



Mid-Coachella Canal Storage Project

Cultural Resources Technical Report

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Submitted to:

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Submitted to: Coachella Valley Water District

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Acreage: Approximately 120 acres

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ACRONYMS AND ABBREVIATIONS

AB	Assembly Bill
ACBCI	Agua Caliente Band of Cahuilla Indians
AMSL	above mean sea level
ASM	ASM Affiliates, Inc.
B.P.	Before Present
Canal	Coachella Canal
CCLP	Coachella Canal Lining Project
CCR	California Code of Regulations
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CMAGR	Chocolate Mountains Aerial Gunnery Range
CRHR	California Register of Historical Resources
CVWD	Coachella Valley Water District
HELIX	HELIX Environmental Planning, Inc.
IID	Imperial Irrigation District
NAHC	Native American Heritage Commission
NHPA	National Historic Preservation Act
NRHP	National Register of Historic Places
O&M	operations and maintenance
OHP	Office of Historic Preservation
PRC	Public Resources Code
project	Mid-Coachella Canal Storage Project
Reclamation	Bureau of Reclamation
ROW	right of way
RPA	Register of Professional Archaeologists/Registered Professional Archaeologist
SCIC	South Coastal Information Center
SDCWA	San Diego County Water Authority
SHPO	State Historic Preservation Officer
SOIS	Secretary of the Interior Standards
SPRR	Southern Pacific Railroad

ACRONYMS AND ABBREVIATIONS (cont.)

TCP	Traditional Cultural Properties
TCR	Tribal Cultural Resources
USDI	U.S. Department of the Interior
USGS	U.S. Geological Survey

EXECUTIVE SUMMARY

Harvey Consulting Group, Inc. contracted HELIX Environmental Planning, Inc. (HELIX) to provide cultural resources services for the Mid-Coachella Canal Storage Project (project) in the community of Wister, Imperial County, California. The project is a proposed approximately 120-acre redesign of the Coachella Canal (Canal); the redesign will entail the removal of the concrete lining through the segments between siphon 11 and siphon 14 and the removal of the embankment between the original earthen canal and the new, concrete-lined portion of the Canal between siphons 11 and 14 to create a clay-lined storage reservoir. This assessment intends to determine the potential of ground disturbances associated with this project to affect significant cultural resources. The results of this assessment, which addresses both historic-era and prehistoric resources, is based on the results of an archival records search and research, Sacred Lands File search, Native American coordination, a site visit to the proposed project area, and an assessment of the significance of impacts to archaeological resources and historic-era structures. This report details the methods and results of the cultural resources study and has been prepared to comply with the California Environmental Quality Act (CEQA). A separate report was prepared for the U.S. Department of the Interior (USDI) Bureau of Reclamation, the federal lead agency for the project, to comply with Section 106 of the National Historic Preservation Act (NHPA), as amended.

An archaeological records search, conducted at the South Coastal Information Center (SCIC) on December 07, 2021, indicated that 20 previous cultural resource studies occur within the records search limits, four of which overlap with the project area. The studies consist of cultural resource reviews, environmental impact reports, a biological survey, a mining and reclamation plan, resource inventory and evaluation reports, a historic and archaeological resources protection (HARP) plan, an archaeological and cultural resources surveys, history of local development, and a consultation report. The records search results also indicated that a total of 22 cultural resources have been previously recorded within one-half mile of the project area; one of which has been documented within the project site (P-13-007858/33-005705). P-13-007858/P-33-005705 is the National Register of Historic Places-eligible Canal, which was constructed between 1938 and 1948.

The field investigations included a site visit of the study area by a HELIX archaeologist, architectural historian, and a Native American monitor and Tribal Archaeologist from the Agua Caliente Band of Cahuilla Indians on January 6, 2022. The site visit did not result in the identification of any cultural material within the project area. However, the Canal itself is a historic property that is both an archaeological and historic built environment resource.; it is eligible for, but not listed in, the National Register of Historic Places (NRHP).

Based on the results of the current study, the Mid-Coachella Canal Project will not affect historic properties. While the proposed work will essentially redesign the portion of the Canal within the project area, the work is limited to the removal of an embankment between the original, unlined Coachella Canal and a parallel canal constructed when the original canal was lined in 2006. No historic features contributing to the significance of the Canal will be impacted by the work. The infilling of the unlined, old canal with water will serve to restore this portion of the feature to a use that mirrors its original purpose as a water conveyance feature. Re-inundating the portion of the unlined canal will also help to preserve the portion of the unlined old canal between siphons 11 and 14, which is currently abandoned.

While no additional archaeological sites have been identified within the project (other than the Canal itself), the area surrounding the project is highly sensitive for archaeological deposits. The potential exists that intact cultural resources may be present within the middle embankment that will be removed

for the project. In addition, because the Canal was built prior to the advent of laws protecting cultural resources, no archaeological study of the Canal alignment was conducted prior to the feature's construction. As such, human remains or cultural items protected under the NHPA and/or the Native American Graves Protection and Repatriation Act may occur within the previously disturbed soils within the project. In addition, any such items, whether identified in an intact or disturbed deposit, would likely be considered by the consulting Tribes to be Tribal Cultural Resources and would need to be treated as such.

A cultural resources monitoring program should be conducted during project development. The monitoring program would include attendance by the archaeologist at a pre-construction meeting with the grading contractor and the presence of an archaeological monitor during initial ground-disturbing activities in areas that will be over excavated in previously undisturbed soils. An archaeological monitor would have the authority to temporarily halt or redirect grading and other ground-disturbing activity in the event that cultural resources are encountered. If significant cultural material is encountered, the project archaeologist will coordinate with the Coachella Valley Water District and the USDI Bureau of Reclamation to develop and implement appropriate mitigation measures.

1.0 INTRODUCTION

Harvey Consulting Group, Inc. contracted HELIX Environmental Planning, Inc. (HELIX) to provide cultural resources services for the Mid-Coachella Canal Storage Project (project) in the community of Wister, Imperial County, California. The project is a proposed expansion of the Coachella Canal (Canal) by removing the berm between the original unlined canal and a more recently constructed lined parallel canal. Once the berm has been removed, an approximate 120-acre clay-lined water storage area comprised of three cells will be created along the length of the Canal between Check 11 (MP 54.6) and Check 14 (MP 59.5). A cultural resources study, including a records search, Sacred Lands File search, Native American outreach, archival research, a review of historic aerial photographs and maps, and a site visit of the project area, was completed. This report details the methods and results of the cultural resources study and has been prepared to comply with the California Environmental Quality Act (CEQA).

1.1 PROJECT LOCATION

The project is located near the community of Wister, in Imperial County (Figure 1, *Regional Location*). The project is situated in Township 9 South, Range 14 East, east ½ of Section 36; southwest ¼ of southwest ¼ of Section 31; east ½ of Section 6; southwest 1/4 of Section 5; northeast ¼ of Section 8; south ½ of Section 9; northwest ¼ of Section 15, on the U.S. Geological Survey (USGS) 7.5' Wister quadrangle (Figure 2, *USGS Topography*). The approximately 120-acre project site is located within Assessor's Parcel Numbers 003-050-018, 003-050-025, 003-120-014, 003-120-022, 003-130-006, 003-200-047, and 003-210-001, and bordered by Gasline Road to the east and Coachella Canal Road to the west (Figure 3, *Aerial Photograph*). The U.S. Navy's Chocolate Mountain Aerial Gunnery Range (CMAGR) sits adjacent to the eastern edge of the project.

1.2 PROJECT DESCRIPTION

The Coachella Canal is a branch of the All-American Canal that brings water from the Lower Colorado River into the Imperial and Coachella valleys. The Coachella Canal is owned by the US Department of the Interior (USDI) Bureau of Reclamation (Reclamation) and operated and maintained under contract by the Coachella Valley Water District (CVWD). The Coachella Canal Lining Project (CCLP) is a water conservation project completed in 2006 under an agreement between Reclamation, CVWD, and the San Diego County Water Authority (SDCWA). CCLP resulted in a parallel 32-mile-long segment of a concrete-lined canal that replaced the adjacent original earthen canal as a means of reducing seepage losses to conserve water and make that water available for transfer to the SDCWA.

An approximately 4.5-mile segment of the lined canal between siphons 11 and 14 crosses heavy clay soils that shrink and swell seasonally, resulting in cracked panels of the concrete lining that have required significant maintenance. In addition, the Canal has very limited operational flexibility due to its lack of storage capability. The purpose of the proposed project is to bury the concrete lining through the segments between siphon 11 and siphon 14, thereby resolving the maintenance problems, and to remove the embankment between the original earthen canal and the lined canal to create a storage reservoir providing substantially improved operational flexibility. The estimated total footprint of the storage system to be developed is approximately 120 acres, with a storage capacity of approximately 728 acre-feet.

The project is proposed as an inline reservoir between Check 11 (Mile Post 54.6) and Check 14 (Mile Post 59.5). The reservoir will be formed by removing the existing embankment between the existing lined canal and the original earthen canal section to form single-wide trapezoidal sections. The materials removed will be used to construct more gradual canal side slopes (3:1) and to raise the invert by two feet. Existing check structures and siphons will remain in place. Check 11 will serve as the inlet control structure, and Check 14 will be the outlet control structure. The newer CCLP siphons (11, 12, and 13) will continue to be used to convey flow through the reservoir, with siphons 12 and 13 dividing the reservoir into three cells.

All work will be confined within the existing canal right-of-way (ROW), including the fence line on the western perimeter and the existing operations and maintenance (O&M) road just outside the fence line on the eastern side of the Canal. Three other elements of the project outside of the existing ROW include (1) the use of an existing staging area near the northern end of the project developed for the CCLP, a portion of which is still in use as an equipment storage yard by CVWD; (2) use of the existing and regularly used County road that parallels the Canal that will be used for transport from the staging area to the work site; and (3) reuse of existing rock rubble piles located along the west side of the Canal ROW north of the main project site, at Check 24. The rock rubble piles will likely be used as source material for bank armoring on the west-facing eastern edge of the original canal as it is converted into the storage reservoir. If needed, additional rock will be obtained from a commercial source. For either source, the material will be transported to the project site via the existing County Road.

Embankments near Check 14 will be raised to maximize the amount of useful storage and to allow for a maximum reservoir level three feet higher than the present canal design water level. Since the new reservoir invert is approximately two feet higher than the existing concrete canal invert, the maximum water depth in the reservoir is 12 feet at Check 14. Modifications to siphons 12 and 13 and Check 14 will be required to accommodate the higher water levels and raised inverts.

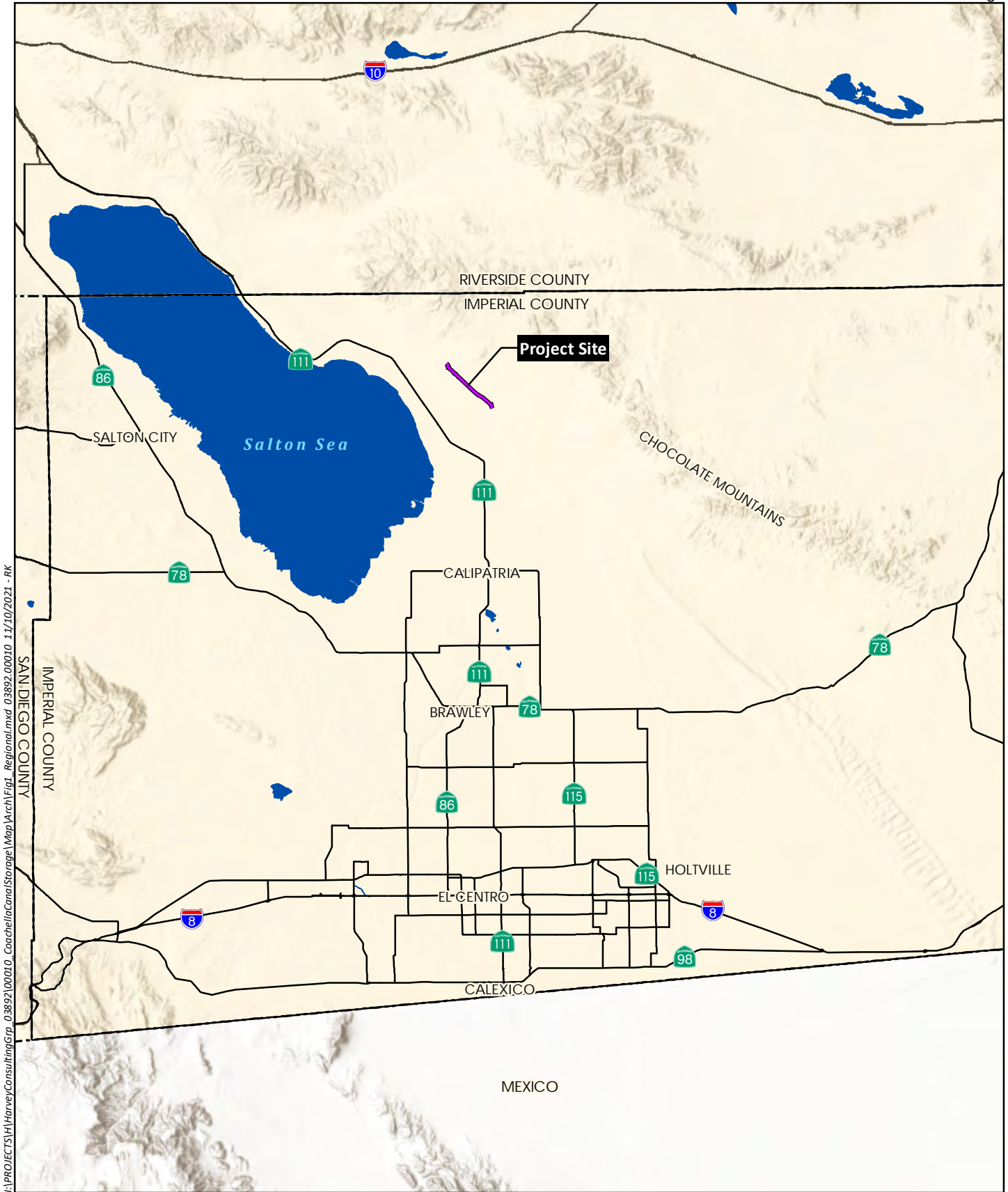
The reservoir will have three cells separated by siphons 12 and 13. With no additional control structures added at these two siphon inlets, the water surface will be almost level and at about the same elevation in all three cells during low-flow conditions (<400 cubic feet per second). At higher flow rates, the water surface will step down from upstream cell to downstream cell due to head loss through the siphons. The size of these steps will increase with flow rate, up to about a six-foot drop between cells at maximum canal flow. The three-cell reservoir will resemble a wide canal with three pools, except the water surface within each cell will be almost horizontal due to the increased cell width and resulting low flow velocity.

1.3 REGULATORY FRAMEWORK

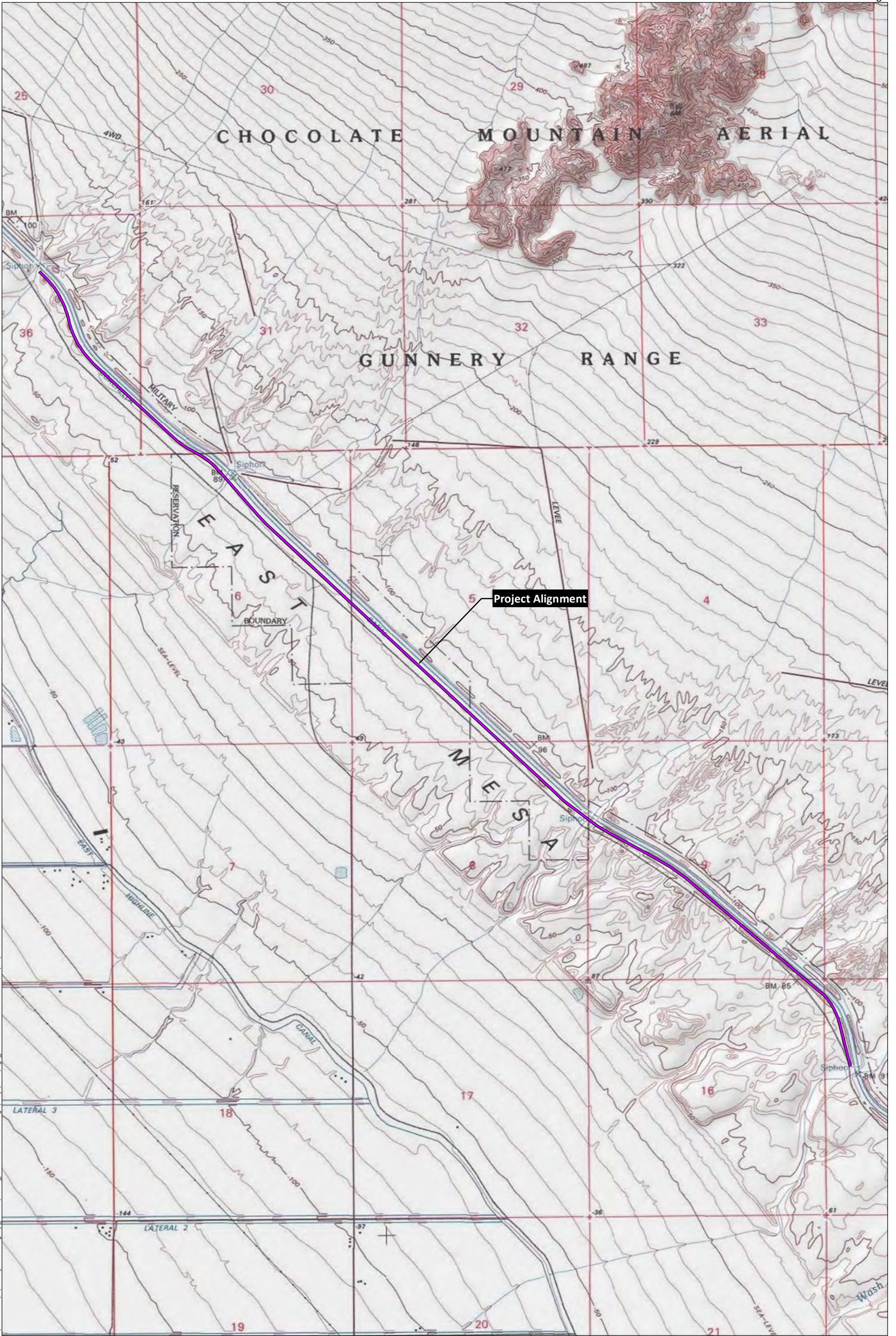
Cultural resources are defined as buildings, sites, structures, or objects, each of which may have historical, architectural, archaeological, cultural, and/or scientific importance. Significant resources are those resources that have been found eligible for listing in the California Register of Historical Resources (CRHR) or National Register of Historic Places (NRHP), as applicable.

1.3.1 Federal

Federal regulations that would be applicable to the project consist of the National Historic Preservation Act (NHPA) and its implementing regulations (16 United States Code 470 et seq., 36 Code of Federal Regulations [CFR] Part 800). Section 106 of the NHPA requires Federal agencies to account for the effects of their undertakings on “historic properties”, that is, properties (either historic or

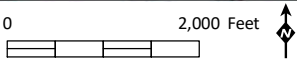


Source: Base Map Layers (Esri, 2013)



Project Alignment

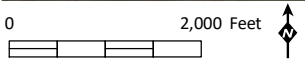
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Source: Wister 7.5' Quad (USGS)



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Source: Aerial (Esri 2019)

archaeological) that are eligible for the NRHP. To be eligible for the NRHP, a historic property must be significant at the local, state, or national level under one or more of the following four criteria:

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

1.3.2 State

CEQA, Public Resources Code (PRC) 21084.1, and California Code of Regulations (CCR) Title 14 Section 15064.5, address determining the significance of impacts to archaeological and historic resources (“historical resources”). Section 15064.5(b)(1) of the State CEQA Guidelines specifies that projects that cause “...physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historic resource would be materially impaired” shall be found to have a significant impact on the environment. Pursuant to CEQA, “historical resources” are defined as:

- resource(s) listed or determined eligible by the State Historical Resources Commission for listing in the CRHR (14 CCR Section 15064.5[a][1])
- resource(s) either listed in the National Register of Historic Places (NRHP) or in a “local register of historical resources” or identified as significant in a historical resource survey meeting the requirements of Section 5024.1(g) of the PRC, unless “the preponderance of evidence demonstrates that it is not historically or culturally significant” (14 CCR Section 15064.5[a][2])
- resources determined by the Lead Agency to meet the criteria for listing on the CRHR (14 CCR Section 15064.5[a][3])

For listing in the CRHR, a historical resource must be significant at the local, state, or national level under one or more of the following four criteria:

1. It is associated with events that have made a significant contribution to the broad patterns of local or regional history, or the cultural heritage of California or the United States;
2. It is associated with the lives of persons important to local, California, or national history;
3. It embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of a master or possesses high artistic values;
4. It has yielded, or has the potential to yield, information important to the prehistory or history of the local area, California, or the nation.

Under 14 CCR Section 15064.5(a)(4), a resource may also be considered a “historical resource” for the purposes of CEQA at the discretion of the lead agency.

All resources that are eligible for listing in the CRHR or the NRHP must have integrity, which is the authenticity of a historical resource’s physical identity evidenced by the survival of characteristics that existed during the resource’s period of significance. Resources, therefore, must retain enough of their historic character or appearance to be recognizable as historical resources and to convey the reasons for their significance. Integrity is evaluated with regard to the retention of location, design, setting, materials, workmanship, feeling, and association. In an archaeological deposit, integrity is assessed with reference to the preservation of material constituents and their culturally and historically meaningful spatial relationships. A resource must also be judged with reference to the particular criteria under which it is proposed for nomination.

In accordance with the National Park Service and CEQA Guidelines, projects that comply with the *Secretary of the Interior’s Standards for the Treatment of Historic Properties* and *Secretary’s Guidelines for Rehabilitation* (SOIS) are projects that retain the historic integrity of a resource. A project that complies with the SOIS is generally considered to be a project that will not cause a significant adverse impact to a historical resource.

The goal of the SOIS is to outline treatment approaches that allow for the retention of and/or sensitive changes to the distinctive materials and features that lend a historical resource its significance. The SOIS offer general recommendations for preserving, maintaining, repairing, and replacing historical materials and features. These standards also provide guidelines for rehabilitation to facilitate designing and making alterations in order to ensure that there are no adverse impacts to historic properties.

1.3.3 Native American Heritage Values

California State Assembly Bill 52 (AB 52) revised PRC Section 21074 to include Tribal Cultural Resources (TCRs) as an area of CEQA environmental impact analysis. As a general concept, a TCR is similar to the federally defined term Traditional Cultural Properties (TCP); however, it incorporates consideration of local and state significance and required mitigation under CEQA. According to Patricia L. Parker and Thomas F. King (1998), “Traditional” in this context refers to those beliefs, customs, and practices of a living community of people that have been passed down through the generations, usually orally or through practice. The traditional cultural significance of a historic property, then, is derived from the role the property plays in a community’s historically rooted beliefs, customs, and practices.

A TCR may be considered significant if it is (i) included in a local or state register of historical resources; (ii) determined by the lead agency to be significant pursuant to criteria set forth in PRC Section 5024.1; (iii) a geographically defined cultural landscape that meets one or more of these criteria; (iv) a historical resource described in PRC Section 21084.1 or a unique archaeological resource described in PRC Section 21083.2; or (v) a non-unique archaeological resource if it conforms with the above criteria.

1.3.4 Local Regulations

The project area is located within Imperial County. The Imperial County General Plan land use designations for the portion of the Coachella Canal affected by the project are primarily Recreation/Open Space, with small segments of this portion of the Canal in the Government/Special Public designation. The latter is associated with the assessor’s parcels within the CMAGR. The County’s General

Plan Open Space and Conservation Element does not identify the Coachella Canal as a historically sensitive linear feature or a tribally sensitive area in the sensitivity modeling maps (Imperial County 2016). However, the General Plan Land Use Element contains Goal 9 under the Protection of Environmental Resources to identify and preserve significant cultural resources. Objective 9.1 calls for preserving lands that contain watersheds, important natural resources, and prehistoric and historic sites as open space.

Zoning for the project area is primarily noted as “military” in the GS (Government/Special Public Zone, Zoning Map No. 49, Wister Area), with small segments zoned S-2 (Open Space/Preservation, Zoning Map No. 70, Open Space). The intent of the GS zone is to allow for the operation of government facilities and those with special public benefit uses. The primary purpose of the S-2 zone is for the preservation of natural and cultural resources and the open space areas that contain those resources. There are no specific historic preservation or cultural resource preservation ordinances in the Imperial County code.

1.4 PROJECT PERSONNEL

Mary Robbins-Wade, RPA served as the Principal Investigator for archaeology for the project. HELIX Cultural Resources Specialist Catherine A. Wright served as the project manager, participated in the site visit, and served as the primary author of this technical report. HELIX Architectural Historian Teri Delcamp also participated in the site visit and prepared the architectural history sections of this report. Resumes of key HELIX personnel are included as Appendix A. A Native American monitor and a Tribal archaeologist from the Agua Caliente Band of Cahuilla Indians (ACBCI) were also present for the site visit, which occurred on January 06, 2022.

2.0 PROJECT SETTING

2.1 NATURAL SETTING

The project area is situated within the western portion of the Colorado Desert, a subregion of the Sonoran Desert. The Colorado Desert is the largest and most arid subdivision of the Sonoran Desert. The Colorado Desert contains a variety of biogeographic subregions that reflect differences in terrain, hydrologic features, and biota. While intense monsoonal summer thunderstorms occur, the area is otherwise generally subjected to long, hot, and dry summers with moderate winters. Rainfall within Imperial County averages slightly more than three inches per year and is only slightly higher along the Colorado River, with an average annual rainfall of three to four inches (Morton 1977). The project area is situated along the eastern margin of a major physiographic and geologic feature of the Colorado Desert, the Salton Trough or Salton Basin. The Salton Trough is an extensive topographic and structural depression extending from the Gulf of California about 130 miles northwest through the Coachella Valley to the summit of San Geronio Pass (Hall 2007; Morton 1977). At the eastern edge of this trough, the Chocolate Mountains rise immediately to the east of the project, reaching elevations over 2,500 feet above mean sea level (AMSL). Elevation within the project area ranges from approximately 85 to 95 feet AMSL. The project area is characterized by open sandy desert, with some adjacent areas of agricultural fields. The Salton Sea is located nearby to the west.

The Gulf of California is separated from the southern end of the Salton Trough by the roughly 11-meter-high (36-foot-high) delta of the Colorado River, which slopes gradually downward to the north to about 226 feet below sea level at the Salton Sea, then rises gradually through the Coachella Valley. This feature

evolved during the late Cenozoic Era, resulting from tectonic forces that continue to the present day to separate the Baja California peninsula from mainland Mexico. These forces are manifested by numerous fault systems (including the San Andreas Fault) that have resulted in a deepening of the rift that, through the millennia, has contained bodies of either freshwater or saltwater. Intrusions of seawater into the rift first occurred during the late Cenozoic Era, during the Miocene and Pliocene epochs. During the last 10,000 years, the Colorado River has temporarily diverted into the trough numerous times, creating a large freshwater lake, the Late Prehistoric manifestation of which is designated as Lake Cahuilla. Lake Cahuilla, when full or even nearly full, would have encompassed the smaller present-day Salton Sea and covered much of the Imperial Valley, creating an extensive (but temporary) lacustrine environment (Apple et al. 1997; Schaefer 2006; Waters 1983). The last infilling occurred naturally in the seventeenth century (Laylander 1997). The project area is situated along the eastern maximum shoreline of this ancient lake. The current Salton Sea was created by accident in the early twentieth century during early canal construction in the area.

Geologically, the project area is underlain mostly by young alluvium and colluvium eroding from the Chocolate Mountains to the east as well as by aeolian and lacustrine deposits, both of which originate from the old Salton Basin lakebed. The Chocolate Mountains, situated immediately to the east of the project area, consist of very old (possibly Precambrian) metamorphic rocks as well as intrusive Miocene volcanic rocks. In general, prior to modern disturbance, the soils in the project area consisted of unconsolidated alluvium and colluvium derived from metamorphic bedrock or Cenozoic-aged lacustrine and aeolian sedimentary formations (Morton 1977). These soils are mostly moderate to excessively drained sands, gravelly sands, sands with cobbles, fine sands, and silty clays in lacustrine basin areas. In some areas, a clay layer occurs buried below a surface deposit of sand, gravel, or cobble materials. Wind and water erosion are both significant agents in soil erosion, and erosion from both is substantially evident in the area.

In general, creosote bush or low desert scrub is the most widespread native vegetation type in the Sonoran Desert, covering large expanses of the Colorado Desert. Other native plant communities include alkali sink, mesquite woodland, desert ironwood woodland, palo verde woodland, four-wing saltbush scrub, creosote bush-burrow weed scrub, brittlebush scrub, ocotillo scrub, and desert buckwheat scrub. The creosote bush scrub community is dominated by creosote bush (*Larrea tridentata*) and saltbush (*Atriplex canescens*) and occurs where the soil is more alkaline. With the exception of sparse creosote scrub, ocotillo (*Fouquieria splendens*), and brittlebush (*Encelia farinose*), little vegetation is present in surface-exposed sandy areas. Small shrubs such as mesquites (*Prosopis* sp.), burrobush (*Hymenoclea salsola* var. *pentalepis*), desert ironwood (*Olneya tesota*), desert broom (*Baccharis sarothroides*), and introduced tamarisk, are present along some valleys and dry water courses, with ocotillo sparsely present on alluvial fans (Hall 2007; Munz 1974).

The Colorado Desert is inhabited by a variety of faunal species well adapted to the dry and arid environment. Mammals commonly found in this region include kit fox (*Vulpes macrotis*), desert cottontail (*Sylvilagus audubonii*), black-tailed jackrabbit (*Lepus californicus*), and an array of rodents such as white-tailed antelope squirrel (*Ammospermophilus leucurus*), round-tailed ground squirrel (*Spermophilus tereticaudus*), desert and Merriam kangaroo rats (*Dipodomys merriami*), and desert pocket mouse (*Perognathus penicillatus*). Coyote (*Canis latrans*), desert bighorn sheep (*Ovis canadensis nelson*), and Sonoran pronghorn antelope (*Antilocapra americana sonorensis*) are among the larger mammals. The most common bat species in this area is the California leaf-nosed bat (*Macrotus californicus*). This region is also populated by a variety of reptiles, such as the fringed-toed lizard (*Uma inornata*, *U. notate*), flat-tailed horned lizard (*Phrynosoma m'calli*), desert tortoise (*Gopherus cinctus*),

chuckwalla (*Sauromalus obesus*), and desert iguana (*Dipsosaurus dorsalis*). Many snake species thrive in the hot, sandy ecosystem of the Colorado Desert as well, including the banded sandsnake (*Chilomeniscus cinctus*), sidewinder (*Crotalus cerastes*), and rosy boa (*Lichanura trivirgata gracia*) (Jaeger 1961).

Many of the animal species living within these plant communities are known to have been used by native inhabitants (Bean 1978). Rabbits and rodents were very important to the prehistoric diet. Bighorn sheep and pronghorn antelope were somewhat less significant for food but were an important source of leather and bone for tools and clothing. Many of the plant species naturally occurring in the project area and vicinity are known to have been used by native populations for food, medicine, tools, ceremonial, and other uses (Barrows 1900; Bean and Siva Saubel 1972).

2.2 CULTURAL SETTING

2.2.1 Prehistoric Period

The project area is situated in the Salton Basin area of western Imperial County. This area lies within the western portion of the Colorado Desert, which, in California, extends from the crest of the Peninsular Ranges of eastern San Diego County to the Colorado River. East of the crest, largely desert-like conditions have prevailed in this area of California through millennia. The project area is also situated in proximity to the Mojave Desert to the northeast. While both areas have been subject to more than 90 years of archaeological investigation, the prehistory of the Mojave Desert is considerably more developed than that of the Colorado Desert (Schaefer 1994; Schaefer and Laylander 2007; Sutton et al. 2007).

In contrast to the Mojave Desert region, for example, the basic culture history of the Colorado Desert region has not changed dramatically since pioneering archaeologist Malcolm Rogers (1939, 1945, 1966) published his initial impressions of the desert's chronology and cultural development. As in the Mojave Desert, substantially more archaeological investigation has occurred, and a more substantial culture history has been developed in the coastal area due, in no small part, to the substantial level of modern development that has occurred there. Consequently, understanding of the early prehistory of the Colorado Desert region still relies heavily on comparisons with the adjacent Mojave Desert and coastal regions. Many of the diagnostic artifacts present in the Colorado Desert were first found and originally named for locations in the Mojave Desert. A principal reason for a less-developed culture history in the Colorado Desert has been a paucity of stratified subsurface sites found in the Colorado Desert region relative to the Mojave Desert or coastal area, with most sites in the Colorado Desert, until recently, still being primarily surficial (Schaefer 1994; Schaefer and Laylander 2007). As will be described further below, however, some recent work at stratified sites in the Coachella Valley and in the Jacumba area have finally produced such results, thereby providing the basis for the development of a culture history through time for the western Colorado Desert. While the project is situated within the Salton Basin area of the western Colorado Desert, the cultural history and chronological periods described below, first proposed for the Colorado Desert area by Schaefer (1994), are more reflective of the periods commonly used in the adjacent coastal and western mountain areas of San Diego County.

The western Colorado Desert is dominated by the substantial geologic feature of the Salton Trough or Salton Basin. Although it is generally accepted that freshwater inundations of the Salton Trough likely began during the Pleistocene epoch, it is better documented that, during Holocene times, Lake Cahuilla formed in the Salton Trough when, during major flood episodes, the Colorado River breached a drainage

divide near Cerro Prieto in northern Baja California. The resulting head-cutting diverted all or most of the Colorado River flow into the Salton Trough. Unchecked, the Colorado River flow would fill the trough to the 12-meter (40-foot) contour, at which point an outflow channel was created. Flow into the trough presumably would have continued until siltation clogged the inflow channel. High evaporation rates would then cause the lake to recede and salinity to increase proportionally. Lake Cahuilla filled during these natural episodes of Colorado River flooding, and then receded, several times before its last natural desiccation about 300 years before present (B.P.) (Schaefer 1994, 2006; Waters 1983; Wilke 1978). Stands of Lake Cahuilla at the maximum 12-meter contour were huge, covering 5,700 square kilometers (2,201 square miles) and reaching a maximum depth of 96 meters (315 feet). With the possible exception of the Paleoindian Period, the intermittent presence of this lake in the Basin in mid- to late-Holocene times has had a profound effect on the prehistoric peoples inhabiting the area.

2.2.1.1 Paleoindian Period

The earliest well-documented prehistoric sites in Southern California are identified as belonging to the Paleoindian Period. While in the adjacent Mojave Desert, the Paleoindian Period is dated from approximately 10,000 to 12,000 B.P. (Sutton et al. 2007:236), Schaefer has defined the period as dating from approximately 7000 to 12,000 B.P. in the Colorado Desert (Schaefer 2018:10). In the western U.S., most evidence for the Paleoindian peoples derives from finds of large, fluted spear and projectile points (Fluted-Point Tradition) associated with big game hunting, in places such as Clovis and Folsom in the Great Basin and the northern Desert Southwest (Moratto 1984:79–88). In California, however, most evidence for the Fluted-Point Tradition derives principally from along the margins of these areas in the Sierra Nevada (Moratto et al. 2011), the southern Central Valley (Riddell and Olsen 1969), and the Mojave Desert of southeastern California (Davis 1978), with only isolated occurrences in the Colorado Desert, consisting almost entirely of scattered surface finds. These discoveries in the Colorado Desert region include one in the Yuha Desert of the southwestern Colorado Desert (Davis et al. 1980:150) and one in the McCoy Mountains in the eastern area (Kline 2014), as well as three in the eastern mountain areas of San Diego County, including one in the foothills near Ocotillo Wells (Rondeau et al.: 65), one in Cuyamaca Pass (Dillon 2002), and one east of Warner Springs (Kline and Kline 2007). Two such artifacts have also been found to the south in Baja California (Des Lauriers 2008; Hyland and Gutierrez 1995).

Another tradition associated with the Paleoindian Period is the San Dieguito Tradition, with an artifact assemblage distinct from that of the Fluted-Point Tradition. In California (Alta California), this tradition has been documented only in the Mojave and Colorado deserts of southern California (Rogers 1939, 1966; Schaefer 1994; Warren 1967) and in the coastal area of San Diego County (Carrico et al. 1993; Rogers 1966; Warren 1966, 1967; Warren and True 1961). Warren dates the San Dieguito Tradition as beginning circa 10,000 B.P. and ending sometime between 8500 and 7200 B.P. (Warren 1967, 1968:4; Warren et al. 1998; Warren and Ore 2011). It is characterized by an artifact inventory consisting almost entirely of flaked stone biface and scraping tools but lacking the fluted points associated with the Fluted-Point Tradition. The subsistence system or emphasis of the San Dieguito Tradition, while not yet entirely agreed upon, is suggested by Warren as having an economy oriented toward hunting rather than gathering, based on an artifact assemblage of primarily hunting-associated tools (Warren 1967).

The C.W. Harris Site (CA-SDI-149), located along the San Dieguito River in western San Diego County, is a stratified archaeological site that formed the original basis upon which, first Rogers (1939, 1966), and then Warren and others (Warren 1966, 1967; Warren and True 1961), originally identified the “San Dieguito complex”, that Warren later reclassified as the San Dieguito Tradition (1968). Diagnostic artifact types and categories recovered from the deepest stratum at the site as well as, recently, in the lowest

strata at two nearby associated sites, CA-SDI-316 and CA-SDI-4935B (Carrico et al. 1993; Cooley 2013), include elongated bifacial knives, leaf-shaped projectile points, scraping tools, and crescentics (Carrico et al. 1993; Rogers 1966; Vaughan 1982; Warren 1966, 1967; Warren and True 1961). The Harris Site is also the source for the oldest calibrated radiocarbon date (9968 B.P.) found in association with a deeply buried subsurface San Dieguito artifact assemblage (Warren et al. 1998; Warren and Ore 2011). Another calibrated radiocarbon date of 9130 B.P. has also recently been acquired from a San Dieguito-associated deep subsurface stratum at site CA-SDI-316, located immediately adjacent, and associated stratigraphically with, the Harris Site (Cooley 2013). This latter date further documents the presence and antiquity of the buried San Dieguito stratum at the Harris Site.

While Rogers (1939, 1966) has described occurrences of sites and artifacts attributable to the San Dieguito Complex/Tradition in the Mojave and Colorado desert areas, because they have, until recently, been nearly all surface finds, the ability to accurately determine the antiquity of these artifacts and sites by radiometric dating methods has proven to be problematic (Schaefer and Laylander 2007:247; Sutton et al. 2007:237; Warren 1967:179). Consequently, radiometric dating of the artifacts and their context at the Harris Site has, for several decades, been the principal means of ascertaining the antiquity of the San Dieguito complex and these related desert assemblages (Warren 1967; Warren et al. 1998; Warren and Ore 2011). In the Mojave Desert area, the San Dieguito complex has been largely subsumed under the Lake Mojave complex (Sutton et al. 2007:236). Recently, calibrated radiocarbon dates from several Lake Mojave complex-associated sites have produced dates of similar antiquity to those from the Harris Site (Sutton et al. 2007:235), i.e., circa 10,000 to 11,000 B.P. In the Mojave Desert area, Lake Mojave complex sites are frequently associated with glacial lakes that were still present at the end of the Pleistocene and the beginning of the Holocene. Such lacustrine features were generally not present in the more southerly Colorado Desert area. Given the discovery of the Paleoindian Period and/or Lake Mojave complex-associated projectile points on the western side of the Salton Basin (Apple et al. 1997; Wahoff 1999), it is possible that it too may have been inundated, at least periodically, during this earlier period.

Very recently, some surprising new evidence has been obtained from subsurface archaeological investigations at site CA-SDI-7074, located to the south-southeast of Borrego Springs, near Jacumba in the mountain foothills of eastern San Diego County (Williams 2014). The site was found to be stratified and to contain more than 100 subsurface thermal features, most of which were indicated to likely be earth ovens associated with agave roasting activity. While radiocarbon dating of 22 of the features indicated most of them dating to the Late Prehistoric Period (after circa, 1700 B.P.), five of the more deeply buried features were discovered to date to between 8590 and 9600 B.P. (Williams 2014). These results represent a remarkable indication of vegetal food processing activity occurring in the Colorado Desert area during a time period when most of the existing archaeological evidence is associated with hunting for subsistence.

2.2.1.2 Archaic Period

The Archaic Period is generally differentiated from the earlier Paleoindian Period by a shift from hunting-focused subsistence systems to a more generalized economy with an increased focus on gathering and the use of grinding tools and seed-processing technology. Consequently, typical artifact assemblages in the Mojave Desert for the early Archaic Period contain dart points, but with increasing quantities of ground stone tools, such as manos and metates, occurring into the middle and latter parts of the period (Sutton et al. 2007). In general, compared to the Mojave Desert, only limited archaeological evidence has yet been encountered in the Colorado Desert area that can be definitely

attributed to the Archaic Period; most of the evidence that does exist has been found in the western Colorado Desert. The area east of the Salton Basin, which constitutes the eastern part of the Colorado Desert, contains principally large areas of desert pavements, washes, rocky volcanic mountains, and the Colorado River Valley. With the possible exception of the Colorado River Valley, most of these areas have not been found to contain archaeological deposits with depth and/or with materials suitable for absolute dating. Instead, these areas appear to be where various resources were obtained, such as lithic raw material. This is evidenced by the presence of many quarry and flaking station sites in these areas, along with trails leading to and from them to the Colorado River and to the Salton Basin (Apple 2005; Bryne 2011; Pendleton et al. 1986). These trails are prominent features within the eastern area, and, while it is known from ethnographic sources and by the presence of pottery features associated with them, that they were in use in Late Prehistoric times, it seems likely that such trails were in use during earlier times (i.e., Archaic Period) times as well (Apple 2005; Bryne 2011:8; Rogers 1966:47-48). Some sites that have recently been investigated in the Ford Dry Lake area, at the northeastern edge of the Colorado Desert, contain a large number of manos and metates along with a few projectile points possibly diagnostic of the Archaic Period, but no materials that can be dated by absolute methods were found in association (AECOM 2016). Results from some recent excavations conducted at a site adjacent to the Colorado River (CA-IMP-7911/H) have revealed buried cultural deposits and features as deep as 1.85 meters, but the earliest radiocarbon date for these deep deposits is 1620 B.P. (Cleland 2005).

Until recently, little archaeological evidence had been encountered in the Colorado Desert that could definitively be attributed to the earliest part of the Archaic Period, i.e., from circa 8000–4000 B.P. (Schaefer 1994:64; Schaefer and Laylander 2007:247). However, as noted above for the Paleoindian Period, evidence has been recently obtained from subsurface archaeological investigations in the western Colorado Desert at site CA-SDI-7074, located in the Jacumba area of San Diego County, that dates to this time period (Williams 2014). These results not only indicate the utilization of agave as a food resource much earlier in time than was previously realized but may also suggest a reappraisal of the dating for the inception of the Early Archaic Period in the Colorado Desert area, as Williams states that the thermal roasting features “spanned the Early Archaic to Late Prehistoric periods” (Williams 2014:325). Also recovered from the site was an Elko-style projectile point, suggestive of a mid- to late-Archaic Period occupation (Williams 2014:151).

Another discovery located in the western Colorado Desert area, also noted above, occurred during an archaeological investigation at the Salton Sea Test Base. This discovery consisted of an assemblage of large projectile points that are stylistically associated with early-to-mid-Archaic-style projectile points in the Mojave Desert, including Pinto and Elko styles (Apple et al. 1997; Wahoff 1999). Although the investigation did not obtain any radiocarbon dates to verify the presence of cultural deposits of this antiquity, the size and styles of these points are clearly associated with the early Archaic Period. One other site of note, described below for the Late Archaic Period, consists of deposits at the Indian Hill Rockshelter (CA-SDI-2537), in Anza-Borrego Desert State Park in the mountain foothills of eastern San Diego County (McDonald 1992). These cultural deposits have been dated by radiocarbon dating to 4070 ± 100 years B.P.; therefore, an assignment to the late Archaic is admittedly arbitrary.

Evidence for late Archaic Period activity (beginning circa 4000 B.P.) in the Colorado Desert includes results from subsurface investigations at sites in the Coachella Valley area of the Salton Basin, northwest of the project area (Love and Dahdul 2002). The contexts of several sites in the valley, some with deeply buried deposits possibly associated with ancient stands of Lake Cahuilla, were radiocarbon dated to circa 2000–3000 B.P. (Love and Dahdul 2002; Schaefer and Laylander 2007:249). Other evidence for the Late Archaic Period in the area includes deposits found in the western Colorado Desert at the Indian Hill

Rockshelter and at a rockshelter in Tahquitz Canyon, in the mountains west of Palm Springs (Bean et al. 1995; Schaefer and Laylander 2007:247). Until the recent results from CA-SDI-7074, the Indian Hill Rockshelter was the oldest radiocarbon-dated archaeological site in the Colorado Desert, with a date of 4070 ± 100 years B.P. (McDonald 1992). The site also contained distinctive dart-sized projectile points, ground stone implements, rock-lined caches, and inhumations (McDonald 1992; Schaefer 1994; Wilke and McDonald 1989). The rockshelter in Tahquitz Canyon, while lacking radiocarbon dating, contained an assemblage similar to that found and dated in the Indian Hill Rockshelter (Bean et al. 1995; Schaefer and Laylander 2007:247).

While evidence for settlement patterning during the Archaic period in the Colorado Desert is minimal, some Late Archaic sites in the Coachella Valley (Love and Dahdul 2002) appear to have been in contexts associated with intermittent ancient stands of Lake Cahuilla. It seems likely, therefore, that, similar to the subsequent Late Prehistoric Period, this hydrological feature had a significant influence on settlement patterns in the western Colorado Desert, at least during the Late Archaic. The limited occurrences of evidence of Archaic habitation at the Indian Hill Rockshelter and Tahquitz Canyon rockshelter sites indicate that settlement of the adjacent mountain areas can also be inferred during the Middle to Late Archaic. While evidence for settlement patterning during the Early Archaic is even more limited, the occurrence, adjacent to the current Salton Sea, of an assemblage of large projectile points stylistically associated with Early-Archaic-style projectile points in the Mojave Desert (Apple et al. 1997:6-41 to 6-52; Wahoff 1999) and of three Middle- to Late-Archaic-style projectile points at three sites in the Ocotillo Wells area (Mealey 2012:234-235, 2014:177) suggests, again, that the possible presence or absence of lacustrine resources associated with this hydrological feature may, as during subsequent periods, have had a significant influence on settlement in the western Colorado Desert, possibly intermittently throughout the Archaic Period. Lastly, the recent results from CA-SDI-7074, introduce a new set of possibilities for early settlement of the area that remains to be explored.

In the eastern Colorado Desert, while definite evidence is still lacking, it seems probable that the Colorado River was a location of considerable prehistoric resource availability extending back into Archaic Period times and was, therefore, a place where habitation frequently occurred. The lack of archaeological evidence for this is likely due to the dynamic conditions present as a result of recurrent flooding and erosion that have occurred through the millennia associated with this substantial river. These natural forces have likely served to remove or to deeply bury any habitation deposits that may once have been present along the river. For example, the discovery noted above of buried cultural deposits along the river occurred during deep trenching for the installation of a pipeline. The oldest date for these deep deposits of circa 1620 B.P. would be marginal between the end of the Archaic Period and the beginning of the subsequent Late Prehistoric Period.

2.2.1.3 Late Prehistoric Period

The Late Prehistoric Period in the Colorado Desert dates from approximately 1500 B.P. to the historic period (Schaefer 1994). In Southern California, generally, this period is seen as a time marked by a number of rather abrupt human behavioral changes, which are reflected in the archaeological record. The magnitude of these changes and the short period of time within which they took place are reflected in the significant alteration of previous subsistence practices and the adoption of significant new technologies. As discussed below, some of this change may have resulted from significant variations in climatic conditions.

As is evidenced in the archaeological record, subsistence and technological changes that occurred in Southern California during the Late Prehistoric Period include:

- A shift from hunting using the atlatl and dart to using the bow and arrow, as indicated by the presence of smaller projectile points;
- A reduced emphasis on shellfish gathering along some areas of the coast (possibly as a result of silting-in of the coastal lagoons);
- The introduction and production of pottery;
- An increase in storage of principal foodstuffs, such as mesquite, acorns, and piñon nuts, as indicated by the presence of mortars and pestles and large ceramic storage vessels;
- A shift in burial practices from inhumation to cremation; and,
- Along the Colorado River, a change in economic and settlement patterns that involved subsistence expansion to include floodplain horticulture.

In the Coachella and Imperial valleys in the Salton Basin area, the Late Prehistoric Period is strongly associated with the periodic infilling and emptying of Lake Cahuilla. This substantial hydrological feature is seen as recurrently altering the course of human settlement in the area during the period (Schaefer and Laylander 2007:250–251). During periods when lakes were absent, and elsewhere in the Colorado Desert, settlement is seen as associated with semi-sedentary villages established along major water courses and around springs, with adjacent montane areas seasonally occupied to exploit agave, mesquite, acorns, and piñon nuts. Mortars for mesquite, piñon nuts, and acorn processing increased in frequency relative to seed-grinding basins. Most archaeological resources in the record for the western Colorado Desert, east of the mountain foothills, that date to the Late Prehistoric Period, are associated with the Lake Cahuilla shoreline(s) (Apple et al. 1997; Laylander 1997; Love and Dahdul 2002; Noah 2012; Schaefer 2006; Wilke 1978). Recessional shorelines of the lake during the Late Holocene are marked by high frequencies of Native American sites. Hundreds of rock features interpreted as fish traps and habitation features have been recorded primarily on the northern and western shores of Lake Cahuilla (Wilke 1978), and Rogers (1945:191) identified sites along the eastern shoreline (before the construction of the Coachella Canal, which disturbed much of the 12-meter contour). Also affecting sites in other areas of the Salton Basin, particularly those containing the northern and western recessional shorelines of Lake Cahuilla, has been the substantial enhancement of water conveyance systems during the twentieth century that has resulted in the transformation of much of the region into agricultural fields (Laylander 1997:1; Schaefer and Laylander 2007: 249). A natural factor also affecting sites, especially along the lower elevation recessional shorelines of the lake, has been the lacustrine sediment deposition that has occurred from the repeated inundations of the basin through time. This has resulted in the burial of earlier occupations along the shorelines under deep deposits of sediments (Schaefer and Laylander 2007: 249).

In addition to cultural resources directly associated with Lake Cahuilla, important Late Prehistoric Period cultural resource sites in the project region were seasonally occupied locations in rock shelters, at springs, and along major drainages, located within or emanating from the adjacent montane areas to the west. In these latter categories, several sites along Boulder Creek near Mountain Spring on the eastern slopes of the Peninsular mountains have been radiocarbon dated to the Late Prehistoric Period (Shackley 1984). In addition to the late Archaic Period occupations described above, radiocarbon

evidence of Late Prehistoric Period occupation was noted at site CA-SDI-7074, near Jacumba (Williams 2014), and at CA-SDI-2537, the Indian Hill rockshelter (McDonald 1992); both sites are located in the upper elevation, desert foothills of southeast San Diego County. In the adjacent mountainous area of southwestern Riverside County, to the northwest of the project area, an important population center has also been documented in Tahquitz Canyon, during the Late Prehistoric Period (Bean et al. 1995).

Also, as discussed above for the Archaic Period, in the eastern Colorado Desert, prehistoric trails are prominent features in this area. While their use during the Archaic Period can only be proposed, their use during the Late Prehistoric Period is well documented, both archaeologically and ethnographically. During the Late Prehistoric Period, it is known that they served multiple functions, including routes for trade and travel between areas, spiritual and ceremonial activity, as well as routes used for resource procurement (Apple 2005; Byrne 2011).

The chronology most commonly applied to the Colorado Desert is based on ceramic types from data derived principally from the central and eastern areas of the desert. This chronology has been developed by Schiffer and McGuire (1982:216–222) and Waters (1982a), using a chronology originally proposed by Rogers (1945) that divided the Late Prehistoric Period in the Colorado Desert area based on the progression or changes in the development of ceramic types. Using the term “Patayan” (instead of the term “Yuman,” used by Rogers) for these periods, three periods were defined (in addition to a preceramic period) based on ceramic types associated with changes in ceramic traits through time that he correlated with fillings and desiccations of Lake Cahuilla:

- Patayan I began approximately 1200 B.P. with the introduction of pottery into the Colorado Desert, but it appeared to be limited mostly to the Colorado River area.
- The Patayan II phase coincides with an infilling of Lake Cahuilla around 950 B.P. As described previously, the lake covered much of the Imperial Valley and created an extensive lacustrine environment that is thought to have attracted people from the Colorado River area. New pottery types appeared resulting from local production along the lakeshore and technological changes in the Colorado River area. Subsequently, Lake Cahuilla experienced several fill/recession episodes before its final desiccation.
- The last period, Patayan III, began around 500 B.P. as the lake receded. Colorado Buff Ware became the predominant pottery type during this period, both in the desert and along the river, although several Patayan II types continued (Waters 1982a, 1982b).

While this chronological paradigm has served for years as a useful tool for organizing archaeological assemblages in the area, more recently, Schaefer and Laylander (2007:252–253) have described some serious discrepancies based on new information (e.g., Hildebrand 2003).

2.2.2 Ethnohistory

2.2.2.1 Cahuilla

The Cahuilla are a subgroup of the Takic family of the Uto-Aztecan stock and are, therefore, closely related linguistically to other Takic speaking groups, including their neighbors to the west and north, the Luiseño, Cupeño, Gabrielino, and Serrano. These Takic-speaking groups are thought to represent a migration into the area occurring approximately 1500 B.P. (Schaefer 2006:21). According to Schaefer (2006:22):

What role these Takic speakers had in the development of the Patayan pattern in the Colorado Desert remains unclear, although it may have been considerable. The ancestors of the Colorado River Yumans are most often identified as the source of ceramics, cremation practices, agriculture, some architectural forms, and some stylistic and symbolic representations. The Takic migrations may coincide with the introduction of bow-and-arrow technology but no direct association can be made. They may have contributed specific hunter and gatherer techniques as well as cosmological and symbolic elements to the Patayan cultural system.

The diversity of Cahuilla territory reflected the range of environmental habitats in inland Southern California. Topographically, their territory ranged from the summit of the San Bernardino Mountains, in excess of 11,000 feet, to the Coachella Valley and Salton Sink, well below sea level. Ecological habitats included the full range of mountains, valleys, passes, foothills, and desert areas. Villages were typically situated in canyons or on alluvial fans near water and food resources, and a village's lineage owned the immediately surrounding land (Bean 1978). Well-developed trails were used for hunting and travel to other villages. Village houses ranged from brush shelters to large huts 15 to 20 feet long. Important plant foods exploited from the Cahuilla's diverse habitat included mesquite and screw beans, piñon nuts, and various cacti. Other important plant foods included acorns (six oak varieties), various seeds, wild fruits and berries, tubers, roots, and greens. Women were instrumental in the collection and preparation of vegetal foods.

When Lake Cahuilla was present, it undoubtedly affected the settlement and subsistence patterns, with the desert area becoming a more productive resource area. Schaefer (2006:22) states that "Cahuilla mythology and oral tradition also indicate that when Lake Cahuilla dried up, it was the mountain people who resettled the desert floor. The time of Lake Cahuilla is also best documented in the oral traditions of the Cahuilla, both with regard to settlement patterns, song cycles, and the effects of Lake Cahuilla on patrilineal clan segmentation." According to Strong (1929:36), "The derivation of the term Cahuilla is obscure, and it is regarded by the Indians to be of Spanish origin."

The earliest Spanish contact with the Cahuilla may have been with the Anza expedition trips in 1774 and 1777. The route followed San Felipe Creek west through Borrego Springs, up into the San Jacinto Mountains (Pourade 1962:164; Schaefer 2006:23). The impact of the Spanish mission system and colonization along the coast was much less immediate and profound within the isolated desert and mountain groups. It was not until 1819, after the establishment of the San Bernardino estancia and cattle ranch at San Gorgonio, that a more direct Spanish influence was felt. By 1823, members of the Romero Expedition documented that the Cahuilla at Toro were growing corn and melons and were already familiar with the use of horse and cattle, indicating a familiarity with Hispanic practices (Bean and Mason 1962).

During the Spanish period and into the Mexican period, political leadership became more centralized as Juan Antonio from the Mountain Cahuilla and Chief Cabazon in the desert emerged as central figures (Strong 1929). Juan Antonio's group played a significant role during the Mexican-American War, siding with the Mexicans against the Luiseño, who supported the American invasion (Phillips 1975). Along with the rise of powerful chiefs and political restructuring, Mexican language, clothing, and food were incorporated into traditional culture during this era.

With the 1848 signing of the Treaty of Guadalupe Hidalgo, the American government promised to preserve the liberty and property of the inhabitants of California, and, in 1852, a treaty was drafted to settle land rights issues for the Cahuilla (as well as Serrano and Luiseño). The treaty was never ratified by

Congress, and the best farming and grazing lands were claimed by Euro-American settlers. In addition, Cahuilla land was substantially reduced during the 1860s and 1870s, primarily as a result of two Executive Orders establishing reservations. The result of this was a checkerboard of 48 sections of reservation lands spread across the eastern edge of the Santa Rosa and San Jacinto mountains and the Coachella Valley. Although various modifications have occurred over time, this has remained the permanent home of the Cahuilla to date (Schaefer 2006).

2.2.3 Historical Background

The Post-Contact period of California is generally broken into three distinct periods: the Spanish period (1769 to 1821), the Mexican period (1821 to 1848), and the American period (1848 to present).

2.2.3.1 Spanish Period (1769 to 1821)

The first Europeans to arrive in what became southern California were members of the 1542 expedition of Juan Rodriguez Cabrillo. Cabrillo and other early explorers sailed along the coast and made limited expeditions into Alta (upper) California between 1529 and 1769. Although Spanish, Russian, and British explorers briefly visited Alta California during this nearly 250-year span, they did not establish permanent settlements (Starr 2007).

While the end of Indigenous control of Southern California is viewed as having begun in 1769 and throughout the Mission Era, it was not until several decades later that de facto European control was established, with the end of the Garra Uprising in the 1850s (Evans 1966). The Spanish Period, however, represents a period of Euro-American exploration and settlement throughout the state, with the establishment of Spanish presidios and the introduction of the Mission system, beginning with Gaspar de Portolá and Franciscan Father Junipero Serra establishing the first Spanish settlement in Alta California at San Diego in 1769. Mission San Diego de Alcalá was the first of 21 missions built by the Spanish between 1769 and 1823.

While the area that was to become Imperial County was first explored by Europeans in 1540, with the expedition of Hernando de Alarcón, it was not until the 1700s that the area began to be fully explored. Pedro Fages led the first exploration in 1772 while chasing deserters, and continued explorations in 1782 and 1785. Juan Bautista de Anza undertook two expeditions to cross the Imperial Valley, beginning at the Spanish presidio of Tubac in Arizona and traveling to Mission San Gabriel in Los Angeles County (Mitchell 2011).

The inhospitable environment and terrain of the Algodones Dunes made exploration difficult and discouraged colonization in the eastern portion of Imperial County, so settlements were primarily located in the West Mesa (Yuha Desert). Settlements in the eastern portions were limited to Mission Puerto de Purisima Concepción and Mission San Pedro y San Pablo de Bicuñer, both located along the Anza Trail and both destroyed in 1781 during conflicts between the Spanish and the Quechan (Hurt 2002).

2.2.3.2 Mexican Period (1821 to 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 open to foreign merchants. During this period, the retention of many Spanish inquisitions and laws

continued the dispossession of Indigenous people, especially following the secularization of the mission system in 1834.

With secularization, extensive land grants were established in the interior in order to increase the population of the inland areas, enticing families from the more settled coastal areas colonized by the Spanish. During the supremacy of the ranchos between 1834 and 1848, the economy was largely focused around the cattle industry, and landowners devoted large tracts to graze their herds. Cattle hides became a primary southern California export, providing a commodity to trade for goods from the east and other areas in the United States and Mexico. The number of Euro-American inhabitants increased during this period due to an influx of explorers, trappers, and ranchers associated with the land grants, which further contributed to the introduction and rise of diseases foreign to the Indigenous population, who had no associated immunities.

The Mexican Period of Imperial County was focused on the effort to establish an overland route from Sonora to the California coast. Its purpose was to increase trade between the two regions, as well as to encourage settlement. In 1825, after numerous exploratory expeditions, the Sonora Road was established, using much of the Anza Trail before turning west to continue through the Carrizo Corridor and splitting into San Diego and Temecula. The Mexican government established Fort Romualdo Pacheco along the route in 1825; however, it was abandoned and destroyed in 1876, due to an attack by the Kumeyaay (Office of Historic Preservation [OHP] 2021).

The Sonora Road would continue to be used, though never gaining popularity until its southwest portion shifted north of the United States-Mexico Border in the late 1830s. Ironically, the route was used in 1846 by General Stephen Watts Kearny to lead his troops across the Yuha Desert during the Mexican-American War. A portion of the road was again used in 1846, this time by Colonel Philip St. George Cooke, who led the Mormon Battalion from Iowa to San Diego in an attempt to establish a wagon route to California.

2.2.3.3 American Period (1848 to present)

The United States attacked California in 1846, taking control of Monterey, San Francisco, San Diego, and Los Angeles with little resistance. Los Angeles soon slipped from American control, however, and needed to be retaken in 1847. Approximately 600 U.S. sailors, marines, Army dragoons, and mountain men converged under the leadership of General Kearny and Commodore Robert F. Stockton in early January of that year to challenge the California resistance, which was led by General José María Flores. The American party scored a decisive victory over the Californios in the Battle of the Rio San Gabriel and at the Battle of La Mesa the following day, effectively ending the war and opening the door for increased American immigration (Harlow 1992). Hostilities officially ended with the signing of the Treaty of Guadalupe Hidalgo in 1848, in which the United States agreed to pay Mexico \$15 million for the conquered territory, including California, Nevada, Utah, and parts of Colorado, Arizona, New Mexico, and Wyoming, representing nearly half of Mexico's pre-1846 holdings. California joined the Union in 1850 as the 31st state (Wilkman and Wilkman 2006).

Further exploration and development of the agricultural potential of the Imperial Valley marked the beginning of the American Period in the region. With the signing of the Treaty of Guadalupe Hidalgo in 1848 and the subsequent acquisition of California by the United States, settlers began making their way into the county. The establishment of the Southern Emigrant Trail, which followed the old Sonora Road, was extensively used by settlers, miners, and the military on their way to California (Brian F. Mooney

Associates 1993). This route would be used by the Butterfield Overland Mail (1858–1861), and Camp Salvation, located near present-day Calexico, was just one of the numerous stops along its route, established to provide water to travelers along the trail (OHP 2014). This route served as the primary route until the establishment of the Smith-Groom Country Road in 1865, but even then, it was not until the twentieth century that more than a few rugged individuals would settle the harsh environment of Imperial County.

While a few people settled in the area, and some farmers started the town of Imperial in the 1890s, it was not until the 1900s that more farmers entered the valley and established homesteads. This was primarily due to the construction of the Alamo Canal in 1901, which brought water from the Colorado River to the Alamo River and began the irrigation of the Imperial Valley (Mitchell 2011). With water came growth; the City of Imperial was officially formed in 1904, Imperial County was established in 1907, and in the same year, the cities of Brawley, Calexico, Heber, and Silsbee were officially formed. This boom in growth was partially due to the intense promotion by the federal government, through the use of the Homestead Act and the Desert Land Act, through which many farmers acquired ownership of land. By 1930, over 500,000 acres of the Imperial Valley were being irrigated, and in 1934 construction of the All-American Canal began. It was completed in 1940, by which time the population of the area had grown to more than 61,000.

Railroad lines, including a branch of the Southern Pacific Railroad (SPRR) extending through the Imperial Valley to Calexico, were constructed throughout portions of the County in the early 1900s, which further increased settlement. With the introduction of automobiles, the development of new and better roads was required, including included Plank Road, which was a seven-mile-long, movable road built over the sand dunes between Imperial Valley and Yuma in 1914 and continued to be added on to and improved into the 1930s (OHP 2014; Brian F. Mooney Associates 1993).

2.2.3.4 Advent of Irrigation in the Imperial and Coachella Valleys (1848 to 1934)

The Coachella Canal is a branch of the All-American Canal; the canals, with their related distribution systems, deliver water to the fertile Imperial and Coachella valleys. The Canal has been described as part of a historic district that includes the Imperial Dam and Desilting Works, the All-American Canal, and the Coachella Canal (Schaefer and Ní Ghabhláin 2003, Ní Ghabhláin and Schaefer 2005).

The Coachella Canal would not exist without the All-American Canal, and both owe their existence to the Colorado River, which historically had overflowed into tributary rivers in the valleys. The canal systems were the culmination of a complex history woven from the need for water, numerous efforts to irrigate the Imperial and Coachella valleys, and tensions between private and public ownership of water rights. Beginning in the mid-1800s, the geological surveys of William P. Blake noted several features of the valleys that would yield the potential for significant agricultural production. The Salton Trough region was lower in elevation than the Colorado River, which was observed to overflow into the New and Alamo rivers. The area's fertile clay soils, with little irrigation by gravity flow from these rivers, were likely to produce abundant crops (Blake 1853).

By 1900, the privately-owned California Development Company had developed the first irrigation system in the region, the Imperial Canal, also known as the Alamo Canal. As envisioned by Blake 50 years earlier, the Alamo Canal was fed by Colorado River water redirected to the Alamo River (Starr 1990; JRP Consulting 2000). The availability of water in the region, as well as several federal land acts, including the Homestead Act, the Desert Land Act, and the Carey Land Act, encouraged settlers to

establish farms throughout the Imperial Valley. The Carey Land Act specifically allowed private companies to profit from the sales of water using the irrigation systems they built (Ní Ghabhláin and Schaefer 2005).

However, both the original Alamo Canal and a later bypass canal had silted up by the early 1900s (Starr 1990). In addition, the federal government had begun steps to wrest control of the irrigation systems away from private companies (Schaefer and Ní Ghabhláin 2003). The U.S. Reclamation Service (later renamed the USDI Bureau of Reclamation) was formed in 1902 by the Newlands Reclamation Act to provide oversight of the irrigation systems in the arid and semiarid western states that owed their origins to the previous federal land acts of the late 1800s. Irrigation projects were known at that time as “reclamation” projects because the irrigation projects would “reclaim” arid lands for human use, specifically the settlement of American farms and homes (Trover 2016). The agency targeted and challenged private developers, one of the first being the California Development Company, regarding claims about regional economic development and soil fertility, and profits from the use of Colorado River water. In 1903, the Colorado River was declared a navigable waterway, which placed the river and any redirection of its water under federal control (Schaefer and Ní Ghabhláin 2003).

The California Development Company switched tactics and built a canal to draw water from the Colorado River south of the border in Mexico and into the Imperial Valley. Their efforts to open the diversion without a concrete headgate led to the flood of 1905-1907, which destroyed the Imperial Valley’s irrigation system, formed the Salton Sea, and put the now-bankrupt Company under the SPRR’s control in 1907. The SPRR had to expend monumental efforts and funds to finally divert the river back to the Gulf of California (Wells 1907; Starr 1990; Frisby 1992). These factors ultimately led to the formation of the Imperial Irrigation District (IID) in 1911 after additional flooding occurred in 1910. Together with the Imperial Laguna Water Company, formed in 1914, IID proposed the All-American Canal in 1919 to irrigate all of the Imperial Valley (Dowd 1956). At about the same time, the Coachella Valley water table had fallen dramatically as a result of the hundreds of artesian wells drilled in the region after the discovery of artesian water in 1894. By 1909, there were approximately 400 wells, 300 of which were artesian, in the Coachella Valley, and farmers needed a supplemental water source to continue agricultural production. However, reports of private investors in Los Angeles who intended to appropriate and impound water from the Imperial Valley triggered opposition and a successful effort to form a local water district in the Coachella Valley (Bureau of Reclamation 1955; Trover 2016). As a result, the Coachella Valley Water District (CVWD) was formed in 1918 and oversaw areas in Riverside, Imperial, and San Diego counties (CVWD 1978).

By 1919, Congressmen Kettner and Kincaid introduced legislation intent on replacing the California Development Company’s irrigation canal that brought Colorado River water to the Imperial Valley through Mexico. The first bill drafts gave IID priority for water reclaimed outside IID’s boundaries, making CVWD’s water rights secondary (Trover 2016). In 1919, CVWD entered into the first contract with the federal government under the Kettner Bill for the importation of water from the Colorado River for agricultural uses. A second contract was made under the Kincaid Bill in 1921 to survey the Coachella Branch route of the All-American Canal (CVWD 1978). However, the actual construction of canal systems to redirect Colorado River water to the Imperial and Coachella valleys could not come to fruition until after federal legislation was passed to enact an agreement (the Colorado River Compact) that determined the distribution of Colorado River water to the seven states that border the waterway (Fradkin 1981). That legislation was the final version of the Swing-Johnson Bill, also known as the Boulder Canyon Project Act, which was passed in 1928 after seven years of deliberation and negotiations. The Boulder Canyon Project Act ratified the 1922 Colorado River Compact, provided

California ratified it (it had not been binding because Arizona had not ratified it and never did, an issue only resolved in 1963 by the US Supreme Court). The Act also authorized the construction of Hoover Dam (formerly known as Boulder Dam), Imperial Dam, and the All-American Canal. Federal funds were to be advanced through the contracts, with the irrigation districts ultimately responsible for repayment (Wilbur and Ely 1948; Reisner 1993; Trover 2016). The USDI Bureau of Reclamation (Reclamation) undertook detailed surveys of the alignment for the All-American Canal and the Coachella Canal branch in 1929 and 1930, with the final report, including cost estimates, completed in 1931 (Gault 1931).

IID and CVWD were often in conflict over water rights. Although an agreement had been signed between IID and Reclamation in 1932, a conflict between the two districts over the allocation and control of water delayed the start of construction for the Imperial Dam. It was not until 1934 that the two agencies agreed on co-operation and funding for the building of the All-American Canal, after the entire CVWD Board had been recalled over their plan to join IID in 1932. The compromise allowed CVWD its own terms in the construction contract and provided that each water district would pay in proportion to the amount of water the delivery system provided to them. In a special election in 1934, voters overwhelmingly approved the formation of a 137,000-acre improvement district, the “Coachella Service Area,” to construct the Coachella Canal – during the midst of the Great Depression and knowing it would create a new tax on their property (Wilbur and Ely 1948; CVWD 1978; Trover 2016).

With the completion of the All-American Canal in 1939, which was placed in service in 1940 and began delivering water to the Imperial Valley in 1941, the Imperial and Coachella valleys became one of the most productive agricultural areas in the United States (Schaefer and Ní Ghabhláin 2003). Without the All-American Canal and its dependable water source, farmers in the region would not have been able to produce the intensive high-risk crops that supported the economic development of Riverside and Imperial counties. The growth in agricultural production in these two counties following the completion of the All-American Canal was gigantic, with Imperial County seeing a 1,122-percent growth in the value of field crops in the first 14 years. The later completion of the Coachella Canal resulted in the doubling of irrigated farmland in the Coachella Valley within seven years, resulting in a 900-percent increase in the value of field crops (Bureau of Reclamation 1955).

2.2.3.5 Coachella Canal (1934 to 1948)

With the formation of the Coachella Service Area improvement district, Reclamation agreed to construct the Imperial Dam, All-American Canal, and the Coachella Branch of the All-American Canal (Coachella Canal). Title to the Coachella Canal and related structures would remain with Reclamation, while the operation, maintenance, and replacement responsibilities were to be transferred to CVWD upon completion (Trover 2016).

The Coachella Canal begins as a monumental turnout gate at Drop 1 on the All-American Canal, which is located 38 miles downstream from Imperial Dam in Imperial County. It then follows an almost 124-mile route, first northwest to Indio, then curving south to terminate at the artificial reservoir known as Lake Cahuilla in Riverside County. Starting at an elevation of 160 feet AMSL, the Canal terminates at about sea level (Schaefer and Ní Ghabhláin 2003).

Surveying that began in the 1910s and 1920s culminated in a final survey report with cost estimates in 1931. More detailed surveys and design drawings were prepared in 1938 and 1939. The contract for construction of the first 43-mile-long reach of the Coachella Canal was awarded in 1938; excavation began late that year, and construction was completed by early 1940. Excavation used routine methods

and equipment, including two dragline excavators and buckets, tractors, and bulldozers. The construction of Drop 1 of the All-American Canal for the Coachella Canal turnout was completed in 1939 (Bureau of Reclamation 1938, 1939).

Construction on the second reach of 47 miles began in 1939 and included excavation of the Canal, diversion channels, dikes, and parallel drains, as well as construction of 32 siphons, five drainage inlets, four automatic wasteways, and one check structure. The design for the siphons was modified under the contract in 1940 to increase the size of the box sections and barrel lengths and eliminate concrete in the floors of the wash crossing channels. Significant excavation and construction for this reach of the Canal occurred between 1940 and 1941. Approximately 31 miles was excavated, and the concrete work for siphons 1 to 32 was completed. However, virtually all construction work on the Canal was suspended due to World War II. The second reach was not completed until 1943 (Bureau of Reclamation 1940, 1941, 1943).

Bids for the third reach of the Canal, which had been sought but rejected in 1941, were again opened in early 1944. Due to a shortage of labor and materials, construction did not commence until late in the year. The third reach extended through difficult soil conditions and required drilling and blasting operations. Shortages of labor, materials, and labor housing slowed construction progress between 1944 and 1945. Construction to line the Canal with clay and improve the Canal road under a separate contract occurred during this time. A government camp for employee housing with a water tank and utilities was built in 1945 near the town of Coachella and included 25 two- and three-bedroom houses. By the end of 1946, all construction on the third reach and the government housing camp was completed. Contracts for construction of the fourth and fifth reaches of the Canal were awarded in 1946, and for the final reach in 1947. The final reach of the Canal was completed in 1948, and water service commenced in 1949 when it took a full 24 hours for water from the Colorado River to reach the Coachella Valley (Schaefer and Ní Ghabhláin 2003).

The Canal's last 38 miles between North Shore and Lake Cahuilla were lined with three-inch concrete to prevent water loss through seepage, with the first 85 miles lined with 12-inch-thick clay (Bureau of Reclamation 1934, 1948, 1949, 1984). The Canal is trapezoidal in shape, with the banks at least 24 feet in width. While the clay-lined sections have a bottom width of 60 feet and a water depth of 10.3 feet, the original concrete-lined sections have a bottom width of 12 feet and a depth of 10.8 feet (Bureau of Reclamation 1948). Associated structures include 33 inverted siphons, nine automatic spillways, 22 checks, seven evacuation channels, an eight-foot diameter tunnel, and 39 bridges (Bureau of Reclamation 1948). With over 160 wash channels from the adjacent mountains crossing the channel, a series of dikes were created in order to protect the Canal from floodwaters while limiting the number of flood control structures. These include a total of 37 miles of diversion dikes and 36 miles of detention dikes (Bureau of Reclamation 1938, 1948). The SPRR crosses the Canal at two locations. The portion of the Canal from the All-American Canal to Niland is operated by IID, and the remainder north of Niland is operated by CVWD (Schaefer and Ní Ghabhláin 2003).

Modifications have been made to the Coachella Canal over time. Early improvements include the installation of electronic telemetering control systems and debris screens in 1957 and 1967. Approximately 132,000-acre-feet of water lost annually to seepage resulted in the construction of a parallel concrete-lined canal in 1980-1981 for the first 48 miles between the All-American Canal and Niland (Schaefer and Ní Ghabhláin 2003). Another parallel 33.2-mile-long concrete-lined canal, extending north of Niland, was constructed by the CCLP and completed in 2006, a portion of which is involved in the current project.

3.0 METHODS

HELIX requested a records search of the project site and a one-half-mile radius from the South Coastal Information Center (SCIC) at San Diego State University on November 29, 2021, the results of which were received on December 7, 2021. The records search covered a one-half-mile radius around the project area and included the identification of previously recorded cultural resources and locations and citations for previous cultural resources studies. A review of the California Historical Resources, the state OHP historic properties directories, and the Local Register, was also conducted. The records search maps are included as Confidential Appendix B to this report. Historic maps and aerial photographs were reviewed to assess the potential for historic archaeological resources to be present.

The Native American Heritage Commission (NAHC) was contacted on November 10, 2021, for a Sacred Lands File search and a list of Native American contacts. A second request was sent on January 14, 2022, and a phone call was placed to NAHC to follow up on the request.

A visit to the project site was conducted by HELIX Cultural Resources Specialist Catherine A. Wright, HELIX Architectural Historian Teri Delcamp, Native American monitor Andreas Heredia of ACBCI, and ACBCI Archaeologist Lacy Padilla on January 6, 2022. The project lies within the completely developed limits of the Canal and its supporting facilities; no pedestrian survey was completed because the natural ground surface has been obscured by the development of the middle embankment of the Canal. However, a windshield survey was performed to ensure that no areas of the natural ground surface with the potential to contain cultural resources at the surface were present.

4.0 ARCHIVAL RESEARCH AND CONTACT PROGRAM

4.1 RECORDS SEARCH

HELIX received a records search of the California Historical Resources Information System from SCIC on December 7, 2021. The records search summary and map are included as Appendix B (Confidential Appendices, bound separately).

4.1.1 Previous Surveys

The SCIC identified 20 previous cultural resource studies within the records search limits, four of which overlap the project area (Table 1, *Previous Studies within One-Half Mile of the Project Area*). The studies consisted of cultural resource reviews, environmental impact reports, a biological survey, a mining and reclamation plan, resource inventory and evaluation reports, a historic and archaeological resources protection plan, archaeological and cultural surveys, history of local development, and a consultation report. Some of the reports are multiple drafts or phases of the same project, rather than 20 separate projects or studies.

Table 1
PREVIOUS STUDIES WITHIN ONE-HALF MILE OF THE PROJECT AREA

Report Number (SD-)	Report Title	Author, Year
IM-00225	Appendix A - History of Local Development	WESTEC Services, Inc., 1980
IM-00230	Salton Sea Anomaly Cultural Resource Review Data-Support Package	WESTEC Services, Inc., 1981
IM-00234	Salton Sea Anomaly - Master Environmental Impact Report	WESTEC Services, Inc., 1981
IM-00236	Volume II - Salton Sea Anomaly Master Environmental Impact Report and Magma Power Plant #3 (49 MW) Environmental Impact Report Appendices	WESTEC Services, Inc., 1981
IM-00237	Volume I - Salton Sea Anomaly Master Environmental Impact Report and Magma Power Plant #3 (49 MW) Environmental Impact Report Draft	WESTEC Services, Inc., 1981
IM-00254	Final Salton Sea Anomaly Master Environmental Impact Report and Magma Power Plant #3 (49 MW) Environmental Impact Report Comments and Responses	WESTEC Services, Inc., 1981
IM-00255	Final Salton Sea Anomaly Master Environmental Impact Report and Magma Power Plant #3 (49MW) Environmental Impact Report Volume I	WESTEC Services, Inc., 1981
IM-00651	Cultural Resource Overview - Coachella Canal Lining Project	Green and Middleton, 1994
IM-00674	Southern Arizona Transmission Project Preliminary Draft Environmental Impact Statement, Draft Environmental Impact Report, Draft Plan Amendment, DEIS/DEIR/DPA	Bureau of Land Management, 1994
IM-00734	East Salton Sea Material Sites Quartz, Chuckwalla, Niland, Standard, and Miter – Biological Survey Report	Dunham, 1989
IM-00735	Mining and Reclamation Plan for the Chuckawalla Material Site (Imperial County)	Caltrans, 1990
IM-00969	A Class III Cultural Resource Inventory and Evaluation for the Coachella Canal Lining Project: Prehistoric and Historic Sites Along the Northeastern Shore of Ancient Lake Cahuilla, Imperial and Riverside Counties, California	Schaefer, Ni Ghabhlain, and Becker, 2003
IM-01284	Draft Historic and Archaeological Resources Protection (HARP) Plan for The Chocolate Mountain Aerial Gunnery Range, Imperial County, California	McCorkle Apple and Cleland, 1999
IM-01510	Draft Environmental Impact Statement and California Desert Conservation Area Plan Amendment for the West Chocolate Mountains Renewable Energy Evaluation Area	Bureau of Land Management, 2011
IM-01598	Cultural Resources Inventory, Site Monitoring, and Historic Resources Verification for Chocolate Mountain Aerial Gunnery Range Imperial and Riverside Counties, California	Shaver, Lilburn, and McCorkle Apple, 2005
IM-01604	Archaeological Survey for Shallow Temperature Gradient Test Holes, Desert Warfare Training Facility, Chocolate Mountain Aerial Gunnery Range, Imperial County, California	Wahoff, 2009
IM-01605	Results of a Class III Cultural Resources Survey of 6,933 Acres in SWAT-4, Chocolate Mountains Aerial Gunnery Range, Imperial County, California	Schaefer and Dalope, 2011

Report Number (SD-)	Report Title	Author, Year
IM-01607	Cultural Resource Survey Special Warfare Training Areas 4 and 5 Chocolate Mountain Aerial Gunnery Range, Imperial and Riverside Counties, California	Rudolph, 2013
IM-01766	Draft Legislative Environmental Impact Statement for the Renewal of the Chocolate Mountain Aerial Gunnery Range Land Withdrawal	Finn, 2012
IM-01767	Initiation of Consultation for the Renewal of the Chocolate Mountain Aerial Gunnery Range Land Withdrawal	Pearce, 2012

4.1.2 Previously Recorded Resources

The SCIC has a record of 22 previously recorded cultural resources within a one-half-mile radius of the project. Sites within the half-mile records search radius consist of 16 prehistoric archaeological resources, four historic resources, one multi-component site, and one site of undetermined age (see Table 2, *Previously Recorded Resources within One-Half Mile of the Project Area*). One of these resources, recorded as P-13-007858/P-33-005705, consists of the Coachella Canal and berms associated with it (Ní Ghabhláin 2003) (Table 2) and was the only resource located within the Project area.

In general, the sites recorded within the one-half-mile search radius consist of prehistoric resources comprised of well-developed habitation sites, trails, artifact scatters, midden sites, and isolated artifacts. The multi-component site is recorded as consisting of three historic cairns and a disturbed protohistoric rock ring. One site, a cleared rock circle with no associated artifacts, is noted as undetermined. Two of the four historic resources are recorded as stone house foundations; another is a bladed road recorded as a site complex consisting of a network of dirt roads associated with P-13-014651 and indirectly associated with the construction of the Coachella Canal; and the fourth is the Coachella Canal itself. The bladed road recorded as a site complex was not recognized as an archaeological site by the SCIC and recorded as not eligible for the NRHP. The Coachella Canal was constructed between 1938 and 1948 and was formally determined to be eligible for the NRHP (Ní Ghabhláin and Schaefer 2005). No previously recorded cultural resources were identified directly adjacent to the project; however, two sites, P-13-006639, a ceramic scatter with one flake, and P-13-012583, a possible prehistoric trail segment, are situated within 500 feet of the Canal.

Table 2
PREVIOUSLY RECORDED RESOURCES WITHIN ONE-HALF MILE OF THE PROJECT AREA

Primary Number	Trinomial	Age	Description	Recorder, Date
P-13-004332	CA-IMP-4332	Prehistoric Site	Trail associated with stone house foundations and cleared circles	Wilcox and Smith, n.d.; Pignuolo, 2007
P-13-004333	CA-IMP-4333	Historic Structure	Rock house foundation consisting of 11 rocks	Wilcox, 1980
P-13-004334	CA-IMP-4334	Historic Structure	Rock house foundation consisting of six large rocks and numerous small pebbles and dirt	Wilcox, 1980

Primary Number	Trinomial	Age	Description	Recorder, Date
P-13-004827	CA-IMP-4827	Prehistoric Site	Lake Cahuilla occupation site consisting of a lithic scatter, ceramic scatter, hearths, habitation debris, burnt faunal bone, and other (not specified)	DeCosta and Graham, 1982
P-13-004828	CA-IMP-4828	Prehistoric Site	Midden site with hearths, a sparse ceramic, lithic, and ground stone scatter (flakes, metate, and fire-affected rock [FAR], hammerstone, cores, chopping tools)	Graham, 1982; Schneider, 1987
P-13-005480	CA-IMP-5480	Prehistoric Site	Large lithic scatter (flakes, FAR, core) with ceramics and fishbone fragments	Schneider, 1987
P-13-005481	CA-IMP-5481	Prehistoric Site	Large ceramic sherd scatter with lithics (flakes, reduction debris), charcoal, burnt fish, mammal, and tortoise bones and remains	Schneider, 1987
P-13-005482	CA-IMP-5482	Prehistoric Site	Ceramic sherd scatter with one core and ground stone	Schneider, 1987
P-13-005483	CA-IMP-5483	Prehistoric Site	Ceramic scatter and ground stone	Schneider, 1987
P-13-006530	CA-IMP-6530	Prehistoric Site	Ceramic and ground stone scatter	Unknown, 1956
P-13-006531	CA-IMP-6531	Prehistoric Site	Ceramic scatter	Unknown, 1957
P-13-006543	CA-IMP-6543	Prehistoric Site	Ceramic scatter	ASA, 1955
P-13-006639	CA-IMP-6639	Prehistoric Site	Ceramic scatter with one flake	ASA, 1956; Apple and Lilburn, 2005
*P-13-007858/ P-33-005705	CA-IMP-7658/ CA-RIV-5705	Historic Site	Coachella Canal and associated berms	O'Neill and Schaefer, 1997; Avina, 1999; Ni Ghabhlain, 2003; Jones and Broockmann, 2013; Brann and Broockmann, 2014
P-13-012143	---	Prehistoric Isolate	Isolate consisting of one core and one flake	Murphy, 2010
P-13-012570	CA-IMP-11080	Multi-component Site	Three historic cairns and a disturbed protohistoric rock ring	Dalope et al., 2010
P-13-012583	CA-IMP-11093	Prehistoric Site	Originally recorded as a single trail segment; determined to be a modern military pedestrian and game/burro trail. A modern rock circle with a buried pipe in the middle is noted to be one meter west of the trail as well.	Dalope, 2010; Cardno TEC et al., 2012
P-13-012584	CA-IMP-11094	Prehistoric Site	Single trail segment on light desert pavement	Dalope, 2009
P-13-013072	CA-IMP-11431	Prehistoric Site	Nine concentrations of charcoal and ashy soil recorded as possible hearth features, FAR, four concentrations of ceramic sherds, FAR, and fish bone	Toenjes, 2010

Primary Number	Trinomial	Age	Description	Recorder, Date
P-13-014506	CA-IMP-12193	Undetermined	Cleared rock circle with no associated artifacts	Broockmann, 2012
P-13-014507	CA-IMP-12194	Prehistoric Site	Cleared circle surrounded by a deflated wall, a cleared circle, and a trail	Broockmann, 2012
P-13-014651	---	Historic Site	Bladed road associated with CA-RIV-11686/P-13-014651, recorded as a site complex (not recognized as an archaeological site by SCIC)	James and Perry, 2014

**Overlaps with project area*

4.1.3 P-13-007858/P-33-005705 (CA-IMP-7658/CA-RIV-5705)

One archaeological site has been recorded within the project area, P-13-007858/P-33-005705 (CA-IMP-7658/CA-RIV-5705), the Coachella Canal. The Canal has previously been recorded as P-13-007658 in Imperial County and P-33-005705 in Riverside County. Built between 1938 and 1948, the site includes the original, unlined canal, diversion channels and dikes, parallel drains, siphons, drainage inlets, wasteways, and check structures. The first site form for the Coachella Canal (CA-RIV-5705) was prepared in 1983 by ASM Affiliates, Inc. (ASM) and covers a portion of the Canal between siphons 7 and 32. ASM recorded the site as being in good condition but not eligible for the NRHP. No justification was provided for the finding of the Canal being ineligible for listing in the NRHP. CA-IMP-07658 is an 8.9-kilometer (5.5-mile) segment of the Old Coachella Canal, which was evaluated as eligible for listing in the NRHP in 1997 (Schaefer et al. 2003). Both site forms were updated in 2003 by ASM for the CCLP, and the entire length of the old canal was recommended as eligible for the NRHP. The site form for P-13-007858/P-33-005705 was updated in 2014 to include a dirt and riprap berm with ramps and firing positions located on the northeast side of the Canal, Berm 22, which is situated outside of the project and on CMAGR, adjacent to the eastern limit of the project (Brann and Brookman 2014). According to the site form (Brann and Brookman 2014), Berm 22 is 2,537 feet long and between 49 and 66 feet wide at the base. The berm has boulder riprap on portions of the lower half of the eastern side that was employed to assist in controlling the erosion from floodwaters coming down the alluvial channels on the eastern side of the berm. The military converted the berm into part of the range complex associated with the SWAT ranges and Camp Billy Machen. Two firing positions have been placed atop the northern end of the berm, which consist of metal poles sunk into the berm with a roof structure over the top and fencing on the west side. These structures do not substantially alter the original structure of the berm.

4.2 OTHER ARCHIVAL RESEARCH

Various archival sources were also consulted, including historic topographic maps (USGS Online Historical Topographic Map Explorer 2022) and aerial imagery (NETR Online 2022). These include a historic aerial from 1953 and several historic USGS topographic maps, including the 1940 and 1944 Frink (1:62,500) maps, the 1954 and 1955 Salton Sea (1:125,000) maps, the 1956 Wister (1:24,000) and 1956 Frink (1:62,500) maps, and the 1965 and 1968 Salton Sea (1:125,000) maps. The purpose of this research was to identify historic structures and land use in the area.

Other than the Canal and its associated structures, no buildings or structures appear in the project area on any of the aerials and topographic maps examined. On the 1940 and 1945 maps, several dirt roads appear, including the Canal access road along the west side of the Canal, and a road extending

perpendicular to the east from the Canal near the northern end, whose purpose is indicated to be to access a mine. In adjacent areas, to the west, increasing amounts of agricultural use and development can be seen to occur through time.

4.3 NATIVE AMERICAN CONTACT PROGRAM

HELIX contacted the NAHC on November 10, 2021, for a Sacred Lands File search and a list of Native American contacts for the project area. A response from NAHC was received on February 15, 2022, indicating that a search of the Sacred Lands File was negative and no sacred lands have been identified associated with the project area. No outreach to the Tribes, either verbal or written, was conducted by HELIX. However, the Tribal archaeologist and a Tribal monitor from the ACBCI participated in the site visit to ensure that the potential for TCRs to be present in the study area was considered during the project analysis. To date, a copy of the records search from SCIC prepared for the current study and the 2003 CCLP history and evaluation report (Schaefer and Ní Ghabhláin 2003) have been provided to the ACBCI. The Tribe has not provided information indicating TCRs are present within or in the vicinity of the project area.

CVWD will perform government-to-government consultation in compliance with AB 52, and Reclamation will conduct Tribal consultation under Section 106. No follow-up letters will be prepared for this report. A list of Tribal contacts provided by NAHC is included as Appendix C of this report. The lead agencies for the project will be responsible for any government-to-government consultation efforts for the project.

4.4 SITE VISIT

A site visit was conducted on January 6, 2022, by HELIX Cultural Resources Specialist Catherine A. Wright, who also served as HELIX Project Manager; HELIX Architectural Historian Teri Delcamp; ACBCI Native American Monitor Andreas Heredia; and ACBCI Archaeologist Lacy Padilla. The project area was subject to a visual survey by driving down each side of the Canal along the operations and maintenance (O&M) roads between siphons 11 and 14. Brief stops were conducted along the route when inlet or outlet control structures were encountered.

The project site is completely developed by the original Coachella Canal alignment, the concrete-lined parallel canal alignment, embankments created by the spoils from the construction of the canals, the middle embankment separating the two canals, fence lines, and the O&M roads (see Plates 1 through 4). Because the natural ground surface has been obscured by these developments, a pedestrian survey for archaeological sites was not warranted. However, a windshield survey was performed to ensure no areas of the natural ground surface where archaeological resources might occur were present.

The ground surface has been impacted by the development of the Canal, including excavation for the canals themselves, and the grading and leveling for the O&M roads running between each canal segment. It also appears that the areas along both sides of the Canal have been built up to protect the Canal, and to accommodate the O&M roads and security fencing along the Canal. Embankments created from the removal of sediments to build the original and parallel-lined canals run along the outside of the O&M roads, forming an approximate 30-foot embankment, creating a physical boundary between the Canal and the surrounding open desert to the east. The existing siphon and check structures within the project area were constructed for the CCLP project in 2006. The project was essentially devoid of any vegetation, save that growing within the now-dewatered abandoned portion of the old canal segment around wildlife drinkers created by the CCLP.

The only area within the project that appears to have remaining intact soils forms the approximately 30-foot-wide embankment separating the two canals, which was graded to create an O&M road along the top of the embankment. The Canal was constructed utilizing draglines to dig the trench in which the water was to flow (Schaefer and Ní Ghabhláin 2003). However, it does not appear that the surrounding lands were excavated or graded. Further, it appears that what was originally the western side of the Canal, which became the current middle embankment, was not excavated or otherwise disturbed during the original construction, nor was it removed or deeply excavated when the parallel alignment was created for the CCLP. According to Schaefer and Ní Ghabhláin (2003), the soils excavated to create the original canal were utilized to create a six-foot embankment on the west side of the Canal that was then graded to create access and maintenance roads, leaving the natural ground surface intact below the embankment. When the CCLP was constructed, this area along the western edge of the original Canal became the eastern side of the middle embankment. The middle embankment will be removed to create the midline storage.

The original Canal's easterly embankment is still present but was modified by the CCLP, with periodic grading for access down to the wildlife drinkers that were added at the bottom of the original Canal. The clay-lined banks of the Canal are eroded.



Plate 1. View along east side of original Coachella Canal towards south; embankment created from canal construction spoils shown to east.



Plate 2. View south from center berm between original and lined canals; concrete-lined canal on right.



Plate 3. View northwest from Check 11 north from east side of Coachella Canal showing old canal with some remaining water in foreground and newer concrete-lined canal in background.



Plate 4. View of old, unlined portion of the Canal towards the north at curve in alignment south of Check 11. Note overall level of disturbance and wildlife drinker midframe. Lined canal is shown to the left.

5.0 RESULTS

No prehistoric archaeological resources were identified within the project by either the records search or the site visit. The Coachella Canal is recorded as an archaeological resource, as described below and in Section 4.1.3, P-13-007858/P-33-005705 (CA-IMP-7658/CA-RIV-5705). Other than the Canal, no archaeological material was observed within the project site. As noted above, the project area has been graded and otherwise heavily disturbed by the construction of the canals.

5.1 SITE DESCRIPTION

5.1.1 P-33-005705 and P-13-007658 (Coachella Canal)

The Coachella Canal occurs in both Imperial and Riverside counties. P-13-007658 only refers to a small portion of the old Coachella Canal between siphons 7 and 32, in Imperial County, while P-13-007858 documents the entire canal. The portion of the Coachella Canal between siphons 7 and 32 is recorded as an archaeological resource under trinomials CA-IMP-7658 and CA-RIV-5705. Within this portion of the Canal, there are 25 siphons, three check structures, two automatic spillways, five drainage inlet structures, one railroad bridge, and numerous dirt and rip rap berms, in addition to the Canal itself. The entirety of the Canal documented as P-13-007858 includes the 123.5-mile sand trench that formed the Old Coachella Canal. Overall, the Canal appears to be in a good state of repair and maintains a high level of integrity.

5.2 HISTORICAL SIGNIFICANCE

The Coachella Canal was evaluated by ASM in 2003 prior to completion of the CCLP and found to be potentially eligible for listing in the NRHP under Criterion A and Criterion C (Schaefer and Ní Ghabhláin 2003). It is eligible under Criterion A as a part of the effort to capture the waters of the Colorado River for the development of agriculture in the Imperial and Coachella valleys. As one of the largest public works projects ever completed in the United States, the development of the Canal is representative of Federal involvement in the development of water reclamation projects at the onset of the twentieth century. The Canal also represents the role of local irrigation districts and agricultural interests in the development of this desert region of the Southwest. Finally, the Canal ensured a reliable water supply for the Coachella Valley, thereby spurring the agricultural and its associated economic development of the region. The Coachella Valley remains, to this day, one of the most productive irrigated agricultural areas of the United States.

The Coachella Canal was also evaluated as eligible under Criterion "C" as a good example of a moderate-sized Bureau of Reclamation irrigation canal constructed in the 1930s and 1940s, with distinctive characteristics of canal construction from the period.

Reclamation made a formal determination of NRHP eligibility under criteria A and C in 2003. Also, in 2003, Reclamation made a finding of the adverse effect that would result from the CCLP with the abandonment of the original canal, demolition of the downslope berm, and destruction of most of the associated canal structures. Reclamation had previously submitted a draft treatment plan to the State Historic Preservation Officer (SHPO) for mitigation of impacts to all cultural resources, including the Coachella Canal that would result from the CCLP. Ultimately in 2004, the SHPO concurred on NRHP eligibility only under Criterion A and agreed with the determination of effect and that the treatment plan was sufficient mitigation for the CCLP. Thus, the Canal's significance with regard to NRHP eligibility is at the broader level of contributions to the region's development history rather than for any physical features that are distinctive to canal construction.

Since the Coachella Canal was determined eligible for the NRHP under Criterion A, and the CCLP treatment plan was determined sufficient to mitigate all impacts to cultural resources from that project, the consideration with the current project is whether any additional impacts could occur that were not previously mitigated. The portion of the original canal that will be affected by the current project has already been significantly altered by the CCLP, which replaced the original earthen canal with the construction of a parallel concrete-lined canal. Portions of the old canal that remain intact are the embankment between the old and newer canals, as well as the bottom and easterly embankment of the old canal. The embankments have been altered by grading for the O&M roads and access to the wildlife drinkers that were created in the bottom of the old canal with the CCLP. Moreover, because the Coachella Canal was not determined eligible for the NRHP under Criterion C, the modifications to physical features do not factor as impacts unless those modifications would affect the purpose and function of the Canal as water conveyance infrastructure.

6.0 SUMMARY AND MANAGEMENT RECOMMENDATIONS

6.1 SUMMARY

A study was undertaken to identify any additional cultural resources present in the Mid-Coachella Canal Storage Project and to determine the effects of the project on historical resources, as defined by CEQA. A cultural resources site visit did not identify any archaeological resources within the project area; however, the Coachella Canal itself is a highly significant historical resource. Since the entirety of the old Coachella Canal was determined eligible for the NRHP (and, by extension, the CRHR), it is considered a historical resource under CEQA. As a historical resource, the potential for a project to have significant environmental impacts must be analyzed. However, as noted above, the portion of the old canal in the project area has been previously significantly altered by the CCLP, and SHPO concurred that Reclamation's treatment plan fully mitigated all impacts to cultural resources from that project. The sections below discuss the potential for any new impacts associated with the current project and mitigation measures.

6.1.1 Archaeological Resources

The entire project area has been disturbed by the development of the original Canal in the 1930s and 1940s and the construction of the CCLP in the 2000s. Construction activities would have obliterated archaeological sites present within the areas trenched or otherwise disturbed during canal development. However, the project is situated along the high-water shoreline of prehistoric Lake Cahuilla, which would have attracted humans prehistorically in this arid portion of the desert. Considerable evidence exists for prehistoric use of the area along the lake margins, predominantly in the form of habitation sites with associated fish bone (York n.d.). The records search from SCIC identified 22 previously recorded cultural resources within a one-half-mile radius of the project; these consist of 16 prehistoric archaeological resources, four historic resources (including the Canal), and two multi-component sites. Of these sites, five are documented prehistoric habitations showing signs of considerable use, all of which were identified and documented during surveys, and none of which has been evaluated for significance. While surface manifestations of archaeological resources may not be present within the project area, the project location along the high-water shoreline of Lake Cahuilla also indicates there is a potential for buried sites to occur along former shorelines used by humans as the lake receded. Further, while none of the prehistoric habitations have been excavated to date, the documentation prepared for the sites does mention the potential for buried deposits to occur. As such, the potential exists for intact cultural resources to be present within the undisturbed soils of the middle embankment between the original and the lined Canal that will be removed to create the reservoir.

It should be noted that the prior replacement of the earthen Coachella Canal, which included dewatering of the trench that forms the Canal, has the potential to affect the integrity of the site. Between wind and water erosion, the potential exists, that over time, the unlined trench that makes up the original Coachella Canal will continue to be filled in while the slopes grading into the feature erode. As time passes, visible manifestations of the Canal may be slowly erased from the landscape. The introduction of water back into this portion of the Canal as a result of the project will not only restore this portion of the site to a use more consistent with its original purpose; it will also preserve the integrity of the feature over time.

6.1.2 Historical Resources

The old Coachella Canal was formally determined eligible for the NRHP under Criterion A in 2004 for its part in bringing water for the development of agriculture in the Imperial and Coachella valleys. It was not determined eligible under Criterion C as a good example of an early-twentieth-century irrigation canal with distinctive characteristics of canal construction. Thus, the Canal's significance is at the broader level of contributions to the region's development history rather than for any physical features that are distinctive to canal construction. The portion of the Canal that will be affected by the project was dewatered and replaced by a parallel, lined canal segment completed with the CCLP in 2006. The only intact portions of the old canal that remain in the project area are the embankment separating it from the newer lined canal and on the east side, as well as the bottom of the Canal.

The Canal continues to be a water conveyance resource and has been modified over time to ensure it is effective for that purpose; the current project also intends to ensure efficient operation of the Canal. Therefore, the proposed further modifications to the physical features of the Canal, which will remove the middle embankment and add material to the easterly embankment to provide water storage reservoir cells, do not have the potential to significantly impact the NRHP or CRHR significance of the Coachella Canal. This section of the original canal will once again be utilized for water conveyance and storage, which will allow it to function in a manner more consistent with its historic use.

6.2 MANAGEMENT RECOMMENDATIONS

6.2.1 Archaeological Resource Recommendations

While no archaeological or Native American cultural resources have been identified within the project area, the potential exists for sites to be uncovered when the project is developed in undisturbed soils. Because the original canal was built prior to the existence of CEQA, no archaeological study was performed prior to its construction. Numerous archeological resources are documented within a one-half-mile radius of the project, including well-developed prehistoric habitation sites, three prehistoric trail segments, two sites made up of cleared circles, and numerous artifact scatters. In addition, the Canal is situated near the high stand of Lake Cahuilla, an area known for prehistoric archaeological resources associated with the use of the lake, primarily for fishing. As such, the potential exists that cultural deposits remain buried within the embankment separating the two canals. In addition, while no Native American cultural resources have been identified within the project area, there are important cultural resources within one-half mile of the project, including five prehistoric habitations.

Subsurface construction activities, such as grading associated with the project, have the potential to damage or destroy previously undiscovered archaeological resources or TCRs, resulting in a potentially significant impact. Archaeological resources can include both prehistoric and historic features and artifacts; tribal cultural resources may be archaeological in nature but have cultural significance that may not be obvious to the archaeologist or non-Native American observer. TCRs can also include cultural landscapes or other non-archaeological resources. Due to this potential, it is recommended that cultural resource monitoring be conducted as needed during initial ground disturbance in canal segments that will be over excavated in previously undisturbed alluvial soils. Full-time monitoring in these segments will be performed during steps 2 and 3 of construction, when the middle embankment is removed. Monitoring will no longer be necessary once construction activities occur within soils previously disturbed during construction of the original or lined canal. If significant cultural material is

encountered, CVWD will coordinate with Reclamation staff and a qualified Archeologist to develop and implement appropriate site-specific treatment measures (e.g., avoidance, data recovery, capping).

The existing staging area near the northern end of the project, a portion of which is still in use as an equipment storage yard by CVWD, was developed for the canal lining project; it has been graded and maintained. No archaeological sites have been identified within this portion of the project. Because no ground disturbance is proposed for the staging area, no further archaeological study of this portion of the project is warranted.

Existing rock rubble piles located along the west side of the Canal ROW, north of the project site at Check 24, were placed in their location during the CCLP and are not a part of the original canal construction nor do they serve as a feature of the Canal. No additional study of this portion of the project is necessary.

Inadvertent Discoveries

In the event that cultural resources are exposed during ground-disturbing activities, construction activities (e.g., grading, grubbing, or vegetation clearing) should be halted in the immediate vicinity of the discovery. An archaeologist who meets the Secretary of the Interior's Professional Qualifications Standards should then be retained to evaluate the find's significance under CEQA. If the discovery proves to be significant, additional work, such as data recovery excavation, may be warranted and should be discussed in consultation with CVWD.

Discovery of Human Remains

Although there is no evidence to suggest the presence of human remains in the project area, their discovery is always a possibility during project construction. If such an event did occur, the specific procedures outlined by the NAHC, in accordance with Section 7050.5 of the California Health and Safety Code and Section 5097.98 of the Public Resources Code, must be followed:

1. All excavation activities within 100 feet of the remains will immediately stop, and the area will be protected with flagging or by posting a monitor or construction worker, to ensure that no additional disturbance occurs.
2. The project owner or their authorized representative will contact the County Coroner.
3. The coroner will have two working days to examine the remains after being notified in accordance with HSC 7050.5. If the coroner determines that the remains are Native American and are not subject to the coroner's authority, the coroner will notify NAHC of the discovery within 24 hours.

The NAHC will immediately notify the Most Likely Descendant, who will have 48 hours after being granted access to the location of the remains to inspect them and make recommendations for their treatment. Work will be suspended in the area of the find until CVWD approves the proposed treatment of human remains.

Should the project limits change to incorporate new areas of proposed disturbance, an archaeological survey of these areas will be required.

With the implementation of the recommendations proposed below, potential impacts to previously undiscovered cultural resources would be reduced to a less than significant level.

6.2.2 Historical Resource Recommendations

While the project will not significantly impact the Coachella Canal's historical resources, it may create the false impression that the reservoir was part of the Canal's original construction in the 1930s and 1940s. With the implementation of the recommendation proposed below, potential impacts to historical resources that may result from the project would be reduced to a less than significant level.

The Canal has been well-documented by past surveys and evaluations, including a Historic American Engineering Record document in 2003. Therefore, the recommendation is that CVWD complete drone flight recordings of the project area before construction commences, and after construction is completed once the reservoir cells are filled with water. The recordings will be stored and made available by CVWD and Reclamation to the public.

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Appendix A

Resumes

Summary of Qualifications

Ms. Robbins-Wade has 41 years of extensive experience in both archaeological research and general environmental studies. She oversees the management of all archaeological, historic, and interpretive projects; prepares and administers budgets and contracts; designs research programs; supervises personnel; and writes reports. Ms. Robbins-Wade has managed or participated in hundreds of projects under the California Environmental Quality Act (CEQA), as well as numerous archaeological studies under various federal jurisdictions, addressing Section 106 compliance and National Environmental Policy Act (NEPA) issues. She has excellent relationships with local Native American communities and the Native American Heritage Commission (NAHC), as well as has supported a number of local agency clients with Native American consultation under State Bill 18 and assistance with notification and Native American outreach for Assembly Bill 52 consultation. Ms. Robbins-Wade is a Registered Professional Archaeologist (RPA) and meets the U.S. Secretary of the Interior's Professional Qualifications for prehistoric and historic archaeology.

Selected Project Experience

12 Oaks Winery Resort (2015 - 2018). Project Manager/ Principal Investigator for a cultural resources survey of approximately 650 acres for a proposed project in the County of Riverside. Oversaw background research, field survey, site record updates, Native American coordination, and report preparation. Met with Pechanga Cultural Resources staff to discuss Native American concerns. Worked with applicant and Pechanga to design the project to avoid impacts to cultural resources. Work performed for Standard Portfolio Temecula, LLC.

28th Street between Island Avenue and Clay Avenue Utilities Undergrounding Archaeological Monitoring (2014 - 2018). Project Manager/Principal Investigator for a utilities undergrounding project in a historic neighborhood of East San Diego. Responsible for project management; coordination of archaeological and Native American monitors; coordination with forensic anthropologist, Native American representative/Most Likely Descendent, and City staff regarding treatment of possible human remains; oversaw identification of artifacts and cultural features, report preparation, and resource documentation. Work performed for the City of San Diego.

Archaeological Testing for the F11 (2015 - 2017). Project Manager for a cultural resources study for a proposed mixed-use commercial and residential tower in downtown San Diego. Initial work included an archaeological records search and a historic study, including assessment of the potential for historic archaeological resources. Subsequent work included development and implementation of an archaeological testing plan, as well as construction monitoring and the assessment of historic archaeological resources encountered. Work performed for the Richman Group of Companies.

Education

Master of Arts,
Anthropology, San
Diego State
University, California,
1990

Bachelor of Arts,
Anthropology,
University of
California, Santa
Barbara, 1981

Registrations/ Certifications

Caltrans,
Professionally
Qualified Staff-
Equivalent Principal
Investigator for
prehistoric
archaeology,
, Bureau of Land
Management
Statewide Cultural
Resource Use Permit
(California), permit
#CA-18-35,
, Register of
Professional
Archaeologists
#10294, 1991
County of San Diego,
Approved CEQA
Consultant for
Archaeological
Resources, 2007
, Orange County
Approved
Archaeologist 2016

Mary Robbins-Wade, RPA

Cultural Resources Group Manager

Blended Reverse Osmosis (RO) Line Project (2018 - 2019). Project Manager/ Principal Investigator for cultural resources monitoring during construction of a 24-inch recycled water pipeline in the City of Escondido. Oversaw monitoring program, including Worker Environmental Awareness Training; responsible for Native American outreach/coordination, coordination with City staff and construction crews, and general project management. Work performed for the City of Escondido.

Borrego Springs Community Library IS/MND (2015 - 2016). Cultural Resources Task Manager/ Principal Investigator for a cultural resources survey for a proposed development consisting of a public library, park, and police substation for the County of San Diego. The project is proposed on a 20.5-acre site on undeveloped land in the Borrego Springs community.

Buckman Springs Road Bridge Widening Technical Studies (2017 - 2020). Senior archaeologist for a cultural resources survey in support of the proposed Buckman Springs Road Bridge Widening Project, entails the rehabilitation and widening of the existing bridge crossing of Buckman Springs Road over Cottonwood Creek (Bridge No. 57C-0270). The project proponent is the County of San Diego Department of Public Works (DPW), with local assistance funding from the Federal Highway Administration. Provided senior technical oversight and quality assurance/quality control on deliverables.

Buena Sanitation District Green Oak Sewer Replacement Project (2016 - 2017). Project Manager/Principal Investigator for a cultural resources testing program in conjunction with a proposed sewer replacement project for the City of Vista. Oversaw background research, fieldwork, site record update, Native American coordination, and report preparation. Work performed for Harris & Associates, Inc., with the City of Vista as the lead agency.

Cactus II Feeder Transmission Pipeline IS/MND (2017 - 2018). Cultural Resources Task Lead for this project in the City of Moreno Valley. Eastern Municipal Water District proposed to construct approximately five miles of new 30-inch to 42 inch-diameter pipeline; the project would address existing system deficiencies within the City and provide supply for developing areas. Oversaw background research, field survey, and report preparation. Responsible for Native American outreach for cultural resources survey. Assisted District with Native American outreach and consultation under AB 52. Work performed under an as-needed contract for Eastern Municipal Water District.

Dale 2199C Pressure Zone Looping Pipeline Project (2019 - 2019). Cultural Resources Task Lead for this project in Moreno Valley. Eastern Municipal Water District proposed construction of a new pipeline to connect two existing pipelines in the District's 2199C Pressure Zone. The pipeline would consist of an 18-inch-diameter pipeline between Kitching Street and Alta Vista Drive that would connect to an existing 12-inch-diameter pipeline in the northern end of Kitching Street and to an existing 18-inch-diameter pipeline at the eastern end of Alta Vista Drive. The project will improve reliability and boost the Dale Pressure Zone's baseline pressure and fire flow availabilities. Four potential alignments were under consideration; three of these bisect undeveloped land to varying degrees, while the other is entirely situated within developed roadways. Oversaw background research and field survey. Responsible for Native American outreach for cultural resources survey and co-authored technical report. Work performed under an as-needed contract for Eastern Municipal Water District.

Mary Robbins-Wade, RPA

Cultural Resources Group Manager

Downtown Riverside Metrolink Station Track & Platform Project (2019 -). Cultural Resources Task Lead for this project involving changes to and expansion of the Downtown Riverside Metrolink Station. Overseeing records search and background information, archaeological survey, and report preparation. Responsible for coordination with Native American Heritage Commission, Riverside County Transportation Commission (RCTC), and Federal Transportation Authority (FTA) on Native American outreach. Work performed for Riverside County Transportation Commission as a subconsultant to HNTB Corporation.

Emergency Storage Pond Project (2018 - 2018). Project Manager/Principal Investigator for a cultural resources testing program in conjunction with the Escondido Recycled Water Distribution System - Phase 1. Two cultural resources sites that could not be avoided through project design were evaluated to assess site significance and significance of project impacts. Work included documentation of bedrock milling features, mapping of features and surface artifacts, excavation of a series of shovel test pits at each site, cataloging and analysis of cultural material recovered, and report preparation. The project is located in an area that is sensitive to both the Kumeyaay and Luiseño people, requiring close coordination with Native American monitors from both groups. Work performed for the City of Escondido.

Escondido Brine Line Project (2018 - 2019). Project Manager/Principal Investigator for cultural resources monitoring during construction of approximately 2.3 miles of a 15-inch brine return pipeline in the City of Escondido. The project, which is part of the City's Agricultural Recycled Water and Potable Reuse Program, enables discharge of brine recovered from a reverse osmosis facility that is treating recycled water; it is one part of the larger proposed expansion of Escondido's recycled water distribution to serve eastern and northern agricultural land. The project is located in an area that is sensitive to both the Kumeyaay and Luiseño people, requiring close coordination with Native American monitors from both groups. Oversaw monitoring program, including Worker Environmental Awareness Training; responsible for Native American outreach/coordination, coordination with City staff and construction crews, and general project management. Work performed for the City of Escondido.

Fox Tank Monitoring (2018 - 2019). Principal Investigator and Project Manager for the cultural resources monitoring program during construction of the Fox Tank Project. Oversaw the cultural resources monitoring program, including coordination with the District and the Native American tribal cultural monitors regarding cultural resources encountered during monitoring and their ultimate disposition. Work performed under an as-needed contract for Eastern Municipal Water District.

Hacienda del Mar EIR (2016 - 2020). Senior Archaeologist for a proposed commercial development project for a senior care facility in Del Mar. Assisted in the preparation of associated permit applications and an EIR. Oversaw background research, updated records search and Sacred Lands File search, monitoring of geotechnical testing, coordination with City staff on cultural resources issues, and preparation of updated report. Prior to coming to HELIX, served as Cultural Resources Task Lead for the cultural resources survey for the project, conducted as a subcontractor to HELIX. Work performed for Milan Capital Management, with the City of San Diego as the lead agency.

Mary Robbins-Wade, RPA

Cultural Resources Group Manager

Haymar Easement Protection Project (2020 -). Cultural Resources Task Lead/Principal Investigator for an emergency repair project to protect a trunk sewer and associated access path badly damaged by erosion. Overseeing cultural resources monitoring during construction in this highly culturally sensitive area, including coordination with Luiseño tribal monitors and City staff.

Judson Potable Water Storage Tank and Transmission Pipeline IS/MND (2016 - 2019). Cultural Resources Task Lead for this project in the City of Moreno Valley. Eastern Municipal Water District is proposing the construction and operation of a steel, 2.2-million-gallon (MG) potable water storage tank, approximately 2,300 linear feet of 18-inch-diameter transmission pipeline, a paved access road, a detention basin, and other appurtenances to support tank operations. Oversaw background research and field survey. Responsible for Native American outreach for cultural resources survey and co-authored technical report. Assisted District with Native American outreach and consultation under AB 52. Work performed under an as-needed contract for Eastern Municipal Water District.

Lilac Hills Ranch (2014 - 2017). Project Manager/Principal Investigator of a cultural resources survey and testing program for an approximately 608-acre mixed-use development in the Valley Center area. Oversaw background research, field survey, testing, recording of archaeological sites and historic structures, and report preparation. Responsible for development of the research design and data recovery program, preparation of the preservation plan, and Native American outreach and coordination. The project also included recording historic structures, development of a research design and data recovery program for a significant archaeological site, and coordination with the Native American community and the client to develop a preservation plan for a significant cultural resource. The project changed over time, so additional survey areas were included, and a variety of off-site improvement alternatives were addressed. Work performed for Accretive Investments, Inc. with County of San Diego as the lead agency.

Moulton Niguel Water District Regional Lift Force Main Replacement (2017 - 2018). Cultural Resources Task Lead/Principal Investigator for the replacement of a regional lift station force main operated by Moulton Niguel Water District (MNWD). The project comprises an approximately 9,200 linear foot alignment within Laguna Niguel Regional Park in Orange County, in an area that is quite sensitive in terms of cultural resources. HELIX is supporting Tetra Tech throughout the preliminary design, environmental review (CEQA), and final design, including permitting with applicable state and federal regulatory agencies. The cultural resources survey will inform project design, in order to avoid or minimize potential impacts to cultural resources. Oversaw background research and constraints analysis, Native American coordination, cultural resources survey, coordination with MNWD and Tetra Tech, and report preparation. Work performed for MNWD, as a subconsultant to Tetra Tech.

Murrieta Hot Springs Road Improvements Project (2018 - 2020). Principal Investigator/Cultural Resources Task Lead for cultural resources survey in support of an Initial Study/Mitigated Negative Declaration (IS/MND) for the widening of Murrieta Hot Springs Road in the City of Murrieta. The project would widen or restripe Murrieta Hot Springs Road between Winchester Road and Margarita Road from a 4-lane roadway to a six-lane roadway to improve traffic flow, as well as provide bike lanes in both directions along this segment. A new raised median, light poles, signage, stormwater catch basins, retaining walls, and sidewalks would also be provided on both sides of the roadway, where appropriate.

Mary Robbins-Wade, RPA

Cultural Resources Group Manager

The project area is in a location that is culturally sensitive to the Native American community. The cultural resources study included tribal outreach and coordination to address this cultural sensitivity.

Oceanside Water Utilities Dept On-Call Environmental Consulting Services, 2017-2022 (2018 - 2020). Cultural Resources Task Lead/Principal Investigator for three consecutive on-call contracts with the City of Oceanside Water Utilities Department. Oversees the preparation of cultural resource reports, coordinates with Native American tribes, and directs construction monitoring teams for projects as part of this contract. Project types include reservoirs, pump stations, lift stations, pipelines, and treatment plants.

Park Circle - Cultural Resources (2014 - 2019). Project Manager/Principal Investigator of a cultural resources survey and testing program for a proposed 65-acre residential development in the Valley Center area of San Diego County. The project is located along Moosa Creek, in an area that is culturally sensitive to the Luiseño people. Oversaw background research, historic study, field survey, testing, recording archaeological sites and historic structures, and report preparation. Responsible for Native American outreach and coordination. The cultural resources study included survey of the project area, testing of several archaeological sites, and outreach and coordination with the Native American community, as well as a historic study that addressed a mid-20th century dairy barn and a late 19th century vernacular farmhouse. Work performed for Touchstone Communities.

Peacock Hill Cultural Resources (2014 - 2017). Project Manager/Principal Investigator of a cultural resources study update for a residential development in Lakeside. Oversaw updated research, fieldwork, lab work, analysis by forensic anthropologists, report preparation, and Native American coordination. In the course of outreach and coordination with the Native American (Kumeyaay) community, possible human remains were identified, prompting additional fieldwork, as well as coordination with the Native American community and forensic anthropologists. Work performed for Peacock Hill, Inc.

Sky Canyon Sewer Environmental Consulting (2018 - 2019). Cultural Resources Task Lead for this project adjacent to the City of Murrieta in southwestern Riverside County. Eastern Municipal Water District (District) proposed to implement the Sky Canyon Sewer Main Extension Project to construct approximately 6,700 linear feet of new gravity-fed 36-inch-diameter sewer main to provide additional sewer capacity for planned development. The proposed 36-inch-diameter sewer main would extend the existing 36-inch-diameter French Valley Sewer at Winchester Road further downstream to Murrieta Hot Springs Road. Oversaw background research and field survey. Responsible for Native American outreach for cultural resources survey and co-authored technical report. Assisted District with Native American outreach and consultation under AB 52. Work performed under an as-needed contract for Eastern Municipal Water District.

Summary of Qualifications

Ms. Wright has 23 years of experience performing cultural resource management in the West. She has performed the full range of archaeological and historic resource studies in California, Arizona and Nevada. This includes background research, surveys, site evaluations, and mitigation through data recovery and monitoring. She has prepared numerous cultural resource survey reports, site overviews, background summaries, survey and testing plans, and Integrated Cultural Resource Management Plans (ICRMPs). She acted as Quality Assurance Manager for numerous large cultural resources contracts with the Department of Defense, including the Navy, Air Force, Army Corps of Engineers (Corps), and the US Army. Ms. Wright has also served as a Natural Resources Specialist for Naval Facilities Engineering Command (NAVFAC), Southwestern Division and has worked closely with NAVFAC personnel managing cultural resource contracts for NAVFAC Southwest and NAVFAC Atlantic. Ms. Wright has supported historic built environment studies, prepared interpretive programs and displays, and prepared portions of National Register of Historic Places district nominations in southern California.

Ms. Wright has considerable experience with the applications of the NHPA and with cultural resource requirements of CEQA and with CEQA Plus. Through her federal service, she is also familiar with the requirements of various Executive Orders guiding archaeological and historic resource studies. Ms. Wright has also worked with BLM, City and County of Riverside, California State Parks, Caltrans, Bureau of Indian Affairs (BIA), U.S. Forest Service (USFS), Bureau of Reclamation, Corps, Imperial Irrigation District (IID), Coachella Valley Water District, the City and County of San Diego, and Caltrans.

Selected Project Experience

Olive Park Telecom Site (2019 - 2019). Cultural Resources Specialist for the preparation of a technical report for a telecommunications site in Spring Valley. Prepared portions of the monitoring report summarizing activities and results. Work performed for the County of San Diego.

Shell Station - 490 PCH - Initial Study/ Mitigated Negative Declaration (2018 - 2018). Cultural Resources Specialist for cultural resources survey addressing CEQA requirements for the construction of a 2,438-square foot food mart with a gas station in Seal Beach. Prepared historic background section, including summarizing a review of historic aerial photographs and maps. Work performed for A&S Engineering.

Education

Bachelor of Science,
Anthropology,
University of
California, Riverside,
1998

Registrations/ Certifications

Field Director, Bureau
of Land Management
Statewide Cultural
Resource Use Permit
(California), permit
#CA-18-35

Catherine A. Wright

Cultural Resources Specialist

3Roots San Diego EIR (2018 - 2018). Cultural Resource Specialist for budget tracking for a survey in the City of San Diego. Gathered data on hours spent to ensure sufficient funding was available to conduct mitigation studies.

Marisol Specific Plan Initiative (2018 - 2018). Cultural Resources Specialist for preparing the cultural resources section of an EIR prepared to support the development of a hotel and resort property along the coast in Del Mar. The project falls within the boundaries of one of the last intact prehistoric coastal adaptation sites in southern California and is archaeologically very sensitive. Prepared mitigation measures to be implemented prior to ground breaking and once construction commences. Work performed for the City of Del Mar.

Oceanside Water Utilities Dept On-Call Environmental Consulting Services, 2017-2022 (2018 - 2019). Cultural Resource Specialist for the preparation of technical studies for archaeological and historic built environment issues in the city of Oceanside. Prepared numerous technical reports and proposals to ensure the City remains in compliance with the cultural resources requirements of CEQA and NEPA.

Sycamore-Watson Residential Project (2018 - 2018). Archaeological Peer Reviewer for a cultural resources survey technical report that summarized the cultural resources work performed by a consultant on a 7-acre development property. The project area is sensitive for cultural and Tribal cultural resources. Provided critical feedback on the methods utilized and the recommendations provided in the report. Work performed for the City of Vista.

Sprouts Cultural Report Project (2018 - 2018). Cultural Resource Specialist for the preparation of an ARM-format technical report to summarize a cultural resources survey for the proposed Sprouts store in Vista; work was performed under Section 106 of the NHPA. A historic-era irrigation ditch was identified during survey and was evaluated as significant for project management purposes. Work performed for the City of Vista.

S. Santa Fe Heights Project (PC14-310) (2019). Cultural Resources Specialist for an archaeological survey for a proposed residential development on South Santa Fe Avenue in Vista. Prepared technical report for submission to the City of Vista.

Olive Avenue 15-Lot TSM/ANX Project (P17-0388) (2019). Cultural Resources Specialist for an archaeological survey on Olive Avenue in Vista. Prepared technical report and coordinated with subconsultant architectural historian to provide the City of Vista with site documentation for a residential property located within the project area.

Cedar Road Townhomes Project/P19-0255 (2020). Peer Reviewer for a private development project in Vista. Provided written technical feedback regarding a cultural

Catherine A. Wright

Cultural Resources Specialist

resources survey report prepared by another firm. Work conducted for the City of Vista

Apple Valley Airport Detention Basin IS/MND (2018 - 2018). Assistant Project Manager for coordination with the San Manuel Band of Mission Indians, which provided Native American monitoring services during an archaeological survey of the Apple Valley Airport. Work performed for the Apple Valley Airport Authority.

Sweetwater Vistas Technical Reports (2018 - 2018). Cultural Resources Specialist for preparation of a detailed historic context for the project, which is situated in a culturally sensitive portion of eastern San Diego County. Prepared a summary of prehistoric and historic human activities in the Sweetwater Valley from the Late Prehistoric period to the post-Mission era. Work performed under contract to Sweetwater Vistas, LLC under review by the U.S. Army Corps of Engineers.

Cactus II Feeder Transmission Pipeline IS/MND (2018 - 2018). Cultural Resource Specialist for a 4.5-acre survey in Moreno Valley for the proposed installation of a sewer line and associated facilities. Coordinated Native American monitoring, completed survey, and prepared a negative survey report. The project area is sensitive for cultural resources but the ground surface was obscured by grass. Recommended archaeological and Native American monitoring once construction commences. Work performed for Eastern Municipal Water District.

De Anza Sewer Force Main Project (Bio and Cultural Resources) (2018 - 2018). Cultural Resources Specialist for coordinating the services of a subcontractor to perform archaeological and paleontological monitoring services for Eastern Municipal Water District. Worked with subconsultant to ensure adequate staffing of the project during construction. Work performed for Eastern Municipal Water District.

DALE 2199C PRESSURE ZONE LOOPING PIPELINE PROJECT (2019). Cultural Resources Specialist for the preparation of a ARMR-format technical report to summarize a CEQA-compliant archaeological survey in Riverside County. Completed online research regarding historic land use of the property, prepared letters of consultation for Native American representatives traditionally affiliated with the project site, and prepared the technical report. The results of the survey were negative but based upon the cultural sensitivity of the project area, recommended monitoring be performed during site development.

Escondido Brine Line Project (2019 - 2019). Cultural Resources Specialist for proposal preparation and budget tracking. Tracked expenditures to ensure the project did not exceed the contract amount. Work performed for the City of Escondido.

Catherine A. Wright

Cultural Resources Specialist

La Ventana Project (2018 - 2018). As Cultural Resources Specialist, prepared an archaeological monitoring plan for the development of a residential property. Summarized previous studies of the property and an agreement between the developer and the Pechanga Band of Luiseno Indians ensuring monitoring is complete in compliance with their recommendations. Prepared guidance for monitoring, survey, surface collection, the relocation of bedrock milling features on the property into open space, and the installation of fencing. The monitoring plan will be reviewed by Pechanga prior to submission to the developer and the County of Riverside. Work was performed in compliance with CEQA and Section 106 of the NHPA.

Seraphina Project (2017 - 2018). Cultural Resources Specialist for a technical report to summarize the results of a 40-acre survey adjacent to Santa Gertrudis Creek in Temecula. Two pipelines associated with the historically significant First San Diego Aqueduct are situated within the project area and will be capped during project construction. Prepared site forms for the pipes and a historic road alignment, which are located within the study area. Prepared a State Historic Preservation Officer (SHPO) consultation letter for the U.S. Army Corps of Engineers. Work was performed in compliance with Section 106 of the NHPA. Work performed for Hillcrest Homes.

964 Urania Avenue (2018 - 2018). Cultural Resources Specialist for monitoring of grading on a small residential property in Encinitas prior to site development. Performed monitoring of heavy equipment, the results of which were negative. Work performed for Hallmark Communities.

Oceanpointe Cultural Resources (2019). Cultural Resources Specialist for a 36-acre survey along the south side of Mission Avenue in Oceanside. The project will entail the development of residences just southwest of Mission San Luis Rey, an area known to be culturally, historically, and archaeologically sensitive. One previously recorded site and three previously recorded isolates were reidentified during survey and their documentation updated. One newly identified site was documented and significance evaluation completed. Prepared the technical report, completed background archival research, and prepared recommendations for additional archaeological study of the property prior to site development.

Downtown Riverside Metrolink Station Track & Platform Project (2020). Cultural Resource Specialist for preparation of a technical report to summarize the archaeological survey of the proposed location of a new train depot in Riverside. Conducted background research, summarized survey results, and provided recommendations for additional cultural resource studies required for project compliance with NEPA. Work performed for HNTB under contract to the Federal Transit Authority.

Catherine A. Wright

Cultural Resources Specialist

Orchard Wood Sewer Replacement Project (2018 - 2018). Cultural Resource Specialist for preparation of a technical report to summarize the results of a survey of an existing sewer line in Encinitas. The technical report summarized status of knowledge information, methods and results of the study, and provided recommendations for additional work. The area is sensitive for prehistoric archaeological resources and recommendations for archaeological and Native American monitoring during ground disturbances were made. Work performed as a subconsultant to Infrastructure Engineering Corporation, with the City of Encinitas as the lead agency.

Bouquet Canyon Road Project (2018 - 2018). Project Manager for an intensive pedestrian survey of a residential property in Benedict Canyon. Coordinated with Tribal monitors and archaeological crew to complete the survey and prepared technical report, including a historic context for the cities of Los Angeles, Beverly Hills, and West Hollywood. Work performed for 9712 Oak Pass Road, LLC.

461 Harbor Project (2018 - 2018). Cultural Resources Specialist for archival review of a rail line that bisects 5.55 acres of vacant lands located at 461 Harbor Blvd. in La Habra between Cypress Avenue and S. Harbor Blvd. Identified the rail alignment and worked with historic aerial photos and topographic maps to determine the potential age of extant historic buildings on the property. Work performed for KB Home.

City of San Diego Alvarado Trunk Sewer Phase IV Design (2018 - 2018). Cultural Resources Specialist for the preparation of a technical report to summarize an archaeological survey along Alvarado Creek within the City of San Diego. Worked with Field Director to ensure the areas that were subjected to survey were captured in the report. Prepared a summary of background research, NAHC consultation, a records search from the South Coastal Information Center. Work performed for the City of San Diego.

San Elijo Joint Powers Authority Roadway and Trail Addendum and Permitting (2018 - 2018). Cultural Resources Specialist for roadway and shared-use trail crossing improvements within Manchester Avenue along the frontage of Manchester Avenue in Cardiff. Prepared background section including historic context information. Work performed for Kimley-Horn.

Padre Dam Municipal Water District East County Advanced Water Purification Program Year 2 (2018 - 2018). Cultural Resources Specialist for preparation of a technical report to summarize the background research and survey completed for the replacement of water lines from the western portion of Santee to Lakeside, CA. The project bisects numerous historical areas in the region, including historic ranches, prehistoric and historical archaeological sites, and the San Diego Aqueduct Flume. Prepared recommendations for mitigation measures to be implemented once construction begins. Work performed for the City of San Diego.

Catherine A. Wright

Cultural Resources Specialist

Rosamond Community Services District Wetland Conceptual Design Services Environmental Surveys and Documentation (2018 - 2019). Cultural Resources Specialist for survey of a 32-acre property proposed for the construction of evaporation ponds along the western boundary of Edwards Air Force Base. Coordinated with field crew and Native American monitors. Two previously recorded sites were subjected to testing and determined to be not eligible for the NRHP or CRHR. Prepared the technical report and technical memos to summarize the work for AB 52 consultation by the Rosamond Community Services District. Work performed for Kennedy Jenks under review by the U.S. Army Corps of Engineers.

Newage Carlsbad Luxury Resort Technical Studies (2018 - 2018). Cultural Resources Specialist for preparing a prehistoric context for the site of a future hotel on the west site of Batiquitos Lagoon in south Carlsbad. Reviewed historic archaeological reports and geological data to summarize the Native American land use history of the property, to summarize prior archaeological work performed in the region, and to add to the assessment of the cultural sensitivity of the property prior to construction.

Salt Bay Design District Specific Plan EIR (2020 -). Cultural Resource Specialist for a proposed mixed-use development within the Salt Bay Design District in Chula Vista. Prepared an updated technical report incorporating City of San Diego recommended revisions to the original report.

Buena Vista Apartments Project-Cultural Resources Services (Monitoring) (2018 - 2018). Cultural Resource Specialist for preparing a consultation letter for the State Historic Preservation Officer to comply with Section 106 of the NHPA.

Wildomar Crossings Retail Development Project (2018 - 2018). Cultural Resources Specialist for preparing an ARMR-format technical report under Section 106 of the NHPA. Reviewed CEQA report and reformatted the contents of the document into an appropriate format. Work performed for Mann Property Company under review by the Army Corps of Engineers.

Cultural Resources Monitoring and Site Surface Collection for MILCON P-970 Ammunition Supply Point Upgrade at MCB Pendleton (2019). Cultural Resources Specialist for the preparation of an interim monitoring report to summarize archaeological surface collection and monitoring for the development of an ammunition supply depot at Marine Corps Base Camp Pendleton. Work performed for NAVFAC Southwest.

Catherine A. Wright

Cultural Resources Specialist

Escondido Country Club (2018 - 2018). Senior Archaeologist for coordination with an architectural historian subcontractor to provide a proposal to evaluate extant structures at the former Escondido County Club.

CEQA/NEPA Support for Ontario International Airport (2019 - 2019). Cultural Resource Specialist for archaeological survey for the expansion of the Ontario International Airport. Prepared portions of technical report, including historic background section, and coordinated Native American monitoring for the survey. Work performed for the Ontario International Airport Authority.

Otay Reservoir Biological Survey and Report and Cultural Resources Report Review (2018 - 2018). Cultural Resources Specialist for peer review of a consultant's 1996 technical report regarding archaeological studies for the Reservoir-Rancho Jamul 0.50-MG project. Summarized the studies as performed and provided recommendations for additional studies of the property to meet CEQA compliance requirements. Prepared a proposal to complete archaeological studies prior to site development. Work performed for Otay Water District.

Palomar Community College District Maintenance and Operations Facility Cultural Resources Monitoring (2018 - 2018). Cultural Resource Specialist for archaeological monitoring during excavation of a detention basin on the Palomar College campus in San Marcos. Coordinated with a Native American monitor to observe mechanical excavation into undocumented fill with the potential to hold cultural resources. The results of monitoring were negative. Prepared detailed notes for submission to Palomar Community College District. Work performed for Palomar Community College.

Murrieta Hot Springs Road Improvements Project (2020 -). As Cultural Resource Specialist, updated a cultural resources survey report for a proposed residential development located in Murietta, CA. The results of the survey were negative. Work performed for SB&O under review by the City of Murietta.

City of San Diego As-Needed Permitting Assistance for O & M Activities and Emergencies, July 2017 - June 2018 (2018 - 2018). Cultural Resources Specialist for preparation of a technical report to summarize pedestrian survey performed along the San Diego River. Summarized background research and the results of the survey. Work performed for the City of San Diego.

CONFIDENTIAL Cottonwood Sand Mine Environmental Impact Report (2018 - 2019). Cultural Resources Specialist for Native American consultation pertaining to Tribal sensitivity of a proposed sand mine in San Diego. Worked with Viejas, Barona, Kwaaymii Laguna Band of Mission Indians, Ewiiapaayp Band of Kumeyaay Indians, and the Kumeyaay Cultural Repatriation Committee to identify Traditional Cultural

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Resources within the study area. Coordinated a historic built environment study for the project with a subconsultant. Work performed for Enviromine, Inc.

The Commons at Hidden Springs (2019). Cultural Resources Specialist for a 15-acre archaeological survey in Wildomar, Riverside County, CA. Coordinated with Field Director to prepare a technical report summarizing the background, methods, and results of the study, which were negative.

P-586 Missile Assembly Building - San Nicolas Island (2020 - ongoing). Project Manager for archaeological studies performed to support the development of a missile assembly bunker at San Nicolas Island. Coordinated with client and Navy personnel, prepared work plan, met with Tribal monitors, and oversaw project schedule and expenditures. Work performed for Soltek Pacific under contract to NAVAIR.

Verizon Quail Run (2017 - 2018). Cultural Resources Specialist for the development of a cellular site along Central Avenue in Riverside. Coordinated archaeological monitoring with the construction crews and Native American monitoring with Tribal representatives. Work performed for Verizon.

Verizon Bassmore Arch Monitoring (2018 - 2018). Cultural Resources Specialist for archaeological monitoring of a cellular tower site along Central Avenue in Riverside. Coordinated with Tribal monitor and construction crew to ensure monitors were present during ground disturbances.

TCI-54 Oaks Senior Living Community Peer Reviews (2019 - 2019). Cultural Resources Specialist for the preparation of a peer review summary of a technical study performed by GANDA for a property in Marin County. Reviewed the technical report and recommendations and provided written feedback on alternative approaches for the study.

La Salina Sewer Lift Station Design and Wastewater Treatment Plant Decommissioning (2018 - 2019). Cultural Resources Specialist for the preparation of a cultural resources survey and assessment report for the project, which is located along the coast in central Oceanside. Worked with a qualified historian, who prepared a historic context and evaluation of the ca. 1947 La Salina Wastewater Treatment Plant. Summarized the prehistoric and historical archaeological sites that may be impacted by project development. Work performed for Tetra Tech, Inc., with the City of Oceanside as the lead agency.

EMWD Quail Valley III Regional Water Tank Environmental Consulting (2020). Cultural Resource Specialist for the construction of a new water tank and associated piping and facilities in Riverside County. Prepared the technical report to summarize

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a records search, Native American outreach, archaeological survey, and research into the historic land uses of the project lands. Work performed for ...

Previous Project Experience

Malibu Creek Regional Park Interpretive Displays (2015 – 2016). Project Archaeologist for preparation of a historic context to summarize the prehistoric and historic uses of the area surrounding Malibu Creek in the Santa Monica Mountains. Prepared text for on-site interpretive signs to be placed within the park to educate the public on historic uses of the area. Work performed for the Salvation Army.

Historical Resources Evaluation of the Palmdale Ditch (2008). Report Editor for the review and revision of a technical report summarizing a cultural resources survey and evaluation of a historic water feature in the Antelope Valley. Work performed for Metropolitan Water District of Southern California.

Archaeological Site Signing at San Clemente Island (2007). Archaeologist for installation of new protective signs at the Eel Point site. Prepared a scope of work to install more than 700 additional signs for sites located near roadways and in areas with a high level of access to military personnel. Prepared brochures to be provided to military personnel to inform them on the SCLI cultural resources program. Work performed for Navy Region Southwest.

PSEP L1004 Archaeological High-Level Review, (2017 - 2017). Senior Archaeologist for preparation of a literature review and sensitivity analysis for a proposed pipeline replacement project. Worked with SoCalGas personnel to obtain records search information. Prepared a sensitivity analysis to identify the potential for the unanticipated discovery of archaeological or historical sites during project development. Provided recommendations for compliance with CEQA and NEPA. Produced a second set of recommendations pertaining to a number of taps to be installed in the project. The results were negative. Work performed for Southern California Gas Company

Archaeological Monitoring for the Widening of 32151 Del Obispo (2017 - 2017). Archaeologist for preparation of a scope of work and cost estimate to perform five days of archaeological monitoring during trenching and potholing within a known archaeological district in San Juan Capistrano. Work performed for Southern California Gas Company

Archaeological Survey for the Repair of Line 235 (2017 - 2017) – Archaeologist for the preparation of a scope of work, cost estimate, and Fieldwork Authorization Request (FAR) for a survey on Bureau of Land Management (BLM) lands administered by the BLM's Needles Field Office. Survey was conducted to support repair or replacement of 34-inch diameter pipeline that has succumbed to various forms of degradation since its installation in the late 1950's. Work performed for Southern California Gas Company

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Archaeological Monitoring for Southern California Gas Line 85 Pipeline Right of Way (2017 - 2017). Archaeologist for the preparation of a Fieldwork Authorization Request (FAR) for submission to the Bureau of Land Management (BLM). Prepared draft technical report to summarize the results of monitoring. Prepared a DPR form for a single isolated artifact identified during construction. Work performed for Southern California Gas Company

PSEP L1005 Archaeological High-Level Review (2017 - 2017). Senior Archaeologist for the preparation of a literature review and sensitivity analysis for a proposed pipeline replacement project. Worked with SoCalGas personnel to obtain records search information. Prepared a sensitivity analysis to identify the potential for the unanticipated discovery of archaeological or historical Work performed for Southern California Gas Company

Archaeological Survey for the Line 6916 Sunnyslope Relocation Potholing (2017 - 2017). Co-Project Manager for coordinating an archaeological survey along a gas line near Twentynine Palms, CA. Work performed for Southern California Gas Company

Archaeological Monitoring for Line 6916 (2017 - 2017). Project Manager for coordination with a subcontractor to provide a qualified archaeological monitor during the excavation of an existing natural gas line on BLM lands near Needles. An isolated artifact was recorded in proximity to the gas line and so monitoring was required. No additional artifacts or cultural resources were identified during construction. Work performed for Southern California Gas Company

Cuyama Photovoltaic (PV) Monitoring (2017 - 2017). Project Manager for archaeological and Native American monitoring, noise, air quality, and Best Management Practices work for the development of a PV project in Santa Barbara County. Coordinated with First Solar staff to provide qualified monitoring personnel to observe construction and to monitor air quality and noise levels during construction. Provided weekly updates to First Solar on the progress of monitoring and nesting bird surveys. Work performed for First Solar

Pallowalla High-Level Environmental Review and Cultural Resources Survey (2017 - 2017). Senior Archaeologist for a high-level review of cultural resources information for a 2.5-acre project located in open desert adjacent to a residential development in Blythe. Prepared recommendations for cultural resource studies of the property. Managed an intensive pedestrian survey of the project. Prepared technical report to summarize the negative results of the survey. Work performed for Southern California Gas Company

Sunroad Otay Plaza CEQA Clearance Study (2017 – 2017). Project Manager for an archaeological survey, noise study, and air quality study to support the development of a new commercial complex. The results of an archaeological records search for the property identified the project as being situated within the boundaries of a previously recorded, 700-acre prehistoric lithic quarrying site. Prepared a technical memo to summarize the results of the archaeological study and coordinated

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with City of San Diego staff to ensure the construction phase of work was not delayed by archaeological finds. Responded to Native American inquiries into the project. Work performed for KLR Planning

Cultural Resource Reviews for the SoCalGas PSEP Project (2016 - 2017). Senior Archaeologist for the preparation of summaries of existing cultural resource information for numerous SoCalGas undertakings in Central California. Coordinated with SoCalGas adjunct staff to obtain records searches of information provided by the California Historical Resources Information System (CHRIS) information centers in Fullerton, Bakersfield, and Santa Barbara counties. Reviewed historic topographic maps and aerial photos to determine the historic land use of the project properties. Prepared high-level reviews and detailed environmental reviews for pipeline maintenance, replacement, and abandonment projects throughout the region. Provided recommendations for additional work required to implement the PSEP program. Work performed for Southern California Gas Company

Environmental Monitoring for Valves 18 and 18a (2017 - 2017). Co-Project Manager for coordinating the work of a qualified biologist during monitoring of construction for the replacement of two gas valves. Worked with the subcontractor to ensure a preconstruction survey was completed within a week of the commencement of construction. Reviewed daily field notes during monitoring and reviewed and edited the preconstruction survey reports. Work performed for Southern California Gas Company

On-Call Environmental Studies for Southern California Gas Company (2017 - 2017)– Project Manager for cultural resource services under this on-call contract. Worked with SoCalGas personnel to propose upon, staff, and complete various technical studies including records searches, surveys, Native American monitoring, archaeological monitoring, and site significance evaluations throughout SoCalGas's jurisdiction. Coordinated with subcontractors to provide qualified cultural resources personnel. Coordinated with federal agencies to obtain permitting to perform the studies. Prepared and reviewed technical reports. Provided labor estimates for upcoming projects. Tracked use of subcontractors to ensure adequate use of Disadvantaged Business Enterprises. Work performed for Southern California Gas Company

Line 3000 Cultural Resource Surveys and Monitoring (2016 - 2017). Project Manager for coordinating with a qualified subcontractor to perform archaeological surveys and monitoring for safety related conditions on natural gas lines located south of National Trails Highway in Needles, CA. Prepared scope and cost and negotiated the Request for Contractor Service (RFCS). Monitoring was performed on an as-needed basis during construction and required immediate responses to requests for service. The work was performed under a Fieldwork Authorization by the Needles BLM. Reviewed technical report prior to submittal to SoCalGas Project Manager. Work performed for Southern California Gas Company

Archaeological Testing at the SoCalGas Goleta Facility (2016 - 2017). Project Manager for preparation of a proposal to complete archaeological testing within the

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boundaries of a known prehistoric habitation site located within the SoCalGas facility located along Goleta Slough, Santa Barbara County. Prepared mapping of shovel test pit (STP) locations for approval by the County prior to the commencement of testing. Coordinated the exact placement of excavation locations with the field director. Coordinated site access and project work with the SoCalGas archaeologists and environmental personnel. Reviewed technical report prior to submission. Work performed for Southern California Gas Company

Archaeological Studies at the Sanchez Adobe (2016 - 2017). Project Manager for archaeological monitoring during the replacement of a waterline within a National Register of Historic Places (NRHP-) listed historic district in San Mateo County. The five-acre property includes archaeological remains attributable to every major habitation period in California, from the prehistoric through WWII. Coordinated with San Mateo County to provide Ground Penetrating Radar (GPR) studies to determine if intact subsurface cultural deposits are present within the site boundaries; edited resulting GPR report and utilized the results to prepare a proposal for performing an Extended Phase I testing program within the boundaries of an area slated for the construction of an interpretive center. Coordinated the preservation in place of human remains discovered during testing through placement of a cap with Park personnel, the construction contractor, and Native American representatives. Work performed for San Mateo County Parks Department.

Class III Archaeological Survey of BLM Lands for the Upgrade and Maintenance of Southern California Gas Pipeline Line 3000 (2016 - 2017).

Project Manager for the completion of a 1,127-acre survey along an existing natural gas line situated along Kelbaker Road in the Mojave Desert. The work was performed for compliance with the FLPMA and Section 106 of the NHPA. Prepared and submitted a Fieldwork Authorization Request to the Bureau of Land Management (BLM) to conduct fieldwork. Obtained a records search from SoCalGas. Coordinated with field staff to complete the survey along 62 miles of the pipeline. Coordinated with BLM to obtain additional project information, a Fieldwork Authorization, and to prepare appropriate recommendations for the evaluation and mitigation of project sites. Prepared portions of historic context. More than 70 resources were identified and recorded. Eligibility evaluations were provided based upon surface components of the site. Two separate ARMR-format reports were prepared for BLM review. Work performed for Southern California Gas Company

Naval Weapons Station Seal Beach Integrated Cultural Resources Management Plan (ICRMP) Update (2017 – 2017).

Project Coordinator to prepare and negotiate a budget for updating the NWS Seal Beach, Detachment Fallbrook and Detachment Corona ICRMPs. Attended the project kickoff meeting with technical staff and management staff from the Prime to determine the distribution of work between the firms. Reviewed draft ICRMP sections. Coordinated the transfer of data and deliverables between Rincon and the Prime. Work performed for Ultrasystems Environmental under contract with NAVFAC SW

Cuyama Solar Development (2016 - 2016). Task Manager for archaeological and Native American monitoring effort during ground disturbances related to the

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development of a solar field and gen-tie line in Cuyama. Coordinated with the client and monitors to ensure appropriate archaeological and Tribal coverage during site development. Attended weekly coordination meetings and worked closely with the Project Manager to provide data to First Solar in a timely manner. Prepared a brief technical report to summarize the background, methods utilized during fieldwork, and the results of the study, which were negative. *Work performed for First Solar.*

Scarlet Solar Archaeological Survey (2016 - 2016). Task Manager for preparation of a records search request and request to the Native American Heritage Commission to conduct a search of the California Sacred Lands File (SLF). Coordinated fieldwork with Field Director and the client to ensure access to the study area was granted. Conducted informal Native American consultation to determine the Tribal sensitivity of the 4,000+-acre project property. Work performed for Recurrent Energy

Work Plan for the Orcutt Specific Plan Area Archaeological Testing Project (2016 - 2017). Senior Archaeologist for drafting the testing plan for a small lithic scatter located at the confluence of three streams in San Luis Obispo County. Work plan included the methods for testing the site with shovel test pits (STPs) and test excavation units (TEUs) to determine the CRHR eligibility of the site. Work performed for Ambient Communities, LLC.

Archaeological Technician Support for the Development of Sewage Settling Ponds along Lake Rosamond (2016 - 2016). Project Manager for working with the installation's on-call contractor to provide adequate, qualified field surveyors to complete a pedestrian inventory of a large area along Rosamond Lake on the western side of the base. Coordinated with field crew and base staff to complete the survey. Prepared site forms and other field documentation for more than 80 prehistoric and historic sites located near Challenger Road. For the most part, the sites are attributable to the Western Pluvial Lakes Tradition and to the historic period occupation of EAFB. Work performed for JT3.

Braverman Drive Residential Development Site Mitigation and Salvage (2016 - 2016). Archaeologist for the salvage of late prehistoric cremations and associated burial goods after the completion of data recovery mitigation of a prehistoric site along the San Diego River in Santee, San Diego County. Screened soil and collected diagnostic and unique artifacts and human remains for repatriation with the Kumeyaay Indians. Reviewed portions of the technical report. Work performed for KB Home.

Line 33-37 Archaeological Monitoring, Santa Monica Mountains Recreation Area (2016 - 2016). Task Manager for working with Southern California Gas to provide archaeological and Native American monitors for the replacement of a gas line on National Park Service (NPS) lands. Coordinated the revision of an existing ARPA permit for the project to include monitoring. Worked with NPS and SoCalGas to obtain timely approval of the permit. Work performed for Southern California Gas Company

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Block 81 (Park and Market) Archaeological Testing and Monitoring (2016 - 2016). Project Manager for preparation of a proposal with an associated archaeological testing plan for a large commercial block in downtown San Diego (Block 81) where known historic sites were documented in 2002. Worked with subcontractor to obtain a bid for providing paleontological monitors during construction. Work performed for Holland Partners Group

Richmar Park Archaeological Monitoring (2016 - 2016). Project Manager for a contract with the City of San Marcos staff to provide archaeological monitoring for the development of a park on Richmar Ave. The project was performed for CEQA and HUD NHPA compliance. No sites were identified. *Work performed for Schmidt Design*

Archaeological Testing for the 6th Avenue Suites Project (2016 - 2016). Senior Archaeologist for monitoring of mechanical trenching to test a previously developed property for subsurface archaeological deposits. Monitored geotechnical testing and boring being performed by the project geologist. No sites were identified. Coordinated with City of San Diego personnel to provide paleontological monitors during deeper excavations on the property. Prepared technical report. Work performed for the Narven Partners.

Frazier Park to Pine Mountain Telecommunications Cable Project– (2015 – 2015). Senior Archaeologist for preparation of a permit application for an ARPA permit to complete replacement of telecommunication lines within the Angeles National Forest (ANF). Worked with ANF archaeologists to obtain permitting. Work performed for Plains All American Pipeline, LLC

Archaeological Monitoring for 220 West Gutierrez Street (2015 - 2015). Senior Archaeologist for preparation of a technical report summarizing monitoring and the discovery of two historic trash deposits on the property at 220 W. Gutierrez in Santa Barbara. Prepared technical report and site form for the discovery. Work performed for Paladin Law Group, LLC

Walker Pass Archaeological Survey (2015 - 2015). Senior Archaeologist for a survey and preparation of site documentation, a historic context for the town of Neenach, and portions of an archeological survey report for compliance with CEQA prior to the development of a 1,200-acre solar field in the Antelope Valley. Work performed for Recurrent Energy

Garland Solar Archaeological Monitoring Project (2015 - 2016). Senior Archaeologist for coordination with monitoring staff to ensure adequate archaeological and Native American monitors were present during project development. Tracked monitoring hours and expenses for the client. Prepared monthly summary reports to describe the month's construction monitoring activities as required by the project MMRP. Project Coordinator/Technical Writer. Work performed for Recurrent Energy

Malibu Creek Regional Park Interpretive Displays (2015 – 2016). Project Archaeologist for preparation of a historic context to summarize the prehistoric and

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historic uses of the area surrounding Malibu Creek in the Santa Monica Mountains. Prepared text for on-site interpretive signs to be placed within the park to educate the public on historic uses of the area. Work performed for the Salvation Army.

Environmental Assessment/Overseas Environmental Assessment (EA/OEA) for the Fiber Optic Communications Underwater System (FOCUS) Replacement (2014 - 2015). Technical Editor for review of the draft EA/OEA being prepared by the Department of the Navy for the replacement of submarine communications lines running from Naval Base Ventura County, Point Mugu to Santa Cruz and San Nicolas islands, offshore from the California mainland. Ensured Government comments to the draft document were properly incorporated. Provided input on the archaeological studies to be accomplished before project implementation. Work performed for Naval Air Systems Command (NAVAIR).

Update and Evaluation of 31 Sites at Airport Lake (2014 - 2014). Senior Archaeologist for preparation of prepared site forms and background information for the preparation of a technical report to summarize a testing and evaluation program at NAWS China Lake. Work performed for Naval Air Systems Command (NAVAIR).

Target Buffer Survey (2014 - 2014). Senior Archaeologist for preparation of previous research section for a technical report summarizing the results of an intensive pedestrian survey on the North Range of NAWS China Lake. Identified previous studies conducted within the current study area and summarized their results. Prepared summaries of site information for more than 50 sites identified within the project APE. Work performed for Naval Air Systems Command (NAVAIR).

Bodie Hills Archaeological Surveys (2014 – 2014). Senior Archaeologist for the preparation of site forms and previous research sections for the technical report provided to the BLM summarizing a survey and evaluation effort on BLM lands in Inyo and Mono counties, California. Survey was conducted over the course of three years and resulted in the identification, documentation, and evaluation of more than 200 prehistoric and mining-related historic sites. Work performed for the BLM.

NAVFAC Southwest On-Call Cultural Resources Contract (2012 - 2017). Contract Manager for working with lead cultural resource specialists and NAVFAC cultural resources personnel to conduct the full range of archaeological and architectural history studies on Navy and Marine Corps installations throughout the American Southwest. Served as Quality Control Manager for project deliverables. Work performed for NAVFAC Southwest.

Edwards Air Force Base (EAFB) Additional 85 Sites Testing (2010 - 2010). Assistant Contract Manager for the preparation of a cost estimate and scope of work for submission to the Air Force. Edited portions of technical report. Negotiated the budgeted amount with base personnel. Work performed for the US Air Force.

Sunrise Powerlink Archaeological Monitoring Project (2009 – 2015). Assistant Contract Manager for coordination with San Diego Gas & Electric Company (SDG&E)

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to staff, permit, and manage archaeological monitoring of the construction of a major transmission corridor from Imperial County to the San Diego coastline. Worked with BLM to obtain FLPMA permitting for temporary field crews and coordinated project scheduling. Work performed for SDG&E.

San Diego Gas & Electric Monitoring at 749 Ora Avo Road (2008 - 2008).

Archaeologist for emergency monitoring of the replacement of a power pole in Vista. Coordinated work with SDG&E project managers and construction foreman, conducted archaeological monitoring of pole replacement, and prepared technical report to summarize the results of the project. Work performed for SDG&E.

La Pozz Cement Survey (2008 - 2009). Project Coordinator for ensuring completion of technical aspects of work. Edited archaeological report and managed report production. Work performed for Enviroscientists.

SHPO Consultation for the JIEDDO Construction Project (2007 - 2007). As Natural Resources Specialist, assisted with the preparation of a SHPO consultation package for Section 106 compliance on a large-scale trenching project for the installation of a fiber optic network. Prepared a written review of previous cultural resources work that had taken place within the project, identified sites that were impacted by trenching, and made recommendations for treatment and/or mitigation of 29 NRHP-eligible sites. Reviewed a contractor's damage assessment report and provided comments. Conducted site visits to identify sites damaged by trenching. Work performed for NAVFAC Southwest.

Historical Resources Evaluation of the Palmdale Ditch (2008 - 2008). Report Editor for the review and revision of a technical report summarizing a cultural resources survey and evaluation of a historic water feature in the Antelope Valley. Work performed for Metropolitan Water District of Southern California.

Determination of Effect for Ranges at San Clemente Island (2007 - 2007). Natural Resource Specialist for the preparation of a written determination of effects (DOE) from the construction of berms within a rifle range on the Island. Conducted site visits to identify impacts to a NRHP-eligible site. Prepared background information on the project and coordinated with the Officer-In-Charge to determine any plans for future work in the area. The DOE report was submitted to the SHPO for concurrence. Work performed for Navy Region Southwest.

Archaeological Site Signing at San Clemente Island (2007 - 2007). Archaeologist for installation of new protective signs at the Eel Point site. Prepared a scope of work to install more than 700 additional signs for sites located near roadways and in areas with a high level of access to military personnel. Prepared brochures to be provided to military personnel to inform them on the SCLI cultural resources program. Work performed for Navy Region Southwest.

Data Consolidation for Previous Work at San Clemente Island (2007 - 2007). Archaeologist for a review of previous documentation for studies conducted in the central portion of San Clemente Island. Prepared a scope of work and cost estimate

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for consolidation of the data under a single cover. Work performed for Navy Region Southwest.

NALF San Clemente Island Programmatic Agreement (PA), (2007 - 2007).

Archaeologist for the review of the cultural resources section of the Southern California Range Complex EIR and provided comments. Prepared an abbreviated history of work at the Island to include in a consultation package for submission to the SHPO to support Commander Navy Region Southwest's Programmatic Agreement for cultural resources at the Island. Consulted with the Commanding Officers of both Naval Base Coronado and NALF San Clemente Island, and Navy environmental personnel to facilitate the submission of the PA. Work performed for Navy Region Southwest.

MCAS Miramar Integrated Cultural Resources Management Plan (2007 - 2009).

Technical Editor for a management planning document, which covers regulatory requirements and status of knowledge information for archaeological resources and historic built environment resources on the MCAS Miramar base in San Diego County. Work performed for NAVFAC SW.

MCAS Miramar Archaeological Study (2007 - 2009). Prepared work plan for the preparation of an Integrated Cultural Resources Management Plan (ICRMP) for this Marine Corps installation, located in central coastal San Diego County. Reviewed status of knowledge information related to the archaeology and history of the base. Worked with Base Archaeologist, Public Works Office, and environmental personnel to complete the ICRMP. Work performed for NAVFAC SW.

UCSD San Diego Consortium for Regenerative Medicine Archaeological Monitoring (2009 - 2009). Assistant Project Manager for coordinating work between the Prime Contractor and project personnel. Worked with project archaeologist to develop a strategy for conducting monitoring within the boundaries of a known archaeological site for the construction of a new research facility and associated parking structures. Work performed for the University of California, San Diego (UCSD).

EAFB Phase II and III Studies Along the West and Northwest Base Boundaries (2007 - 2009). Technical Editor to ensure study documentation was complete and correct. Edited technical report summarizing background information, study methods and results. Work performed for the US Army Corps of Engineers, Los Angeles District.

Archaeological Inventory of the Chicken Springs Project (2008 - 2009). Assistant Project Manager for preparation of bid documents including written proposal and project budget. Coordinated work with offices in Cheyenne and Rock Springs, Wyoming. Edited technical report resulting from fieldwork. Work performed for the Wyoming BLM.

Historical Resources Evaluation of the Palmdale Ditch (2008 - 2008). Report Editor for the review of and revisions to a technical report for the survey and

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evaluation of a historic water feature in the Antelope Valley. Work performed for the Metropolitan Water District of Southern California.

LaPozz Mining Archaeological Survey (2008 - 2008). Report co-author for the review of and revisions to a technical report providing recommendations for eleven sites prior to their disturbance by mining undertakings. Revised report to follow BLM requirements (ARMR report format) and reviewed site records and additional project documentation to ensure compliance with Section 106 of the NHPA. Work performed for the BLM.

Edwards Air Force Base Archaeological Survey and Evaluations (2008 - 2008). Report Editor for the review of cultural resources technical reports and revisions provided to Principal Investigators. Work performed for the US Army Corps of Engineers, Los Angeles District.

UCSD Gliderport Cultural Resources Assessment Project (2008 - 2008). As Report Editor, reviewed technical report resulting from an archival review of known sites within a proposed construction project area. Work performed for the University of California, San Diego (UCSD).

Naval Detachment Concord Archaeological Survey (2006 – 2008). Assistant Project Manager for coordination with Navy personnel and staff GIS administrator to prepare project area maps for use during survey and to conduct the records search. Edited final draft of technical report. Work performed for NAVFACSW

Carson Lake Geothermal Project (2007 – 2007). Report Editor for review of a technical report resulting from a 300-acre archaeological survey near Naval Air Station Fallon in Nevada. Reviewed technical report and provided recommendations for revisions to the content. Work performed for the Nevada BLM.

Felicita Park Archaeological Monitoring (2007 – 2007). Assistant Project Manager for archaeological monitoring during the removal of large signs at Felicita Park in Escondido. Prepared scope and budget and coordinated between Parks and Recreation staff and archaeological monitors. Work performed for County of San Diego Department of Parks and Recreation.

Black Mountain Park Project (2005 – 2007). Associate Archaeologist for preparation of a background study of the park and surrounding area based upon records search information from the South Coastal Information Center and the San Diego Museum of Man. Reviewed and summarized records search results to provide a historic context for the study area. Edited historic resources management plan for the mine complex. Work performed for the City of San Diego.

Power Line Reconstruction at Palomar Mountain, (2007 – 2008). Assistant Project Manager for consultation with SDG&E environmental managers to provide archaeological monitors during the replacement of power poles that were burned during the 2007 San Diego wildfires. Coordinated with SDG&E personnel, California State Parks archaeologists, and staff members to ensure adequate archaeological coverage during the ground disturbances resulting from this project. Provided

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assistance with Section 106 compliance. Coordinated monitoring during clean-up of a diesel spill within Rancho Cuyamaca State Park. Work performed for San Diego Gas & Electric Company.

Integrated Cultural Resource Management Plan (ICRMP) for Navy Base Ventura County (2006 – 2008). Associate Archaeologist for preparation of a draft ICRMP for base facilities including NAS Point Mugu, CBC Port Hueneme, Laguna Peak, Catalina Heights housing area, and the Camarillo Airport. Prepared an historic context for the base facilities, compiled data on cultural resource studies and building evaluations, heritage assets, historic landscapes, eligible properties, data gaps and sensitive areas requiring further study. Prepared data for and updated the inFADs database with heritage asset codes. Provided information on cultural resources management and procedures at the base including the project review system, the base's programmatic agreement, Native American consultation, NAGPRA compliance and cultural resource inventories and evaluations. Assisted with making recommendations for the base's five-year plan. Also compiled information on Standard Operating Procedures for base projects. Work performed for NAVFACSW.

Integrated Cultural Resource Management Plan for Navy Base Coronado (2006 – 2007). Associate Archaeologist for the preparation of a work plan for the ICRMP for base facilities including NAS North Island, Naval Amphibious Base Coronado, Imperial Beach Outlying Landing Field, SERE Training Facility, and the Mountain Warfare Training Facility in La Posta. Compiled an historic context for the base facilities, data on cultural resource studies and building evaluations, heritage assets, historic landscapes, eligible properties, data gaps and sensitive areas requiring further study. Provided information on cultural resources management and procedures at the base including the project review system, the base's programmatic agreement, Native American consultation, NAGPRA compliance and cultural resource inventories and evaluations. Assisted with making recommendations for the base's five-year plan. Also compiling information on Standard Operating Procedures for base projects. Work performed for NAVFACSW.

Integrated Cultural Resource Management Plan for the Barry M. Goldwater Range West (BMGR West)(2006 – 2008). Associate Archaeologist for preparation of a workplan to guide the completion of an ICRMP for the BMGR in Yuma, AZ. The ICRMP will include an historic and natural context, information on historic preservation studies and resources on the base, legal guidance, descriptions of standard operating procedures, future projects, GIS mapping, and recommendations for the treatment of historic properties on the installation. The INFADs data for the BMGR will also be updated in a format compatible with the government's data systems. Work performed for NAVFACSW.

San Diego Military Family Housing PPV Program, (2006 – 2006). Associate Archaeologist for preparation of a brochure template to provide information to the residents of NRHP-listed housing units in military family housing in San Diego County. Prepared a listing of architectural drawings for Quarters D located at NAS North Island to assist in the preparation of architectural documentation for this NRHP-listed property. Work performed for San Diego Military Family Housing

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Archaeological Monitoring Plan for the Admiral Hartman Family Housing Project (2006 – 2006). Associate Archaeologist for preparation of an archaeological monitoring plan for the replacement of leaking natural gas lines at the Admiral Hartman Family Housing in Pacific Beach; this housing is situated within a well-known prehistoric and ethnohistoric Kumeyaay village site. Work performed for Clark Realty.

Amberwoods Archaeological Monitoring (2006 – 2006). Project Coordinator for attending the preconstruction meeting and coordinating with an on-site monitor. Conducted spot-checking of project site during the removal of large eucalyptus trees on the property. Work performed for California West Homes

Archaeological Monitoring for Construction of the New San Diego Federal Courthouse (2006 – 2006). Archaeological Monitor during excavation of the former site of the Hotel San Diego for underground parking facilities at the new federal courthouse located at Union and Broadway in downtown San Diego. Identified and documented one small deposit of historic bottles associated with a large footing that was removed for the project. Coordinated on site monitoring with client and qualified temporary field personnel. Work performed for Jacobs Engineering.

Preparation of Publications for the Journal of California and Great Basin Archaeology (2006 - 2006). Peer Reviewer for editing two technical reports prepared by CalFire for submission to the Journal of California and Great Basin Archaeology. One of the papers provides the basis for identifying and describing a unique site type: Cuyamaca Oval basin metates (Hector et al. 2006). Work performed for CalFire.

Archaeological Survey for the Moapa Powerline, (2006 – 2006). Associate Archaeologist for a 8.5-mile survey along the base of the Mormon Mountains outside of Mesquite, Nevada. Identified a number of prehistoric isolated artifacts and historic sites within the project APE. Documented sites and coordinated with client. Work performed for Interconnect Towers, Inc.

Weinman Residence Monitoring (2006 – 2006). Project Manager for archaeological monitoring of a private residence located on Via Latina in San Diego. Directed updating of an existing records search at the South Coastal Information Center. Prepared required documentation for the City of San Diego Mitigation Monitoring Coordination and Land Development Review Department. Work performed for the City of San Diego.

Archaeological Survey of the El Camino Real Widening Project (2006 – 2006). Associate Archaeologist for an archaeological survey of a one-mile segment of El Camino Real between Chestnut Avenue and Tamarack Avenue in Carlsbad. Prepared technical report. Work performed for the City of Carlsbad.

Archaeological Survey of the Ridge Creek Project (2006 – 2006). Project Manager for an archaeological survey of a 40-acre agricultural property located along Live Oak Park Road in Fallbrook. Directed a preliminary evaluation of six buildings on

Catherine A. Wright

Cultural Resources Specialist

the property including photo-documentation and a search of County Assessor's records. Prepared a technical report for submission to the County of San Diego. Coordinated between County personnel and client. Work performed for Leising Builders

Archaeological Survey of the Redhawk Project (2006 - 2006). Associate Archaeologist for a records search of the project area at the Eastern Information Center and a technical report based upon field survey. Directed a paleontological study of the project and incorporated the results into a technical report. Work performed for HELIX Environmental Planning.

Survey of Pacific Highway and Barnett Avenue, (2006 – 2006). Associate Archaeologist for a records search from the South Coastal Information Center and preparation of a technical report based upon field survey by staff. Report identified constraints and opportunities from a number of historic features located within the project area. Work performed for BRG Consulting

Summary of Qualifications

Ms. Delcamp is a qualified historian/architectural historian who meets the Secretary of the Interior's standards for her profession. Ms. Delcamp has more than 20 years of professional experience in preparing history and architectural history studies in California. She has served as Principal Planner for the City of Carlsbad, Senior Planner (Historic Preservation) for the City of Riverside, Historic Preservation Manager for the City of San Juan Capistrano, Senior Planner for the cities of San Diego, Oceanside, and San Clemente. Ms. Delcamp's experience includes a wide range of study types, from the preparation of historic context studies to historic built environment evaluations.

Selected Project Experience

Coachella Canal Midline Storage Project, Niland, California (2021 - Present).

Architectural Historian for the Mid-Canal Reservoir Storage Project, proposed as an inline reservoir on the Coachella Canal that will be formed by removing the existing embankment between the existing lined canal with the original earthen canal section to form a single wide trapezoidal section. Responsible for reviewing extant data on the historicity of the National Register of Historic Places (NRHP)-eligible Canal, surveying the project, and completing an impacts/effects analysis utilizing the data from the survey and the literature review. Work performed as a subconsultant to Harvey Consulting Group, with Coachella Valley Water District and Bureau of Reclamation as the lead agencies.

Previous Experience

Principal Planner, City of Carlsbad, Carlsbad CA (2015-2020). Manage the current planning and customer service sections supervising 11 employees, including senior planners, associate planners and planning technicians. Review the most complex development projects ranging across the full spectrum of land uses and entitlements. Make CEQA determinations for both sections; provide cultural resource CEQA significance determinations for section development projects and provide internal peer review of cultural resource studies. Conduct CEQA analyses including preparation of initial studies and mitigated negative declarations. Implement and administer a variety of local land use regulations including Tribal, Cultural & Paleontological Resources Guidelines; Local Coastal Program; Habitat Management Plan and Airport Land Use Compatibility Plan. Prepare and present reports to Commissions and Council. Respond to inquiries and meet with community members to provide information and discuss land use-related concerns.

Carlsbad Tribal, Cultural and Paleontological Resources Guidelines, Carlsbad, California (2015-2020). Senior Planner for the update to cultural resources guidelines

Education

Master of Arts,
History, California
State University San
Marcos

Bachelor of Arts,
Liberal Studies
(History focus),
California State
University Long
Beach

Professional Affiliations

American Planning
Association

National Trust for
Historic Preservation

California
Preservation
Foundation

Awards

Association of
Environmental
Professionals, Merit
Award, Carlsbad
Tribal, Cultural and
Paleontological
Resources
Guidelines, 2018
American Institute of
Architects San
Diego Chapter,
Divine Detail Award,
Montanez Adobe,
San Juan
Capistrano, CA,
2010

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for the City of Carlsbad. Oversaw consultant contract, oversaw tribal consultation, collaborated and edited draft and final document, and achieved City Council adoption. Work conducted for City of Carlsbad.

City of Carlsbad Cultural Resource CEQA Determinations for Development Projects, Carlsbad, California (2015-2020). Senior Planner for determining the need for cultural resources/historical reports for numerous projects including single family homes, historic theater, historic school campus buildings, churches, commercial and institutional sites. Work conducted for City of Carlsbad.

City of Carlsbad Tribal Consultation Projects, Carlsbad, California (2015-2020). Senior Planner for leading or assisting City colleagues conducting AB 52 and SB 18 tribal consultations for numerous development projects, General Plan Amendments and Specific Plan Amendments. Work conducted for City of Carlsbad.

Historic Preservation Senior Planner, City of Riverside, Riverside, CA (2011-2015). Manage and oversee day-to-day operation of historic preservation section within the Neighborhood Engagement Division. Detailed analysis and presentation of planning cases to decision-makers. Manage projects and consultant contracts for various surveys and CEQA documents. Acting Historic Preservation Officer for Administrative Certificates of Appropriateness. Prepare and secure grants and prepare progress reports and annual reports in conjunction with the Certified Local Government program. Write and review cultural resource reports submitted in support of designation, historical significance evaluations and/or in accordance with the California Environmental Quality Act. Supervise Associate Planner and Assistant Planner. Partner with community preservation organizations and other departments to achieve preservation goals. Provide customer service via public counter, telephone and email regarding land uses, development standards and historic preservation.

City of Riverside Consultant Contract Management, Riverside, California (2011-2015). Senior Planner focused on Historic Preservation in the City of Riverside. Prepared Requests for Proposals and managed professional consultant contracts for preparation of Environmental Impact Report and Mitigated Negative Declaration for historic resource demolition and area-wide Utility Department infrastructure improvements, respectively. Prepared Requests for Proposals and managed professional consultant contracts for preparation of historic surveys for grant funded work and Specific Plan updates. Work performed for the City of Riverside.

City of Riverside Historic Preservation Ambassador Training Program, Riverside, California (2011-2015). Prepared Request for Proposals and managed consultant for new training manual and workshop series to create cohort of community preservation leaders to assist city in preservation education and advocacy. Work performed for the City of Riverside.

Relocation of the Cooper House, Riverside, California (2011-2015). As Senior Planner, prepared a Cultural Resources Report and Evaluation of Impacts for the Cooper House in Riverside. Work performed for the City of Riverside.

4135 Market Street, Structure of Merit Designation, Riverside, California (2011-2015). Senior Planner for the preparation of a Historic Evaluation & DPR Form for a significant structure located at 4135 Market Street in Riverside.

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Historic Evaluation & DPR Form Recordation for the James & Jessie Shaw Residence, Riverside, CA (2011-2015). Senior Planner for preparation of a historic evaluation and landmark designation for a private residence at 8410 Cleveland Avenue. Work performed for City of Riverside.

Historic Evaluation & DPR Form Recordation for the Frank and Katherine Wells-Patsy O'Toole House, Riverside, CA (2011-2015). Senior Planner for the preparation of a historic evaluation, DPR form and landmark designation for a private residence at 1945 Arroyo Drive. Work performed for the City of Riverside.

Historic Evaluation & DPR Form Recordation for the Mackey House, Riverside, CA (2011-2015). Senior Planner for the preparation of a historic evaluation, DPR form and landmark designation for a private residence at 6140 Tiburon Drive. Work performed for the City of Riverside.

Cultural Resources Report and Evaluation of Impacts, Demolition of 11134 and 11144 Pierce Street, Riverside, CA (2011-2015). Senior Planner for the preparation of a cultural resources report prior to the demolition of properties located at 11134 and 11144 Pierce Street. Work performed for the City of Riverside

Riverside Mid-Century Modern Building Survey Certified Local Government Grant, Riverside, CA (2011-2015). Grant writer and contract and project manager for a survey and inventory of mid-century modern buildings in Riverside. Work performed for the City of Riverside.

Riverside Mid-Century Modern Subdivision Oral Histories Certified Local Government Grant, Riverside, CA (2011-2015). Grant writer and contract and project manager for preparation of oral histories surrounding mid-century modern buildings in Riverside. Work performed for the City of Riverside.

American Recovery and Reinvestment Act (ARRA) Surveys, Riverside, CA (2011-2015). Senior Planner for the completion of historical contexts and preparation of a multiple property DPR form. Work performed for the City of Riverside.

Management of Certificates of Appropriateness, Riverside, CA (2011-2015). Senior Planner for the analysis, preparation for Board and Council consideration, and supervision or approval of numerous planning applications for master plans, additions, adaptive re-use, relocation and/or restoration of historic commercial, industrial, educational and residential landmarks and district contributors, including commercial offices/stores, train depots, packing houses, individual homes and college campus landmarks, etc. Work performed for the City of Riverside.

Historic Preservation Fund Grant Program, Riverside, CA (2011-2015). Senior Planner for the management of bi-annual General Fund competitive grant program for historic preservation projects including staff to Council-created committee for award of grants. Work performed for the City of Riverside.

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Historic Preservation Manager, City of San Juan Capistrano, San Juan Capistrano, CA (2005-2011). Solely responsible for management and administration of the City's historic preservation program. Staffed City's Cultural Heritage Commission. Reviewed complex development projects affecting designated historic sites. Managed planning, design, bid and construction phases of 7-year Capital Improvement Program for City-owned historic sites (approximate budget \$1.3 million). Developed and administered Historic Preservation section's annual budget and coordinated annual historic building maintenance budget and priorities with Public Works. Wrote and presented reports to Commissions, Council, community organizations and public. Coordinated with other departments and state and federal agencies on historic preservation issues and projects. Prepared, supervised and/or reviewed National Register, California Register and local nominations. Conducted historic preservation public outreach including events and workshops.

Forster Mansion Exclusive Events Conditional Use Permit, San Juan Capistrano, CA (2005-2011). Historic Preservation Manager for controversial, complex case for outdoor special events within mixed use residential and commercial area. Work performed for City of San Juan Capistrano

Zoomars on Los Rios Conditional Use Permit San Juan Capistrano, CA (2005-2011). Historic Preservation Manager for the management of a complex expansion of non-conforming use case for petting zoo in residential historic district. Work performed for City of San Juan Capistrano

Montanez Adobe Restoration and Seismic Repair San Juan Capistrano, CA (2005-2011). Historic Preservation Manager for the preparation of RFPs and managed contracts; managed design, bid and construction. Montanez Adobe project received state award 2012. Work performed for City of San Juan Capistrano

7-Year Capital Improvement Program for City-Owned Historic Structures, San Juan Capistrano, CA (2005-2011). Contract & Project Manager for bid and construction projects including Harrison House Repair & Restoration, Roger Williams/Swanner House Historic Paint Restoration, Roger Williams /Swanner House and Water Tower Foundation Repairs, Roger Williams/Swanner House Interior Repairs Joel Congdon House Repairs, and Blas Aguilar Adobe Repairs. Work performed for City of San Juan Capistrano

7-Year Capital Improvement Program for City-Owned Historic Structures, San Juan Capistrano, CA (2005-2011). Contract & Project Manager for Design RFP, Bid & Construction, including Montanez Adobe Restoration & Seismic Repair, Joel Congdon House ADA Improvements, Joel Congdon House Water Tower Restoration, Parra Adobe Seismic Repair and Restoration Historic Structure Report. Work performed for City of San Juan Capistrano

7-Year Capital Improvement Program for City-Owned Historic Structures, San Juan Capistrano, CA (2005-2011). Contract & Project Manager for RFP for Historic Structure Report and Rehabilitation Plans, including Parra Adobe Save America's Treasures Grant, The Ecology Center at the Congdon House, Blas Aguilar Adobe Repair and Native Education Facility, Mission San Juan Capistrano: Rectory Garden; Entry Restoration and Gift Shop projects, Historic Evaluation Report, Nick's Café, 26755 Verdugo Street, SB18 Tribal Consultation for General Plan and Specific Plan projects, and management of Historic Preservation Week 2006, 2007, 2008, 2009. Work performed for the City of San Juan Capistrano

Senior Planner, City of Oceanside, Oceanside, CA (2004-2005). Under direction of City Planner, supervised the current planning and customer service section. Supervised Associate Planners and Assistant Planners, including completion of performance evaluations. Reviewed complex development projects ranging across the full spectrum of land uses and entitlements, including CEQA initial studies

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and documents. Implemented Local Coastal Program. Wrote and presented reports to Commission and Council. Work performed for the City of Oceanside.

Senior Planner, Historic Preservation, City of San Diego, San Diego, CA (2002-2004). Staffed Old Town Community group and Design Review Board; evaluated and presented planning cases to both. Managed and administered City's historic preservation program and supervised staff including Administrative Interns, Secretary and Senior Planners on team. Conducted detailed review of historic resource reports and surveys for designation. Oversaw and participated in historic resource surveys. Reviewed projects for consistency with Secretary of the Interior's Standards. Staffed Historical Resources Board. Participated in Section 106 consultation and managed MOU and PA compliance, coordinating with Port Authority, Navy Region Southwest and various historic preservation organizations, etc. Fulfilled Certified Local Government duties. Wrote and presented reports to Board, Commissions, Council, community organizations and public. Conducted historic preservation public outreach including events, training and workshops. Individual assignments included:

Naval Training Center Historic District Plancheck Drawings, City of San Diego, CA (2002-2004). Senior Planner for an evaluation of the Liberty Station Re-Use plans for consistency with Secretary of the Interior's Standards. Work performed for the City of San Diego

Secretary of the Interior's Standards Consistency Determinations, San Diego, CA (2002-2004). Senior Planner for the San Diego Zoo/Balboa Park expansion; Salk Institute Expansion; SDG&E Station A adaptive re-use; Santa Fe Depot/Museum of Contemporary Art; Coronado Belt Line bike trail; Hard Rock Hotel/Depot re-use; various rehabilitation and re-use projects in Gaslamp Historic District, Old Town San Diego, etc. Work performed for the City of San Diego

US Navy, US Marine Corps and San Diego Airport Authority Section 106 Programmatic Agreement (PA) Compliance, San Diego, CA (2002-2004) Senior Planner to review proposals for consistency with the PA. Met with agency representatives and property owners.

La Jolla Intensive Historic District Survey, San Diego, CA (2002-2004). Senior Planner on a survey team for the La Jolla Historic District. Work performed for the City of San Diego.

Burlingame and Islenair Historic Districts, San Diego, CA (2002-2004). Senior Planner for the supervision of the preparation of historic contexts and historic district nominations. Work performed for the City of San Diego

East Village, Warehouse, and African American Historic District Surveys, San Diego, CA (2002-2004). Outreach team member for inventories of historic districts in the East Village, Warehouse District, and the historic African American district of San Diego. Work performed for the City of San Diego

Individual Historic Designations and Mills Act Program, San Diego, CA (2002-2004). Reviewed all historic designation requests and referrals, prepared staff reports, supervised staff and managed Mills Act contract program comprising 80-100 property evaluations per year; worked with Deputy Director, community, preservation stakeholders and Land Use Committee to develop methodology for implementing new fees for designations and Mills Act contracts.

Senior Planner, City of San Clemente, CA (1990-2002). As Senior Planner, supervised the current planning and customer service section. Supervised Associate Planners and Assistant Planners, including completion of performance evaluations. Reviewed complex development projects ranging across the full spectrum of land uses and entitlements, including CEQA initial studies and documents. Supervised

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consultant contracts on various projects including General Plan amendments, Specific Plans and implementing entitlements, grants and CEQA documents. Served as Air Quality Planner and LOSSAN rail corridor technical advisory committee member. Managed and administered Planning Commissions and Design Review Subcommittee. Fulfilled Certified Local Government duties. Wrote and presented reports to Commissions, Council, community organizations and public. Established and implemented Mills Act incentive program. Conducted public outreach including community workshops and training.

Marblehead Coastal Project, San Clemente, CA (1990-2002). Managed mid-1990s re-activation of 117 acre, 400+ dwelling unit and 61 acre regional commercial project; supervised and coordinated consultants for General Plan Amendment, Specific Plan and EIR; managed all associated entitlements including tentative tract, site plan review, conditional use permits, design review; coordinated weekly meetings with developer team, and meetings and reviews with other agencies including Coastal Commission and Department of Fish and Game; coordinated all revised project documentation and reports through numerous public hearings; processed project through to approval by Planning Commission and City Council.

Metrolink Station, San Clemente, CA (1990-2002). Managed city portion of award-winning project adjacent to National Register community building; liaised with OCTA consultant; supervised separate design consultant for ancillary “depot” building; coordinated staff and community meetings; developed ancillary building budget and design priorities; completed shared parking analysis, coordinated Coastal Commission’s acceptance of methodology, and conducted required monitoring.

Certified Local Government, San Clemente, CA (1990-2002). Assisted in preparation of application, program, ordinance, etc., to obtain CLG status; prepared grant application; managed OHP and consultant contracts for grant; conducted research, outreach, workshops and public hearings to adopt updated survey; conducted workshops with CLG grant consultant; planned, prepared and obtained approval for City’s first Mills Act Contract program.

Downtown/Business Park Economic Development Achievements and Housing Balance, San Clemente, CA (1990-2002). Managed numerous retail, office and industrial from discretionary entitlements through plancheck to permit issuance for 200,000+ square feet in new projects including DeNaults Hardware; Sav-On; Rip-Curl; Rancho San Clemente Plaza Pacifica; Rancho San Clemente Industrial Park; Talega Business Park; Rancho San Clemente Business Park; as well as residential subdivisions for 500+ dwelling units throughout Forster Ranch and Rancho San Clemente Specific Plan areas, Cross Hill, and numerous individual home developments.

Advanced Planning, San Clemente, CA (1990-2002). Prepared SCAQMD AQMP baseline analysis for City as representative to Orange County Air Quality Technical Advisory Committee; wrote Zoning Code for amended site plan review process and historic preservation incentives; member of staff advisory committee for Citywide General Plan and comprehensive Zoning Code updates, and new Urban Design Guidelines; represented City on LOSSAN rail corridor technical advisory committee which resulted in new Metrolink Station; prepared grant applications for transportation enhancement projects.