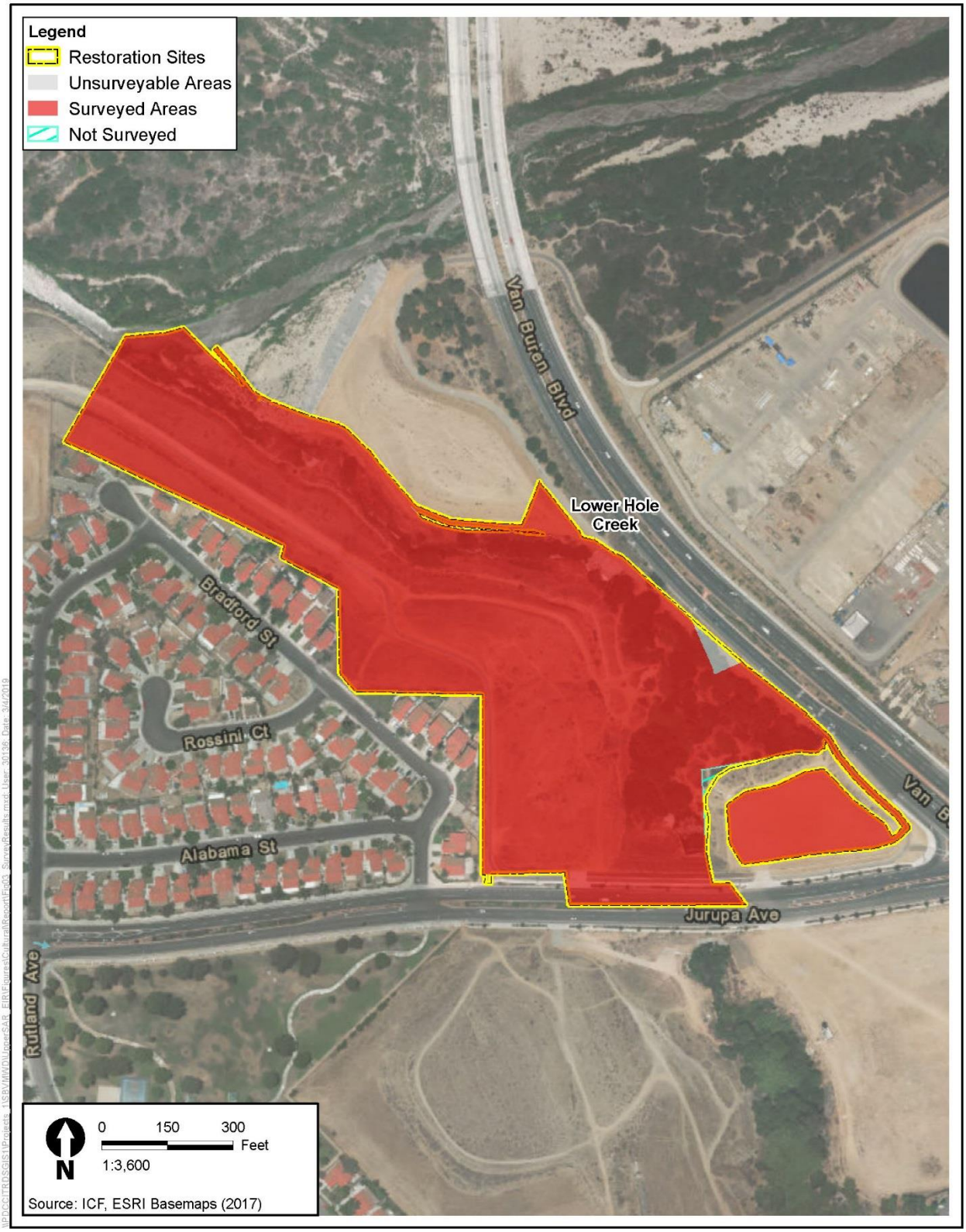

Figure 5. Survey Coverage for Tributaries Restoration Site (Lower Hole Creek), Mitigation Reserve Program, and Associated Access Roads and Staging Areas (Map 2)

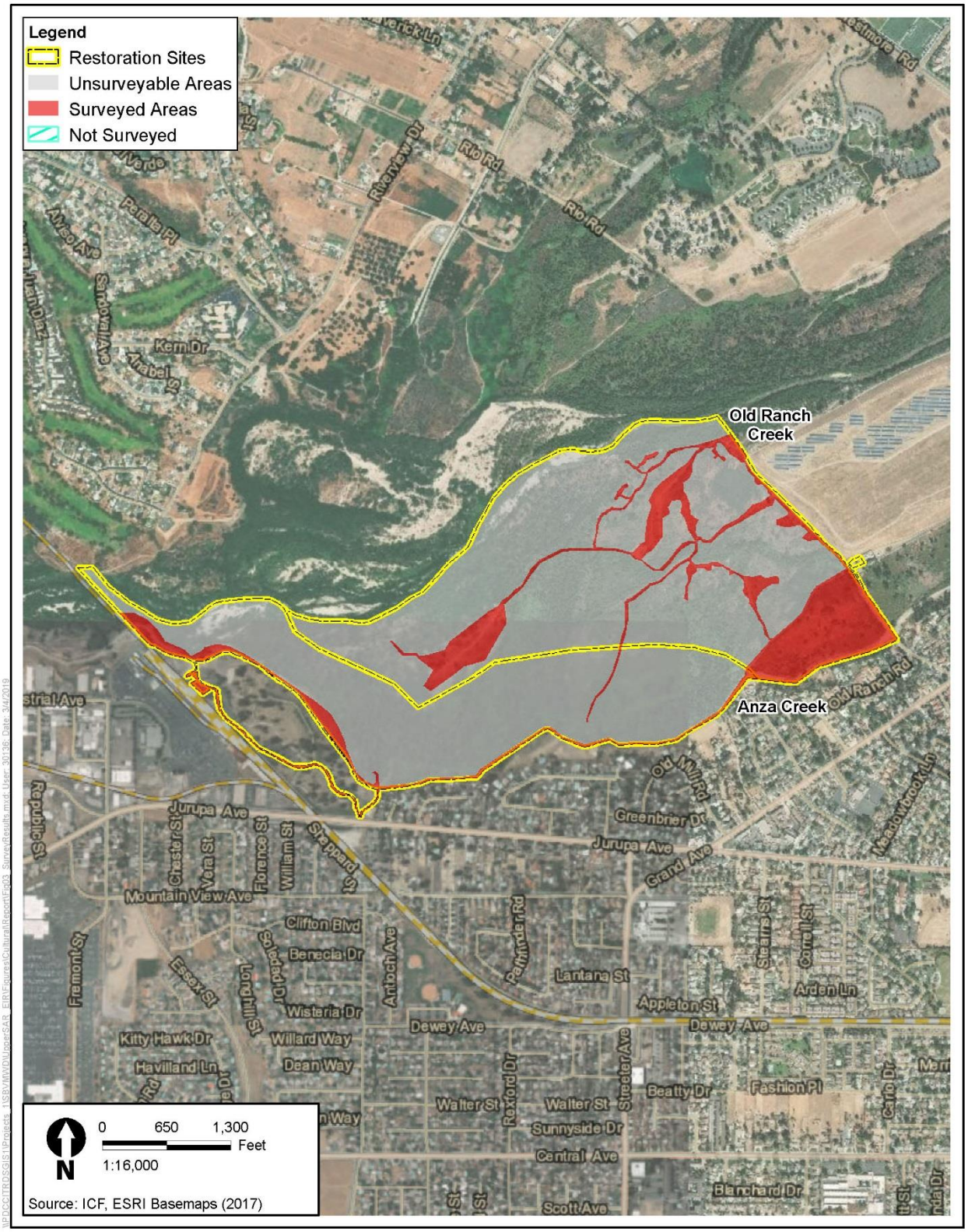

Figure 6. Survey Coverage for Tributaries Restoration Site (Old Ranch Creek and Anza Creek), Mitigation Reserve Program, and Associated Access Roads and Staging Areas (Map 3)

Figure 7. Trails through the Hidden Valley Creek Restoration Area; Impenetrable Vegetation, View West

Figure 8. Dense Growths of Seasonal Grasses Found in Much of the Project Areas

Chapter 5
Results

Records Search

A total of 55 cultural resources studies have been conducted within the 0.5-mile radius of the records search; 11 of the cultural resources studies overlap with Tributaries Restoration Project and Mitigation Reserve Program project APEs. Table 2 contains a summary of the cultural resources studies that include a portion of the proposed project APE.

Table 2. Cultural Resources Studies Conducted within a 0.5-mile Radius of the Project APEs

EIC Number-	NADB Number	Year	Author	Title
RI-0030	1080030	1971	Michael Gardner	Archaeological Impact Expected from the Tequesquite Arroyo-Box Springs Wash Flood Control Project
RI-2131	1083416	1995	Bruce Love	Archaeological Survey Report for Santa Ana River Bikeway Phase IIIA Landscaping Project, City and County of Riverside, California
RI-2132	1083553	1995	Bruce Love	Historic Property Survey Report for Santa Ana River Bikeway Phase IIIA Landscaping Project, City and County of Riverside, California
RI-2307	1082764	1988	R. Paul Hampson, Jerrel Sorensen, Susan Goldberg, Mark Swanson, and Jeanne Arnold	Cultural Resources Survey, Upper Santa Ana River, California
RI-3395	1084037	1991	Patricia Jertberg and Karen Kirtland	Cultural and Biological Resources Assessment of Jurupa Avenue Extension, Approximately 1 Mile, City of Riverside, Riverside County, California
RI-3873	1084805	1996	Bruce Love and Bai Tom Tang	Identification and Evaluation of Historic Properties – Existing Data Inventory and Intensive Survey: Anza Electric Powerline Upgrade Project
RI-3893	1084859	1995	Brian Dillon	Archaeological Assessment of the Riverside Cogeneration Project on the Santa Ana River, Riverside County, California
RI-4220	1085427	1999	Bruce Love and Bai Tom Tang	Identification and Evaluation of Historic Properties: Rancho La Sierra Water Supply Facility Site, City of Riverside, Riverside County, California
RI-5325	1086193	2005	Robert White and Laura White	A Cultural Resources Assessment of a 5.09-Acre Parcel as Shown on TPM 32521 Located

EIC Number-	NADB Number	Year	Author	Title
				Adjacent to Calle Lagartija in Rancho California, Unincorporated Riverside County
RI-7694	NA	2008	Joan George, Peggy Beedle, and Vanessa Mirro	Cultural Resources Report for the Santa Ana River Trunk Sewer Replacement Project, Riverside County, California
RI-8403	NA	2009	Joan George	Letter Report: Phase-I Cultural Resources Addendum for the Santa Ana River Trunk Sewer Replacement Project, Riverside County, CA

Results of the records search indicate that 47 previously recorded resources are within 0.5 mile of the proposed project area and 12 of these are within the Tributaries Restoration Project and Mitigation Reserve Program APEs. All 12 of the resources are within the Mitigation Reserve Program APE while 7 of the 12 are located within the Tributaries Restoration Project APE. One of the 12 resources in the project APE is the Union Pacific Railroad Bridge, a built environment resource (P-33-003361). The six historical-period cultural resources within the APE include water conveyance features, a refuse scatter, a bridge, a sewer line, and the remains of a dock. The prehistoric resources are mostly bedrock milling sites, but also include a lithic scatter and a pictograph site. Table 3 contains a summary of cultural resource sites within a 0.5-mile radius of the proposed project area; highlighted resources are within the project APE.

Table 3. Cultural Resources within a 0.5-mile Radius of the Mitigation Reserve Program and/or Tributaries Restoration Project APEs

Primary	Trinomial	Age	Description	Project Location: Mitigation Reserve Program (MRP); Tributaries Restoration Project (TRP)
P-33-000127	CA-RIV-127	Multicomponent	Bedrock milling and historic debris	MRP
P-33-000325	CA-RIV-325	Prehistoric	Unknown prehistoric artifacts, possibly same site as CA-RIV-127	MRP
P-33-000559	CA-RIV-559	Multicomponent	Pecan grove on Judson farmstead	
P-33-000560	CA-RIV-560	Prehistoric	Flake scatter and rock feature	
P-33-000621	CA-RIV-621	Prehistoric	Bedrock milling	MRP
P-33-000622	CA-RIV-622	Prehistoric	Bedrock milling	MRP and TRP
P-33-000623	CA-RIV-623	Prehistoric	Bedrock milling	
P-33-000624	CA-RIV-624	Multicomponent	Bedrock milling, lithics, historic canal, nails	

Primary	Trinomial	Age	Description	Project Location: Mitigation Reserve Program (MRP); Tributaries Restoration Project (TRP)
P-33-000679	CA-RIV-679	Prehistoric	Pictograph	
P-33-000700	CA-RIV-700	Prehistoric	Bedrock milling	
P-33-000884	CA-RIV-884	Prehistoric	Pictographs	MRP and TRP
P-33-001093	CA-RIV-1093	Multicomponent	Bedrock milling and concrete marker dated 1946	
P-33-003354	CA-RIV-3354	Historical-Period	"China Gardens" farm	
P-33-003357	CA-RIV-3357	Historical-Period	Canal	MRP and TRP
P-33-003359	CA-RIV-3359	Historical-Period	Historic debris	
P-33-003360	CA-RIV-3360	Multicomponent	Historic period debris and three prehistoric flakes	
P-33-003361	CA-RIV-3361H	Historical-Period	Union Pacific Railway bridge	MRP
P-33-004762	CA-RIV-4762	Prehistoric	Bedrock milling	
P-33-007540	CA-RIV-5806H	Historical-Period	Historic canal	
P-33-007541	CA-RIV-5807H	Historical-Period	Concrete building foundation	
P-33-008698		Historical-Period	Isolated condiment bottle and tea cup fragment	MRP
P-33-008827	CA-RIV-6263	Prehistoric	Bedrock milling	
P-33-008829	CA-RIV-6265	Prehistoric	Bedrock milling	
P-33-008831	CA-RIV-6267	Prehistoric	Bedrock milling	
P-33-008839		Historical-Period	Water control and conveyance to and across old Hole Creek	MRP and TRP
P-33-009651		Historical-Period	Hole Lake Complex water conveyance features and dam	MRP and TRP
P-33-009652	CA-RIV-6452	Prehistoric	Bedrock milling	MRP and TRP

Primary	Trinomial	Age	Description	Project Location: Mitigation Reserve Program (MRP); Tributaries Restoration Project (TRP)
P-33-011126	CA-RIV-6690	Historical-Period	Lloyd H. Edmiston residence, ranch, and orchard	
P-33-011397	CA-RIV-6785	Prehistoric	Flakes and a mano	
P-33-011398	CA-RIV-6786H	Historical-Period	Wood pillars, concrete pylons, and concrete footings	
P-33-011592		Prehistoric	Mano and flake	
P-33-011633		Built Environment	One-story residence, garage, barn	
P-33-013252		Historical-Period	Wastewater treatment plant	
P-33-013254		Historical-Period	"Kendall's" Commercial Building	
P-33-013255		Historical-Period	One-story California Bungalow	
P-33-013256		Historical-Period	One-story California Bungalow	
P-33-013257		Historical-Period	Barn	
P-33-013258		Historical-Period	One-story California Bungalow	
P-33-013261		Historical-Period	One-story California Bungalow	
P-33-014379		Historical-Period	Ranch-style residence	
P-33-014380		Historical-Period	One-story residence	
P-33-016848		Historical-Period	Santa Ana River Trunk Sewer	MRP and TRP
P-33-016849		Historical-Period	Historic refuse, shed, and livestock pen	
P-33-016851		Historical-Period	De Anza Trail Monument	
P-33-017330		Prehistoric	Two metate fragments	
P-33-017331		Historical-Period	Historic trash pit	
P-33-024052		Historical-Period	Paradise Knolls Golf Course	

Native American Outreach

A letter was sent to NAHC on July 26, 2018, requesting a Sacred Lands File search and list of potentially interested Native American groups and individuals. NAHC responded on August 2, 2018, stating that a search of the Sacred Lands records files revealed no Sacred Lands or traditional cultural properties in proximity to the proposed project area. NAHC also provided a list of 30 Native American contacts who might have knowledge of cultural resources in the project area.

On April 25, 2018, Valley District sent out letters pursuant to Assembly Bill 52 to three Native American groups to assess recommendations or concerns regarding the project. Letters were sent to Raymond Huaute representing the Morongo Band of Mission Indians, Jessica Mauck representing the San Manuel Band of Mission Indians, and Andrew Salas representing the Gabrieleño Band of Mission Indians – Kizh Nation. Mr. Raymond Huaute and Mr. Travis Armstrong responded for the Morongo Band of Mission Indians, and Ms. Jessica Mauck responded for San Manuel Band of Mission Indians. Mr. Andrew Salas of the Gabrieleño Band of Mission Indians – Kizh Nation did not respond.

On May 1, 2018, Ms. Jessica Mauck, a Cultural Resources Analyst representing the San Manuel Band of Mission Indians, responded stating that the project area is outside of the Serrano ancestral territory and, as such, did not request consulting party status or elect to participate in the project any further.

On May 9, 2018, Mr. Raymond Huaute, Tribal Historic Preservation Officer for Morongo Band of Mission Indians, responded to Valley District's request for consultation. Mr. Huaute stated that "the project is located within the Tribe's aboriginal territory or in an area considered to be a traditional use area or one in which the Tribe has cultural ties." Additionally, Mr. Huaute requested that a records search be conducted at the California Historical Resources Information System Information Center, that the results be provided to the tribe, and that tribal monitoring participation be considered during the initial pedestrian field survey of the Phase I study of the project. Mr. Huaute also requested a copy of the results of that study. As of the time of this report, Valley District has not responded to Mr. Huaute's request; however, a cultural resources records search was conducted and ICF reached out to Travis Armstrong, Morongo Band of Mission Indians Consulting Archaeologist, to join the cultural resources pedestrian survey that was conducted. Mr. Armstrong was not available to join the survey. Additionally, Native American monitoring has been recommended as a mitigation measure.

Consultation meetings were also held with Mr. Travis Armstrong, Consulting Archaeologist with the Morongo Band of Mission Indians, and ICF, on two separate occasions: June 21, 2018, and August 21, 2018. Mr. Armstrong described archaeological site P-33-000884 as a pictograph site that had been vandalized with spray-painted graffiti within the project area. He stated that the pictographs were barely visible due to the damage from vandals. Mr. Armstrong provided a photograph of the feature that had been processed using DStretch®.[2] The processed image did show some red markings, but a pattern or image could not be discerned (see Appendix B). He emphasized the importance of this resource and requested he be notified of field surveys. Mr. Armstrong later spoke with ICF Principal Investigator Benjamin Vargas, MA, RPA, and also discussed the damage that had been done to the site and provided some ideas for how to protect the site from further damage. Mr. Armstrong suggested the planting of poison oak or some other type of vegetation that would keep people away from the feature. Mr. Armstrong also recommended further consultation to discuss potential

[2] DStretch is a tool for rock art researchers to enhance images of pictographs using a digital camera.

measures for protecting the site and possibly restoring the pictographs. Mr. Armstrong also discussed that he had tried to visit other resources in the vicinity, but that a significant number of homeless people live in the area and that the area was overgrown with brush. These impediments curtailed his ability to visit the sites. Mr. Armstrong also requested that he be informed when cultural resources surveys were to take place. Mr. Armstrong was contacted prior to conducting the surveys, but he declined to join due to other commitments. Additionally, some of Mr. Armstrong's suggestions for protection of this resource were incorporated into proposed mitigation measures (see below), including continued consultation regarding the treatment of this resource.

Other than consultation with Mr. Armstrong representing Morongo Band of Mission Indians, Mr. Huaute representing Morongo Band of Mission Indians, and Ms. Mauck representing San Manuel Band of Mission Indians, no other Native American individuals or tribes responded to requests for consultation by Valley District. As of the time of this report, no other responses have been received by ICF from Valley District or otherwise.

Pedestrian Survey

Archaeological Sites

Ten of the twelve previously recorded cultural resources within the project APE were relocated. Additionally, two new isolates (ICF-HV-01 and ICF-HV-02) were identified, and substantial additions were made to one previously recorded site (P-33-000621) during the survey.

P-33-000325 and P-33-008698 were not relocated during the current survey efforts. P-33-000325 is most likely mapped in the incorrect location. The archaeological site record indicates "RIV-127" as a previous designation for the site and mentions the Union Pacific Railway tracks. The site record seems to indicate its location in proximity to or association with P-33-000127, which is intersected by railroad tracks. Although the artifacts originally recorded as P-33-008698 were not relocated, an adjacent historic fence line was added to the isolate boundary and it was updated to reflect the location as a single archaeological site using the same Primary number (see description below).

A single historical resource (an architectural resource), P-33-003361 (CA-RIV-3361/H), was recorded previously and is adjacent to the western boundary of the Old Ranch Creek restoration site. P-33-003361 has been previously recommended as eligible for listing in the CRHR. While it is not likely to be affected by the Tributaries Restoration Project activities, it is unknown whether it would be affected by the Mitigation Reserve Program; therefore, it was reviewed for this report due to its proximity to the two project APEs.

Figures 1 and 2 in Confidential Appendix C depict the locations of each resource in relation to the proposed Tributaries Restoration Project and Mitigation Reserve Program sites. Department of Parks and Recreation (DPR) 523 site records can be found in Confidential Appendix D. Upon completion of the survey, ICF personnel submitted site records with temporary designations to the EIC for issuance of permanent trinomials.

Previously Recorded Sites

P-33-000127 (CA-RIV-127)

P-33-000127 is a bedrock milling site consisting of milling slicks and bedrock mortars on several granitic outcrops and is located within the APE of the Mitigation Reserve Program only. The site was originally recorded in 1951 and has been updated numerous times (Haenszel 1971; Kirkish 1972; Hall 1975; McCarthy 1987; McLean and Bouscaren 2007; Ruzicka and Akyüz 2013) Historical (mid-19th to early 20th century) and modern refuse was also observed throughout the site. This site has been described as the location where de Anza's party camped and crossed the Santa Ana River in 1774 and 1776, although no evidence of his camp site has been identified. The milling features may be remnants of the village site de Anza mentioned, or could be from an earlier, prehistoric occupation. A few historic artifacts have been observed in the site area since 1975 and are most likely associated with the Union Pacific Railroad Bridge (CA-RIV-3361H) that was built over this site in 1902–1904. Modern graffiti and gray paint now cover the bedrock outcrops and obscure some of the previously recorded milling features.

During the current survey, ICF archaeologists revisited the resource and found it to be as previously recorded in 2013 by Ruzicka and Akyüz. Graffiti still covers much of the outcrops and portions of the boulders have been painted gray to cover older episodes of graffiti. The gray paint has obscured the surface of the outcrops, making the identification of exfoliated slick features very difficult. This resource is located under a Union Pacific Railroad Bridge (site P-33-003361), and it has been posited that the construction of the bridge likely disturbed the site. The Santa Ana River bike path has also been constructed adjacent to the site, which may also have obscured the features on the site. The site continues to be a target of graffiti and "cover up" painting. No artifacts were identified on the ground surface surrounding the bedrock outcrops.

Evaluation

P-33-000127 has been recommended as eligible for the CRHR (Ruzicka and Akyüz 2013), although it is unknown if there has been concurrence on this recommendation. The site still appears eligible under CRHR Criteria 1, 2, and 4 (NRHP Criteria A, B, and D), but likely requires further evaluation through subsurface testing to make a final determination. Such milling sites are ubiquitous throughout the region, and aside from its possible association with the de Anza party, the site is not distinctive of a certain time, place, or construction method and would not otherwise be recommended eligible under Criteria 3/C. Bedrock milling features were described by de Anza near an area where he camped, and if these features are the same as those described by the de Anza party, the site shows an association with people and events (Criteria 1/A; Criteria 2/B) important to local history, history of the region, and the broad patterns of history. Subsurface testing could yield temporally or behaviorally diagnostic archaeological information that could clarify any association with de Anza's party (Criteria 4/D). As such, ICF concurs with the previous recommendation that the site is eligible per Criteria 1/A, 2/B, and 4/D. Should ground disturbance be proposed at the site, further evaluation through archaeological testing is recommended (see Chapter 6).

P-33-000325 (CA-RIV-325)

This resource was originally recorded in 1967 and later updated in 1971 as a group of unspecified artifacts in the Santa Ana River bottom. The boundary identified for P-33-000325 by the EIC is located within the Mitigation Reserve Program APE only. No information was given on the site

record about the types of artifacts that were identified, nor was a map provided with the original site record. During the current survey, ICF archaeologists revisited the site boundary provided by the EIC but did not observe any artifacts or other cultural constituents. It is posited that these artifacts were most likely buried by sediment from the Santa Ana River or have been washed downstream. The site form refers to CA-RIV-127 (P-33-000127) as a previous designation, so these artifacts may have either been near P-33-000127 or were a component of it.

Evaluation

P-33-000325 could not be relocated during the current survey, and the artifacts have not been observed since 1971. No known maps of the site exist, and there is only reference to site CA-RIV-127 as a possible association. Given that the site has never been relocated, and information on its contents are ambiguous, it is recommended that this site is not eligible for inclusion on either the CRHR or NRHP.

P-33-000621 (CA-RIV-621)

P-33-000621 is a prehistoric bedrock milling site located on the south side of the Santa Ana River that was originally recorded as a single milling slick on one bedrock outcrop by Hammond of the University of California at Riverside Archaeological Research Unit in 1973. P-33-000621 is located within the boundaries of the Mitigation Reserve Program APE only. The site was field checked by Matthew Hall in 1975, and the boundary was expanded to include three milling slicks across three boulders covering a 45-by-8-meter area. No associated artifacts or middens were observed at that time. In 1987 archaeologists with Greenwood and Associates updated the site record, adding multiple grinding locations to total nine milling slicks, two metates or basins, and several pecked areas. The site boundary was expanded to include these new features. resulting in a 90-by-40-meter area.

In 1995 the site was visited by Archaeological Consulting Services (ACS). The only change to the record at that time was to note the disturbance of one of the boulders within the outcrop related to the construction of a concrete canal. ACS conducted archaeological testing of the site in 1996, excavating a single 1-by-1-meter test unit to a depth of 32 centimeters below the ground surface. No historic or prehistoric deposits were observed in this unit.

The site was relocated during the current survey; however, additional components were added. The previously identified site boundaries were expanded to include an additional set of milling features on a cluster of boulders on the northern side of the Santa Ana River Trail. The milling features originally recorded in the southern portion of the site were confirmed; however, no new features were observed.

The newly identified northern portion of the site has been affected by the changing course of the Santa Ana River, flood episodes, and the development of small tributaries that most likely obscured the boulders containing these newly identified milling features during previous archaeological surveys. The photos below (Figure 9) show a sample of how the bed of the Santa Ana River has changed course over just the past 13 years, and a review of older aerial photographs shows similar variation. The degree to which the northern portion of this site was covered by sediment and vegetation varies throughout this time, and affected what would have been visible to the various archaeological surveys that covered this area over the past 45 years. For example, on the February 2018 aerial photograph, the bedrock outcrops were visible just as they were observed during the current survey. In 2012, however, there appears to be more water in the river with a separate

tributary cutting through the northern portion of the site. Some of the boulders appear to be below water level or covered by sediment. In the 2009 aerial photograph, only one boulder is visible, while the rest are covered by sediment, vegetation, and water from the river. In the 2005 aerial photograph only the top of a boulder is visible, and the other boulders are completely covered by sediment. In 1995, the area surrounding the boulders is completely covered in sediment. In this photograph we have shown the locations of the currently visible rock outcrops. Similar fluctuations in the amount of sediment and the levels and courses of the river are noted on aerial photographs dating back to at least 1948.

Current conditions and new alignments of the Santa Ana River channel have exposed additional granite boulders with milling slicks. Three new boulders with slicks on them were noted during the current survey. Soils surrounding the boulders have been scoured away, so it is unknown if, but also unlikely that, there are any buried constituents to the site. There were no signs of a subsurface component to the site, and no artifacts were noted on the current ground surface near the newly mapped milling features. The current alignment of the Santa Ana River channel flows immediately adjacent to the boulders, which are now on the "bank" of the river.

Feature 1

Feature 1 is a large granitic boulder that would have been mostly submerged or buried under sediment when the site was originally recorded. Feature 1 has one small saucer mortar that is very shallow with only slight grinding evident. The boulder has been graffitied and painted over numerous times and its surface is exfoliating. Feature 1 and Feature 2 were originally part of the same rock outcrop but have split.

Table 4. Milling Station Data for Outcrop Feature 1

Feature No.	Milling Station No.	Type	Length (cm)	Width (cm)	Depth (cm)	Comments
1	1	Saucer	15	19	0.4	Light grinding, shallow

Feature 2

Feature 2 is a large granitic boulder that would have been mostly or completely buried under sediments from the Santa Ana River when the site was originally recorded. This boulder was originally connected to Feature 1, but has been split. This boulder has three grinding surfaces, all on its higher, southern side. The boulder has been graffitied and painted over numerous times and the surface is exfoliating.

Table 5. Milling Station Data for Outcrop Feature 2

Feature No.	Milling Station No.	Type	Length (cm)	Width (cm)	Depth (cm)	Comments
2	1	Saucer	19	21	0.8	Light grinding, shallow
2	2	Saucer	30	25	1.2	Moderate grinding, shallow
2	3	Saucer	30	23	3	Heavy grinding

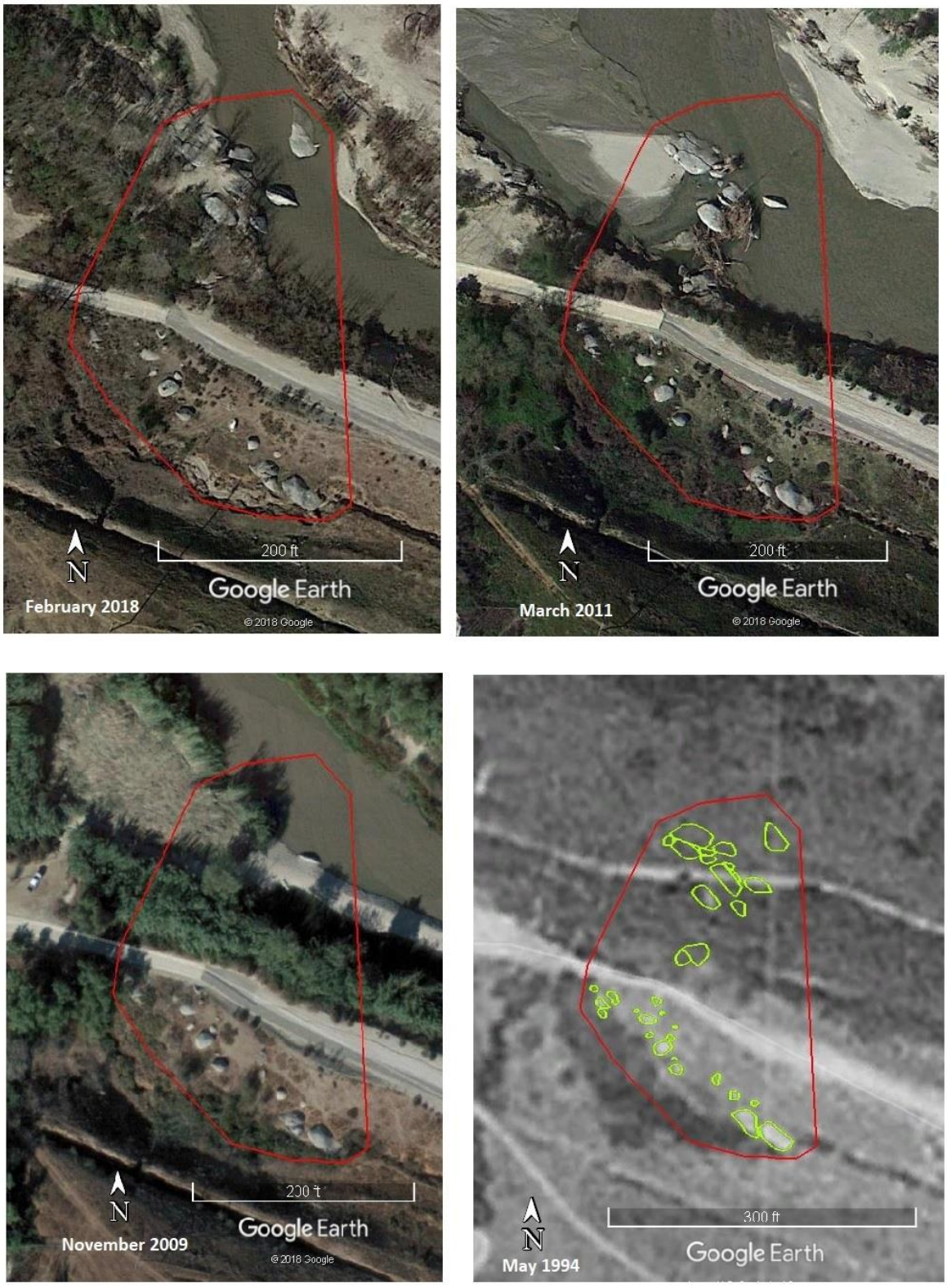

Figure 9. Historic Aerial Photographs Showing Siltation and Scouring of CA-RIV-621

Feature 3

Feature 3 is a large granitic boulder with a relatively flat surface near the current edge of the Santa Ana River channel. It is likely that this boulder was partially or completely buried by sediments from the Santa Ana River at the time the site was originally recorded. The boulder has a large amount of graffiti that has been painted over, making identification of the milling slicks difficult. It is possible that more slicks are present that could not be identified. The boulder is part of a larger outcrop that has fractured in several areas, and is exfoliating. Grinding surfaces are located on the higher, southern side of the boulder.

Table 6. Milling Station Data for Outcrop Feature 3

Feature No.	Milling Station No.	Type	Length (cm)	Width (cm)	Depth (cm)	Comments
3	1	Saucer	25	28	4	Heavy grinding, well defined
3	2	Saucer	16	21	2.5	Moderate grinding, well defined
3	3	Saucer	16	31	1.5	Moderate grinding, heavily weathered, exfoliating
3	4	Slick	50	4	-	Light grinding, has been painted over

Feature 12

Feature 12 is a very large boulder that may not have been visible at the time the site was originally recorded and/or updated. The granitic boulder is heavily weathered and exfoliating, and has heavy graffiti that has been painted over numerous times. Two grinding surfaces were identified, but it is possible that there are other surfaces that have been obscured by graffiti and painting that could not be identified.

Table 7. Milling Station Data for Outcrop Feature 12

Feature No.	Milling Station No.	Type	Length (cm)	Width (cm)	Depth (cm)	Comments
12	1	Saucer	35	20	0.8	Moderate grinding, well defined, shallow
12	2	Saucer	32	22	1	Moderate grinding, well defined

Overall, extensive graffiti and other layers of paint have obscured most of the milling surfaces, and copious amounts of modern trash and dense grasses obscure the ground surface around the newly identified milling features at the site. Homeless encampments surround the site; as a result, large amounts of refuse are found in and around the site boundaries.

Minor archaeological testing was conducted previously on the southern portion of this site. A single, 1-by-1-meter test unit was excavated to a depth of 32 centimeters below the ground surface, and no prehistoric artifacts were observed.

Evaluation

When site P-33-000621 was originally recorded and later updated no formal evaluations were conducted, and no recommendations were made as to the potential eligibility of the site for

inclusion on the CRHR or the NRHP. The southern portion of the site was "tested" through the excavation of a single 1-by-1-meter excavation unit. No subsurface cultural materials were identified at that location at that time. The 1-meter-square test unit was a very small percentage of the total site area overall, and not adequate for providing a formal evaluation of the site. The newly added northern portion of this site increases the overall area of the site, and it has not been tested. The proximity of the newly added portion of the site to the Upper Santa Ana River means that there is a high likelihood that scouring has removed any subsurface component that may have existed. However, a determination of whether a subsurface component exists at the site cannot be made accurately without additional testing in a larger portion of both the southern and northern loci of the site.

Milling sites such as this are ubiquitous in the region, and without an associated subsurface component, such sites are typically recommended as ineligible for inclusion on the CRHR or the NRHP for their lack of potential to yield information important to the history or prehistory of the local area, region, state, or the nation. Without a more formal testing program for the site, a recommendation for eligibility cannot be made at this time. Should the site be subject to disturbance from the proposed project, recommendations are made in Chapter 6.

P-33-000622 (CA-RIV-622)

CA-RIV-622, a prehistoric bedrock milling site on the south side of the Santa Ana River, was originally recorded as containing one metate or basin, nine milling slicks, and three mortars by Hammond of the University of California at Riverside Archaeological Research Unit in 1973. P-33-000622 is located within the boundaries of both the Tributaries Restoration Project and the Mitigation Reserve Program APEs. The site was field checked by Matthew Hall in 1975, and it was noted at that time to include the nine milling slicks, two metates or basins, and four mortars across three boulders covering a 20-by-10-meter area. No associated artifacts or middens were observed at that time. In 1987 archaeologists with Greenwood and Associates revisited the site, and recorded that it was much the same as had been described in 1975. Additional exfoliation of the bedrock was noted, and two ground stone fragments were identified in the vicinity. In 1995 the site was visited by ACS. The only change to the record at that time was to note the disappearance of one of the boulders (Feature 2) and the absence of one previously described milling feature due to exfoliation. No historic or prehistoric deposits were observed, and the site boundaries were reduced to 13 meters by 6.1 meters at that time.

The site was relocated during the current survey. All three of the boulders were observed, and it was apparent that sediments had accumulated to obscure Feature 2 from view during the 1995 site visit. It is likely that soils were pushed onto this boulder because of grading the dirt road that is immediately adjacent to the site. The site appears to be unchanged since the 1995 update. Extensive graffiti and other layers of paint cover the vertical faces of Feature 3. Poison oak surrounds Feature 3 and the previously recorded slick was not accessible. No associated artifacts were observed on the ground surface surrounding the outcrops. The site record was updated to include Feature 2, and the boundary adjusted to 20 meters by 10 meters per the 1975 site record.

Evaluation

When site P-33-000622 was originally recorded and later updated, no formal evaluations were conducted, and no recommendations were made as to the potential eligibility of the site for inclusion on the CRHR or the NRHP. No subsurface components have been identified at the site, nor

has subsurface testing been conducted to assist in its evaluation. Milling sites such as this are ubiquitous in the region, and without an associated subsurface component, such sites are typically recommended as ineligible for inclusion on the CRHR or the NRHP for their lack of potential to yield information important to the history or prehistory of the local area, region, state, or the nation. Without a more formal testing program for the site, a recommendation for eligibility of the site cannot be made at this time. Should the site be subject to disturbance from the proposed project, recommendations are made in Chapter 6.

P-33-000884 (CA-RIV-884)

P-33-000884 was first recorded in 1965 by Arda Haenszel. Haenszel reported that the site consisted of a large granite boulder with red "pictos"(pictographs) on its south side. P-33-000884 is located within the boundaries of both the Tributaries Restoration Project and the Mitigation Reserve Program APEs. Haenszel stated that they could not get close to the feature because it was overgrown with poison oak. The site was described as being situated on a slope between a drainage ditch from Hole Lake and an abandoned irrigation ditch. The original recording did not include any photographs, and there have been no site updates since 1965. Travis Armstrong, the Tribal Historic Preservation Officer for the Morongo Band of Mission Indians, contacted ICF in response to Native American outreach and indicated that he had visited the site and that there was significant damage due to graffiti, and that the pictographs were barely visible. Mr. Armstrong provided a photograph of the feature that had been processed using DStretch (Figure 10). The image processed using DStretch did show some red markings, but a pattern or image could not be discerned. On September 18, 2018, ICF archaeologist Benjamin Vargas, M.A., RPA visited the site and could access the southern portion of the rock outcrop. Mr. Vargas photographed this area, and could discern some very faint red pigment that had been painted over by black spray-painted graffiti, confirming Mr. Armstrong's earlier findings (Figure 11).

The site is in poor condition. While the large rock outcrop appears to be in its original location, graffiti and natural weathering have obscured the pictographs almost beyond recognition. Processing the images through DStretch slightly enhanced the markings; however, no discernable pattern or imagery could be identified. Overall, the site is rare considering that few similar site types (with pictographs) have been recorded in this area. There was no indication of a subsurface component to the site; however, much of the area adjacent to the north of the large outcrop is within the channel of a small stream, while the area to the south of the boulder is a relatively steep slope and has been disturbed by a historical-period canal. No subsurface testing has been conducted at the site, and such testing would not likely be possible due to current conditions.

Evaluation

P-33-000884 was originally recorded in 1965, and has had no formal update or evaluation since that time. The site has very poor integrity, as it has been vandalized for many years through graffiti and attempts at covering the graffiti. The pictographs are exposed to the elements, and have likely also been subject to weathering through natural processes. Unfortunately, no known photographs exist of the rock art prior to it having been vandalized. This site is of importance to the Morongo Band of Mission Indians, as noted by their Tribal Historic Preservation Officer during the consultation process. Using technology such as DStretch and more detailed analysis, it may be possible to identify elements of the rock art that have not been documented to this point. Because such rock art sites are relatively rare in this region, they have the potential to yield information important to the prehistory of the local region. As such, we recommend that the site is potentially eligible for inclusion on the

CRHR and NRHP under Criteria 4/D. Recommendations are provided in Chapter 6 should the site be affected by the proposed project.

Figure 10. Close-up of Pictograph and Graffiti at CA-RIV-884 (Photograph Enhanced Using DStretch Software and Provided Courtesy of Travis Armstrong)

Figure 11. Close-up of Pictographs and Graffiti at CA-RIV-884 (DStretch not Used) Taken During the Current Survey of the Project Area; View North

P-33-003357 (CA-RIV-3357H)

P-33-003357 was originally recorded as two different sites (CA-RIV-3357H and CA-RIV-5806H). In 1997, Love and Tang decided that the two sites should be combined, as they were part of the same hydroelectric system. The two sites originally consisted of several structures, a concrete- and rip-rap-lined canal, and other associated features. P-33-003357 is located within the boundaries of both the Tributaries Restoration Project and the Mitigation Reserve Program APEs. The canal originally ran a 6-mile-long course along the Santa Ana River to the Riverside Power Company's hydroelectric plant known as the Pedley Power Plant. The power plant and associated infrastructure were constructed in 1904. The power plant was eventually destroyed by flooding, and was abandoned in the 1910s (Love and Tang 1997). At the time Love and Tang updated the site record, the canal was still intact; however, there is no mention of the structures. Recent aerial photographs show that the structures appear to remain largely intact on the western portion of the site, but this was not verified by the current survey because this portion of the site is outside of the current project APE.

The channel on the eastern portion of the site from just north of the intersection of Crest Avenue and Julian Drive east to its terminus approximately 850 feet northwest of the intersection of Van Buren Boulevard and Jurupa Avenue appears to be mostly intact and in the same condition as when it was updated by Love and Tang in 1997. In this area, portions of the channel are concrete lined; however, much of what is visible of the channel has been filled in by sediment and modern refuse. There are dense growths of riparian plants and nonnative weeds and plants covering the edges of most of the channel.

Evaluation

Due in part to the lack of integrity and destruction of the portions of this site that were resurveyed, this resource is recommended ineligible for the CRHR and NRHP. These water features did not have an important association with people or events (Criteria 1/A and 2/B), were not distinctive of a certain time, place, or construction method (Criteria 3/C), and would not yield additional information with further research (Criteria 4/D). Recordation by Love and Tang in 1997 has likely exhausted the research potential of the site.

P-33-003361 (CA-RIV-3361/H)

P-33-003361 is a Union Pacific Railroad bridge that spans the Santa Ana River, and was constructed from 1902 to 1904. P-33-003361 is located within the boundaries of the Mitigation Reserve Program APE only. The viaduct-style bridge was originally part of the San Pedro, Los Angeles, and Salt Lake Railroad line. It was built using wooden-scaffold molding with eight large arches that cross the river. When built, it was the longest concrete bridge in the world (Ruzicka and Akyüz 2013). The site was originally recorded in 1987 by Sorensen et al., and updated in 2003 by SWCA Environmental Consultants and in 2013 by Ruzicka and Akyüz. The bridge retains its original design and is in daily use with some minor repair patching. This resource was observed during the current survey and appears to be in the same condition as previously recorded and updated. Areas of the bridge have been graffitied and covered up with white paint.

Evaluation

The site has been recommended previously as eligible under Criterion 3, stating that it embodies distinctive characteristics of a type, period, region, or method of construction; represents a feat of

engineering; and possesses high artistic values (Ruzicka and Akyüz 2013). It is unknown whether there has been concurrence on this recommendation.

It is unknown if the contributing features of this site would be adversely affected by the proposed Mitigation Reserve Program activities. Despite this, the site boundary is adjacent to the Old Ranch Creek restoration site, where soil disturbances in the river would take place. ICF concurs with the recommendation of eligibility for inclusion on the CRHR and NRHP.

Figure 12. Union Pacific Railroad Bridge (CA-RIV-3361/H) View Toward Northwest

P-33-008698

Site P-33-008698 consists of an isolated Owens-Illinois condiment bottle (1933–1943 production) and an isolated tea cup fragment. These isolates were originally recorded in 1999 by ACS. P-33-008698 is located within the boundaries of the Mitigation Reserve Program APE.

In 2018, ICF archaeologists revisited the location of the isolate and did not relocate the previously recorded resources. While these resources were not relocated, a fence line that may be historical period in age was observed running through the location of the isolate. The fence line consists of a series of 6-by-8-inch wooden fence posts and wire mesh and barbed-wire fence lines in varying states of disrepair. The wooden posts have been burned by local brushfires and some have fallen over. Overall, there is low visibility in the surrounding area due to heavy growths of seasonal grasses, wildflowers, and vegetal duff, which has obscured the previously recorded isolated artifacts.

Historic topographic maps show a dirt road terminating near where ICF recorded the fence line as early as 1901. An aerial photograph dating to 1948 shows a series of dirt roads in a triangular pattern in this location, but no structures or fence lines are discernable. As late as 1981, the triangular arrangement of roads is still seen on topographic maps and aerial photographs; however, there is no evidence of structures. Archival research with aerial photographs and maps shows that there was activity in the area near P-33-008698, and it is likely that it was related to early residential or agricultural pursuits in this location during the historical period. The age and function of the fence line and the previously recorded historical-period isolated artifacts are unknown, but likely related to the activity identified from archival research.

Evaluation

Due in part to the lack of integrity and destruction of the portions of this site, this resource is recommended ineligible for the CRHR and NRHP. Abandoned property and fence lines and other infrastructure are ubiquitous throughout the local area and the region, and have little research value. The fence line and previously associated artifacts do not have a known association with people or events important to the local area, region, or state/nation (Criteria 1/A and 2/B), are not distinctive of a certain time, place, or construction method (Criteria 3/C), and are not likely to yield additional information with further research (Criteria 4/D). As such, ICF recommends that the site is not eligible for inclusion on the CRHR or NRHP. Recommendations are provided in Chapter 6 for further treatment of this resource should it be affected by proposed project activities.

P-33-008839

When it was originally recorded, site P-33-008839 consisted of several water control and conveyance features including wooden posts and cross beams, booster pumps, steel pipes, concrete reservoirs/settling ponds, concrete-lined ditches, and ground wells. This site was first recorded in 1997 by Robertson & Associates. The water conveyance features and wells located within this site boundary date to as early as 1917 and had modifications and additions as late as the 1950s. P-33-008839 is located within the boundaries of both the Tributaries Restoration Project and the Mitigation Reserve Program APEs.

In 2018, ICF archaeologists revisited the site and observed portions of the destroyed water control and conveyance features including steel pipes, wooden posts with metal caps, and concrete features. A few features remain intact, but overall, the infrastructure that was previously recorded within the project APEs has largely been dismantled or demolished. Aerial photographs show that at some time between 2016 and the present, the majority of these features were graded and/or dismantled. Presently, much of the site is covered in dense vegetation including sycamores, wild sunflowers, and seasonal grasses, with some portions where vegetation has been graded away. Within the project APE, the site does not retain integrity comparable to the time that it was originally recorded. The site boundaries extend beyond the boundaries of the current project APEs, and it is unknown whether those additional components retain integrity or have been disturbed.

Evaluation

P-33-008839 has been significantly altered within the current project APEs since it was originally recorded in 1997. Many of the site components have been removed and graded away, with only a few items remaining. Within the project APEs, the site clearly does not retain integrity, and would not be recommended for inclusion in either the CRHR or the NRHP. It is unknown whether

remaining portions of the site exist outside of the current project APEs and whether they have been affected similarly. Because the full extent of disturbance to the site is unknown, a recommendation cannot be made for this site as a whole. The portion of the site within the project APEs is heavily disturbed and in some locations altogether removed; therefore, it is not recommended as eligible for inclusion in the CRHR or NRHP.

33-009651

P-33-009651 was originally recorded in 1995 by Alexandrowicz et al., as an earthen dam. In 2000, Collett updated the site to include the dam and a complex of features constructed circa 1915 as part of the Willitts J. Hole Ranch (Collett 2000). Collett called the site the "Hole Lake Complex" and it consisted of an earthen dam, two spillways, two pipelines, two channels, a pump house, a drainage pipe, and two other pipelines. P-33-009651 is located within the boundaries of both the Tributaries Restoration Project and the Mitigation Reserve Program APEs. The site was updated in 2009 by McKenna and found to be in the same state as when it was originally recorded by Collett. In 2011, McKenna was involved in a project known as the Jurupa Avenue Extension Project, where it was noted that "numerous features identified in 2000 by Collett et al. were already demolished by the contractor" (McKenna 2009). Archaeological monitoring conducted by McKenna for the Jurupa Avenue Extension Project identified a few of the remnants of features as they were being demolished.

During the current survey, only one partial feature of the Hole Lake Complex was identified. A new spillway has been built, and the extension of Jurupa Avenue has destroyed most of the features that were identified by Collett and confirmed by McKenna. A small segment of what was described as the "western spillway" was identified as a section of a standing wall. This remnant of the western spillway feature consists of a section of poured concrete that appears to have been a sidewall of the spillway. Dense brush covers the area surrounding the feature, which did not allow for close inspection and documentation. The section of the spillway wall is actively being buried by sediment from the western slope of overlying hillside and has been heavily graffitied. Other elements of the Hole Lake Complex have been completely removed by the extension of Jurupa Avenue and the Santa Ana River Trail and by the construction of a new spillway that was built between 2011 and 2012. Overall, the site does not retain any integrity, as most of its components are gone.

Evaluation

Due in part to the lack of integrity and destruction of the portions of this site that were resurveyed, this resource is recommended as ineligible for inclusion on the CRHR and NRHP. These water conveyance features (when extant) did not have an association with important people or events (Criteria 1/A and 2/B), were not distinctive of a certain time, place, or construction method (Criteria 3/C), and would not yield additional information with further research (Criteria 4/D) beyond what has already been documented.

P-33-009652 (CA-RIV-6452)

P-33-009652 was originally recorded in 2000 by Collett as a large, isolated bedrock milling feature. Collett identified three grinding elements on the outcrop including one basin, one slick, and one rub. P-33-009652 is located within the boundaries of both the Tributaries Restoration Project and the Mitigation Reserve Program APEs. The grinding elements were all identified as "low intensity" but discernable. Collett did not identify any other artifacts or midden constituents at the site. The site

was updated by McKenna in 2011, and it was noted that the grinding elements were still visible; however, the outcrop had been vandalized with graffiti.

The site was visited by ICF senior archaeologist Benjamin Vargas, M.A., RPA on September 18, 2018. Construction of a new sewer outfall since the time the site was originally recorded has affected the site. The outcrop containing the grinding elements appears to have been incorporated into the design of the outfall. Currently, the large granite outcrop sits at the north end of the sewer outfall with other large boulders as rip-rap that have been cemented together. Much of the boulder is obscured with sediment and vegetation and the rock is covered in graffiti and paint. Mr. Vargas could not relocate the grinding surfaces on the rock, but it is likely that those elements were covered in brush or had been painted over and were not discernable. The outcrop does not appear to have been moved, as research with historic aerial photographs shows it in the same location since the time it was recorded in 2000 and earlier. While the site is intact, the feature appears to lack integrity because it has been altered through modern graffiti and painting and has been incorporated into the design of a modern sewage outfall feature.

Figure 13. Photo Showing P-33-009652 Bedrock Milling Feature in Relation to New Sewer Outfall Feature, View Northeast

Evaluation

Due to a lack of integrity and heavy disturbance to the area surrounding the site, this resource is likely ineligible for inclusion on the CRHR and NRHP; however, due to conditions at the site, it remains unevaluated. No subsurface components have been identified at the site, nor has subsurface testing been conducted to assist in its evaluation. Milling sites such as this are ubiquitous in the region, and without an associated subsurface component, such sites are typically recommended as ineligible for inclusion on the CRHR or the NRHP for their lack of potential to yield information

important to the history or prehistory of the local area, region, state, or the nation. Because of the conditions surrounding the site, formal evaluation through testing using traditional excavation methods is probably not feasible. Without a more formal testing program for the site, a recommendation for eligibility of the site cannot be made at this time. Should the site be subject to disturbance from the proposed Tributaries Restoration Project and/or the Mitigation Reserve Program, recommendations are made in Chapter 6.

P-33-016848

P-33-016848 is identified as the Santa Ana River Trunk Sewer Line/Santa Ana River Outfall, and is located within the boundaries of both the Tributaries Restoration Project and the Mitigation Reserve Program APEs. This site was originally recorded in 2008 as two pipelines located along the south bank of the Santa Ana River. The lines were described to have been constructed in 1941 and 1957 (Beedle 2008). At that time, the site was evaluated and recommended as ineligible for listing on the CRHR. The site was later updated in 2008 and several manhole features were added. In 2012, the site was again updated, and at this time it was noted that the site had been destroyed as part of the construction of its replacement.

In 2018, ICF archaeologists revisited the recorded site area and observed remnants of the concrete-covered manholes and portions of the clay sewer line and reinforced concrete pipe both in the Santa Ana River valley and in the bluffs above the valley. Portions of the clay sewer line and concrete pipe have been removed or eroded out of their original locations, as stated in the last update of this site in 2012, and were observed outside of their original location along the bluff. The original clay pipe has been mostly removed as a result of the Santa Ana River Trunk Sewer Replacement Project in 2012.

Evaluation

In 2012, Webb and Ruzicka recommended this resource as ineligible for inclusion on the CRHR, as it did not have an important association with people or events (Criteria 1 and 2), it was not distinctive of a certain time, place, or construction method (Criterion 3), and would not yield additional information with further research (Criterion 4). Due to the construction of a new sewer line in the same location as the original trunk/sewer line, the site has largely been destroyed. As such, the integrity of the site has been permanently altered, and it cannot be considered for inclusion in either the CRHR or NRHP. The site extends beyond the current project APE, and the condition of the site in other areas is unknown. Considering the lack of integrity of the site within the project APEs, ICF concurs with the previous recommendation of "not eligible" for inclusion on the CRHR or NRHP.

New Resources

Isolates

ISO-ICF-HV-01

ISO-ICF-HV-01 is located within the boundaries of the Mitigation Reserve Program APE only. This isolate consists of a single, relatively small, shallow mortar, likely a "hopper" mortar with a chip on one portion of the margin of the upper ground surface that appears to have been "repaired" with asphaltum. The mortar measures roughly 16 by 18 centimeters and the upper grinding surface is approximately 2 centimeters deep. The mortar has been shaped on all sides and is made of granite.

The mortar was mostly buried (approximately 75 percent) in the sand of the Santa Ana River floodplain. No other artifacts were identified in the immediate vicinity of this isolate, and it has likely been moved through natural flooding activity or grading/disking for fire suppression.

Figure 14. Photograph of Isolated Mortar (ISO-ICF-HV-01)

ISO-ICF-HV-02

ISO-ICF-HV-02 is located within the boundaries of the Mitigation Reserve Program APE only. This isolate consists of a single grinding implement (mano) made from an adobe brick. The mano is rectangular with rounded edges and corners, and appears to have been shaped on all sides. The material is a coarse, high-fired adobe brick that likely dates to the early historic period (Mission or Rancho era). The adobe brick was made with adobe clay with straw or hay temper, and is of unknown origin. The brick is typical of adobe bricks made during the Mission or Rancho historic era. The artifact is heavily weathered, and measures 21 by 9 centimeters and is 3.5 centimeters thick. The artifact is situated on a sand bar area in the floodplain of the Santa Ana River. The artifact has likely been transported, as this area appears to be highly active during rain or flood events.

Figure 15. Photograph of Isolated Mano (ISO-ICF-HV-02)

Isolates Summary

Both of the isolates are located in the floodplain of the Santa Ana River, in an area that is highly active. Soils in this area are coarse sands and gravels with pebble and cobble inclusions and some larger boulders. The isolates are subject to natural disturbance from flooding and scouring during rain events. The area also appears to have been graded or disked, likely for fire suppression. Bioturbation through plant and tree growth and rodent activity is also evident throughout this area. Lacking context to consider them against larger prehistoric and historic research themes, isolated artifacts such as those identified during this survey cannot be evaluated for inclusion on the CRHR or NRHP. These two isolated artifacts have been fully documented on appropriate DPR forms.

Paleontological Record Search

On August 2, 2018, the Natural History Museum of Los Angeles County conducted a paleontological search of the project area. The search revealed that no fossils have been recorded within the boundaries of either the Tributaries Restoration Project or Mitigation Reserve Program APEs. Two fossil localities have been recorded approximately 6 miles west and south-southwest of the proposed project within older Quaternary deposits (McLeod 2018). The museum also analyzed the project APEs for paleontological sensitivity and geologic context. Overall, only the Lower Hole Creek restoration area and the southernmost portion of the Anza Creek restoration area contain any paleontological sensitivity, and the museum recommends paleontological monitoring for any substantial excavation in those two areas.

- ***Old Ranch Creek*.** Surface deposits consist primarily of younger Quaternary sand and gravels within the active channel of the Santa Ana River. These deposits have a low sensitivity for paleontological resources.
- ***Anza Creek*.** Within the active channel of the Santa Ana River portion of the Anza Creek restoration area, paleontological sensitivity is low due to the presence of younger Quaternary deposits. The western portion of the Anza Creek restoration area contains exposures of igneous rocks, which do not produce fossils and therefore have no paleontological sensitivity. The southern margin of the Anza Creek restoration area contains surface deposits of older Quaternary deposits, which have produced fossils at depths of 9 to 11 feet below the surface (McLeod 2018).
- ***Lower Hole Creek*.** Surface deposits consist of older Quaternary Alluvium derived primarily as deposits from the more elevated terrain to the west. Substantial excavation in this restoration area may encounter fossils (McLeod 2018).
- ***Hidden Valley Creek.*** Within the active channel of the Santa Ana River portion of the Hidden Valley Creek restoration area, paleontological sensitivity is low due to the presence of younger Quaternary deposits. The southeastern border of this restoration area skirts exposures of igneous rocks, which do not produce fossils and therefore have no paleontological sensitivity.

Chapter 6
Summary and Recommendations

Summary

The purpose of this study was to identify and document any cultural resources located in the Tributaries Restoration Project and the Mitigation Reserve Program APEs, to evaluate any resources identified for their potential inclusion in the CRHR or NRHP, to assess potential impacts on resources because of the proposed project, and to provide measures for the treatment of resources should they be affected. A cultural resources records search, a Native American Sacred Lands File search, Native American outreach, and a cultural resources field survey were conducted. Results of the records search indicate that 47 cultural resources were previously recorded within 0.5 mile of the proposed project, 12 of which are within the project APE. A Sacred Lands File search conducted by NAHC did not identify any Sacred Lands or traditional cultural resources within the proposed project area. As a result of outreach to Native American groups, one response was received from Mr. Travis Armstrong, the Tribal Historic Preservation Officer for the Morongo Band of Mission Indians. Mr. Armstrong provided information about archaeological site P-33-000884 (CA-RIV-884), expressed concern over its preservation, and provided suggestions for preventing further damage to the site.

The APEs of the Tributaries Restoration Project and the Mitigation Reserve Program and associated access routes and staging areas were surveyed for cultural resources. Ground visibility (averaging less than 30 percent) varied throughout the survey area. Because of visibility issues, large sections of the Hidden Valley Creek and Anza Creek/Old Ranch Creek restoration areas were not covered in the pedestrian survey. The restoration site areas have been significantly disturbed by both natural and human-made processes historically and in more recent times. The restoration areas are subject to infrequent but intense periods of high-energy flooding that scours and redeposits soil within the river and surrounding floodplain. Additionally, human activities such as grading, agricultural activities, fire suppression, and re-routing of creek channels have further degraded and disturbed the soil in these areas.

The area near the Santa Ana River has been subjected to repeated grading and earth moving related to rerouting of the river, installation of water conveyance features such as dams and channels, and removal of soil and sand that collects during wind and flood events. Mechanical maintenance of the Santa Ana River's banks and flood control construction have all resulted in the various restoration site areas being highly disturbed. Additionally, much of the restoration areas are inhabited by homeless people who, in some cases, have created substantial encampments. Because of these encampments, large amounts of refuse have been deposited in many areas, and in some cases within the boundaries of archaeological sites.

A paleontological study was conducted by the Natural History Museum of Los Angeles County for the project area. The search revealed that no fossils have been recorded within the boundaries of the proposed project APEs. Two fossil localities have been recorded approximately 6 miles west and south-southwest of the proposed project within older Quaternary deposits (McLeod 2018). The museum also analyzed each restoration site for paleontological sensitivity and geologic context. Overall, only the Lower Hole Creek restoration area and the southernmost portion of the Anza Creek

restoration area contain any paleontological sensitivity, and the museum recommends paleontological monitoring for any substantial excavation in those two areas.

Impact Analysis

Ground disturbance for the proposed Tributaries Restoration Project would include several relatively low-impact activities related to increasing native species habitats; restoring existing channels and an existing floodplain tributary; enhancing existing riparian and floodplain habitats; and controlling nonnative invasive species. These project components would have varying impacts at each of the different project areas. New channel construction and restoration activities would involve minor excavations to create new controlled channels. In some cases, this would include excavation of adjacent steep slopes for stabilization and planting of native species. Floodplain creation would involve the excavation of steep slopes adjacent to existing channels and clearing of nonnative plant species and planting of native vegetation. Potential impacts on historical or archaeological resources as a result of activities related to the Mitigation Reserve Program are unknown at this time. For the purposes of this study, however, ICF considered all historical or archaeological resources to be potentially affected by the activities associated with the Mitigation Reserve Program and made recommendations accordingly. All 12 archaeological and historical resources within the study area fall within the Mitigation Reserve Program APE, while 7 of these 12 would be affected by activities associated with the Tributaries Restoration Project.

Overall, subsurface grading activities for the proposed project have relatively low potential to encounter previously unidentified, potentially CRHR- or NRHP-eligible archaeological resources within the river and area immediately surrounding the riverbed. However, portions of the restoration sites outside the riverbed may have low to moderate potential for buried resources capped by alluvium, particularly in the margins of the floodplain where human activities may have been obscured by the deposition of younger alluvial soils through flooding. Below we discuss the potential impacts on each individual resource within the project APE and provide recommendations for mitigation of any significant impacts on resources that may occur because of the proposed project.

P-33-000127

Impacts

Site P-33-000127 is in the Mitigation Reserve Program APE, within the Anza Creek/Old Ranch Creek restoration area. The site is adjacent to the Santa Ana River, near an area that would have channel enhancement with habitat structures. The site could potentially be affected if slope stabilization requiring grading is conducted in this area. This area of the site was inspected for signs of buried deposits, but none were identified. It is possible, however, that sediment from flooding or construction of the Santa Ana River Trail bike path in this area may have buried archaeological deposits if they exist in this area.

Recommendations

It is unknown whether P-33-000127 would be affected directly by the activities associated with the Mitigation Reserve Program within the Anza Creek/Old Ranch Creek area. The known, above-

ground components of this site, namely the bedrock milling features, would not be affected by the proposed project. It is unknown whether a subsurface component exists at this site, and given the current conditions at the site, archaeological testing would be very difficult due to the presence of paved roads, a railroad line, and the Santa Ana River. Avoidance is always the preferred method of treatment for archaeological sites. Given the current conditions, and the low likelihood of encountering subsurface components to the site, potential impacts on this site can be avoided through establishing fencing around the known boundaries of the site, including a 10-foot buffer, and delineating the locations as an Environmentally Sensitive Area (ESA). If avoidance is not feasible, archaeological and Native American monitoring is recommended for any slope modification or ground disturbance immediately adjacent to the archaeological site boundaries. Monitoring measures and procedures are presented below. Should subsurface archaeological materials be identified during monitoring, the unanticipated discoveries protocol presented below should be followed.

P-33-000325

Site P-33-000325 is located within the boundaries of the Mitigation Reserve Program APE, but it is unknown whether it would be affected by activities associated with this project. P-33-000325 was never relocated by ICF's archaeological survey team and the artifacts have not been observed since 1971; however, it is likely that P-33-000325 is related to P-33-000127. No known maps of the site exist, and there is only reference to site CA-RIV-127 as a possible association. Given that the site was not relocated, and information on its contents are ambiguous, the site was recommended as ineligible for listing in the CRHR or NRHP. As such, no further action is recommended for this site. If, however, P-33-000325 is found to be part of or related to P-33-000127, and is found to exist, then the recommendations of retaining a qualified archaeologist, providing an archaeological and Native American monitoring, and the unanticipated discoveries protocol should apply.

P-33-000621

Impacts

P-33-000621 is located in the Hidden Valley Creek restoration area within the boundaries of the Mitigation Reserve Program APE, but it is unknown whether it would be affected by activities associated with this project.

Recommendations

It is unknown whether a subsurface component exists at this site. Because the current project plans do not include any form of ground disturbance, there are no recommendations for further action with this site. Because activities associated with the Mitigation Reserve Program are unknown at this time, it is recommended that a qualified archaeologist be retained. Should project plans be found to include ground disturbance to the site, retention of a qualified archaeologist and avoidance and establishment of an ESA are the recommended methods of treatment. Protective fencing associated with ESAs should be placed at a distance of 25 feet beyond the newly recorded boundaries of the site. If avoidance of this site is not feasible, prior to any ground-disturbing activities, a detailed Archaeological Treatment Plan (ATP) should be prepared and implemented by a qualified archaeologist. Should avoidance of the identified site not prove feasible, any impacts on the site would be considered significant and a testing program would be required. Subsurface

testing would be conducted to determine whether subsurface deposits with information potential exist, to confirm the boundaries of the resource, and to make eligibility determinations. Should such testing exhaust the data potential of the site, impacts from the proposed project would be reduced to less-than-significant levels. However, if testing finds that the archaeological site meets significance criteria under CEQA and/or Section 106, data recovery may be necessary. A detailed data recovery plan would need to be created.

Archaeological and Native American monitoring for any ground disturbance related to the excavation of the new channel near the boundary of the site is also recommended to identify any buried archaeological resources that might be affected. Should subsurface archaeological materials be identified during monitoring, the unanticipated discoveries protocol presented below should be followed.

P-33-000622

Impacts

P-33-000622 is within the boundaries of both the Tributaries Restoration Project (in the Hidden Valley Creek restoration area) and the Mitigation Reserve Program APEs, and is likely to be affected by the proposed project. The activities associated with the Tributaries Restoration Project may involve ground disturbance in areas within and around the site boundaries including excavation of a new channel, clearing of nonnative vegetation, and planting of riparian vegetation. The channel would be cut within 10 to 20 meters of the northern boundary of the site, and is likely to be excavated to a depth of approximately 1 meter (3 to 4 feet) below the ground surface. The proposed path of the channel is outside of the currently mapped site boundaries of P-33-000622, and may not affect the site directly. Selective clearing of nonnative vegetation and replanting of riparian species would be conducted in and around the boundaries of the site. This impact should be relatively minimal; however, it is unknown whether subsurface archaeological materials are present at this site and could be affected. Activities and potential disturbance from the Mitigation Reserve Program are unknown at this time.

Recommendations

It is unknown whether a subsurface component exists at this site. While ground disturbance is likely to be minimal within the site boundaries, retention of a qualified archaeologist, and avoidance and establishment of an ESA are the recommended methods of treatment. If avoidance of this site is not feasible, prior to any ground-disturbing activities, a detailed ATP should be prepared and implemented by a qualified archaeologist. Should avoidance of the identified site not prove feasible, any impacts on the site would be considered significant and a testing program would be required. Subsurface testing would be conducted to determine whether subsurface deposits with information potential exist, to confirm the boundaries of the resource, and to make eligibility determinations. Should such testing exhaust the data potential of the site, impacts from the proposed project would be reduced to less-than-significant levels. However, if testing finds that the archaeological site meets significance criteria under CEQA and/or Section 106, data recovery may be necessary. A detailed data recovery plan would need to be created. Archaeological and Native American monitoring for any ground disturbance related to the excavation of the new channel near the boundary of the site is also recommended to identify any buried archaeological resources that might be affected. Should

subsurface archaeological materials be identified during monitoring, the unanticipated discoveries protocol presented below should be followed.

P-33-000884

Impacts

P-33-000884 is within the boundaries of both the Tributaries Restoration Project (in the Lower Hole Creek restoration area) and the Mitigation Reserve Program APEs, and is likely to be affected by the proposed project. Because the site consists of Native American pictographs, the site has been recommended as eligible for inclusion on the CRHR and NRHP. The main constituent of the site is a large boulder containing the pictographs, and it is unknown whether a subsurface component exists. Much of the area surrounding the main component of the site has been damaged or altered due to construction of water conveyance features during the historical period. The proposed project plans avoid the boulder altogether; however, modifications to the existing channel and vegetation removal and replanting activities would affect areas surrounding the site. Due to the highly disturbed nature of the area surrounding the site, it is not likely that intact subsurface materials exist; therefore, direct impacts on the site are not anticipated but remain unknown.

Recommendations

While direct impacts on the site are not likely, concern has been expressed by local Native American groups that the site be preserved, and efforts be put in place to reduce further damage to the site. A qualified archaeologist should be retained, and avoidance is always the preferred method of treatment for archaeological sites. Given the current conditions, and the low likelihood of encountering subsurface components to the site, potential impacts on this site can be avoided through establishing fencing around the site boundaries and delineating the location as an ESA. Conditions surrounding the main site feature are not conducive to the placement of fencing with a buffer and, as such, it is recommended that protective ESA fencing be placed immediately adjacent to the site boundaries. Additionally, it has been recommended that further consultation with interested Native American parties be conducted to explore additional means of protection for the site such as the placement of deterrent plant species (such as poison oak) around the site.

Due to disturbance and present conditions surrounding the site, traditional testing methods may not be feasible. Because testing cannot be completed for the site, then archaeological and Native American monitoring for any ground disturbance related to the excavation of the new channel near the boundary of the site is recommended to identify any buried archaeological resources that might be affected. Should subsurface archaeological materials be identified during monitoring, the unanticipated discoveries protocol presented below should be followed. Monitoring measures and procedures are presented below. Should subsurface archaeological materials be identified during monitoring, the unanticipated discoveries protocol presented below and, potentially, data recovery procedures, should be followed. Local Native American tribes who have expressed an interest in preserving the site should also be consulted to develop a method of preserving the site and providing protection from further harm.

P-33-003357

Impacts

P-33-003357 is within the boundaries of both the Tributaries Restoration Project (in both the Hidden Valley Creek and Lower Hole Creek restoration areas) and the Mitigation Reserve Program APEs, and is likely to be affected by the proposed project. The site has previously been recommended as ineligible for listing in either the CRHR or NRHP due to a lack of integrity. The site components have been damaged, altered, or removed in many areas and, as such, the site does not retain integrity. Proposed ground disturbance from the project in both the Hidden Valley Creek and Lower Hole Creek restoration areas is outside of the borders of this site in both locations. The southern boundaries of disturbance in both locations appears to be defined by the northern boundary of the site. It is ICF's finding that there would be no impact on the remaining portions of the site as a result of activities associated with the proposed Tributaries Restoration Project; however, it is unknown if activities associated with the Mitigation Reserve Program would affect the site.

Recommendations

While the site is recommended as ineligible for inclusion on the CRHR or NRHP, it is unknown whether activities associated with the Mitigation Reserve Program would affect the site. Because the site has been recommended as ineligible for inclusion on the CRHR or NRHP but may be affected by the proposed Mitigation Reserve Program, it is recommended that a qualified archaeologist be retained, and that the unanticipated discoveries protocol be followed during ground-disturbing activities near and within the site boundaries.

P-33-003361

Impacts

P-33-003361 is a built environment historical resource, a Union Pacific Railway Bridge that has been recommended as eligible for the CRHR and NRHP. The site is located within the boundaries of the Mitigation Reserve Program APE along the eastern boundary of the proposed Anza Creek/Old Ranch Creek restoration area. Current plans for restoration would not affect the site in any way; however, it is unknown whether activities associated with the Mitigation Reserve Program would affect the site in any way. Ground disturbance would occur below the structure, and there are no impacts planned for the structure itself. The bridge is currently in use by the railroad, and should not be affected by construction vehicles or activities for the proposed project.

Recommendations

It is not likely that P-33-003361 would be affected by the Mitigation Reserve Program because the bridge and associated rail line are actively being used. However, the effects of the proposed Mitigation Reserve Program are unknown, and as such it is recommended that a qualified archaeologist and/or architectural historian be retained. Additionally, potential impacts on this site can be avoided through establishing fencing around resources with a 25-foot buffer outside of the known boundaries of the site, and delineating the locations as an ESA. Should project plans change,

and should disturbance or modification to the structure be proposed, a management plan would be required to determine the nature of impacts and to provide mitigation measures.

P-33-008698

Impacts

P-33-008698 is located within the boundaries of the Mitigation Reserve Program APE (in the Anza Creek/Old Ranch Creek restoration area). The site was originally recorded as a group of isolated artifacts, and ICF's survey team expanded the site boundary to include fence lines likely associated with a previous homestead or agricultural activity. ICF has recommended the site as ineligible for listing in the CRHR and NRHP. It is unknown whether the site would be affected by ground disturbance or other activities associated with the Mitigation Reserve Program.

Recommendations

While the site is recommended as ineligible for inclusion on the CRHR or NRHP, it is unknown whether activities associated with the Mitigation Reserve Program would affect the site. Because the site has been recommended as ineligible for inclusion on the CRHR or NRHP but may be affected by the proposed Mitigation Reserve Program, it is recommended that a qualified archaeologist be retained, and that the unanticipated discoveries protocol be followed.

P-33-008839

Impacts

P-33-008839 is located within the boundaries of both the Tributaries Restoration Project (in the Hidden Valley Creek restoration area) and the Mitigation Reserve Program APEs, and is likely to be affected by the proposed project. The portion of the site within the proposed Tributaries Restoration Project boundaries consists of water conveyance features that have been mostly destroyed or altered. The portion of the site within the proposed project APEs has been recommended as ineligible for listing on the CRHR or NRHP due to a lack of integrity. Ground-disturbing activities that could affect the site associated with the Tributaries Restoration Project include the excavation of a channel (approximately 3 to 4 feet in depth), clearing of nonnative vegetation, and planting of riparian species; potential activities associated with the Mitigation Reserve Program are currently unknown. While these ground-disturbing activities would intersect the site boundaries, they are not likely to affect the site because features associated with the site have been previously removed and/or altered. It is ICF's conclusion that the site would not be significantly affected by either the Tributaries Restoration Project or the Mitigation Reserve Program.

Recommendations

The Tributaries Restoration Project does include ground-disturbing activities within the boundaries of this site, and it is unknown whether activities associated with the Mitigation Reserve Program would affect the site. However, this site has been previously disturbed in the areas of potential impact. Because of the potential for ground disturbance, there is potential for discovery and impact on unknown subsurface archaeological deposits that might exist. Because of the potential for

unknown subsurface components to the site, it is recommended that a qualified archaeologist be retained, and the unanticipated discoveries protocol be followed.

P-33-009651

Impacts

P-33-009651 is located within the boundaries of both the Tributaries Restoration Project (in the Lower Hole Creek restoration area) and the Mitigation Reserve Program APEs, and is likely to be affected by the proposed project. The site was recommended as ineligible for listing on the CRHR or NRHP due to a lack of integrity and because most of the site components no longer exist. Only a small portion of this site consisting of a fragment of one feature was identified during the current survey, and a new spillway has been constructed in the site. Ground disturbance associated with the Tributaries Restoration Project would include the excavation of a new channel, removal of nonnative vegetation, and replanting of riparian species. Additionally, floodplain grading and slope maintenance would be conducted within the site boundaries of P-33-009651. Activities associated with the Mitigation Reserve Program are currently unknown.

Recommendations

The Tributaries Restoration Project does include ground-disturbing activities within the boundaries of this site, and it is unknown whether activities associated with the Mitigation Reserve Program would affect the site. However, this site has been previously disturbed in the areas of potential impact. Because of the potential for ground disturbance, there is potential for discovery and impact on unknown subsurface archaeological deposits that might exist. Because of the potential for unknown subsurface components to the site, it is recommended that a qualified archaeologist be retained, and the unanticipated discoveries protocol be followed.

P-33-009652

Impacts

P-33-009652 is a prehistoric bedrock milling feature located within the boundaries of both the Tributaries Restoration Project (in the Lower Hole Creek restoration area) and the Mitigation Reserve Program APEs, and is likely to be affected by the proposed project. P-33-009652 was not evaluated for inclusion in the CRHR or NRHP because it is unknown whether the site contains a subsurface component. Impacts on the site would include the excavation of a new channel immediately adjacent to the feature, removal of nonnative vegetation, and replanting of riparian species. Additionally, floodplain grading and slope maintenance would be conducted within or adjacent to the site boundaries of P-33-009652. A buried rock vane structure would be constructed immediately adjacent to the bedrock feature. While it is not likely that the bedrock feature would be affected directly, it is possible that subsurface components to the site (if they exist) may be affected by ground disturbance. It is also possible that the bedrock feature could be affected by the presence of heavy machinery and foot traffic.

Recommendations

It is likely that P-33-009652 would be affected by restoration activities. Because the nature of potential disturbance from the Mitigation Reserve Program is unknown, it is assumed that the site would be affected by activities associated with the program. It is recommended that a qualified archaeologist be retained, and the preferred method of treatment is avoidance and establishment of an ESA. Protective fencing associated with ESAs should be placed at a distance of 25 feet beyond the known boundaries of the site. It is unknown whether a subsurface component exists at this site and, given the current conditions at the site, archaeological testing would be very difficult due to the presence of a newly constructed spillway and dense vegetation. Due to disturbance and present conditions surrounding the site, traditional testing methods may not be feasible. If testing cannot be completed for the site, then archaeological and Native American monitoring for any ground disturbance related to the excavation of the new channel near the boundary of the site is recommended to identify any buried archaeological resources that might be affected. Should subsurface archaeological materials be identified during monitoring, the unanticipated discoveries protocol presented below and, potentially, data recovery procedures, should be followed. Monitoring measures and procedures are presented below.

P-33-016848

Impacts

P-33-016848 is located within the boundaries of both the Tributaries Restoration Project (along the southern boundary of the Anza Creek/Old Ranch Creek restoration areas) and the Mitigation Reserve Program APEs, and is likely to be affected by the proposed project. P-33-16848 consists of remnants of the Santa Ana River Trunk Sewer Line/Santa Ana River Outfall. The site has mostly been destroyed or altered, and was recommended as not eligible for inclusion in the CRHR or NRHP. Because components of the original site have mostly been removed, the site is not likely to be affected by ground-disturbing activities related to the proposed project.

Recommendations

The Tributaries Restoration Project does include ground-disturbing activities within the boundaries of this site, and it is unknown whether activities associated with the Mitigation Reserve Program would affect the site. This site has been heavily disturbed in the areas of potential impact. Because of the potential for ground disturbance, there is potential for discovery and impact on unknown subsurface archaeological deposits that might exist. Because of the potential for unknown subsurface components to the site, it is recommended that a qualified archaeologist be retained, and the unanticipated discoveries protocol be followed.

ISO-ICF-HV-01

ISO-ICF-HV-01 is an isolated ground stone artifact (mortar) located within the boundaries of the Mitigation Reserve Program APE (in the Hidden Valley Creek proposed restoration area). Traditionally, isolated artifacts are not considered for eligibility determinations for either the CRHR or NRHP. Recordation of this artifact has exhausted its research potential. Furthermore, the artifact was discovered in an area that is subject to disturbance from the natural processes of flooding and

has likely moved a significant distance from its original location. Due to a lack of depositional integrity and context for this find, no further action is recommended.

ISO-ICF-HV-02

ISO-ICF-HV-01 is an isolated historical-period grinding artifact (mano) located within the boundaries of the Mitigation Reserve Program APE (in the Hidden Valley Creek proposed restoration area). Traditionally, isolated artifacts are not considered for eligibility determinations for either the CRHR or NRHP. Recordation of this artifact has exhausted its research potential. Furthermore, the artifact was discovered in an area that is subject to disturbance from the natural processes of flooding and has likely moved a significant distance from its original location. Due to a lack of depositional integrity and context for this find, no further action is recommended.

Paleontology

Impacts

The Natural History Museum of Los Angeles County conducted a paleontological search and provided paleontological sensitivity recommendations for the proposed Tributaries Restoration and Mitigation Reserve Program APEs. Most of the project APEs are underlain by younger Quaternary deposits, which contain a low sensitivity for paleontological resources. The western margins of the Lower Hole Creek restoration area and the southernmost portion of the Anza Creek restoration area contain elevated paleontological sensitivity. In the western margins of the Lower Hole Creek restoration area, impacts are likely to involve grading of existing hillslopes for stabilization and revegetation. The southern portions of the Anza Creek/Old Ranch Creek restoration area are also likely to be affected through grading of some portions of the existing hillslopes for stabilization and revegetation. Depth of excavations would vary in these areas depending on the current conditions and degree of slope. Excavations in these areas may encounter older Quaternary deposits that have been found to contain fossils.

Recommendations

Paleontological monitoring is recommended for ground-disturbing activities within the western portion of the Anza Creek/Old Ranch Creek restoration area and the western portion of the Lower Hole Creek restoration area where grading activities would be conducted along hillslopes and would affect older Quaternary deposits. Paleontological monitoring would be conducted to avoid significant impacts on potential paleontological resources and to recover significant paleontological resources should they be identified during monitoring. Paleontological monitoring should be conducted by a paleontological monitor that meets the qualifications set forth by the Society of Vertebrate Paleontology (SVP) as a Paleontological Resource Monitor. Oversight of paleontological monitoring and recovery of any fossils should be conducted by a professional paleontologist that meets the requirements as a Principal Investigator, Project Paleontologist per the guidelines of the SVP.

Conclusions

The proposed Tributaries Restoration Project and Mitigation Reserve Program would have the potential to directly affect 12 archaeological sites and two newly identified isolates. Table 8 provides a summary of eligibility recommendations and recommended measures for each of these sites. Below we provide avoidance and mitigation measures to ensure that significant impacts on archaeological and paleontological resources are mitigated during project implementation.

Table 8. Eligibility Recommendations and Recommended Mitigation Measures for Cultural Resource Sites within the Proposed Project APE

Primary Number/Trinomial	Project Location: Mitigation Reserve Program (MRP); Tributaries Restoration Project (TRP)	Eligibility Recommendations for Inclusion on CRHR and NRHP	Recommended Measures
P-33-000127 CA-RIV-127	MRP	Appears eligible; unevaluated	Retain a qualified archaeologist; Establish an ESA; if avoidance is not feasible, provide archaeological and Native American monitoring; Unanticipated discoveries protocol
P-33-000325 CA-RIV-325	MRP	Recommended ineligible	Retain a qualified archaeologist; Unanticipated discoveries protocol
P-33-000621 CA-RIV-621	MRP	Unevaluated	Retain a qualified archaeologist; Establish an ESA; if avoidance is not feasible, develop and implement ATP
P-33-000622 CA-RIV-622	MRP and TRP	Unevaluated	Retain a qualified archaeologist; Establish an ESA; if avoidance is not feasible, develop and implement ATP
P-33-000884 CA-RIV-884	MRP and TRP	Recommended eligible	Retain a qualified archaeologist; Establish an ESA; if avoidance is not feasible, provide archaeological and Native American monitoring; Unanticipated discoveries protocol
P-33-003357 CA-RIV-3357H	MRP and TRP	Recommended ineligible	Retain a qualified archaeologist; Unanticipated discoveries protocol
P-33-003361 CA-RIV-3361H	MRP	Recommended eligible	Retain a qualified archaeologist/ architectural historian; Establish an ESA; if avoidance is not feasible, develop and implement ATP

Primary Number/Trinomial	Project Location: Mitigation Reserve Program (MRP); Tributaries Restoration Project (TRP)	Eligibility Recommendations for Inclusion on CRHR and NRHP	Recommended Measures
P-33-008698	MRP	Recommended ineligible	Retain a qualified archaeologist; Unanticipated discoveries protocol
P-33-008839	MRP and TRP	Recommended ineligible	Retain a qualified archaeologist; Unanticipated discoveries protocol
P-33-009651	MRP and TRP	Recommended ineligible	Retain a qualified archaeologist; Unanticipated discoveries protocol
P-33-009652 CA-RIV-6452	MRP and TRP	Unevaluated	Retain a qualified archaeologist; Establish an ESA; if avoidance is not feasible, provide archaeological and Native American monitoring; Unanticipated discoveries protocol
P-33-016848	MRP and TRP	Recommended ineligible	Retain a qualified archaeologist; Unanticipated discoveries protocol
ISO-ICF-HV-01	MRP	Recommended ineligible	No further action recommended
ISO-ICF-HV-02	MRP	Recommended ineligible	No further action recommended

Avoidance and Mitigation Measures

Retain a Qualified Archaeologist and a Qualified Paleontologist

The applicant should retain a qualified archaeologist defined as an archaeologist who meets the Secretary of the Interior's Standards for professional archaeology to carry out all mitigation measures related to archaeological and historical resources. The applicant should retain a qualified paleontologist defined as a paleontologist who meets the requirements as a Principal Investigator, Project Paleontologist per the guidelines of the SVP.

Avoidance through Establishment of Environmentally Sensitive Areas

Avoidance is always the preferred method of treatment for archaeological sites. Preservation in place of archaeological materials maintains the critical relationship between artifacts and their archaeological context. Additionally, should sacred objects or objects of religious importance to Native American groups be identified, preservation in place avoids conflicts with traditional values

of groups who ascribe meaning to these resources. Impacts on cultural resources can be avoided through establishing fencing around cultural resources with a buffer and delineating these locations as ESAs. Worker training should include language to the effect that ESAs must be avoided and cannot be entered on foot or with heavy equipment. Signage indicating the fenced area is an ESA is recommended.

Prior to the commencement of ground-disturbing activities, at the project kickoff, the selected qualified archaeologist and paleontologist or their designee will provide a briefing to construction personnel to provide information on regulatory requirements for the protection of cultural resources. As part of this training, construction personnel will be briefed on proper procedures to follow should unanticipated cultural resources discoveries be made during construction. Workers will be provided contact information and protocols to follow in the event that unanticipated discoveries are made. Additionally, workers will be shown examples of the types of cultural resources that would require notification of the project archaeologist or paleontologist. If necessary, the project archaeologist or paleontologist can create a training video, PowerPoint presentation, or printed literature that can be shown to new workers and contractors to avoid continuous training throughout the life of the project.

Development and Implementation of an Archaeological Treatment Plan

For unevaluated archaeological sites, it is often important to understand whether or not a subsurface component exists. To properly evaluate such properties, an ATP should be developed that describes methods and procedures for conducting subsurface excavations to determine the vertical and horizontal extents of an archaeological site. Implementation of such a plan can include mechanical and/or manual excavations to provide data on the cultural constituents at the site and the depositional context of such materials (if found to exist). These data can be used to determine the integrity of the site and to make a formal evaluation based on the eligibility criteria set forth in CEQA and Section 106 of the NHPA for inclusion in the CRHR and NRHP. The ATP will define the parameters of archaeological testing at the site, and the extent of excavation and analysis of any materials recovered. The ATP will also include guidelines for treatment and curation of any materials recovered during the testing process. Subsequent to implementation of the ATP, a technical report describing the methods and results of archaeological testing and formal evaluations of the archaeological sites and recommendations for further treatment will be completed. The ATP should be approved by the lead agency and should involve consultation and review by interested Native American groups.

Development of Protection Plan for Archaeological Site P-33-000884 (CA-RIV-884)

Site P-33-000884 (CA-RIV-884) is an archaeological site containing Native American pictographs, and has been recommended as eligible for inclusion on the CRHR and NRHP. Through Assembly Bill 52 consultation, Mr. Travis Armstrong, Tribal Historic Preservation Officer representing the Morongo Band of Mission Indians, indicated that this site is important to the Morongo Band of Mission Indians and recommended that measures be taken to preserve the site, restore it (if possible), and protect it from further damage. Currently, the site has been heavily damaged by vandals who have spray-painted graffiti over much of the pictographs. It is unknown whether the graffiti can be removed and whether the pictographs can be restored to their pre-vandalization

state. Additional consultation should take place with the Morongo Tribe of Mission Indians to discuss the feasibility of restoration of the resource. Additionally, Mr. Armstrong has requested that measures be undertaken to protect the site from further damage. Mr. Armstrong suggested the planting of poison oak surrounding the large boulder that the pictographs are on (poison oak currently covers some portions of this feature). Additional measures could include the placement of protective fencing and signage identifying the location as an Environmentally Sensitive Area.

Provide Archaeological and Native American Monitoring

If avoidance is not feasible, and project-related ground disturbance is anticipated to occur at archaeological sites identified above, it is recommended that an archaeologist be present to monitor the activity. If ground-disturbing activities are to proceed at prehistoric archaeological sites, it is recommended a Native American monitor be retained in addition to an archaeological monitor. As part of the archaeological monitoring program, a preconstruction worker training briefing should be provided by a qualified archaeologist. Prior to the commencement of restoration activities, at the project kickoff, the selected qualified archaeologist will provide a briefing to construction personnel to provide information on regulatory requirements for the protection of cultural resources. As part of this training, construction personnel will be briefed on proper procedures to follow should unanticipated cultural resource discoveries be made during construction. Workers will be provided contact information and protocols to follow if unanticipated discoveries are made.

The Native American monitor should be affiliated with a local Native American tribe. If project-related ground-disturbing activities in archaeologically sensitive areas are performed simultaneously in more than one location, and these activities are performed at a distance greater than 300 feet apart, an archaeological monitor should be present at each location. At a minimum, the archaeological monitor will meet the Society for California Archaeology professional qualification standards for an archaeological crew leader, and will work under the direction of an individual that meets the Secretary of the Interior's Standards and Guidelines for Archaeology and the Society for California Archaeology professional qualification standards for a Principal Investigator.

The archaeological monitor will have the authority to temporarily pause excavations, as needed, to examine potential archaeological discoveries. In the event of an unanticipated discovery of archaeological resources or human remains, the archaeological monitor will follow the unanticipated discovery protocols described below.

Unanticipated Discoveries

If buried cultural resources are discovered inadvertently during ground-disturbing activities, work should be temporarily halted in the area and within 50 feet of the find until a qualified archaeologist can assess the significance of the find and, if necessary, develop appropriate treatment measures in consultation with the lead agency. If the find is prehistoric or Native American in origin, consultation with local Native American tribes who have expressed interest and concern regarding the project should be undertaken.

If the discovery is determined to be not significant in consultation with the lead agency, work will be permitted to continue in the area. If, in consultation with the lead agency, a discovery is determined to be significant, a mitigation plan should be prepared and carried out in accordance with state and federal guidelines. If the resource cannot be avoided, a data recovery plan should be developed to ensure collection of sufficient information to address archaeological and historical research questions, with results presented in a technical report describing field methods, materials collected,

and conclusions. The qualified archaeologist shall treat recovered items in accordance with current professional standards by properly determining provenance, cleaning, analyzing, researching, reporting, and curating them in a collection facility meeting the Secretary of the Interior's Standards as promulgated in 36 CFR 79.

Human Remains and Associated or Unassociated Funerary Objects

The discovery of human remains is always a possibility during ground-disturbing activities. If human remains are found, the State of California Health and Safety Code Section 7050.5 states 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 and all work within 50 feet of the find shall be halted until the remains have been evaluated by the county coroner. If the human remains are determined to be prehistoric, the coroner will notify NAHC, which will determine and notify a most likely descendant. The most likely descendant shall complete the inspection of the site within 48 hours of notification and may recommend scientific removal and nondestructive analysis of human remains and items associated with Native American burials.

Provide Paleontological Monitoring

Paleontological monitoring is recommended for ground-disturbing activities within the western portion of the Anza Creek/Old Ranch Creek restoration area and the western portion of the Lower Hole Creek restoration area where grading activities will be conducted along hillslopes and will affect older Quaternary deposits. Paleontological monitoring will be conducted to avoid significant impacts on potential paleontological resources and to recover significant paleontological resources should they be identified during monitoring. Paleontological monitoring should be conducted by a paleontological monitor that meets the qualifications set forth by the SVP as a Paleontological Resource Monitor. Oversight of paleontological monitoring and recovery of any fossils should be conducted by a professional paleontologist that meets the requirements as a Principal Investigator, Project Paleontologist per the guidelines of the SVP. Paleontological monitoring should be conducted for ground-disturbing activities conducted along the southern margins of the Anza Creek restoration area at depths of 9 feet below the ground surface or deeper. Paleontological monitoring should also be conducted for excavations in the Hole Creek restoration area at all depths because surface deposits contain older Quaternary Alluvium, which is known to contain fossils (McLeod 2018).

Chapter 7
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Chapter 8

List of Preparers and Persons/Organizations Contacted

Preparers

Benjamin Vargas, M.A., RPA	ICF, Archaeologist
Rachel Droessler, M.A., RPA	ICF, Archaeologist, GIS Analyst
Andrew Belcourt	ICF, Archaeologist, GIS Analyst

Persons and Organizations Contacted

Travis Armstrong	Consulting Archaeologist, Morongo Band of Mission Indians
Raymond Huaute	Tribal Historic Preservation Officer, Morongo Band of Mission Indians
Jessica Mauck	Cultural Resources Analyst, San Manuel Band of Mission Indians
Andrew Salas	Chairperson, Gabrieleño Band of Mission Indians – Kizh Nation

Appendix A
Records Search

CONFIDENTIAL

Appendix B
Native American Coordination

STATE OF CALIFORNIA Edmund G. Brown, Jr., Governor

NATIVE AMERICAN HERITAGE COMMISSION
Environmental and Cultural Department
1550 Harbor Blvd., ROOM 100
West SACRAMENTO, CA 95691
(916) 373-3710
Fax (916) 373-5471

August 2, 2018

Karolina Chmiel

ICF

Sent by Email: karolina.chmiel@icf.com

Re: Upper Santa Ana River Habitat Conservation Plan, Riverside County

Dear Ms. Chmiel,

A record search of the Native American Heritage Commission (NAHC) Sacred Lands File (SLF) was completed for the information you have submitted for the above referenced project. The results were negative. However, the absence of specific site information in the SLF does not preclude the presence of cultural resources in any project area. Other sources for cultural resources should also be contacted for information regarding known and/or recorded sites.

Enclosed is a list of Native Americans tribes who may have knowledge of cultural resources in the project area. I suggest you contact all of those indicated, if they cannot supply information, they might recommend others with specific knowledge. By contacting all those listed, your organization will be better able to respond to claims of failure to consult with the appropriate tribe. If a response has not been received within two weeks of notification, the Commission requests that you follow-up with a telephone call to ensure that the project information has been received.

If you receive notification of change of addresses and phone numbers from any of these tribes, 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 me at 916-573-1033 or frank.lienert@nahc.ca.gov.

Sincerely,

Frank Lienert
Associate Governmental Program Analyst

Native American Heritage Commission
Native American Contacts
August 2, 2018

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(760) 347-7880 Fax

Los Coyotes Band of Cahuilla and Cupeno Indians
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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 American Tribes with regard to cultural resources assessments for the proposed
Upper Santa Ana River Habitat Conservation Plan, Riverside County

Native American Heritage Commission
Native American Contacts
August 2, 2018

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August 2, 2018

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Upper Santa Ana River Habitat Conservation Plan, Riverside County

Native American Heritage Commission
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August 2, 2018

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SAN BERNARDINO Valley MUNICIPAL WATER DISTRICT

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April 25, 2018

San Manuel Band of Mission Indians
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Attn: Jessica Mauck

Re: Invitation to Consult under Public Resources Code (PRC) 21080.3.1 and Chapter 532 Statutes of 2014 (i.e., AB 52)

Dear Ms. Mauck:

Please consider this letter as formal notification of a proposed project as required under the California Environmental Quality Act, specifically PRC § 21080.3.1 and Chapter 532 Statutes of 2014 (i.e., AB 52). Please respond within 30 days, pursuant to PRC § 21080.3.1(d), if you would like to consult on this project. Please provide a designated lead contact person if you have not provided that information to us already.

The San Bernardino Valley Municipal Water District (SBVMWD) proposes restoration of four sites along tributaries to the Santa Ana River (Tributary Restoration Sites) as early implementation of the Upper Santa Ana River Habitat Conservation Plan. Figures 1 and 2 show project location and vicinity maps (see attached Figures 1-2).

To jump start implementation of conservation measures that will be required by the Upper Santa Ana River (SAR) Habitat Conservation Plan (HCP), the San Bernardino Valley Municipal Water District (Valley District) developed conceptual restoration designs for four tributary sites along the SAR in the Riverside area for the benefit of Santa Ana sucker. Creating habitat for the covered species, in particular the Santa Ana sucker and the other aquatic species, as soon as possible is an essential component of the conservation strategy and successful implementation of the Upper SAR HCP. As such, designing covered species habitat restoration at sites that offset impacts from the Upper SAR HCP covered activities is an essential element of the incidental take permit (ITP) issuance process.

A short description of the restoration sites includes:

- ***Old Farm Road***. This site is bounded to the north by the SAR, to the east by the closed Tequesquite Landfill, and to the south by the SAR bicycle trail. Old Farm Road occupies the east and north portion of the larger area that is occupied in the south and west portion by Anza Drain (below). Channel and revegetation work was proposed for 14.3 acres in the preliminary design.

- ***Anza Drain***. This site is bounded to the north by the SAR and to the south and west by the SAR bicycle trail and Anza Narrows Park. Anza Drain occupies the south and west portion of the larger area that is occupied in the east and north by

Old Farm Road. The preliminary design proposed a total of 14.9 acres of channel and revegetation work. Due to the proximity of the Old Farm Road and Anza Drain sites, expanding the restoration actions to include enhancement of ecological function could include an additional 321 acres.

- ***Hole Creek***. This site is located just downstream of the Van Buren Boulevard Bridge and the City of Riverside's Regional Water Quality Control Plant and is divided into two adjacent project areas (Upper Hole Creek and Lower Hole Creek). The Upper and Lower Hole Creek project areas are separated by Jurupa Avenue. The preliminary design proposed channel and revegetation work for 5.5 acres for lower Hole Creek and 10.5 acres for upper Hole Creek. An additional 78 acres could be restored at this site to enhance ecological functions.

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Cultural resources investigations for this project are pending and will be conducted largely by our consultant ICF for compliance with the California Environmental Quality Act. As part of these cultural resource investigations, a literature and records search will be conducted at the South Central Coastal Information Center (SCCIC) at California State University, Fullerton. A search of its Sacred Lands files by the Native American Heritage Commission on September 14, 2017 did not identify any cultural resources in the project area of potential effect (APE). Cultural resources surveys of the project area will be conducted in the near future.

As part of the cultural resources review of the proposed project under CEQA, we are requesting any information that you are willing to share about Tribal Cultural Resources that may be present in the proposed project area. If you would like to consult on this project with Valley District, please notify us in writing within 30 calendar days of receipt of this letter, consistent with PRC 21080.3.1. Please respond to:

Mr. Douglas Headrick
San Bernardino Valley Municipal Water District
380 E. Vanderbilt Way
San Bernardino, CA 92408
douglash@sbvmwd.com
909-387-9226

After your written request is received, the undersigned will contact you within 30 calendar days to begin the coordination process.

Your comments and concerns will be important to Valley District as we move forward with the project. We look forward to identifying any Tribal concerns early so that they can be

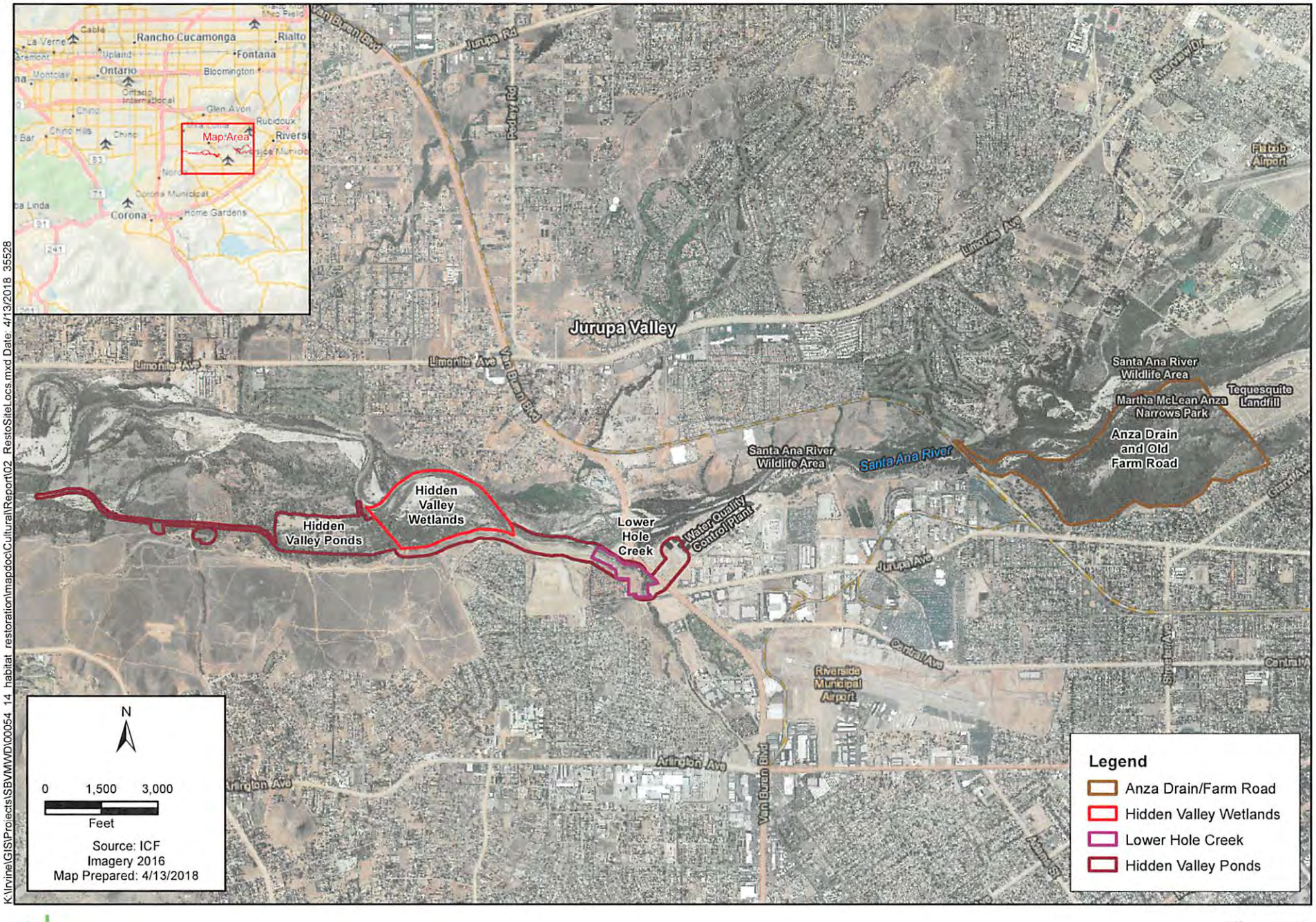
considered in the initial stages of project planning, and avoidance or mitigation measures can be incorporated into project design.

If you have any questions or concerns with the project, please refer all contacts to Heather Dyer, via email heatherd@sbvmwd.com or by phone 909-387-9256.

Sincerely,

Douglas D. Headrick
General Manager

Attachments: Figure 1-2
Cc: Michael Zischke, Cox Castle Nicholson



K:\Irvine\GIS\Projects\SBVMWD\00054 14 habitat restoration\mapdoc\Cultural\Report\02 RestoSiteLocs.mxd Date: 4/13/2018 35528

Figure 2
Project Location
Upper Santa Ana River Restoration Project

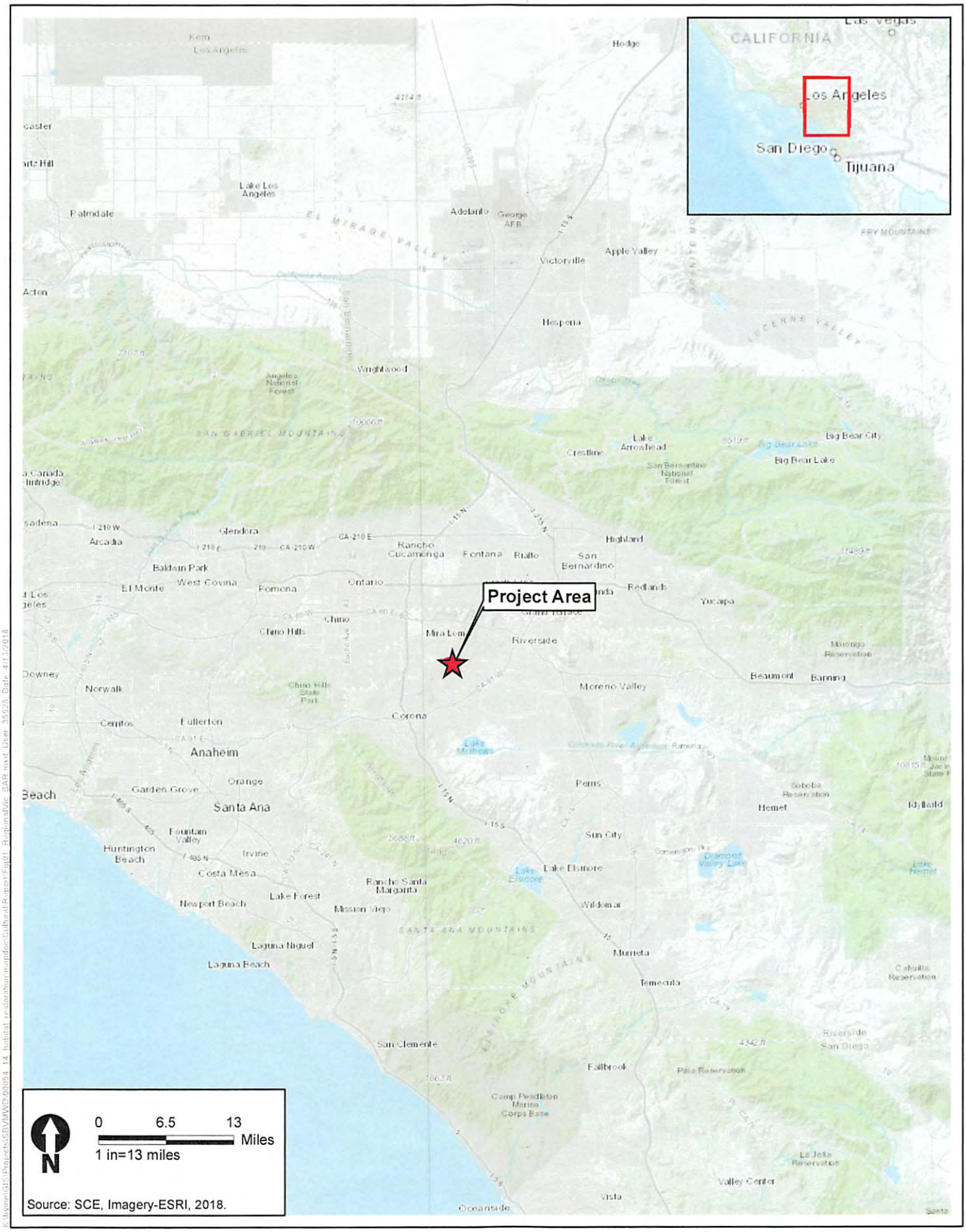


Figure 1
Regional Location
Upper Santa Ana River Restoration Project

SAN BERNARDINO Valley MUNICIPAL WATER DISTRICT

380 East Vanderbilt Way
San Bernardino, CA 92408
phone: 909.387.9200
fax: 909.387.9247
www.sbvmwd.com

April 25, 2018

Morongo Band of Mission Indians
12700 Pumarra Road
Banning, California 92220
Attn: Raymond Huaute

Re: Invitation to Consult under Public Resources Code (PRC) 21080.3.1 and Chapter 532 Statutes of 2014 (i.e., AB 52)

Dear Honorable Chairperson Martin:

Please consider this letter as formal notification of a proposed project as required under the California Environmental Quality Act, specifically PRC § 21080.3.1 and Chapter 532 Statutes of 2014 (i.e., AB 52). Please respond within 30 days, pursuant to PRC § 21080.3.1(d), if you would like to consult on this project. Please provide a designated lead contact person if you have not provided that information to us already.

The San Bernardino Valley Municipal Water District (SBVMWD) proposes restoration of four sites along tributaries to the Santa Ana River (Tributary Restoration Sites) as early implementation of the Upper Santa Ana River Habitat Conservation Plan. Figures 1 and 2 show project location and vicinity maps (see attached Figures 1-2).

To jump start implementation of conservation measures that will be required by the Upper Santa Ana River (SAR) Habitat Conservation Plan (HCP), the San Bernardino Valley Municipal Water District (Valley District) developed conceptual restoration designs for four tributary sites along the SAR in the Riverside area for the benefit of Santa Ana sucker. Creating habitat for the covered species, in particular the Santa Ana sucker and the other aquatic species, as soon as possible is an essential component of the conservation strategy and successful implementation of the Upper SAR HCP. As such, designing covered species habitat restoration at sites that offset impacts from the Upper SAR HCP covered activities is an essential element of the incidental take permit (ITP) issuance process.

A short description of the restoration sites includes:

- ***Old Farm Road***. This site is bounded to the north by the SAR, to the east by the closed Tequesquite Landfill, and to the south by the SAR bicycle trail. Old Farm Road occupies the east and north portion of the larger area that is occupied in the south and west portion by Anza Drain (below). Channel and revegetation work was proposed for 14.3 acres in the preliminary design.

- ***Anza Drain***. This site is bounded to the north by the SAR and to the south and west by the SAR bicycle trail and Anza Narrows Park. Anza Drain occupies the south and west portion of the larger area that is occupied in the east and north by

Old Farm Road. The preliminary design proposed a total of 14.9 acres of channel and revegetation work. Due to the proximity of the Old Farm Road and Anza Drain sites, expanding the restoration actions to include enhancement of ecological function could include an additional 321 acres.

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Cultural resources investigations for this project are pending and will be conducted largely by our consultant ICF for compliance with the California Environmental Quality Act. As part of these cultural resource investigations, a literature and records search will be conducted at the South Central Coastal Information Center (SCCIC) at California State University, Fullerton. A search of its Sacred Lands files by the Native American Heritage Commission on September 14, 2017 did not identify any cultural resources in the project area of potential effect (APE). Cultural resources surveys of the project area will be conducted in the near future.

As part of the cultural resources review of the proposed project under CEQA, we are requesting any information that you are willing to share about Tribal Cultural Resources that may be present in the proposed project area. If you would like to consult on this project with Valley District, please notify us in writing within 30 calendar days of receipt of this letter, consistent with PRC 21080.3.1. Please respond to:

Mr. Douglas Headrick
San Bernardino Valley Municipal Water District
380 E. Vanderbilt Way
San Bernardino, CA 92408
douglash@sbvmwd.com
909-387-9226

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If you have any questions or concerns with the project, please refer all contacts to Heather Dyer, via email heatherd@sbvmwd.com or by phone 909-387-9256.

Sincerely,

Douglas D. Headrick
General Manager

Attachments: Figure 1-2
Cc: Michael Zischke, Cox Castle Nicholson

SAN BERNARDINO Valley MUNICIPAL WATER DISTRICT

380 East Vanderbilt Way
San Bernardino, CA 92408
phone: 909.387.9200
fax: 909.387.9247
www.sbvmwd.com

April 25, 2018

Gabrieleño Band of Mission Indians – Kizh Nation
Post Office Box 393
Covina, California 91723
Attn: Andrew Salas

Re: Invitation to Consult under Public Resources Code (PRC) 21080.3.1 and Chapter 532 Statutes of 2014 (i.e., AB 52)

Dear Honorable Chairperson Salas:

Please consider this letter as formal notification of a proposed project as required under the California Environmental Quality Act, specifically PRC § 21080.3.1 and Chapter 532 Statutes of 2014 (i.e., AB 52). Please respond within 30 days, pursuant to PRC § 21080.3.1(d), if you would like to consult on this project. Please provide a designated lead contact person if you have not provided that information to us already.

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Sincerely,

Douglas D. Headrick
General Manager

Attachments: Figure 1-2
Cc: Michael Zischke, Cox Castle Nicholson

Confidential Record of Communication

Project: Upper Santa Ana River

Contact Name: Travis Armstrong

Title: Consulting Archaeologist

Organization/Tribe: Morongo Band of Mission Indians

Address: n/a

City/State/Zip: n/a

Date: 6/21/2018

Time: 11:00am

Phone: 951-755-5259

Email: thpo@morongo-nsn.com

Meeting between: Karen Crawford, ICF Archaeologist and Travis Armstrong (telephone)

Topic/s of discussion: Sites of concern in the project area, potential mitigation, field safety

- Mr. Armstrong described an archaeological site (CA0LAN-884) consisting of a petroglyph on a large, flat-topped boulder west of the Van Buren Blvd. bridge over the Santa Ana River. Vandals have sprayed graffiti all over the pictograph.
- Mr. Armstrong asked Heather Dyer of SBVMWD if mitigation could be included for this site--include cleanup of the graffiti and revegetation with poison oak or another native that would keep people away while protecting the rock.
- He mentioned having a conversation (in an unofficial capacity) with a representative of the Coastal Conservancy's Santa Ana River trail Conservancy, who stated that funding may be available for education. This is unrelated to the current project.
- Other sites in the Project area: Mr. Armstrong is aware of a few sites in the project area and he has been in the field to check on their condition. However the area is very overgrown and there is a significant number of homeless people that live in the vicinity and he curtailed his fieldwork and left for safety reasons. He advised that all field personnel be very cautious and safety conscious when in the field.
- He discussed this project with the San Manuel Band of Mission Indians and while he does not speak for them he believes they will defer consultation to the Morongo tribe.
- Requested to be notified of field surveys

Follow-up/Action Items:

- Karen send Travis her contact information (completed 6/21/18)
- Travis send Karen information on petroglyph site (completed 6/21/18)
- ICF/SBVMWD to notify Morongo of field surveys

UTM 457000mE 3757720mN

MAPPED
4. RIV. 884

SAN BERNARDINO COUNTY MUSEUM
Archaeological Site Survey Record

Site [redacted] 2. Map Riverside West 7.5 Riverside 15 3. Country Riverside

4. Twp. 2S Range 6W SE ¼ of SW 1/4 SW1/4 ¼ of Sec. 25

5. Location Several hundred yards W of the S approach of Van Buren Blvd. bridge over the Santa Ana River, and visible from it. 6. On Contour elevation 750'

7. Previous designations for site

8. Owner 9. Address

10. Previous owners, dates

11. Present tenant

12. Red pictos on S side of flat-topped 25' diameter granite

13. Description of site boulder, situated on slope between drainage ditch from Hole Lake and an abandoned irrigation ditch.

14. Area 8 x 8m

15. Depth

16. Height

17. Vegetation 18. Nearest water

19. Soil of site 20. Surrounding soil type

21. Previous excavation

22. Cultivation 23. Erosion

24. Buildings, roads, etc. Van Buren is a main blvd. Almost a freeway.

25. Possibility of destruction

26. House pits

27. Other features

28. Burials

29. Artifacts

30. Remarks I reported this site last year from infor. given me by Shepard. Now I have visited it. Found boulder but couldn't get close enough to se picto because all sides overgrown with poison oak.

31. Published references

32. Other Museum Reference 33. Sketch map

34. Date May 1965 35. Recorded by Arda Haenszel 36. Photos

Sept. 1971

Confidential Record of Communication

Project: Upper Santa Ana River

Contact Name: Travis Armstrong

Title: Consulting Archaeologist

Organization/Tribe: Morongo Band of Mission Indians

Address: n/a

City/State/Zip: n/a

Date: 8/21/2018

Time: 4:30 p.m.

Phone: 951-755-5259

Email: thpo@morongo-nsn.com

Meeting between: Benjamin Vargas, ICF Archaeologist and Travis Armstrong (telephone)

Topic/s of discussion: Sites of concern in the project area, potential mitigation, field safety

- Mr. Vargas let Mr. Armstrong know that ICF would be conducting field surveys for the proposed Upper Santa Ana River Restoration Project sites on 8/22/2018. Mr. Armstrong said that he would not be able to join the surveys.
- Mr. Armstrong and Mr. Vargas discussed the archaeological site (CA-RIV-884) consisting of a petroglyph on a large, flat-topped boulder west of the Van Buren Blvd. bridge over the Santa Ana River. Vandals have sprayed graffiti all over the pictograph. Mr. Armstrong noted that he had photographed the feature, but it had been a while since he had been back out to the site. He also noted that there was a lot of poison oak surrounding the feature and that it might be difficult to get near. Mr. Armstrong noted that it would be good if the ICF team could get updated photographs if possible.
- Mr. Armstrong discussed potential mitigation measures for this site such as restoration or removal of the graffiti, and most importantly, protection of the site. Mr. Armstrong stated that the site is important to the Morongo people and that these types of sites are relatively rare in the area.
- Mr. Armstrong discussed potential ways to protect the site such as planting more poison oak around the boulder so that people could not graffiti it any more.
- Mr. Armstrong mentioned that he used Dstretch to analyze the photographs that he took, and that it made the pictographs more clear, but that he could not discern any pattern to the pictographs. Mr. Armstrong said that he would send Mr. Vargas a photograph of the site and the pictographs.
- Mr. Armstrong also mentioned that there are other prehistoric sites in the Project area: Mr. Armstrong is aware of a few sites in the project area and he has been in the field to check on their condition. However the area is very overgrown and there is a significant number of homeless people that live in the vicinity and he curtailed his fieldwork and left for safety

reasons. He advised that all field personnel be very cautious and safety conscious when in the field.

- He discussed this project with the San Manuel Band of Mission Indians and while he does not speak for them he believes they will defer consultation to the Morongo tribe.
- Mr. Armstrong said that because the area had fresh water, it was and important area to the Morongo people and this is the reason for numerous sites in the vicinity of the project.
- Mr. Armstrong also said that he would like a copy of the report when it is completed if possible.

Follow-up/Action Items:

- Mr. Armstrong sent a photograph of the pictograph site on 8/22/2018
- ICF to send Mr. Armstrong copy of technical report.

Vargas, Benjamin

Subject: FW: Santa Ana River Tributary Restoration Sites (Old Farm Rd, Anza Drain, Hole Creek, Hidden Valley Wetlands and Ponds)
Attachments: image50e31c.PNG

-------- Original message --------
From: Jessica Mauck <JMauck@sanmanuel-nsn.gov<mailto:JMauck@sanmanuel-nsn.gov>>
Date: 5/1/18 4:15 PM (GMT-07:00)
To: Doug Headrick <dough@sbvmwd.com<mailto:dough@sbvmwd.com>>
Subject: Santa Ana River Tributary Restoration Sites (Old Farm Rd, Anza Drain, Hole Creek, Hidden Valley Wetlands and Ponds)

Hello Douglas,

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 27 April 2018. The proposed project area is located just outside of Serrano ancestral territory and, as such, SMBMI will not request consulting party status or elect 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
[cid:image50e31c.PNG@3ab0bc2e.4782b2e0]<http://www.sanmanuel-nsn.gov>

Appendix C
Resource Location Map

CONFIDENTIAL

Appendix D
DPR 523 Site Record Forms

CONFIDENTIAL