Historic Property Identification Report for the East Valley Water District Well No. 152 Drilling and Equipping Project, City of Highland, San Bernardino County, California

OCTOBER 2026

NONCONFIDENTIAL

PREPARED FOR

Albert A. Webb Associates

PREPARED BY

SWCA Environmental Consultants

HISTORIC PROPERTY IDENTIFICATION REPORT FOR THE EAST VALLEY WATER DISTRICT WELL NO. 152 DRILLING AND EQUIPPING PROJECT, CITY OF HIGHLAND, SAN BERNARDINO COUNTY, CALIFORNIA

Prepared for

Albert A. Webb Associates
3788 McCray Street
Riverside, California 92506
Attn: Eliza Laws, Senior Environmental Analyst

Prepared by

Bethany Greene, B.A., and
Nicholas F. Hearth M.A., RPA

Principal Investigator
Tiffany Clark, Ph.D., RPA

SWCA Environmental Consultants
3550 Vine Street, Suite 220
Riverside, California 92507
(951) 583-4605
www.swca.com

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EXECUTIVE SUMMARY

Purpose and Scope

Albert A. Webb Associates retained SWCA Environmental Consultants (SWCA) to conduct a historic property identification study in support of the proposed Well No. 152 Drilling and Equipping Project (project) in the city of Highland, San Bernardino County, California. The East Valley Water District (EVWD or District) proposes to drill, construct, operate, and maintain a new potable groundwater supply well, to be designated Well No. 152, on an approximately 1.13-acre portion of Assessor's Parcel Number 029-705-124. The EVWD is receiving a WaterSmart Grant for the proposed project from the Bureau of Reclamation (Reclamation). Therefore, a cultural resources study was completed in accordance with the requirements of a California Environmental Quality Act (CEQA)-Plus investigation, which includes an evaluation of project impacts under CEQA, Section 106 of the National Historic Preservation Act (NHPA), and the National Environmental Policy Act. SWCA understands that the EVWD will be the CEQA lead agency for the project, with Reclamation serving as the federal lead agency.

The study included the following: 1) a delineation of the area of potential effects (APE), 2) a California Historical Resources Information System (CHRIS) records search, 3) a literature, map, and aerial imagery review, 4) a Sacred Lands File (SLF) search by the Native American Heritage Commission (NAHC), 5) Native American outreach, 6) interested party outreach, 7) an archaeological sensitivity analysis, and 8) an intensive pedestrian survey of the APE.

Dates of Investigation

On October 31, 2025, SWCA completed a CHRIS records search at the South Central Coastal Information Center (SCCIC) at California State University, Fullerton, for the APE plus a 1-mile buffer. The NAHC conducted an SLF search at the request of SWCA; the results were received on October 31, 2025. The intensive-level cultural resources survey of the APE was completed on November 19, 2025. Native American outreach was conducted on December 6, 2025, with follow-up phone calls occurring January 6, 2026. Interested party outreach was conducted on May 28, 2026.

Summary of Findings

The results of the CHRIS records search indicate eight cultural resources have been previously recorded within a 1.0 mile of the APE; none of the known cultural resources intersect the APE. The SLF results returned by the NAHC were positive. A review of ethnographic literature identified Serrano place-names in the vicinity, including former village site *Wa'atsava't* within a 16-kilometer (10-mile) radius of the APE. Historical maps indicate the APE was used for agricultural activities in the nineteenth century and remained undeveloped until the early 2010s, when the EVWD's headquarters building was constructed on the property. A site sensitivity assessment indicates the APE is characterized by a relatively low potential for containing buried archaeological deposits. Finally, no cultural resources were identified during the pedestrian survey.

Recommendations

Based on the results of the historic property identification study, no historic properties were identified in the project's APE. Therefore, SWCA recommends a finding of **no impacts to historical resources** under CEQA and **no historic properties affected** under Section 106 of the NHPA. No further cultural resources management is proposed at this time.

In the event that potentially significant archaeological materials are encountered during construction, all work must be halted in the vicinity of the discovery until a cultural resource specialist meeting the Secretary of the Interior's Professional Qualification Standards for archaeology (36 CFR 61) can evaluate

the find. If the discovery proves to be eligible for the California Register of Historical Resources and/or the National Register of Historic Places, then additional work, such as data recovery excavations, may be warranted to reduce the impacts under CEQA and Section 106 of the NHPA, respectively.

Finally, if the APE is expanded to include areas not covered by this study or other recent cultural resources investigations, additional studies may be required.

Disposition of Data

The final cultural resources survey report and any subsequent related reports will be filed with the EVWD, Reclamation, and the SCCIC at California State University, Fullerton. All field notes, photographs, and records related to the current study are on file at the SWCA Pasadena office.

CONTENTS

Introduction **1**
Project Location 1
Project Description 1
Area of Potential Effects 1
Project Personnel 4
Regulatory Framework **4**
CEQA-Plus 4
Federal Regulations 4
National Historic Preservation Act of 1966 4
National Register of Historic Places 6
State Regulations 7
California Environmental Quality Act 7
California Register of Historical Resources 8
California Health and Resource Code – Archaeological Resources 8
Public Resource Code 9
California State Assembly Bill 52 9
Treatment of Human Remains 10
Local Regulations 10
City of Highland 10
Natural and Cultural Setting **11**
Environmental Setting 11
Cultural Setting 12
Precontact Period 12
Ethnographic Overview 13
Historic Overview 16
Methods **20**
California Historical Resources Information System Records Search 20
Archival Research 20
Native American Outreach 20
Interested Party Outreach 20
Sensitivity Assessment 21
Cultural Resources Survey 21
Results **22**
CHRIS Records Search 22
Previously Conducted Cultural Resources Studies 22
Previously Recorded Cultural Resources 22
Native American Outreach 22
Interested Party Outreach 25
Sensitivity Assessment 25
Cultural Resource Survey 26
Summary and Recommendations **29**
References Cited **30**

Appendices

Appendix A. Resumes [redacted]

Figures

Figure 1. Project vicinity..... 2
Figure 2. Project location depicted on USGS quadrangle..... 3
Figure 3. Project APE map. 5
Figure 4. The Santa Fe Railroad's kite-shaped route through Highland (Landis 2021). 19
Figure 5. Project APE overview from eastern edge of project, facing west. 27
Figure 6. Project APE overview from the middle of the project, facing north. 27
Figure 7. Project APE overview from the western edge of the project, facing southeast. 28
Figure 8. Area of redeposited fill in project APE, facing north. 28

Tables

Table 1. Previously Conducted Investigations within 1.0 Mile of the Project APE 23
Table 2. Previously Recorded Cultural Resources within 1.0 Mile of the Project APE 24

INTRODUCTION

Albert A. Webb Associates retained SWCA Environmental Consultants (SWCA) to complete a historic property identification study in support of the proposed Well No. 152 Drilling and Equipping Project (project) in the city of Highland, San Bernardino County, California. The proposed project involves the drilling, construction, operation, and maintenance of a new potable groundwater supply to be designated Well No. 152. The East Valley Water District (EVWD or District) is receiving a WaterSmart Grant for the project from the Bureau of Reclamation (Reclamation). Therefore, the proposed project is considered a federal undertaking. The cultural resource study was completed in accordance with the requirements of a California Environmental Quality Act (CEQA)-Plus investigation, which includes an evaluation of project impacts under CEQA, Section 106 of the National Historic Preservation Act of 1966 (NHPA), and the National Environmental Policy Act (NEPA). SWCA understands that EVWD will be the CEQA lead agency for the project, with Reclamation serving as the federal lead agency. This historic property identification report summarizes the methods and results of the study.

Project Location

The proposed project area is an approximately 1.13-acre portion of Assessor's Parcel Number 029-705-124 in the city of Highland, San Bernardino County, California (Figure 1). The project area is primarily south and east of the EVWD headquarters building at 31111 Greenspot Road. The project area lies in Section 7, Township 1 South, Range 2 West, as shown on the 1988 U.S. Geological Survey (USGS) Redlands and Yucaipa, California, 7.5-minute quadrangles (Figure 2).

Project Description

EVWD proposes the drilling, construction, operations, and maintenance of a new potable groundwater supply well designated Well No. 152. The proposed project would include the installation of a wellhead, booster station, aboveground storage tank and chemical building, and storm drain pipeline. Demolition, relocation and reconstruction of a portion of the south side parking stalls and storage areas would also be required. The storage containers would be relocated on-site to allow for the well building, and a new underground 18-inch diameter storm drain and 24-inch diameter storm drain pipeline would be constructed to connect to the existing 18-inch diameter storm drain and 24-inch diameter storm drain conveyance route between the parking lot and the Water Quality Management Basin and drainage channel to the south, respectively. The project also proposes to pave the area surrounding the chemical building, well building, water storage tank, and booster station.

Most site preparation is expected to result in ground disturbance up to 5 feet below ground surface (bgs) with a depth of 15 feet bgs for the booster station equipment. The well would be installed with a maximum 42-inch diameter casing and drilled to a depth of approximately 800 feet bgs.

Area of Potential Effects

The area of potential effects (APE) is the geographic area within which an undertaking may directly or indirectly cause alterations to the character or use of historic properties, if such properties exist. The APE generally encompasses all areas expected to be affected by the proposed project, including construction staging areas and laydown yards. The APE must be considered as a three-dimensional space and include the horizontal limits (i.e., disturbance footprint) and vertical limits (i.e., belowground and aboveground elevations) associated with the proposed project.

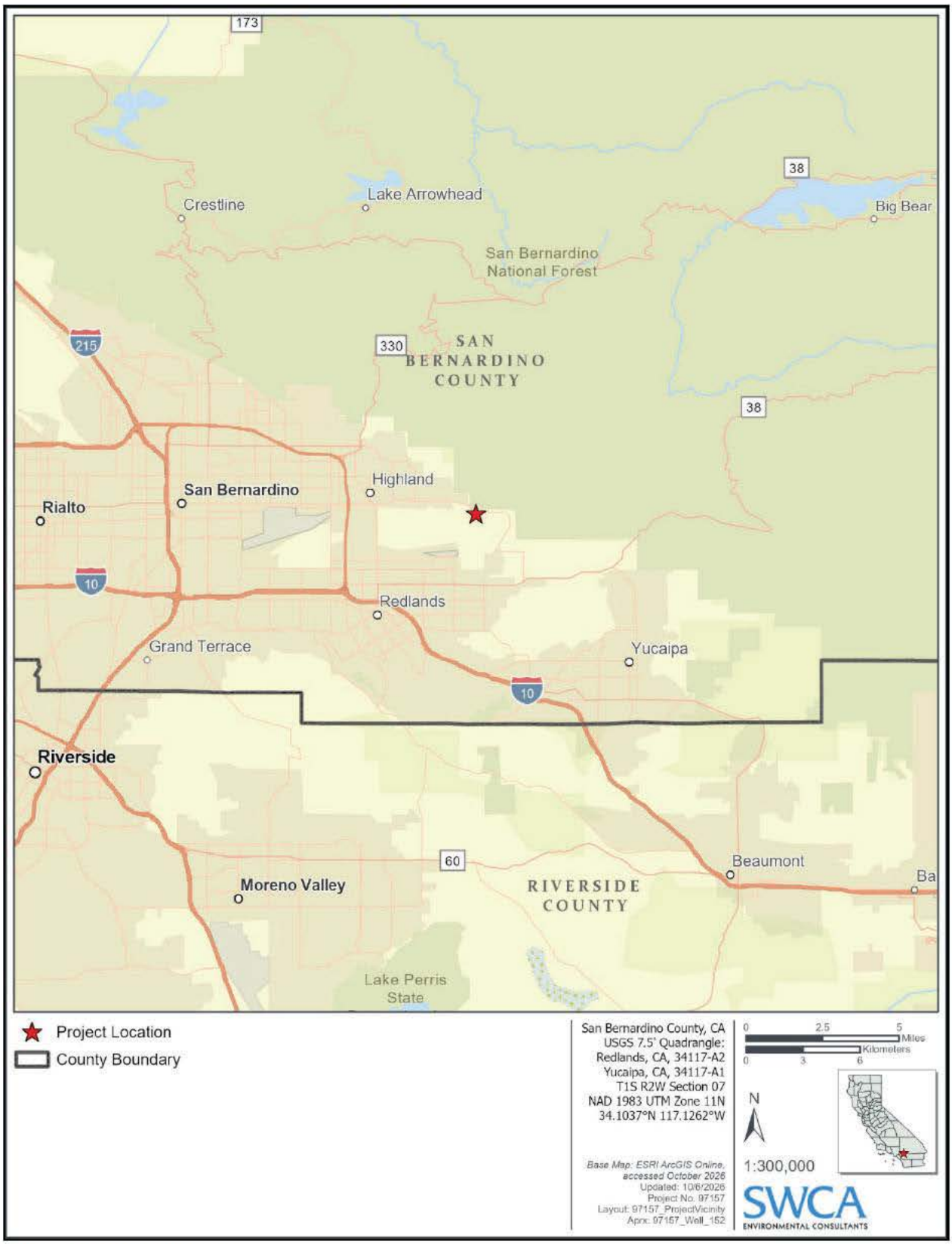


Figure 1. Project vicinity.

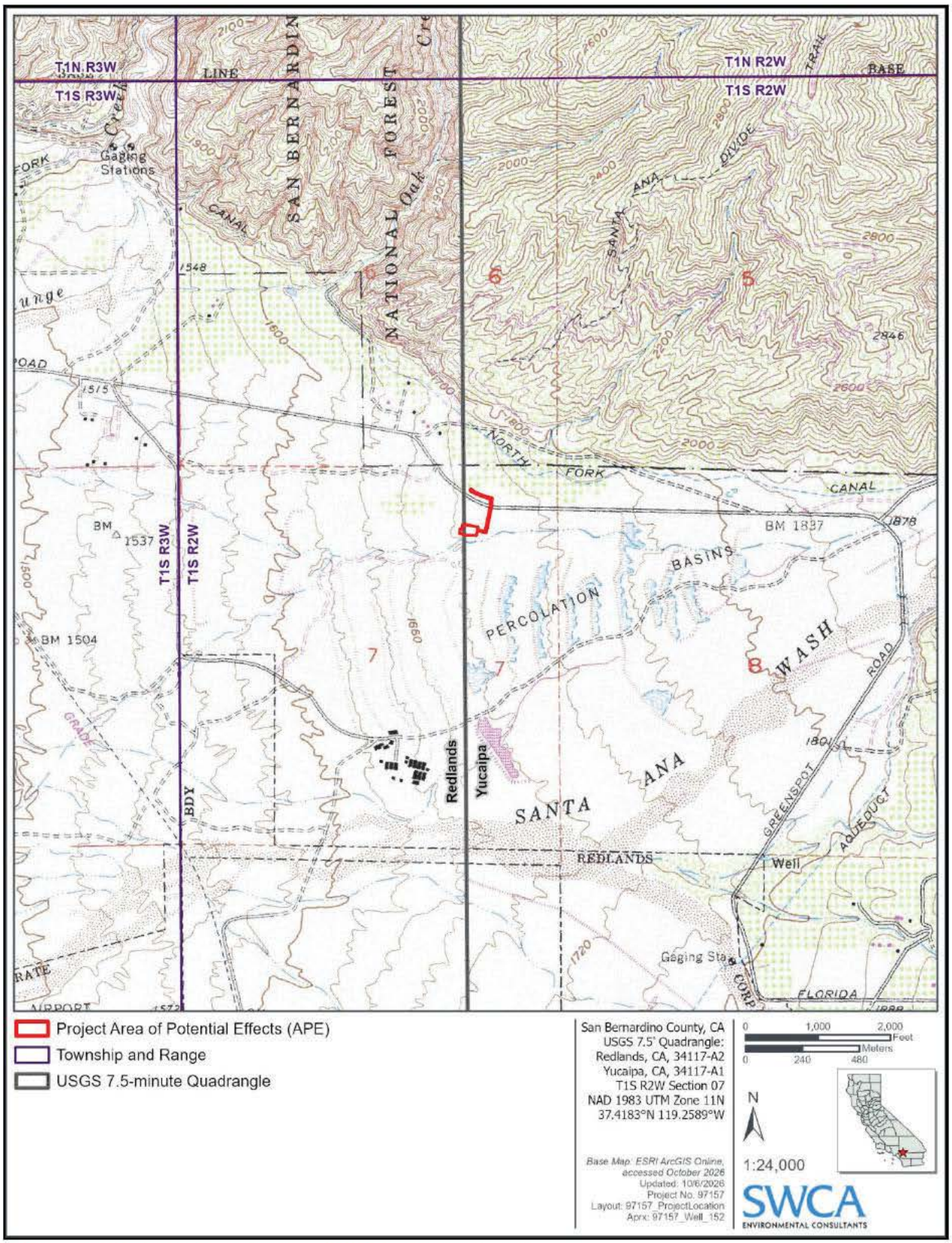


Figure 2. Project location depicted on USGS quadrangle.

For this study, the APE includes the project disturbance footprint and surrounding area (Figure 3). In total, the horizontal APE encompasses 1.13 acres. With the exception of the well and the booster station, the vertical depth of the APE will not exceed 5 feet bgs. The portion of the APE that encompasses the booster station will extend to a depth of 15 feet bgs with the well site extending to a maximum depth of 800 feet bgs. The height of the APE extends 25 feet above ground surface, which corresponds to the height of Supervisory Control and Data Acquisition (SCADA) system antennae.

Project Personnel

Senior Project Manager Nicholas F. Hearth, M.A., Registered Professional Archaeologist (RPA), oversaw the historic property identification study, conducted the pedestrian survey, and was a co-author on the report. SWCA Staff Archaeologist Melita Kyritsi Loper accompanied N. Hearth on the pedestrian survey, with Assistant Project Archaeologist Bethany Greene co-authoring the report. SWCA Principal Investigator Tiffany Clark, Ph.D., RPA, provided regulatory guidance for the study and also co-authored the report. Both N. Hearth and Dr. Clark meet the Secretary of the Interior's Standards for Professional Qualifications in archaeology. Resumes of key personnel are included in Appendix A.

REGULATORY FRAMEWORK

This section includes a discussion of applicable federal, state (including CEQA-Plus), and local laws, ordinances, regulations, and standards that inform the identification of eligible historic resources.

CEQA-Plus

A CEQA-Plus study addresses compliance with both state and federal regulations when a federal nexus is established during project execution, triggering federal cross-cutting requirements (also referred to as federal cross-cutters or CEQA-Plus). A federal nexus has been established for this project due to the receipt of federal funding from Reclamation. Compliance with both state and federal regulatory frameworks allows the lead agencies to apply the results of the historic property identification study across both levels.

Federal Regulations

National Historic Preservation Act of 1966

Enacted in 1966 and amended most recently in 2014, the NHPA (54 United States Code [USC] 300101 et seq.) instituted a multifaceted program, administered by the Secretary of the Interior, to encourage sound preservation policies of the nation's cultural resources at the federal level. The NHPA authorized the expansion and maintenance of the National Register of Historic Places (NRHP) and established the position of State Historic Preservation Officer.

The NHPA also set up a mechanism to certify local governments to carry out the goals of the NHPA, to assist Native American Tribes to preserve their cultural heritage, and to create the Advisory Council on Historic Preservation (ACHP).



Figure 3. Project APE map.

SECTION 106

Section 106 of the NHPA (54 USC 306108) states that federal agencies with direct or indirect jurisdiction over federally funded, assisted, or licensed undertakings must take into account the effect of the undertaking on any historic property that is included in or eligible for inclusion in the NRHP and that the ACHP must be afforded an opportunity to comment, through a process outlined in the ACHP regulations in 36 Code of Federal Regulations (CFR) 800, on such undertakings. The Section 106 process involves identification of significant historic resources within an APE, determination whether the undertaking will cause an adverse effect on historic resources, and resolution of those adverse effects through execution of a Memorandum of Agreement (36 CFR 800). In addition to the ACHP, interested members of the public—including individuals, organizations, and agencies (such as the California Office of Historic Preservation [OHP])—must be provided with opportunities to participate in the process.

National Register of Historic Places

The NRHP was established by the NHPA as "an authoritative guide to be used by Federal, State, and local governments, private groups and citizens to identify the Nation's cultural resources and to indicate what properties should be considered for protection from destruction or impairment" (36 CFR 60.2). The NRHP recognizes properties that are significant at the national, state, and local levels. To be eligible for the NRHP, a property must be significant in American history, architecture, archaeology, engineering, or culture under one or more of the following criteria (36 CFR 60.4):

- **Criterion A:** It is associated with events that have made a significant contribution to the broad patterns of our history;
- **Criterion B:** It is associated with the lives of persons who are significant in our past;
- **Criterion C:** It embodies the distinctive characteristics of a type, period, or method of construction, or represents the work of a master, or possesses high artistic values, or represents a significant and distinguishable entity whose components may lack individual distinction; and/or
- **Criterion D:** It has yielded, or may be likely to yield, information important in prehistory or history.

Ordinarily cemeteries, birthplaces, or graves of historic figures, properties owned by religious institutions or used for religious purposes, structures that have been moved from their original locations, reconstructed historic buildings, and properties that are primarily commemorative in nature are not considered eligible for the NRHP, unless they satisfy certain conditions. In general, a resource must be 50 years of age to be considered for the NRHP, unless it satisfies a standard of exceptional importance.

In addition to meeting these criteria, a property must also retain historic integrity, which is defined in National Register Bulletin 15 as the ability of a property to convey its significance (National Park Service [NPS] 1995). To assess integrity, the NPS recognizes seven aspects or qualities that, considered together, define historic integrity. To retain integrity, a property must possess several, if not all, of these seven qualities:

1. Location – the place where the historic property was constructed or the place where the historic event occurred;
2. Design – the combination of elements that create the form, plan, space, structure, and style of a property;
3. Setting – the physical environment of a historic property;

4. Materials – the physical elements that were combined or deposited during a particular period of time and in a particular pattern or configuration to form a historic property;
5. Workmanship – the physical evidence of the crafts of a particular culture or people during any given period in history or prehistory;
6. Feeling – a property's expression of the aesthetic or historic sense of a particular period of time; and
7. Association – the direct link between an important historic event or person and a historic property.

State Regulations

The OHP, a division of the California Department of Parks and Recreation (DPR), is responsible for carrying out the duties described in the California Public Resources Code (PRC) and for maintaining the California Historic Resources Inventory and California Register of Historical Resources (CRHR). The state-level regulatory framework also includes CEQA.

California Environmental Quality Act

CEQA requires a lead agency to consider project effects on historical resources (which is understood to include significant archaeological resources). Under CEQA, a "project that may cause a substantial adverse change in the significance of a historic resource is a project that may have a significant effect on the environment" (PRC 21084.1). Analysis is a two-part process: first, the determination must be made whether historical resources are present in the project area. Second, if such resources are present, the proposed project must be analyzed for its potential to cause a "substantial adverse change in the significance" of the resource.

HISTORICAL RESOURCES

According to Section 15064.5 of the State CEQA Guidelines, for the purposes of CEQA, historical resources are:

1. A resource listed in, or formally determined eligible . . . for listing in the CRHR (PRC Section 5024.1, 14 California Code of Regulations [CCR] 4850 et seq.).
2. A resource included in a local register of historical resources, as defined in PRC Section 5020.1(k) or identified as significant in a historic resources survey meeting the requirements of PRC Section 5024.1(g).
3. Any object, building, structure, site, area, place, record, or manuscript that the lead agency determines to be eligible for national, state, or local landmark listing; generally, a resource shall be considered by the lead agency to be historically significant (and therefore a historic resource under CEQA) if the resource meets the criteria for listing on the CRHR (as defined in PRC Section 5024.1, 14 CCR 4852).

Resources nominated to the CRHR must retain enough of their historic character or appearance to convey the reasons for their significance. Resources whose historic integrity (as defined above) does not meet NRHP criteria may still be eligible for the CRHR.

According to CEQA, the fact that a resource is not listed in or determined eligible for the CRHR or is not included in a local register or survey shall not preclude the lead agency from determining that the resource may be a historical resource (PRC 5024.1).

Substantial Adverse Change to Historical Resources

State CEQA Guidelines (14 CCR 15064.5) define a "substantial adverse change in the significance of an historical resource" as "physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historical resource would be materially impaired". Material impairment occurs when a project alters in an adverse manner or demolishes "those physical characteristics of an historical resource that convey its historical significance and that justify its inclusion" in or eligibility for the NRHP, CRHR, or local register. In addition, pursuant to Section 15126.2 of the State CEQA Guidelines, the "direct and indirect significant effects of the project on the environment shall be clearly identified and described, giving due consideration to both the short-term and long-term effects."

California Register of Historical Resources

Created in 1992 and implemented in 1998, the CRHR is "an authoritative guide in California to be used by state and local agencies, private groups, and citizens to identify the state's historical resources and to indicate what properties are to be protected, to the extent prudent and feasible, from substantial adverse change" (PRC 21083.2, 21084.1). Certain properties, including those listed in or formally determined eligible for the NRHP and California Historical Landmarks numbered 770 and higher, are automatically included in the CRHR. Other properties recognized under the California Points of Historical Interest program, identified as significant in historical resources surveys, or designated by local landmarks programs may be nominated for the CRHR. According to Section 5024.1(c) of the PRC, a resource, either an individual property or a contributor to a historic district, may be listed in the CRHR if the State Historical Resources Commission determines that it meets one or more of the following criteria, which are modeled on NRHP criteria:

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

Resources nominated to the CRHR must retain sufficient integrity, defined in National Register Bulletin 15 as the ability of a property to convey its significance (NPS 1995). The CRHR adopts seven aspects of integrity from the NRHP (36 CFR 60.4) (see discussion above).

California Health and Resource Code – Archaeological Resources

In terms of archaeological resources, the lead agency must first determine whether an archaeological resource is a historical resource as defined in 14 CCR 15064(a). If the lead agency determines that the archaeological resource is a historical resource, it shall refer to the provisions of PRC 21084.1 and 14 CCR 15126.6 of the State CEQA Guidelines, and the limits contained in PRC 21083.2 do not apply.

An archaeological resource that does not meet the criteria of a historical resource may meet the definition of a unique archaeological resource. PRC 21083.2(g) defines a unique archaeological resource 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:

1. Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information
2. Has a special and particular quality such as being the oldest of its type or the best available example of its type
3. Is directly associated with a scientifically recognized important precontact or historic event or person

If it can be demonstrated that a proposed project will cause damage to a unique archaeological resource, the lead agency may require that reasonable efforts be made to permit any or all these resources to be preserved in place or left in an undisturbed state. To the extent that they cannot be left undisturbed, mitigation measures are required (PRC 21083.2(a)–(c)). State CEQA Guidelines note that if an archaeological resource is neither a unique archaeological resource nor a historical resource, the effects of the project on those resources shall not be considered to be a significant effect on the environment (14 CCR 15064.5(c)(4)).

Public Resource Code

NONUNIQUE ARCHAEOLOGICAL RESOURCES

PRC 21083.2(h) defines a nonunique archaeological resource as an archaeological artifact, object, or site that does not meet the criteria of "unique archaeological resource" in subdivision (g). A nonunique archaeological resource need be given no further consideration, other than the simple recording of its existence by the lead agency if it so elects.

ACCIDENTAL DISCOVERY OF ARCHAEOLOGICAL SITES

PRC 21083.2(i) states that as part of the objectives, criteria, and procedures required by PRC 21082 or as part of conditions imposed for mitigation, a lead agency may make provisions for archaeological sites accidentally discovered during construction. These provisions may include immediate evaluation of the find. If the find is determined to be a unique archaeological resource, contingency funding and a time allotment sufficient to allow recovering an archaeological sample or to employ one of the avoidance measures may be required under the provisions set forth in this section. Construction work may continue on other parts of the building site while archaeological mitigation takes place.

California State Assembly Bill 52

California State Assembly Bill 52 (AB 52) of 2014 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 the PRC. To fulfill the requirements of AB 52, the EVWD will conduct government-to-government consultation with California Native American groups and Tribes.

TRIBAL CULTURAL RESOURCES

Section 4 of AB 52 adds Sections 21074 (a) and (b) to the PRC, which address Tribal cultural resources and cultural landscapes. Section 21074 (a) defines Tribal cultural resources as one of the following:

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

(A) Included or determined to be eligible for inclusion in the CRHR.

(B) Included in a local register of historical resources as defined in subdivision (k) of Section 5020.1.

(2) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Section 5024.1. In applying the criteria set forth in subdivision (c) of Section 5024.1 for the purposes of this paragraph, the lead agency shall consider the significance of the resource to a California Native American tribe.

Section 1 (a)(9) of AB 52 establishes that "a substantial adverse change to a tribal cultural resource has a significant effect on the environment." Effects on Tribal cultural resources should be considered under CEQA. Section 6 of AB 52 adds Section 21080.3.2 to the PRC, which states that parties may propose mitigation measures "capable of avoiding or substantially lessening potential significant impacts to a tribal cultural resource or alternatives that would avoid significant impacts to a tribal cultural resource." Further, if a California Native American Tribe requests consultation regarding project alternatives, mitigation measures, or significant effects to Tribal cultural resources, the consultation shall include those topics (PRC 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 21082.3[a]). Tribal cultural resources within the project area are not addressed in this document.

Treatment of Human Remains

The disposition of burials falls first under the general prohibition on disturbing or removing human remains under Section 7050.5 of the California Health and Safety Code. More specifically, remains suspected to be Native American are treated under CEQA (14 CCR 15064.5); Section 5097.98 of the PRC outlines the process to be followed if remains are discovered. If human remains are discovered during construction, no further disturbance to the site shall occur, and the San Bernardino County Coroner must be notified (14 CCR 15064.5; PRC 5097.98).

Local Regulations

City of Highland

The *City of Highland General Plan* (General Plan) adopted cultural policies and preservation strategies to protect, document, and minimize disruption of sites with archaeological significance by requiring archival research, field surveys, and cultural resources reports prepared for new developments within archaeologically sensitive areas (City of Highland 2006). The City of Highland (City) published a map in the Conservation and Open Plan Element of the General Plan depicting sensitive archaeological areas that may be impacted by development and advises coordination with the San Manuel Band of Mission Indians (SMBMI) when development would take place within these sensitive areas.

The General Plan's Community Design Element includes goals, policies and actions pertaining to historic buildings and districts. The City's Municipal Code Section 16.32.060 defines what qualifies as a "designated cultural resource" and a "historic district," and Section 16.32.040 of the Municipal Code describes the powers and duties of the Historic and Cultural Preservation Board. As stated in Section 16.32.050 of the Municipal Code, "an improvement, natural feature, or site may be nominated as a cultural resource by the historic and cultural preservation board . . . if it meets the criteria for listing on the NRHP or the following:

A. It exemplifies or reflects special elements of the city's cultural, social, economic, political, aesthetic, engineering, architectural, or natural history.

B. It is identified with persons or events significant in local, state, or national history.

C. It embodies distinctive characteristics of a style, type, period, or method of construction, or is a valuable example of the use of indigenous materials or craftsmanship.

D. It is representative of the work of a notable builder, designer, or architect.

E. It contributes to the significance of an historic area, being a geographically definable area possessing a concentration of historic or scenic properties or thematically related grouping of properties which contribute to each other and are unified aesthetically by plan or physical development.

F. It has a unique location or singular physical characteristics or is a view or vista representing an established and familiar visual feature of a neighborhood, community, or the city.

G. It embodies elements of architectural design, detail, materials, or craftsmanship that represent a significant structural or architectural achievement or innovation.

H. It is similar to other distinctive properties, sites, areas, or objects based on a historic, cultural, or architectural motif.

I. It reflects significant geographical patterns, including those associated with different eras of settlement and growth, particular transportation modes, or distinctive examples of park or community planning.

J. It is one of the few remaining examples in the city, region, state, or nation possessing distinguishing characteristics of an architectural or historical type or specimen."

NATURAL AND CULTURAL SETTING

Environmental Setting

The project APE lies in the northeastern portion of San Bernardino Valley (Griffith et al. 2016). The valley is bordered on the north by the San Gabriel Mountains, the east by the San Jacinto Mountains, the south by the Temescal and Santa Ana Mountains, and the west by the Pomona Valley. The alluvial valley was formed by the Santa Ana River and its tributaries. The project APE is north of the Santa Ana River, near the Seven Oaks Dam. The Santa Ana River originates on the northern and eastern slopes of Mount San Gorgonio and is the largest hydrological feature in the area. Prior to the construction of the Seven Oaks Dam, the Santa Ana River was prone to energetic flash flooding during winter.

The climate in this region is mild and semiarid, with temperatures ranging from 41 degrees Fahrenheit in the winter to 96 degrees Fahrenheit in the summer. Winters are damp and cold, with an average rainfall of 13 inches from November through April; February typically has the most rain days. Summers are arid and hot and have the least amount of cloud cover and precipitation of the year (Weather Spark 2026).

Geologic mapping indicates that the project APE is characterized by Late Holocene (present–4,200 years ago) very young wash deposits and Middle Holocene (4,200–8,200 years ago) young axial channel deposits (Morton and Miller 2006). The soils and sediments consist of Soboba series stony loamy sand formed from Holocene alluvial deposits (U.S. Department of Agriculture 1975). Soboba series soils are deep and excessively drained on alluvial fans and floodplains, with slopes ranging from 0 to 30 percent. These soils consist of A horizon of grayish brown sand from 0 inches (0 centimeters [cm]) to 11 inches (28 cm), with medium and fine roots. This horizon transitions to a C parent material (C1) horizon consisting of grayish brown, very gravelly and cobbly sand from 11 inches (28 cm) to at least 60 inches (152 cm).

Prior to development, vegetation in the area would have included species typical of the valley grassland plant community. Indigenous species may have included rye grass (*Leymus condensatus*), blue grass (*Poa secunda*), bent grass (*Agrostis* spp.), needlegrass (*Stipa* spp.), three-awn (*Aristida divaricata*), and

members of the sunflower family (Asteraceae). Restricted riparian communities also occurred along watercourses. Native fauna in the area consisted of small mammals, reptiles, amphibians, and birds.

Cultural Setting

Precontact Period

Over the past century, numerous chronological sequences have been devised to understand precontact cultural change in southern California's various ecological zones. For the project APE, a synthesis of two different regional chronologies, coastal horizons by Wallace (1955, 1978) and desert traditions by Warren and Crabtree (1986), is needed to understand the development of inland areas located between the coast and the desert. Building on early studies and focusing on data synthesis, Wallace (1955, 1978) developed a precontact chronology for the southern California coastal region that is still widely used today in coastal, near-coastal, and many inland areas. Wallace's precontact sequence consists of four periods: Early Man, Milling Stone, Intermediate, and Late Prehistoric. As noted by Moratto (1984:159), Wallace's (1955) chronology lacked precision due to the paucity of absolute dates at the time of its creation, but it remains generally valid today.

Some revisions have been made to Wallace's 1955 chronology using new radiocarbon dates and projectile point assemblages (e.g., Koerper and Drover 1983; Koerper et al. 2002; Mason and Peterson 1994). In particular, the chronology formulated by Koerper and Drover (1983) is based on the results of their excavations at a multicomponent village site (CA-ORA-119-A) near University of California, Irvine, in Orange County. Further analysis by Sutton and Gardner (2010) has narrowed down these dates even more and provided new names for the traditions observed during these periods. Sutton describes the Milling Stone period as the beginning of the Encinitas tradition in inland areas and describes the Del Rey tradition as beginning in the Intermediate period and lasting through the Late Prehistoric period.

The regional synthesis developed by Warren and Crabtree (1986) has defined five traditions in the chronology associated with the deserts of southern California: Lake Mojave, Pinto, Gypsum, Saratoga Springs, and Shoshonean. They viewed cultural continuity and change in terms of various significant environmental shifts, defining the cultural ecological approach for archaeological research of the California deserts. The authors viewed changes in settlement pattern and subsistence as cultural adaptations to a changing environment, beginning with the gradual environmental warming in the Late Pleistocene, the desiccation of the desert lakes during the Early Holocene, the short return to pluvial conditions during the Middle Holocene, and the general warming and drying trend, with periodic reversals, that continues to this day.

The chronologies discussed above are used in conjunction because they differ in terms of temporal and spatial continuity that complement each other. Wallace's (1955) horizons cover a large spatial area but have a restricted timeline. The Warren and Crabtree (1986) synthesis has a constricted spatial area but a more continuous timeline that fits into and expands Wallace's by adding periods of cultural traditions.

EARLY HOLOCENE (11,600–7600 BP)

Traditional models of the prehistory of California hypothesize that its first inhabitants were the big game hunting Paleoindians who lived at the close of the last Ice Age (approximately 11,000 years BP). As the environment warmed and dried, large Ice Age fauna died out, requiring adaptation by groups to survive. The western Great Basin and deserts of southern California were characterized by large pluvial (rain-fed) lakes, streams, marshes, and grasslands. The human response to this environment is known as the Western Pluvial Lakes Tradition (WPLT) (Moratto 1984). The WPLT is generally identified by an

advanced flaked stone industry of foliate knives/points, Silver Lake and Lake Mojave points, lanceolate bifaces, and long-stemmed points. Other flaked stone tools include crescents, scrapers, choppers, scraper-planes, hammer stones, cores, drills, and gravers. People of this period hunted diverse populations of smaller animals and collected a wide number of plants from diverse ecozones. Importantly, this period lacks widespread evidence of milling stones, indicating hard seed processing was likely not widely practiced. Sites are generally found along the shores of former pluvial lakes, marshes, and streams (Moratto 1984). The desert manifestation of the WPLT is the Lake Mojave Complex, while along the coast the WPLT is seen in the San Dieguito Complex. Along the coast, rising sea levels created bays and estuaries. Following initial settlement along the coast, groups adopted marine subsistence including fish and shellfish. These shell middens contain flaked cobble tools, metates, manos, discoidals, and flexed burials and allowed for a semisedentary lifestyle (Byrd and Raab 2007). Eventually, shellfish became the primary source of food, and plant gathering, hunting, and fishing became less important.

MIDDLE HOLOCENE (7600–3650 BP)

The Middle Holocene is a time of change and transition. As conditions continued to warm and dry, lakes and streams in desert regions disappeared, prompting a shift in subsistence strategies, namely to the gathering of plant seeds, grasses, and shellfish along the coast as the primary dietary staple. Fishing and hunting of smaller animals began to play a less important role in day-to-day activity. This transition is associated with what Wallace named the Milling Stone horizon (Wallace 1955), a designation that continues to be used by archaeologists working in the coastal province of southern California. Large habitations are seen in the inland areas, and considerable variability is seen along coastal occupation of southern California. Occupation revolved around seasonal and semisedentary movements in the areas of modern-day coastal Orange and San Diego Counties. Trade networks are postulated by researchers that have dated Olivella grooved rectangle shell beads as far north as central Oregon to 4900–3500 BP (Byrd and Raab 2007). Characteristics of the Middle Holocene sites include ground stone artifacts (manos and metates) used for processing plant material and shellfish, flexed burial beneath rock or milling stone cairns, flaked core or cobble tools, dart points, cogstones, discoidals, and crescentics.

LATE HOLOCENE (3650–233 BP)

During the Late Holocene, there was a migration of Takic speakers from the San Joaquin Valley into southern California (Sutton 2009, 2010). Characteristics of the Late Holocene include the introduction of the bow and arrow and the mortar and pestle, the use of ceramics, and a change in mortuary behavior from inhumations to cremations in southern California. This time was also a period of climatic fluctuation. Paleoenvironmental data show that periods of drought alternated with cooler and moister periods (Byrd and Raab 2007; Jones et al. 2004; Vellanoweth and Grenda 2002), which resulted in dynamic regional cultural patterns with considerable local variation. Byrd and Raab (2007) suggest that foragers in southern California overexploited high-ranked food, such as shellfish, fish, marine and land mammals, and plant remains, which led to resource depression, causing people to forage resources that were more abundant but more difficult to process.

Ethnographic Overview

The project APE is within the traditional territory of two primary ethnographically distinct Native American groups: Serrano and Cahuilla (Bean 1978; Kroeber 1925).

SERRANO

The Serrano people once occupied the southwestern Mojave Desert and Inland Empire region of present-day San Bernardino and Los Angeles Counties. The Serrano language is part of the Serran branch of the

Takic family of the Uto-Aztecan linguistic stock (Mithun 2004). The two Serrano languages, Kitanemuk and Serrano, are closely related, with the traditional lands of the Kitanemuk located to the northwest of the Serrano. The term "Serrano" appears to have acquired an ethnic definition during the ethnohistoric period as pertaining to the Indigenous people who inhabited the San Bernardino Mountains, with the term meaning "mountaineers, or those of the Sierras" (Kroeber 1925:611). The traditional territory of the Serrano is believed to have encompassed much of the Mojave Desert and San Bernardino Mountains, including the base and north of the San Bernardino Mountains east of Cajon Pass near Victorville, east to Twentynine Palms and south to the Yucaipa Valley, with the Vanyume territory extending north along the Mojave River (Bean and Smith 1978; Bean and Vane 1990). The Serrano called themselves the Maara'yam, which included multiple clans including the Yuhaaviatam, or "People of the Pines" (SMBMI 2026).

Most Serrano lived in small village-hamlets in the foothills, though some resided on the desert floor near water sources (Bean and Smith 1978:571). The project APE is likely part of the territory surrounding the village and placename of *Wa'atsava't*, based upon the presence of the *wa'atcem* clan territory along the south slope of the San Bernardino Mountains (Altschul et al. 1984; Strong 1929). Kroeber (1925:617–618) considered the organization of Serrano lineage sets to be similar to that of political groups. He defined a lineage set as occupying one village, representing at least two moieties, and coordinating its hunting and gathering activities according to the religious deliberations and scheduling determined by two leaders (one from each of the moieties). Of these leaders, one occupied the ceremonial house, and the other possessed the ceremonial bundle. Often, a lineage set had the exclusive power to forge and maintain economic ties to other villages of neighboring Serrano, Cahuilla, Chemehuevi, Gabrielino, and Cupeño. Desert Serrano villages are mentioned in the 1776 account of Fr. Francisco Garcés and in the records dating to the early 1800s kept by Fr. Joaquín Nuez. Fr. Garcés mentions villages along the Mojave River near today's city of Barstow and the community of Daggett (Coues 1900:1:241–248). De Zalvidea (1806 [1955]) suggests the average village population was around 70 people, and that these settlements were generally spaced at 10-mile (16-kilometer) intervals along the river.

The fundamental economy of the Serrano was subsistence hunting and collecting plant goods, with occasional fishing (Bean and Smith 1978). Serrano territory was a trade nexus between inland and coastal Tribes, and trade and exchange were important aspects of the Serrano economy. Those individuals 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 due to the considerable topographic variation and resultant differences in bio-geographic zones in the vicinity. In addition to intervillage trade, ritualized communal food procurement events—such as rabbit and deer hunts and piñon, acorn, and mesquite nut-gathering events—integrated the economy and helped distribute resources that were locally available in different ecozones.

A variety of materials was used for hunting, gathering, and processing food, many of which were also used for shelter, clothing, and ceremonial items. Technological similarities have been noted between the Serrano and their neighbors, particularly the Cahuilla (Bean and Smith 1978). Shell, wood, bone, stone, and plant fibers were used to make a variety of implements along with highly decorated baskets (Smith and Simpson 1964). The Serrano made pottery and used it daily to carry and store water or foodstuffs; and ceramics were also used as ceremonial objects. They made bone awls, sinew-backed bows, arrows, arrow straighteners, throwing sticks (for hunting), traps, fire drills, stone pipes, musical instruments of various types (rattles, rasps, bull-roarers, and whistles), yucca fiber cordage (for snares, nets, and carrying bags), and clothing (Bean and Smith 1978; Bean and Vane 2002). A strong tradition of basket weaving incorporated the use of multiple materials, including juncus sedge, deergrass, and yucca fiber.

Because the Serrano occupied the inland territory beyond Cajon Pass, contact between the Serrano and Euro-Americans was relatively minimal prior to the early 1800s; however, European diseases began decimating Native populations in the Mojave Desert and Antelope Valley beginning in the late 1700s (SMBMI 2026). As early as 1790, the Serrano began to be drawn into mission life and were involuntarily marched to the *Asistencia* in Redlands, an outpost of the San Gabriel Mission (Bean and Vane 2002; SMBMI 2026). More Serrano were relocated to Mission San Gabriel Arcángel in 1811 after a failed Indigenous attack on that mission. In the 1860s, a smallpox epidemic decimated many Indigenous people from southern Californian, including the Serrano (Bean and Vane 2002). Oral accounts of a massacre in the 1860s at Twentynine Palms indicate it may have been part of a larger American military campaign that lasted 32 days (Bean and Vane 2002:10).

Some of the surviving Serrano sought shelter at Morongo with their Cahuilla neighbors, which later became a formal reservation and is currently known as the Morongo Band of Mission Indians (Bean and Vane 2002). Other survivors followed the Serrano leader Santos Manuel down from the mountains and across the valley floor, eventually settling what later became the San Manuel Band of Mission Indians Reservation, which was established in 1891 (SMBMI 2026).

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. Although 60% of Cahuilla territory was in the Lower Sonoran Desert environment, 75% of their diet came from plant resources acquired in Upper Sonoran and Transition environmental zones (Bean 1978:576). 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 socio-political organization included three primary levels (Bean 1978:580). The highest level was the cultural nationality, encompassing everyone speaking a common language. Next were two patrimoieties called the Wildcats (*tuktum*) and the Coyotes (‘*istam*); every clan of the Cahuilla belonged to one or the other. The third basic level of socio-political organization was the many political-ritual-corporate units called *sibs*, or patrilineal clans (Bean 1978:580). Lineages within a clan cooperated in many ways, including defense, communal subsistence activities, and religious ceremonies. Each lineage maintained ownership rights to various resource collecting locations, “including food collecting, hunting, and other areas.” The Cahuilla lived in a productive environment well suited to a sophisticated hunting and gathering economy. Studies suggest that aboriginal people in southern California improved the structure and productivity of the environment through controlled burning, selective harvesting and pruning, replanting, seed re-broadcast, and possibly limited irrigation (Bean and Lawton 1993). Limited agricultural practices for growing beans, squash, and corn had been adopted by the Cahuilla prior to Euro-American contact. Bean (1978:578) suggests that their “proto-agricultural techniques and a marginal agriculture” were adopted from the Colorado River groups to the east.

Asistencias were established near Cahuilla territory at San Bernardino and San Jacinto by 1819. Interaction with Europeans was less intense in the Coachella Valley region than for coastal groups because the topography and paucity of water rendered the inland area inhabited by the Cahuilla unattractive to colonists; however, by the 1820s, 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.

By the 1830s, Mexican ranchos near Cahuilla territory along the upper Santa Ana and San Jacinto Rivers provided the opportunity for the Cahuilla to earn money ranching and learn new agricultural techniques.

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 1978:583–584). By 1974, approximately 900 people claimed Cahuilla descent; most resided on reservations.

Between 1875 and 1891, the United States established 10 reservations for the Cahuilla within their territory: Agua Caliente, Augustine, Cabazon, Cahuilla, Los Coyotes, Morongo, Ramona, Santa Rosa, Soboba, and Torres-Martinez (Bean 1978:585). Four of these reservations are shared with other Native American groups, including the Chemehuevi, Cupeño, and Serrano. The Cahuilla on the Morongo Reservation established the Malki Museum in 1965, which today is a respected repository for artifacts and ethnographic knowledge.

Historic Overview

California's Historic period is generally divided into three periods: the Spanish period (1769–1822), the Mexican period (1822–1848), and the American period (1848–present).

SPANISH PERIOD (1769–1822)

Spanish explorer Juan Rodríquez Cabrillo led the first European expedition in the southern California region in 1542, and subsequently Sebastián Vizcaíno mapped much of the present California and Oregon coastline. The Spanish crown laid claim to California based on the surveys conducted by Cabrillo and Vizcaíno (Bancroft 1885:96–99; Gumprecht 2001:35).

The 1769 overland expedition by Captain Gaspar de Portolá marks the beginning of California's Spanish period. A major emphasis during this period was the construction of missions and associated presidios (military forts) to integrate the Native American population into Christianity and communal enterprise. Incentives were also provided to bring settlers to pueblos or towns, but just three pueblos were established during the Spanish period, only two of which were successful and remain as California cities (San José and Los Angeles). In 1769, Portolá established the San Diego presidio as the first Spanish settlement in Alta California, and Franciscan Friar Junípero Serra founded Mission San Diego de Alcalá, the first of 21 missions established in Alta California. During this period, Spain also granted ranchos to prominent citizens and soldiers (though very few compared with those deeded in the Mexican period).

MEXICAN PERIOD (1822–1848)

After the end of the Mexican Revolution against Spain (1810–1821) and the failure of a short-lived Mexican Empire, all former Spanish holdings in North America (including both Alta and Baja California) became part of the newly formed Mexican Republic. The Mexican legislative body in California ended isolationist policies designed to protect the Spanish monopoly on trade and decreed California ports open to foreign merchants (Dallas 1955:14). Additionally, the missions were secularized, which resulted in the subdivision of former mission lands. Governor Pío Pico and his predecessors made more than 600 rancho grants between 1833 and 1846, putting most of the state's lands into private ownership for the first time (Gumprecht 2001).

Extensive land grants were established in the interior during the Mexican period, in part to increase the population inland from the more settled coastal areas where the Spanish had first concentrated their colonization efforts. 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. Two ranchos were established during this time in the vicinity of Highland—Muscupiabe and San Bernardino. Neither of these ranchos includes the project APE.

The number of nonnative inhabitants increased during the Mexican period, with an influx of explorers, trappers, and ranchers. The rising California population contributed to the introduction and rise of diseases foreign to the Native American population, who had no associated immunities.

AMERICAN PERIOD (1848–PRESENT)

The 1846–1848 Mexican-American War precipitated several battles in southern California. On January 13, 1847, the Treaty of Cahuenga effectively ended the war in California, though fierce fighting continued in Mexico, and the war officially ended with the Treaty of Guadalupe Hidalgo in 1848. California became a state with the Compromise of 1850, which also designated Utah and New Mexico (with present-day Arizona) as U.S. territories (Waugh 2003). Horticulture and livestock continued to dominate the southern California economy through 1850s. The Gold Rush began in 1848, and with the influx of people seeking gold, cattle were no longer desired mainly for their hides but also as a source of meat and other goods. During the cattle boom of the 1850s, large herds were driven from southern to northern California to feed that region's burgeoning population of miners and merchants. The cattle boom ended for southern California as neighboring states and territories drove herds to northern California at reduced prices. Operation of the huge ranchos became increasingly difficult, and droughts in the 1860s decimated cattle herds, severely reducing the ranchos' productivity (Cleland 2005:102–103).

The Southern Pacific Railroad arrived in the San Bernardino Valley in 1875 (Landis 2020), leading to increased permanent American settlements in the region, which in turn resulted in the taking of further Native American lands. Reservations were formed in the area by 1883, including the Morongo, Soboba, Agua Caliente, Cabazon, Torres, and Martinez Reservations (Morongo Basin Historical Museum 2026: U.S. House of Representatives Committee on Natural Resources. 1883). The San Manuel Reservation was established in 1891, and the Serrano Indian population in the area was moved there by the government in the late 1800s (Beattie 1994; SMBMI 2026).

LOCAL HISTORY

Highland

Although the City of Highland did not formally incorporate until 1987, the community's development had its beginnings in several small nineteenth-century settlements, including Cramville, Messina, and Rabel Springs. Cramville was a cluster of early ranches named after John Henry Cram and six of his sons, who had settled in the area of present-day Orange Street and Greenspot Road in circa 1856 (Beattie 1994; *Redlands Daily Facts* 2010). Between 1857 and 1859, Henry Rabel purchased 120 acres near Base Line Street and Victoria Avenue. He developed bathhouses and a hotel near some hot springs, and the area became known as Rabel Springs. Another settlement named Messina was established in 1873, also near Base Line Street and Palm Avenue. As a central point between the fledgling settlements, Messina became a commercial center for the area (Beattie 1994).

Settlers Lewis and Henry Cram developed an approximately 3-mile-long earthen ditch in 1858 from the mouth of Santa Ana Canyon to their homestead. This ditch enabled them to irrigate their pioneer plantings of orange and other fruit trees. A neighboring rancher, Frederick Van Leuven, also began using the ditch; thus, it became known as the Cram-Van Leuven Canal. Water appropriation from the Santa Ana River eventually became a contentious subject leading to battles over water rights and litigation (Beattie 1994; City of San Bernardino 2026; *Redlands Daily Facts* 2010).

In 1860, the first county road was developed from San Bernardino east into the mountains, allowing for the transportation of supplies to gold mines up in Bear Valley. This road is now called Fifth Street. While the area was often referred to as the highlands because of its proximity to the foothills, the first formal use of the name "Highland" occurred when Messina's first school district was established in 1883 and was referred to as such. By 1887, Messina had also established its first post office.

As the area's population increased, additional water infrastructure improvements were developed. Water was sourced from the Santa Ana River, nearby mountains, and Bunker Hill Basin (a large underground aquifer). The North Fork Water Company was established in 1885. The North Fork Ditch—a rock- and rubble-lined ditch—and Bear Valley Dam and Lake were important contributors to water sources for area residents in the 1880s (EVWD 2026a, 2026b). Farmers held shares in the water company to have water delivered to their properties. Water traveled throughout the area in canals to ranching properties. It was then directed through a system of weir boxes and irrigation flumes into furrows between rows of trees. After reliable water sources were secured, the area's citrus industry began to flourish (Crider 2025:42–45).

Important transportation improvements also occurred around this time. The Santa Fe Railroad developed a figure-8 or "kite-shaped" track that ran from Los Angeles in the west to the San Bernardino area in the east (Figure 4). The eastern loop through Cramville, Highland, and Del Rosa was completed in 1892. The 166-mile-long route not only transported the region's famed citrus crop but also was used to take passengers on scenic excursions promoting the area, leading to increased tourism and settlement (EVWD 2023). Depots were established, orange groves multiplied, and packing houses were built near the depots. The names chosen for the local depots were East Highlands for the Cramville area, West Highlands for the Del Rosa area, and Highland for the central area. The railroad attracted commercial activity, and many of Messina's businesses were relocated closer to the railroad alignment. In 1899, Messina changed its name to Highland when the post office moved into the Highland Santa Fe Depot (Beattie 1994; Landis 2020).

The Highland Chamber of Commerce was established in 1906 to help organize the development of the unincorporated city. Citrus remained a leading agricultural crop in the area and in San Bernardino County overall during the first half of the twentieth century. In 1927, approximately 45,600 acres of citrus was planted in the county. By 1943, this had increased to approximately 49,900 acres; however, as with many other California communities, the post-World War II population and building boom resulted in the loss of much agricultural land for development (Highland Area Historical Society 2026).

Area water needs changed relative to population growth, and by the 1950s, the Bunker Hill Basin drew more water than was replenished. In 1954, the San Bernardino Valley Municipal Water District was formed following a contentious vote. The agency joined the State Water Project to bring water to the area from hundreds of miles away. Decades-long disagreements among regional cities and agencies over water appropriation from the Santa Ana River eventually led to litigation (Beattie 1994; City of San Bernardino 2026; *Redlands Daily Facts* 2010). Finally, in 1969, a compromise was reached among all parties involved. That same year, a massive flood killed nearly 100 people, leading the U.S. Army Corps of Engineers to design the Seven Oaks Dam for flood protection at the mouth of the Santa Ana Canyon; the dam was completed in 1999 (EVWD 2023; U.S. Army Corps of Engineers 2016).

The City of Highland formally incorporated in 1987, with an area of 13 square miles (Beattie 1994). At present, the City has grown to encompass approximately 18.6 square miles (U.S. Census Bureau 2026).

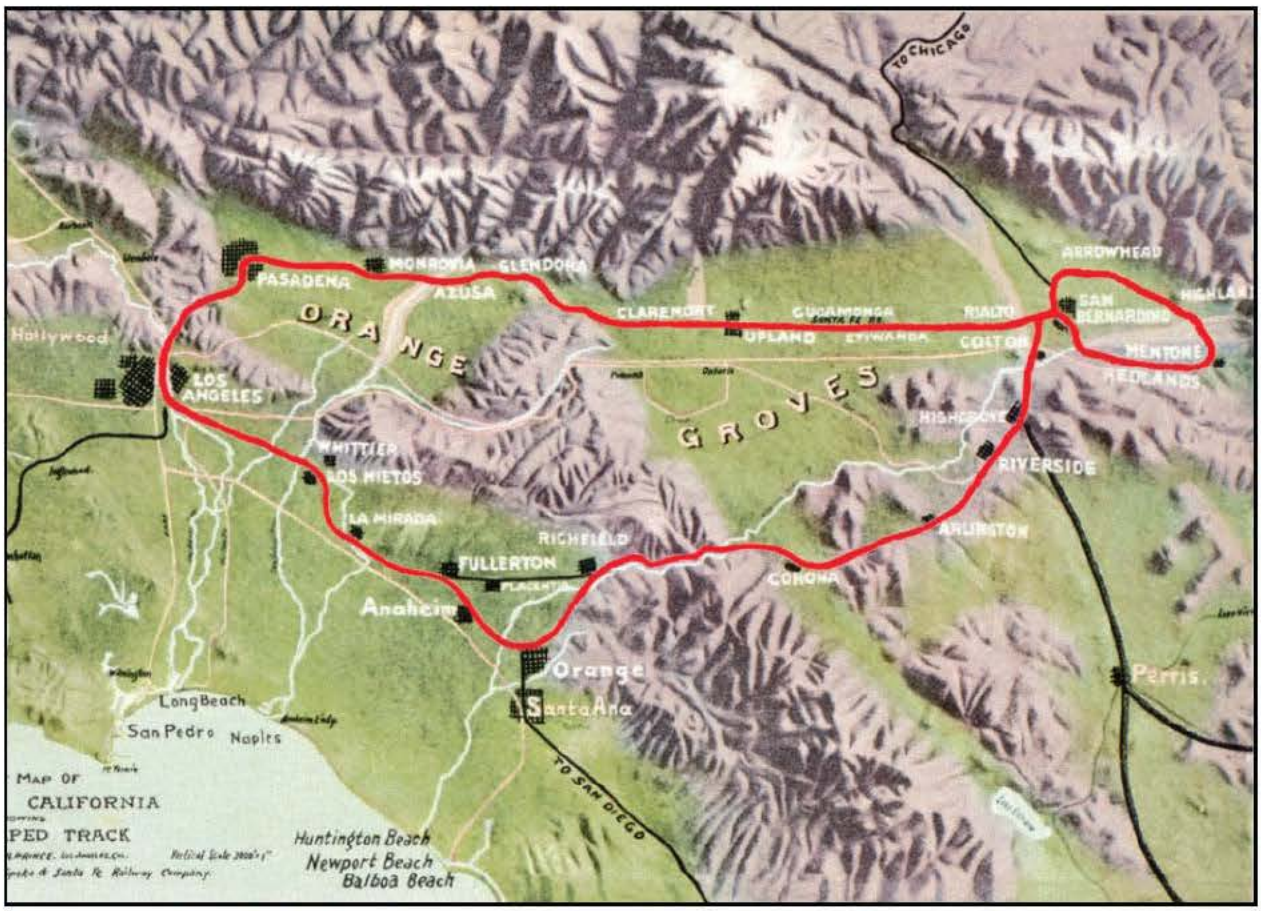


Figure 4. The Santa Fe Railroad's kite-shaped route through Highland (Landis 2021).

East Valley Water District

The EVWD was originally called the East San Bernardino County Water District when it was established in 1954. The district was planned to consolidate the private water companies that served the area and to provide an integrated water system for local residents operated by a public agency (EVWD 2026c; *Redlands Daily Facts* 1954; *San Bernardino County Sun* 1953).

The EVWD was responsible for providing domestic water service to the unincorporated and agricultural communities of Highland and East Highlands. As the population in the area grew, residents also voted to give EVWD the responsibility to provide sewer system services for the community. The East San Bernardino County Water District was renamed as the East Valley Water District in 1982. Over the years, parts of the district's service areas were annexed into the city of San Bernardino. Many of the previous agricultural areas in the district's service area have become urbanized, and the system has expanded to supply water to various new areas of development. In 2000, for example, the EVWD's service area increased from 14,750 to 17,978 acres following an annexation of land (EVWD 2026c).

EVWD records indicate that the storage reservoirs in its water system were constructed between 1956 and 2003, with equal numbers constructed in the decades of the 1950s, 1960s, and 1990s. The distribution pipelines in the water system were installed as early as 1929 (in very small numbers) through 2012, with greater concentrations in the 1950s through 1960s, and again in the late 1970s, the mid-1980s through early 1990s, and the early 2000s (EVWD 2019).

As of 2014, the EVWD used three principal supply sources for its water: local groundwater pumped from EVWD-owned wells, imported water from the State Water Project, and local surface water from the Santa Ana River (through the North Fork Mutual Water Company) (EVWD 2019). Currently, the EVWD services an approximately 34-square-mile area, providing water and wastewater service to the city of Highland, eastern parts of the city of San Bernardino, the SMBMI, and unincorporated parts of San Bernardino County (EVWD 2026c, 2026d).

METHODS

California Historical Resources Information System Records Search

SWCA completed a search of the confidential California Historical Resources Information System (CHRIS) records at the Southern Central Coastal Information Center (SCCIC) at California State University, Fullerton, on October 30, 2025. The purpose of the records search was to identify previously recorded cultural resources and previous studies completed within 1.0 mile of the project APE. The SCCIC maintains cultural resources records for San Bernardino County. Background research also included a review of the NRHP, CRHR, California Points of Historical Interest list, California Historical Landmarks list, Archaeological Resources Directory, and California Historic Resources Inventory.

Archival Research

In addition to reviewing prior investigations and previously recorded cultural resources, SWCA reviewed the California OHP's Built Environment Resources Directory and examined historical maps, aerial imagery, newspaper articles, the *Upper Santa Ana River Watershed Integrated Regional Urban Water Management Plan* (Basin Technical Advisory Committee 2020), and other archival documents obtained through various public sources, including the USGS, University of California, Santa Barbara (UCSB) Library, Highland Area Historical Society, and newspapers.com.

Native American Outreach

On October 30, 2025, SWCA sent a request for a Sacred Lands File (SLF) search and contact list from the Native American Heritage Commission (NAHC). The NAHC maintains a list of Sacred Lands that are of interest to Native American Tribal groups within California and could potentially be impacted by development projects. The NAHC also maintains a current contact list of Tribal representatives for further input into the project.

Interested Party Outreach

On May 28, 2026, SWCA conducted interested party outreach by emailing the Highland Historical Society and Mentone Historical Society. The purpose of the outreach was to determine whether either party had knowledge of any designated or potential historic properties that may exist in the APE or surrounding vicinity. A follow-up telephone call was placed to the Highland Historical Society later that day after an email to the address listed on its website was returned as undeliverable.

Sensitivity Assessment

SWCA also assessed the potential of encountering unknown, buried archaeological sites in the project APE. A sensitivity assessment considers precontact and historical human use of the project vicinity, broadly, as well as the physical setting of the site, including whether the depositional context of the project APE is conducive to the preservation of intact buried archaeological material. The results of such assessment are by nature qualitative, ranging along a spectrum of increasing probability for encountering buried material, designated here as low, moderate, and high.

Indicators favorable to Indigenous land use and occupation include proximity to natural features (e.g., perennial water sources, plant or mineral resources, and animal habitat) or other known Indigenous archaeological sites and generally flat topography, although special-use sites, such as bedrock milling stations, may be found along sloping terrain. Given the age of the resources involved, a primary source of data for assessing the sensitivity of precontact sites is derived from soil and geological mapping. Sensitive sedimentary deposits produced by alluvial, colluvial, eolian, and other natural processes, as well as paleosols, typically date from the terminal Pleistocene through the Holocene epoch. The presence of surface artifacts and/or features of Indigenous origin in Holocene depositional environments conducive to the preservation of buried archaeological materials increases the buried site sensitivity of an area.

Indicators of buried historic-era archaeological resources include the surficial presence of bricks, glass, other building materials, or historic refuse in geotechnical bores; archival evidence of historic-era buildings, structures, or objects that are no longer present in modern aerials; the presence of historic-era buildings, structures, or objects that remain on the property; evidence of multiple episodes of construction and demolition of historical structures on the property resulting in buried historic fill; and evidence of historic-era development and land use on neighboring properties. Historical aerial images and topographic maps are a primary source of data for identifying evidence of historic-era land uses that may have corresponding archaeological artifacts and features. Areas with archival evidence of previous land use activities with little to no evidence of recent, deep subsurface disturbance (e.g., deep grading) would have moderate to high sensitivity for potentially significant historic-era archaeological resources of various types. Residential sites in previously undeveloped areas or during the initial period of community development may have similar conditions that attracted Indigenous land use (i.e., environmental, topographic, and geologic conditions, including proximity to natural features such as perennial water sources, plant or mineral resources, trees, animal habitat, and generally flat topography). Areas that lack these traits have low sensitivity for early historic-era occupations and residences; however, sensitivity may increase to moderate or high later in history, depending on the level of development that occurred in the surrounding area (e.g., homes constructed on a hillside slope in an area of suburban growth).

Cultural Resources Survey

SWCA Archaeologist Melita Kyritsi Loper, B.A. and Nicholas Hearth M.A., RPA, completed a pedestrian survey of the project APE on November 19, 2025. An intensive-level, systematic surface inspection with transects walked at 10-meter intervals was conducted for all areas of the APE with exposed ground surfaces.

SWCA examined the ground surface for the presence of precontact artifacts (e.g., flaked stone tools, tool-making debris, or stone milling tools), historic-era artifacts (e.g., metal, glass, or ceramics), sediment discoloration that might indicate the presence of a cultural midden, roads and trails, and depressions and other features that might indicate the former presence of structures or buildings (e.g., postholes or foundations). The APE was photographed using a digital camera and resource data were recorded with a handheld tablet with a submeter-accurate GPS antenna using the ArcGIS Field Maps application.

All resources were documented on appropriate DPR Series 523 forms. Resource boundaries and artifacts visible on the ground surface were recorded with GPS points and polygons in the Field Maps application. All field notes, photographs, and records related to the current study are on file at the SWCA office in Pasadena, California.

RESULTS

CHRIS Records Search

Previously Conducted Cultural Resources Studies

The CHRIS records search identified 15 cultural resource investigations that have been previously conducted within 1.0 mile of the project APE (Table 1). One of these studies intersects the project APE. Additional details of the records search are included in Appendix B.

Previously Recorded Cultural Resources

The CHRIS records search identified eight previously recorded cultural resources within 1.0 mile of the project APE (Table 2). These include one multicomponent site, six historic-era archaeological sites, and one historic-era isolated find. None of these resources intersect the project APE.

Examination of General Land Office maps indicate no structures, roads, trails, or other features were present in the project APE or vicinity in 1858 (Bureau of Land Management [BLM] 1858a, 1858b). The earliest mapped development in the project vicinity is an early alignment of Greenspot Road, which was in use as early as 1882 (BLM 1882). By 1899, a single structure had been built north of the APE adjacent to the roadway (USGS 1899). Orchards had been established in the areas north and northwest of the project APE by the early 1930s; a series of percolation basins were located to the south, adjacent to the Santa Ana River (UCSB 1933).

No evidence of development is observed in the APE from the early 1950s through the early 2010s (NETROnline 2026; USGS 1954a, 1954b). Sometime between 1995 and 2002, the percolation basins located southeast of the APE were replaced with a large reservoir (NETROnline 2026). The EVWD headquarters building just north of the project APE was constructed between 2012 and 2014 (NETROnline 2026). At this time, the northeastern portion of the APE was paved for use as a parking lot. Recently, a flood control structure was built just south of the APE (NETROnline 2026).

Native American Outreach

The NAHC sent the results of the SLF search via email on October 31, 2025. The SLF search was positive. The NAHC provided a list of 33 Tribal representatives who may have a potential interest in or further knowledge of the project vicinity. Further communication with the NAHC occurred until November 20, 2025, regarding how the Tribal contact list was created and how to approach Tribes with regard to the record search. A copy of the NAHC letter from the email is provided in Appendix C.

On December 4, 2025, letters were sent by SWCA via email to each of the contacts provided by the NAHC. The letters included a description of the proposed project, a summary of the SLF results, and a request to provide any additional information on Native American cultural resources that may exist in the vicinity of the project APE. Follow-up telephone calls were made on January 6, 2026, with follow-up emails sent on January 13, 2026, to those who had not responded or had requested more information. An example of the letters and a record of the correspondence are included in Appendix C.

Table 1. Previously Conducted Investigations within 1.0 Mile of the Project APE

Report Number	Title of Study	Author and Affiliation	Year	Proximity to Project APE
SB-04831	*Cultural Resource Assessment: Upper Santa Ana River Wash Land Management and Habitat Conservation Plan, San Bernardino County, California*	Brunzell, David, and Curt Duke, LSA Associates, Inc.	2005	Within
SB-00620	*Yucca Harvesting near the Vontrigger Hills: Archaeological Survey and Assessment Of Impacts*	San Bernardino County Museum Association	1978	Outside
SB-00840	*AP 595012393872, Cultural Resources Assessment, Yucca Valley Area*	San Bernardino County Museum Association	1979	Outside
SB-01566	*Santa Ana River Upstream Alternatives, Cultural Resources Survey*	Brock, James, John F. Elliott, Benjamin Resnick, and William A. Sawyer, ECOS Management Criteria, Inc.	1986	Outside
SB-01755	*Archaeological Resources of the Seven Oaks Dam Project, Upper Santa Ana River Locality*	Arnold, Jeanne E., Anne Q. Duffield, Roberta S. Greenwood, R. Paul Hampson, and Thad M. Van Bueren; Greenwood & Associates	1987	Outside
SB-01786	*Work Camps in the Santa Ana River Canyon*	Foster, John M., Roberta S. Greenwood, and Anne Q. Duffield, Greenwood & Associates	1988	Outside
SB-01805	*Cultural Resources Survey and Impact Assessment for the Eastern Half of Section 4, T1N R4E, Near Rimrock, San Bernardino County, California*	Singer, Clay A. and John E. Atwood, Singer & Associates	1988	Outside
SB-02029	*Initial Cultural Resource Assessment: A Cultural Resource Assessment of a 20-Acre Tract Of Land Designated P.N. 2-9013-000 Located in the East Highlands Area of San Bernardino County, California*	De Munck, Victor C., Archaeological and Ethnographic Field Associates	1989	Outside
SB-03478	*David Graves – Special Use Permit*	Sweetman, Eric B.; San Bernardino National Forest	1985	Outside
SB-05169	*Records Search and Field Reconnaissance Results for NEXTEL Telecommunications Wireless Site CA-5351B-Greenbelt (Wattenbarger), located at 30992 Greenspot Road, City of Highland, San Bernardino County, California.*	Wlodarski, Robert J.	2005	Outside
SB-05672	*Cultural Resources Technical Report: North Fork Channel, East Valley Water District*	URS Corporation	2005	Outside
SB-05816	*East Branch Extension Phase II Archaeological Survey Report, San Bernardino County, California*	Schmidt, Tiffany A. and Janis K. Offerman	2007	Outside
SB-05978	*A Class III Intensive Field Survey for the North Peak Wind Assessment Project*	Rosenberg, Seth A. and Brian F. Smith; Brian F. Smith and Associates	2007	Outside
SB-06035	*Archaeological Survey Report for the Greenspot S-Curve Realignment, City of Highland, San Bernardino County, California*	Goodwin, Riordan	2008	Outside

Report Number	Title of Study	Author and Affiliation	Year	Proximity to Project APE
SB-06191	*Archaeological Survey Report for Southern California Edison Company Deteriorated Pole Replacement Project for a Total of Ten Poles on IDA 12kV (#4579978E & #4744631E), Oak Glen 12kV (#4744626E), Bryn Mawr 12kV (#4744645E), Stewart 4kV (#4760030E), Boulder 12kV (#4714250E), Lapins 12kV (#4759904E), Mesa Grande 12kV (#4759915E), Conine 12kV (#4759921E) and Preseton 12kV (#4759658E) Circuits and Removal of One Pole on Bench 12kV (#782504H) Circuit on Private Lands in Riverside and San Bernardino Counties, California*	Jordan, Stacey C.	2008	Outside

Table 2. Previously Recorded Cultural Resources within 1.0 Mile of the Project APE

Primary Number/ Trinomial	Resource Age	Resource Description	Eligibility Status	Recorder, Affiliation, Year	Proximity to Project APE
P-36-005526/ CA-SBR-5526H	Historic era	Grove house foundations with a well, irrigation ditches, refuse deposits, and orange and pepper trees	Determined Eligible	Resnick, Ben, and Jim Brock; ECOS Management Criteria, Inc., 1985. Hampson, R. Paul, Roderick S. Brown, and Margaret A. Doyle; Greenwood and Associates, 1987	Outside
P-36-005978/ CA-SBR-5978H	Historic era	Single-family residence, barn, and structure foundation with an associated artifact scatter, irrigation ditch, and exotic plants	Unknown	Hampson, R. Paul; Greenwood and Associates, 1987. Jacquemain, Terri, Daniel Ballester and John G Goodman II; CRM TECH, 2015	Outside
P-36-007215/ CA-SBR-7215H	Historic era	Roads, orchards, irrigation system	Unknown	McKenna, Jeannette, 1992	Outside
P-36-013751	Precontact and historic era	Precontact ceramic scatter, historic refuse scatter	Unknown	Vadala, Jeff, and Riordan Goodwin; LSA Associates, 2006	Outside
P-36-024379/ CA-SBR-15509H	Historic era	Water conveyance system and historic refuse	Recommended not eligible for the NRHP or CRHR	Ballester, Daniel, and Robert Porter; CRM TECH, 2012	Outside
P-36-024383/ CA-SBR-15512H	Historic era	Water conveyance system	Recommended not eligible for the NRHP or CRHR	Ballester, Daniel, and Robert Porter; CRM TECH, 2012	Outside
P-36-031694/ CA-SBR-31694H	Historic era	Wall or foundation	Unknown	Shepard, R. and A. Myers; ECORP Consulting, Inc., 2014	Outside
P-36-060194	Historic era	Isolated artifact	Unknown	Hampson, R. P. and M. A. Doyle; San Bernardino County Museum, 1987	Outside

As of the date of this report, the following eight responses have been received:

- On December 3, 2025, Analise Perez of the Augustine Band of Cahuilla Mission Indians responded with a notice that the group did not require formal consultation at this stage.
- Eunice Ambriz-Aguilar, cultural resources technician for the Yuhaaviatam of San Manuel Nation, replied on December 3, 2025. She stated that due to the project being within an area of concern, the Tribe would be interested in engaging in government-to-government consultation with the lead agency, in accordance with AB 52. SWCA responded on December 3, 2025, that the request would be noted in the report. On January 13, 2026, SWCA replied with information of other Tribes that had deferred.
- Jill McCormick of the Quechan Tribe of the Fort Yuma Reservation responded on December 8, 2025, and indicated the Tribe did not wish to consult on the project and would defer to other local Tribes. SWCA replied that this would be noted in the report.
- BobbyRay Esparza of the Agua Cahuilla Band of Indians responded on January 6, 2026, requesting SWCA share the results of the SLF search and the cultural resources report. B. Esparza noted that the Tribe may have an interest in sharing information and participating in the project. He also asked us to keep them updated on any project progress/developments. SWCA replied with the SLF results and explained that the request for the report was received and would be passed on to EVWD.
- On January 6, 2026, Sophia Pnia of the Gabrieleno Band of Mission Indians – Kizh Nation responded with a request for the point of contact at EVWD to be provided to Chairman Andrew Salas. SWCA replied that the request was received, forwarded to EVWD, and would be noted in the report.
- A response was received from Abraham Becerra of the Torres-Martinez Desert Cahuilla Indians on January 6, 2026, indicating that for this project, the Tribe would defer to San Manuel.
- Jannifer Pahua of the Rincon Band of Luiseno Indians responded on January 7, 2026, stating they did not have additional information to provide and that the project is outside their Area of Historic Interest. They recommended contacting a Tribe closer to the project for more pertinent information.
- On January 15, 2026, Claritsa Duarte of the Agua Caliente Band of Cahuilla Indians deferred consultation to the San Manuel Nation and concluded consultation.

Interested Party Outreach

On May 28, 2026, SWCA emailed the Highland Historical Society and the Mentone Historical Society to determine whether either organization had any concerns or pertinent information about historical developments in the project vicinity. SWCA received an “undeliverable” notice for the Highland Historical Society email. A follow-up telephone call was placed to the Highland Historical Society later that same day. SWCA has received no response from either historical society.

Sensitivity Assessment

As previously discussed, the project APE primarily consists of Middle to Late Holocene very young wash and axial channel deposits (Morton and Miller 2006). Generally, Holocene sediments have the potential to contain buried precontact resources as their period of deposition is concurrent with human habitation in the region; however, the soil and geological data indicate that this portion of San Bernardino Valley was

subject to energetic flash flooding during rain events and spring snowmelt. Given these environmental conditions, the project APE would not have been ideally suited for precontact habitation. Rather, the area appears to have served as an important travel corridor for Native Americans between the highlands of the San Bernardino Mountains and the lowlands of the valley. Precontact site types expected to be present in these areas consist of trails and temporary camp sites; such resources would have left few detectable artifacts and features on the landscape. Data from the CHRIS records search support these findings, as no precontact archaeological resources have been documented within the immediate vicinity of the project APE.

Archival research indicates the APE is also characterized by a low level of sensitivity for historic-era archaeological remains. Historical development in the project vicinity appears to largely be limited to agricultural and flood control activities. Although historic-era archaeological remains have been documented in the CHRIS record search area, no evidence was found indicating that the project APE was subject to development before 2012.

The buried site sensitivity of the project APE is heavily influenced by its proximity to the Santa Ana River. The river has flooded numerous times, which has created conditions amenable to erosive and burial sequences that may destroy some archaeological sites while preserving others. Given the hydrological activity of the area, along with more ephemeral nature of precontact and historic-era resources that are expected to be encountered, the project APE appears to have a low sensitivity for significant or potentially significant buried archaeological materials.

Cultural Resource Survey

The results of the field survey were negative. The entire project APE appeared to have been previously disturbed by development of the EVWD facility and the recent construction of water control features (Figures 5–8). Ground surface visibility varied considerably, with pavement and riprap obscuring the ground surface in the northern and southern portions of the APE, respectively (see Figure 5). Areas of greater visibility were observed in the central and western portions of the APE (see Figures 6 and 7). Based on field observations, a layer of redeposited fill appears to cover portions of the project APE (see Figure 8).



Figure 5. Project APE overview from eastern edge of project, facing west.



Figure 6. Project APE overview from the middle of the project, facing north.



Figure 7. Project APE overview from the western edge of the project, facing southeast.



Figure 8. Area of redeposited fill in project APE, facing north.

SUMMARY AND RECOMMENDATIONS

Albert A. Webb Associates retained SWCA to complete a historic property identification study in support of the proposed project. The study included a CHRIS record search, archival and background research, outreach to local Native American groups and interested parties, a site sensitivity assessment, and a pedestrian survey. The study was conducted in accordance with the requirements of a CEQA-Plus investigation, which includes an evaluation of project impacts under CEQA, Section 106 of the NHPA, and NEPA.

The results of the historic property identification study were negative. The sediments in the APE are disturbed and contain a relatively low potential for buried precontact and historic-era archaeological deposits. SWCA recommends a finding of **no impacts to historical resources** under CEQA and **no historic properties affected** under Section 106 of the NHPA. Because the proposed project will not affect historical resources/historic properties, no further cultural resources management is proposed at this time.

In the event that potentially significant archaeological materials are encountered during construction, all work must be halted in the vicinity of the discovery until a cultural resource specialist meeting the Secretary of Interior's Professional Qualification Standards for archaeology (36 CFR 61) can evaluate the find. If the discovery proves to be eligible for the CRHR and/or the NRHP, then additional work, such as data recovery excavations, may be warranted to reduce the impacts under CEQA and Section 106 of the NRHP, respectively.

Finally, if the APE is expanded to include areas not covered by this study or other recent cultural resources investigations, additional studies may be required.

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APPENDIX A

Resumes

TIFFANY CLARK, PH.D., PRINCIPAL ARCHEOLOGIST

Tiffany Clark has more than 30 years of experiences in cultural resource management. Her professional experience includes all phases of survey, testing and data recovery excavation, laboratory analysis, report preparation, Native American coordination, and construction monitoring. She has supervised and participated in several projects that involve the cultural resource management of mission period archaeological sites in southern California and New Mexico. Dr. Clark has extensive experience with regulatory compliance issues and has worked with numerous local, state, and federal agencies. She has prepared numerous technical reports and environmental documents for compliance with the National Environmental Policy Act (NEPA), Section 106 and 110 of the National Historic Preservation Act (NHPA), and the California Environmental Quality Act (CEQA). Her research interests include the impacts of missionization on Native American subsistence practices, the organization of prehistoric ceramic production and distribution systems, zooarchaeology, economic archaeology, and historic preservation. Dr. Clark's research has been published in peer-reviewed journal articles including *Journal of Anthropological Archaeology*, *California Archaeology*, *Journal of Ethnobiology*, and *Kiva*. She is a member of the Register of Professional Archaeologists and exceeds the Secretary of Interior's Professional Qualifications Standards in Archaeology.

YEARS OF EXPERIENCE

30

EXPERTISE

Archaeology

Bioarcheology

Zooarchaeology

EDUCATION

PH.D., Anthropology, Arizona State University, Tempe, 2006

M.A., Bioarcheology, Arizona State University, Tempe, 1997

B.A., Biology, Occidental College, Los Angeles, 1992

REGISTRATIONS / CERTIFICATIONS

Register Professional Archaeologists (ID#989197); 2011

PERMITS

Bureau of Land Management Permit, Principal Investigator, Statewide

MEMBERSHIPS

Society for American Archaeology

Society for California Archaeology

SELECTED PROJECT EXPERIENCE (* denotes project experience prior to SWCA)

Altair Project; Brookfield Residential; Riverside County, California. Brookfield Properties is developing the Altair Project on approximately 270 acres of land west of Old Town Temecula. The project requires compliance with several mitigation measures and conditions of approval related to cultural and paleontological resources. *Role: Principal Investigator/ Project Manager. Provided technical expertise during the due diligence process and is currently serving as the Project Archaeologist during the construction stage of the project. Coordinating with the Pechanga Band of Luiseño Indians on the appropriate treatment of cultural resources discovered during ground-disturbing activities.*

Murrieta Hills Specific Plan; Pulte Homes; City of Murrieta, Riverside County, CA. Pulte Homes is developing the Murrieta Hills Project on approximately 985 acres of land in the city of Murrieta. The development footprint of the project encompasses several archaeological sites that have been determined to be historical resources under CEQA. *Role: Principal Investigator/Project Manager. Dr. Clark provided technical expertise in the entitlement process and is currently preparing the cultural resource documents (Cultural Resource Management Plan and Phase 3 Data Recovery Plan) for compliance with the project's Mitigation and Monitoring Program. As part of this this effort, Dr. Clark worked with the Pechanga Band of Luiseño Indians to ensure the development and implementation of these plans are culturally appropriate and respectful to the tribe.*

Menifee Valley Specific Plan Project; Brookfield Residential; City of Menifee, Riverside County, CA. Brookfield Properties is developing the Menifee Valley Specific Plan Project on approximately 590 acres of land in the city of Menifee. The project includes the development of 14 planning area that would accommodate housing units, neighborhood amenities, business parks, commercial areas, and civic facilities. Role: Principal Investigator/Project Manager. *Dr. Clark supervised all the required cultural work efforts associated with the entitlement and construction phase of the project.*

*** Potable Water System Improvements and Consolidation of Water Systems; NV5; Yucca Valley; San Bernardino County, California.** This Project consisted of the system consolidation of the Bighorn-Desert View Water Agency and Goat Mountain water systems, interconnections with Hi-Desert Water District, and pipelines, wells, booster stations, storage tank, and associated infrastructure. Portions of the Project were located on public lands managed by the Bureau of Land Management, Barstow Field Office. A Class III cultural resource inventory was required for the Project that included record search and background research, an intensive pedestrian survey, resource documentation and evaluation, an extended Phase I study, and preparation of a Class III inventory report. *Role: Principal Investigator. Dr. Clark was responsible for*

providing technical expertise and oversight of the archaeological survey and test excavations and co-authored the technical report.

*** Silverwood (formerly Tapestry) Project; Helix Environmental; City of Hesperia, San Bernardino County, CA.** The Silverwood Project is a master-planned community development encompassing more than 9,000 acres of land in the City of Hesperia. Cultural resource work efforts included Phase I, II, and III studies, Native American coordination, preparation of a Cultural Resources Management Plan, and construction monitoring. *Role: Principal Investigator. Dr. Clark supervised all the required cultural work efforts associated with the entitlement and construction process associated with the first phase of the Project.*

*** San Bernardino County Transportation Authority (SBCTA), Interstate 10 Eastbound Truck Climbing Lane Improvement Project, San Bernardino and Riverside Counties, CA.** SBCTA, in conjunction with Caltrans District 8, proposes to extend the eastbound truck climbing land on Interstate-10 for a distance of 3 miles in the City of Yucaipa and Calimesa in San Bernardino and Riverside counties, respectively. *Role: Principal Investigator/Cultural Resources Technical Lead/ Project Manager. Dr. Clark supervised the cultural resources studies that were being completed for the Project. These tasks included: records searches and literature reviews; archival research; a Phase I survey; Native American consultation and coordination; coordination with local and federal agencies; and preparation of Area of Potential Effect Map, Archaeological Survey Report, and Historic Properties Survey Report for compliance with CEQA and Section 106.*

*** California Department of Transportation (Caltrans), On-Call Cultural Resources Services; Caltrans District 8; San Bernardino and Riverside Counties, CA.** Task orders completed as part of this on-call contract with Caltrans District 8 included a Phase I study for the State Route 60 Truck Climbing and Descending Lane Project, Phase I and II studies for the Interstate 40 Median Regrade and U.S. 395 Construct Median Buffer and Widen Shoulder projects, and Phase III data recovery for the State Route 58 Realignment and the State Route 138 Realignment – Crowder Canyon projects. As part of these projects, All projects were conducted in compliance with CEQA and Section 106 of the NHPA. *Role: Principal Investigator. Dr. Clark supervised cultural resource records searches and literature reviews; archival research; pedestrian and reconnaissance surveys; testing and evaluation for NRHP and CRHR eligibility; Native American consultation and coordination; coordination with local and federal agencies; and preparation of technical reports for Caltrans review and approval.*

*** Cultural Resources Assessment for the Tierra Del Sol Project; Torres Martinez Desert Cahuilla Indians; Riverside County, California.** Cultural resource assessment of a proposed off-highway vehicle trail on reservation lands west of the Salton Sea. The study was prepared to identify archaeological resources that may be impacted by the project. *Role: Principal Investigator. Supervised the cultural resources study that included: records searches and literature reviews; archival research; pedestrian surveys; resource documentation; and preparation of a technical report.*

*** Sixth Street Park, Arts, River and Connectivity Improvement Project; City of Los Angeles Bureau of Engineering, City of Los Angeles, Los Angeles County, CA.** The City of Los Angeles proposed the demolition and replacement of the existing Sixth Street Bridge east of downtown Los Angeles. Due to the cultural sensitivity of the area, archaeological monitoring was required to ensure the construction work avoided inadvertent impacts to buried historic-era archaeological resources dating to the late 1800s or early 1900s. *Role: Principal Investigator. Dr. Clark was responsible for coordinating with the Department of Public Works and Bureau of Engineering and supervising clearance surveys and archaeological montioring efforts.*

*** Cajalco and Seaton Warehouse and Park Project; T&B Planning; Riverside County, California.** The Cajalco and Seaton Warehouse Project is a 100-acre industrial and recreational project near the community of Mead Valley, Riverside County, California. *Role: Principal Investigator. Dr. Clark provided technical oversight and quality assurance of the cultural resource study that included record searches; archival research; pedestrian surveys; Native American consultation and coordination; a Phase II evaluation study, and preparation of a technical report.*

*** City of Riverside Sidewalk Improvement Project; City of Riverside; Riverside, Riverside County, CA.** The City of Riverside, in conjunction with the Caltrans District 8, proposed sidewalk improvements in three residential areas within the City of Riverside. The project was conducted in compliance with CEQA and Section 106 of the NHPA. *Role: Principal Investigator. Dr. Clark supervised cultural resource records searches and literature reviews; archival research; reconnaissance surveys; Native American consultation and coordination; coordination with local and federal agencies; and preparation of Area of Potential Effect Maps, Archaeological Survey Report, and Survey Report.*

*** City of Santa Ana Reburial Project; City of Santa Ana Public Works Department; City of Santa Ana, Orange County, CA.** In October 2020, the City of Santa Ana, Public Works Department (City) uncovered Native American human remains during replacement of a residential sewer line. The City worked with the Most Likely Descendent to develop a reburial plan for the reinterment of the human reamins. *Role: Principal Investigator. Dr. Clark oversaw the transfer of remains from the Coroner's Office, the osteological analysis of the skeletal remains, and preparation of findings memorandum. As part of the Project, she also assisted the City with the reburial process in accordance with requests of the Most Likely Descendent.*

BETHANY GREENE, B.A., ASSISTANT PROJECT ARCHAEOLOGIST

Bethany has worked as an archaeologist in cultural resource management since 2014. She has worked in California, Nevada, Pennsylvania, West Virginia, Kentucky, and Illinois. She is experienced in implementing Section 106 of the National Historic Preservation Act (NHPA), National Environmental Policy Act (NEPA), and California Environmental Quality Act (CEQA) on a variety of projects across all phases of archaeology: Phase I pedestrian and shovel test surveys, extended Phase I survey (XPI), buried site testing, archaeological sensitivity assessments, Phase II testing and evaluations, Phase III data recovery, and Phase IV monitoring. Her project responsibilities include coordination and completion of archaeological field and laboratory work, analysis, and reporting.

YEARS OF EXPERIENCE

11

EDUCATION

M.A. in progress, Applied Archaeology; California State University, San Bernardino; 2020

B.A., Bachelor of Arts; Anthropology; Pennsylvania State University; 2014

REGISTRATIONS / CERTIFICATIONS

Adult First Aid/CPR/AED Certified, California No. 016IS61; American Red Cross; 2023

PERMITS

National Park Service, Permit for Archeological Investigations (PWR-1979-25-CA-05 (CA Parks)): Southern California Edison easements and their maintained structures within National Park Service lands in the state of California.; *Field Director*

TRAINING

Step by Step: Section 106 of the National Historic Preservation Act and the National Environmental Policy Act, Society for American Archaeology; 2023

MEMBERSHIPS

Member, Society for American Archaeology

Member, Society for California Archaeology

SELECTED PROJECT EXPERIENCE (* denotes project experience prior to SWCA)

East Valley Water District Resource Studies; Albert A. Webb Associates; City of Highland, San Bernardino County, California. SWCA has been retained to support Biological, Cultural, and Paleontological Resources surveys and technical reporting for the EVWD Canal 3 reservoir improvements project. The project includes the proposed installation of a new booster pump station, two storage reservoirs, pipeline connections and demolition of an existing booster pump station on a 3.8-acre parcel of land. Deliverables include a Biological Technical Report, a Paleontological Technical Report, a Cultural Resources Technical Report; as well as support for AB 52 consultation to support environmental constraints analyses, CEQA Compliance and Permit Acquisition. *Role: Assistant Project Manager. Updated resources, contributed to Department of Parks and Recreation (DPR) forms, and coauthored the technical report.*

North Star 4 & 5 Solar Project - Add. Support; Apex Energy Solutions, LLC; Oceanside, Riverside County, California. SWCA has been retained to support Biological, Cultural, and Paleontological Resources surveys and technical reporting for the North Star 4 & 5 Solar project. The project includes the proposed installation of a 100-megawatt solar facility across 303 acres. Deliverables include a Biological Technical Report, a Paleontological Technical Report, a Cultural Resources Technical Report; as well as support for CEQA Compliance and Permit Acquisition. *Role: Assistant Project Manager. Updated resources, contributed to DPR forms, and coauthored the technical report.*

Community Defense Fuel Break Project; Inland Empire Resource Conservation District and San Bernardino National Forest (SBNF); Riverside and San Bernardino Counties, California. SWCA is providing cultural resources support for a fuel breaks project to create a more fire-resilient forest structure on approximately 16,000 acres of the SBNF covering three Ranger Districts. SWCA was contracted to provide, among other services, a cultural resources assessment of the Phase 1 and Phase 2 portions of the proposed Project in accordance with NEPA and Section 106 of the NHPA. SWCA completed a Class III survey of the Phase 1 and Phase 2 area of potential effects (APE), resulting in over 230 cultural resources updated or newly recorded. *Role: Assistant Project Archaeologist. Led field crews on survey and updated cultural resources; contributed to DPR forms.*

NICHOLAS F. HEARTH, M.A., SENIOR PROJECT MANAGER

Nick Hearth has worked as an archaeologist in cultural resources management since 2002. While focused on archaeological work in southern California for over 15 years, and a Redlands resident, he has worked in multiple states in the Southwest, Midwest, and New England, overseeing and completing projects in all phases of archaeology. Nick is an expert in applying the California Environmental Quality Act (CEQA), including Assembly Bill (AB) 52 and Senate Bill (SB) 18, Section 106 of the National Historic Preservation Act (NHPA), and the National Environmental Policy Act (NEPA) on a variety of projects across many market sectors. He has been fortunate to work with many tribes and, for the past 13 years, has had the privilege of working nearly exclusively with Southern California Tribes, including nearly two dozen tribes, e.g., Cahuilla, Gabrielino, Fernandeño, Tataviam, Luiseño, Serrano, Chumash, Kumeyaay, and Juaneño members. Nick meets the Secretary of the Interior's (SOI's) Professional Qualification Standards for Archaeology and is a Registered Professional Archaeologist. His project responsibilities include interfacing with tribal partners; oversight of archaeological, historical, and paleontological studies; directing all phases of archaeological field and laboratory work; and ensuring the analysis and reporting meet all local, state, and federal standards.

YEARS OF EXPERIENCE

24

EXPERTISE

Project management and implementation

California and Great Basin Archaeology

Tribal relations and consultation

CEQA and NHPA compliance

Technical studies oversight

EDUCATION

M.A., Anthropology; University of California, Riverside; 2006

B.A., Cum Laude, Anthropology; University of Massachusetts, Amherst; 2003

REGISTRATIONS / CERTIFICATIONS

Registered Professional Archaeologist No. 989903

SELECTED PROJECT EXPERIENCE (* denotes project experience prior to SWCA)

East Valley Water District Cultural Resource Studies; Confidential Client; San Bernardino County, California. SWCA has been retained to support Biological, Cultural, and Paleontological Resources surveys and technical reporting for the EVWD Canal 3 reservoir improvements project. The project includes the proposed installation of a new booster pump station, two storage reservoirs, pipeline connections and demolition of an existing booster pump station on a 3.8-acre parcel of land. Deliverables include a Biological Technical Report, a Paleontological Technical Report, and a Cultural Resources Technical Report, as well as support for AB 52 consultation to support environmental constraints analyses, CEQA Compliance, and Permit Acquisition. *Role: Cultural Resource Lead. Responsible for cultural resource technical quality and activities, provided AB52 consultation support, provided day-to-day oversight of the cultural resource budget, control systems, schedule, work assignments, and quality assurance/quality control of the cultural resource deliverables.*

***Perris Valley Channel (PVC) Lateral B, Stage 4, Perris, Riverside County, Riverside Flood Control and Water Conservation District.** The District proposes to construct the PVC Lateral B, Stage 4, between the existing PVC Lateral B, Stage 2 facility at Heacock Street and the downstream terminus of the PVC Lateral B, Stage 5 facility. Nick led the team conducting a cultural resource assessment among a suite of environmental, permitting, and regulatory services of the project for compliance with CEQA and Section 106 of the NHPA. Nick was the lead author of the cultural resources report, co-authored the paleontological report, managed the field surveys, and had various project management responsibilities. *Role: As Principal Investigator, Nick was the technical lead for the historic property survey including archaeology sites and built environment resources. He provided quality assurance of the historic property report and project management of the paleontological study.*

* **Adams Street Water Main Replacement; Coachella Valley Water District; Riverside County, California.** Design and engineering services were provided for replacing portions of a water transmission main pipeline and connections along Adams Street in the Coachella Valley. Environmental permitting services, field reconnaissance, utility research, data collection, preliminary and final design, and bid support services were also provided. *Role: Principal Investigator. Authored and edited the historic properties report.*