APPENDIX C

Cultural Resources Technical Report for the Hesperia-Topaz Land Development Project

Cultural Resources Technical Report for the Hesperia-Topaz Land Development Project, Hesperia, San Bernardino County, California

MARCH 2025

PREPARED FOR

San Luis Concrete

PREPARED BY

SWCA Environmental Consultants

CULTURAL RESOURCES TECHNICAL REPORT FOR THE HESPERIA-TOPAZ LAND DEVELOPMENT PROJECT, HESPERIA, SAN BERNARDINO COUNTY, CALIFORNIA

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INTRODUCTION

This report summarizes the results of a Phase I cultural resources assessment in support of the Hesperia-Topaz Land Development Project (project). The project is located northwest of the intersection of Topaz Avenue and Courtney Street in Hesperia, San Bernardino County, California. San Luis Concrete retained SWCA Environmental Consultants (SWCA) to analyze any potential impacts to archaeological resources located within the project area pursuant to the California Environmental Quality Act (CEQA), including relevant portions of Public Resources Code (PRC) Section 5024.1, Title 14 California Code of Regulations (CCR) Section 15064.5 of the State CEQA Guidelines, and PRC Sections 21083.2 and 21084.1.

This report documents the methods and results of a confidential records search of the California Historical Resources Information System (CHRIS), a Sacred Lands File (SLF) Search by the Native American Heritage Commissions (NAHC), and archival research used to evaluate the presence or likelihood of archaeological resources within the project area. The project is subject to review under CEQA, and the City of Hesperia (City) is the lead CEQA agency.

SWCA Archaeologists Erica Nicolay, M.A., and Jennie Stott, M.A., prepared the report, Senior Project Manager Robbie Thomas, M.A., Registered Professional Archaeologist (RPA) provided oversight and managed the field effort, and Cultural Resource Director Kyle Knabb, Ph.D., RPA, acted as Principal Investigator. Copies of the report are on file with SWCA's Pasadena office and the South Central Coastal Information Center (SCCIC), located at California State University, Fullerton.

PROJECT DESCRIPTION AND LOCATION

The proposed project includes construction of seven single-family residences on what will be a new cul-de-sac reached by a long paved site access driveway, and associated street improvement on Topaz Avenue including sewer, domestic water, storm drain, street lighting, sidewalk, curbs and asphalt patch. Specifically, the project will include on-site improvements on a 2.3-acre property and off-site improvements along the property frontage. The proposed project is located at northwest intersection of Topaz Avenue and Courtney Street within the city of Hesperia, San Bernardino County, California (Project Area; Appendix A: Figure A-1 and Figure A-2). The project area consists of eight total lots ranging in size from 7,210 square feet to 13,924 square feet. The lot in the northeastern corner of the project area would be developed with the proposed stormwater retention basin, while the remaining seven lots would be developed with residential single-family uses. The project area is in Section 13 of Township 4 North, Range 5 West, which is plotted on the U.S. Geological Survey (USGS) Hesperia, California, quadrangle (Appendix A: Figure A-3).

REGULATORY SETTING

California Environmental Quality Act

CEQA requires a lead agency to analyze whether historic and/or archaeological resources may be adversely impacted by a proposed project. 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 Section 21084.1). Answering this question is a two-part process: first, the determination must be made as to whether the proposed project involves cultural resources. Second, if

cultural resources are present, the proposed project must be analyzed for a potential "substantial adverse change in the significance" of the resource.

Historical Resources

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

- A resource listed in, or formally determined eligible for listing in the California Register of Historical Resources (PRC 5024.1, 14 CCR, Section 4850 et seq.).
- A resource included in a local register of historical resources, as defined in Section 5020.1(k) of the Public Resources Code or identified as significance in a historic resources survey meeting the requirements of Section 5024.1(g) of the Public Resources Code.
- 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 California Register (as defined in PRC Section 5024.1, Title 14 CCR, Section 4852).

Resources nominated to the California Register of Historical Resources (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 National Register of Historic Places (NRHP) criteria may still be eligible for listing in the CRHR.

According to CEQA, the fact that a resource is not listed in or determined eligible for listing in 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 Section 5024.1). Pursuant to CEQA, a project with an effect that may cause a substantial adverse change in the significance of a historical resource may have a significant effect on the environment (State CEQA Guidelines, Section 15064.5[b]).

SUBSTANTIAL ADVERSE CHANGE AND INDIRECT IMPACTS TO HISTORICAL RESOURCES

State CEQA Guidelines specify that a "substantial adverse change in the significance of an historical resource means 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" (State CEQA Guidelines, Section 15064.5). 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" or eligibility for inclusion in the NRHP, CRHR, or local register. In addition, pursuant to State CEQA Guidelines Section 15126.2, 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."

The following guides and requirements are of particular relevance to this study's analysis of indirect impacts to historic resources. Pursuant to State CEQA Guidelines (Section 15378), study of a project under CEQA requires consideration of "the whole of an action, which has the potential for resulting in either a direct physical change in the environment, or a reasonably foreseeable indirect physical change in the environment." State CEQA Guidelines (Section 15064(d)) further define direct and indirect impacts:

(1) A direct physical change in the environment is a physical change in the environment which is caused by and immediately related to the project.

(2) An indirect physical change in the environment is a physical change in the environment which is not immediately related to the project, but which is caused indirectly by the project. If a direct physical change in the environment in turn causes another change in the environment, then the other change is an indirect physical change in the environment.

(3) An indirect physical change is to be considered only if that change is a reasonably foreseeable impact which may be caused by the project.

Archaeological Resources

In terms of archaeological resources, PRC Section 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 prehistoric 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 reasonable efforts be made to permit any or all of these resources to be preserved in place or left in an undisturbed state. To the extent that they cannot be left undisturbed, mitigation measures are required (PRC Sections 21083.2[a], [b], and [c]). CEQA notes 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 (State CEQA Guidelines Section 15064.5[c][4]).

California State Assembly Bill 52

Assembly Bill 52 of 2014 (AB 52) amended PRC Section 5097.94 and added PRC Sections 21073, 21074, 21080.3.1, 21080.3.2, 21082.3, 21083.09, 21084.2, and 21084.3.

CONSULTATION WITH NATIVE AMERICANS

AB 52 formalizes the lead agency–tribal consultation process, requiring the lead agency to initiate consultation with California Native American groups that are traditionally and culturally affiliated with the project, including tribes that may not be federally recognized. Lead agencies are required to begin consultation prior to the release of a negative declaration, mitigated negative declaration, or environmental impact report.

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 California Register of Historical Resources.

(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 Section 21080.3.2[a]). The environmental document and the mitigation monitoring and reporting program (where applicable) shall include any mitigation measures that are adopted (PRC Section 21082.3[a]).

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 Sections 21083.2 and 21084.1). Certain properties, including those listed in or formally determined eligible for listing in 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 inclusion in the CRHR. According to PRC Section 5024.1(c), 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 enough of their historic character or appearance to convey the reasons for their significance. Resources whose historic integrity does not meet NRHP criteria may still be eligible for listing in the CRHR.

Treatment of Human Remains

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

METHODS

In support of this analysis, SWCA completed a confidential records search of the CHRIS, an SLF search through the California NAHC, archival research, and an intensive pedestrian survey. The results of these were used to evaluate the presence or likelihood of cultural resources within the project area.

California Historical Resources Information System Records Search

On August 8, 2024, SWCA conducted a search of the CHRIS at the SCCIC on the campus of California State University, Fullerton. This search included any previously recorded cultural resources and investigations within a 0.5-mile radius of the project area for archaeological resources. A subsequent search of the CHRIS data was conducted on March 12, 2025, that expanded the search radius from 0.5 mile to 1 mile. The CHRIS records search also included a review of the NRHP, the CRHR, California Points of Historical Interest list, the California Historical Landmarks list, the Archaeological Determinations of Eligibility list (Office of Historic Preservation Directory of Historic Properties Data File), the City's HCM list, and the California State Inventory of Historic Resources.

Sacred Lands File Search

The NAHC is charged with identifying, cataloging, and protecting Native American cultural resources, which includes ancient places of special religious or social significance to Native Americans, and known ancient graves and cemeteries of Native Americans on private and public lands in California. The NAHC's inventory of these resources is known as the SLF. In addition, the NAHC maintains a list of tribal contacts affiliated with various geographic regions of California. The contents of the SLF are strictly confidential, and SLF search requests return positive or negative results in addition to a list of tribal contacts with affiliation to the specified location. A letter from the NAHC summarizing the results of the records search is provided in Appendix B.

Archival Research

Concurrent with the confidential CHRIS records search, SWCA conducted a desktop review of available historic-age maps, aerial images, and quadrangles along with San Bernardino County Assessor records. This archival research focused on assessing the general sequence of historic-age development within the project area and identifying any natural, built, or other resources that may have previously existed within the project area. The aerial images and maps were also used to assess the potential for previously unrecorded built environment or other archaeological resources to be present within the project area. Sources consulted included the following publicly accessible data sources: USGS (2025) historical

topographic maps; University of California, Santa Barbara Aerial Imagery Library (2025); and NETROnline Historical Aerials (2025) (historic topographic maps and aerial images).

Cultural Resources Survey

On March 7, 2025, SWCA Archaeologist Cecilio Garcia conducted an archaeological intensive pedestrian survey of the 2.3-acre project area (see Figure A-2 in Appendix A). The purpose of the survey was to identify cultural resources and historical built environment resources that may be present within the project area. The intensive-level survey consisted of systematic surface inspection of all areas with transects walked at 10- to 15-meter (m) intervals or less to ensure that any surface-exposed artifacts and sites could be identified.

SWCA examined the ground surface for the presence of prehistoric artifacts (e.g., flaked stone tools, tool-making debris, stone milling tools); historic artifacts (e.g., metal, glass, 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., post holes, foundations).

Overviews of the survey area were photographed using a digital camera. Survey data collection (including mapping) utilized a tablet computer (Samsung Galaxy Tab A) paired with a Juniper Geode submeter-accurate Global Navigation Satellite System receiver. The survey was documented using standard archaeological survey forms. All field notes, photographs, and records related to the current study are on file at SWCA's office in Pasadena, California.

ENVIRONMENTAL SETTING

The project area is located within the Victor Valley, a subregion located along the southern edge of the larger Mojave Desert. The project area is located on undeveloped land that supports scattered Joshua trees (*Yucca brevifolia*) with an herbaceous understory dominated by nonnative forbs and grasses. Disturbance on-site includes vegetation removal, trash piles, and unmaintained roads associated with off-road vehicle usage. Topographically, the setting is characterized as an open aspect plain with a very gradual slope to the south. The project area is at an elevation of approximately 1,030 to 1,035 meters (m) (3,380–3,396 feet) above mean sea level. The project area is near two washes: the Oro Grande Wash, a segment of the Upper Mojave River Basin that is 2.43 kilometers (km) (1.5 miles) to the northwest, and an unnamed wash located directly to the northwest of the project area. Both washes run in a meandering northwesterly-southeasterly direction. Notably, however, these two water sources are seasonal or dependent on heavy rains and are likely dry much of the year. A segment of the California Aqueduct also runs in northeasterly-southwesterly direction approximately 1.6 km (1 mile) to the southwest of the project area, and the Mojave River is located 10.62 km (6.6 miles) to the east of the project area. The soils within the site largely date to the Pleistocene (Tang et al. 2010:19).

HISTORIC CONTEXT

Prehistoric Context

The prehistory of southern California is varied and rich, encompassing a period of more than 12,000 years. Numerous chronological sequences have been devised to explicate cultural changes for various areas within southern California over the past 75 years (Moratto 2004). This prehistoric overview

is structured using the latest Mojave Desert culture history (Sutton et al. 2007). The framework is thus divided into four major periods: Pleistocene, Early Holocene, Middle Holocene, and Late Holocene (Table 1).

Table 1. Mojave Desert Chronology (after Sutton et al. 2007:236)

Temporal Period	Cultural Complex or Period	Approximate Dates	Marker Artifact
Pleistocene	Pre-Clovis (hypothetical)	Pre-10,000 cal BC	Unclear
	Paleoindian	10,000–8000 cal BC	Fluted points (Clovis)
Early Holocene	Lake Mojave	8000–6000 cal BC	Stemmed points (Lake Mojave, Silver Lake)
	Pinto		
Middle Holocene		7000–3000 cal BC	Pinto Series points
Late Holocene	Gypsum	2000 cal BC–cal AD 200	Gypsum and Elko Series points
	Rose Spring	cal AD 200–1100	Rose Spring and Eastgate Series points
	Late Prehistoric	cal AD 1100–Contact	Desert Series points, ceramics

Paleoindian Period (ca. 10,000 to 8000 BC)

A firm date for the initial human occupation of the Mojave Desert has not yet been established. While there have been several controversial claims of Pleistocene-age (pre-Clovis) finds, such as the Early Man Site of Calico Hills (Leakey et al. 1968; Leakey, Simpson, Clements et al. 1972), most archaeologists remain unconvinced by available Mojave Desert data. The growing acceptance of evidence for pre-Clovis occupations elsewhere in the Western Hemisphere suggests the possibility that such evidence may yet be found in this region as well.

The earliest broadly accepted cultural complex in the Mojave Desert is the Clovis Complex (Sutton et al. 2007:233). The hallmark artifacts of this complex are large lanceolate-shaped bifaces with distinctive fluting, used to thin and flatten the base for hafting. Other tools associated with the Clovis Complex were large side scrapers, blades struck from prepared cores, and a mixture of expedient flaked tools (Justice 2002:73). Paleoindian populations associated with fluted point technology consisted of small, mobile groups who hunted and gathered near permanent sources of water such as pluvial lakes.

There is some doubt as to whether the Clovis Complex had a temporally or geographically extensive presence in the Mojave Desert. Fluted points have traditionally been interpreted as tools used for hunting Pleistocene megafauna due to their clear association with megafauna remains in the American Southwest, but most fluted points found in California have been recovered as isolated surface finds without confirmed Pleistocene radiocarbon dates (Arnold 2004). However, excavations at China Lake during the 1970s uncovered fluted points associated with burned, extinct megafaunal material (Davis 1975). These discoveries are among the more convincing evidence that suggests there was human occupation during the terminal Pleistocene (Giambastiani and Berg 2008:12).

The Early Holocene (8000 to 6000 BC)

The communities that lived in the Mojave Desert witnessed and were profoundly affected by great environmental changes during the gradual Pleistocene-Holocene transition. Temperatures became warmer

but remained cooler and moister than today. The Mojave Desert became marked by shallow lakes and marshes that were biologically very productive. These were surrounded by desert vegetation typical of later time periods, most prominent being the white bursage and later the creosote bush (Grayson 1993:199-200). Some low-elevation locales retained maintained juniper and sagebrush habitats. By the early Holocene, warmer temperatures, reduced precipitation, and the eventual dehydration of the pluvial lakes are believed to have led to irregularities in the distribution and abundance of resources (Sutton et al. 2007: 237). These climatic changes created the need for a more diversified subsistence strategy; the archaeological pattern associated with this adaptation is known as the Lake Mojave Complex.

Named for a Pleistocene lake in southern California, the Lake Mojave Complex is recognized by the heavy, stemmed projectile points of the Great Basin Stemmed series such as Lake Mojave and Silver Lake. Other tools include bifaces, steep-edged unifaces, crescents, the occasional cobble-core tool, and, rarely, ground stone implements (Justice 2002:91). This tool kit represents a generalized adaptation to highly variable terrain. For example, the crescent is thought to have served multiple functions, including use as a spear tip to hunt waterfowl (Justice 2002:116).

While the tool kit of the Lake Mojave Complex has long been thought of as an adaptation to lacustrine subsistence strategies, this conclusion was based on largely circumstantial evidence: the occurrence of numerous sites along extinct shorelines (Moratto 2004:93-96). However, many of the lakes were no longer constant sources of water during the Holocene, and an increasing number of recent studies (e.g., Basgall 2005; Basgall and Jurich 2006; Giambastiani and Berg 2008:14), have revealed that the people of the Lake Mojave Complex sites occur in non-lacustrine terrain as well. Furthermore, there is no clear evidence that Lake Mojave technology indicates a focus on aquatic resources (Basgall and Jurich 2006:12). Sutton et al. (2007:237) have noted that the Lake Mojave assemblages included tools that are "consistent with long-term curation and transport." Additionally, it is not uncommon for extralocal materials, such as stone artifacts and marine shell beads, to be found in Lake Mojave cultural deposits, suggesting that Lake Mojave people were either highly mobile or interacted with groups over long distances.

The changing climate, distribution of occupational sites, and the all-terrain tool kit suggest that the inhabitants of the Mojave Desert during the early Holocene developed a broad-ranging subsistence strategy based on patterns of "intensive environmental monitoring" (Sutton et al. 2007:237): the people monitored the seasons and moved in the direction of known resource patches.

The Middle Holocene (7000 to 3000 BC)

The middle Holocene climate, although more arid than periods before and after, was still highly variable, with multiple oscillations between wetter and drier conditions occurring throughout. In addition, although the lakes and marshes of the early Holocene dried up, streams and springs in the Mojave Desert may have still maintained water flow from nearby ranges, at various times and places, providing suitable water sources to sustain human activity, albeit at low densities (Aikens 1978; Basgall 2000; Cleland and Spaulding 1992; Sutton 1996; Warren 1984). Between 7000 and 5000 BC, temperatures appear to have risen and aridity appears to have increased, peaking between 6000 and 5000 BC Lowland ephemeral lakes and streams began to dry up, and vegetation communities capable of supporting large game animals became limited to a few isolated contexts. Settlement patterns adapted, shifting to upland settings where sources of water still existed (Sutton 1996). This land-use change also correlated with adjustments in tool assemblage content and diversity, resulting in the emergence of the Pinto Complex.

Originally defined by Campbell and Campbell (1935), the Pinto Complex appears to represent shifts in subsistence patterns and adaptations, with greater emphasis placed on the exploitation of plants, as well as a continued focus on artiodactyls and smaller animals. It had a wider distribution throughout the Mojave

Desert than the previous complexes. The pan-desert nature of the complex suggests that it represents a settlement system with a high degree of residential mobility.

The distinctive characteristics of the Pinto Complex tool kit, as defined by Justice (2002:126) and Zyniecki (2003:12), include "indented base and bifurcate base projectile points with robust basal ears and weak shoulders." Other diagnostic artifacts types of this complex include large and small leaf-shaped bifaces, domed and heavy-keeled scrapers, numerous core/cobble tools, large metates and milling slabs, and shaped and unshaped handstones.

Basgall hypothesized the existence of a distinct complex occupying the Mojave Desert at the same time as the Pinto Complex. His hypothesized Deadman Lake Complex is characterized by "small-to-medium-size contracting-stemmed or lozenge-shaped points, extensive concentrations of battered cobbles and core tools, abundant bifaces, simple flake tools, and milling implements" (Sutton et al. 2007:239). Basgall and his coauthors speculate that the complexes coexisted, the Pinto materials associated with pluvial lakes and the Deadman Lake Complex at higher elevations. These complexes may represent the material evidence of two separately adapted groups; alternatively they may indicate two different activity patterns produced by a single group. However, they acknowledge that the sample of known sites containing Deadman Lake assemblages is extremely small, and any characterization of the complex as a distinct cultural system is provisional at best. It is still unclear whether Pinto and Deadman Lake complexes represent the material evidence of two separately adapted groups, or of two different activity patterns produced by a single group.

Near the end of the Middle Holocene the climate became hotter and drier, marked by a period of "cultural hiatus" between 3000 and 2000 BC; during this gap there appears to have been little to no human occupation in much of the Mojave (Sutton et al. 2007:241).

The Late Holocene (2000 BC to Contact)

The climate of the prehistoric Late Holocene approximates that of today, with cooler and moister conditions than the middle Holocene but not as cool and moist as the early Holocene. As with the middle Holocene, the climate was highly variable. Many lakes once again rose to high stands, and plant communities took on their modern distribution; however, these lake levels fluctuated, at times dramatically, throughout the period. At least two major droughts are thought to have occurred within the Sierras (Stine 1994), at ca. AD 892 to 1112, and ca. AD 1209 to 1350. This was followed by a cooler and wetter period between 600 and 150 years ago (Cleland and Spaulding 1992:4). People returned to the region, and human subsistence strategies, compared to previous settlement behavior, changed significantly. This subsistence strategy correlated with adjustments in artifact/tool assemblage content and diversity, resulting in the emergence of the Gypsum Complex.

The Gypsum Complex was characterized by dart-point size projectile points in notched or eared (Elko), concave base (Humboldt), and small-stemmed (Gypsum) forms. In addition to diagnostic projectile points, Gypsum Complex sites included leaf-shaped points, rectangular-based knives, flake scrapers, T-shaped drills, and, occasionally, large scraper planes, choppers, and hammerstones (Warren 1984:416). Manos and milling stones were common, and the mortar and pestle were also introduced during this period. Other artifacts included split-twig animal figurines, *Olivella* shell beads, and *Haliotis* beads and ornaments. The presence of both *Haliotis* and *Olivella* shell beads and ornaments and split-twig animal figurines indicates that the California desert inhabitants were in contact with populations from the southern California coast and the southern Great Basin (Arizona, Nevada, and Utah). The increased contact with other groups likely provided the local inhabitants with storable food products in exchange for lithic materials (obsidian, chalcedony, and chert). Despite all of this activity in the Mojave Desert during

this period, there is very little evidence for long-term occupation within the Marine Corps Air Ground Combat Center (MCAGCC) (Sutton et al. 2007:241).

By AD 200, the climate had become slightly cooler. Population size appears to have increased, as evidenced by a higher frequency of archaeological sites. This period in California prehistory is marked by the Rose Spring Complex, an archaeological pattern associated with a time frame known as the Saratoga Springs, Haiwee, or Amargosa period, depending on region (Sutton 1996; Sutton et al. 2007:236). By the onset of this period at AD 200, dart-size points were being replaced with smaller Rose Spring projectile points, signaling the introduction of the bow and arrow (Yohe 1998). This innovation may also correspond with the beginning of the Numic expansion, which many researchers believe emanated from southeastern California (Bettinger and Baumhoff 1982; Grayson 1993). Major villages and numerous smaller sites dating to this period have been recorded in eastern California, many of which contain bedrock milling features in addition to portable milling equipment.

The introduction of ceramics to the archaeological record of the Mojave Desert region marks the beginning of the Late Prehistoric period (ca. AD 1100–1770). During this period Rose Spring-style projectile points were replaced with smaller Desert Side-notched and Cottonwood series points. Resource intensification and specialization are suggested by an increased variety of tool forms, use of new technologies such as the mortar and pestle and ceramics, use of storage facilities, and increased diversity in the locations of archaeological sites. In the central Mojave Desert, the Mojave River became a primary focus of occupation, and trade networks increased along the Mojave River and over the San Gabriel Mountains (Sutton 1996). During the early portions of the Late Prehistoric period, the Colorado River intermittently flowed westward into the Salton Trough, forming Lake Cahuilla. This freshwater lake was more than 100 miles long and extended well into the present-day Coachella Valley before its final recession after AD 1400. Archaeological remains recovered from the extinct lakeshore, as well as Cahuilla oral history, reflect the fish, mussels, waterfowl, and other lacustrine resources that made up local subsistence regimes during this period. There is evidence that populations relocated to new residential bases in the Peninsular Range foothills, including the Little San Bernardino Mountains immediately south of the project area, following the final recession of Lake Cahuilla (Wilke 1978).

Generally speaking, archeological evidence left by highly mobile hunter-gatherers in the Mojave Desert most often takes the form of sparse scatters of flaked stone, ground stone, and ceramic artifacts and features such as hearths, rock rings, and trails. These remains represent resource extraction and processing sites as well as short-term encampments. Repeated use of specific locations may result in more diverse and substantial archaeological deposits. Likely locations for such habitual-use areas are places with predictable critical resources, especially water, tree crops (e.g., piñon), and outcrops of stone suitable for tool manufacture.

Ethnographic Context

According to available ethnographic maps (Bean and Smith 1978:570; Kroeber 1925; Sutton et al. 2007:232), the study area falls within the traditional territory of the Serrano people, being situated south of the Kawaiisu, southeast of the Kitanemuk, and west of the Southern Paiute. Other neighboring Takic-speaking groups include the Tataviam and Gabrielino (or *Tongva*) to the west and southwest and the Cahuilla to the south. Ethnographic boundaries in the Mojave Desert are loosely defined, owing to the highly mobile nature of desert settlement strategies and the variety of alternatives presented by previous researchers.

Serrano

The Serrano language is part of the Serran division of a branch of the Takic family of the Uto-Aztecan linguistic stock (Mithun 2006:539, 543). The two Serran languages, Kitanemuk and Serrano, are closely related. Kitanemuk lands were northwest of Serrano lands. Serrano was originally spoken by a relatively small group located within the San Bernardino and Sierra Madre mountains, and the term "Serrano" has come to be ethnically defined as the name of the people in the San Bernardino Mountains (Kroeber 1925:611). The Vanyume, who lived along the Mojave River and associated Mojave Desert areas and are also referred to as the Desert Serrano, spoke either a dialect of Serrano or a closely related language (Mithun 2006:543).

The Serrano occupied an area in and around the San Bernardino Mountains between approximately 450 and 3,350 meters (1,500–11,000 feet) above mean sea level. Their territory extended west into the Cajon Pass, east past Twentynine Palms, north past Victorville, and south to Yucaipa Valley. Year-round habitation tended to be located on the desert floor, at the base of the mountains, and up into the foothills, with all habitation areas requiring year-round water sources (Bean and Smith 1978; Kroeber 1908).

Most Serrano lived in small villages located near water sources (Bean and Smith 1978:571). Houses measuring 12 to 14 feet in diameter were domed and constructed of willow branches and tule thatching. The interiors were encircled with tule mats. Each house was occupied by a single extended family, including a husband, wife (or wives), children, grandparents, and perhaps a widowed aunt or uncle, and was a family gathering place for sleeping and storage. Much of the daily routine occurred outdoors in the open or under square ramadas constructed of at least four posts, cross-beams, and tule-thatched roofs. Many of the villages had a ceremonial house, used both as a religious center and the residence of the lineage leaders. When hunting, the men would sometimes construct individual dwellings away from the village. Additional structures within a village might include granaries and a large circular subterranean sweathouse. The sweathouses were typically built along streams or pools.

A village was usually composed of at least two lineages, referred to as a lineage set. In each village, one lineage tended to be more dominant than the other. Lineages tended to rise and fall in dominance. A lineage set would intermarry, share ties of economic reciprocity, and share the ceremonial house and ceremonial bundle. Lineage sets together assumed the responsibility of conducting religious ceremonies through the one lineage's religious leader and his assistant; the assistant was the religious leader of the other lineage of the set. The Serrano were loosely organized along patrilineal lines and associated themselves with one of two exogamous moieties or "clans"—the Wahiyam (coyote) or the Tukum (wildcat) moiety.

Serrano territory was a trade nexus between inland tribes and coastal tribes. Ethnohistory also suggests that the Serrano played a role in the trade of horses from the southwest to the California coast (Bean and Vane 2002). Despite the Serrano's large geographic extent, as well as their control of significant travel corridors, some anthropologists consider the politically autonomous structure and function of the village unit and therefore have difficulty considering the Serrano a unified "tribe," as that word is defined as a unit of people with a common political leadership (Kroeber 1925:617; Strong 1929:14).

The subsistence economy of the Serrano was one of hunting and collecting plant goods, with occasional fishing carried out (Bean and Smith 1978:571). They hunted large and small animals, including mountain sheep, deer, antelope, rabbits, small rodents, and various birds, particularly quail. Plant staples consisted of seeds; acorn nuts of the black oak; piñon nuts; bulbs and tubers; and shoots, blooms, and roots of various plants, including yucca, berries, barrel cacti, and mesquite. The Serrano used fire as a management tool to increase yields of specific plants, particularly chía.

Trade and exchange was an important aspect of the Serrano economy. Those living in the lower-elevation, desert floor villages traded foodstuffs with people living in the foothill villages who had access to a different variety of edible resources. In addition to inter-village 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 available in different ecozones.

Among the materials that the Serrano used for hunting, gathering, and processing food, many were also used for shelter, clothing, and ceremonial items. Shell, wood, bone, horn, stone, plant materials, animal skins, and feathers were used for making money, baskets, rabbit skin blankets, mats, nets, and bags. The Serrano made pottery and used it daily to carry and store water or foodstuffs; ceramics were also used as ceremonial objects (Benedict 1924). They also made awls, sinew-backed bows, arrows, arrow straighteners, throwing sticks (for hunting), traps, fire drills, stone pipes, musical instruments of various types (rattles, rasps, whistles, bull-roarers, and whistles), yucca fiber cordage for snares, nets, and carrying bags, and clothing (Bean and Smith 1978:571; Bean and Vane 2002). A strong tradition of basket weaving incorporated the use of juncus sedge, deergrass, and yucca fiber (Benedict 1924). They cooked foods in earth ovens or in watertight baskets using heated cooking rocks and stirring constantly, or by parching through use of hot embers and a constant tossing motion of shallow trays containing the grains. Animal bones were boiled and then cracked for access to the marrow. A variety of methods were used in the drying and preserving of foods for later consumption.

Mainly due to the inland location of the territory that Serrano occupied beyond Cajon Pass, contact between Serrano and Europeans was relatively minimal prior to the early 1800s. As early as 1790, however, Serrano began to be drawn into mission life (Bean and Vane 2002). More Serrano were relocated to Mission San Gabriel in 1811 after a failed indigenous attack on that mission. Most of the remaining western Serrano were moved to an *asistencia* built near Redlands in 1819 (Bean and Smith 1978:573). By 1834, most western Serrano had been moved to the missions, with some Serrano possibly moved to the mission at San Fernando Rey (Kroeber 1908). Only small groups of Serrano remained in the area northeast of the San Gorgonio Pass and were able to preserve some of their native culture.

In the 1860s, a smallpox epidemic killed many indigenous southern Californians, including many Serrano (Bean and Vane 2002). Oral history accounts of a massacre in the 1860s at Twentynine Palms may have been part of a larger American military campaign that lasted 32 days (Bean and Vane 2002:10). Surviving Serrano sought shelter at Morongo with their Cahuilla neighbors; Morongo later became a reservation (Bean and Vane 2002). Other survivors followed the Serrano leader Santos Manuel down from the mountains and toward the valley floors and eventually settled what later became the San Manuel Band of Mission Indians Reservation. This reservation was established in 1891 (San Manuel Band of Mission Indians 2008).

Historic Context

Post-contact history for the state of California is generally divided into three periods: the Spanish Period (1769–1822), Mexican Period (1822–1848), and American Period (1848–present). Although there were brief visits by Spanish, Russian, and British explorers from 1529 to 1769, the Spanish Period in California began with the establishment in 1769 of a settlement at San Diego and the first (Mission San Diego de Alcalá) of 21 missions constructed between 1769 and 1823. Independence from Spain marks the beginning of the Mexican Period, and the signing of the Treaty of Guadalupe Hidalgo in 1848, ending the Mexican-American War, signals the beginning of the American Period, when California became a territory of the United States.

Spanish Period (1769–1822)

Spanish explorers made sailing expeditions along the coast of southern California between the mid-1500s and late 1700s. In search of the legendary Northwest Passage, Juan Rodríquez Cabrillo stopped in 1542 at present-day San Diego Bay. With his crew, Cabrillo explored the shorelines of present-day Catalina Island, and San Pedro and Santa Monica bays. Much of the present California and Oregon coastline was mapped and recorded in the following half-century by Spanish naval officer Sebastián Vizcaíno. Vizcaíno's crew also landed on Santa Catalina Island and at San Pedro and Santa Monica bays, giving each location its long-standing name. The Spanish crown laid claim to California based on the surveys conducted by Cabrillo and Vizcaíno (Bancroft 1886:96–99; Gumprecht 1999:35).

Inland exploration and colonization of Alta California by Spain would not be a priority for more than 200 years. The 1769 overland expedition by Captain Gaspar de Portolà marks the beginning of California's "Historic Period," occurring just after the king of Spain installed the Franciscan Order to direct religious and colonization matters in assigned territories of the Americas. With a band of 64 soldiers, missionaries, Baja (lower) California Native Americans, and Mexican civilians, Portolà established the Presidio of San Diego, a fortified military outpost, as the first Spanish settlement in Alta California. Also in July of 1769, Franciscan Fr. Junípero Serra founded Mission San Diego de Alcalá at Presidio Hill, the first of the 21 missions that would be established in Alta California by the Spanish and the Franciscan Order between 1769 and 1823.

Although Pedro Fages traveled near the Cajon Pass as early as 1772, the first known Spanish explorer to enter the area that would become San Bernardino County was Fr. Francisco Garcés, traveling from the Colorado River in 1776 (Hoover et al. 2002:321). Fr. Garcés traveled as far as the Pacific coast along an ancient trade route, known as the Mojave Trail, and he named the Mojave River Arroyo de los Mártires (Stream of the Martyrs). The river was later named Rio de las Animas (River of Souls) by Fr. Joaquín Pasqual Nuez, who accompanied the 1819 expedition of Lt. Gabriel Moraga. The San Bernardino Valley was named in 1810 by the Franciscan missionary Francisco Dumetz, who led a party from the San Gabriel Mission into the valley in observance of the Feast of St. Bernardine of Siena.

The series of 21 missions was situated parallel to the California coastline between San Diego and Sonoma. Near-coastal locations were preferred by the Spaniards for colonization because they were easier to defend and supply from ships and were also bordered by populous Native American villages with potential converts. Although present-day San Bernardino County did not formally host Spanish missions, the region remained connected to the California presidio and mission system through the Franciscan rancho and *asistencia* outposts. Near today's city of Redlands in San Bernardino County, the San Bernardino de Sena Estancia (also known as the San Bernardino Rancho) was established in 1819 for grazing cattle owned by the Mission San Gabriel Arcángel (Engelhardt 1927).

A major government objective during the Spanish Period in California was to build missions and associated presidios to integrate the Native American population into Christianity and communal enterprise. Inducements were also made to bring settlers to pueblos or towns, but just three pueblos were established during the Spanish Period, only two of which were successful and are now major California cities (San José and Los Angeles). The threat of foreign invasion, political dissatisfaction, demands for land by civilian settlers and retiring soldiers, and unrest among the indigenous population kept growth within Alta California to a minimum.

Mexican Period (1822–1848)

After more than a decade of intermittent rebellion and warfare, New Spain (Mexico and the California territory) won independence from Spain in 1821. In 1822, the Mexican legislative body in California

ended isolationist policies designed to protect the Spanish monopoly on trade, and decreed California ports, including San Diego, open to foreign merchants (Dallas 1955:14).

During this period, trappers and explorers from the eastern United States journeyed westward. Jedediah Strong Smith was among these early American adventurers. He traveled through the project vicinity in 1826 and 1827 and nicknamed the Mojave River the "Inconstant River" because it frequently disappeared beneath the ground's surface.

The influence of the California missions waned in the late 1820s through the early 1830s, and as one consequence, extensive land grants in the interior were initiated in the Mexican Period, in part to entice populations away from the more settled coastal areas where the Spanish had concentrated their colonization efforts. Following adoption of the Secularization Act of 1833, the Mexican government privatized most Franciscan lands, including holdings of their California missions. By 1836, this sweeping process effectively reduced the California missions to parish churches and released their vast landholdings. Although earlier secularization schemes had called for redistribution of lands to Native American neophytes who were responsible for construction of the mission empire, the vast mission lands and livestock holdings were instead redistributed by the Mexican government through several hundred land grants to private, non–Native American ranchers (Langum 1987:15–18).

The Mexican Period is marked by the rise of large ranchos, which became important economic and social centers. Some 20 ranchos covering nearly 500,000 acres were granted in northwestern Riverside and southwestern San Bernardino counties. These included Ranchos El Rincón and Jurupa, which straddled both of today's counties; and Cucamonga, Santa Ana, and San Bernardino in San Bernardino County.

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

American Period (1848–Present)

The Mexican-American War ended with the Treaty of Guadalupe Hidalgo, signed in 1848, ushering California into its American Period. Horticulture and livestock, based primarily on cattle as the currency and staple of the rancho system, continued to dominate the southern California economy through the first decade of the Gold Rush beginning in 1848. California attained statehood with the Compromise of 1850, which also designated Utah and New Mexico (with present-day Arizona) as U.S. territories. San Bernardino County was organized from parts of Los Angeles and San Diego counties in April of 1853, and the city of San Bernardino became the county seat in 1854. Although portions of San Bernardino and San Diego Counties were used to create Riverside County in 1893, San Bernardino County remains the largest county in California.

During the Gold Rush, thousands of people traveled the Gila Trail or Southern Overland Trail from Texas to Arizona, then crossed the Colorado River at present-day Yuma into California and proceeded across the Colorado Desert to the San José Valley. The main trail continued from that point northward to Temecula and Los Angeles. Many left the main trail and traveled southward to San Diego, where they

then journeyed via ship to San Francisco or took the inland coastal route to Los Angeles, rejoining the main trail to the goldfields. Thousands more traveled the Mojave River Trail, named the Old Spanish Trail by Captain John C. Frémont in 1844. Starting in Santa Fe, New Mexico, and continuing through Utah and Arizona, the trail then crossed the Mojave Desert to reach the Mission San Gabriel Arcángel and the Pueblo de Los Ángeles. Northeast of Victorville near today's community of Daggett, a group of Native Americans told Frémont they had lived along the Mojave River and the mountains to the north, and traded with other indigenous peoples in the region along the Mojave River Trail. Frémont's is the first account to use the name "Mojave River" (Frémont 1845:260).

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 1850s cattle boom, vaqueros drove large herds from southern to northern California to feed that region's burgeoning mining and commercial boom. Cattle were at first driven along major trails or roads such as the Gila Trail or Southern Overland Trail, then were transported by trains where available. The cattle boom ended for southern California as neighboring states and territories drove herds to northern California at reduced prices, as operation of the huge ranchos became increasingly difficult, and as droughts severely reduced their productivity.

American politics and the need for a mild-winter route to the west favored a southerly thoroughfare from the eastern United States to California in the 1850s. The U.S. Gadsden Purchase of 1854 secured more land from Mexico for this route, and by 1857, surveys established the current international boundary from New Mexico west to California (Walker and Bufkin 1986). In 1857, the government awarded to James E. Birch a mail contract for 1,475 miles from San Antonio, Texas, to San Diego, California. The contractor's "Jackass Mail" passed through the Imperial Valley on its 2-month-long round trips. In 1858, the federal contract passed to the Butterfield Overland Mail Company. With the start of the Civil War in 1861 and departure of Southern representatives from Congress, the U.S. government canceled Butterfield's contract and suspended talks on a southern transcontinental rail route.

Wagon roads and railroads constructed across California's Colorado and Mojave deserts from the 1840s to the 1870s connected coastal California with the rest of the county. These modes of transport served to carry mail, prospectors, miners, entrepreneurs, merchants, immigrants, laborers, muleteers, settlers, and military personnel as well as civilian and military supplies, livestock, produce, timber, and minerals produced by desert mines, among other necessities. The construction of permanent roadways in the place of desert trails and wagon roads marked the increased use of the automobile at the turn of the twentieth century. In addition to the Mojave River Trail (Old Spanish Trail) and the southern Yuma route (Gila Trail, Southern Overland Trail, Butterfield Stage Route), the earliest routes that traversed the California deserts from the west to the Colorado River included Brown's Wagon Road, the Bradshaw Trail, and Brown and Frink's Road.

Following the Civil War, overland stage services to and from southern California resumed in 1868 with the Holladay and Wells Fargo operations (Nevin 1974; Stein 1994). The pre-Civil War national initiative for a southern transcontinental railroad route resumed during the 1870s, as the Texas and Pacific (T&P) Railway Company in 1871 received a federal charter and conducted transcontinental surveys to pursue the initiative. In 1873, however, the T&P's westerly construction stalled in north-central Texas. The resulting delay was critical, allowing San Francisco investors to extend their own Southern Pacific Railroad (SPRR) through Imperial Valley to the Colorado River in 1877, bridging the river at Yuma into Arizona along the T&P survey in 1878 (Yenne 1985). The SPRR had already reached the extreme southwest corner of San Bernardino County in 1876. The Atlantic and Pacific (later the Atchison, Topeka, and Santa Fe; now the Burlington Northern Santa Fe) Railroad soon crossed the central part of the county, the Southern California Railway linked Barstow to San Diego in 1885, and San Bernardino was connected to the eastern states in 1887 via the Atchison, Topeka, and Santa Fe via Barstow and Needles.

The first highways across the Mojave Desert followed the Cajon Pass-Barstow-Needles route established by the Southern California Railway and the Atchison, Topeka, and Santa Fe. Established in 1912, the Ocean-to-Ocean Highway, now known as the National Old Trails Road, stretched from Baltimore, Maryland, to California. The route across the California deserts followed the Mojave River/Old Spanish Trail through Needles and Barstow to San Bernardino. Established in 1926, the majority of U.S. Route 66 largely followed the Ocean-to-Ocean Highway, passing through the desert region south of Needles on its way across the country to Los Angeles. After U.S. Route 66 was decommissioned in 1985, parts of it became Interstate 40 (I-40) as well as Interstate 15 (I-15). Remains of the route in several western states, including California, have been designated a National Trails Highway. Other important highways that crossed through the region included the Randsburg/San Bernardino Road, which was added to the state system of secondary highways in 1933 and designated State Route 145. The highway was designated U.S. Route 395 (US-395) 2 years later.

RESULTS

Records Search Results

Previously Conducted Studies

SWCA conducted searches of the CHRIS records from the SCCIC on August 8, 2024, and March 12, 2025. Results of the records search indicate that 29 previous cultural resource investigations have been conducted within a 1-mile radius of the project area. Of the 29 studies, one study—SB-06859—overlaps the project area. SB-06859 included a cultural resource survey report in support of two proposed wastewater treatment facilities in the town of Apple Valley and the city of Hesperia, both within San Bernardino County. The portion of this study within Hesperia overlaps the entirety of the current project area. SB-06859 included a survey as well as a records search at the SCCIC; no archaeological resources were identified, and no further work was recommended. Details pertaining to these investigations are listed in Table 2.

Table 2. Previous Cultural Resources Studies within 1 mile of the Project Area

Report No.	Study Title	Author and Affiliation	Year	Relationship to Project Area
SB-00191	*Archaeological, Historical, and Paleontological Site Survey for County Service Area No. 70 Improvement Zone "J", Assessments of Impact and Recommendations*	Smith, Gerald A.: San Bernardino County Museum Association	1973	Outside
SB-00986	*Baldy Mesa Water Lines, Cultural Resources Assessment*	Reynolds, Robert E.: San Bernardino County Museum Association	1980	Outside
SB-01025	*Archaeological, Historical, And Paleontological Site Survey for County Service Area No. 70 Improvement Zone "J", Assessments of Impact and Recommendations*	Harris, Ruth: San Bernardino County Museum Association	1973	Outside
SB-01026	*Archaeological, Historical and Paleontological Site Survey for County Service Area No. 70, Improvement Zone "J", Assessments of Impact and Recommendations*	Harris, Ruth: San Bernardino County Museum Association	1974	Outside
SB-01027	*Cultural Resources Assessment: Baldy Mesa Water Lines, County Service Area 70, Improvement Zone J, San Bernardino County, California*	Reynolds, Robert E.: San Bernardino County Museum Association	1980	Outside

Report No.	Study Title	Author and Affiliation	Year	Relationship to Project Area
SB-02314	*An Archaeological Assessment of a 9.23-Acre Parcel Located Immediately Northeast of the Intersection of Main Street and Topaz Avenue in Hesperia, San Bernardino County*	White, Robert S.: Archaeological Associates	1991	Outside
SB-02476	*A Phase I Linear Survey: Cultural Resources Investigations for the Hesperia Improvement District, Hesperia, San Bernardino County, California*	Mckenna, Jeanette A.: Mckenna et al.	1991	Outside
SB-02802	*Historical Structures Assessment for the Phelan Road Widening Project, Baldy Mesa Road to Los Banos Road, County of San Bernardino, California*	Brock, James: Archaeological Advisory Group	1993	Outside
SB-03020	*(Draft) Adelanto-Lugo Transmission Project Cultural Resources Assessment*	Sturm, Brad, D. Mclean, K. Becker, and J. Rosenthal: Woodward-Clyde	1993	Outside
SB-04575	*Cultural Resources Survey of the Feole Property, APN: 0405-052-02, Hesperia, San Bernardino County, California*	Austerman, Virginia and Kenneth M. Becker: Unknown	2005	Outside
SB-04790	*Historical/ Archaeological Resources Survey Report: Tentative Tract Map No. 17916, in the City of Hesperia, County of San Bernardino, California*	Jacquemain, Terri, Hruby, Zachary X., and Josh Smallwood: Unknown Affiliation	2006	Outside
SB-04791	*Historical/ Archaeological Resources Survey Report: Tentative Tract Map No. 17915, in the City of Hesperia, San Bernardino County, California*	Jacquemain, Terri and Smallwood, Josh: Unknown Affiliation	2006	Outside
SB-04975	*Historical/Archaeological Resources Survey Report: Baldy Mesa Water District Arsenic Treatment Project, Cities of Victorville and Hesperia, San Bernardino County, California*	Wetherbee, Matthew: CRM Tech	2005	Outside
SB-05216	*Results of a Phase 1 Cultural Resources Investigation for the Proposed Wal-Mart Supercenter Approximately 38 Acres in the City of Hesperia, San Bernardino County, California*	Mckenna, Jeanette: Unknown	2006	Outside
SB-05218	*A Cultural Resources Assessment of TT 17243, a 30-Acre Parcel Located Northeast of the Intersection of Topaz Avenue and Mesa Street, City of Hesperia, San Bernardino County, California*	White, Robert S. and White, Laura S.: Archaeological Associates	2005	Outside
SB-06652	*Preliminary Archaeological Survey Report for 98 Linear Miles of the East Branch Extension of the California Aqueduct for the DWR East Branch Enlargement Project Los Angeles and San Bernardino Counties (California)*	ESA: Unknown	2010	Outside
SB-06858	*Cultural Resources Study: Main Street Corridor Project, City of Hesperia, San Bernardino County, California*	Smallwood, Josh: Ecorp	2010	Outside
SB-06859	***Identification and Evaluation of Historic Properties: Town of Apple Valley and City of Hesperia Wastewater Reclamation Plants and Related Facilities Project, Victor Valley Area, San Bernardino County, California***	**Tang, Bai "Tom", Terri Jacquemain, Daniel Ballester, and Harry Quinn: CRM Tech**	**2010**	**Overlapping**
SB-07118	*Phase I Cultural Resource Survey St. Mary Medical Center-Oasis Project, City of Victorville, San Bernardino County, California*	Said, Arabesque, Michael Dice, and Kenneth J. Lord: Michael Brandman Associates	2011	Outside
SB-07156	*Historical/Archaeological Resources Survey Report: Water Supply System Improvements Projects, Fiscal Years 2010/2011 – 2014/2015, Victorville Water District, San Bernardino County, California*	Tang, Bai "Tom", Daniel Ballester, and Nina Gallardo: CRM Tech	2011	Outside

Report No.	Study Title	Author and Affiliation	Year	Relationship to Project Area
SB-07402	*Cultural Resource Records Search Results for Verizon Wireless Candidate "Mesa Street", Unaddressed Parcel, APN: 0405-331-22-0000, Victorville, San Bernardino County, California*	Bonner, Wayne H. and Sarah A. Williams: Michael Brandman Associates	2012	Outside
SB-07481	*Identification and Evaluation of Historic Properties: Town of Apple Valley Force Mains and Percolation Basins Project and City of Hesperia Recharge Basins and Lift Station Project, Victor Valley Area, San Bernardino County, California*	Hogan, Michael, Bai "Tom" Tang, Terri Jacquemain, Daniel Ballester, and Harry Quinn: Unknown Affiliation	2012	Outside
SB-07494	*G.O. 131-D Victor-Aqueduct-Phelan 115kV Replacement Project*	Clark, Fatima V. and Dave Hanna: Southern California Edison	2013	Outside
SB-07495	*Cultural Resource Assessment for the Mojave Water Agency Groundwater Regional Recharge and Recovery (R3) Project, San Bernardino County, California*	Gust, Sherri and Molly Valasik: Cogstone	2011	Outside
SB-07496	*Monitoring Compliance Report for Construction of the Mojave Water Agency Regional Recharge and Recovery (R3) Project, San Bernardino County, California*	Gust, Sherri and Courtney Richards: Cogstone	2012	Outside
SB-07840	*Addendum to Identification and Evaluation of Historic Properties: Town of Apple Valley Force Mains and Percolation Basins Project and City of Hesperia Recharge Basins and Lift Station Project, Victor Valley Area, San Bernardino County, California*	Tang, Bai "Tom": CRM Tech	2014	Outside
SB-07845	*Cultural Resource Records Search and Site Visit Results for T-Mobile West, LLC, Candidate IE24883A (IE883 M5-T2 Lugo SCE), 9950 Pyrite Avenue, Hesperia, San Bernardino County, California*	Bonner, Wayne H., Sarah A. Williams, and Kathleen A. Crawford: EAS	2014	Outside
SB-07846	*Direct APE Historic Architectural Assessment for T-Mobile West, LLC, Candidate IE24883A (IE883 M5-T2 Lugo SCE), 9950 Pyrite Avenue, Hesperia, San Bernardino County, California*	Crawford, Kathleen A.: EAS	2014	Outside
SB-07953	*Cultural Resource Assessment Report Victorville 2 Hybrid Power Project San Bernardino County, California*	Estes, Allen, Thomas Young, Nazih Fino, Aimee Arrigoni, Eric Strother, and James Allan: William Self Associates, Inc.	2007	Outside

Previously Recorded Resources

The records search also identified 21 previously recorded cultural resources within a 1-mile radius of the project area. These resources are all historic in age and include 10 refuse scatters, three transmission lines, one road, four historic-era isolates, and three built environment resources (two buildings and a segment of the East Branch of the California Aqueduct). None of these resources overlap the project area. The results are summarized in Table 3.

Table 3. Previously Recorded Cultural Resources within 1 mile of the Project Area

Primary No. (Trinomial)	Temporal Affiliation	Resource Type	Resource Description	Year Recorded (Recorded By)	Relationship to Project Area
P-36-004251 (CA-SBR-004251H)	Historic-era	Structure	Baldy Mesa Pole Line	1980 (R. Reynolds, SBCM); 1991 (J Petersen, Archaeological Research Unit); 1993 (Kenneth Becker, RMW Paleo); 1993 (Kenneth Becker, RMW Paleo); 2009 (Kathrine Anderson, ESA); 2010 (J Coleman, Solano Archaeological Services); 2011 (Josh Trampier, SRI); 2018 (Carleton Bennett, LSA)	Outside
P-36-004275 (CA-SBR-004275H)	Historic-era	Road	Toll Road – Houghton's Crossing Road	1980 (R. Reynolds); 1991 (Knell, RMW Paleo); 1993 (Becker; Phillips); 2002 (Cotterman); 2010 (Molly Valasik)	Outside
P-36-007743 (CA-SBR-007743)	Historic-era	Site	Refuse scatter	1993 (Kenneth Becker, RMW Paleo); 2019 (D. Dang, Garcia and Associates)	Outside
P-36-007744 (CA-SBR-007744H)	Historic-era	Site	Refuse scatter	1993 (Becker et al.)	Outside
P-36-007745 (CA-SBR-007745H)	Historic-era	Site	Refuse scatter	1993 (Becker et al.)	Outside
P-36-010315 (CA-SBR-010315H)	Historic-era	Structure	Edison Company Boulder Dam–San Bernardino Electrical Transmission Line	1988 (N. Neuenschwander, Peak & Associates, Inc); 1989 (J. Brock, Archaeo Advisory Group); 1993; 1997 (Neal Neuenschwander, Peak & Associates); 1997 (Carrie Wills, WSA); 2006 (Roger Hatheway, Hatheway & Associates); 2008 (Jay K. Sander, Chambers); 2008; 2009 (Stephen Pappas, ECORP); 2010 (J. Howard, ECORP); 2011 (S. Kremkau, SRI); 2011 (Justin Lev-Tov, SRI); 2012 (C. Bodmer, Chambers Group, Inc); 2012 (N. Lawson, CH2M Hill); 2013 (C. Higgins, Far Western); 2013 (M. O'Neill, Pacific Legacy); 2014 (Wendly L. Tinsley Becker, Urbana Preservation & Planning); 2015 (Audry Williams, SCE); 2018 (Carole Denardo, L&L); 2023 (Jared Miles, SWCA)	Outside
P-36-010316 (CA-SBR-010316H)	Historic-era	Structure	Kramer-Victorville Transmission Line	Unknown	Outside
P-36-015472	Historic-era	Site	Site of Hula Ville	1977 (Albert Hurtado); 1982 (James Arbuckle); 2011 (Arabesque A. Said and Michael Dice, Michael Brandman Associates)	Outside

Primary No. (Trinomial)	Temporal Affiliation	Resource Type	Resource Description	Year Recorded (Recorded By)	Relationship to Project Area
P-36-020764	Historic-era	Building	14393 Main St., Hesperia	2009 (Josh Smallwood, ECORP Consulting, Inc.)	Outside
P-36-020765	Historic-era	Building	14602 Main St., Hesperia	2009 (Josh Smallwood, ECORP Consulting, Inc.)	Outside
P-36-021287	Historic-era	Site	Refuse scatter	2006 (Allen Estes and Eric Strother, William Self Associates, Inc.)	Outside
P-36-021289	Historic-era	Site	Refuse scatter	2006 (WSA)	Outside
P-36-021300	Historic-era	Site	Refuse scatter	2007 (Allen Estes and David Buckley, William Self Associates, Inc.)	Outside
P-36-021301	Historic-era	Site	Refuse scatter	2007 (WSA)	Outside
P-36-021304	Historic-era	Site	Refuse scatter	2007 (Allen Estes and David Buckley, William Self Associates, Inc.)	Outside
P-36-021351 (CA-SBR-015913H)	Historic-era	Structure	East Branch of the California Aqueduct	2008 (Jeremy Hollins, URS Corp); 2009 (Katherine Anderson, ESA); 2011 (S. Kremkau, SRI); 2011 (Patricia Ambacher, AECOM); 2011 (Katherine Anderson, ESA); 2012 (M. O'Neill, P. Clarkson, and C. Hagan, Pacific Legacy, Inc.) 2019 (Urbana Preservation & Planning, LLC)	Outside
P-36-021365 (CA-SBR-013724H)	Historic-era	Site	Refuse scatter	2009 (M. Bray, ESA)	Outside
P-36-060846	Historic-era	Isolate	Single glass bottle fragments and hole-in-cap can	1993 (Kenneth Becker and Jodie Phillips, RMW Paleo Associates)	Outside
P-36-060847	Historic-era	Isolate	Glass bottle base	1993 (Kenneth Becker and Jodie Phillips, RMW Paleo Associates)	Outside
P-36-060848	Historic-era	Isolate	Bottle fragment	1993 (RMW Paleo)	Outside
P-36-060849	Historic-era	Isolate	Hole-in-cap can	1993 (RMW Paleo)	Outside

Sacred Lands File Search

On August 15, 2024, SWCA received the results of the SLF search from the NAHC. The results letter indicated that the results were positive and recommended contacting the San Manuel Band of Mission Indians and Chemehuevi Indian Tribe. Additional representatives of Native Americans with traditional affiliations to the project area were included on a contact list (see Appendix B). The NAHC recommended that each person be contacted to request any additional information they may have regarding unlisted or potential resources.

SWCA sent outreach letters via email and U.S. Postal Service on March 19, 2025, to the 21 individuals on the NAHC contact list. Follow up emails and/or phone calls will be conducted April 1, 2025, to those individuals that have not responded to the initial outreach effort. A summary of these outreach efforts will be provided below upon conducting the follow up effort.

Table 4. NAHC's Native American Contact List Included with the SLF Results

Name, Title	Affiliation
Lacy Padilla, Director of Historic Preservation/THPO	Agua Caliente Band of Cahuilla Indians
Christina Swindall Martinez, Secretary	Gabrieleño Band of Mission Indians - Kizh Nation
Andrew Salas, Chairperson	Gabrieleño Band of Mission Indians - Kizh Nation
Anthony Morales, Chairperson	Gabrieleno/Tongva San Gabriel Band of Mission Indians
Robert Dorame, Chairperson	Gabrielino Tongva Indians of California Tribal Council
Christina Conley, Cultural Resource Administrator	Gabrielino Tongva Indians of California Tribal Council
Sandonne Goad, Chairperson	Gabrielino/Tongva Nation
Sam Dunlap, Cultural Resource Director	Gabrielino-Tongva Tribe
Charles Alvarez, Chairperson	Gabrielino-Tongva Tribe
Robert Martin, Chairperson	Morongo Band of Mission Indians
Ann Brierty, THPO	Morongo Band of Mission Indians
Manfred Scott, Acting Chairman – Kw'ts'an Cultural Committee	Quechan Tribe of the Fort Yuma Reservation
Jordan Joaquin, President, Quechan Tribal Council	Quechan Tribe of the Fort Yuma Reservation
Jill McCormick, Historic Preservation Officer	Quechan Tribe of the Fort Yuma Reservation
Donna Yocum, Chairperson	San Fernando Band of Mission Indians
Alexandra McCleary, Senior Manager of Cultural Resources Management	San Manuel Band of Mission Indians
Mark Cochrane, Co-Chairperson	Serrano Nation of Mission Indians
Wayne Walker, Co-Chairperson	Serrano Nation of Mission Indians
Nicolas Garza, Cultural Resources Specialist	Twenty-Nine Palms Band of Mission Indians
Christopher Nicosia, Cultural Resources Manager/THPO Manager	Twenty-Nine Palms Band of Mission Indians
Sarah O'Brien, Tribal Archivist	Twenty-Nine Palms Band of Mission Indians

Historical Aerial and Map Review

SWCA reviewed aerial images, available via the University of California, Santa Barbara Aerial Imagery Library (2024) and NETROnline Historic Aerials (2024) dating from 1939 to the present day. The earliest aerial image available for the project area (1939) indicates that the project and the general area was undeveloped. Several unpaved, dirt trails in the area as well what appears to be a paved road in the location of present-day I-15. A dry wash appears to be present directly to the northwest of the project area, and the larger Oro Grande Wash is visible further to the northwest. The next aerial (1952) shows the project area as vacant; however, several small residences with associated dirt roads had been built within the area, including directly to the north of the project area. By 1959 several of the subdivisions east of Tamarisk and the subdivision directly south of the project area had been laid out, although only a few houses were present at this time. By 1968, I-15 appears to have been expanded to its current extent. There were no other discernible changes to the project area or surrounding vicinity visible on this aerial; however, by 1980 the subdivisions surrounding the area contained considerably more residential developments. The project area was still undeveloped at this time. The growth in residential developments in the general area continued through the end of the 1980s and throughout the 1990s. Between 1985 and 1990 the home that was directly to the north of the project area was demolished, and between 2005 and

2009, Topaz Avenue was paved. Throughout the 2020s residential development within the general area has continued, although the project area has remained vacant throughout this time.

SWCA reviewed USGS quadrangles, available via the USGS Historical Topographic Map Explorer (USGS 2024) and NETROnline Historic Aerials (2024), dating from 1902 to 2021. Generally speaking, these maps correspond with the information depicted in the above-referenced aerials; however, they add little additional information that would help characterize the history of the project area. As shown on these topographic maps, the project area has never been developed and the surrounding area was very sparsely developed throughout much of the twentieth century. Beginning in the 1980s, the subdivisions surrounding the project area began to slowly take shape.

Cultural Resource Survey

The results of the field survey indicate that the project area consists of a flat parcel with areas of visible natural erosion and construction-related disturbances including a dirt path with signs of vehicle traffic. Ground visibility was good throughout the project area at approximately 60% to 85%. There is scattered modern refuse throughout the property. The surrounding vegetation included several Joshua trees in varying states of maturity, low-lying seasonal grasses, and sparse shrubs. Sediments across the project area consisted of gray-brown, sandy loam with gravel inclusions. No cultural resources were identified in the project area during the field survey.

Archaeological Sensitivity Assessment

The project area has never been developed as indicated by historic aerial images and topographic maps. The project is located to the north and west of residential subdivisions which were primarily developed between 1980 and the early 2000s. The nearest development to the project area historically included a residential development directly to the north which was present by 1952 and was demolished between 1985 and 1990. Due to the lack of developments within the project area historically, it is expected that historic period archaeological remains would be limited to sparse refuse scatters from opportunistic dumping episodes. This is further supported by the presence of refuse scatters and isolated refuse items identified by the record search within 1 mile of the project area. These types of archaeological deposits generally contain surficial evidence. As such, SWCA finds the project area likely has a low sensitivity for containing historic period archaeological resources.

The project area is located within territory that was once occupied by the Serrano, and although there are seasonal water sources near the area that may have provided important natural resources to Native American groups during parts of the year, there is a lack of permanent and reliable sources of water or other resources. There are no known prehistoric resources within 1 mile of the project area or within the project area, which was intensively surveyed as part of a cultural resource assessment conducted by CRM Tech in 2010 and again as part of this study (Tang et al. 2010). As part of the 2010 study, the soils within the project area were identified as primarily Pleistocene in age, and therefore likely too old to support the preservation of intact archaeological deposits. Although, as discussed in the prehistoric context section, there is some evidence for Pleistocene age occupation of the Mojave Desert, specifically in the China Lake region, no such evidence has yet been found in the vicinity of the project area (Davis 1975). Therefore, SWCA finds the project area likely has a low sensitivity for containing prehistoric archaeological resources.

CONCLUSIONS AND MANAGEMENT RECOMMENDATIONS

The cultural resource assessment included an examination of CHRIS records, communication with Native American tribal representatives, archival and background research, a buried site sensitivity assessment, and a pedestrian survey. No archaeological resources were identified within the project area as a result of the assessment. Additionally, SWCA considers the sensitivity for unidentified prehistoric and historic Native American-affiliated archaeological resources to be low and the sensitivity for historic period (non-Native American) archaeological resources to be low. However, archaeological resources, while unanticipated, are unpredictable and the possibility of encountering as-yet unidentified archaeological resources within the project area cannot be completely ruled out.

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 (National Park Service 1983) can evaluate the find. If the discovery proves to be eligible for listing on the CRHR, then additional work, such as data recovery excavations, may be warranted to reduce the impacts under CEQA. Additionally, Health and Safety Code Section 7050.5, CEQA Guidelines Section 15064.5(e), and PRC Section 5097.98 mandate the process to be followed in the unlikely event of the discovery of human remains. Finally, if the project area is expanded to include areas not covered by this study or other recent cultural resource investigations, additional studies may be required.

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APPENDIX A

Figures

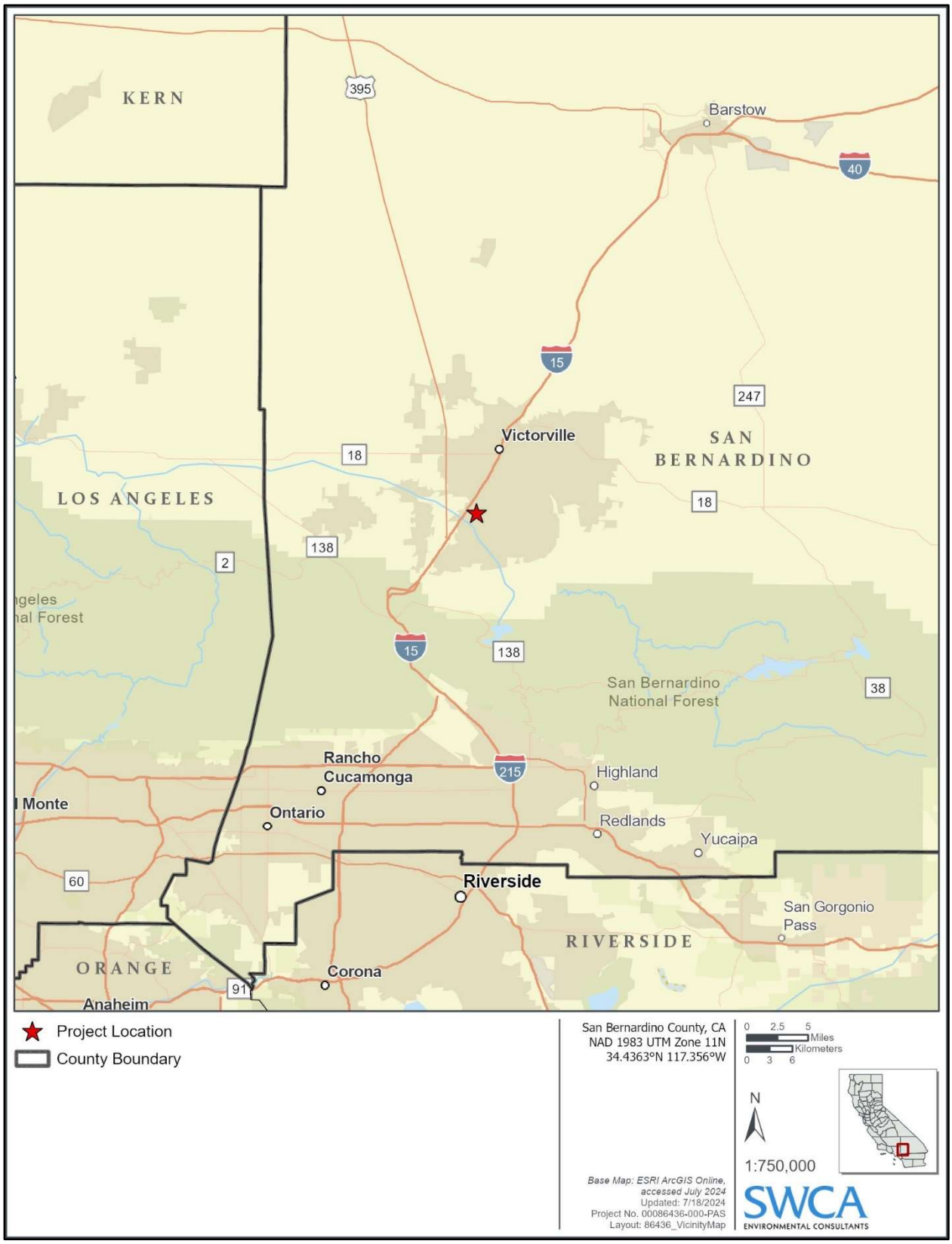

Figure A-1. Project vicinity map.

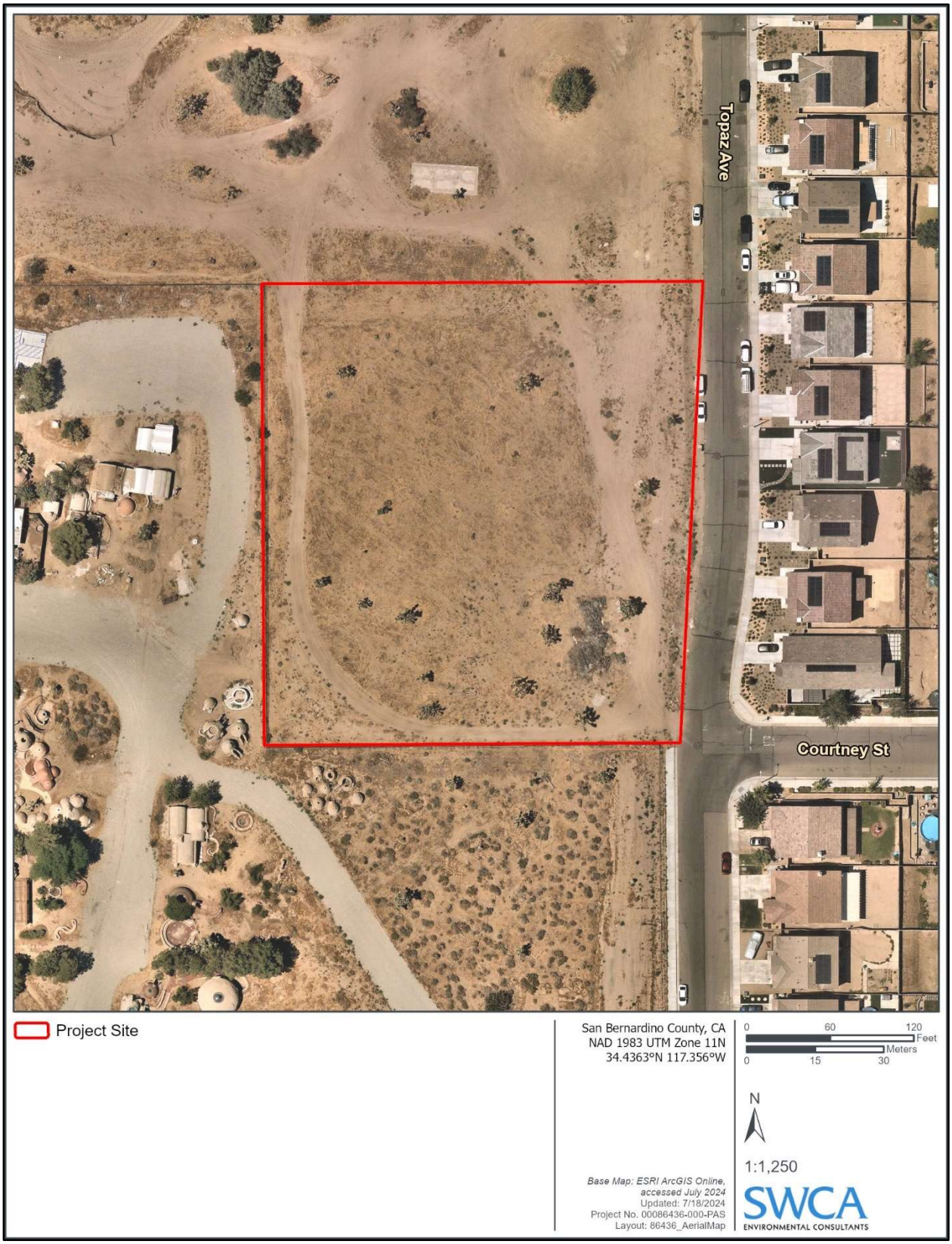

Figure A-2. Project site shown on aerial map.

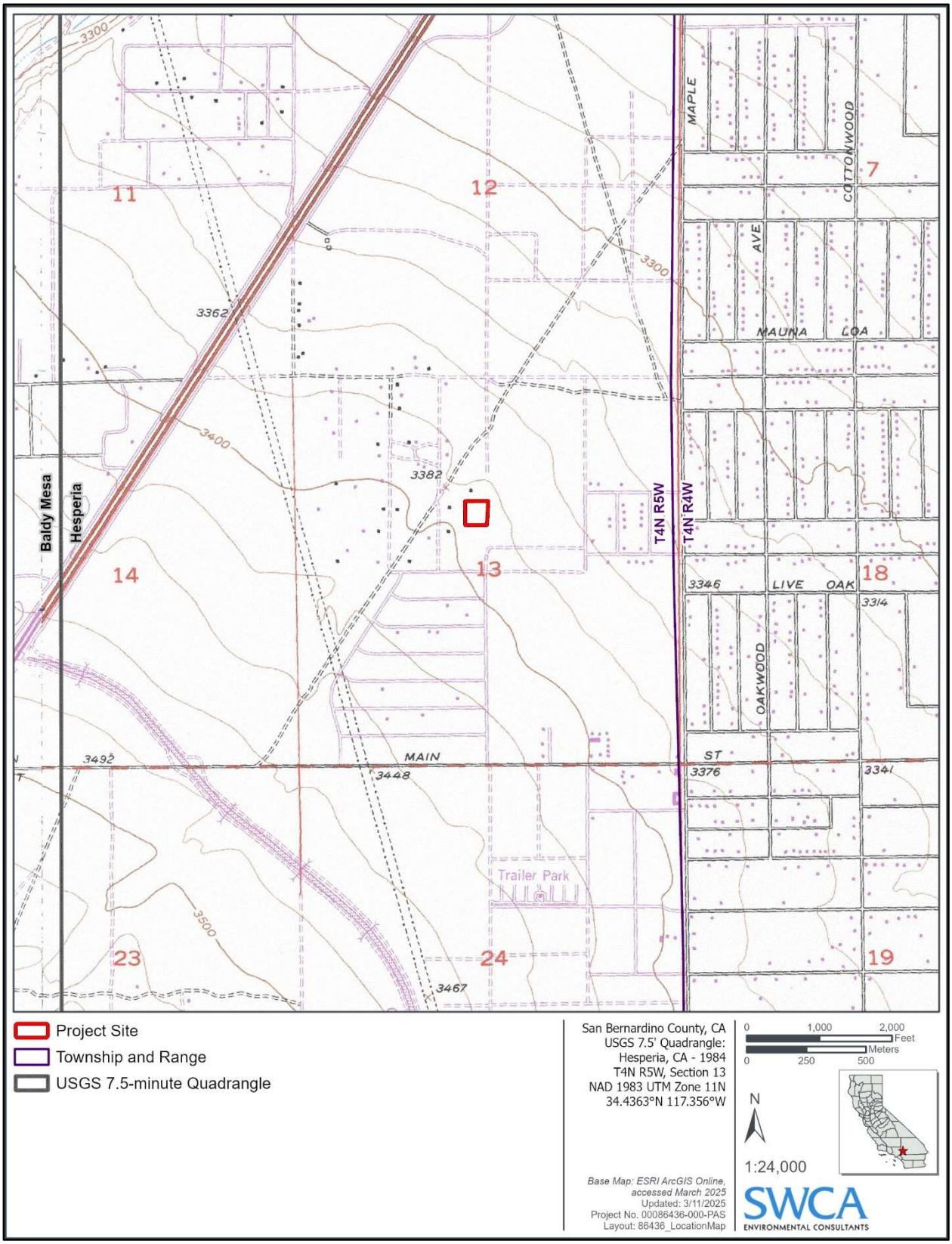

Figure A-3. Project site mapped on the U.S. Geological Survey (USGS) Hesperia, California, quadrangle.

Appendix B

Native American Heritage Commission
Sacred Lands File Search Results

NATIVE AMERICAN HERITAGE COMMISSION

NAHC HEADQUARTERS
1550 Harbor Boulevard
Suite 100
West Sacramento,
California 95691
(916) 373-3710
nahc@nahc.ca.gov

August 15, 2024

Erica Nicolay
SWCA Environmental Consultants

Via Email to: erica.nicolay@swca.com

Re: Hesperia Topaz Project (Project Number 86436) Project, San Bernardino County

Dear Ms. Nicolay:

A record search of the Native American Heritage Commission (NAHC) Sacred Lands File (SLF) was completed for the information submitted for the above referenced project. The results were positive. Please contact the San Manuel Band of Mission Indians and Chemehuevi Indian Tribe on the attached list for information. Please note that tribes do not always record their sacred sites in the SLF, nor are they required to do so. A SLF search is not a substitute for consultation with tribes that are traditionally and culturally affiliated with a project's geographic area. Other sources of cultural resources should also be contacted for information regarding known and recorded sites, such as the appropriate regional California Historical Research Information System (CHRIS) archaeological Information Center for the presence of recorded archaeological sites.

Attached is a list of Native American tribes who may also have knowledge of cultural resources in the project area. This list should provide a starting place in locating areas of potential adverse impact within the proposed project area. Please contact all of those listed; if they cannot supply information, they may recommend others with specific knowledge. By contacting all those listed, your organization will be better able to respond to claims of failure to consult with the appropriate tribe. If a response has not been received within two weeks of notification, the Commission requests that you follow-up with a telephone call or email to ensure that the project information has been received.

If you receive notification of change of addresses and phone numbers from tribes, please notify the NAHC. With your assistance, we can assure that our lists contain current information.

If you have any questions or need additional information, please contact me at my email address: Cameron.vela@nahc.ca.gov.

Sincerely,

Cameron Vela

Cameron Vela
Cultural Resources Analyst

Attachment