

APPENDIX F

**CULTURAL RESOURCE SURVEY PHASE I PROJECT AREA OF THE
LA ENTRADA SPECIFIC PLAN AND THE PALEONTOLOGICAL
RESOURCES ASSESSMENT**

CULTURAL RESOURCE SURVEY PHASE I PROJECT AREA OF THE LA ENTRADA SPECIFIC PLAN

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OF THE LA ENTRADA SPECIFIC PLAN**

**COACHELLA VALLEY
RIVERSIDE COUNTY, CALIFORNIA**

LSA

June 2013

**CULTURAL RESOURCE SURVEY
PHASE I PROJECT AREA
OF THE LA ENTRADA SPECIFIC PLAN**

**COACHELLA VALLEY
RIVERSIDE COUNTY, CALIFORNIA**

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APPENDICES

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 CULTURAL RESOURCES IN THE PROJECT AREA (*Confidential – Not For Public Review*)
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ABSTRACT

A cultural resource record search, survey, and Native American consultation were conducted for the proposed Phase 1 Project (Phase 1) portion of the La Entrada Specific Plan Project (La Entrada project), located in the City of Coachella (City), Riverside County (County), California. The Phase 1 portion of the project area encompasses a total of 502 acres within an irregularly-shaped parcel of land south of I-10, almost all of which is east of the Coachella Canal. The property is currently undeveloped vacant land. Construction associated with development of this property includes mass grading and the installation of large super pads, access streets, and storm drainage channels. Portions of the property have been designated open space and will not be developed.

The purpose of this work was to identify the presence of cultural resources per the California Environmental Quality Act (CEQA; as amended January 1, 2013); Public Resources Code (PRC), Division 13 (Environmental Quality), Chapters 2.6, Section 21083.2 (Archaeological Resources), and 2.6, Section 1084.1 (Historical Resources); and the State CEQA Guidelines (as amended December 1, 2012); California Code of Regulations (CCR), Title 14, Chapter 3, Article 5, Section 15064.5 (Determining the Significance of Impacts on Historical and Unique Archaeological Resources). Sites determined important under CEQA are eligible for listing on the California Register of Historical Resources (California Register).

In August 2012, a record search was conducted through the San Bernardino Archaeological Information Center (SBAIC) at the San Bernardino County Museum in Redlands, California. Results indicate that the Specific Plan was completely surveyed twice before and that four cultural resources were recorded within the Phase 1 area. Recorded resources in the Phase 1 area include two prehistoric trail segments (CA-RIV-4844 and CA-RIV-4894), one historic prospecting locale with quartz shatter, two areas of scattered cairn rocks (CA-RIV-4852), and the Coachella Canal (P-33-005905).

In February 2013, a systematic cultural resource survey of the Phase 1 area confirmed the presence of the four recorded resources and showed that these resources were unchanged since they were previously updated. Sites CA-RIV-4844 and CA-RIV-4894 remain highly fragmented, noncontiguous, disrupted foot paths lacking integrity. The scatter cairn rock and milky quartz at Site CA-RIV-4852 has little or no research potential. As previously recommended, sites CA-RIV-4844, CA-RIV-4852, and CA-RIV-4894 are not historical resources per CEQA, and no additional cultural resource work is recommended at these sites.

The Coachella Canal, P-33-005905, is also unchanged from the time it was last documented. This resource was previously evaluated and recommended eligible for listing in the National Register of Historic Places (National Register) under Criteria A and C. As resources eligible for the National Register are also considered eligible for the California Register, this resource is also significant under Criteria A and C of CEQA and is eligible for listing in the California Register. Consideration of this determination was given to this resource, and the two proposed crossings of the Coachella Canal will not impact the defining characteristics of the canal (under Criteria A and C) that make it eligible for the California Register. Thus, the currently proposed 502.5 acre Phase 1 area of the La Entrada

Specific Plan will not impact the Coachella Canal, and unless project plans change in the area of the Coachella Canal, no further cultural resource work is required for this resource.

If archaeological material is found during project construction, a qualified archaeologist should be contacted in order to assess the nature and significance of the find and determine appropriate treatment. In the event human remains are encountered during the project, State Health and Safety Code Section 7050.5 states that no further disturbance shall occur until the County Coroner has made a determination of origin and disposition pursuant to PRC Section 5097.98. The County Coroner must be notified of the find immediately. If the remains are determined to be Native American, the County Coroner will notify the Native American Heritage Commission (NAHC), which will determine and notify a Most Likely Descendant (MLD). With the permission of the landowner or his/her authorized representative, the MLD may inspect the site of the discovery. The MLD shall complete the inspection within 48 hours of notification by the NAHC. The MLD will have the opportunity to offer recommendations for the disposition of the remains.

INTRODUCTION

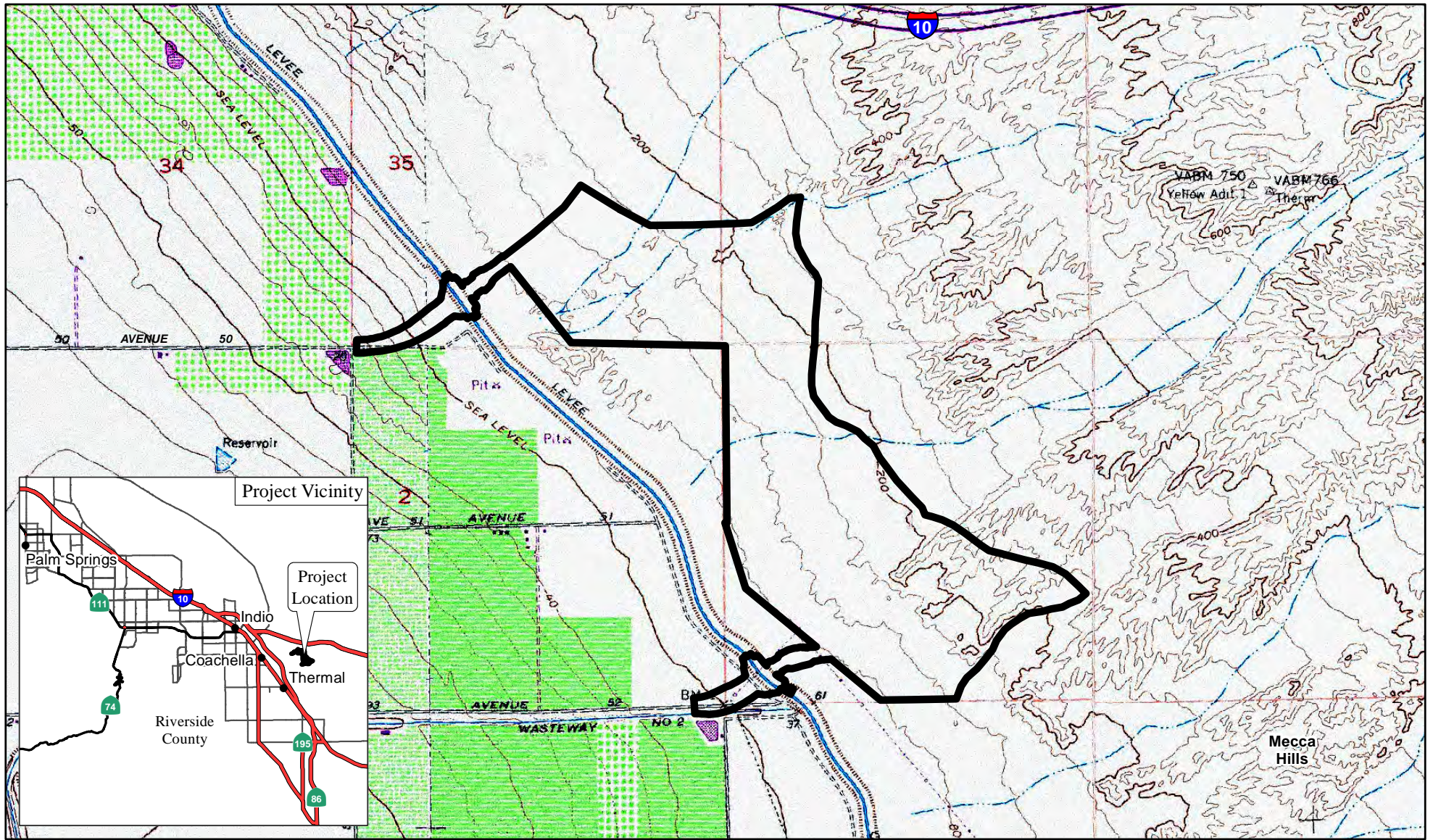
The purpose of this cultural resource survey is to identify the presence of cultural resources in the Phase 1 area of the La Entrada Specific Plan. Although a general discussion of the larger La Entrada Specific Plan is included and a record search and background information provided for an area greater than the Phase I area, the field survey was conducted only for the 502.5-acre Phase 1 portion of the La Entrada Specific Plan. This assessment addresses the requirements of CEQA (as amended January 1, 2013): PRC, Division 13 (Environmental Quality), Chapters 2.6, Section 21083.2 (Archaeological Resources) and 2.6, Section 21084.1 (Historical Resources); and the State CEQA Guidelines (as amended December 1, 2012), CCR Title 14, Chapter 3, Article 5 Section 15064.5 (Determining the Significance of Impacts on Historical and Unique Archaeological Resources).

LOCATION

The Phase 1 area is located on the eastern edge of the Coachella Valley within the lower, western reaches of the Mecca Hills. Specifically, the Phase 1 area is within the City of Coachella and its Sphere of Influence, located approximately 4.0 miles (6.4 kilometers [km]) east of the City itself, 6.0 miles (9.6 km) southeast of Indio, and 10.5 miles (16.8 km) north of the current northern boundary of the Salton Sea. The main body of the Phase 1 area is located on the east side of the Coachella Canal, 0.5–1.75 miles (0.8–2.8 km) south of Interstate 10 (I-10) (Figure 1).

The main portion of the Phase I area is a 470.35-acre polygon measuring over 1.5 miles (2.4 km) long by approximately 0.3–0.6 mile (0.5–1.0 km) wide located on the east side of the Coachella Canal. Two access road areas, one located along Avenue 50 at the northern end of the project and another located along Avenue 52 at the southern end of the project, extend west across the Coachella Canal. The northern Avenue 50 access road is a 16.64-acre area, while the southern Avenue 52 access road is a 15.53-acre area. The Phase I area encompasses 502.5 acres.

The lowest and westernmost portion of the Phase 1 area, the northern Avenue 50 access road over the Coachella Canal, is located at an elevation of 25 feet (ft) below sea level, while the highest part of the project area is located at an elevation of 280 ft above mean seal level (amsl) along the descending ridges of the Mecca Hills at the Phase I area's eastern boundary. Drainage is nearly uniformly toward the southwest. The northern part of the Phase 1 area is within Sections 35 and 36, Township 5 South, Range 8 East, while the southern portion of the project area is located within Sections 1 and 2, Township 6 South, Range 8 East. The entire parcel, except for the westernmost 1,000 ft (305 meters [m]), is on the United States Geological Survey (USGS) *Thermal Canyon, California* 7.5-minute topographic quadrangle map (USGS 1972b). The westernmost 1,000 ft of the Phase I area, consisting of the northern Avenue 50 project access road west of the Coachella Canal, is located on the *Indio, California* 7.5-minute topographic quadrangle map (USGS 1972a; Figure 1).



L S A

LEGEND

 Project Location



0 1000 2000
FEET

SOURCE: USGS 7.5' Quad. (Indio, 1972; Thermal Canyon, 1972)

I:\CLA1201A\GIS\Project_Location_USGS.mxd (2/13/2013)

FIGURE 1

La Entrada Specific Plan
Project Location

PROJECT DESCRIPTION

The proposed La Entrada Specific Plan project is a master-planned residential community that includes several land uses. The plan is an expansion of the previously approved 1989 McNaughton Specific Plan, located in the City of Coachella. The overall plan consists of approximately 2,200 acres, of which the current Phase 1 area includes 502.5 acres.

As currently proposed, the overall La Entrada Specific Plan includes seven primary land uses: (1) approximately 7,800 residential units on approximately 982 acres; (2) 135 acres of mixed land uses, including high-density residential, commercial, and public facilities, and other nonresidential uses; (3) three elementary schools and one middle school on approximately 69.8 acres; (4) 343.3 acres of parks and recreation locales; (5) several multipurpose trails; (6) 112.2 acres of circulation uses, including on-site and interchange grading; and (7) 556.9 acres of open space. The proposed project includes the extension of Avenues 50 and 52 into and through the project site.

The overall Specific Plan will be constructed in phases based on market demand and available infrastructure needed to support development. Phasing revisions may occur based on other projects and improvements in the area, but will be reviewed by the City. Anticipated construction begins with Phase 1, which is planned at 1,471 dwelling units over the 502.5-acre project area, and 110,000 square feet (sf) of commercial and office space on 10.1 acres of the Phase 1 area. Two public parks totaling 10.2 acres are also proposed for the Phase 1 portion of the development.

Proposed Phase 1 construction also includes northern project area access along Avenue 50, which widens Avenue 50 to a four-lane arterial, while widening the southern project area access along Avenue 52 to two lanes. A looped water system entering the project area along Avenues 50 and 52 and extending to a proposed reservoir in the upper portions of the project will connect to an existing line along Avenue 48. A 24-inch sewer main will also access the project area along Avenues 50 and 52. An aboveground main electrical transmission line will extend east into the project area along Avenue 52 from an existing substation just west of the Coachella Canal on the north side of Avenue 52.

The current project work includes an archival record search, updated site forms, and Native American consultation per Senate Bill 18 (SB 18). Record search information is provided as Appendix A. Site updates and previously recorded site record forms are provided as Appendix B. Native American consultation correspondence is attached as Appendix C.

SETTING

NATURAL SETTING

The natural setting of the project vicinity is presented based on the underlying theoretical assumption that humans and human social groups are in continual interaction with the physical environment. As part of the environment, humans respond to environmental limits through technological and behavioral adaptations in order to create more favorable living conditions. The location of archaeological sites is based on the result of this behavior, which can be observed in the relationship of sites to the proximity of particular resources, topography, and other environmental factors that provide subsistence and protection from the elements. Technologically, prehistoric sites contain artifact and ecofact assemblages that can furnish a record of specific environmental interactions. The purpose of scientific archaeological studies is to analyze remains in order to identify the manners by which humans survived and adapted to ancient environmental conditions.

Geography

The southeastern portion of the State of California is a great expanse of desert terrain composed of two named deserts: the Mojave Desert and the Colorado Desert (Jaeger 1933; Beck and Haase 1974:2). Located south of the Mojave Desert, west of the coastal Peninsular Ranges, and extending into Arizona, the Colorado Desert lies at elevations below 2,000 ft and is lower than the Mojave Desert. Because of their relative elevations, the Mojave Desert is known as the “high” desert, while the Colorado Desert is known as the “low” desert.

The Colorado Desert trough contains the Salton Sea, located in the Salton Trough, or Salton Sink, the lowest areas of which are below sea level. The Salton Sink was once connected to the Gulf of California. The area is now isolated from the sea by a low bar of silt at the mouth of the Colorado River (Jaeger and Smith 1971:9). Salts, accumulated on its ancient floor, have made the Salton Sea almost as salty as the ocean. The addition of new salts combined with evaporation results in an annual increase in the Salton Sea’s salt content. Eventually, the salt content will become too great for the Salton Sea to support any kind of fish life.

Geology

The project area is located in the northern portion of the Mecca Hills, which are just northwest of the Orocopia Mountains. To the west lies the Coachella Valley, and to the south, the Salton Sea. Geologically, the project area contains two general sediment types: surficial Pleistocene alluvial sand and clay sediments, and the Pliocene Ocotillo Formation (Diblee and Minch 2008). The surficial Pleistocene (12,000–2.6 million years old) sediments are alluvial sand and clay of valley areas mixed with clay of Playa Lakes and occupy the lower elevations of the project area nearest the Coachella Canal. Playa Lake clay originates from prehistoric Lake Cahuilla, the high stand of which was located slightly above the current Coachella Canal. These lake clays are light grey, generally alkaline, with

some micaceous silt. The Ocotillo Formation forms the elevated ridges of the current project area and is a terrestrial boulder conglomerate of Pliocene age (2.6–5.3 million years old).

Biology

Life Zones. Biologists have long used three Life Zones to identify differences in flora and fauna, elevation, climate, and other environmental factors, especially temperature. In the 1890s, the concept of Life Zones was developed by American biologist C. Hart Merriam to describe visible changes in horizontal bands of vegetation that are observed as one ascends a mountain, or as one travels from southern to northern latitudes (see Ornduff 1974:54). According to Merriam, Life Zones describe a vegetational response to temperature. In Southern California, three major life zones are recognized: the *Sonoran*, *Transition*, and *Boreal*, and their subdivisions (Jaeger and Smith 1971:36).

The *Lower Sonoran* life zone is best represented in the Colorado and Mojave Deserts, both of which exhibit high summer temperatures; high aridity; and little, unevenly distributed, annual rainfall (usually 2–5 inches). Elevations range from below sea level to 3,000 ft. Typical plants include the creosote bush, desert willow, and ironwood tree (Jaeger and Smith 1971:36). The *Upper Sonoran* life zone occurs from near sea level to 5,000 ft and occurs primarily on cismontane valleys and on low mountain slopes with chaparral. Rainfall, occurring primarily in winter, ranges from 5 to 15 inches annually. Typical plants are scrub oak, California juniper, chamise, and piñon pine, while typical animals include coyote, gray fox, brush rabbit, and spotted skunk (Jaeger and Smith 1971:36–37).

The *Transition* life zone occurs at elevations of 5,000–7,000 ft and is the zone of the ponderosa pine, California black oak, and sugar pine. Mammals found here include the western gray squirrel, Merriam's chipmunk, and acorn woodpecker. The *Boreal* life zone is divided into the Canadian–Hudson life zone, found at elevations of 8,000–10,000 ft, and the Arctic Alpine life zone, found only on the summits of San Geronio and San Jacinto peaks (Jaeger and Smith 1971:36–37).

Biotic Communities. Biologists also use another environmental classification method based on the distribution of plants and animals, rainfall, temperature, and a combination of other factors, including available food and shelter, light, cloudiness, and competition for food. Thus, biotic communities are based on naturally occurring groups of different organisms inhabiting a common environment and interacting with each other, especially through food relationships (Jaeger and Smith 1971:37–38). Biotic communities of Southern California include rocky shore, coastal strand, riparian woodland, mountain meadow, coastal scrub, chaparral, southern oak woodland, Joshua tree–high desert woodland, and creosote bush–low desert scrub, to name a few. In all, 27 distinct biotic communities are described by Jaeger and Smith (1971:39–56). The two biotic communities found in the project area are briefly described here.

Creosote Bush – Low Desert Scrub. Along the lower slopes are alluvial fans and valleys of the low desert country from approximately 3,000 ft to below sea level; this biotic community exhibits widely distributed shrubs 3–10 ft tall. Characteristic plants include creosote bush (*Larrea tridentata*), burrobrush (*Franseria dumosa*), Indigo bush (*Dalea shottii*), brittlebush (*Encelia farinosa*), desert lily (*Hesperocallis undulata*), ocotillo (*Fouquieria splendens*), and silver cholla (*Opuntia echinocarpa*). Characteristic mammals include the white-tailed antelope ground squirrel

(*Citellus leucurus*), round-tailed ground squirrel (*Spermophilus tereticaudus*), black-tailed jack rabbit (*Lepus californicus*), white-throated woodrat (*Neotoma albigula*), Merriam's kangaroo rat (*Dipodomys merriami*), and the little pocket mouse (*Perognathus longimembris*). Common birds include the roadrunner (*Geococcyx californicus*), Costa's hummingbird (*Calypte costae*), common raven (*Corvus corax*), cactus wren (*Campylorhynchus brunneicapillum*), and black-throated sparrow (*Amphispiza bilineata*). Reptiles include the zebra-tailed lizard (*Callisaurus draconoides*), desert iguana (*Dipsosaurus dorsalis*), desert tortoise (*Gopherus agassizi*), and coachwhip (*Masticophis flagellum*). Invertebrates include scarred-snout weevils (*Eupagoderes* spp.).

Desert Wash. This biotic community occurs in dry sandy drainages leading from desert mountain canyons that broaden as they drain into basins as they carry flood waters after torrential rains. The water table in these areas is usually far beneath the surface. Areas of desert wash are common from the northern Mojave Desert south to the Mexican border. Characteristic plants in the Mojave Desert include the cat's claw (*Acacia greggii*), desert willow (*Chilopsis linearis*), and hole-in-the-sand plant (*Nicolletia occidentalis*). Common mammals include the black-tailed jack rabbit (*Lepus californicus*), desert cottontail (*Sylvilagus auduboni*), white-tailed antelope ground squirrel (*Citellus leucurus*), round-tailed ground squirrel (*Spermophilus tereticaudus*), desert wood rat (*Neotoma lepida*), and cactus mouse (*Peromyscus eremicus*). Birds include the phainopepla (*Phainopepla nitens*), verdin (*Auriparus flaviceps*), and black-tailed gnatcatcher (*Poplioptola melanura*). Reptiles include the zebra-tailed lizard (*Callisaurus draconoides*), sidewinder (*Crotalus cerastes*), and desert tortoise (*Gopherus agassizi*). Invertebrates include the San Emigdio blue (*Plebejus emigdionis*) and Mojave sootywing (*Pholisora libya*).

Plant Communities. Botanists also use what are referred to as "Plant Communities" to describe regional assemblages of interacting plant species characterized by the presence of one or more dominant species (Ornduff 1974:61). Basing his work on an outline devised a decade earlier by Munz and Keck (1949), Munz (1959) recognized 11 vegetation types and 29 plant communities in California.

Using 23 plant communities, Ornduff (1974) presents a somewhat simplified version of Munz's work. In his overview, Ornduff (1974:61-69) identified those plant species commonly found in each plant community. Based only on plant species, "Plant Communities" are the somewhat simpler botanical version of "Biotic Communities" that ignore the combination of interrelated environmental factors such as rainfall, temperature, various animals, etc., and as such are more limited in their usefulness. Nevertheless, some "Plant" and "Biotic" communities are nearly identical. Plant communities such as Piñon-Juniper Woodland, Sagebrush Scrub, Chaparral, Coastal Sage Scrub, and Joshua Tree Woodland are all similarly named and superficially identical to biotic communities. The Creosote Bush Scrub plant community is also one that clearly pertains to the Mojave Desert in general, and specifically to the Antelope Valley.

CLIMATOLOGY

Average annual rainfall in the Colorado Desert measures approximately 4–10 inches. The annual rainfall in the Colorado Desert decreases rapidly east of Mt. San Jacinto, but is just 4 inches between

Indio near the project area and Blythe, located on the California–Arizona border (Beck and Haase 1974:5). Indio averages just 3.65 inches of rainfall per year (Beck and Haase 1974:5). Notably, Mt. San Jacinto, located just 20 miles (32 km) west of the project area, receives over 24 inches of rain annually, while Mt. San Gorgonio receives over 34 inches of yearly precipitation (Beck and Haase 1974:5).

In California, snow falls infrequently, usually between November and April, sometimes at an elevation as low as 2,000 ft. Snow seldom falls on the coastal plains and almost never in the lower, warmer Colorado Desert.

When one thinks of a desert, what first comes to mind are extremes in temperature, especially extreme high temperatures. The mean maximum temperature in the Indio area averages 108 degrees Fahrenheit (°F) in July, making it one of the hottest locations in all of California (Beck and Haase 1974:7). Between Needles and Blythe along the Colorado River, summer temperatures also average 108°F. Temperatures in excess of 100°F are uncomfortable for humans, but the low relative humidity makes desert areas somewhat more tolerable (Beck and Haase 1974:7).

Notably, desert temperature extremes also include extreme lows. Mean minimum temperature in the Indio area of the Colorado Desert averages 36–38°F in January, warming to 42°F as one moves east toward Blythe on the California-Arizona border. The high desert of the Antelope Valley exhibits a mean minimum January temperature range of 28–34°F. The difference between Indio's (low desert) seasonal temperatures and those of the Antelope Valley (high desert) is due primarily to elevation. Higher elevations are cooler in both summer and winter than lower elevations.

Prehistorically, the climate of what are now the arid Mojave and Colorado Deserts was originally a nondesert-like environment that changed slowly to its current desert condition during post-Pleistocene times. For thousands of years during pre-Pleistocene times, glaciers in the surrounding mountains fed inland pluvial lakes. As the climate slowly became more arid and the glaciers shrank, pluvial lakes also shrank in size until they disappeared. From circa (ca.) 12,000–8,000 years ago, there appears to have been a shift from woodland to desert-type plant communities in lower-elevation inland areas (Bryson et al. 1997:28). Although pluvial lakes continued to exist for a few thousand more years until the glaciers that fed them finally disappeared completely, the drier desert-like conditions that we currently observe had already begun to exist as long as 8,000 or more years ago.

Deserts such as the Colorado and Mojave are not simply deserts because of their extreme temperatures and lack of rain. Constant wind is a characteristic of deserts worldwide, and it has long been known that most of the world's deserts exist within two broad belts that lie directly under the trade winds, one in the northern hemisphere and one in the southern hemisphere (Jaeger 1933:2). The Whitewater area near Palm Springs, which is the pass between Mount San Gorgonio and Mount San Jacinto, is one of the three windiest locations in the State of California. The other two areas are the eastern foothills of the Tehachapi Mountains and the entrance to San Francisco Bay, which is the location of the only break in the Coast Ranges (Beck and Haase 1974:3). These three California locations are topographic lows and passes where westerly winds from the Pacific Ocean accelerate as they pass through the narrow opening in each respective range. All three areas have predominantly west to east winds. Wind originating over the Pacific Ocean travels west and onshore over the California landmass. This occurs during the day when the landmass warms up while the ocean stays a relatively constant temperature. The warmer landmass causes air over it to rise and draws the cooler

ocean air onto the land, a west to east movement. Rare is the day when these areas do not have winds of at least 15–20 miles per hour (mph) for at least a part of the day. Constant wind in excess of 50 mph has been recorded throughout the year in all three of these California locales, but wind in excess of 50 mph is rare (Strudwick 2010:22).

As stated previously, constant wind is a characteristic of deserts worldwide (Jaeger 1933:2). Although wind is the reason why electricity-producing wind turbines have been constructed at these areas, the constant wind was also an environmental factor that prehistoric inhabitants would have encountered.

CULTURAL

Prehistory

Developing a regional chronology for the major stages of cultural evolution in the desert areas of California is an important topic of archaeological research. In general, cultural development and change in Southern California have occurred gradually and have shown long-term stability; thus, developing chronologies for specific locales is problematic. Coastal chronologies (Figure 2), including those of Wallace (1955, 1978) and Warren (1968) are still in common usage, though they apply only marginally to the inland deserts. As such, Wallace (1962) presented a four-stage sequence using information from previous work in Death Valley by Rogers (1939, 1945). More recently, Bettinger and Taylor (1974) and Warren and Crabtree (1986, originally written in 1972) both present desert chronologies based on temporal periods using radiocarbon-dated projectile point types as period markers. This information has been synthesized in Warren (1984). Figure 2 presents some of the major regional cultural chronologies and syntheses for the California desert and adjacent regions. Recently the use of the Holocene Model has been used to organize placement of prehistoric culture change. In this model, the approximately 10,000–12,000 year-long Holocene Epoch is divided into three roughly equal time periods, Early, Middle and Late Holocene. For purposes of simplification, desert chronology nomenclature is placed within the framework of the Holocene Model.

Early Holocene. Approximately 12,000–7,000 Before the Present (BP), during what is now referred to as the Early Holocene, the area between San Bernardino and San Geronio Pass was occupied by Native American people (Moratto 1984:110–113). This initial occupation of prehistoric Southern California was labeled “Early Man” or “Horizon I” by Wallace (1955). Elsewhere this “Paleo Indian” or Early Period” covers the time period from the first presence of humans in Southern California until postglacial times. Moratto (1984:104) uses the term *Paleo-Coastal*, which was first proposed by Davis et al. (1969) to identify specific components of coastal California sites dating between 11,000–8,000 BP. Wallace (1978:25–28) renames this period the “Hunting” Period, and states that the terminal portion of the Early Period occurred approximately 6000–5500 BC. Early Holocene cultures of coastal California have been interpreted as diversified foraging economies (Moratto 1984:79–88; Erlandson 1994:44–45). Elsewhere, Early Holocene artifacts and cultural activities suggest a predominantly hunting culture (Wallace 1955), with social structure and survival based on the hunting of now extinct megafauna, including large species of animals such as bison and mammoth. The occurrence of extremely large and occasionally fluted bifaces marks sites from this time (Moratto 1984:81). Large bifaces are associated with the use of the spear and atlatl, also known as the spear thrower, and indicate big game hunting activities.

Time Scale			Mojave and Colorado Deserts			Coastal San Diego County		Interior San Diego County (Northern) (Southern)		Regional Syntheses							
Years B.P.	Epoch	Years A.D./ B.C.	Rogers 1939	Warren and Crabtree 1972	Warren 1984	Rogers 1939, 1945, 1966	Moriarty 1966	Meighan 1954; True 1958, 1966, 1970		Meighan 1959	Wallace 1955, 1978	Warren 1968					
0	LATE HOLOCENE	1500	Amargosa II	Shoshonean	Proto-historic	Yuman III Culture		Luisenõ	Dieguenõ	Archaic Stage	Historic	Yuman	Shoshonean	Chumash			
1000		1000		Saratoga Springs	Saratoga Springs	Yuman II Culture		San Luis Rey II San Luis Rey I Takic "Shoshonean" Intrusion	Cuyamaca Complex		Horizon IV Late Prehistoric						
500 A.D. 500 B.C.		Amargosa I				Yuman I Culture		Transition or Hiatus			Horizon III						
2000		0	Gypsum	Gypsum	Gypsum	La Jolla II Culture		La Jolla III	Milling Stone Substratum (La Jolla/Pauma Complexes)		Intermediate (Diversified Subsistence)	Campbell Tradition					
3000		1000									Pinto		Pinto	La Jolla I Culture	La Jolla II		
4000	MIDDLE HOLOCENE	2000		Pinto	Pinto	La Jolla I Culture	La Jolla I	San Dieguito Culture	San Dieguito	Early Lithic Stage	Horizon II	Encinitas Tradition					
5000		2500									Lake Mojave		San Dieguito Culture	San Dieguito	San Dieguito	Horizon I Early Man (Hunting)	San Dieguito Tradition
6000		3000															
7000	EARLY HOLOCENE	5000															
8000		5500															
9000		6000															
10,000	PLEISTOCENE	6500															
		7000															
		7500															
		8000															

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FIGURE 2

La Entrada Project
Cultural Chronologies of
Prehistoric Southern California

SOURCE: Adapted from Moratto (1984:125, 158)

In much of California, the Western Pluvial Lakes Tradition (WPLT) has been proposed as a concept to “...bring order to some of the taxonomic chaos...” in an effort to organize the “...terminological jungle that has obscured basic archaeological patterns and relationships...” in California (Moratto 1984:92). In general, the WPLT toolkit commonly includes crescents, large flake and core scrapers, choppers, scraper planes, hammerstones, different core types, drills, gravers, and diverse types of flakes (Moratto 1984:93). A primary characteristic of WPLT sites is their location on the shores of pluvial lakes. The WPLT is thought to have manifestations at sites on the shores of pluvial lakes from northern-central California to Southern California (Moratto 1984:81, 103). The Lake Mojave Complex is one of the best known expressions of the WPLT.

The current project area is situated north of the Salton Sea, a modern lake that exists within the Salton Sink. The western edge of the current study area lies near the northeastern extent of ancient Lake Cahuilla, an enormous catchment basin measuring 115 miles (184 km) long by 34 miles (54 km) wide. Today, the Salton Sea, measuring 34 miles (54 km) long by 16 miles (26 km) wide, exists as a modern remnant in the lowest areas of ancient Lake Cahuilla. Ancient Lake Mojave, nearly 60 miles (96 km) north of the current project area, is located on the north side of the San Bernardino Mountains. Prehistoric sites and material from both ancient lake areas are relevant to the current discussion.

Lake Mojave Period culture is a generalized hunting and gathering subsistence system considered a Paleo-Indian assemblage by most archaeologists. The Lake Mojave culture is also thought to be ancestral to the archaic cultures of the Pinto Period and, as such, has become the comparative unit for Early Man in the Mojave Desert (Warren and Crabtree 1986:184). Lake Mojave ground stone artifacts are large and unshaped with minimal grinding wear. Flaked stone artifacts include large-stemmed Lake Mojave and Silver Lake projectile points, long-stemmed corner-notched points, leaf-shaped bifaces, and bifacially worked cores, crescents, and formed flake tools such as domed and keeled scrapers, shaft straighteners, large core and cobble tools, and large quantities of debitage. A notable feature of Lake Mojave flaked stone technology is the use of percussion flaking for all stages of tool manufacture and the high proportion of fine-grained igneous lithic material (Hall 1993:19; Horne and McDougall 1997:9).

Middle Holocene. During this period, 7,000–3,500 BP, Pinto Period culture succeeds Lake Mojave Period culture. Throughout most of the Mojave Desert, Pinto Basin sites tend to be small and limited to surface deposits (Rogers 1939; Warren 1984:413). Pinto Period flaked stone artifacts include weakly shouldered, concave-base Pinto points, large and small leaf-shaped bifaces, domed and keeled scrapers, and an abundance of core and cobble tools. Percussion flaking of fine-grained igneous lithic material continues to dominate the lithic assemblage from this period. Ground stone implements, including large slightly modified milling slabs, small thin extensively used milling slabs, and both shaped and unshaped hand stones, indicate an increase in reliance on seed processing (Hall 1993:21; Horne and McDougall 1997:9). The definition of the Pinto Complex is based on material from the Mojave Desert (Warren 1984:412), original studies of which were conducted at Pinto Basin and the Twenty Nine Palms area (Campbell and Campbell 1935) just northeast of the current study area.

At Indian Hill in Anza-Borrego State Park just west of ancient Lake Cahuilla, a preceramic phase was identified based on Pinto Basin Complex projectile points (Wallace et al. 1962), which Warren (1984:404) believes are similar in shape to Elko points. However, other material from this Indian Hill

site includes large keeled scraper planes suggesting considerable antiquity for lower portions of this site where the material originated.

Late Holocene. Late Holocene cultures in the Mojave Desert existed from 3500 BP to historic contact and are divided by time period into Gypsum Period (ca. 3500–1500 BP), Saratoga Springs period (1500–800 BP), and Shoshonean Period (ca. 800 BP to historic contact).

In 1939, using evidence based on studies throughout the Mojave and Colorado Deserts, Rogers originally proposed a Pinto-Gypsum Complex that contained a small range of tools, including both Pinto and Gypsum points, and suggested that the complex dated post 800 BC, far more recent than originally proposed by the Campbells in 1935 (see Warren 1984:349–351). Today, Gypsum Period culture is identified by Gypsum, Humboldt, and Elko series projectile points and also includes leaf-shaped points, rectangular-based knives, T-shaped drills, and occasionally large scraper planes, chopper and hammer stones (Warren 1984:416; Horne and McDougall 1997:10). Manos and metates are common, and use of the mortar and pestle first occurs during the Gypsum Period. Other artifacts include shaft smoothers, incised slate and sandstone tablets and pendants, bone awls, shell beads, and ornaments. Flaked stone assemblages include substantial quantities of pressure flakes and virtual replacement of fine-grained igneous lithics with cryptocrystalline silicates such as chert (Hall 1993:23). Ground stone tools are typically small and thin and exhibit extensive wear. In the Coso area, the Rose Spring projectile point appears late in the Gypsum Period and sometimes occurs with split-twig figurines and bow-and-arrow petroglyphs suggesting cultural similarities with groups in northern Arizona (Warren and Crabtree 1986:189; Grenda 1998:18). Nearby Gypsum Period sites include the Ridge site (CA-SBR-713) in Crowder Canyon near Cajon Pass, CA-SBR-6580 in Summit Valley, and CA-RIV-2804 in the Prado Basin of western Riverside County (Grenda 1998:18).

The Saratoga Springs Period (1500–800 BP) comprises four regional developments based primarily on pottery and projectile point types. Sites in the northern Mojave Desert appear to exhibit similarities with the Anasazi of northern Arizona (Grenda 1998:19), while sites in the southern desert appear to have been greatly influenced by the Hakataya culture of the lower Colorado River area (Warren 1984:420–424). Turquoise mining and long distance trade networks appear during this time. Small triangular Cottonwood style points, shell beads, and steatite objects exist, and large village sites with deep middens and cemeteries begin to develop. During the Saratoga Springs Period, large mammals continue to be hunted, but small animals and plants contribute increasingly as food resources. During this period, foraging territory appears to decrease while the duration of site occupation increases (Grenda 1998:18), leading to the development of the deeper midden deposits previously described. Saratoga Springs sites are represented by Sites CA-KER-303 and CA-LAN-488 in the foothills of the Antelope Valley, by numerous sites around Rosamond and Rogers Lakes to the east, and by CA-KER-875 on Koehn Lake (see Grenda 1998:19).

The Shoshonean Period cultures (ca. 800 BP to historic contact) are a continuation of Saratoga Springs cultures. The use of ceramic pottery, appearing first on the lower Colorado River approximately AD 800, begins to spread westward into California's Colorado Desert by approximately AD 900 (Warren 1984:425). Associated with the use of pottery are the desert side-notched and cottonwood triangular projectile points dating ca. AD 1150–1200. Shoshonean Period sites contain flaked stone assemblages made almost exclusively of pressure flaked cryptocrystalline

silicates. Fewer bifaces, an increase in the quantity of flake cores and large flake blanks, and a decrease in flaked stone density at most sites characterize Shoshonean Period sites.

Dating of Saratoga Springs and Shoshonean Period sites has been primarily done using projectile point types and radiocarbon analysis of organic material from sites. But sites from these periods can also be identified through the increased frequency of Salton Sea (Obsidian Butte) obsidian, which was used sporadically in California until after ca. AD 1000. Obsidian Butte obsidian was made available by the receding shore of prehistoric Lake Cahuilla, its last two stands occurring approximately AD 900–1500 (Wilke 1978:57). The Obsidian Butte source on the southeast shore of the Salton Sea in Imperial County is the closest known obsidian source to the current study area. Although located much farther from the study area, obsidian from the Coso and Mono area tends to be traded throughout Southern California at an earlier time (Koerper et al. 1986).

Although ceramics are a hallmark of Shoshonean Period sites, two principal types of pottery existed in the Palm Springs/Lake Cahuilla area: Tizon Brown Ware and Lower Colorado Buff Ware. Tizon Brown Ware is much more common and appears to have been used somewhat earlier than Buff Ware at sites in the Anza–Borrego area. At the Indian Hill rockshelter in Anza-Borrego State Park southwest of the current project study area, Tizon Brown Ware is much more common and found in lower strata than the Buff Ware, although both exist in upper strata. In the San Geronimo Pass area, the distribution of Tizon Brown Ware and Colorado Buff Ware is nearly even. However, at lower elevations in the Colorado Desert, where prehistoric sites are concentrated along the shoreline of Lake Cahuilla, Buff Ware is by far the most common ceramic type (Warren 1984:405–407). Thus, Tizon Brown Ware appears to be more common than Lower Colorado Buff Wares at sites west and south of the current study area, and while these ceramic types are evenly distributed at sites near the current study area, Buff Ware is more common at sites east and southeast of the current study area. This suggests that groups of the lower Colorado Desert elevations preferred Buff Ware, while groups west of the San Geronimo Pass area (White Water) and at higher elevations (Anza-Borrego State Park) preferred Tizon Brown Ware. Wilke (1978) has investigated a number of sites around the periphery of Lake Cahuilla and has found that Buff Ware is characteristic of these sites, and desert side-notched and cottonwood points form the vast majority of projectile points.

Prehistoric Lake Cahuilla. Prehistorically, in what is now the Salton Sink, a large lake existed sporadically throughout history. This lake, known as Lake Cahuilla, existed for a period of time after the Colorado River naturally switched course, diverting water into the Salton Sink, rather than carrying the water to the Gulf of California (Norris and Webb 1976:165). When the river flowed into the Salton Sink, it would create a temporary lake that sometimes existed for hundreds of years until the river switched back to its original course, at which time the lake would then slowly evaporate and disappear. At its most recent high stand, ca. AD 900–1500, Lake Cahuilla was much larger than the current Salton Sea. Evidence that the waters of Lake Cahuilla reached an elevation of approximately 42 ft amsl (Wilke 1978:33) exists in the form of freshwater shells, which litter the surface of the Coachella Valley today.

Beginning approximately AD 900, the last one and possibly two infillings of Lake Cahuilla occurred (Wilke 1978:57–58). The high stand of the lake during this period, at an elevation of approximately 42 ft amsl, is similar to the elevation of the Coachella Canal in the current project area. At its greatest extent, prehistoric Lake Cahuilla was enormous, measuring an estimated 315 ft (96 m) deep, 34 miles

(54 km) wide, and extending from a point approximately 20 miles (32 km) south of the United States–Mexico border to just northwest of the town of Indio, a distance of 115 miles (Wilke 1978:33). Once the infilling of Lake Cahuilla stopped after the Colorado River naturally diverted back to its original drainage path into the Gulf of California, it is estimated that it evaporated at a rate of about 6 ft (2 m) per year and was completely dried out in 55–60 years (Wilke 1978:38, 58). The transition of the lake area back to desert conditions required only about one century until by AD 1540 the area was once again completely desert (Wilke 1978:58).

Ethnohistory

Ethnohistorically, the Specific Plan area was occupied by natives of the Takic (Shoshonean) language family (Kroeber 1925; Bean 1972). The current project is located in the Coachella Valley, the heart of Desert Cahuilla territory, and is several miles south of the southern boundary of Serrano Territory. The Coachella Valley is the westernmost portion of the Colorado Desert located east of the San Geronio Pass. Much of the Coachella Valley is located in the Salton Sink. Freshwater shells litter the surface of the Salton Sink and indicate the existence of prehistoric Lake Cahuilla (Wilke 1978). The name “Coachella” may derive from the Spanish word “conchilla,” meaning little shell (Powell 1976:2; Santa Fe Federal Savings and Loan Association 1977). USGS cartographers used the name “conchilla” until 1909, but may have misread the word, as it was written “Coachella” after 1909 (Gudde 1998:83).

The Cahuilla. Cahuilla territory is located near the geographic center of Southern California within the inland basin between the San Bernardino Mountains and the range extending southward from Mt. San Jacinto, along with some western coastal drainage areas (Kroeber 1925:693). Natural physiographic features such as mountains, deserts, and plains separated the Cahuilla from their nearest native neighbors (Bean 1978:575).

When the Spanish arrived in 1769, the region was occupied by natives of the Takic (Shoshonean) language family (Kroeber 1925; Bean 1972). The name Cahuilla is of uncertain origin, although it may be from their own word *káwiya*, meaning master or boss (Kroeber 1925:693; Bean 1978:575). Likewise, David Prescott Barrows states that the word means master, ruling one, or powerful man (James 1960:22). A more recent description of the meaning of the name Cahuilla, based on information gathered by J. P. Harrington (Bright 1977:117, Gudde 1998:57), is that it was borrowed from local Spanish and means nonmissionized Indian, rather than the original connotation of leader or chief. In the 1820s and 1830s, the name was spelled Caguilla. First use of the current spelling, Cahuilla, occurred in 1845 (Gudde 1998:57). In the 1850s, spellings such as “Coahuilla” and “Cohuilla” indicate some confusion with the Mexican state of Coahuila (Bright 1977:116).

Based on topography, there are three natural divisions of the Cahuilla: The Desert, Mountain, and Pass Cahuilla. The Pass, or Western, Cahuilla inhabited the San Geronio Pass area lying between the peaks of Mounts San Bernardino, San Geronio, and San Jacinto, each of which rises to an elevation of more than 10,000 ft. Pass Cahuilla territory existed at elevations of 1,500–2,500 ft and included areas from San Timoteo Canyon, Cabazon, and Palm Springs Canyon, extending to a location just east of White Water (Kroeber 1925:693–694). To the south, partially below sea level, the Desert Cahuilla occupied an area extending from White Water south to the Salton Sea, where fresh water was obtained in shallow wells. The Mountain Cahuilla inhabited the mountainous region south of Mt.

San Jacinto at elevations of 3,000–4,000 ft. The term Western Cahuilla is preferred over Pass Cahuilla because this group was not confined to the vicinity of San Gorgonio Pass (James 1960:37). This tripartite Cahuilla division is believed to be primarily geographic, although linguistic and cultural differences are thought to have existed in varying degrees (Strong 1929). The current study area is located within Desert Cahuilla territory, where 20 villages are depicted in the Coachella Valley between the Indio-Coachella-Thermal area and the northwestern tip of the Salton Sea (Bean 1978:576).

The earliest records of the Cahuilla show them broken ... into a multitude of small village groups, established wherever water and food were available.
[James 1960:37]

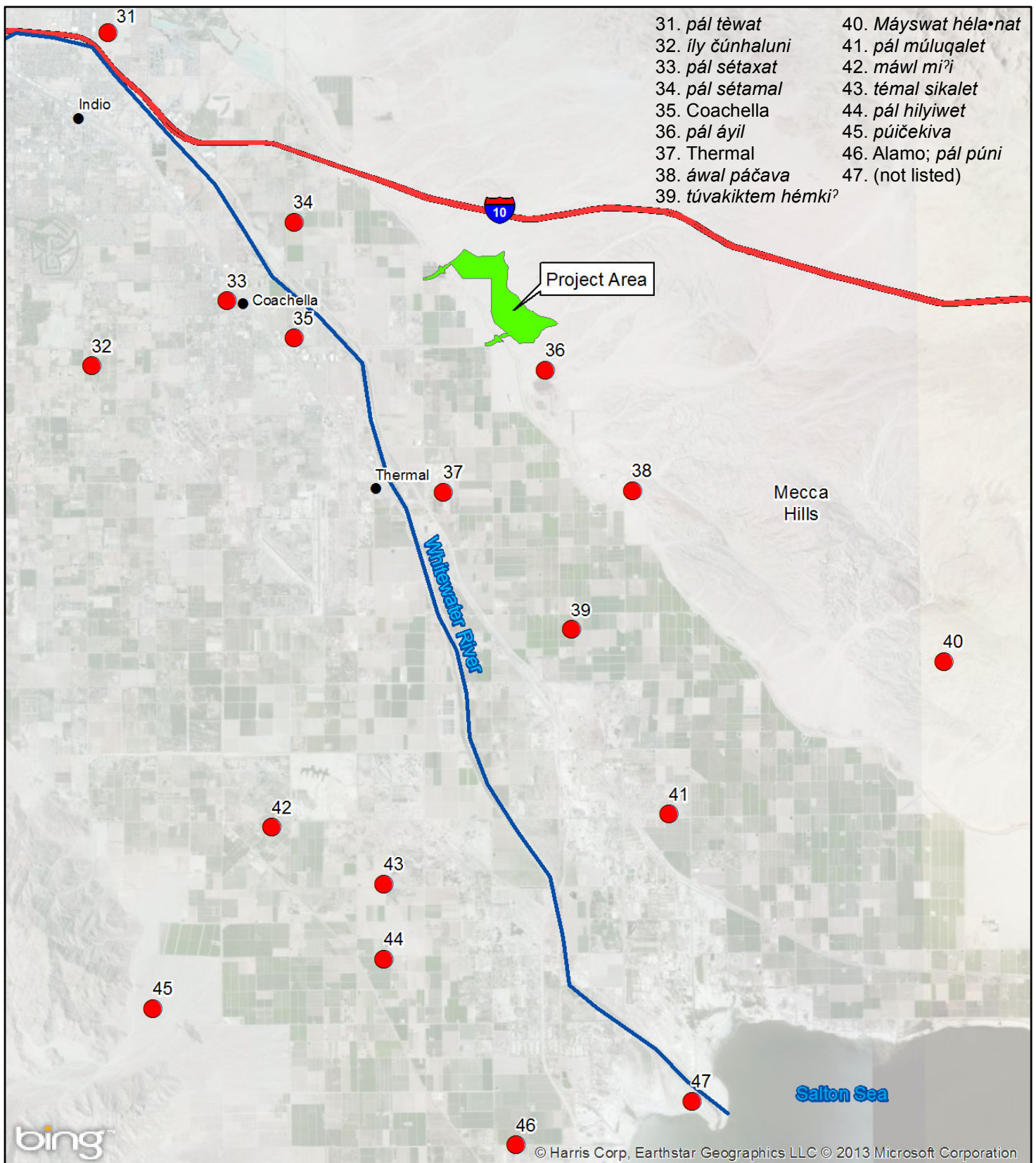
Cahuilla villages were usually located in canyons or on alluvial fans near dependable water and food sources and also in areas that were protected from the fierce winds known to blow especially near the pass north of Mt. San Jacinto. Cahuilla villages consisted of groups of related individuals, generally from a single lineage, and the territory around the village was owned in common by the lineage occupying the village (Bean 1978:575). Nearby land was owned by clans, families, and individuals.

There are several Desert Cahuilla villages and important geographic features near the current Specific Plan area (Figure 3). The location and spelling of these village names is based on Bean (1978:576). The two Desert Cahuilla villages nearest the current project area are *pál áyil* and *pál sétamal*. The village of *pál áyil* (*Palai yil*), meaning “water turtle,” is located approximately 0.5 mile (0.8 km) south of the project area. This village was recorded northeast of Thermal on the east side of the Southern Pacific Railroad at an elevation of approximately 80–100 ft amsl, placing it 40 ft or more above the high stand of ancient Lake Cahuilla (Bean 1978:576; Bean et al. 1991). Another village, *pál sétamal* (*Palsetamul*), meaning “salt water agave,” is about 2.0 miles (3.2 km) west–northwest of the project area (Bean 1978:576; Bean et al. 1991). The village of *pál sétamal* is located on the present-day Cabezon Indian Reservation, which was established in 1876. At 70 ft below sea level, this village could not have been occupied when ancient Lake Cahuilla was at its highest stand of about 40 ft amsl (Bean et al. 1991).

Other nearby Desert Cahuilla villages include Thermal, Coachella, *pál sétaxat*, and *áwal páčava*, all located fewer than 2.5 miles (4.0 km) south or west of the current project area. Many other Desert Cahuilla villages are also identified in the Coachella-Thermal area (Bean 1978:576; refer to Figure 3). Recorded villages tend to be located at lower elevations within the Coachella Valley, especially northwest of the Salton Sea along the Whitewater River that drains into the Salton Sea.

The Specific Plan is located in the Mecca Hills, the location of the village of *Kawish-wa-wat-acha*, meaning “rock water hold” (Bean et al. 1991). The exact location of this village is unknown, although it is thought that it may have been east or northeast of Mecca (Bean et al. 1991), or possibly in Painted, Box, or Hidden Springs Canyons, since all of these Mecca Hills canyons have fresh water springs and seeps that support palm trees. The Mecca Hills, called *Quawish-Ulish*, which means “Red Hills,” were a basalt material collection area and an area of ritual significance to the Cahuilla (Bean et al. 1991). Other geographic place names include *Akawene*, which is likely the Cahuilla name for the Indio Hills, located north of the project area (Bean et al. 1991), and *Aiakaic*, the Cahuilla name for San Jacinto Peak, a dominant and important feature of the Cahuilla landscape (Bean et al. 1991) that, although 40 miles (64 km) distant, is clearly visible northwest of the Specific Plan area.

Figure 3: Geospatial Relationship of the La Entrada Project Area with Desert Cahuilla Villages as Identified in Bean (197:576)



LSA

LEGEND

- Desert Cahuilla Villages
- Project Area

FIGURE 3

La Entrada Specific Plan

Geospatial Relationship of the La Entrada Project Area with Desert Cahuilla Villages as Identified in Bean (1978:576)

SOURCE: Bing (c. 2010); Bean (1978:576)

E:\CLA1201A\GIS\Tribal_Villages.mxd (3/11/2013)

The closest indigenous neighbors to the Desert Cahuilla were the Serrano, or “mountaineer” or “highlander” (Kroeber 1925:615; Bean and Smith 1978:570). The Serrano inhabited the region of the San Bernardino Mountains and low-lying areas north of Cahuilla territory from Cajon Pass east to a point south of Barstow and Daggett (Kroeber 1925:615–616; Bean and Smith 1978:570). The most frequent name for the Serrano among neighboring groups is some derivation of *Mara* or *Morongo*. The Luiseño called the Serrano *Marayam*, the Chemehuevi called them *Meringits*, while the Serrano called themselves *Maringayam*, names derived from the Serrano Group Maringayam, or “Morongo” formerly of Maringa, Big Morongo Creek (Kroeber 1925:616). The name Morongo is currently the designation of the Indian reservation near Banning on which Serrano settled among Cahuilla. *Mara* is the native name of the oasis at Twenty Nine Palms. Serrano territory is located 10 miles (16 km) or more north of the current project area.

Artifacts common to the Cahuilla include coiled pottery that was often incised and painted, baskets, manos, metates, mortars, pestles, steatite arrow-shaft straighteners, mesquite or willow bows and arrows, wooden throwing sticks, charmstones, bull-roarers, and small bifacially worked stone points (Kroeber 1925:695–704; Bean 1978:579). Marine shell, including the *Olivella* bead, is often associated with cremations (Davis and Bouscaren 1980:8).

Cahuilla subsistence was based primarily on acorns, mesquite and screw beans, piñon nuts, and cactus fruit, supplemented by a variety of wild fruits and berries, tubers, roots, and greens (Kroeber 1925:694–696; Barrows 1965; Bean 1972, 1978). Kroeber (1925:694–695) states that the principal Cahuilla plant foods are accurately known and that in the low desert areas, mesquite was the staple food. Agave and yucca were eaten less often. Agricultural use of corn, beans, squash, and melons has also been attributed to the Cahuilla (Lawton and Bean 1968; Bean 1978:578). A list of Cahuilla plant foods is supplied by Barrows (1965:242), who originally performed fieldwork prior to 1900. Hunting of deer, rabbits, antelopes, bighorn sheep, reptiles, small rodents, quail, doves, and ducks using bow and arrows, throwing sticks, traps, and communal drives is also documented (James 1960:58; Bean 1978:576; Wilke 1978).

When prehistoric Lake Cahuilla was in existence, some of the Cahuilla developed a lacustrine economy and lived specifically along the northern and western shores of the lake (Bean et al. 1981). As the lake rose and fell, the Cahuilla moved their villages and changed their subsistence patterns to meet the changing circumstances.

Cahuilla dwellings were thatched, and although it is thought that they were originally dome-shaped, this is not a certainty (Kroeber 1925:703). Rectangular dwellings are known ethnohistorically. Dwellings were situated to take advantage of water sources and also to ensure privacy. The chief’s dwelling was the largest, and many activities occurred there. Typically, the chief’s dwelling was constructed next to a men’s ceremonial structure, or *tomekish* (James 1960:43), where rituals, curing ceremonies, and recreational activities occurred (Bean 1978:577).

James (1960:43) states that a communal men’s *hoyachat*, or sweat house, was also constructed in the village (Bean 1978:578). Kroeber (1925:703) is more specific, stating that although the Western Cahuilla constructed a sweat house, no mention of it is made for the Mountain or Desert Cahuilla. Interestingly, the adjacent Colorado River tribes did not construct sweat houses either, so Kroeber (1925:703) thinks it unlikely that the Desert Cahuilla constructed them. Another common Cahuilla structure is the *ramada*, or shade, which was a roof of foliage on posts, frequently surrounded by

some sort of windbreak (Kroeber 1925:704; James 1960:45). This structure was built adjacent to the dwelling and was used during the day to protect the tribe from the fierce desert sun while still allowing a breeze to penetrate.

Perhaps one of the most remarkable and characteristic features of the Cahuilla were the cavernous walk-in wells excavated by the Desert Cahuilla in order to obtain water. These wells, as deep as 50 ft, were excavated at what must have been a great cost in labor (James 1960:48). At the bottom of these wells, steps often led the final few feet to where water seeped from the surrounding earth. Cahuilla villages were established near these enormous walk-in wells. It is from these wells that the name of the town of “Indian Wells” is derived.

A local native legend maintains that the location of the first palm tree, from which all other palms originated, was “...about one and a half miles west of the point of Indian Wells (Point Happy), which the Indians named *Cov in ish*, meaning a low or hollow place” (Patencio 1943:101). This location would have been just east of the mouth of Deep Canyon, approximately 9 miles (14.5 km) west of the current project area. James (1960:38–39) illustrates two Cahuilla village sites, one in Indian Wells and another in Deep Canyon. Additional Cahuilla village sites are identified in Bean (1978:576). As previously described, several of these villages are within 2.5 miles of the current project area. It is apparent from the abundance of villages and recorded references that the Cahuilla were well adapted to inhabiting an inhospitable desert environment.

The Late Prehistoric Period of the Coachella Valley area did not end as abruptly as it did nearer the coast when Franciscan friars and Spanish soldiers began establishing mission outposts. In Wilke’s background study of the Cahuilla (1978), he states that the oral tradition of the historic Cahuilla is “...sufficiently detailed that it seems highly probable the aboriginal occupants of the Lake Cahuilla shore in the Coachella Valley at least 450 ... [to] ... 1,000 years ago were ancestral to the historic Cahuilla” (Wilke 1978:127).

History

Initial European Contact. The first clearly documented contact with natives of the Coachella Valley occurred in 1823–1824 with the Estudillo-Romero expedition into the Colorado Desert during an attempt to locate a route from the Colorado River to the coast that would avoid the hostile Yuman Indians (Bean and Mason 1962; Davis and Bouscaren 1980:9). Due to the distance of the Cahuilla from the Spanish Missions, the Cahuilla had little direct contact with Europeans until 1819, when several mission outposts or *asistencias* (San Bernardino, Santa Ysabel, Pala) were established near Cahuilla territory. The effect of this was that some Cahuilla began to obtain domestic animals and to adopt some aspects of European culture (Bean 1978:583). North of the Cahuilla, and extending to areas nearer the coast, the Serrano were not as fortunate. Although distant from missions such as San Gabriel, an *asistencia* was built in 1819 near Redlands in San Bernardino, and from then until 1834 most of the western Serrano were removed to the missions. The Serrano in San Bernardino Valley were decimated by smallpox and other problems caused by missionization, although Serrano to the east and farther from the missions and their outposts suffered somewhat less (Grenda 1998:16).

By the time the San Bernardino *asistencia* was established in 1819, some Cahuilla in the Coachella Valley area were already speaking Spanish and becoming acquainted with Spanish–Mexican culture and politics (Bean et al. 1991). This enabled them to develop new political and economic strategies

with which to deal with the Spanish. By the 1840s, the Cahuilla had strengthened themselves culturally and politically by confederating several clans or remnants of former clans (Bean et al. 1991). This had the effect of ensuring that they retained considerable control of their ancestral culture and land well into the American Period. As late as the 1860s, the Cahuilla still outnumbered Euro-Americans in the Coachella Valley. However, this population dynamic changed in 1863 after large numbers of Cahuilla died during a smallpox epidemic. At this same time, numbers of non-Indian immigrants had begun to move into the area from the eastern United States and elsewhere, resulting in increased hardship for the native Cahuilla inhabitants (Bean et al. 1991). In fact, the situation became so desperate as native Cahuilla were pushed from their lands that it attracted national attention and ultimately led to the creation of Indian reservations throughout the area by 1877 (Bean et al. 1991).

Government surveys were undertaken in 1852–1853 in order to establish a baseline in the San Geronimo Pass. The first wagon road into the valley was established as a result of these surveys (Davis and Bouscaren 1980:9). Also in 1853, a survey for a southern railroad route included geologist William Blake, who named the Colorado Desert and Lake Cahuilla and provided detailed information concerning the local natives and environment. A stagecoach line was in service by the 1860s, and the railroad opened between Los Angeles and Indian Wells in 1876 (Gunther 1984:250).

Agriculture. Agriculture became an integral part of the Coachella Valley in the late 19th and early 20th centuries. In 1890, dates were introduced to the Indio area by the United States Department of Agriculture. The earliest date palms were inferior in quality and produced somewhat inferior quality dates. However, the commercial viability of the date industry changed in 1903 when Bernard Johnson brought Deglet Noor date shoots from Algeria (Shields 1957). In 1913, the Coachella Valley Date Grower's Association was organized in an effort to promote dates. By 1967, more than 4,000 acres of land in the Coachella Valley was planted in date palms, with more than three-fourths of this acreage planted with the Deglet Noor date. At the height of agricultural activity, 119 varieties of date palm and 33 varieties of citrus, as well as grapes and bell peppers grown in the Coachella Valley, established this area as one of the premier agricultural areas in the world. So successful was the agricultural date palm industry here that some varieties of date palms no longer found in their native countries exist only as offshoots in the Coachella Valley (Shields 1957).

Date palms are no longer as abundant here as they were in the 1950s and 1960s. By that time, residential communities had begun to spring up and along with them golf courses. Today there are over 200 golf courses in the Palm Springs area. To supply the golf courses and residences with lawns, sod farms developed. Like the local agricultural industry, the local sod industry consumed large quantities of water. If not for the availability of water, the Coachella Valley would not be able to support the agriculture or economy upon which the residents of the area depend.

Water. Although artesian water sources existed in the Coachella Valley in 1894, the cost of drilling prevented substantial agricultural use of groundwater prior to 1900, when the first hydraulic well was drilled at a reasonable cost (Schaefer and Ní Ghabhláin 2003:17). By 1907, there were approximately 400 wells in the valley, and by 1913 over 4,000 acres of land were under cultivation. Increased agriculture resulted in a reduction of ground water levels. A more dependable source of water was needed. The alarming drops in the groundwater levels resulted in the January 1918 creation of the

Coachella Valley Water District, a district representing local needs (Schaefer and Ní Ghabhláin 2003:17).

In Imperial County to the south, the Imperial or Alamo Canal was constructed during the waning years of the 1800s, portions of it in Mexico, in order to resolve the demand for water. Beginning in August 1900, the earthen Alamo Canal delivered Colorado River water to residents of Imperial County. By 1904, portions of the Alamo Canal's channel had silted in (Schaefer and Ní Ghabhláin 2003:15), limiting its usefulness. The result of this was that in 1911 the Imperial Irrigation District was formed. In 1919, the Imperial Irrigation District recommended the construction of an "All-American Canal" to be constructed entirely within the United States. Due to efforts of the Coachella Valley Water and Imperial Irrigation Districts, routes for both the All-American and Coachella Valley canals were surveyed as early as 1921.

The Boulder Canyon Project Act of 1928 authorized construction of both Hoover Dam on the Colorado River and an All-American Canal to replace the Alamo Canal. Constructed in the 1930s and completed in 1942, the 82 miles (131 km) All-American Canal runs west from its Colorado River source at Imperial Dam, located on the California–Arizona border approximately 15 miles (24 km) northeast of Yuma. The All-American Canal and its six smaller branches is the world's largest irrigation canal system, carrying a maximum of over 26,000 cubic feet (cf) of water per second using gravity to create the flow west from the Colorado River. Agricultural runoff from the All-American Canal drains into the Salton Sea.

At a point 37 miles (59 km) west of Imperial Dam, the first northern diversion from the All-American Canal was created. This branch, the Coachella Canal, was also constructed in the 1930s, with construction completed in 1948 and the first water delivery in 1949 (Coachella Valley Water District). The 123-mile- (197 km) long Coachella Canal runs north from its junction with the All-American Canal near the United States–Mexico border at a point approximately 18 miles (29 km) west of Yuma in Imperial County. From this point, the Coachella Canal runs north through Imperial County and into Riverside County, skirting the eastern side of the Salton Sea. North of the Salton Sea, the Coachella Canal turns northwest, traveling around the town of Indio, curves west, and then south to its terminus at present-day Lake Cahuilla at the west end of Avenue 58, approximately 2 miles (3 km) southeast of La Quinta and about the same distance northwest of the Torres Martinez Indian Reservation. The Coachella Canal has been recorded as historic Site P-33-005705 in Riverside County and CA-IMP-7658 in Imperial County (Foulkes 1983; Ní Ghabhláin 2003; Schaefer and Ní Ghabhláin 2003)

Like the All-American Canal, the Coachella Canal uses gravity to deliver some 280,000 acre-feet (af) of water annually to 60,000 acres of farmland in the Coachella Valley. With a capacity of up to 1,300 cf per second, nearly 2,600 af of water can be delivered in a single day, equating to a potential delivery of nearly 1 million af of water annually (1 af equals 325,851 gallons).

Water from the Coachella Canal is used for purposes of agriculture and farming, watering golf courses, and replenishing the groundwater basin aquifer. Only one-quarter to one-third of water used for agricultural activity in the Coachella Valley is groundwater from the local aquifer. The majority of water used for agricultural activities in the valley, 66–75 percent, comes from the Colorado River via the Coachella Canal (Coachella Valley Water District). Groundwater replenishment also uses water from the Coachella Canal to recharge the local aquifer at four locations in the valley, the largest of

which is the Whitewater Spreading Area. All domestic drinking water in the Coachella Valley comes from local groundwater wells drilled as deep as 1,200 ft.

The Salton Sea. California's largest lake, and the second largest lake in the American West after the Great Salt Lake in Utah, is the Salton Sea (Oglesby 2005:1). The Salton Sea was created during a disastrous 1905–1907 flood that occurred during an attempt to open a diversion along the Colorado River for the Alamo Canal in the region where the All-American Canal now begins northeast of Yuma (Schaefer and Ní Ghabhláin 2003:16). This area along the Colorado River is level, and just slight variations in the river's course here result in widely different drainage patterns. Each year during the rainy season, the Colorado River floods and disperses alluvial sediment widely across the floodplain. In the past, accumulated sediments occasionally resulted in the river changing course, sometimes for centuries. Under normal circumstances, the Colorado River would flow southward to the Gulf of California. However, when the river changed course during prehistory, it would drain west into the Salton Sink, creating prehistoric Lake Cahuilla. This westerly diversion of the river had not occurred naturally since the late 1400s (Wilke 1978:57–58). However, in 1905 the earthen banks of the Colorado River south of Yuma were bulldozed in Mexico to create a new intake from which to obtain water for the Imperial Valley irrigation system after the Alamo Canal had silted up. The reason the diversion was attempted in Mexico, south of the United States border, was due to the difficulty in obtaining a water diversion permit from the United States government. Once the diversion had been created without a concrete headgate, the river uncontrollably eroded its earthen banks, which were insufficient to hold the Colorado River to its original course. So great was the flow of water through the dirt diversion that the diversion point eroded back as much as 0.5 mile (0.8 km) per day. Millions of gallons of water rushed from the Colorado River west into the low-lying Salton Sink, destroying the existing Imperial Valley irrigation system in the process of flooding (Schaefer and Ní Ghabhláin 2003:16). As had happened naturally many times during prehistory, an inland lake known as the Salton Sea formed in the Salton Sink within weeks (Oglesby 2005). It took nearly two years of monumental and extremely expensive effort by the Southern Pacific Railroad to halt the overflowing Colorado River and return it to its original course south into the Gulf of California. Today, the Salton Sea measures 34 miles (54 km) long by 16 miles (26 km) wide, just one-third the length of ancient Lake Cahuilla. The complete "... refilling of Lake Cahuilla was averted only at great effort by damming..." (Wilke 1978:35). The Salton Sea continues to exist due to agricultural runoff from the All-American Canal, otherwise it would have evaporated long ago.

Place Names. As identified by White et al. (2006), the towns of Coachella, Indio, Thermal, and Mecca all exist due to the railroad, which first reached the Coachella Valley in 1876. The first siding south of Indio was "Woodspur" (or "Wood Spur"), created to accommodate the loading of mesquite and ironwood being cut by local natives for shipment to Los Angeles. In 1880, a well was drilled by the railroad at Woodspur, and the number of homesteaders raising crops in the area increased throughout the 1890s. A post office was established on November 30, 1901 (Gudde 1998:83). Indio, named after the Spanish word for "Indian," was originally the Southern Pacific Railroad siding of "Indian Wells," named in 1876 after the deep native walk-in wells (Gudde 1998:177). The name Indio was applied by 1879. Prior to 1888, the name "Thermal" was applied to the railroad station because of the extreme heat (Gudde 1998:391). The name "Mecca" was applied on September 26, 1903, to the settlement that had been known since 1896 as "Walters" (Gudde 1998:232). The name "Mecca" was chosen because the many date palms gave the locale the appearance of an Arabian city.

METHODS

ARCHIVAL RESEARCH

A record search was completed by LSA historian Elisa Bechtel on August 1, 2012, at the SBAIC of the California Historical Resources Information System (CHRIS) located at the San Bernardino County Museum in Redlands, California. The record search included a review of all recorded historic and prehistoric archaeological sites within a 1-mile radius of the Specific Plan project area, as well as a review of known cultural resource survey and excavation reports. In addition, the California State Historic Resources Inventory, which includes the National Register, California Historical Landmarks, California Points of Historical Interest, and various local historical registers, was examined. The results of the record search are provided as Appendix A.

NATIVE AMERICAN CONSULTATION

Native American consultation for this project has been conducted per SB 18. On July 20, 2012, the NAHC sent a letter to the City in response to the project Notice of Preparation (NOP). The letter contained a list of Native American contacts that the NAHC suggested may have information regarding cultural resources that could be impacted by the project. On July 31, 2012, a letter was sent to all of the individuals on the list.

A Sacred Lands File (SLF) search was requested from the NAHC on August 22, 2012. The NAHC responded on August 23, 2012, stating that Native American cultural resources were not identified within the Specific Plan project area. However, in a telephone conversation on August 23, 2012, Dave Singleton, NAHC Program Analyst, clarified that the area in general is considered to be very sensitive for cultural resources, and there are known resources in close proximity to the project. The list of Native American contacts provided with the results of the August 23 SLF search contained representatives of all of the Tribes initially contacted in the July 31, 2012 letter. Therefore, no additional letters were sent.

The following Native Americans and Tribes were contacted:

- Cabazon Band of Mission Indians, David Roosevelt, Chairperson
- Santa Rosa Band of Mission Indians, Shane Chapperosa, Chairman
- Augustine Band of Cahuilla Mission Indians, Mary Ann Green, Chairperson
- Ramona Band of Cahuilla Mission Indians, Joseph Hamilton, Chairman
- Morongo Band of Mission Indians, Michael Contreras, Cultural Heritage Program
- Torres-Martinez Desert Cahuilla Indians, Mary Resvaloso, Chairperson
- Torres-Martinez Desert Cahuilla Indians, Diana L. Chihuahua, Vice Chairperson, Cultural Resources

- Agua Caliente Band of Cahuilla Indians, Tribal Historic Preservation Officer (THPO), Patricia Tuck
- Augustine Band of Cahuilla Mission Indians, Karen Kupcha
- Cahuilla Band of Indians, Chairperson

FIELD SURVEY

A pedestrian survey of the Phase 1 area was conducted by LSA Archaeologists Ivan Strudwick and Logan Freeberg from February 4–8, 2013. The Phase 1 area, which consists of gently sloping alluvial wash in the lower elevations and a series of narrow steep ridges and canyons in the upper elevations, was systematically surveyed by walking parallel linear transects separated by 8–15 m. Ridges were surveyed lengthwise. Canyons and washes were surveyed parallel to drainages and ridges. Steep slopes were not surveyed, but these were limited to the sides of ridges and were often less than 8–12 m in width. Steep slopes were visually examined from a distance for the presence of features, rock outcrops, or protected areas, such as shelters, that could have been used by people.

REPORT OF FINDINGS

ARCHIVAL RESEARCH

The record search indicates that 14 cultural resource projects have been conducted within 1 mile of the current 502.5 Phase 1 area. Nearly all of these cultural resource projects are surveys. The Phase 1 project area has been completely surveyed twice, first by Rhodes (1988a) as part of the Rancho Coachella Development Project, and later by White et al. (2006) as part of the 2,188-acre Lomas del Sol Specific Plan, now known as the La Entrada Specific Plan. Four additional cultural resource projects have also been conducted along the western portion of the current Phase 1 area near the Coachella Canal and the Southern California Edison (SCE) power lines. These projects included two surveys (Napton and Greathouse 1993, and Denniston 2007), one combination survey/eligibility assessment (Taylor 1987), and one significance evaluation (Schaefer and Ní Ghabhláin 2003).

Outside but directly adjacent to the Phase 1 area, three surveys have been conducted: one to the south (Tang et al. 2005) and two just west of the Phase 1 area (Mitchell 1989 and Tang et al. 2004).

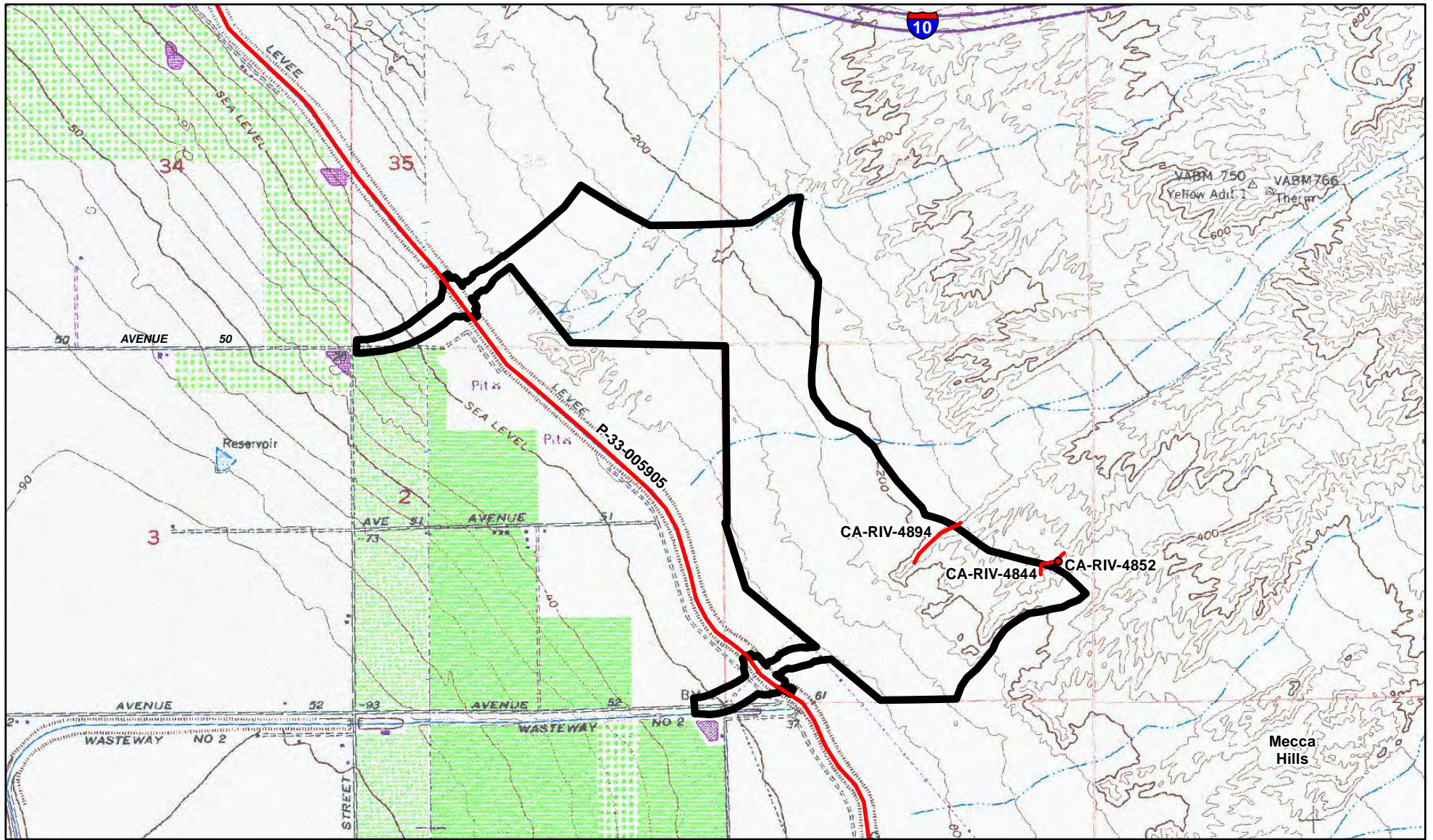
Another five survey reports exist for surveys within 1 mile of the project area: Dice (2005); Dice and Sanka (2006); Tang and Hogan (2006); Tang et al. (2006), and Woodward and Davis (1984).

Previous cultural resource work has resulted in the recording of a total of 27 cultural resources within the Phase 1 area and a 1 mile buffer area. These 27 sites include 21 historic resource sites and 6 prehistoric sites. Four of these resources are within the Phase 1 area. These sites are CA-RIV-4844 (prehistoric trail), CA-RIV-4852 (broken quartz prospect locales and scattered rock cairns), CA-RIV-4894 (prehistoric trail), and P-33-005905 (historic Coachella Canal). The resources are depicted in Figure 4 and described further below. Copies of site record forms and updates for these four resources are provided in Appendix A.

Within 1 mile outside of the Phase 1 area there are 23 recorded cultural resources, including 19 historic sites and 4 prehistoric sites. All but two of these sites (two prehistoric Sites: P-33-8018 and P-33-8390) were recorded as part of previous surveys for the 2,188 acre Lomas del Sol Specific Plan. All but four of the 21 sites within the Lomas del Sol Project surveys (P-33-14974, P-33-4916, P-33-4919, and P-33-8185) are located within Section 6 (Township 6S, Range 9E), which is directly east of the southern Section 1 portion (Township 6S, Range 8E) of the current 502.5 acre La Entrada Phase 1 area.

Resources within the Project Area

- CA-RIV-4844 (P-33-004844) is a prehistoric trail along the upper portion of a wide ridge first recorded by Rhodes (1988b) and updated as faint and occasionally ill-defined by White (2006) and White et al. (2006:35) (Figure 4). Running along the top of the ridge, the faint trail was updated as measuring 25–35 centimeters (cm) wide and approximately 100 m in length. Site CA-RIV-4844 was recorded in association with Site CA-RIV-4852.



L S A

LEGEND

- Project Location
- Cultural Resource Site
- Cultural Resource Site



0 1000 2000
FEET

SOURCE: USGS 7.5' Quad. (Indio, 1972; Thermal Canyon, 1972)

I:\CLA1201A\GIS\Cult_Resources_Sites_USGS.mxd (3/13/2013)

FIGURE 4

La Entrada Specific Plan

La Entrada Project Area Showing
Locations of Cultural Resource Sites

- CA-RIV-4852 (P-33-004852) was first recorded by Rhodes (1988b) as two disturbed rock cairns, two prehistoric flaking stations with milky quartz, and a milky quartz core in an area measuring 15 x 55 m and located adjacent to prehistoric trail CA-RIV-4484 (Figure 4). This site was updated by White (2006) and White et al. (2006:35–37), who found the destroyed cairn areas and redefined the two prehistoric flaking stations as casual historic prospecting locations in an area measuring 20 x 5 m. The prospect location was described as an area where a prospector broke a milky quartz rock with a hammer in order to check the interior of the rock for mineral content.
- CA-RIV-4894 (P-33-004894) was originally recorded by Rhodes (1988b) as a prehistoric trail 500 m long extending along the top of a ridge (Figure 4). The site was updated by White (2006) and White et al. (2006:37), who state that some of the trail was destroyed by geotechnical trenching along the top of the ridge. The remaining length of trail, ending at a wooden power pole, was described as faint in places and said to measure 30–40 cm wide and 287 m long.
- P-33-005905 is the historic Coachella Branch of the All-American Canal (Figure 4). First recorded by Foulkes (1983) and updated by Ní Ghabhláin (2003), the canal was evaluated for listing on the National Register by Schaefer and Ní Ghabhláin (2003). The 123.5-mile-long Coachella Canal was constructed between 1934 and 1948 as part of the Boulder Canyon Project Act of 1928, and first opened for use in 1949.

NATIVE AMERICAN CONSULTATION PER SB 18

No initial responses from Native Americans were received as a result of the July 31, 2012, letter requesting any information they might have regarding cultural resources that could be impacted by the project. Between August 23 and 31, 2012, two rounds of follow-up communication were attempted in the form of phone calls and emails, depending on whether the party could be reached for comment. As a result, responses were received from six Tribes.

- **Cabazon Band of Mission Indians:** Judy Stapp, Director of Cultural Affairs, stated that she sent a letter dated July 3, 2012, to the City regarding the NOP for the project. In the letter she said that the Tribe did not know of specific resources that could be affected by the project and did not request government-to-government consultation at that time. However, she recommended archaeological monitoring during project ground-disturbing activities due to the overall sensitivity of the area.
- **Santa Rosa Band of Mission Indians:** Steven Estrada in Cultural Resources stated that he had not received the letter and requested that it be sent again by email. He stated he would respond if he had had concerns. The second letter was emailed on August 31, 2012. As of September 7, 2012, no response had been received.
- **Los Coyotes Band of Mission Indians:** An administrator stated that she would forward the message and that the Tribe would comment if there were concerns. As of September 7, 2012, no comments had been received.
- **Augustine Band of Cahuilla Mission Indians:** David Saldoval in Cultural Resources stated that he had reviewed the letter, and a response from the Tribe was forthcoming. A response letter dated September 14, 2012, was received from Mary Ann Green, Chairperson. The letter stated that the Band was unaware of specific cultural resources that might be affected. The Band recommends that tribes in the immediate vicinity be contacted, that a qualified Native American

monitor be present on site during the preconstruction and construction phase of the project, and that they be notified immediately of any cultural resources discoveries.

- **Torres-Martinez Desert Cahuilla Indians:** Roland Ferrer, Planning Director, responded by email on September 7, 2012. He requested government-to-government consultation per SB 18 and directed consultation to Matt Krystall, Tribal Resources Manager, as the main point of contact.
- **Agua Caliente Band of Cahuilla Indians THPO:** Patricia Garcia-Tuck, sent a letter addressed to the City via email. The letter stated that the Tribe knew of several resources within the project area, including Indian trails, and that a known ethnographic resource, *Palaiyi*, is potentially located near or within the proposed project boundary. Because of the sensitivity of the area, the Tribe had outlined numerous requests in the letter, including monitoring by a Tribal approved monitor; thorough background research of Cahuilla traditions; consultation with local tribes to discuss the development and potential mitigation and treatment of resources; copies of associated reports; and government-to-government consultation per SB 18. On January 24, 2013, the City responded by letter stating that it welcomed the opportunity to consult with the Agua Caliente Band of Cahuilla Indians. The City suggested scheduling a meeting after the Tribe had the opportunity to view the draft report, and would be happy to host the meeting.

No responses were received from the Ramona Band of Cahuilla Mission Indians, the Morongo Band of Mission Indians, or the Cahuilla Band of Indians. All details regarding the Native American SB 18 consultation, including written correspondence, is provided as Appendix C.

FIELD SURVEY

The field survey of the Phase 1 area resulted in the recording of no new cultural resources. All four previously recorded cultural resource sites were found and are discussed below. Systematic parallel transects were surveyed up and down the relatively evenly sloping drainages, washes, canyons, and the few ridges located in the southern portion of the parcel (Figure 5). Vegetation consists principally of a sparse growth of creosote and low desert scrub, although some bushes are as much as 10 ft tall. Cholla and barrel cacti also exist in small numbers. Brush is denser along drainages and near the canal. Drainages tend to be wide expanses, or “washes,” where gravel and rock wash down during infrequent storms. Most of the wash areas are gravel, sand, and rock, with a few larger boulders. Almost no silt or clay is visible along the washes. Silt and clay deposits exist in low areas where water pools along the east side of the Coachella Canal. Narrow uplifted ridges are often composed of silt or consolidated silt, suggesting a sedimentary origin. Except for a few isolated ridges across the wide expanse of the parcel, high ridges exist only in the southeastern portion of the parcel (Figure 5). Several isolated small ridges less than 20 ft high exist across the parcel, but taller ridges as much as 60 ft high are situated at the eastern portion in the south end of the project area. These are ridges that descend from the Mecca Hills to the east. Ridges gradually decrease in height to the west as alluvial slope wash covers them.

Evidence of bulldozer activity, motorcycle dirt-bike racing, geotechnical work, and scattered isolated modern aluminum beer cans and other trash exists throughout the main 470-acre main parcel. Dirt roads lead through most of the project area, with the major ones paralleling the Coachella Canal.

Mt. San Jacinto

Mt. San Gorgonio

(Coachella Canal)



Expanse of project area showing evenly sloping sand, gravel, and rock washes from ridge in south portion of parcel. On the left are the snow-capped peaks of Mt. San Jacinto (left) and Mt. San Gorgonio below which is the Coachella Canal berm. Ridges in distance on right are outside of project area. View to north.



Continuation of above photo showing wash and high finger ridge in southern portion of project area. Prehistoric trail CA-RIV-4894 is recorded along top of ridge just past wooden power pole. View to NE.

LSA

FIGURE 5

La Entrada Specific Plan
Project Photos

Bulldozer activity exists sporadically throughout the parcel, and much of it appears to have occurred as part of geotechnical work, which also included excavation of trenches. Motorcycle dirt bike racing has left tracks over many areas toward the northern portion of the project area, and as the tracks often lead down the low ridges in this area, they can easily be confused with trails.

Only the Avenue 50 and Avenue 52 project access roads extend west of the Coachella Canal. The northern 16.64-acre Avenue 50 access road area crosses the canal and leads west through agricultural vineyards (Figure 6). This area is level, slopes gently to the southwest, and has been heavily disturbed from agricultural activity. East of the canal, the northern Avenue 50 access road traverses an undeveloped wash area with a few small tamarisk trees. Although the portion of the Avenue 50 access road east of the Coachella Canal was surveyed, the agricultural vineyard west of the canal was not surveyed due to lack of access.

The southern 15.53-acre Avenue 52 access road area also crosses the canal in a similar manner, although west of the canal the land is open and exhibits evidence of bulldozing and dumping (Figure 7). East of the canal, the proposed southern Avenue 52 access road traverses a wash that, except for a 230-kilovolt (kV) SCE lattice steel tower and three wooden poles, contains little evidence of use. Also west of the canal were many freshwater clams. The iridescent bivalve, *Anodonta*, and the small gastropod *Physa* were both observed throughout the area west and downslope of the canal. Both are native (Stearns 1879:142–143; Taylor 1981:142, 161–162) and existed in ancient Lake Cahuilla. Closer to the Coachella Canal, in sediment from the canal, are quantities of the Asian clam (*Corbicula fluminea*). *Corbicula* was introduced to the United States in the early 1900s (Melton 1996:252) and reached California by 1945 (Taylor 1981:143). It is widespread in reservoirs and canals. The presence of *Anodonta* and *Physa* indicate that this portion of the project area was within ancient Lake Cahuilla, while *Corbicula* is the result of recent dredging of the Coachella Canal.

Previously Recorded Cultural Resources

The four previously recorded cultural resources were found to be unchanged since they were last updated by Ní Ghabhláin (2003) and White (2006). The location of these resources is depicted on the 7.5-minute USGS map of the project area (Figure 4) and in photographs (Figures 5–8). Also, updates stating that the four sites have not changed since they were last updated are provided as Appendix B.

- CA-RIV-4844 is a prehistoric ridgetop trail alongside of which is recorded Site CA-RIV-4852 (Figure 8), which consists of disturbed historic rock cairns and milky quartz shatter, likely the result of casual historic prospecting (White 2006; White et al. 2006:35). The disturbed rock cairns are now areas of scattered rock. Running along the top of the ridge, the trail measures just 25–35 cm, is ill-defined in places, and is used today by coyote and jackrabbits. Although the trail may have once been used by humans, today it is segmented, incomplete, and retains none of its original integrity.
- CA-RIV-4852 (Figure 8) is scattered fist-sized rock and milky quartz shatter. Lacking attributes associated with prepared cores, the milky quartz shatter more closely resembles a shattered cobble broken by a prospector in the unknown past (White 2006 and White et al. 2006:35–37). As such, it is probable that the entire site was the result of prospecting.



Looking WSW across the Coachella Canal (P-33-005905) at agricultural vineyard from the proposed northern access road crossing at Avenue 50.



Looking ENE from the Coachella Canal at the main body of the project area from the proposed northern project access road crossing at Avenue 50.

L S A

FIGURE 6

La Entrada Specific Plan
Project Photos



Looking WSW across the Coachella Canal (P-33-005905) from the proposed southern project access road crossing at Avenue 52.



Looking ENE from the Coachella Canal at the main body of the project area from the proposed southern project access road crossing at Avenue 52.

L S A

FIGURE 7

La Entrada Specific Plan
Project Photos



Prehistoric ridge top trail CA-RIV-4844. Logan Freeberg examining milky quartz shatter at site CA-RIV-4852. Scattered rocks from an historic rock cairn to the right, just behind Logan. View to the SW.



Site CA-RIV-4852: close-up of milky quartz shatter, the result of casual historic prospecting to access the mineral content of quartz rocks.

L S A

FIGURE 8

La Entrada Specific Plan
Project Photos

- CA-RIV-4894 is another ridgetop trail along a narrow ridge overlooking a major wash from the south (Figure 5). Just 30–40 cm wide in most places, the trail is now approximately 287 m long. In Figure 5, the trail is located atop the center of the ridge just past (northeast of) the pictured wooden pole. In many areas the trail is ill-defined and segmented, and it is difficult to identify specifically as a human trail in areas. Furthermore, as previously recorded (White 2006; White et al. 2006:37), some of the trail has been completely obliterated by geotechnical trenching. The ridge along which the trail runs is narrow in places, and one would expect any animal traversing the area to use this area for passage. So although the trail may have been human, today it is used by animals such as coyotes.
- P-33-005905 is the historic Coachella Canal (Figures 5–7). The canal, originally concrete-lined in this area, is essentially unchanged from the time construction was completed in 1948 (Foulkes 1983; Schaefer and Ní Ghabhláin 2003:1). In the project area the width of the canal's earthen berms, from the low edge-of-berm on one side to the other, measures 280–300 ft. This measurement varies somewhat along the length of the canal near the project area. Within these earthen berms, the width of the canal channel—the distance from the high point on one side of the canal to the high point on the other side—is approximately 60 ft. Thus, the maximum water-carrying width of the canal is 60 ft. Within this, an area 47 ft wide is concrete-sided. The width of the body of water within the concrete-sided portion of the canal is 40 ft.

DISCUSSION

Prehistoric Trails

Two prehistoric trails (CA-RIV-4844 and CA-RIV-4894) are recorded in the Phase 1 area. The trails, both running southwest-northeast, were recorded by Rhodes (1988b) and discussed in Rhodes (1988a). The trails were updated by White (2006) and described in White et al. (2006:35–37). As discussed, the updates appear to be more accurate, since time and geotechnical trenching had both combined to disturb the trails since they were originally recorded by Rhodes in 1988. As the first professional archaeologist to officially survey the current project area, Rhodes (1988a:9) states that the trails he identified "...coincide well with the Mecca Pass Trail System..." previously identified along northeast-southwest trending ridges in the Mecca Hills east of Indio and south of I-10.

The trails located during ... [the 1988] survey, in conjunction with those previously recorded, add credence to the assumption of a Mecca Pass Trail System connecting valley habitational areas to mountain resource procurement regions. (Rhodes 1988a:10).

As evidence of the presence of prehistoric trails in the area, Rhodes (1988a) describes Department of the Interior land survey notes recorded in 1855 by John LaCroc during work in Township 6S, Range 8E. The notes discuss the location of an Indian trail, quoted by (Rhodes 1988:11):

... at 39.00 chains south between Sections One and Six, an 'Indian trail bears east and west' in the vicinity of our T-4 [CA-RIV-4844].

One chain equals 66 ft, and 39.00 chains equal 2,574 ft, or 132 ft (2 chains) less than 0.5 mile. It would appear that the notes describe an east-west running trail located nearly 0.5 mile south of the southern boundary of Sections 1–6. As such, this trail probably ran east-west across the floor of the

Coachella Valley just north of what is now Avenue 53, and rather than being located within the current project area and coinciding with the trail at Site CA-RIV-4484, was actually located approximately 0.5 mile south of the current project area. Based on the assumed location of village sites identified by Bean (1978:576), this trail may have led to the village of *pál áyil* (*Palai yil*), which is thought to have been located approximately 0.5 mile (0.8 km) south of the current project area (refer to Figure 3, No. 36).

Because LaCroce's 1855 trail appears to have been located on the valley floor, it likely no longer exists. Only human trails within undisturbed areas of desert pavement are likely to exist today. The northeast-southwest trending ridges of the Mecca Hills and the project area are likely candidates for the presence of human trails. Travel out of the Coachella Valley from the area near Coachella into "mountain resource procurement regions" would have followed the length of washes or ridges in or near the current project area in a northeastern direction. Disturbance to these trails over time would reduce the likelihood of locating such trails. In describing disturbances to trails that he observed in the late 1980s, Rhodes (1988:10–11) states:

Unfortunately, near the valley margins, the actual [trail] routes have been obliterated by a combination of natural erosion, and humanmade disturbance such as development of the [Coachella Branch of the] All-American Canal, valley agriculture, utility easements, and off-road vehicle use.

Disturbances also include such things as animals using the trails. However, humans used animal trails. Typically, human trails are somewhat wider (35 or more cm wide) than narrow animal trails (20 cm or less). Rhodes (1988a:11) mentions that "Decisions concerning animal/game trail distinctions ... are not always easily addressed or conclusive." A discussion of the trails observed in the project area by the current survey crew was described by White et al. (2006:58) as follows:

Trails, or portions thereof, comprise the only surviving/identified prehistoric resources within the study area. During the course of the field assessment, it became obvious that there were numerous bits and pieces of what appeared to be human trails on many of the ridge tops. As the survey progressed it was clear that many of these trail segments were the work of animals such as jackrabbits and coyotes. The types of "trails" were extremely narrow (10–15 cm) and exhibited a tendency to veer off down slopes that humans would not consider traversing. A few of these narrow segments were ultimately identified as motorcycle tracks, others were attributed to natural forces such as heavy runoff.

The wider, more defined, trail segments were in many instances puzzling since they would clearly appear on the [natural desert] pavement and then mysteriously fade away. Many of these trail sections likely started out as animal trails, were used by humans as well, and have subsequently reverted back to the domain of the rabbits and coyotes. Given the mining interest in the area by early and mid 20th century prospectors, it is also reasonable to assume that some of these [trail] segments were used by ... prospectors...

Furthermore, the trail segments observed by the current survey crew and recorded by previous researchers were not always contiguous and uninterrupted. White et al. (2006:59) state that "...the

[trail] segments within the study area are relatively short in length, disrupted/or disjointed.” Thus, the implication is that although the recorded trails, CA-RIV-4844 and CA-RIV-4894, follow ridges, they are short, faint, disrupted, and/or disjointed, often narrow, and thus probably also animal trails.

Cultural Landscapes

The purpose of this discussion on cultural landscapes is to consider cultural resources in the current project area within a larger framework. As defined by the National Park Service, a cultural landscape is a geographic area (including both cultural and natural resources and the wildlife or domestic animals therein), associated with an historic event, activity, or person, or exhibiting other cultural or aesthetic values (National Preservation Institute 2013). Within this definition, there are four categories of cultural landscapes to consider:

1. Historic designed landscape
2. Historic vernacular landscape
3. Historic sites
4. Ethnographic landscape

The fourth category, ethnographic landscape, is the category applicable to the current project. Ethnographic landscapes contain a variety of natural and cultural resources defined as heritage resources by people associated with cultural landscapes. Such resources can include massive geological formations, small plant communities, subsistence areas, and ceremonial areas (National Preservation Institute 2013).

A portion of Francisco Patencio’s opening quote in *The Cahuilla Landscape* (Bean et al. 1991) states: “All the places in the mountains and the flat land are named and known to the Indians.” Bean et al. (1991:2) themselves state “The Cahuilla area as a whole must have had thousands of place names.” Some Cahuilla state that all places were given names. As described (Bean et al. 1991:9), one of the reasons for this was that precise name designations allowed people to describe exactly where they had hunted or gathered food so they could easily send others to that locale. Named locations were part of the Cahuilla’s cultural landscape.

Previous descriptions of Cahuilla territory in the Indio-Coachella-Thermal portion of the Coachella Valley show that there were a number of ethnographically recorded villages. As depicted in Figure 3, most of the recorded Cahuilla village sites in this area are located along the Whitewater River, although one village, *pál áyil* (or *Palai yil*, meaning “water turtle”) may have been located approximately 0.5 mile south of the current project area. As identified by Native American respondent Patricia Garcia-Tuck (Agua Caliente Band of Cahuilla Indians THPO), “Palaiyi” is an ethnographic resource located somewhere in the vicinity of the current project area. Record search information from this project (Appendix A) also shows that despite a number of cultural resource surveys near the project area, few archaeological sites were recorded, the most common being trails.

Although no Traditional Cultural Properties (TCPs) have been identified within the project area, the Mecca Hills, of which the current project area is a part, are considered by the Cahuilla as a traditional cultural landscape. The ridge top and valley-bottom trails leading to and from villages would have served to tie the local area together as a cultural landscape. However, as previously described, the nearest known Cahuilla village is thought to have been located 0.5 mile south of the current project

area, and recorded trails in and near the current project run along existing ridges that trend in a southwest-northeast direction and do not lead from the current project area to the nearby village. The trail described in 1855 by John LaCroce (Rhodes 1988a:11) that crossed the valley floor in an east-west direction just north of Avenue 53 may have led to the village of *pál áyil*. Some north-south trails must have also existed, but these may have been located along the Whitewater River, which drains north to south. So whereas the current Phase 1 area might be considered a small portion of a much larger cultural landscape, it contains no known Cahuilla place names, does not contain a TCP, and contains only two short, faint, narrow, and disrupted/disjointed ridge top trails (i.e., CA-RIV-4844 and CA-RIV-4894).

PREVIOUS RECOMMENDATIONS

Concerning the prehistoric trails CA-RIV-4844 and CA-RIV-4894, White et al. (2006:64) state that they are segments of what may have been a larger trail network, but with no clear connection to any trails beyond the immediate project area. The trail segments within the Phase 1 area are highly fragmented, noncontiguous, disjointed, disrupted foot paths lacking integrity, and as such it was stated that they are not significant resources under CEQA.

Site CA-RIV-4852, originally recorded as a prehistoric lithic reduction station with two disturbed rock cairns (Rhodes 1988a:8; Rhodes 1988b), was redefined by White (2006) and White et al. (2006:35–37) as a casual prospecting locale of quartz shatter and the remnants of 2 cairns of unknown age. Due to its limited research potential, White et al. (2006:66) evaluated the site as not eligible for listing in the California Register and as not a historical resource per CEQA. What little information the site was said to provide was realized through recording, and no further archaeological work was recommended for this site (White 2006:66).

The Coachella Canal, Site P-33-005905, located at the two project access roads west of the main body of the Phase 1 area, was previously recorded by Foulkes (1983), updated by Ní Ghabhláin (2003), and evaluated for significance and eligibility for listing on the National Register by Schaefer and Ní Ghabhláin (2003:iv). Per their assessment, the Coachella Canal:

...has been determined eligible to the National Register under Criterion A of 36 CFR 800 due to the key role it played in the development of intensive agricultural economy based on irrigation in the Coachella Valley. The Coachella Canal is also eligible as an integral element of the Boulder Dam Project, comprising Boulder Dam, Imperial Dam, the All-American Canal, and the Coachella Canal, one of the most monumental public reclamation projects ever undertaken in the western United States. The Coachella Canal is also eligible under Criterion C as a good example of an irrigation canal constructed during in the 1930s and 1940s, with distinctive characteristics of canal construction during the period. (Schaefer and Ní Ghabhláin 2003:iv)

CEQA Evaluation of Significance

Per the Guidelines for CEQA (as amended December 1, 2012), CCR Title 14, Chapter 3, Article 5 Section 15064.5 (Determining the Significance of Impacts on Historical and Unique Archaeological

Resources), a resource shall be considered to be historically significant if it meets one or more of the criteria for listing on the California Register:

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

A resource included in a local register of historical resources, as defined in PRC Section 5020.1(k), or identified as significant as a historical resource meeting the requirements of PRC Section 5024.1(g), shall be presumed to be historically or culturally significant to public agencies, unless the preponderance of evidence suggests otherwise. The fact that a resource is not listed in or determined to be eligible for listing in the California Register, or not identified in a historical resources survey as defined previously, does not preclude a determination that the resource is a historical resource.

Isolated finds are almost never considered important/significant. However, cultural resource sites may or may not be found to be significant. Existing cultural resources within the current project area were evaluated using the above criteria.

RECOMMENDATIONS

The cultural resource field survey of the 502.5-acre Phase 1 area confirmed the presence of four cultural resources: two prehistoric trail segments (CA-RIV-4844 and CA-RIV-4894), 1 historic prospecting locale with quartz shatter and 2 areas of scattered cairn rocks (CA-RIV-4852), and the Coachella Canal (P-33-005905). Three of these resources (CA-RIV-4844, CA-RIV-4852, and CA-RIV-4894) were found to be in the same condition as updated by White (2006) and White et al. (2006). The fourth resource, P-33-005905 (Coachella Canal), was found to be in an undisturbed condition as originally recorded (Foulkes 1983) and updated (Ní Ghabhláin 2003).

It was previously recommended by White et al. (2006:64) that trail segments CA-RIV-4844 and CA-RIV-4894 are not significant resources under CEQA because they are highly fragmented, noncontiguous, disjointed, disrupted foot paths lacking integrity. This previous recommendation is still valid. These two trails do not lead to any known sites within the greater Cahuilla cultural landscape. Sites CA-RIV-4844 and CA-RIV-4894 are unchanged since being recorded in 2006. They have been recorded, photographed, and their locations plotted. As such, they have been adequately documented. Since, they are not historical resources per CEQA, no additional cultural resource work is recommended at these two sites.

No changes to the casual historic prospecting site CA-RIV-4852 have occurred since it was updated by White (2006) and White et al. (2006). White (2006:66) recommended that the site was not a significant resource under CEQA because little additional research potential exists and the site was already recorded. This recommendation is also still valid. Site CA-RIV-4852 is not a historical resource per CEQA, and no additional cultural resource work is recommended at this site.

The Coachella Canal, site P-33-005905, has been evaluated and recommended as eligible for listing on the National Register under Criterion A (the key role it played in the development of intensive agricultural economy based on irrigation in the Coachella Valley, as well as being an integral element of the Boulder Dam Project) and Criterion C (a good example of an irrigation canal constructed in the 1930s and 1940s, with distinctive characteristics of canal construction during the period) of 36 Code of Federal Regulations (CFR) 800 (Schaefer and Ní Ghabhláin 2003:iv). As such, the Coachella Canal is also significant under Criteria A and C of CEQA, and the resource is eligible for listing in the California Register. Consideration of this determination is given here to this resource.

The two proposed crossings of the Coachella Canal will not impact the defining characteristics of the canal (under Criteria A and C) that make it eligible for the California Register. Criterion A, the key role the canal played in developing an intensive agricultural economy based on irrigation in the Coachella Valley and the canal's place as an element of the Boulder Dam Project, will not change with construction of the road crossing. Likewise Criterion C, the canal being a good example of an irrigation canal constructed in the 1930s–1940s with distinctive characteristics of canal construction from that period, will also remain unchanged. The Coachella Canal will still embody these characteristics with construction of the proposed crossings. Thus, the currently proposed 502.5-acre La Entrada Specific Plan – Phase 1 Project will not impact the Coachella Canal, and unless project

plans change in the area of the Coachella Canal, no further cultural resource work is required for this resource.

In order to protect any currently unrecorded resources, if archaeological material is found during project construction a qualified archaeologist should be contacted in order to assess the nature and significance of the find and determine appropriate treatment. If a resource is determined to be eligible for listing on the California Register (historical resource), the project cannot cause adverse effects to the resource (CCR Title 4(3) 15064.5(b)), and avoidance of impacts to the resource is recommended. If a resource is determined to be not eligible for listing on the California Register, avoidance of impacts to the resource is not necessary. If a resource is determined eligible and avoidance of adverse effects is not possible, such effects must be mitigated. Mitigation can include excavation of the deposit in accordance with a cultural resource mitigation or data recovery plan that makes provisions for adequately recovering the scientifically consequential information from and about the historical resource (see CCR Title 4(3) Section 15126.4(b)(3)(C)). The data recovery plan shall be prepared and adopted prior to archaeological excavation and should make provisions for sharing of information with Tribes that have requested SB 18 consultation. The data recovery plan shall employ standard archaeological field methods and procedures; laboratory and technical analyses; production of a report detailing methods, findings, and significance of the resource; curation of the material at an appropriate facility for future research and/or display; an interpretive display of recovered archaeological material at a local school, museum, or library; and public presentations on the findings and significance of the resource and recovered material. Results of the study shall be deposited with the SBAIC at the San Bernardino County Museum in Redlands, California.

In the event human remains are encountered during the project, State Health and Safety Code Section 7050.5 states that no further disturbance shall occur until the County Coroner has made a determination of origin and disposition pursuant to PRC Section 5097.98. The County Coroner must be notified of the find immediately. If the remains are determined to be Native American, the County Coroner will notify the NAHC, which will determine and notify an MLD. With the permission of the landowner or his/her authorized representative, the MLD may inspect the site of the discovery. The MLD shall complete the inspection within 48 hours of notification by the NAHC. The MLD will have the opportunity to offer recommendations for the disposition of the remains.

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APPENDIX A
RECORD SEARCH RESULTS

CONFIDENTIAL – NOT FOR PUBLIC REVIEW

APPENDIX B

**SITE UPDATES AND
PREVIOUSLY RECORDED SITE RECORD FORMS FOR
CULTURAL RESOURCES IN THE PROJECT AREA**

CONFIDENTIAL – NOT FOR PUBLIC REVIEW

APPENDIX C

NATIVE AMERICAN CONSULTATION

SB18 NATIVE AMERICAN CONTACT RECORD**Proposed La Entrada Specific Plan, City of Coachella, Riverside County, California**

Date the Native American Heritage Commission (NAHC) responded to the request for a Sacred Lands File search: August 23, 2012

NAHC Response: Native American cultural resources were not identified within the area of potential effects; however, in a telephone call, Dave Singleton indicated that the area is in general very sensitive for cultural resource. In a July 20, 2012 response to the CEQA Notice of Preparation for the La Entrada Specific Plan, the NAHC recommended that the 11 Native American individuals listed in the table below be contacted for information regarding cultural resources that could be affected by the project.

Groups Contacted	Date LSA Letter Sent to Tribes	Date Tribal Response to Letter Received	Date and Results of Follow-up Telephone Calls and/or Emails
Cabazon Band of Mission Indians David Roosevelt, Chairperson <i>Cahuilla</i>	July 31, 2012	No response received.	August 23, 2012: Judy Stapp, Director of Cultural Affairs, stated that she sent a letter dated July 3, 2012 to the City regarding the project. In the letter she said that the Tribe does not know of specific resources that could be affected by the project, and do not request government-to-government consultation at this time. However, they do recommend archaeological monitoring during ground disturbing activities due to the overall sensitivity of the area. Please see attached letter.
Santa Rosa Band of Mission Indians John Marcus, Chairman <i>Cahuilla</i>	July 31, 2012	No response received	August 23, 2012: Steven Estrada in Cultural Resources stated that he has not seen the letter and requested that it be emailed to him. He will respond if there are concerns. August 31, 2012: The letter was emailed to Mr. Estrada. To date, no response has been received.
Los Coyotes Band of Mission Indians Shane Chapperosa, Chairman <i>Cahuilla</i>	July 31, 2012	No response received	August 23, 2012: A message was left with an administrator. She stated that the Tribe would respond if there are concerns. To date, no response has been received.
Augustine Band of Cahuilla Mission Indians Mary Ann Green, Chairperson <i>Cahuilla</i>	July 31, 2012	No response received	August 23, 2012: David Saldoval in Cultural Resources stated that he has reviewed the letter and a response from the Tribe is forthcoming. September 9, 2012: A letter response dated September 14, 2012 was received from Ms. Green. The letter stated that at this time, the Band is unaware of specific cultural resources that may be affected. They recommend that tribes in the immediate vicinity be contacted; that a qualified Native American monitor be present on-site during the pre-construction and construction phase of the project; and that they be notified immediately of any cultural resources discoveries.
Ramona Band of Cahuilla Mission Indians Joseph Hamilton, Chairman <i>Cahuilla</i>	July 31, 2012	No response received	August 23, 2012: A follow up email was sent to Mr. Hamilton. August 31, 2012: A second follow up email was sent to Mr. Hamilton.
Morongo Band of Mission Indians Michael Contreras, Cultural Heritage Program <i>Cahuilla, Serrano</i>	July 31, 2012	No response received	August 23, 2012: A follow up email was sent to Mr. Contreras. August 31, 2012: A second follow up email was sent to Mr. Contreras.

Torres-Martinez Desert Cahuilla Indians Mary Resvaloso, Chairperson <i>Cahuilla</i>	July 31, 2012	No response received	August 23, 2012: A follow up email was sent to Ms. Resvaloso. August 31, 2012: A second follow up email was sent to Ms. Resvaloso.
Torres-Martinez Desert Cahuilla Indians Diana L. Chihuahua, Vice Chairperson, Cultural Resources <i>Cahuilla</i>	July 31, 2012	No response received	August 23, 2012: A follow up email was sent to Ms. Chihuahua. August 31, 2012: A second follow up email was sent to Ms. Chihuahua. September 7, 2012: An email response was received from Roland Ferrer, Planning Director. Mr. Ferrer requested SB18 consultation with the City. He directed consultation to Matt Krystall, Tribal Resources Manager, who will be the main point of contact for this project.
Agua Caliente Band of Cahuilla Indians THPO Patricia Tuck, Tribal Historic Preservation Officer <i>Cahuilla</i>	July 31, 2012	No response received	August 23, 2012: A follow up email was sent to Ms. Tuck. August 31, 2012: A second follow up email was sent to Ms. Tuck. September 6, 2012: A letter addressed to the City was received from Ms. Tuck. The letter stated that the Tribe knows of several resources within the project area, including Indian trails, and that a known ethnographic resource, <i>Palaiyi</i> , is potentially located near or within the proposed project boundaries. Because of the sensitivity of the area, the Tribe has numerous requests outlined in the letter that include monitoring by a Tribal approved monitor, thorough background research of Cahuilla traditions, consultation with local tribes to discuss the development and potential mitigation and treatment of resources, copies of associated reports, and government-to-government SB18 consultation with the City. Please see the attached letter. January 24, 2013: The City responded by letter dated January 24, 2013. The letter stated that they welcome the opportunity to consult with the Agua Caliente Band of Cahuilla Indians. They suggested scheduling a meeting after the Tribe has had the opportunity to view the draft report, and would be happy to host the meeting.
Augustine Band of Cahuilla Mission Indians Karen Kupcha <i>Cahuilla</i>	July 31, 2012	No response received	Please see Mary Ann Green above.
Cahuilla Band of Indians Chairperson <i>Cahuilla</i>	July 31, 2012	No response received	August 23, 2012: A follow up email was sent to the address provided. August 31, 2012: A second follow up email was sent.

LSA

LSA ASSOCIATES, INC.
20 EXECUTIVE PARK, SUITE 200
IRVINE, CALIFORNIA 92614

949.553.0665 TEL
949.553.8076 FAX

BERKELEY
CARLSBAD
FORT COLLINS

FRESNO
PALM SPRINGS
PT. RICHMOND

RIVERSIDE
ROCKLIN
SAN LUIS OBISPO
SOUTH SAN FRANCISCO

TRANSMITTAL

TO: Dave Singleton
Program Analyst
Native American Heritage Commission
915 Capitol Mall, Room 364
Sacramento, CA 95814

DATE: August 22, 2012

☐ FOR YOUR REVIEW ☐ FOR YOUR FILES
☐ AT YOUR REQUEST ☐ FOR YOUR INFORMATION
☒ FOR YOUR APPROVAL ☐ DISTRIBUTION

SUBJECT: Sacred Lands File Search Request

PROJECT: La Entrada Specific Plan, City of Coachella

PROJECT NUMBER: _____

ITEMS BELOW ARE TRANSMITTED: ☐ HERewith ☐ UNDER SEPARATE COVER ☐ VIA:

DATE	COPIES	DESCRIPTION
8-22-12		

GENERAL REMARKS:

Hi Dave,

Remember we discussed a request I made for a Sacred Lands File (SLF) search for the La Entrada Specific Plan in the City of Coachella? You did not want to duplicate efforts because the NAHC had already sent a letter regarding the project to the City. I just realized that the letter the City forwarded to me from the NAHC does not contain the results of a SLF search, but recommends that one be requested. (I attached the letter and highlighted that language.) May I please request a SLF search on behalf of the City for this proposed project? I am sending the same request I sent before, which is why it will look familiar => I hope this makes sense...sorry for any confusion. Thanks very much for your help!

Best Regards,

Terri

COPIES TO:

BY: Terri Fulton

LOCAL GOVERNMENT TRIBAL CONSULTATION LIST REQUEST

NATIVE AMERICAN HERITAGE COMMISSION

915 Capitol Mall, Room 364

Sacramento, CA 95814

(916) 653-4082

(916) 657-5390 - Fax

Project Title: La Entrada Specific Plan

Local Government/Lead Agency: City of Coachella

Contact Person: Terri Fulton for Luis Lopez w/ City of Coachella

Street Address: 20 Executive Park, Suite 200

City: Irvine, CA Zip: 92614

Phone: 949-553-0606 Fax: 949-553-8076

Specific Area Subject to Proposed Action

County: Riverside

City/Community: Coachella

Local Action Type:

☐ General Plan ☐ General Plan Element ☒ General Plan Amendment

☒ Specific Plan ☐ Specific Plan Amendment

☐ Pre-planning Outreach Activity

Project Description:

The La Entrada Specific Plan is an amendment to the previously approved 1989 McNaughton Specific Plan & will expand the previously approved plan by 588 acres resulting in a total project area of 2200 acres. The plan includes residential, commercial + recreational uses.

☒ SACRED LANDS FILE SEARCH AND NATIVE AMERICAN CONTACTS LIST REQUEST

Information Below is Required for a Sacred Lands File Search

USGS Quadrangle Name Indio + Thermal Canyon, California

Township 5S Range 8E Section(s) 35 - Indio
35, 36 - Thermal Canyon

Native American Tribal Consultation lists are only applicable for consulting with California Native American tribes per Government Code Section 65352.3.

AND Township 6S Range 8E Section 1, Thermal Canyon
Township 6S Range 9E Section 6, Thermal Canyon

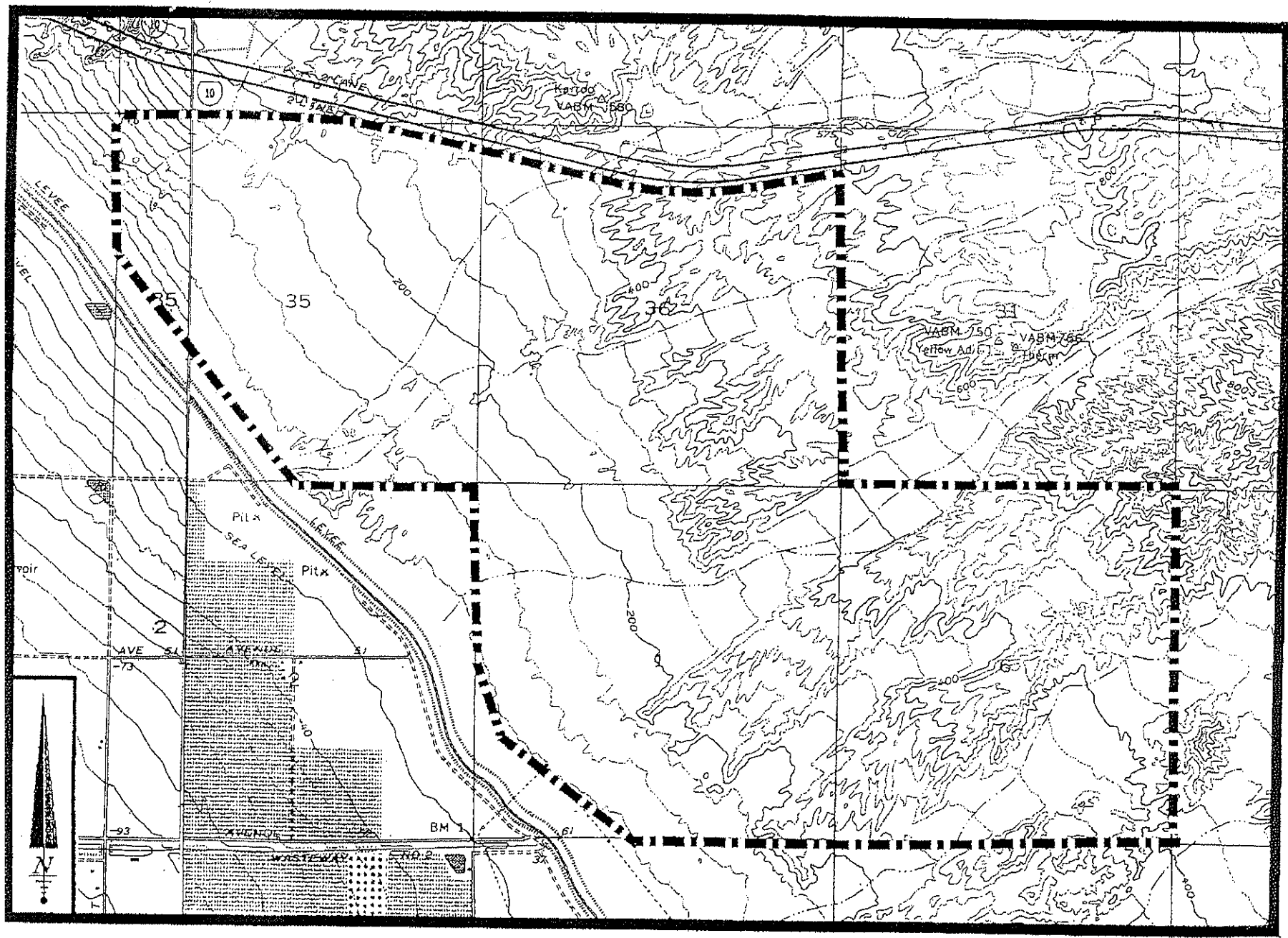


Figure 2. Study area as shown on portions of the *Indio* and *Thermal Canyon* USGS 7.5' Topographic Quadrangles (1956; photorevised 1972).

NATIVE AMERICAN HERITAGE COMMISSION

915 CAPITOL MALL, ROOM 364
SACRAMENTO, CA 95814
(916) 653-6251
Fax (916) 657-5390
Web Site www.nahc.ca.gov
ds_nahc@pacbell.net



July 20, 2012

Mr. Luis Lopez, development Services Director

City of Coachella

1515 Sixth Street
Coachella, CA 92236

Re: SCH#2012071061; CEQA Notice of Preparation (NOP): draft Environmental Impact Report (DEIR) for the La Entrada Specific Plan Project; located in the City of Coachella; Riverside County, California.

Dear Mr. Lopez:

The Native American Heritage Commission (NAHC), the State of California 'Trustee Agency' for the protection and preservation of Native American cultural resources pursuant to California Public Resources Code §21070 and affirmed by the Third Appellate Court in the case of EPIC v. Johnson (1985: 170 Cal App. 3rd 604).

This letter includes state and federal statutes relating to Native American historic properties of religious and cultural significance to American Indian tribes and interested Native American individuals as 'consulting parties' under both state and federal law. State law also addresses the freedom of Native American Religious Expression in Public Resources Code §5097.9

The California Environmental Quality Act (CEQA – CA Public Resources Code 21000-21177, amendments effective 3/18/2010) requires that any project that causes a substantial adverse change in the significance of an historical resource, that includes archaeological resources, is a 'significant effect' requiring the preparation of an Environmental Impact Report (EIR) per the CEQA Guidelines defines a significant impact on the environment as 'a substantial, or potentially substantial, adverse change in any of physical conditions within an area affected by the proposed project, including ... objects of historic or aesthetic significance.' In order to comply with this provision, the lead agency is required to assess whether the project will have an adverse impact on these resources within the 'area of potential effect (APE), and if so, to mitigate that effect. The NAHC recommends that the lead agency request that the NAHC do a Sacred Lands File search as part of the careful planning for the proposed project.

The NAHC 'Sacred Sites,' as defined by the Native American Heritage Commission and the California Legislature in California Public Resources Code §§5097.94(a) and 5097.96. Items in the NAHC Sacred Lands Inventory are confidential and exempt from the Public Records Act pursuant to California Government Code §6254 (r).

Early consultation with Native American tribes in your area is the best way to avoid unanticipated discoveries of cultural resources or burial sites once a project is underway. Culturally affiliated tribes and individuals may have knowledge of the religious and cultural significance of the historic properties in the project area (e.g. APE). We strongly urge that you make contact with the list of Native American Contacts on the attached list of Native American

contacts, to see if your proposed project might impact Native American cultural resources and to obtain their recommendations concerning the proposed project. Pursuant to CA Public Resources Code § 5097.95, the NAHC requests cooperation from other public agencies in order that the Native American consulting parties be provided pertinent project information. Consultation with Native American communities is also a matter of environmental justice as defined by California Government Code §65040.12(e). Pursuant to CA Public Resources Code §5097.95, the NAHC requests that pertinent project information be provided consulting tribal parties. The NAHC recommends *avoidance* as defined by CEQA Guidelines §15370(a) to pursuing a project that would damage or destroy Native American cultural resources and Section 2183.2 that requires documentation, data recovery of cultural resources.

Furthermore, the NAHC if the proposed project is under the jurisdiction of the statutes and regulations of the National Environmental Policy Act (e.g. NEPA; 42 U.S.C. 4321-43351). Consultation with tribes and interested Native American consulting parties, on the NAHC list, should be conducted in compliance with the requirements of federal NEPA and Section 106 and 4(f) of federal NHPA (16 U.S.C. 470 *et seq*), 36 CFR Part 800.3 (f) (2) & .5, the President's Council on Environmental Quality (CSQ, 42 U.S.C 4371 *et seq.* and NAGPRA (25 U.S.C. 3001-3013) as appropriate. The 1992 *Secretary of the Interiors Standards for the Treatment of Historic Properties* were revised so that they could be applied to all historic resource types included in the National Register of Historic Places and including cultural landscapes. Also, federal Executive Orders Nos. 11593 (preservation of cultural environment), 13175 (coordination & consultation) and 13007 (Sacred Sites) are helpful, supportive guides for Section 106 consultation. The aforementioned Secretary of the Interior's *Standards* include recommendations for all 'lead agencies' to consider the historic context of proposed projects and to "research" the cultural landscape that might include the 'area of potential effect.'

Confidentiality of "historic properties of religious and cultural significance" should also be considered as protected by California Government Code §6254(r) and may also be protected under Section 304 of the NHPA or at the Secretary of the Interior discretion if not eligible for listing on the National Register of Historic Places. The Secretary may also be advised by the federal Indian Religious Freedom Act (cf. 42 U.S.C., 1996) in issuing a decision on whether or not to disclose items of religious and/or cultural significance identified in or near the APEs and possibility threatened by proposed project activity.

Furthermore, Public Resources Code Section 5097.98, California Government Code §27491 and Health & Safety Code Section 7050.5 provide for provisions for inadvertent discovery of human remains mandate the processes to be followed in the event of a discovery of human remains in a project location other than a 'dedicated cemetery'.

To be effective, consultation on specific projects must be the result of an ongoing relationship between Native American tribes and lead agencies, project proponents and their contractors, in the opinion of the NAHC. Regarding tribal consultation, a relationship built around regular meetings and informal involvement with local tribes will lead to more qualitative consultation tribal input on specific projects.

Finally, when Native American cultural sites and/or Native American burial sites are prevalent within the project site, the NAHC recommends 'avoidance' of the site as referenced by CEQA Guidelines Section 15370(a).

If you have any questions about this response to your request, please do not hesitate to contact me at (916) 653-6251.

Sincerely,



Dave Singleton
Program Analyst

Cc: State Clearinghouse

Attachment: Native American Contact List

Native American Contact
Riverside County
July 20, 2012

Cabazon Band of Mission Indians
David Roosevelt, Chairperson
84-245 Indio Springs Cahuilla
Indio , CA 92203-3499
(760) 342-2593
(760) 347-7880 Fax

Santa Rosa Band of Mission Indians
John Marcus, Chairman
P.O. Box 391820 Cahuilla
Anza , CA 92539
(951) 659-2700
(951) 659-2228 Fax

Los Coyotes Band of Mission Indians
Shane Chapparosa, Chairman
P.O. Box 189 Cahuilla
Warner , CA 92086
(760) 782-0711
(760) 782-2701 - FAX

Augustine Band of Cahuilla Mission Indians
Mary Ann Green, Chairperson
P.O. Box 849 Cahuilla
Coachella , CA 92236
(760) 398-4722
760-369-7161 - FAX

Ramona Band of Cahuilla Mission Indians
Joseph Hamilton, Chairman
P.O. Box 391670 Cahuilla
Anza , CA 92539
admin@ramonatribe.com
(951) 763-4105
(951) 763-4325 Fax

Morongo Band of Mission Indians
Michael Contreras, Cultural Heritage Prog.
12700 Pumarra Road Cahuilla
Banning , CA 92220 Serrano
(951) 201-1866 - cell
mcontreras@morongo-nsn.
gov
(951) 922-0105 Fax

Torres-Martinez Desert Cahuilla Indians
Mary Resvaloso, Chairperson
PO Box 1160 Cahuilla
Thermal , CA 92274
mresvaloso@torresmartinez.
(760) 397-0300
(760) 397-8146 Fax

Torres-Martinez Desert Cahuilla Indians
Diana L. Chihuahua, Vice Chairperson, Cultural
P.O. Box 1160 Cahuilla
Thermal , CA 92274
760) 397-0300, Ext. 1209
(760) 272-9039 - cell (Lisa)
(760) 397-8146 Fax

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of the statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

This list is applicable for contacting local Native Americans with regard to cultural resources for the proposed SCH#2012071061; CEQA Notice of Preparation (NOP); draft Environmental Impact Report (DEIR) for the La Entrada Specific Plan Project; located in the City of Coachella; Riverside County, California.

Native American Contact
Riverside County
July 20, 2012

Agua Caliente Band of Cahuilla Indians THPO
Patricia Tuck, Tribal Historic Preservation Officer
5401 Dinah Shore Drive Cahuilla
Palm Springs, CA 92264
ptuck@augacaliente-nsn.gov
(760) 699-6907

(760) 699-6924- Fax

Augustine Band of Cahuilla Mission Indians
Karen Kupcha
P.O. Box 849 Cahuilla
Coachella, CA 92236
(760) 398-4722
916-369-7161 - FAX

Cahuilla Band of Indians
Chairperson
PO Box 391760 Cahuilla
Anza, CA 92539
tribalcouncil@cahuilla.net
915-763-5549

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of the statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

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TRANSMISSION VERIFICATION REPORT

TIME : 08/22/2012 12:42
 NAME :
 FAX :
 TEL :
 SER.# : 000C5J225683

DATE, TIME 08/22 12:40
 FAX NO./NAME NAHC
 DURATION 00:01:34
 PAGE(S) 08
 RESULT OK
 MODE STANDARD
 ECM

LSA

LSA ASSOCIATES, INC.
 20 EXECUTIVE PARK, SUITE 200
 IRVINE, CALIFORNIA 92614

949.553.0666 TEL
 949.553.0676 FAX

BERKELEY
 CARLSBAD
 FORT COLLINS

FRESNO
 PALM SPRINGS
 FT. RICHMOND

RIVERSIDE
 ROCKLIN
 SAN LUIS OBISPO
 SOUTH SAN FRANCISCO

TRANSMITTAL

TO: Dave Singleton
 Program Analyst
 Native American Heritage Commission
 915 Capitol Mall, Room 364
 Sacramento, CA 95814

DATE: August 22, 2012

☐ FOR YOUR REVIEW ☐ FOR YOUR FILES
☐ AT YOUR REQUEST ☐ FOR YOUR INFORMATION
☒ FOR YOUR APPROVAL ☐ DISTRIBUTION

SUBJECT: Sacred Lands File Search Request

PROJECT: La Entrada Specific Plan, City of
 Coachella
 PROJECT NUMBER: _____

ITEMS BELOW ARE TRANSMITTED. ☐ HERewith ☐ UNDER SEPARATE COVER ☐ VIA:

DATE	QUERIES	DESCRIPTION
8-22-12		

GENERAL REMARKS:
 Hi Dave,

Remember we discussed a request I made for a Sacred Lands File (SLF) search for the La Entrada Specific Plan in the City of Coachella? You did not want to duplicate efforts because the NAHC had already sent a letter regarding the project to the City. I just realized that the letter the City forwarded to me from the NAHC does not contain the results of a SLF search, but recommends that one be requested. (I attached the letter and highlighted that language.) May I please request a SLF search on behalf of the City for this proposed project? I am sending the same request I sent before, which is why it will look familiar => I hope this makes sense...sorry for any confusion. Thanks very much for your help!

STATE OF CALIFORNIA

Edmund G. Brown, Jr., Governor

NATIVE AMERICAN HERITAGE COMMISSION

915 CAPITOL MALL, ROOM 384
SACRAMENTO, CA 95814
(916) 653-6251
Fax (916) 657-5390
Web Site www.nahc.ca.gov
e-mail: ds_nahc@pacbell.net



August 23, 2012

Ms. Terri Fulton, RPA for the

City of Coachella

1515 – Sixth Street
Coachella, CA 92236

Sent by FAX to: 949-553-8076

No. of Pages: 3

Re: Sacred Lands File Search and Native American Contacts list for the proposed "La Entrada Specific Plan Amendment (amending the 1989 McNaughton Specific Plan) located on 588-acres in the City of Coachella; Riverside County, California

Dear Ms. Fulton:

Government Code §65352.3 requires local governments to consult with California Native American tribes identified by the Native American Heritage Commission (NAHC) for the purpose of protecting, and/or mitigating impacts to cultural places. The Native American Heritage Commission is the state "trustee agency" designated for the protection of Native American Cultural Resource pursuant to CA Public Resources Code §21070. In the 1985 Appellate Court decision (170 Cal App 3rd 604), the court held that the NAHC has jurisdiction and special expertise, as a state agency, over affected Native American resources, impacted by proposed projects including archaeological, places of religious significance to Native Americans and burial sites

Attached is a consultation list of tribal governments with traditional lands or cultural places located within the Project Area of Potential Effect (APE). The tribal entities on the list are for your guidance for **government-to-government consultation** purposes. Pursuant to CA Public Resources Code §5097.95, please provide pertinent project information to the tribal consulting parties, including archaeological studies..

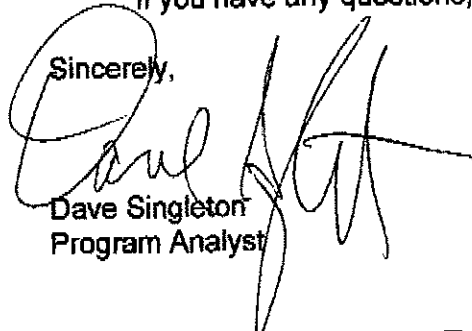
The NAHC did perform a Sacred Lands File search of the 'area of potential effect' (APE). Native American cultural resources were not identified within the APE specified. Quality consulting with Native American tribes is the appropriate protocol. Tribal Governments have 90 days to comment from the receipt of the County's letter inviting consultation.

The Native American Heritage Commission works with Native American tribal governments regarding its identification of 'Areas of Traditional Use,' The Commission

may adjust the submitted data defining the 'Area of Traditional Use' in accordance with documentation provided by consulting tribes, generally accepted ethnographic, anthropological, archeological research and oral history.

If you have any questions, please contact me at (916) 653-6251.

Sincerely,

A handwritten signature in black ink, appearing to read "Dave Singleton", written over the printed name and title.

Dave Singleton
Program Analyst

Attachment: Native American Tribal Government Consultation List

**Native American Tribal Government Contacts
Riverside County
August 23, 2012**

Cabazon Band of Mission Indians
David Roosevelt, Chairperson
84-245 Indio Springs Parkway Cahuilla
Indio , CA 92203-3499
(760) 342-2593

Augustine Band of Cahuilla Mission Indians
Mary Ann Green, Chairperson
P.O. Box 846 Cahuilla
Coachella , CA 92236
(760) 398-4722

Los Coyotes Band of Mission Indians
Shane Chapparosa, Chairman
P.O. Box 189 Cahuilla
Warner , CA 92086
(760) 782-0711

Agua Caliente Band of Cahuilla Indians
Jeff Grubbe, Chairperson
5401 Dinah Shore Drive Cahuilla
Palm Springs , CA 92262
lfreogoz@aguacaliente-nsn.gov
(760) 325-3400

Ramona Band of Cahuilla Mission Indians
Joseph Hamilton, Chairman
P.O. Box 391670 Cahuilla
Anza , CA 92539
admin@ramonatribe.com
(951) 763-4105

Morongo Band of Mission Indians
Robert Martin, Chairperson
12700 Pumarra Road Cahuilla
Banning , CA 92220 Serrano
(951) 849-8807
(951) 755-5200

Torres-Martinez Desert Cahuilla Indians
Mary Resvaloso, Chairperson
PO Box 1160 Cahuilla
Thermal , CA 92274
mresvaloso@torresmartinez.
(760) 397-0300

Agua Caliente Band of Cahuilla Indians THPO
Patricia Tuck, Tribal Historic Preservation Officer
5401 Dinah Shore Drive Cahuilla
Palm Springs , CA 92264
ptuck@augacaliente-nsn.gov
(760) 699-6907

Santa Rosa Band of Mission Indians
John Marcus, Chairman
P.O. Box 391820 Cahuilla
Anza , CA 92539
(951) 659-2700
(951) 659-2228 Fax

Cahuilla Band of Indians
Chairperson
PO Box 391760 Cahuilla
Anza , CA 92539
tribalcouncil@cahuilla.net
915-763-5549

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

This list is applicable only for consultation with Native American tribes under Government Code Section 65352.3. and 65362.4.
at xxx



LSA ASSOCIATES, INC.
20 EXECUTIVE PARK, SUITE 200
IRVINE, CALIFORNIA 92614

949.553.0666 TEL
949.553.8076 FAX

BERKELEY
CARLSBAD
FORT COLLINS

FRESNO
PALM SPRINGS
PT. RICHMOND

RIVERSIDE
ROCKLIN
SAN LUIS OBISPO
SOUTH SAN FRANCISCO

July 31, 2012

Cabazon Band of Mission Indians
David Roosevelt, Chairperson
84-245 Indio Springs
Indio, California 92203-3499

Subject: SB 18 Native American Consultation and Project Notification for the Proposed La
Entrada Specific Plan Project, City of Coachella, Riverside County, California

Dear Mr. Roosevelt:

On behalf of the City of Coachella (City), LSA Associates, Inc. (LSA), would like to notify you of the proposed La Entrada Specific Plan project in the City, Riverside County, California. The City is the Lead Agency for the project and will prepare the Environmental Impact Report (EIR) under the terms and requirements of the California Environmental Quality Act (CEQA) and the guidelines implementing CEQA.

The La Entrada Specific Plan is an amendment to the previously approved 1989 McNaughton Specific Plan, and will expand the previously approved plan by 588 acres, resulting in a total project area of 2200 acres. The plan includes residential, commercial and recreational uses. The additional acreage for the La Entrada Specific Plan will result in a reduced density of dwelling units per acre, from 4.94 to 3.5. A map showing the project location is attached.

Because this project necessitates a Specific Plan, the City is required to perform Native American consultation per Senate Bill 18 (Burton 2004 [SB 18]). As you are aware, in 2004, sections of California's Government Code and Public Resources Code were amended to address the potential environmental impact of such projects on California Native American Cultural Places. The result was SB 18, which applies to all General/Specific Plan updates and amendments proposed on or after March 1, 2005. As the Lead Agency for the project, it is the City's responsibility to conduct Native American government-to-government consultation under SB 18.

The Native American Heritage Commission has identified you as someone who may have knowledge about the project area. This letter is intended to notify you of the project on behalf of the City, and request information regarding cultural resources in the project area that could be affected. The goal is to determine areas of concern to your group and identify avoidance, minimization, or mitigation measures that would address any potential impacts from the project to cultural resources.

If you would like to enter into formal consultation with the City regarding the La Entrada Specific Plan, please contact Mr. Luis Lopez, City Development Services Director, within the next 90 days. His contact information is as follows:

Luis Lopez
Development Services Director
City of Coachella – Development Services Dept.
1515 Sixth Street
Coachella, California 92236
Tel: (760) 398-3102
Fax: (760) 398-5421
Email: LLopez@coachella.org

LSA ASSOCIATES, INC.

You may also direct any questions, comments, or concerns to me, and I will forward them to the City. I will also be contacting you by phone in the near future to make sure you received this letter and are aware of the project. Thank you for your involvement in this process. If you would like more information, please do not hesitate to contact me at (949) 553-0666 or by email at terri.fulton@lsa-assoc.com.

Respectfully,

LSA ASSOCIATES, INC.

A handwritten signature in black ink, appearing to read 'TFulton', with a long horizontal line extending to the right.

Terri Fulton
Archaeologist/Senior Cultural Resources Manager
Native American Tribal Liaison

Attachment: Project Location Map

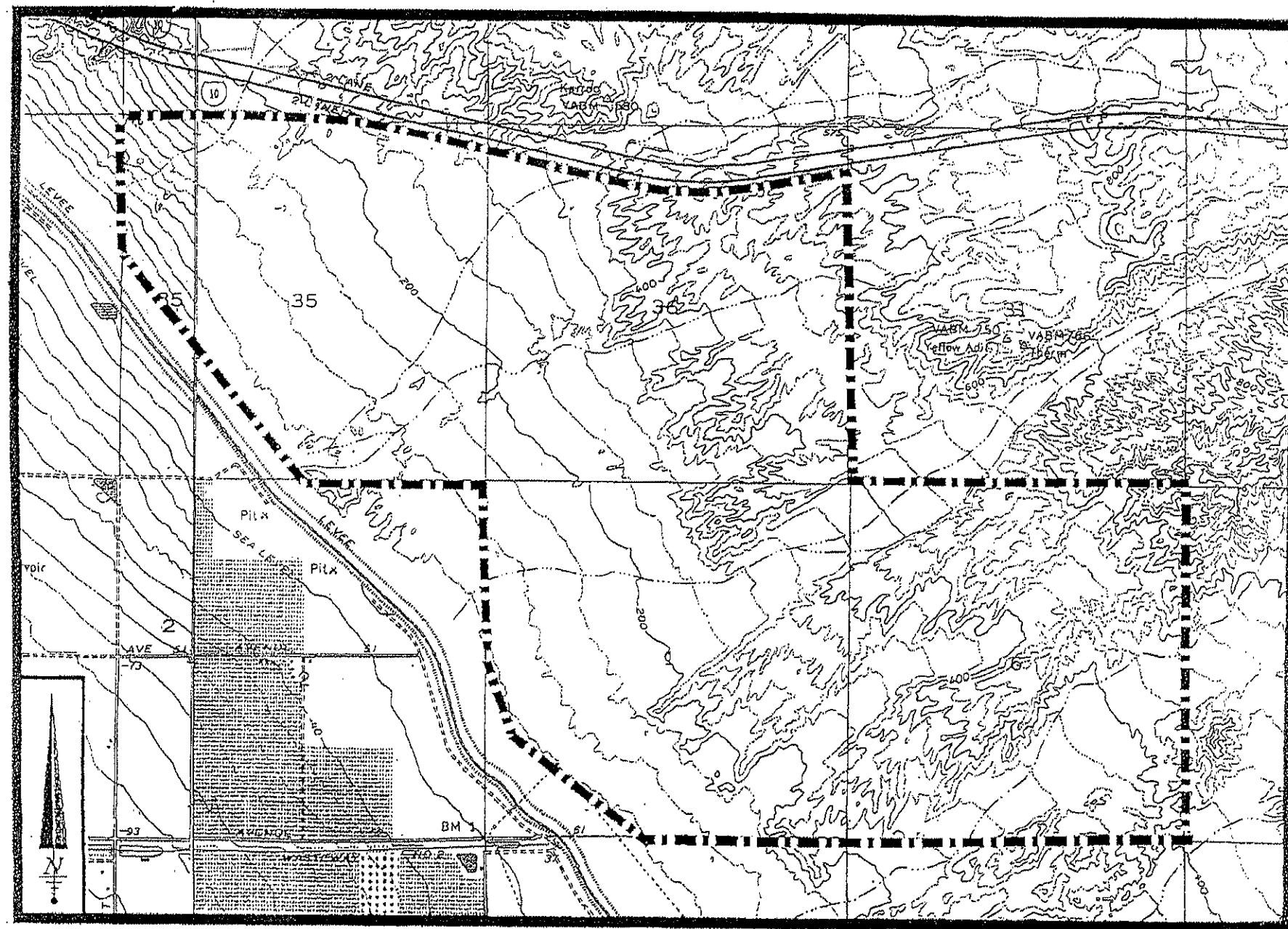
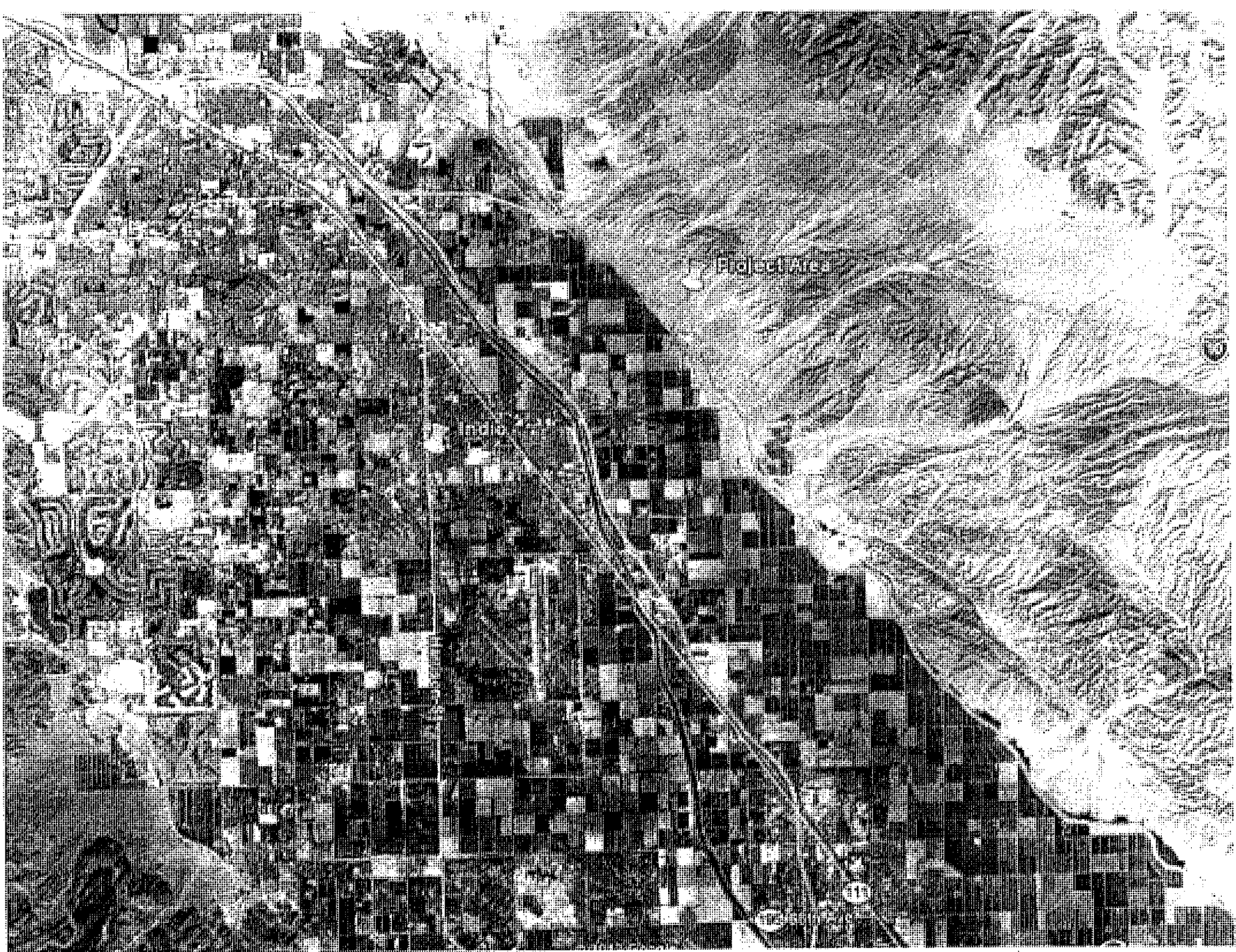


Figure 2. Study area as shown on portions of the *Indio* and *Thermal Canyon* USGS 7.5' Topographic Quadrangles (1956; photorevised 1972).





August 3, 2012

Luis Lopez
Development Services Director
City of Coachella-Development Services Dept.
1515 Sixth Street
Coachella, CA 92236

Re.: SB18 Native American Consultation and Project Notification for the Proposed
La Entrada Specific Plan Project, City of Coachella, Riverside County, California

Dear Mr. Lopez:

Thank you for contacting the Cabazon Band of Mission Indians regarding the above referenced project.

The project is located on Cabazon traditional use area. The Cabazon Band has no specific archival information on the site indicating that it may be a sacred/religious site or other site of Native American traditional cultural value. The Cabazon Band recommends that there be a qualified archaeologist on site during all ground disturbing activities because of the likelihood of finding previously unknown cultural sites in the project area.

We look forward to continued collaboration in the preservation of cultural resources or areas of traditional cultural importance.

Sincerely,

Judy Stapp
Director of Cultural Affairs



Terri Fulton

From: Terri Fulton
Sent: Friday, August 31, 2012 11:14 AM
To: 'sestrada@santarosacahuilla-nsn.gov'
Subject: FW: La Entrada Specific Plan SB 18 consultation
Attachments: Project Location Maps.pdf

Hi Steven,

Sorry about the delay, but here is the letter we discussed last week about the La Entrada Specific Plan project in the City of Coachella. The project location map is also attached. Please let me know if you have comments, or need any additional information. Thank you!

Best,

Terri

July 31, 2012

Santa Rosa Band of Mission Indians
John Marcus, Chairman
P.O. Box 391820
Anza, California 92539

Subject: SB 18 Native American Consultation and Project Notification for the Proposed La Entrada Specific Plan Project, City of Coachella, Riverside County, California

Dear Mr. Marcus:

On behalf of the City of Coachella (City), LSA Associates, Inc. (LSA), would like to notify you of the proposed La Entrada Specific Plan project in the City, Riverside County, California. The City is the Lead Agency for the project and will prepare the Environmental Impact Report (EIR) under the terms and requirements of the California Environmental Quality Act (CEQA) and the guidelines implementing CEQA.

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If you would like to enter into formal consultation with the City regarding the La Entrada Specific Plan, please contact Mr. Luis Lopez, City Development Services Director, within the next 90 days. His contact information is as follows:

Luis Lopez
Development Services Director
City of Coachella – Development Services Dept.
1515 Sixth Street
Coachella, California 92236
Tel: (760) 398-3102
Fax: (760) 398-5421
Email: LLopez@coachella.org

You may also direct any questions, comments, or concerns to me, and I will forward them to the City. I will also be contacting you by phone in the near future to make sure you received this letter and are aware of the project. Thank you for your involvement in this process. If you would like more information, please do not hesitate to contact me at (949) 553-0666 or by email at terri.fulton@lsa-assoc.com.

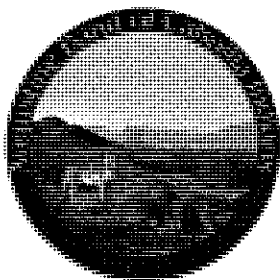
Respectfully,

LSA ASSOCIATES, INC.

A handwritten signature in dark ink, appearing to read 'T. Fulton', with a long horizontal stroke extending to the right.

Terri Fulton
Archaeologist/Senior Cultural Resources Manager
Native American Tribal Liaison

Attachment: Project Location Map



AUGUSTINE BAND OF CAHUILLA INDIANS
P.O. Box 846 • Coachella, CA 92236 • (760) 398-4722 • Fax (760) 398-4252
Tribal Chairperson: MaryAnn Green

LSA
LSA ASSOCIATES, INC.

SEP 20 2012

September 14, 2012

Terri Fulton
LSA Associates, Inc.
20 Executive Park, Suite 200
Irvine, CA 92614

RECEIVED
IRVINE

RE: La Entrada Specific Plan Project (Coachella, CA)

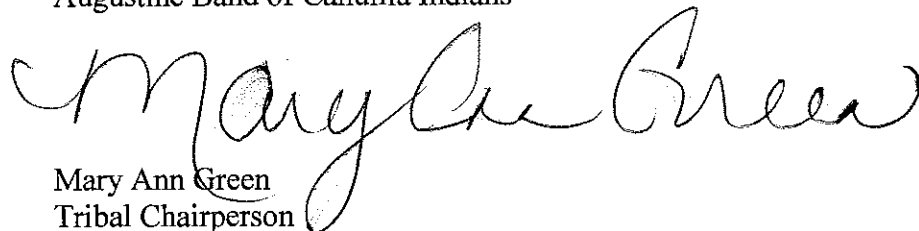
Dear Ms. Fulton:

Thank you for the opportunity to offer input concerning the development of the above-identified project. We appreciate your sensitivity to the cultural resources that may be impacted by your project, and the importance of these cultural resources to the Native American peoples that have occupied the land surrounding the area of your project for thousands of years. Unfortunately, increased development and lack of sensitivity to cultural resources has resulted in many significant cultural resources being destroyed or substantially altered and impacted. Your invitation to consult on this project is greatly appreciated.

At this time we are unaware of specific cultural resources that may be affected by the proposed project. We encourage you to contact other Native American Tribes and individuals within the immediate vicinity of the project site that may have specific information concerning cultural resources that may be located in the area. We also encourage you to contract with a monitor who is qualified in Native American cultural resources identification and who is able to be present on-site full-time during the pre-construction and construction phase of the project. Please notify us immediately should you discover any cultural resources during the development of this project.

Very truly yours,

Augustine Band of Cahuilla Indians


Mary Ann Green
Tribal Chairperson

Terri Fulton

From: Terri Fulton
Sent: Friday, August 31, 2012 11:21 AM
To: admin@ramonatribe.com
Subject: FW: SB 18 Consultation for City of Coachella, La Entrada Specific Plan
Attachments: Project Location Maps.pdf

Hello,

I am following up one more time on this request for comment. If you have already sent your reply to the City, thanks for your input!

Best,

Terri

From: Terri Fulton
Sent: Thursday, August 23, 2012 3:14 PM
To: 'admin@ramonatribe.com'
Subject: SB 18 Consultation for City of Coachella, La Entrada Specific Plan

Chairman Hamilton,

Below please find the text of a letter that was sent to you by LSA on behalf of the City of Coachella notifying you of the proposed La Entrada Specific Plan project. Maps showing the project location are attached. I am following up on the letter to see if you would like to comment or have concerns about the project impacting cultural resources. Additionally, please advise if you would like to enter into government-to-government consultation with the City. If you have already responded directly to the City, there is no need to respond to this request. Thanks very much for your time.

Best Regards,

Terri Fulton
Senior Cultural Resources Manager
Native American Tribal Liaison
LSA Associates, Inc.
949-553-0666 (office)
949-337-5454 (cell)

July 31, 2012

Ramona Band of Cahuilla Mission Indians
Joseph Hamilton, Chairman
P.O. Box 391670
Anza, California 92539

Subject: SB 18 Native American Consultation and Project Notification for the Proposed La Entrada Specific Plan Project, City of Coachella, Riverside County, California

Dear Mr. Hamilton:

On behalf of the City of Coachella (City), LSA Associates, Inc. (LSA), would like to notify you of the proposed La Entrada Specific Plan project in the City, Riverside County, California. The City is the Lead Agency for the project and will prepare the Environmental Impact Report (EIR) under the terms and requirements of the California Environmental Quality Act (CEQA) and the guidelines implementing CEQA.

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Tel: (760) 398-3102
Fax: (760) 398-5421
Email: LLopez@coachella.org

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Respectfully,

LSA ASSOCIATES, INC.



Terri Fulton
Archaeologist/Senior Cultural Resources Manager
Native American Tribal Liaison

Attachment: Project Location Map

Terri Fulton

From: Terri Fulton
Sent: Friday, August 31, 2012 11:27 AM
To: mcontreras@morongo-nsn.gov
Subject: FW: SB 18 Consultation for City of Coachella, La Entrada Specific Plan
Attachments: Project Location Maps.pdf

Hello,

I am following up one more time on this request for comment. If you have already sent your reply to the City, thanks for your input!

Best,

Terri

From: Terri Fulton
Sent: Thursday, August 23, 2012 3:16 PM
To: 'mcontreras@morongo-nsn.gov'
Subject: FW: SB 18 Consultation for City of Coachella, La Entrada Specific Plan

Mr. Contreras,

Below please find the text of a letter that was sent to you by LSA on behalf of the City of Coachella notifying you of the proposed La Entrada Specific Plan project. Maps showing the project location are attached. I am following up on the letter to see if you would like to comment or have concerns about the project impacting cultural resources. Additionally, please advise if you would like to enter into government-to-government consultation with the City. If you have already responded directly to the City, there is no need to respond to this request. Thanks very much for your time.

Best Regards,

Terri Fulton
Senior Cultural Resources Manager
Native American Tribal Liaison
LSA Associates, Inc.
949-553-0666 (office)
949-337-5454 (cell)

July 31, 2012

Morongo Band of Mission Indians
Michael Contreras, Cultural Heritage Prog.
12700 Pumarra Road
Banning, California 92220

Subject: SB 18 Native American Consultation and Project Notification for the Proposed La Entrada Specific Plan Project, City of Coachella, Riverside County, California

Dear Mr. Contreras:

On behalf of the City of Coachella (City), LSA Associates, Inc. (LSA), would like to notify you of the proposed La Entrada Specific Plan project in the City, Riverside County, California. The City is the Lead Agency for the project and will prepare the Environmental Impact Report (EIR) under the terms and requirements of the California Environmental Quality Act (CEQA) and the guidelines implementing CEQA.

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Respectfully,

LSA ASSOCIATES, INC.



Terri Fulton
Archaeologist/Senior Cultural Resources Manager
Native American Tribal Liaison

Attachment: Project Location Map

Terri Fulton

From: Terri Fulton
Sent: Friday, August 31, 2012 11:28 AM
To: mresvaloso@torresmartinez.org
Subject: FW: SB 18 Consultation for City of Coachella, La Entrada Specific Plan
Attachments: Project Location Maps.pdf

Hello,

I am following up one more time on this request for comment. If you have already sent your reply to the City, thanks for your input!

Best,

Terri

From: Terri Fulton
Sent: Thursday, August 23, 2012 3:26 PM
To: 'mresvaloso@torresmartinez.org'
Subject: FW: SB 18 Consultation for City of Coachella, La Entrada Specific Plan

Chairperson Resvaloso,

Below please find the text of a letter that was sent to you by LSA on behalf of the City of Coachella notifying you of the proposed La Entrada Specific Plan project. Maps showing the project location are attached. I am following up on the letter to see if you would like to comment or have concerns about the project impacting cultural resources. Additionally, please advise if you would like to enter into government-to-government consultation with the City. If you have already responded directly to the City, there is no need to respond to this request. Thanks very much for your time.

Best Regards,

Terri Fulton
Senior Cultural Resources Manager
Native American Tribal Liaison
LSA Associates, Inc.
949-553-0666 (office)
949-337-5454 (cell)

July 31, 2012

Torres-Martinez Desert Cahuilla Indians
Mary Resvaloso, Chairperson
P.O. Box 1160
Thermal, California 92274

Subject: SB 18 Native American Consultation and Project Notification for the Proposed La Entrada Specific Plan Project, City of Coachella, Riverside County, California

Dear Ms. Resvaloso:

On behalf of the City of Coachella (City), LSA Associates, Inc. (LSA), would like to notify you of the proposed La Entrada Specific Plan project in the City, Riverside County, California. The City is the Lead Agency for the project and will prepare the Environmental Impact Report (EIR) under the terms and requirements of the California Environmental Quality Act (CEQA) and the guidelines implementing CEQA.

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Respectfully,

LSA ASSOCIATES, INC.



Terri Fulton
Archaeologist/Senior Cultural Resources Manager
Native American Tribal Liaison

Attachment: Project Location Map

Terri Fulton

From: Roland Ferrer <RFerrer@tmdci-nsn.gov>
Sent: Friday, September 07, 2012 12:50 PM
To: Terri Fulton
Cc: Matthew Krystall
Subject: FW: SB 18 Consultation for City of Coachella, La Entrada Specific Plan
Attachments: Project Location Maps.pdf

Terri,
It appears that the project are falls within Cabazon's traditional use area as well. As such I would like to request an SB 18 Consultation. Matt Krystall is our Tribal Resources Manager and will be the main point of contact for this project.

Roland G. Ferrer

Planning Director
Torres Martinez Desert Cahuilla Indians
66725 Martinez Road
P.O. Box 1160
Thermal, CA 92274
(760) 397-0300, x 1209 office
(760) 275-6851 cell
Please note my new email address change to rferrer@tmdci-nsn.gov

From: Diana Chihuahua
Sent: Monday, September 03, 2012 4:00 PM
To: Roland Ferrer
Subject: Fwd: SB 18 Consultation for City of Coachella, La Entrada Specific Plan

Sent from my HTC EVO 4G LTE exclusively from Sprint

----- Forwarded message -----

From: "Terri Fulton" <Terri.Fulton@lsa-assoc.com>
To: "Diana Chihuahua" <dchihuahua@torresmartinez.org>
Subject: SB 18 Consultation for City of Coachella, La Entrada Specific Plan
Date: Fri, Aug 31, 2012 11:29 AM

Hello,

I am following up one more time on this request for comment. If you have already sent your reply to the City, thanks for your input!

Best,

Terri

From: Terri Fulton
Sent: Thursday, August 23, 2012 3:29 PM
To: 'dchihuahua@torresmartinez.org'
Subject: FW: SB 18 Consultation for City of Coachella, La Entrada Specific Plan

Ms. Chihuahua,

Below please find the text of a letter that was sent to you by LSA on behalf of the City of Coachella notifying you of the proposed La Entrada Specific Plan project. Maps showing the project location are attached. I am following up on the letter to see if you would like to comment or have concerns about the project impacting cultural resources. Additionally, please advise if you would like to enter into government-to-government consultation with the City. If you have already responded directly to the City, there is no need to respond to this request. Thanks very much for your time.

Best Regards,

Terri Fulton
Senior Cultural Resources Manager
Native American Tribal Liaison
LSA Associates, Inc.
949-553-0666 (office)
949-337-5454 (cell)

July 31, 2012

Torres-Martinez Desert Cahuilla Indians
Diana L. Chihuahua, Vice Chairperson, Cultural
P.O. Box 1160
Thermal, California 92274

Subject: SB 18 Native American Consultation and Project Notification for the Proposed La Entrada Specific Plan Project, City of Coachella, Riverside County, California

Dear Ms. Chihuahua:

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Development Services Director
City of Coachella – Development Services Dept.
1515 Sixth Street
Coachella, California 92236
Tel: (760) 398-3102
Fax: (760) 398-5421
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Respectfully,

LSA ASSOCIATES, INC.



Terri Fulton
Archaeologist/Senior Cultural Resources Manager
Native American Tribal Liaison

Attachment: Project Location Map

The information transmitted is intended only for the person or entity to which it is addressed and may contain confidential and/or privileged material. If the reader of this message is not the intended recipient, you are hereby notified that you have received this message in error and that any review, dissemination, distribution or copying of this message including any attachments is strictly prohibited. If you received this in error, please contact the sender and delete the material.

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Terri Fulton

From: Terri Fulton
Sent: Friday, August 31, 2012 11:29 AM
To: ptuck@aguacaliente-nsn.gov
Subject: FW: SB 18 Consultation for City of Coachella, La Entrada Specific Plan
Attachments: Project Location Maps.pdf

Hi Pattie,

I am following up one more time on this request for comment. If you have already sent your reply to the City, thanks for your input!

Best,

Terri

From: Terri Fulton
Sent: Thursday, August 23, 2012 3:31 PM
To: 'ptuck@aguacaliente-nsn.gov'
Subject: FW: SB 18 Consultation for City of Coachella, La Entrada Specific Plan

Ms. Tuck,

Below please find the text of a letter that was sent to you by LSA on behalf of the City of Coachella notifying you of the proposed La Entrada Specific Plan project. Maps showing the project location are attached. I am following up on the letter to see if you would like to comment or have concerns about the project impacting cultural resources. Additionally, please advise if you would like to enter into government-to-government consultation with the City. If you have already responded directly to the City, there is no need to respond to this request. Thanks very much for your time.

Best Regards,

Terri Fulton
Senior Cultural Resources Manager
Native American Tribal Liaison
LSA Associates, Inc.
949-553-0666 (office)
949-337-5454 (cell)

July 31, 2012

Agua Caliente Band of Cahuilla Indians THPO
Patricia Tuck, Tribal Historic Preservation Officer
5401 Dinah Shore Drive
Palm Springs, California 92264

Subject: SB 18 Native American Consultation and Project Notification for the Proposed La Entrada Specific Plan Project, City of Coachella, Riverside County, California

Dear Ms. Tuck:

On behalf of the City of Coachella (City), LSA Associates, Inc. (LSA), would like to notify you of the proposed La Entrada Specific Plan project in the City, Riverside County, California. The City is the Lead Agency for the project and will prepare the Environmental Impact Report (EIR) under the terms and requirements of the California Environmental Quality Act (CEQA) and the guidelines implementing CEQA.

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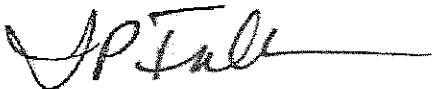
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Respectfully,

LSA ASSOCIATES, INC.

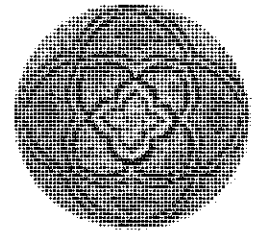


Terri Fulton
Archaeologist/Senior Cultural Resources Manager
Native American Tribal Liaison

Attachment: Project Location Map

AGUA CALIENTE BAND OF CAHUILLA INDIANS

TRIBAL HISTORIC PRESERVATION



September 6, 2012

Luis Lopez
Development Services Director
City Coachella
1515 Sixth Street
Coachella, CA 92236

RE: SB 18 Native American Consultation request for the Proposed La Entrada Specific Plan, Coachella, CA

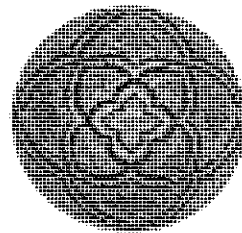
Dear Mr. Lopez:

The Agua Caliente Band of Cahuilla Indians (ACBCI) appreciates your efforts to invite the Tribal Historic Preservation Office (THPO) in the SB18 consultation process. The La Entrada Project is not located within the boundaries of the ACBCI Reservation however it is within the Tribe's Traditional Use Area (TUA). The THPO has the following comments:

According to our records there are several resources located within the project area. Several surveys have revealed surface artifacts, features and Indian trails. Documented oral traditional provides information to be considered in EIRs, mitigations measures and treatment plans. Dr. Lowell Bean's book *The Cahuilla Landscape (1991)* describes a Cahuilla place name location, *Palaiyi*. *Palaiyi* is potentially located near or within the proposed project boundaries. The Cahuilla have used the surrounding areas for food gathering, trail networking and sacred rituals.

Because of the sensitivity of this area the ACBCI THPO requests the following to be considered and incorporated into the Specific Plan:

1. We request a thorough background research in traditional Cahuilla landscapes and oral history to better understand the cultural significance and potential impacts to the Cahuilla traditional places. This research shall be added to the historic and prehistoric sections of the plan under Cultural Resources
2. We request the plan include formal consultations with local tribes to discuss future developments in the proposed area, to discuss potential mitigation, to discuss potential treatment plans
3. We request a 100% survey and cultural resource inventory is required by a qualified archaeologist prior to the any future development activities.
4. We request copies of any associated cultural resource reports and site records that might be generated in connection with these efforts for review and comment
5. We request a review period of 45 days to review the associated cultural resource reports and site records and will provide additional comments, such as proposed mitigation measures or conditions of approval, at that time.
6. We request an Approved Cultural Resource Monitor(s) must be present during any



ground disturbing activities by developers. Should buried cultural deposits be encountered, the Monitor may request that destructive construction halt and the Monitor shall notify a Qualified (Secretary of the Interior's Standards and Guidelines) Archaeologist to investigate and, if necessary, prepare a mitigation plan for submission to the Agua Caliente Tribal Historic Preservation Officer. Work on the overall project may continue during this assessment period.

7. We request specification if human remains are encountered during grading and other construction excavation, work in the immediate vicinity shall cease and the County Coroner shall be contacted pursuant to State Health and Safety Code §7050.5.

The Tribe requests consultation pursuant to SB 18 (Government Code §65352.3) on this proposed project. Please contact our offices for further consultation. Again, the Agua Caliente Tribe appreciates your interest in our cultural heritage. If you have questions or require additional information, please call me at (760) 699-6907. You may also email me at ptuck@aguacaliente-nsn.gov.

Cordially,

Patricia Garcia-Tuck, Director
Tribal Historic Preservation Office
**AGUA CALIENTE BAND
OF CAHUILLA INDIANS**

c: Agua Caliente Cultural Register

X:\CONSULTATIONS Letters\FY2012\ TUA \Coachella_SB18_LaEntrada_09_06_12.docx



CITY OF COACHELLA

1515 SIXTH STREET, COACHELLA, CALIFORNIA 92236

PHONE (760) 398-3502 • FAX (760) 398-8117 • WWW.COACHELLA.ORG

January 24, 2013

Patricia Garcia-Tuck, Director
Tribal Historic Preservation Office
Agua Caliente Band of Cahuilla Indians
5401 Dinah Shore Drive
Palm Springs, CA 92264

Re: SB 18 Native American Consultation Request for the Proposed La Entrada Specific Plan

Dear Ms. Garcia-Tuck,

The City is in receipt of your request for consultation pursuant to Government Code section 65352.3 (also known as SB 18) with regard to the proposed La Entrada Specific Plan. We welcome the opportunity to engage in consultation with the Agua Caliente Band of Cahuilla Indians in order to engage in a meaningful discussion with you and to identify issues of concern to your Tribe that are pertinent to the cultural places at issue.

To that end, I would like to schedule a meeting with you (or your representative), Sarah Owsowitz (counsel for the City), Kelly M. Alhadeff-Black (counsel for the project sponsor), and Terri Fulton (Archeologist/Senior Cultural Resources Manager at LSA Associates) so that we may begin consultation. We would also welcome the submission of any materials you may wish to share with the City.

As you may know, LSA is the City's consultant that is preparing the Environmental Impact Report for the La Entrada project, including preparation of the Cultural Resources Report. Our suggestion would be that we work to schedule our first meeting at a time when a draft copy of LSA's Cultural Resources Report is available, so that the Tribe may have the opportunity to review the draft report prior to our meeting and present comments on it at the meeting.

Based on our discussions with LSA, we anticipate that the Cultural Resources Report will be available, in draft form, by early March, 2013. We would propose a meeting, at your convenience, in mid-March. We would be happy to host this meeting at the Coachella City Hall located at 1515 6th Street in Coachella.

Please let me know when you would like to meet and we can coordinate.

Sincerely,

Luis Lopez
Development Services Director

Xc: Ashley Davis, Kelly Alhadeff-Black, Carlos Campos

Terri Fulton

From: Terri Fulton
Sent: Friday, August 31, 2012 11:30 AM
To: tribalcouncil@cahuilla.net
Subject: FW: SB 18 Consultation for City of Coachella, La Entrada Specific Plan
Attachments: Project Location Maps.pdf

Hello,

I am following up one more time on this request for comment. If you have already sent your reply to the City, thanks for your input!

Best,

Terri

From: Terri Fulton
Sent: Thursday, August 23, 2012 3:37 PM
To: 'tribalcouncil@cahuilla.net'
Subject: FW: SB 18 Consultation for City of Coachella, La Entrada Specific Plan

To Whom it May Concern,

Below please find the text of a letter that was sent by LSA on behalf of the City of Coachella notifying the Tribe of the proposed La Entrada Specific Plan project. Maps showing the project location are attached. I am following up on the letter to see if you would like to comment or have concerns about the project impacting cultural resources. Additionally, please advise if you would like to enter into government-to-government consultation with the City. If you have already responded directly to the City, there is no need to respond to this request. Thanks very much for your time.

Best Regards,

Terri Fulton
Senior Cultural Resources Manager
Native American Tribal Liaison
LSA Associates, Inc.
949-553-0666 (office)
949-337-5454 (cell)

July 31, 2012

Cahuilla Band of Indians
Chairperson
P.O. Box 391760
Anza, California 92539

Subject: SB 18 Native American Consultation and Project Notification for the Proposed La Entrada Specific Plan Project, City of Coachella, Riverside County, California

Dear Chairperson:

On behalf of the City of Coachella (City), LSA Associates, Inc. (LSA), would like to notify you of the proposed La Entrada Specific Plan project in the City, Riverside County, California. The City is the Lead Agency for the project and will prepare the Environmental Impact Report (EIR) under the terms and requirements of the California Environmental Quality Act (CEQA) and the guidelines implementing CEQA.

The La Entrada Specific Plan is an amendment to the previously approved 1989 McNaughton Specific Plan, and will expand the previously approved plan by 588 acres, resulting in a total project area of 2200 acres. The plan includes residential, commercial and recreational uses. The additional acreage for the La Entrada Specific Plan will result in a reduced density of dwelling units per acre, from 4.94 to 3.5. A map showing the project location is attached.

Because this project necessitates a Specific Plan, the City is required to perform Native American consultation per Senate Bill 18 (Burton 2004 [SB 18]). As you are aware, in 2004, sections of California's Government Code and Public Resources Code were amended to address the potential environmental impact of such projects on California Native American Cultural Places. The result was SB 18, which applies to all General/Specific Plan updates and amendments proposed on or after March 1, 2005. As the Lead Agency for the project, it is the City's responsibility to conduct Native American government-to-government consultation under SB 18.

The Native American Heritage Commission has identified you as someone who may have knowledge about the project area. This letter is intended to notify you of the project on behalf of the City, and request information regarding cultural resources in the project area that could be affected. The goal is to determine areas of concern to your group and identify avoidance, minimization, or mitigation measures that would address any potential impacts from the project to cultural resources.

If you would like to enter into formal consultation with the City regarding the La Entrada Specific Plan, please contact Mr. Luis Lopez, City Development Services Director, within the next 90 days. His contact information is as follows:

Luis Lopez
Development Services Director
City of Coachella – Development Services Dept.
1515 Sixth Street
Coachella, California 92236
Tel: (760) 398-3102
Fax: (760) 398-5421
Email: LLopez@coachella.org

You may also direct any questions, comments, or concerns to me, and I will forward them to the City. I will also be contacting you by phone in the near future to make sure you received this letter and are aware of the project. Thank you for your involvement in this process. If you would like more information, please do not hesitate to contact me at (949) 553-0666 or by email at terri.fulton@lsa-assoc.com.

Respectfully,

LSA ASSOCIATES, INC.



Terri Fulton
Archaeologist/Senior Cultural Resources Manager
Native American Tribal Liaison

Attachment: Project Location Map

PALEONTOLOGICAL RESOURCES ASSESSMENT

PALEONTOLOGICAL RESOURCES ASSESSMENT

**LA ENTRADA SPECIFIC PLAN, PHASE 1 PROJECT AREA
CITY OF COACHELLA
RIVERSIDE COUNTY, CALIFORNIA**

LSA

May 2013

PALEONTOLOGICAL RESOURCES ASSESSMENT

LA ENTRADA SPECIFIC PLAN, PHASE 1 CITY OF COACHELLA RIVERSIDE COUNTY, CALIFORNIA

Submitted to:

City of Coachella
1515 Sixth Street
Coachella, California 92236

Prepared by:

Brooks Smith and Jason Miller
LSA Associates, Inc.
20 Executive Park, Suite 200
Irvine, California 92614
(949) 553-0666

Project No. CLA1201A

Data Base Information:

Type of Study: Locality Search and Survey

New Localities Recorded: None

Localities Recorded within ½ Mile: Two

Acreage: 502 acres

Key Words: Holocene and Pleistocene Alluvium, Lake Cahuilla Sediments, the Ocotillo Formation, the Palm Springs Group, Negative Survey, Paleontologically Sensitive Sediments

LSA

May 2013

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APPENDIX

A: LOCALITY SEARCH RESULTS

ABSTRACT

LSA Associates, Inc. (LSA) conducted a paleontological resources assessment for the proposed La Entrada Specific Plan (La Entrada) project, located in the City of Coachella (City) in the County of Riverside (County), California. Portions of the overall project are located in unincorporated Riverside County, but are within the Sphere of Influence (SOI) of the City of Coachella. The proposed La Entrada Specific Plan project is a master planned residential community that would include a mix of land uses. The proposed La Entrada Specific Plan is a comprehensive amendment to and expansion of the previously-approved 1989 McNaughton Specific Plan, located in the City of Coachella, within the Coachella Valley region of Riverside County.

The project is located along the foothills of the Little San Bernardino Mountains on the eastern flank of the Coachella Valley, north of the Salton Sea. The project is located south of Interstate 10 (I-10) and north of the Coachella Branch of the All American Canal, both of which are presently barriers to vehicular access to the site. The overall specific plan project area consists of approximately 2,200 gross acres, of which approximately 1,612 acres (ac) are currently in the City and 588 ac are in unincorporated County area, but within the City's SOI and the planning area of the City as identified in the City of Coachella General Plan. This assessment however, only covers a smaller 502 ac area known as the Phase 1 portion of the project. This Phase 1 portion is located entirely within the City.

Topographically, the Phase 1 portion of the project lies between the relatively flat-lying alluvial floor of the Coachella Valley to the west and bedrock highlands of the Little San Bernardino and Orocopia Mountains to the northeast, east, and southeast. The property includes several southwest-trending ridges of relatively low relief with intervening alluvial drainages. Elevations range from approximately 11 feet (ft) below mean sea level (bmsl) to 250 ft above mean sea level (amsl). Surface drainage is generally directed toward the southwest.

The project area is located in the Salton Trough that comprises a portion of the Colorado Desert Geomorphic Province. The Phase 1 portion of the project is underlain by mid- to late-Quaternary sedimentary units consisting of (oldest to youngest) the Palm Springs Formation (Palm Springs Group), Ocotillo Conglomerate, and Holocene Alluvium. At depth beneath the surface of the project, it is possible that sediments from Pleistocene Alluvium may be encountered during grading associated with development of the project. The San Andreas Fault zone is located along the southwestern margin of the Phase 1 portion of the project; however, it is mostly located outside the project boundaries except where Avenue 50 and Avenue 52 will enter the project.

The proposed Phase 1 portion of the project development includes 1,471 dwelling units, 110,000 square feet (sf) of commercial and office space, and two public parks totaling 10.2 ac. The Phase 1 portion of the project also includes the extension of Avenues 50 and 52 into and through the project area. In addition, water, sewer, and electric utilities lines will be installed.

The Phase 1 portion of the project was surveyed between April 4 and 8, 2013. Ground visibility within the Phase 1 portion of the project area at the time of the field reconnaissance survey was

excellent. The field reconnaissance survey also confirmed that the surficial geology is consistent with Holocene Alluvium, the upper member of the Ocotillo Formation, and the Palm Springs Group, as it has been mapped by Dibblee (2008) and Petra Geotechnical (2013).

In order to mitigate impacts to paleontological resources that may be present within the project area, LSA recommends that:

- A paleontologist shall be hired to develop a Paleontological Resource Impact Mitigation Program (PRIMP) for this Phase 1 portion of the project. The PRIMP shall include the methods that will be used to protect paleontological resources that may exist within the Phase 1 portion of the project area within sediments that have a High Paleontological rating. The PRIMP shall include procedures for monitoring, fossil preparation and identification, curation into a repository, and preparation of a report at the conclusion of grading.
- Excavation and grading activities within sediments with a High Paleontological Potential rating shall be monitored by a qualified paleontologist following a PRIMP. Spot check monitoring shall occur for all excavations with a Low Paleontological Potential rating to determine whether sediments with a potential to contain paleontological resources are being encountered. If fossils are encountered or if the conditions are such that fossils are very likely to be encountered, the sediments in that area should be monitored full-time for as long as the conditions exist. If paleontological resources are encountered during the course of ground disturbance, the paleontological monitor shall have the authority to temporarily redirect construction away from the area of the find in order to assess its significance. Collected resources shall be prepared to the point of identification, identified to the lowest taxonomic level possible, cataloged, and curated into the permanent collections of an accredited scientific institution. At the conclusion of the monitoring program, a report of findings shall be prepared to document the results of the monitoring program.
- In the event that paleontological resources are encountered when a paleontological monitor is not on site, work in the immediate area of the find shall be halted and a paleontologist should be contacted to assess the find for significance; if determined to be significant, it shall be collected from the field. In addition, if the find is located in sediments that have a Low Paleontological Potential rating, or if it is determined that older sediments with a potential to contain paleontological resources are present during a spot-check visit, the paleontologist shall make recommendations as to whether monitoring shall be required in these sediments on a full-time basis.

By following the above procedures, potential impacts to nonrenewable paleontological resources would be avoided.

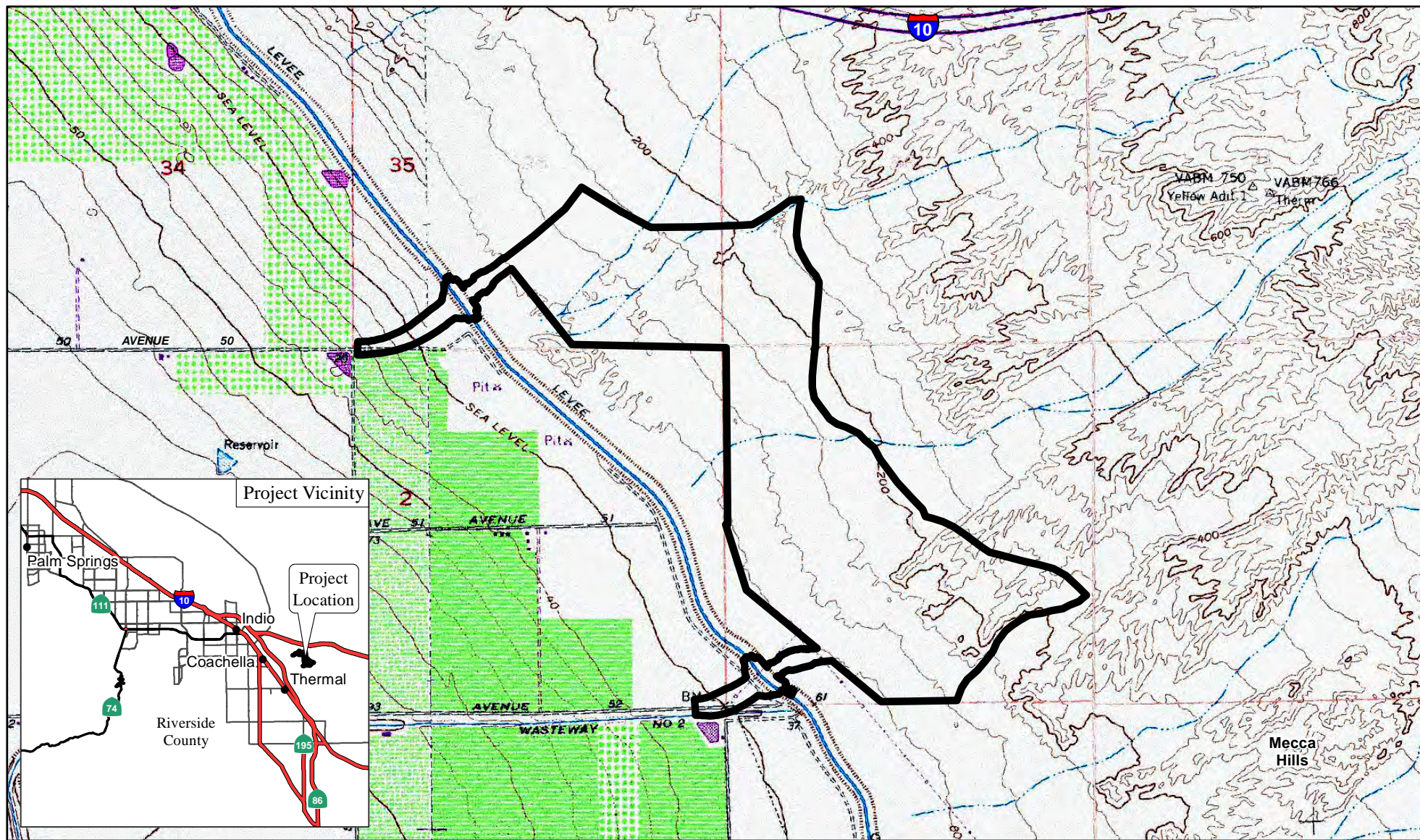
INTRODUCTION

LSA was retained by the City of Coachella to prepare a paleontological resources assessment for the La Entrada project located in the City of Coachella and an unincorporated area of Riverside County, California. The Phase 1 portion of the project area is depicted on the United States Geological Survey (USGS) *Indio and Thermal, California* 7.5-minute topographic quadrangle maps in Sections 35 and 36, of Township 5 South, Range 8 East and Sections 1 and 2, Township 6 South, Range 8 East, (San Bernardino Baseline and Meridian) (Figure 1).

The Phase 1 portion of the project area encompasses a total of 502 ac south of I-10, and mostly east of the Coachella Canal within an irregularly-shaped parcel of land. The property is currently undeveloped vacant land. Earthwork associated with development of this property includes mass grading and the installation of large super pads, access streets, and storm drainage channels. Portions of the land have been designated open space and will not be developed.

The Phase 1 portion of the project is anticipated to include 1,471 dwelling units within the 502 ac area, and 110,000 sf of commercial and office space on 10.1 ac. In addition, two public parks totaling 10.2 ac are also planned. Proposed Phase 1 construction also includes northern project area access along Avenue 50, which widens Avenue 50 to a four-lane arterial, while widening the southern project area access along Avenue 52 to two lanes. Both Avenues 50 and 52 will have to cross the Coachella Canal on the project's southwestern boundary. A looped water system will enter the project area along Avenues 50 and 52 and extend to a proposed reservoir in the upper area of the Phase 1 portion of the project and will connect to an existing water line along Avenue 48. A 24-inch sewer main will also access the Phase 1 portion project area along Avenues 50 and 52. An aboveground main electrical transmission line will extend east into the project area along Avenue 52 from an existing substation just west of the Coachella Canal on the north side of Avenue 52.

The paleontological locality search, field survey, and assessment were conducted pursuant to the California Environmental Quality Act (CEQA) Guidelines, Appendix G, and the California Public Resources Code (PRC) 5097.5. The assessment documents the potential for paleontological resources older than 11,700 years to occur in the Phase 1 portion of the project area. In addition, work was conducted following the guidelines of the Society of Vertebrate Paleontologists (SVP, 2010 and 1995). An impact to paleontological resources is considered significant if it can be reasonably argued that the development of a project would directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.



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 Project Location



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SOURCE: USGS 7.5' Quad. (Indio, 1972; Thermal Canyon, 1972)

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FIGURE 1

La Entrada Specific Plan
Project Location

LEGISLATION

STATE REGULATIONS

Under State law, paleontological resources are protected by both CEQA and PRC Section 5097.5.

Under CEQA, Lead Agencies are required to consider impacts to the direct or indirect destruction of unique resources that are of value to the region or State. Appendix G of the CEQA Guidelines is a checklist with several choices given, including: Potentially Significant Impact, Less than Significant with Mitigation Incorporation, Less than Significant Impact, and No Impact. Specifically, in Appendix G, Section V(c), Lead Agencies are required to consider impacts to paleontological resources.

The California PRC Section 5097.5 states:

“(a) No person shall knowingly and willfully excavate upon, or remove, destroy, injure or deface any historic or prehistoric ruins, burial grounds, archaeological or vertebrate paleontological site, including fossilized footprints, inscriptions made by human agency, or any other archaeological, paleontological or historical feature, situated on public lands, except with the express permission of the public agency having jurisdiction over such lands. Violation of this section is a misdemeanor.

(b) As used in this section, “public lands” means lands owned by, or under the jurisdiction of, the state, or any city, county, district, authority, or public corporation, or any agency thereof.”

Consequently, the County and the City are required to comply with PRC 5097.5.

County of Riverside

The County has mitigation requirements that specifically address potential adverse impacts to paleontological resources. The Cultural and Paleontological Resources section of Chapter 5: Multipurpose Open Space Element of the Riverside County General Plan (County of Riverside, 2003) states in part:

Riverside County has also been inventoried for geologic formations known to potentially contain paleontological resources. Paleontological resources are the fossilized biotic remains of ancient environments. They are valued for the information they yield about the history of the earth and its past ecological settings. Lands with low, undetermined or high potential for finding paleontological resources are mapped on Figure OS-8, the Paleontological Sensitivity Resources map. This map is used in the environmental assessment of development proposals and the determination of required impact mitigation.

Although the Paleontological Sensitivity Resources map provided in the General Plan (County of Riverside, 2003) is very small scale, it nonetheless is helpful in determining whether the geological formations at the surface in the area that will be impacted by projects will have High, Low, or Undetermined paleontological sensitivity, or Paleontological Potential .

The County General Plan (County of Riverside, 2003) provides the following policies that are intended to ensure the preservation of paleontological resources within the County:

- OS 19.8 Whenever existing information indicates that a site proposed for development may contain...paleontological...resources, a report shall be filed stating the extent and potential significance of the resources that may exist within the proposed development and appropriate measures through which the impacts of development may be mitigated.
- OS 19.9 This policy requires that when existing information indicates that a site proposed for development may contain paleontological resources, a paleontologist shall monitor site grading activities, with the authority to halt grading to collect uncovered paleontological resources, curate any resources collected with an appropriate repository, and file a report with the Planning Department documenting any paleontological resources that are found during the course of site grading.
- OS 19.10 Transmit significant development applications subject to CEQA to the San Bernardino County Museum for review, comment, and/or preparation of recommended conditions of approval with regards to paleontological resources.

City of Coachella

General Plan. The Conservation Element in the City's General Plan (City of Coachella, 1996) addresses the protection and sustainability of the City's historic and cultural resources. As indicated in the City's General Plan Conservation Element, Paleontological Resources. Goals and policies presented within the Conservation Element are intended to encourage the conservation, development, and utilization of natural resources. Goals, objectives, and policies related to cultural and paleontological resources presented in the Conservation Element include:

Goal: The City shall require the identification, evaluation, and mitigation of adverse effects to historic, archaeological and culturally significant sites.

Objective: The City shall take all action necessary to protect historic buildings, archaeological resources, or any other objects of historic significance from the effects of proposed development projects.

Policy: The City shall require an identification of resources through a record search and survey followed by a field survey by a qualified archaeologist or

historian. Cultural resources at this point are identified, described, and recorded.

Policy: Sites that have been identified and recorded shall be evaluated for significance under criteria established for both state, CEQA, and Federal Section 106 Guidelines.

Policy: The City shall require that sites which are determined to be significant shall have adverse effects mitigated. Mitigation may include extraction and preservation of artifacts, protection and preservation of artifacts on-site, on-site monitoring during grading and construction, or posting of identification on-site.

Policy: All projects covered under CEQA will be required to request a transmittal level archaeological records search from the Eastern Information Center (EIC) at the EIC at the University of California, Riverside. At the discretion of the City, a records search may be required for projects not subject to CEQA provisions. The results of the records search and recommendations from EIC will determine whether further studies are warranted.

Policy: The City shall preserve significant historical, archaeological, and paleontological resources through designation as open space.

City of Coachella Municipal Code. Chapter 15.48, Historic Districts and Sites, establishes regulations for the conservation of historic resources. Section 15.48.200 of this chapter requires a permit for any construction or alteration of designated historic structures. Alteration to these structures includes actions that would impact the historic and architectural value and significance and the general compatibility with the surrounding area.

METHODS

LOCALITY SEARCH

A paleontological locality search was conducted through the Division of Geological Sciences, San Bernardino County Museum (SBCM), and geological and paleontological records maintained at LSA. The search included a review of the area geology and any known paleontological resources recovered from the surrounding area, as well as the geologic units that would likely be encountered during excavation activities associated with the Phase 1 portion of the project. As geologic formations and units can be exposed over large geographic areas but contain similar lithologies and fossils, the literature review and fossil locality search includes areas well beyond the project area.

The purpose of the locality search was to establish the status and extent of previously recorded paleontological resources within and adjacent to the Phase 1 portion of the project. With this knowledge, LSA could make an informed assessment of the potential effects of the proposed Phase 1 portion of the project on paleontological resources and evaluate the types of fossils that might be uncovered during ground-disturbing activities. In addition, the sensitivity, or Paleontological Potential, of the sediments expected to be encountered within the Phase 1 portion of the project could be determined.

FIELD SURVEY

From February 4–8, 2013, LSA surveyors Ivan Strudwick and Logan Freeberg conducted a pedestrian survey of the entire accessible portions of the 502 ac portion of the Phase 1 portion of the project area. The surface of the Phase 1 portion of the project was composed of ravines with unconsolidated gravels and sands cut through unconsolidated gray cobble and pebble conglomerate with some silt. The Phase 1 portion of the project was systematically surveyed by walking parallel linear transects separated by 8–15 meters (m) or approximately 26–49 ft. Ridges on the Phase 1 portion of the project were surveyed lengthwise; canyons and washes were surveyed parallel to drainages and ridges. Steep slopes were not surveyed, but these were limited to the sides of ridges and were often less than 8–12 m (approximately 26–39 ft) in width. Steep slopes were, however, visually inspected from a distance to see whether fossils were present.

The purpose of this survey was to confirm the accuracy of the geologic mapping and to identify whether any paleontological resources might be exposed on the surface. In this way, LSA could document the existence of paleontological material prior to initiation of ground-disturbing activities and locate areas within the Phase 1 portion of the project that might contain abundant remains.

RESULTS

GEOLOGY

Geologic Setting

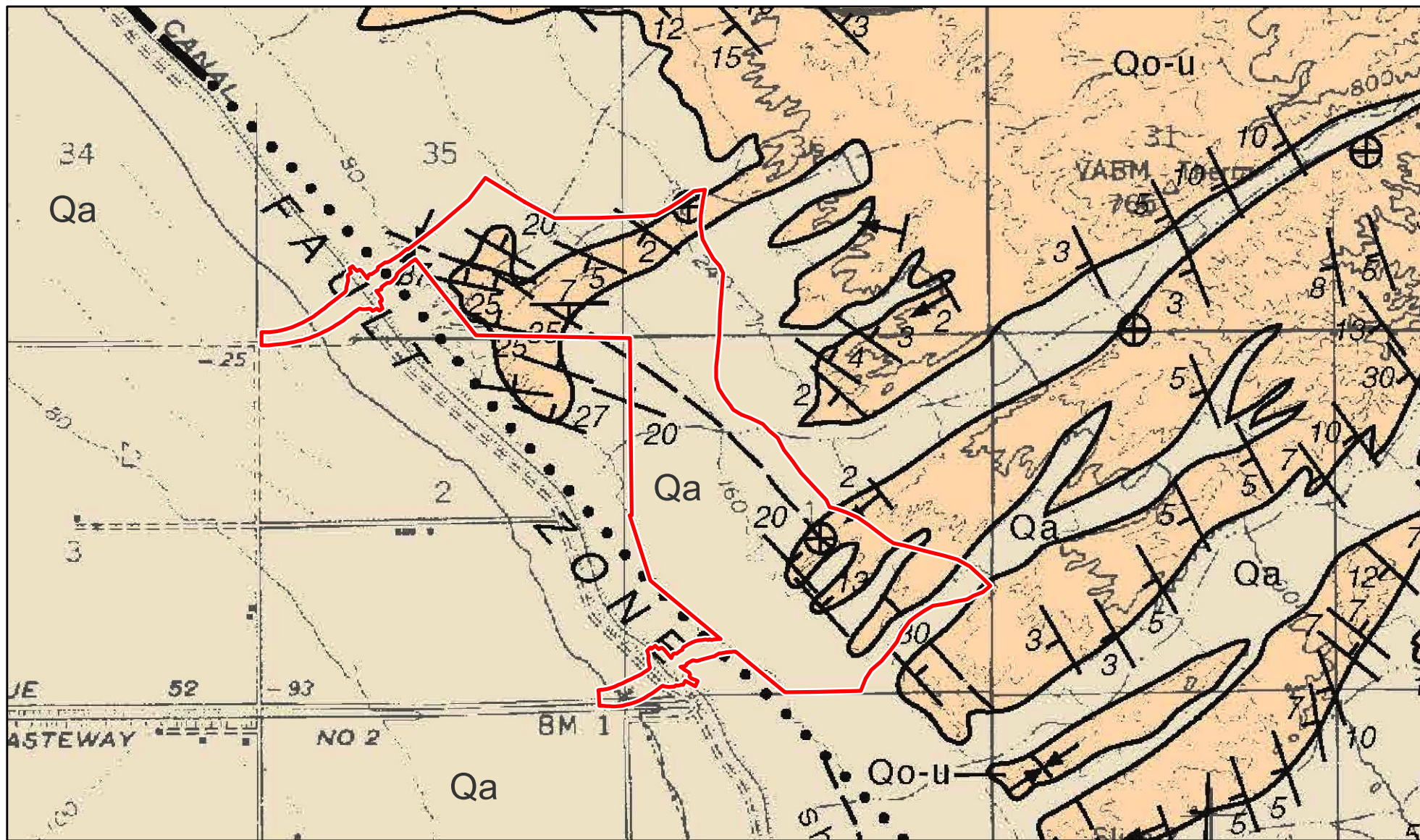
The project area is located in the Salton Trough that extends north from the Sea of Cortez (McKibben, 1993). The project areas geomorphology is predominantly within the Mojave Desert Geomorphic Province but also includes a small portion of the Colorado Desert Geomorphic Province (California Geological Survey, 2002) and crosses the San Andreas Fault (Dibble 2008). The Colorado Desert Geomorphic Province extends from the Whitewater River toward the Salton Sea and lies to the west of the San Andreas Fault. To the north of the project area are the Little San Bernardino Mountains and to the south-southeast are the Mecca Hills, which mark the edge of both the San Andreas Fault and the Mojave Desert Geomorphic Province.

The Mojave Desert Geomorphic Province is a triangular area characterized by a flat desert plain punctuated by isolated mountains, many of which are volcanic. It is bounded by the San Andreas Fault to the southwest and the east-west trending Garlock Fault and the Tehachapi Mountains to the north. Its eastern boundary is irregular. Many of the rocks within the Mojave Desert Geomorphic Province date to the Precambrian period; more recent formations are also present along with unconsolidated recent sands (California Geologic Survey, 2002).

The Colorado Desert Geomorphic Province (California Geologic Survey, 2002) is characterized by a low-lying desert basin that ranges in elevation from 245 ft bmsl to 2,200 ft amsl. It is dominated by the Salton Sea and the Salton Trough. This province is essentially a depressed block between the active branches of the alluvium-covered San Andreas Fault. It is characterized by beach lines of Ancient Lake Cahuilla, as well as alluvial fans and alluvial valleys that ring the Salton Sea (California Geologic Survey, 2002). Ancient Lake Cahuilla was fed by the Colorado River via the Salton Trough.

Geologic formations that are present, or may be present within the Phase 1 portion of the project area, are described in more detail below, and depicted on Figure 2. It should be noted that the geologic mapping by Dibblee (2008) depicted on Figure 2 is not exactly the same as more recent geologic mapping by Petra Geotechnical (2013), as the area east of Avenue 50 in the northern portion of the Phase 1 portion of the project has been identified by Petra Geotechnical (2013) as the Upper Palm Springs Formation. This is likely because Petra Geotechnical (2013) conducted more detailed geologic mapping than Dibblee (2008).

The Palm Springs Group. The Palm Springs Group includes the Arroyo Diablo Formation, the Olla Formation, the Canebrake Conglomerate, the Tapiado Claystone, and the Hueso Formation. These sediments date to the Pliocene through the Pleistocene and were deposited when the climate was much wetter than it is today. These sediments consist of mixtures of silts and sands and gravels. Petra Geotechnical (2013) identifies the Upper Palm Springs Formation as being exposed on the surface of the Phase 1 portion of the project, as well as at depth beneath the surface. Dibblee (2008) indicates



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- Project Location (Phase-1 Area)
- Qa Alluvial Sand and Clay of Valley Areas (Holocene)
- Qo-u Ocotillo Formation - Upper Member (Pleistocene)



0 1000 2000
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SOURCE: Dibblee (2008)

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FIGURE 2

La Entrada Specific Plan
Geology

that surficial deposits of this formation are located nearby, but outside the current Phase 1 portion of the project. The Palm Springs Group underlies the Ocotillo Formation, as well as Holocene Alluvium in the Phase 1 portion of the project area, and may also be encountered if excavation associated within either Holocene Alluvium or the Ocotillo Formation within the Phase 1 portion of the project reaches sufficient depth.

All units in this Group are fossiliferous, although the Tapiado Claystone and the Hueso Formation have produced substantial quantities of vertebrate fossils in the region according to the Division of Geological Sciences, SBCM. Mapping by Petra Geotechnical (2013) only identified the formation as the Upper Member Palm Springs Formation, not the Palm Springs Group or its specific member formations.

The Ocotillo Formation. The Ocotillo Formation is divided into a lower member, a fanglomerate member, and an upper member (Dibblee, 2008). Within the Phase 1 portion of the project area, only the upper member is present. This Formation is a vertically stratified sedimentary formation that dates to the Pliocene. It unconformably overlies the Palm Springs Group. The Ocotillo Formation consists of stratified layers of cobbles, gravels, sands, and silts, mostly deposited in an alluvial fan type environment. The lower member is primarily a pebble to cobble conglomerate, the fanglomerate member is a grey conglomerate with interbeds of sandstone silts, and tuff; the upper member is primarily a boulder conglomerate.

Fossils are known from the finer grained members of the Ocotillo Formation, primarily the Ocotillo Formation – Fanglomerate Member, and similar fossils may be present in all finer grained horizons of this Formation. The Geological Sciences Division of the SBCM has assigned a paleontological sensitivity rating (or Paleontological Potential) of High for this formation in areas with finer-grained interbeds, and a rating of Low for the coarser grained portions.

Lake Cahuilla Sediments. These sediments underlie a small portion of the Phase 1 portion of the project area, on the floor of the Coachella Valley in the far western portion of the Phase 1 portion of the project area, primarily west of the Coachella Canal, and below an elevation of approximately 48 ft amsl. These sediments represent deposition in a lake type environment fed by the Colorado River filling in the Salton Trough. The maximum highstand for Ancient Lake Cahuilla (as this lake is known) is approximately 40 to 48 ft amsl. Sediments are mixtures of sands, silts, and clays, deposited during the numerous times the lake was filled. Within the Phase 1 portion of the project area, these sediments are covered by a thin horizon of Holocene Alluvium and are not actually depicted on Figure 2 by Dibblee (2008).

Silts and sands of Pleistocene and early Holocene Lake Cahuilla can contain fossil birds, pond turtles, large and small fish, and bivalves and snails. These sediments are sometimes found beneath a thin layer of Holocene Alluvium. The upper 10 ft or so of these sediments are likely less than 11,700 years old, and animal remains contained within them likely have not been fossilized and will be contemporaneous with modern species. Below a depth of 10 ft, these sediments may be older than 11,700 years, and any remains contained in them will likely be fossilized. However, any remains in these sediments are important for paleo-ecological reconstructions in the area and are considered significant regardless of their age.

Pleistocene Alluvium. Pleistocene Alluvium is also known as Old Alluvial Alluvium. These deposits are not present on the surface of the Phase 1 portion of the project, but are located at depth beneath the Holocene Alluvium. The Pleistocene Alluvium that is likely present at depth within the Phase 1 portion of the project was deposited during the middle to late Pleistocene (between 300,000 to 11,700 years ago). It is composed of a mixture of gravel, sand, silt, and clay that is usually moderately to poorly sorted and bedded. These deposits are also slightly to moderately consolidated. Colors can be variable, based on upstream geology, but are usually shades of reddish-brown.

Pleistocene Alluvium is defined as having been deposited during the Pleistocene (2.58 million to 11,700 years ago). At depth within the Phase 1 portion of the project area, these sediments are more likely on the younger end of the spectrum, ranging in age from the middle to late Pleistocene (300,000 to 11,700 years ago). Within the Phase 1 portion of the project area, these middle to late Pleistocene alluvial sediments would likely not be encountered until a depth of 10 ft or more below the surface is reached. This depth is based on the discoveries of Pleistocene fossils at depth in areas mapped as Holocene Alluvium on the surface containing similar depositional histories within the County.

Fossils are known in similar Pleistocene deposits from excavations for roads, housing developments, and quarries within the Southern California area (Jefferson, 1991a, 1991b, and 1987; Reynolds and Reynolds, 1991; and Miller, 1971). Mammoths are the indicator fossil for the Pleistocene Epoch, which is divided into the older Irvingtonian North American Land Mammal Age (NALMA) that spans the period between 2.58 million and 300,000 years ago, and the Rancholabrean NALMA that spans the last 300,000 years of the Pleistocene. The indicator fossil for the Rancholabrean NALMA is *Bison* sp. Both NALMAs contain other fossils such as horse, camel, coyote, rodents, birds, reptiles, and fish that help describe climatic and habitat conditions during the last 2 million years. There is a potential for these types of fossils whenever Pleistocene alluvial sediments are exposed. At depth within the Phase 1 portion of the project, fossils from the Rancholabrean NALMA would be expected.

Holocene Alluvium. Holocene Alluvium is also known as Recent Alluvium. Within the majority Phase 1 portion of the project area, these sediments consist of mixtures of sand, cobbles, and gravels, and contain very little fine-grained sands and silts. These sediments are present in the ravine or valley areas that pass through the elevated Pleistocene pebble and cobble deposits of the Ocotillo Formation and Palm Springs Group. These sediments are loosely consolidated, and represent the majority of the surficial sediments exposed within the project.

Although Holocene Alluvium can contain remains of plants and animals, generally not enough time has passed for the remains to become fossilized. In addition, the remains are contemporaneous with modern species, and these remains are usually not considered to be significant. However, it should be noted that although an area may be mapped with Holocene Alluvium on the surface, deposits of Pleistocene alluvium or older formations are often encountered as shallow as 5–10 ft below the surface, and these older sediments can and do contain fossils. Within the Phase 1 portion of the project area, however, these older sediments are likely at least 10 ft beneath the surface.

LOCALITY SEARCH

According to the locality search conducted by the SBCM (Appendix A), geologic mapping indicates that the Phase 1 portion of the project area is located in the Salton Trough, primarily on Holocene Alluvium with outcrops of the Ocotillo Conglomerate in the Eastern portions of the Phase 1 portion of the project area. The SBCM does not have any recorded fossil localities from within the Phase 1 portion of the project boundaries. However, the SBCM knows of two recorded localities within the immediate area. Both of these localities, SBCM 5.9.22 and 5.9.23, contain the remains of Mammoths (*Mammuthus* sp.) that were found in the Palm Springs Group and are located about 0.5 mile (mi) from the Phase 1 portion of the project area. The Upper Member of the Palm Springs Formation has been mapped as being present on the surface of the Phase 1 portion of the project by Petra Geotechnical (2013), and may also be encountered during subsurface excavation associated with the development of this phase of the project.

The SBCM believes that excavation in the upper several feet of the younger Quaternary Alluvium in the proposed Phase 1 portion of the project would likely not uncover significant vertebrate fossil remains. However, the SBCM believes that deeper excavations within the Phase 1 portion of the project may extend down into older deposits and may encounter significant vertebrate fossils. Additionally, the SBCM believes that although the Ocotillo Formation- Upper Member has a lithology that is not conducive to the preservation of fossils; it is possible that lenses of more fine-grained sediments may be present in exposures of this formation within the Phase 1 portion of the project. Furthermore, the SBCM believes that the sediments of the Palm Springs Group are present at depth within the Phase 1 portion of the project. As illustrated by nearby fossil localities, the Palm Springs Group has produced fossils in the immediate area and the SBCM considers this formation to have paleontological sensitivity rating (or Potential) of High.

Therefore, the SBCM believes that if there will be any substantial excavations on the proposed Phase 1 portion of the project, or excavations into sediments identified as being sensitive for paleontological resources, that a qualified vertebrate paleontologist must develop a program to mitigate impacts to nonrenewable paleontologic resources that may be present within the Phase 1 portion of the project. This mitigation program should be consistent with the provisions of CEQA, as well as with regulations currently implemented by the County. The SBCM believes that the program should include monitoring in areas likely to contain paleontological resources, collection of observed resources, preparation and stabilization of collected resources, identification of collected resources, curation of resources into an accredited museum repository, and preparation of a report of findings at the conclusion of grading activities associated with the Phase 1 portion of the project.

FIELD SURVEY

Ground visibility at the time of the survey was generally very good to excellent. The surface of the Phase 1 portion of the project was composed of ravines with unconsolidated sands with gravels, cobbles cutting through elevated areas composed of gray sandy and silty cobble to pebble conglomerate with some sandy and silty lenses. These sediments are consistent with the geologic mapping by Dibblee (2008) and Petra Geotechnical (2013). Some of these ravines were very steep, and their sides were not transected during the survey. No fossils were observed during the survey.

PALEONTOLOGY SUMMARY

The results of the locality search and field survey indicate that no paleontological resources have been found within the Phase 1 portion of the project area. The sediments exposed on the surface of the Phase 1 portion of the project area include: the Palm Springs Group, the Ocotillo Formation -Upper Member, and Holocene Alluvium. Pleistocene Alluvial sediments may be present at depth within the Phase 1 portion of the project area, as will sediments from Ancient Lake Cahuilla. Areas containing Holocene Alluvium have a Low Paleontological Potential rating for containing paleontological resources in the upper 10 ft of where they occur unless more sensitive formations are present at a shallow depth. Areas containing Lake Cahuilla sediments have a High Paleontological Potential for paleontological resources because of their potential to produce significant fossils important to paleo-ecological reconstruction of the area; these sediments may be located at a shallow depth beneath Holocene Alluvium west of the Coachella Canal at elevations below 48 ft amsl. The Ocotillo Formation – Upper Member can produce fossils in fine-grained lenses and interbeds of low-energy deposition; these fine-grained lenses have the potential to be encountered in any area of the Formation and are considered to have High Paleontological Potential for containing paleontological resources. The coarser grained layers of the Ocotillo Formation – Upper Member have a Low Paleontological Potential rating for containing paleontological resources. All members of the Palm Springs Group are known to produce significant numbers of fossils. According to Petra Geotechnical (2013), the Upper Member of the Palm Springs Formation is exposed on the surface in the upper finger ridge area on the northern portion of the Phase 1 portion of the project that is mapped at the Ocotillo Formation – Upper Member by Dibblee (2008) in Figure 2. In addition, the Palm Springs Group may be encountered at depth below the Ocotillo Formation, as well as Holocene Alluvium.

DISCUSSION

PALEONTOLOGICAL SIGNIFICANCE

The Society of Vertebrate Paleontology provides the following definitions of paleontological significance.

- **Significant Paleontological Resources** are fossils and fossiliferous deposits, here defined as consisting of identifiable vertebrate fossils, large or small; uncommon invertebrate, plant, and trace fossils; and other data that provide taphonomic, taxonomic, phylogenetic, paleoecologic, stratigraphic, and/or biochronologic information. Paleontological resources are considered to be older than recorded human history and/or older than middle Holocene (i.e., older than about 5,000 radiocarbon years) (SVP, 2010).
- A **Significant Fossiliferous Deposit** is a rock unit or formation that contains significant nonrenewable paleontological resources, here defined as comprising one or more identifiable vertebrate fossils, large or small; and any associated invertebrate and plant fossils, traces, and other data that provide taphonomic, taxonomic, phylogenetic, ecologic, and stratigraphic information (ichnites and trace fossils generated by vertebrate animals, e.g., trackways or nests and middens, which provide datable material and climatic information). Paleontological resources are considered to be older than recorded history and/or older than 5,000 years before the present (SVP, 1995).

Generally, scientifically significant paleontological resources are identified sites or geological deposits containing individual fossils or assemblages of fossils that are unique or unusual, diagnostically or stratigraphically important, and add to the existing body of knowledge in specific areas, stratigraphically, taxonomically, or regionally (SVP, 1995). Particularly important are fossils found in situ (undisturbed) in primary context (e.g., fossils that have not been subjected to disturbance subsequent to their burial and fossilization). As such, they aid in stratigraphic correlation, particularly those offering data for the interpretation of tectonic events, geomorphologic evolution, paleoclimatology, the relationships between aquatic and terrestrial species, and evolution in general. Discovery of in situ fossil-bearing deposits is rare for many species, especially vertebrates. Terrestrial vertebrate fossils are often assigned greater significance than other fossils because they are rarer than other types of fossils. This is primarily due to the fact that the best conditions for fossil preservation include little or no disturbance after death and quick burial in oxygen-depleted, fine-grained sediments. While these conditions often exist in marine settings, they are relatively rare in terrestrial settings. This has ramifications with regard to the amount of scientific study needed to characterize an individual species adequately and, therefore, affects how relative sensitivities are assigned to formations and rock units.

Although the Phase 1 portion of the project area is not within Orange County, Eisentraut and Cooper (2002) developed a useful analysis for judging whether fossils are scientifically significant, which can be used for any area. In their Model Curation Program, fossils can be judged scientifically significant if they meet any of the following criteria within the following categories:

- **Taxonomy:** Assemblages that contain rare or unknown taxa, such as defining new (previously unknown to science) species, or that represent a species that is the first or that have very limited occurrence within the area or formation.
- **Evolution:** Fossils that represent important stages or links in evolutionary relationships or fill gaps or enhance underrepresented intervals in the stratigraphic record.
- **Biostratigraphy:** Fossils that are important for determining or confining relative geologic (stratigraphic) ages or for use in defining regional to interregional stratigraphic associations. These fossils are often known as biostratigraphic markers and represent plants or animals that existed for only a short and restricted period in the geologic past.
- **Paleoecology:** Fossils that are important for reconstructing ancient organism community structure and interpretation of ancient sedimentary environments. Depending on which fossils are found, much can be learned about the ancient environment from water depth, temperature, and salinity, to what the substrate was like (muddy, sandy, or rocky) to even whether the area was in a high energy location like a beach or low energy location like a bay. Even terrestrial animals can contain information about the ancient environment. For example, an abundance of grazing animals such as horse, bison, and mammoth suggest more of a grassland environment, while an abundance of browsing animals such as deer, mastodon, and camel suggest more of a brushy environment. Preserved parts of plants can also lend insight into what was growing in the area at a particular time. In addition, by studying the ratios of different species to each other's population densities, relationships between predator and prey can be determined.

There is a complex but vital interrelationship among evolution, biostratigraphy, and paleoecology: biostratigraphy (the record of fossil succession and progression) is the expression of evolution (change in populations of organisms through time), which in turn is driven by natural selection pressures exerted by changing environments (paleoecology).

- **Taphonomy:** Fossils that are exceptionally well or unusually/uniquely preserved or are relatively rare in the fossil record. This could include preservation of soft tissues such as hair, skin, or feathers from animals or the leaves/stems of plants that are not commonly fossilized.

Summary of Paleontological Significance

All vertebrate fossils that can be related to a stratigraphic context are considered significant nonrenewable paleontological resources. Invertebrate and plant fossils, as well as other environmental indicators associated with vertebrate fossils, are considered to have paleontological significance. Certain invertebrate and plant fossils that are regionally rare or uncommon, or help to define stratigraphy, age, environmental conditions, or taxonomic relationships, are considered to have paleontological significance.

SENSITIVITY

Sensitivity is often stated "potential" since decisions about how to manage paleontological resources must be based on "potential," as the actual situation cannot be known until construction excavation for the project is underway.

According to the SVP (2010), protection of paleontological resources includes: (a) assessment of the potential for the area to contain significant paleontological resources that could be directly or indirectly impacted, damaged, or destroyed by the proposed development, and (b) formulation and implementation of measures to mitigate these adverse impacts, including permanent preservation of the site and/or permanent preservation of salvaged fossils along with all contextual data in established institutions.

According to the SVP (2010), Paleontological Potential is the potential for the presence of significant nonrenewable paleontological resources. All sedimentary rocks, some volcanic rocks, and some metamorphic rocks have potential for the presence of significant nonrenewable paleontological resources, and review of available literature may further refine the potential of each rock unit, formation, or facies. The SVP has four categories of potential, or sensitivity: High, Low, None, and Undetermined. If a geographic area or geological unit is classified as having undetermined potential for paleontological resources, studies must be undertaken to determine whether that rock unit has a sensitivity of either High, Low, None, or Unknown. These categories are described in more detail below.

High Potential

Rock units from which vertebrate or significant invertebrate, plant, or trace fossils have been recovered are considered to have a high potential for containing additional significant paleontological resources. Rocks units classified as having high potential for producing paleontological resources include, but are not limited to, sedimentary formations and some volcanoclastic formations (e.g., ashes or tephra), some low-grade metamorphic rocks that contain significant paleontological resources anywhere within their geographical extent, and sedimentary rock units temporally or lithologically suitable for the preservation of fossils (e.g., middle Holocene and older, fine-grained fluvial sandstones, argillaceous and carbonate-rich paleosols, cross-bedded point bar sandstones, and fine-grained marine sandstones). Paleontological potential consists of both (a) the potential for yielding abundant or significant vertebrate fossils or for yielding a few significant fossils, large or small, vertebrate, invertebrate, plant, or trace fossils, and (b) the importance of recovered evidence for new and significant taxonomic, phylogenetic, paleoecologic, taphonomic, biochronologic, or stratigraphic data. Rock units that contain potentially datable organic remains older than late Holocene, including deposits associated with animal nests or middens, and rock units that may contain new vertebrate deposits, traces, or trackways, are also classified as having high potential.

Low Potential

Reports in the paleontological literature or field surveys by a qualified professional paleontologist may allow determination that some rock units have a low potential for yielding significant fossils. Such rock units will be poorly represented by fossil specimens in institutional collections, or based on general scientific consensus, fossils are only preserved in rare circumstances; the presence of fossils is the exception, not the rule (e.g., basalt flows or recent colluvium). Rock units with low potential typically will not require impact mitigation measures to protect fossils.

No Potential

Some rock units have no potential to contain significant paleontological resources (e.g., high-grade metamorphic rocks [such as gneisses and schists] and plutonic igneous rocks [such as granites and diorites]). Rock units with no potential require no protection nor impact mitigation measures relative to paleontological resources.

Undetermined Potential

Rock units for which little information is available concerning their paleontological content, geologic age, and depositional environment are considered to have undetermined potential. Further study is necessary to determine whether these rock units have a high or low potential to contain significant paleontological resources. A field survey by a qualified professional to specifically determine the paleontological resource potential of these rock units is required before a PRIMP can be developed. In cases where no subsurface data are available, paleontological potential can sometimes be determined by strategically located excavations into subsurface stratigraphy.

Assessments of significance should be based on the recommendations of a professional Principal Paleontologist with expertise in the region under study and the resources found in that region. The SVP (2010) defines a Principal Paleontologist as a practicing scientist who is recognized in the paleontological community as a professional and can demonstrate familiarity and proficiency with paleontology in a stratigraphic context. A paleontological Principal Investigator shall have the equivalent of the following qualifications:

1. A graduate degree in paleontology or geology, and/or a publication record in peer-reviewed journals; and demonstrated competence in field techniques, preparation, identification, curation, and reporting in the state or geologic province in which the project occurs. An advanced degree is less important than demonstrated competence and regional experience.
2. At least 2 full years of professional experience as assistant to a Project Paleontologist with administration and project management experience, supported by a list of projects and referral contacts.
3. Proficiency in recognizing fossils in the field and determining their significance.
4. Expertise in local geology, stratigraphy, and biostratigraphy.
5. Experience collecting vertebrate fossils in the field.

An evaluation of a particular rock unit's significance rests on the known importance of specific fossils. Often this significance is reflected as a sensitivity ranking of the rock unit relative to other rock units in the same region. Regardless of the format used by a paleontologist to rank formations, the importance of any rock unit must be explicitly stated in terms of specific fossils known or suspected to be present (and if the latter, why such fossils are suspected), and why these fossils are of paleontological importance. Some land-managing agencies may require the use of specific guidelines to assess significance, whereas others may defer to the expertise of local paleontologists and provide little guidance. Because each situation may differ, it is important that there is a clear understanding among project staff, consultants, and personnel from other agencies as to exactly what criteria will be

used to assess the significance of fossils that have the potential to be within each rock unit that will be encountered over the course of the development within the Phase 1 portion of the project.

If a paleontological resource is determined to be significant, of High Sensitivity, or of scientific importance, a mitigation program must be developed and implemented. Mitigation can be initiated prior to and/or during construction.

As a practical matter, no consideration is generally afforded to paleontological sites for which scientific importance cannot be demonstrated. If a paleontological resource assessment results in a determination that the site is insignificant or of Low Sensitivity, this conclusion should be documented in the project's environmental document to demonstrate compliance with applicable statutory requirements.

Summary of Sensitivity

A formation or rock unit has paleontological sensitivity or the potential for significant paleontological resources if it previously has produced, or has lithologies conducive to, the preservation of vertebrate fossils and associated or regionally uncommon invertebrate and plant fossils. All sedimentary rocks, certain extrusive volcanic rocks, and mildly metamorphosed rocks are considered to have potential for paleontological resources.

Project-Specific Sensitivity

The paleontological sensitivities for each of the units that may be encountered during ground-disturbing activities within the study area are listed in Table A, along with the initial recommended monitoring effort. This initial recommendation may be reduced or increased by the Principal Paleontologist as the excavation within the Phase 1 portion of the project progresses. A brief discussion of the Paleontological Potential, or sensitivity designations, including the types of resources that may be encountered and why they are significant, also follows.

Paleontology Potential Discussion

The Phase 1 portion of the project area is located on the following rock types, described by their paleontological potential for containing fossil resources:

The Palm Springs Group – High Paleontological Potential. The Palm Springs Group includes the Arroyo Diablo Formation, the Olla Formation, the Canebrake Conglomerate, the Tapiado Claystone, and the Hueso Formation. These sediments date from the Pliocene through the Pleistocene. All units in this Group are fossiliferous, although the Tapiado Claystone and the Hueso Formation have produced substantial quantities of vertebrate fossils in the region according to the Division of Geological Sciences, SBCM. Therefore the entire Palm Springs Group is considered to have a High Paleontological Potential for containing paleontological resources. According to Petra Geotechnical (2013), the Upper member of the Palm Springs Formation is exposed on the finger ridge in the northern portion of the Phase 1 portion of the project east of Avenue 50.

Table A: Paleontological Potential of Geological Units within the Study Area and Recommended Monitoring Effort

Formation/Unit	Location within the Phase 1 Portion of the Project	Paleontological Potential	Monitoring Effort
Palm Springs Group	Located on the finger ridge in northern portion of the Phase 1 portion of the project. May also be present within the subsurface within sediments mapped as Holocene Alluvium of the Ocotillo Formation.	High	Full-Time
Ocotillo Formation – Upper Member	Present on ridgelines and outcrops. May be present in the subsurface.	Low to High	Spot-Check to Full-Time
Lake Cahuilla Sediments	Western edge of Phase 1 portion of the Project area, mainly west of the Coachella Canal, at a shallow but unknown depth below Holocene Alluvium.	High	Full-Time
Pleistocene Alluvium ¹	May be present in all area mapped as Holocene Alluvium, beginning at a depth of 10 ft below the surface.	High	High
Holocene Alluvium	On the surface within ravines and drainages throughout the Phase 1 portion of the project.	Low surface to 10 ft below surface. High below 10 ft.	Spot-Check to Full-Time

¹ Not exposed on the surface, monitoring effort reflects effort if or when the unit is encountered during grading.
ft = feet

In addition, the Palm Springs Group underlies the Ocotillo Formation as well as Holocene Alluvium in the Phase 1 portion of the project area and may also be encountered if excavation within the Phase 1 portion of the project reaches sufficient depth.

Ocotillo Formation – Upper Member – Low to High Paleontological Potential. The Ocotillo Formation – Upper Member (or Ocotillo Conglomerate, as it is also known) is located on the southeastern areas of the Phase 1 portion of the project on elevated finger ridges. No fossil localities are recorded within the Phase 1 portion of the project area from this formation. Much of this unit is probably too coarse-grained to preserve or contain any fossil remains, and for this reason is assigned a paleontological sensitivity rating (Paleontological Potential) of Low by the General Plan of the City of Coachella. However, it is possible that finer-grained strata within the Ocotillo Formation – Upper Member exist within the Phase 1 portion of the project area. Fossils are known from the finer-grained members of the Ocotillo Formation, primarily the Ocotillo Formation – Fonglomerate Member, and similar fossils may be present in all finer-grained horizons of this Formation. The Geological Sciences Division of the SBCM has assigned a paleontological rating (or Paleontological Potential) of High for this formation in areas with finer-grained interbeds, and a Low rating for the coarser-grained portions. As such, this unit is assigned a Paleontological Potential rating of both Low and High, depending on the type of sediment type that is present.

Lake Cahuilla Sediments – High Paleontological Potential. Silts and sands of Pleistocene and early Holocene Lake Cahuilla can contain fossil birds, pond turtles, large and small fish, and bivalves and snails. These sediments are sometimes found beneath a thin layer of Holocene Alluvium. The upper 10 ft or so of these sediments are likely less than 11,700 years old, and animal remains contained within them likely have not been fossilized and will be contemporaneous with modern species; however, these species are important to scientists during paleo-environmental reconstructions of the Salton Trough and Ancient Lake Cahuilla. As such, Lake Cahuilla sediments are assigned a High Paleontological Potential for containing paleontological resources wherever they are encountered. High Paleontological Potential is assigned to the area expressed at or below the high stand of the Lake Cahuilla shoreline (approximately below an elevation of 48 ft amsl).

Pleistocene Alluvium – High Paleontological Potential. Pleistocene alluvium can contain the remains of fossils such as mammoth, bison, horse, camel, coyote, rodents, birds, reptiles, and fish that help describe climatic and habitat conditions during the last 2 million years. As such, they are scientifically very significant. These sediments are not exposed on the surface of the Phase 1 portion of the project but may exist within the subsurface in areas mapped as Holocene Alluvium beginning as shallowly as 10 ft beneath the surface.

Holocene Alluvium-Low Paleontological Potential. Although Holocene Alluvium can contain remains of plants and animals, generally, not enough time has passed for the remains to become fossilized; in addition, the remains are contemporaneous with modern species, and these remains are usually not considered to be significant. As such these sediments are assigned a Low Paleontological Potential for containing paleontological resources. It should be noted that once a depth of 10 ft is reached, sediments mapped on the surface as being Holocene Alluvium may be old enough to be from the Pleistocene, which does have the potential to contain significant paleontological resources (see above).

RECOMMENDATIONS

Although no significant paleontological resources were identified directly within the Phase 1 portion of the project area during the locality search or field survey, based on the results of the locality search and examination of geologic maps, sediments that can contain fossil remains exist on the surface as well as at depth within the Phase 1 portion of the project area. Therefore, there is the potential to encounter paleontological resources during ground-disturbing activities associated with the development of the Phase 1 portion of the project.

The Palm Springs Group is exposed on the surface and subsurface of the Phase 1 portion of the project area and has a High Paleontological Potential rating whenever it is encountered.

The Ocotillo Formation - Upper Member is exposed on the surface of the project area and is also present in the subsurface, primarily in the southeastern portion of the Phase 1 portion of the project. It has a both a Low and High Paleontological Potential rating for containing paleontological resources depending on conditions. The finer-grained lenses of the Ocotillo Formation - Upper Member have a High Paleontological Potential rating, while the coarser-grained lenses with cobbles and gravels have a Low Paleontological Potential rating.

Lake Cahuilla sediments are not mapped as being on the surface but are expected to be encountered at shallow depths west of the Coachella Canal, beginning at surface elevations of 48 ft amsl and lower. These sediments have a High Paleontological Potential rating whenever they are encountered.

Pleistocene Alluvium is not mapped on the surface of the project area, but will likely be encountered once a depth of approximately 10 ft below the surfaces is reached in areas mapped as Holocene Alluvium. These Pleistocene Alluvial sediments have a High Paleontological Potential rating.

Holocene Alluvium is mapped throughout the Phase 1 portion of the project. It is too young to contain significant paleontological resources and is assigned a Low Paleontological Potential rating. However, it can form a cap on older sediments within the Phase 1 portion of the project area and, thus, excavations in this unit should be occasionally spot-checked to see whether the older sediments have been encountered. Once a depth of 10 ft is reached, it is assumed that sediments old enough to contain fossils are present.

In order to mitigate potential adverse impacts to nonrenewable paleontological resources, as required by CEQA Appendix G and PRC 5097.5, LSA recommends that the following procedures be followed:

- A paleontologist shall be hired to develop a Paleontological Resource Impact Mitigation Program (PRIMP) for this Phase 1 portion of the project. The PRIMP shall include the methods that will be used to protect paleontological resources that may exist within the Phase 1 portion of the project area within sediments that have a High Paleontological Potential rating. The PRIMP shall

include procedures for monitoring, fossil preparation and identification, curation into a repository, and preparation of a report at the conclusion of grading.

- Excavation and grading activities within sediments with a High Paleontological Potential rating shall be monitored by a qualified paleontologist following a PRIMP. Spot-check monitoring shall occur for all excavations with a Low Paleontological Potential rating to determine whether sediments with a potential to contain paleontological resources are being encountered. If fossils are encountered or if the conditions are such that fossils are very likely to be encountered the sediments in that area should be monitored full-time for as long as the conditions exist. If paleontological resources are encountered during the course of ground disturbance, the paleontological monitor shall have the authority to temporarily redirect construction away from the area of the find in order to assess its significance. Collected resources shall be prepared to the point of identification, identified to the lowest taxonomic level possible, cataloged, and curated into the permanent collections of an accredited scientific institution. At the conclusion of the monitoring program, a report of findings shall be prepared to document the results of the monitoring program.
- In the event that paleontological resources are encountered when a paleontological monitor is not on site, work in the immediate area of the find shall be halted and a paleontologist should be contacted to assess the find for significance; if determined to be significant, it shall be collected from the field. In addition, if the find is located in sediments that have a Low Paleontological Potential rating, or if it is determined that older sediments with a potential to contain paleontological resources are present during a spot-check visit, the paleontologist shall make recommendations as to whether or not monitoring shall be required in these sediments on a full-time basis.

By following the above procedures, potential impacts to nonrenewable paleontological resources would be avoided.

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APPENDIX A

LOCALITY SEARCH RESULTS

24 April 2013

LSA Associates, Inc.
attn: Ivan Strudwick
20 Executive Park, Suite #200
Irvine, CA 92614

re: **PALEONTOLOGY LITERATURE AND RECORDS REVIEW, LA ENTRADA
PROJECT, CITY OF COACHELLA, RIVERSIDE COUNTY, CALIFORNIA**

Dear Mr. Strudwick,

The Division of Geological Sciences of the San Bernardino County Museum (SBCM) has completed a records search for the above-referenced project property in the City of Coachella, Riverside County, California. The proposed study area is located in portions of sections 35 and 36, Township 5 South, Range 8 East, as well as portions of sections 1 and 2, T 6S, R 8E, San Bernardino Base and Meridian, as seen on the Indio, California and the Thermal Canyon, California 7.5' United States Geological Survey topographic quadrangle maps (1956 editions, photorevised 1972).

The study area lies within the Salton Trough, a northward extension of the Sea of Cortez (McKibben, 1993). The Salton Trough lies below sea level, and is an active continental rift underlain by the landward extension of the East Pacific Rise; it is surrounded on three sides by mountains and bounded to the southeast by the Colorado River delta. Since the beginning of the Holocene Epoch [$\pm 11,000$ years before present (ybp)], the Colorado River delta has blocked marine water from entering the Salton Trough from the Sea of Cortez. Freshwater lakes have existed intermittently in the deeper parts of the basin that developed landward of the Colorado River delta (Van de Kamp, 1973; Waters, 1983; Maloney, 1986; Whistler and others, 1995).

Previous geologic mapping of the Indio region by Rogers (1965) indicates that the study area is located primarily upon Holocene or recent alluvium (= unit **Qal**). These sediments are too young geologically to contain significant fossil resources, and so are assigned low paleontologic sensitivity. However, the eastern portion of the study area is mapped as consisting of outcrops of the Ocotillo Conglomerate (= **Qc_o**). This formation is a northern extension of the fossiliferous Ocotillo Formation, which in the Anza-Borrego Desert to the south has yielded abundant fossils of mammoths, sabre-toothed cats, ground sloths, short-faced bears, horses, camels, birds, reptiles and fish (Downs and Miller, 1994; Remeika and Jefferson, 1995). No significant vertebrate fossils have been recorded from exposures of the Ocotillo Conglomerate in the more northerly portions of the Coachella Valley, the Indio Hills, or the Mecca Hills (Cassiliano, 2002). Rogers (1965) described

the formation in the region of the proposed project area as a grey unconsolidated boulder conglomerate; this lithology is not conducive to the preservation of fossil remains. Nevertheless, it is possible that lenses of more fine-grained sediments of the Ocotillo Conglomerate are present within the study area; if such pockets or lenses of sediments are encountered, they may have potential to contain fossil resources. The Ocotillo Conglomerate is exposed at the surface in the eastern portion of the property, and may also be present at depth below Holocene sediments elsewhere in the study area.

Additionally, it is possible that sediments of the Palm Spring are present at depth. This geologic unit, which stratigraphically underlies the Ocotillo Conglomerate, has high potential to contain significant nonrenewable fossil resources. The Pliocene-Pleistocene Palm Spring Group, including the Arroyo Diablo and Olla Formations, the Canebrake Conglomerate, the Tapiado Claystone, and the Hueso Formation (Cassiliano, 2002; Dorsey, 2006), was deposited for the most part in lacustrine, deltaic, or distal fan environments, and commonly consists of upward-fining sequences of conglomerate, sandstone, and siltstone. The Arroyo Diablo Formation is 1–2 km thick and contains Colorado River–derived fluvial-deltaic sandstone and mudstone that pass laterally into coarse basin-margin facies of the Olla Formation and Canebrake Conglomerate. Sandstone units represent deposits of a meandering channel system, and siltstone and claystone are interpreted as overbank facies, similar to deposits of the modern Colorado River delta system in the Salton Trough (Dorsey, 2006). The fossiliferous Tapiado Claystone consists primarily of olive-green, blue-grey, and grey claystone; subordinate lithologies include gray and tan siltstone, olive-green, grey, and tan, very fine- to fine-grained sandstone, white micritic limestone lenses, and white, porcellaneous tuff beds. The Tapiado Claystone is more lithologically homogenous in its lower portion where it does not grade into the Hueso Formation. The Tapiado Claystone is more fossiliferous than the Olla Formation or Arroyo Diablo Formation, and has yielded abundant remains of vertebrates as fresh-water ostracodes and gastropods (Cassiliano, 2002). The Hueso Formation consists mainly of tan and buff micaceous sandstone and silty-sandstone; brown and buff micaceous siltstone; grey and buff very coarse-grained sandstone, and subordinate olive-green, grey, and tan claystone. The vast majority of terrestrial vertebrate fossils from the Borrego Badlands region were collected from the Hueso Formation (Cassiliano, 2002). Most of the specimens are of mammals, although diverse assemblages of reptiles and birds have also been collected from the Hueso Formation (Cassiliano, 2002).

For this review, I conducted a search of the Regional Paleontologic Locality Inventory (RPLI) at the SBCM. The results of this records search indicated that no paleontologic localities are recorded within the boundaries of the study area. However, localities SBCM 5.9.22 and 5.9.23, situated ½ mile north of the proposed study area, yielded tusks of extinct mammoth (*Mammuthus*) from outcrops of the Palm Spring Group. This demonstrates the high paleontological sensitivity of these sediments in this region.

Recommendations

The results of the literature review and the check of the RPLI at the SBCM demonstrate that excavation for the proposed project in Coachella has potential to impact significant nonrenewable

fossil resources. A qualified vertebrate paleontologist must develop a program to mitigate impacts to nonrenewable paleontologic resources. This mitigation program should be consistent with the provisions of the California Environmental Quality Act (Scott and Springer, 2003), as well as with regulations currently implemented by the County of Riverside. This program should include, but not be limited to:

1. Monitoring of excavation in areas identified as likely to contain paleontologic resources by a qualified paleontologic monitor. Based upon the results of this review, areas of concern include any undisturbed sediments of the Ocotillo Conglomerate and/or the Palm Spring Group exhibiting a lithology conducive to the preservation of vertebrate fossils. Paleontologic monitors should be equipped to salvage fossils as they are unearthed, to avoid construction delays, and to remove samples of sediments likely to contain the remains of small fossil invertebrates and vertebrates. Monitors must be empowered to temporarily halt or divert equipment to allow removal of abundant or large specimens. Monitoring may be reduced if the potentially-fossiliferous units described herein are not present in the subsurface, or if present are determined upon exposure and examination by qualified paleontologic personnel to have low potential to contain fossil resources.
3. Preparation of all recovered specimens to a point of identification and permanent preservation, including washing of sediments to recover small invertebrates and vertebrates. Preparation and stabilization of all recovered fossils are essential in order to fully mitigate adverse impacts to the resources (Scott and others, 2004).
4. Identification and curation of specimens into an established, accredited museum repository with permanent retrievable paleontologic storage. These procedures are also essential steps in effective paleontologic mitigation (Scott and others, 2004) and CEQA compliance (Scott and Springer, 2003). The paleontologist must have a written repository agreement in hand prior to the initiation of mitigation activities. Mitigation of adverse impacts to significant paleontologic resources is not complete until such curation into an established museum repository has been fully completed and documented.
5. Preparation of a report of findings with an appended itemized inventory of specimens. It is recommended that this report incorporate the full results of this literature review. The report and inventory, when submitted to the appropriate Lead Agency along with confirmation of the curation of recovered specimens into an established, accredited museum repository, would signify completion of the program to mitigate impacts to paleontologic resources.

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Please do not hesitate to contact us with any further questions you may have.

Sincerely,

Eric Scott, Curator of Paleontology
Division of Geological Sciences
San Bernardino County Museum