Appendix C
Cultural Resources Studies

November 2020

MATERIAL CULTURE
CONSULTING

Prepared for:

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PHASE I CULTURAL AND PALEOTNOLOGICAL RESOURCES ASSESSMENT

Great Scott Nursery Development

City of Lake Forest, Orange County, California

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PHASE 1 CULTURAL AND PALEONTOLOGICAL RESOURCES ASSESSMENT:
GREAT SCOTT PROJECT
LAKE FOREST, ORANGE COUNTY, CALIFORNIA

Prepared For:
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September 2020

Type of Study: Cultural and paleontological resources assessment
Cultural Resources within Area of Potential Impact: One
Paleontological Formations: Younger Quaternary Alluvium, Capistrano Formation
USGS Quadrangle: Section 11 and 12 of Township 6 S, Range 8 W, El Toro
APN(s): 610-301-07, 610-301-20
Survey Area: 6.37 acres
Date of Survey: September 17, 2020
Key Words: Paleontology, Archaeology, CEQA, Phase I Survey, Positive Survey, Orange County, High Cultural Sensitivity, Moderate Paleontological Sensitivity

MANAGEMENT SUMMARY

Great Scott Tree Service (Proponent) proposes to convert a currently developed area with two residential houses, a barn, and multiple structures used for storage and animal pens, as well as open dirt areas used for parking and storage into an office, parking area, and wood chipping drying area for the Great Scott Tree Service (GSTS) (Project). The Project is located in the City of Lake Forest, Orange County, California. The Project includes the remodel of the existing house into an office, the removal of existing animal pens and structures, and the construction of a concrete foundation pad and gravel parking area. Material Culture Consulting, Inc. (MCC) was retained by EPD Solutions, Inc. (EPD) to conduct the Phase I cultural and paleontological resource investigation of the Project Area. These assessments were conducted in accordance with the California Environmental Quality Act (CEQA). This assessment included a California Historical Resources Information System (CHRIS) records search at the South Central Coastal Information Center (SCCIC), and background/literature research, a locality search at the Natural History Museum of Los Angeles County (LACM), an examination of geological maps and paleontological literature, a search of the Sacred Lands File by the Native American Heritage Commission (NAHC), outreach efforts with twenty-two Native American tribal representatives, and an intensive-level pedestrian survey of the Project Area.

On September 1, 2020, staff at the California Historical Resource Information System (CHRIS) conducted a search at the South Central Coastal Information Center (SCCIC), located at California State University, Fullerton. The cultural resource records search identified thirty-four prior cultural resources investigations within a ½ -mile buffer of the Project Area. Two of these studies are adjacent to the Project Area. The cultural resources records search also identified twelve previously recorded cultural resources within a ½ -mile radius of the Project Area, one of which is located within the Project Area itself. The closest cultural resource, located within the most northwestern portion of the Project Area, is a prehistoric site. A review of historical aerials and topographic maps show the Project Area was developed for agricultural purposes, tree groves, as late as 1938. The Project Area remained as such until the 1990s when commercial development began in the surrounding area.

On August 4, 2020, MCC Archaeologist Erika McMullin, requested a SLF search from the NAHC. The NAHC responded and did not identify any previously known tribal cultural resources or sacred lands within the Project Area or within a mile of the Project Area. The NAHC provided MCC with contact information for eighteen tribes/individuals to reach out to for additional information on August 5, 2020. MCC sent letters on August 6, 2020 to all eighteen Native American contacts, requesting any information related to cultural resources or heritage sites within or adjacent to the Project Area. Additional attempts at contact by letter, email or phone call were made on August 25, 2020 and September 9, 2020. As a result of this outreach effort, MCC received five responses from tribes/contacts, including Gabrieleno Band of Mission Indians-Kizh Nation, Gabrieleno/Tongva San Gabriel Band of Mission Indians, Gabrielino Tongva Indians of California, San Luis Rey Band of Mission Indians, and Soboba Band of Luiseno Indians. Two tribes, San Luis Rey Band of Mission Indians and Soboba Band of Luiseno Indians, did not provided comments or concerns for the Project and deferred to local tribes. MCC did not conduct formal consultation with the Native American representatives.

The Project Area is comprised of surficial younger Quaternary Alluvium and Capistrano Formation. It is likely that the entire Project Area is underlain by these and/or older Quaternary deposits at unknown depth. Four previously recorded fossil localities are located within one mile of the Project Area.

Erika McMullin, MCC Archaeologist and Cross-Trained Paleontologist, conducted the cultural and paleontological survey of the Project Area on September 17, 2020. During fieldwork, overall survey conditions were fair, but ground visibility varied throughout the Project Area due to present structures and dense vegetation. The entirety

of the Project Area is encompassed by multiple structures, including two residential houses, a barn, and equestrian facilities. Therefore, the entire Project Area has been subjected to intense surface and subsurface modification from construction of the buildings, landscaping, and use. One newly recorded historic site was observed during the survey and one historic structure is within the Project Area which will not be impacted by the Project.

The potential for encountering significant cultural resources within the Project Area is considered high. MCC recommends archaeological monitoring during initial ground-disturbance activities, such as site preparation, demolition of structures, and grading up to three feet below surface, in order to quickly assess any discoveries of cultural resources during project implementation. MCC also recommends setting a plan in place to expediently address inadvertent discoveries and/or human remains, should these be encountered during any phase of development associated with the Project. If the historic structure is impacted by the Project, formal evaluation by a qualified architectural historian is required.

Excavation has the potential to impact the paleontologically sensitive older Quaternary sediments. MCC recommends that a paleontological resource mitigation program be put in place to provide spot-check monitoring to confirm presence or absence of sensitive paleontological sediments or deposits, and methods to salvage and curate any recovered fossils associated with the current study area, should these be unearthed during ground disturbance within the Project Area. If potentially sensitive geologic units are observed during spot-check monitoring, then full-time paleontological monitoring is recommended for all ground disturbance activities.

A copy of this report will be permanently filed with the SCCIC at California State University, Fullerton. All notes, photographs, correspondence, and other materials related to this Project are located at MCC, in Pomona, California.

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INTRODUCTION

Great Scott Tree Service (Proponent) proposes to convert a currently developed area with a home, a barn, and multiple structures used for storage and animal pens, as well as open dirt areas used for parking and storage into an office, parking area, and wood chipping drying area for the Great Scott Tree Service (Project). The Project is located in the City of Lake Forest, Orange County, California. The Project includes the remodel of the house into an office, the removal of existing animal pens and structures, and the construction of a concrete foundation pad and gravel parking area. Material Culture Consulting, Inc. (MCC) was retained by EPD Solutions to conduct a Phase I cultural and paleontological resource investigation of the Project Area. These assessments were conducted in accordance with the California Environmental Quality Act (CEQA). According to CEQA, if development of a Project has the potential to result in significant impacts to cultural or paleontological resources, a plan must be developed to mitigate those impacts to a level which is less than significant. This assessment documents the potential for encountering cultural and paleontological resources during development of Projects within the Project Area and provides recommendations on how to mitigate impacts to those resources.

PROJECT LOCATION AND DESCRIPTION

The proposed Project Area is located in the City of Lake Forest, Orange County, California (Figures 1 and 2). The Project Area is located to the south and east of Serrano Creek, and it is bound by Linear Lane to the west and north of Canada Road (Figure 3). Specifically, the proposed Project is located on the El Toro USGS 7.5-minute quadrangle, Section 11 and 12 of Township 6 South and Range 8 West (San Bernardino Base Meridian) (Figure 2). The Project Area consists of two parcels, identified as Assessor's Parcel Number (APN) 610-301-07 and 610-301-20, which encompasses approximately 6.37 acres. Presently, the Project Area contains two residential houses, a barn, and multiple structures used for storage and animal pens, as well as open, dirt areas used for parking and storage. The Project proposes the remodeling of a house into an office, and the construction of an gravel parking area and concrete foundation pad in addition to the removal of the animal pens and storage structures.

PROJECT PERSONNEL

Tria Belcourt, M.A., RPA, President of MCC, served as the Project Manager and Principal Archaeologist for the study. Ms. Belcourt is a Qualified Orange County Archaeologist, and oversaw the project and performed editorial review of this report. Belcourt is a Registered Professional Archaeologist (RPA) with a M.A. in Anthropology from the University of Florida, a B.A. in Anthropology from the University of California at Los Angeles with over 16 years of experience in California archaeology and 12 years of experience overseeing paleontological assessments in California (See Appendix A). Jennifer Kelly, M.Sc. is a Qualified Orange County Paleontologist and served as the Principal Investigator for Paleontology for the study. Ms. Kelly conducted the paleontological resource literature and map reviews, oversaw the field study, and prepared the paleontological sections of the report. Ms. Kelly has a M.Sc. in Geology from California State University, Long Beach, and has over 14 years of experience in environmental and paleontological compliance in California (See Appendix A). Sonia Sifuentes, M.Sc, RPA, co-authored this report. Julia Carvajal, M.A., provided GIS support for this study. Erika McMullin, MCC Archaeologist and cross-trained Paleontologist, conducted the field survey and co-authored this report.

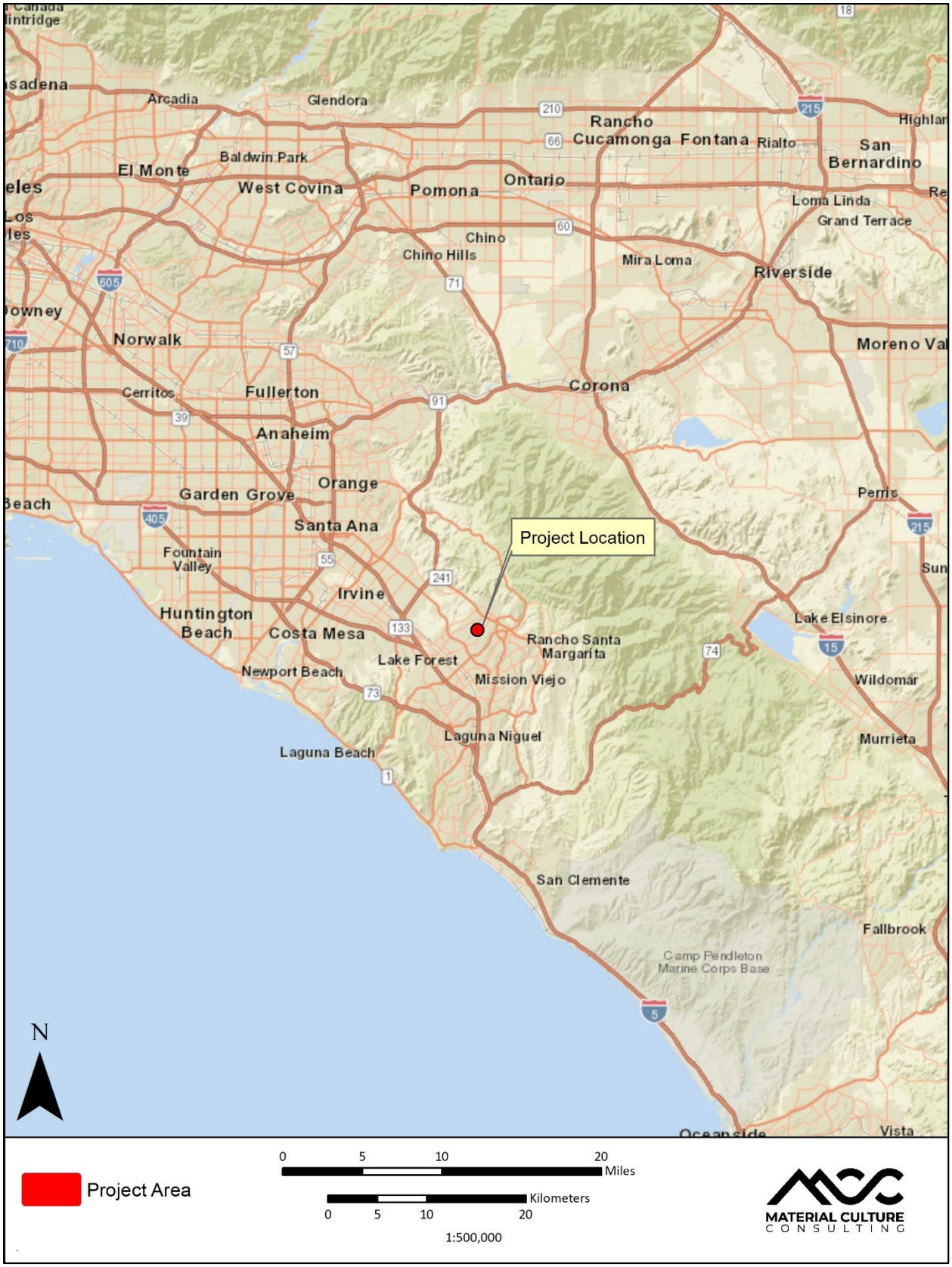


Figure 1. Great Scott Project Vicinity (1:500,000)

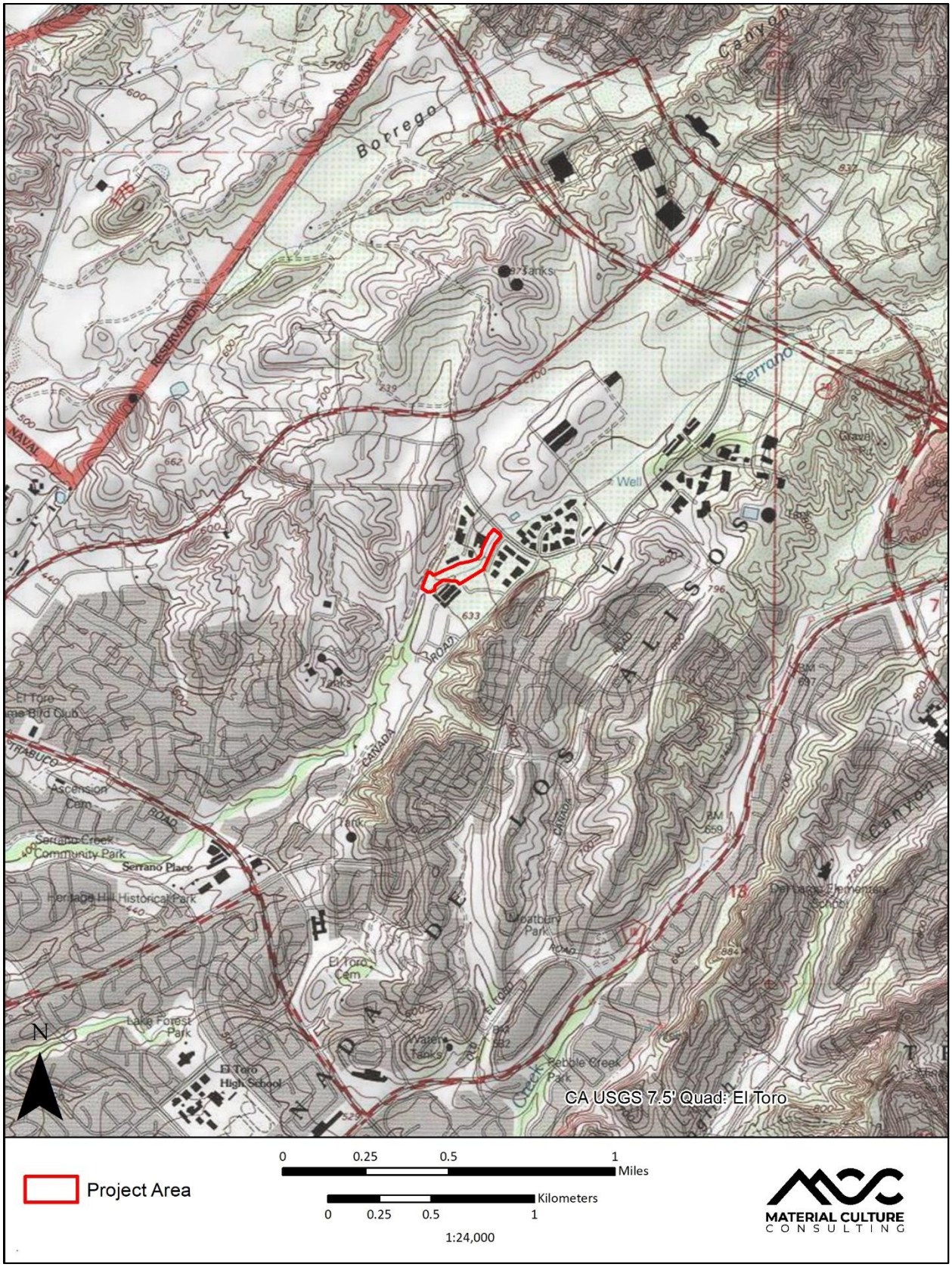


Figure 2. Great Scott Project Area (1:24,000, as depicted on El Toro USGS 7.5 Minute Quadrangle)



Figure 3.Great Scott Project Area (1:2,500, as depicted on aerial photograph)

REGULATORY ENVIRONMENT

The current study is subject to local and state laws and regulations regarding cultural and paleontological resources. These regulations require the identification of cultural and paleontological resources within the Project Area which should be considered during the planning stage of new Projects; include application review for Projects that would potentially involve land disturbance; provide Project-level standard conditions of approval that address unanticipated discoveries; and provide requirements to develop specific mitigation measures if resources are encountered during any development activity. Specific governing legislation and regulations include the following:

CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA)

CEQA declares that it is state policy to "take all action necessary to provide the people of this state with...historic environmental qualities." It further states that public or private Projects financed or approved by the state are subject to environmental review by the state. All such Projects, unless entitled to an exemption, may proceed only after this requirement has been satisfied. CEQA requires detailed studies that analyze the environmental impacts of a proposed Project. In the event that a Project is determined to have a potential significant environmental impact, CEQA requires that alternative plans and mitigation measures be considered. CEQA includes historic and archaeological resources as integral features of the environment.

CEQA requires a designated lead agency to determine whether a Project may have a significant impact on historical resources. A historical resource is defined as a resource listed in, or determined to be eligible for listing in, the California Register of Historical Resources (CRHR) (Section 21084.1); a resource included in a local register of historical resources (Section 15064.5(a)(2)); or any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant (Section 15064.5 (a)(3)). Public Resources Code (PRC) Section 5024.1, Section 15064.5 of the Guidelines, and Sections 21083.2 and 21084.1 of the Statutes of CEQA were used as one of the basic guidelines for the current cultural resources study. PRC Section 5024.1 directs evaluation of historical resources to determine their eligibility for listing on the CRHR.

The purpose of the register is to maintain listings of the state's historical resources. The criteria for listing resources on the CRHR were expressly developed to be in accordance with previously established criteria developed for listing on the NRHP, enumerated above, and require similar protection to what NHPA Section 106 mandates for historic properties. According to Public Resources Code (PRC) Section 5024.1(c)(1-4), a resource is considered historically significant if it meets at least one of the following criteria:

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

In addition to having significance, resources must retain integrity. Integrity is the authenticity of a historical resource’s physical identity as evidenced by the survival of characteristics or historic fabric that existed during the resource’s period of significance. Alterations to a resource or changes in its use over time may have historical, cultural, or architectural significance. Simply, resources must retain enough of their historic character or appearance to be recognizable as historical resources and to convey the reasons for their significance. A resource that has lost its historic character or appearance may still have sufficient integrity for the California Register, if,

under Criterion 4, it maintains the potential to yield significant scientific or historical information or specific data. Note that California Historical Landmarks with numbers 770 or higher are automatically included in the CRHR.

Under CEQA, if an archeological site is not a significant "historical resource" but meets the definition of a "unique archeological resource" as defined in PRC Section 21083.2, then it should be treated in accordance with the provisions of that section. A unique archaeological resource is defined in PRC Section 21083.2(g) as follows:

An archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

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

Resources that neither meet any of these criteria for listing on the NRHP or CRHR nor qualify as a "unique archaeological resource" under CEQA PRC Section 21083.2 are viewed as not significant. Under CEQA, "A non-unique archaeological resource need be given no further consideration, other than the simple recording of its existence by the lead agency if it so elects" [PRC Section 21083.2(h)].

Impacts to historical resources that alter the characteristics that qualify the historical resource for listing on the CRHR are considered to be a significant impact. Impacts to a historical resource are considered significant if the Project activities physically destroy or damage all or part of a resource; change the character of the use of the resource or physical feature within the setting of the resource which contribute to its significance; or introduce visual, atmospheric, or audible elements that diminish the integrity of significant features of the resource. If it can be demonstrated that a Project will cause damage to a unique archaeological resource, the lead agency may require reasonable efforts to be made to permit any or all of these resources to be preserved in place or left in an undisturbed state. To the extent that they cannot be left undisturbed, mitigation measures are required (Section 21083.2 (a), (b), and (c)).

CALIFORNIA HISTORICAL LANDMARKS AND POINTS OF HISTORICAL INTEREST

Historical landmarks are sites, buildings, features, or events that are of statewide significance and have anthropological, cultural, military, political, architectural, economic, scientific or technical, religious, experimental, or other value. In order to be considered a California Historical Landmark, the landmark must meet at least one of the following criteria:

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

If a site is primarily of local or countywide interest, it may meet the criteria for the California Point of Historical Interest Program. Points of Historical Interest are sites, buildings, features, or events that are of local (city or county) significance and have anthropological, cultural, military, political, architectural, economic, scientific or technical, religious, experimental, or other value. To be eligible for designation as a Point of Historical Interest, a resource must meet at least one of the following criteria:

1. The first, last, only, or most significant of its type in the local geographic region (city or county);
2. Associated with an individual or group having a profound influence on the history of the local area;
3. A prototype of, or an outstanding example of, a period, style, architectural movement or construction; or
4. One of the more notable works or the best surviving work in the local region of a pioneer architect, designer, or master builder.

Points of Historical Interest designated after December 1997 and recommended by the State Historical Resources Commission are also listed in the California Register. No historical resource may be designated as both a Landmark and a Point of Interest. If a Point of Interest is subsequently granted status as a Landmark, the Point of Interest designation will be retired.

PALEONTOLOGY

The State of California Public Resources Code (Chapter 1.7), Sections 5097.5 and 30244, includes additional state level requirements for the assessment and management of paleontological resources. These statutes require reasonable mitigation of adverse impacts to paleontological resources resulting from development on state lands, define the removal of paleontological "sites" or "features" from state lands as a misdemeanor, and prohibit the removal of any paleontological "site" or "feature" from State land without permission of the jurisdictional agency. These protections apply only to State of California land, and thus apply only to portions of the Project, if any, which occur on State land.

As defined by Society for Vertebrate Paleontology (SVP), paleontological resources means any fossilized remains, traces, or imprints of prehistoric plants and/or animals which are preserved in or on the earth's crust that can provide information about the history of past life on the planet (2009). Generally, any resource greater than 5,000 years old is considered to be a fossil and are considered a nonrenewable resource that are subject to impacts from land development (SVP, 2010). Paleontological resources are important scientific and educational resources because they are used to:

1) Document the evolutionary history of now extinct organisms to study any associated evolution patterns and/or speciation;
2) Reconstruct the environments, climate change, and/or paleoecological relationships these organism lived in; and
3) Determine the relative geologic age of the strata in which the resources occur and any geological events that resulted in the deposition of the sediments that formed the strata.

Fossil resources vary widely in their relative abundance and distribution and not all are regarded as significant. Vertebrate fossils, whether preserved remains or track ways, are classed as significant by most state and federal agencies and professional groups (and are specifically protected under the California Public Resources Code). In some cases, fossils of plants or invertebrate animals are also considered significant and can provide important information about ancient local environments. Assessment of significance is also subject to the California Environmental Quality Act (CEQA) criterion that the resource constitutes a "unique paleontological resource or site." A significant paleontological resource is considered to be of scientific interest if it is a rare or previously

unknown species, it is of high quality and well-preserved, it preserves a previously unknown anatomical or other characteristic, provides new information about the history of life on earth, or has an identified educational or recreational value. Paleontological resources that may be considered not to have scientific significance include those that lack provenience or context, lack physical integrity due to decay or natural erosion, or that are overly redundant or are otherwise not useful for research. Vertebrate fossil remains and traces include bone, scales, scutes, skin impressions, burrows, tracks, tail drag marks, vertebrate coprolites (feces), gastroliths (stomach stones), or other physical evidence of past vertebrate life or activities (BLM 2016). The full significance of fossil specimens or fossil assemblages cannot be accurately predicted before they are collected, and in many cases, before they are prepared in the laboratory and compared with previously collected material.

Pre-construction assessment of significance associated with an area or formation must be made based on previous finds, characteristics of the sediments, and other methods that can be used to determine paleoenvironmental conditions. A separate issue is the potential of a given geographic area or geologic unit to preserve fossils. Information that can contribute to assessment of this potential includes:

1) The existence of known fossil localities or documented absence of fossils nearby and in the same geologic unit (e.g. "Formation" or one of its subunits);
2) Observation of fossils within the Project vicinity;
3) The nature of sedimentary deposits in the area of interest, compared with those of similar deposits known elsewhere (size of particles, clasts and sedimentary structures conducive or non-conducive to fossil inclusion) that may favor or disfavor inclusion of fossils; and
4) Sedimentology details, and known geologic history, of the sedimentary unit of interest in terms of the environments in which the sediments were deposited, and assessment of the favorability of those environments for the probable preservation of fossils.

As so defined, significant paleontological resources are determined to be fossils or assemblages of fossils that are unique, unusual, rare, uncommon, or diagnostically important. Significant fossils can include remains of large to very small aquatic and terrestrial vertebrates or remains of plants and animals previously not represented in certain portions of the stratigraphy. Assemblages of fossils that might aid stratigraphic correlation, particularly those offering data for the interpretation of tectonic events, geomorphologic evolution, and paleoclimatology are also critically important (Scott and Springer 2003; Scott et al. 2004).

CITY OF LAKE FOREST GENERAL PLAN

The City of Lake Forest's policies pertaining to cultural resources are contained in the Recreation and Resource Element of the Lake Forest General Plan (City of Lake Forest 2020). GOAL RR-3 states, " A community that values its history and preserves its cultural features to bolster community identity and protect sensitive resource." To meet this goal, the city has four policies as follows:
RR-3.1 Preservation. Protect areas containing significant historic, archaeological, and paleontological resources, as defined by the California Public Resources Code.
RR-3.2 County of Orange Coordination. Coordinate with the County of Orange to preserve local historic resources, conserve historical assets within the City, and allow for local community events to occur at these special locations.
RR-3.3 Development. Ensure that human remains are treated with sensitivity and dignity, and ensure compliance with the provisions of California Health and Safety Code Section 7050.5 and California Public Resources Code Section 5097.98.
RR-3.4 Tribal Consultation. Consult with Native American tribes that may be impacted by proposed development, as necessary, and in accordance with state, local, and tribal intergovernmental consultation requirements.

BACKGROUND

ENVIRONMENTAL SETTING

The Project Area is located in the City of Lake Forest, bound by commercial development in all cardinal directions. The Project Area is bounded west of Linear Lane, north of Canada Road, and located south and east of Serrano Creek. The City of Lake Forest is located in Orange County, which is situated within the coastal plains of the Peninsular Ranges geomorphic province. The Project Area is relatively flat, with elevations within the Project Area averaging 168m (550 feet) above mean sea level (AMSL). Serrano Creek, an intermittent creek, runs through the northern portion of the Project Area and runs northeast-southwest through Orange County. Climate in the region consists of warm summers and cool winters, with temperatures ranging 55° to 75° F (Climate Data 2020). The average annual precipitation in Fountain Valley is 12 inches, with most rainfall occurring between December and March (City of Fountain Valley 2020). Project Area has been previously disturbed by the development of a home, barn, animal pens, and storage facilities.

PALEONTOLOGICAL SETTING

Located between an elevated coastal terrace and the Santa Ana Mountains, the City of Lake Forest is part of a coastal plain that is underlain by geologic units consisting of the Peninsular Ranges and Geomorphic Province, characterized by Quaternary deposits of the Pleistocene epoch (11,000 to 1,600,000 years) through the Holocene epoch (less than 11,000 years) (Michael Baker International 2014). The Project Area is situated northeast of the Newport-Inglewood fault zone, which is an active northwest trending fault system that extends 44 miles between Newport Beach and Beverly Hills (State of California- Department of Toxic Substances Control 2013:35). Traces of the Elsinore Fault Zone follow the ridge of the Santa Ana Mountains (Schollhamer et al. 1981). The geology in the region is derived as fluvial deposits from the Santa Ana River. The geologic units underlying the Project Area are mapped as Young Quaternary fan alluvium (Qyf_{sa}) dating from the late Holocene to Pleistocene and the Capistrano Formation dating to Late Miocene to early Pliocene. Nearby geological unites, within 3-miles of the Project Area include the Topanga Formation dating to the middle Miocene and the Vaqueros Formation dating to early Miocene. (Jennings et al. 1977) (Figure 4).

Young Quaternary fan alluvium (Qyf_{sa}) are Holocene to late Pleistocene-aged alluvial fan deposits that typically consist of river and stream derived sediments. The sediments are comprised of unconsolidated to slightly consolidated gray-hued arkosic, sandy and gravel -sand deposits. These deposits specifically are grain-size silty sand and derived as overbank deposits from waterways such as the Serrano Creek. Generally, these sediments have a low paleontological sensitivity rating.

Vaqueros Formation is an early Miocene deposit. The sediments consist of white, coarse-grained, arkose sandstone and brown, flaggy concretionary sandstone and siltstone. It is known to be fossiliferous and contain marine fossil deposits (Woodburne and Golz 1972).

Capistrano Formation was formed during the Late Miocene to Early Pliocene. It is part of the submarine fan complex associated with the Los Angeles Basin. The sediments consist of well-sorted, yellow-grey to light brownish-gray siltstone with interbedded lenticular white fine-grained sandstone. The Capistrano Formation is recognized internationally as the source of the second-most scientifically significant Miocene marine mammal collection and has been assigned high paleontological sensitivity level (Raschke 1984).

Topanga Formation is a middle Miocene formation deposited in the marine basins as the mountains and island blocks of the San Gabriel, Santa Ana, and Catalina masses were quickly uplifted (Minch 1997). The sediments

consist of tan to gray conglomerate and sandy conglomerate that is well-cemented and resistant to erosion (Schoellhamer et al. 1981). The sediment can range from conglomerate to marine sandstone to siltstone and to shale. The Topanga Formation is known to produce abundant and diverse marine vertebrate and invertebrate fauna fossils in addition to an abundant amount of terrestrial plant fossils (Raschke 1984).

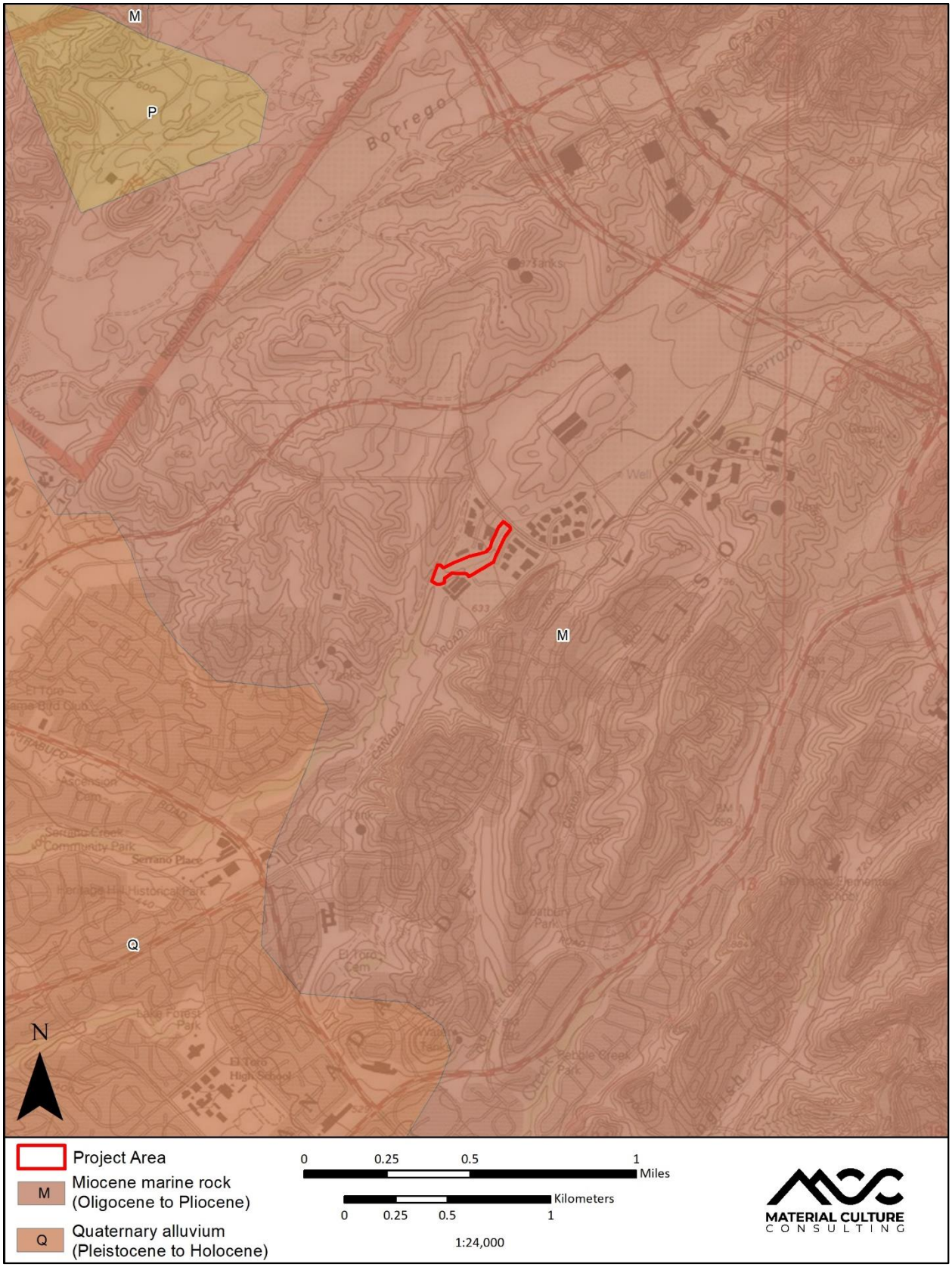


Figure 4. Geological Map of Project Area (1:24,000; complied by USGS in open source PDF format)

PREHISTORIC CONTEXT

The prehistoric cultural chronology for the proposed Project Area is based on chronological information provided by Wallace (1955), Chartkoff and Chartkoff (1984), Morrato (1984), Mason, Koerper and Langenwalter (1997), Koerper, Mason and Peterson (2003), and Byrd and Raab (2007). There are four prehistoric periods for the southern coastal region, which are defined as: Horizon I (Paleo-Indian), Horizon II (Milling Stone Assemblages), Horizon III (Intermediate), and Horizon IV (Late Prehistoric).

Horizon I/Paleo-Indian

The Paleo Indian Period is associated with the terminus of the late Pleistocene (12,000 to 10,000 years before present (YBP)). The environment during the late Pleistocene was cool and moist, which allowed for glaciation in the mountains and the formation of deep, pluvial lakes in the deserts and basin lands (Moratto 1984). However, by the terminus of the late Pleistocene, the climate became warmer, which caused glaciers to melt, sea levels to rise, greater coastal erosion, large lakes to recede and evaporate, extinction of Pleistocene megafauna, and major vegetation changes (Moratto 1984; Martin 1967, 1973; Fagan 1991). Paleo Indians were likely attracted to multiple habitat types, including mountains, marshlands, estuaries, and lakeshores. These people likely subsisted using a more generalized hunting, gathering, and collecting adaptation, utilizing a variety of resources including birds, mollusks, and both large and small mammals (Erlandson and Colten 1991; Moratto 1984; Moss and Erlandson 1995). The oldest archaeological sites known in the California are attributed to the San Dieguito culture, which consists of a hunting culture with flaked stone tool industry (Warren 1967). The material culture related to this time included scrapers, hammer stones, large flaked cores, drills, and choppers, which were used to process food and raw material. The closest local example of the San Dieguito is a site located on the bluffs above Middle Newport Bay (Padon 1998).

Horizon II/Milling Stone Period

The Milling Stone Period dates back well over8,000-3,000 YBP and is characterized by warmer and drier climates, also known as the Altithermal (Fagan 2003). Subsistence characteristics altered, with a generalized plant collecting economy supplemented by hunting and fishing suggested by the artifact assemblage of millingstones and handstones. Sites from this period appear to be part of an expansion of settlement to take advantage of new habitats and resources that became available as sea levels stabilized between about 6,000to 5,000 years ago. Most sites were in coastal areas and huge shell mounds near these coastal habitats suggest increase sedentary occupation and population increase (Fagan 2003). Around 3500 YBP, the archaeological data suggests an economic shift to more reliance on hunting with the appearance of large projectile points. Unique artifacts associated with this period include discoidals and cogged stones (Padon 1998). This period persisted over thousands of years without great change (Mason et al. 1997 and Koerper et al. 2003).

Horizon III/Intermediate Period

The Intermediate Period dates from roughly 3000-1000 YBP and sites attributed to this time period indicate an increased reliance on coastal resources with continued reliance on hunting and collecting strategies. Along the coasts, deep sea fishing begins, with circular fishhooks and perforated stones (possibly associated with larger nets) observed within the artifact assemblage (Drover et al. 1983; Koerper and Drover1983).Artifact assemblage for this time period are characterized by the appearance of the bow and arrow, evidence of increased quantities of bone tools, and increased reliance on the mortar and pestle. Most sites were in coastal areas (Mason et al. 1997 and Koerper et al. 2003). The first permanently occupied villages make their appearance during this period (Chartkoff and Chartkoff 1984).

Horizon IV/Late Prehistoric Period

The Late Prehistoric Period dates from 1, 350 YBP to 150 YBP and is characterized by an increasing political-economic-social complexity. Villages tend to be larger with evidence of increase in smaller satellite sites established for seasonal support for the main village. Intensive exploitation of localized resources, and social contacts and economic influences appear accelerated through trade and social interaction. Artifact assemblage changes included the replace of the atlatl and dart with bow and arrows, introduction of soapstone bowls, shell ornaments, steatite effigies, emergence of Tizon brownware, and cremations (Padon 1998). These changes have been linked to the arrival of Shoshonean peoples in the area. Settlement expanded into the hills and canyons inland (Mason et al. 1997 and Koerper et al. 2003).

ETHNOGRAPHY

The Project Area has historically been situated between three North American terrorites: The Cahuilla people, Gabrielino people, and the Luiseño. Migration of Shoshone peoples from the Great Basin into the desert and coastal Southern California regions occurred approximately 1000 to 600 years B.P. Both the Cahuilla and Luiseño ethnographic groups derived from this migration.

Cahuilla
The Cahuilla territory was bounded by the San Bernardino Mountains to the north, the Orocopia Mountains to the east, the Santa Ana River/the San Jacinto Plain and the eastern portion of Palomar Mountains to the west, and Borrego Springs and the Chocolate Mountains to the south (Bean 1978). The Project Area falls within the western region of the tribe's traditional territory, denoted by the San Gorgonio Pass. The Cahuilla existed within the most geographically diverse region, having exploited more than 500 native and non-native plants (Bean and Saubel 1972). The Cahuilla spoke a language that belongs to the Cupan group of the Takic subfamily of the Uto-Aztecan language family, a language family that includes the Shoshonean groups of the Great Basin (Bean and Shipek 1978).

The prehistoric Cahuilla occupation is characterized by structures within permanent villages that ranged from small brush shelters to dome-shaped or rectangular dwellings. Villages were situated near water sources, in the canyons near springs, or on alluvial fans at man-made walk-in wells (Bean 1972). There appears to be slight difference in subsistence tools between the Desert, Pass, or Mountain Cahuilla groups. The Desert Cahuilla used deep, wooden mortars with a long pestle whereas San Gorgonio Pass Cahuilla utilized shallower mortars with basketry rims (Kroeber 1908: 40, 43). Cahuilla granaries were usually raised on pole platforms two to four feet high, which resembled birds' nests, and were used to store mesquite (Kroeber 1908: 42).

In comparison with other Southern California tribes, the Cahuilla appear to have had a lower population density and a less rigid social structure. The Cahuilla are patrilineal, with closely related patrilineages that share an assumed common ancestor which is important socially and ceremonially (Hudlow 2007). The office of lineage leader, also known as a *nét*, directed subsistence activities, settled conflicts, represented the clan regionally and was responsible for correct performances of ceremonies, with the official role of the chief passed from father to eldest son (Bean 1978; Hudlow 2007).

Initial contact with European explorers with the Cahuilla most likely occurred during the expedition of Juan Bautista de Anza in 1777 (Napton and Greathouse 1982). The presence of the San Gabriel Mission in the early 1800s led to more contact via baptisms (Napton and Greathouse 1982). It also led to the Native Americans moving away from traditional habitation sites to separate themselves from the influence of the Mission (Brumgardt 1977). The Cahuilla traditions may have been relatively stable until mission secularization in 1834, due to the policy of the

Catholic Mission fathers, or padres, to maintain imported European traditional style settlement and economic patterns (Bean and Shipek 1978). After 1877, when the United States government established Indian reservations in the region and religious missionaries began conversion of the Native American populations in the region, traditional cultural practices were prohibited. Presently, the Cahuilla reside in nine separate reservations in Southern California, located in Imperial, Riverside and San Diego counties (Bean 1978).

Gabrielino

The territory of the Gabrielino at the time of Spanish contact covers much of current-day Los Angeles and Orange counties. The southern extent of this culture area is bounded by Aliso Creek, the eastern extent is located east of present-day San Bernardino along the Santa Ana River, the northern extent includes the San Fernando Valley, and the western extent includes portions of the Santa Monica Mountains. The Gabrielino also occupied several Channel Islands including Santa Barbara Island, Santa Catalina Island, San Nicholas Island, and San Clemente Island. Because of their access to certain resources, including a steatite source from Santa Catalina Island, this group was among the wealthiest and most populous aboriginal groups in all of southern California. Trade of materials and resources controlled by the Gabrielino extended as far north as the San Joaquin Valley, as far east as the Colorado River, and as far south as Baja California (Bean and Smith 1978; Kroeber 1925).

The Gabrielino lived in permanent villages and smaller, resource-gathering camps occupied at various times of the year depending upon the seasonality of the resource. Larger villages were comprised of several families or clans, while smaller, seasonal camps typically housed smaller family units. The coastal area between San Pedro and Topanga Canyon was the location of primary subsistence villages, while secondary sites were located near inland sage stands, oak groves, and pine forests. Permanent villages were located along rivers and streams, as well as in sheltered areas along the coast. Gabrielino houses were domed, circular structures made of thatched vegetation. Houses varied in size and could house from one to several families. Sweathouses—semicircular, earth-covered buildings—were public structures used in male social ceremonies. Other structures included menstrual huts and a ceremonial structure called a yuvar, an open-air structure built near the chief's house (Bean and Smith 1978; Kroeber 1925). The social structure of the Gabrielino is little known; however, there appears to have been at least three social classes: 1) the elite, which included the rich, chiefs, and their immediate family; 2) a middle class, which included people of relatively high economic status or long-established lineages; and 3) a class of people that included most other individuals in the society. Villages were politically autonomous units comprised of several lineages. During times of the year when certain seasonal resources were available, the village would divide into lineage groups and move out to exploit them, returning to the village between forays (Bean and Smith 1978; Kroeber 1925).

Clothing was minimal; men and children most often went naked, while women wore deerskin or bark aprons. In cold weather, deerskin, rabbit fur, or bird skin (with feathers intact) cloaks were worn. Island and coastal groups used sea otter fur for cloaks. In areas of rough terrain, yucca fiber sandals were worn. Women often used red ochre on their faces and skin for adornment or protection from the sun. Adornment items included feathers, fur, shells, and beads (Bean and Smith 1978; Kroeber 1925). Hunting implements included wooden clubs, sinew-backed bows, slings, and throwing clubs. Maritime implements included rafts, harpoons, spears, hook and line, and nets. A variety of other tools included deer scapulae saws, bone and shell needles, bone awls, scrapers, bone or shell flakers, wedges, stone knives and drills, metates, mullers, manos, shell spoons, bark platters, and wooden paddles and bowls. Baskets were made from rush (Juncus sp.), deer grass (Muhlenbergia rigens), and skunkbush (Rhus trilobata). Baskets were fashioned for hoppers, plates, trays, and winnowers for leaching, straining, and gathering. Baskets were also used for storing, preparing, and serving food, and for keeping personal and ceremonial items (Bean and Smith 1978; Kroeber 1925). The Gabrielino had exclusive access to soapstone, or steatite, procured from Santa Catalina Island quarries. This highly prized material was used for making pipes, animal carvings, ritual

objects, ornaments, and cooking utensils. The Gabrielino profited well from trading steatite since it was valued so much by groups throughout southern California (Bean and Smith 1978; Kroeber 1925).

Luiseño

The Spanish name Luiseño was used to identify Native Americans who were associated with the Mission San Luis Rey, with the Luiseño most likely had no known native term for their own nationality (Bean and Shipek 1978). Extensive research has been accumulated that gives detailed accounts of the Luiseño (DuBois 1908, Sparkman 1908, Kroeber 1976, White 1963, and Bean and Shipek 1978). At the time of these ethnographies, the Luiseño maintained a sophisticated political organization structure, and their lands extended from western San Jacinto to the Pacific Ocean along several major waterways, including Temecula, Santa Margarita, and San Luis Rey Rivers (Bean and Shipek 1978). Neighboring tribes included the Cahuilla to the east, the Serrano to the north, and the Gabrielino to the west. Each of these groups are part of the same Uto-Aztecan linguistic group and are Takic-speakers. The boundaries for territories fluctuate as new information evolves in ethnographic research, so there is a likelihood that there was quite a bit of overlap between groups over time as well.

The Luiseño organized themselves according to family groups or lineages, rather than forming exogamous moieties. Each lineage occupied land that they held in common, and they lived socially and politically separately from others (Bean and Shipek 1978). They typically resided in villages near reliable water sources and maintained special purpose camps close to the main villages. In the springtime, families would replenish food supplies by gathering local fruit, seeds, bulbs and roots. In the fall, families would move into the upland areas to gather acorns, prickly pear, toyon berries, and yucca. The Luiseño territory contained several species of oak that produced edible acorns. Acorns were stored and processed as needed by breaking the shell, grinding the meat into a powder, and leaching the tannic acid from the nut by using water. A porridge was made from the leached nuts and cooked with water using hot stones in baskets. The Luiseño used a wide variety of tools, including manos and metates, bone and shell fish hooks, stone and shell ornaments, bone awls, wooden throwing sticks, hammer stones, handstones, pestles, mortars, and drills, which are evident in late Prehistoric archaeological sites. Presently, there are six federally recognized Luiseño tribes with associated reservations within Southern California.



Figure 5. Ethnographic division of Southern California (based on Sturtevant and Heizer 1978)

HISTORICAL SETTING

The process of exploration and colonization of Alta California began in earnest in 1769, led by Spaniard Gaspar de Portola and Franciscan Fray (or Father) Junipero Serra. Once the first European exploration of California occurred, the region underwent immense change. As early as 1827, Anglo-Americans were migrating into Southern California. In the decades to come, California would be taken by the United States with the close of the Mexican-American War and subsequent events such as the Civil War and California Gold Rush would continue to shape the history of California.

Spanish Period (1769 to 1821) to Mexican Period (1821 to 1848)

The Spanish period began in 1769 with Captain Gaspar de Portolá's land expedition and ended in 1821 with Mexican Independence. During the Spanish Period, the California mission system was established throughout California. The closest mission to the Project Area was Mission San Juan Capistrano. Originally established in 1775, Mission San Juan Capistrano was re-established a year later and relocated in 1778 to its current location (Hallan-Gibson 1986).The missionaries were established to convert the native population, known as neophytes, and to establish military strong points or "presidios" to protect and to keep foreign interests such as Russia or England from invading lands claimed by Spain. Despite providing neophytes with new skills, European diseases and conflicts decimated the native populations.

During the Spanish Period of California, the Project Area was part of a large land grant owned by Jose Serrano. Serrano was granted the 10,668-acre Rancho Canada de Los Alisos in 1842, which encompassed most of present-day Lake Forest.

The Mexican-American War began in 1846 and ended in 1848. During this time, California was invaded by United States troops, gaining control of valuable Pacific ports and land. California surrendered to the United States Navy in July 1847.In 1848, The Treaty of Guadalupe Hidalgo was signed, giving sovereignty to Alta California, New Mexico, and Arizona to the United States. This event starts the beginning of the American Period.

American Period (1848 to present)

The new colonial period brought in an influx of European settlers to California. The settlers, originally concentrated on Alta California's coast, began expanding inland in search of mineral resources. The increase of settlers caused the native populations to be displaced from their lands. Conflicts arose between the Native Americans and the invading white colonists leading to the establishment of reservations for villages by executive order.

During the 1850s, southern California experienced a cattle boom creating a prosperous industry until the expansion of agriculture. The completion of the transcontinental railroad in 1869 encouraged developers, land speculators, and settlers to invest and move to California. During this time, Orange County's economy changed from stock raising to farming such as growing gain and citrus crops.

Dwight Writing purchased most of Jose Serrano's Rancho Canada de Los Alisos, known as El Toro, after the United States government took control of California and terminated the rancho system. Whiting introduced dry farming, citrus farming, and citrus production. In addition, he planted Eucalyptus groves for construction wood. Much of the groves can still be seen throughout the city, especially near Serrano Creek. Whiting is also credited with bringing the Sante Fe rail line through the region. As a result, the town of El Toro expanded to a shipping, commerce, and social center. After World War II, the El Toro Marine Base and imported water infrastructure were built, helping to shape the city's development of residential, commercial, ad industrial growth. The increase in development replaced the city's agricultural production. The City of Lake Forest was incorporated in 1991. It has an established area, Heritage Hill, to preserve the city's past. The park is home to the Serrano Adobe, the home which belonged to Jose Serrano.

METHODS

CALIFORNIA HISTORIC RESOURCES INVENTORY SYSTEM AND CULTURAL BACKGROUND RESEARCH

On September 1, 2020, staff at the California Historical Resource Information System (CHRIS) conducted a search at the South Central Coastal Information Center (SCCIC), located at California State University, Fullerton. The search identified any previously recorded cultural resources and prior cultural resources investigations within a 1-mile radius of the Project Area. The CHRIS search also included a review of the National Register of Historic Places (NRHP), the California Register of Historical Resources (CRHR), the California Points of Historical Interest list, the California Historical Landmarks list, the Archaeological Determinations of Eligibility list, and the California State Inventory of Historical Resources. . Additional background research included historical aerial photos and a search of the Bureau of Land Management General Land Office Records.

NATIVE AMERICAN OUTREACH AND BACKGROUND RESEARCH

MCC requested a search of the Sacred Lands File (SLF) from the Native American Heritage Commission (NAHC) on August 4, 2020. The NAHC responded on August 5, 2020, that the SLF search yielded negative results for known tribal cultural resources or sacred lands within a ½ -mile radius of the Project Area. The NAHC requested that eighteen Native American tribes or individuals be contacted for further information regarding the general Project vicinity. MCC subsequently sent letters on August 6, 2020 to all twenty-two Native American contacts, requesting any information related to cultural resources or heritage sites within or adjacent to the Project Area. Additional attempts at contact by letter, email, or phone call were made on August 25, 2020 and September 9, 2020. MCC did not conduct formal consultation with the Native American representatives.

PALEONTOLOGICAL RECORDS SEARCH

The literature review included an examination of geologic maps of the Project Area and a review of relevant geological and paleontological literature to determine which geologic units are present within the Project Area and whether fossils have been recovered from those geologic units elsewhere in the region. As geologic units may extend over large geographic areas and contain similar lithologies and fossils, the literature review includes areas well beyond the Project Area. The results of this literature review include an overview of the geology of the Project Area and a discussion of the paleontological sensitivity (or potential) of the geologic units within the Project Area. The purpose of a locality search is to establish the status and extent of previously recorded paleontological resources within and adjacent to the study area for a given project. In August 2020, a locality search was conducted through the Natural History Museum of Los Angeles County (LACM). This search identified any vertebrate localities in the LACM records that exist near the Project Area in the same or similar deposits.

CULTURAL AND PALEONTOLOGICAL FIELD SURVEY

The survey stage is important in a Project's environmental assessment phase to verify the exact location of each identified cultural or paleontological resource, the condition or integrity of the resource, and the proximity of the resource to areas of cultural resources sensitivity. In addition, the field survey provides invaluable information on the type of sediment present within the Project Area, which informs the assessment of paleontological sensitivity.

Erika McMullin, MCC Archaeologist and cross-trained Paleontologist, conducted the field survey of the proposed Project Area on September 17, 2020. The survey consisted of walking in parallel transects spaced at approximately 10-meter intervals over the Project Area, while closely inspecting the ground surface. The Project Area was examined for artifacts (e.g., flaked stone tools, tool-making debris, stone milling tools or fire-affected rock), soil discoloration that might indicate the presence of a cultural midden, soil depressions and features indicative of the former presence of structures or buildings (e.g., postholes, foundations), or historic-era debris (e.g., metal, glass,

ceramics). Existing ground disturbances (e.g. cutbanks, ditches, animal burrows, etc.) were visually inspected. Representative photographs were taken of the entire Project Area and are included in the Results section below.

RESULTS

CALIFORNIA HISTORIC RESOURCES INVENTORY SYSTEM AND CULTURAL BACKGROUND RESEARCH RESULTS

The complete results of the CHRIS resources records search are included as Confidential Appendix B of this report. A summary of the findings is presented below.

The CHRIS records search identified thirty-four prior cultural resources investigations within ½-mile radius of the Project Area (See Table 1). Of these, two of the studies are adjacent to the Project Area.

Table 1. Previously Conducted Investigations within ½ -mile Radius of Project Area

CHRIS Report Number	Year	Author(s)	Report Title	Affiliation	Distance from Project Area
OR-00277	1978	Cottrell, Marie G.	Archaeological Reconnaissance of the Serrano Highlands, Project Area (rancho De Los Alisos, Units 1 & 2)	N/A	Within ½-mile
OR-00495	1980	Cottrell, Marie G.	Archaeological Assessment of Rancho De Los Alisos Planning Area 6.	N/A	Within ½-mile
OR-00580	1977	Anonymous	The Aliso Creek Watershed, Orange County, California a Proposal for Creating an Archaeological District for the National Register of Historic Places and a Suggested Research and Study Design	Scientific Resource Surveys, Inc.	Within ½-mile
OR-00611	1988	Bissell, Ronald M.	Cultural Resources Reconnaissance of the Baker Ranch Property, El Toro Orange County, California	RMW Paleo Associates, Inc.	Within ½-mile
OR-00730	1984	Bissell, Ronald M.	Cultural Resources Assessment Tentative Tract 12110 Orange County, California	RMW Paleo Associates, Inc.	Within ¼-mile
OR-00738	1984	Bissell, Ronald M.	Cultural Resources Assessment Tentative Tract 11986 Orange County, California	RMW Paleo Associates, Inc.	Within ½-mile
OR-00748	1984	Bissell, Ronald M.	Cultural Resources Assessment Los Alisos Research and Development Park El Toro, Orange County, California	RMW Paleo Associates, Inc.	Adjacent to Project Area
OR-00773	1985	Bissell, Ronald M.	Archaeological Site CA-ORA-1057, a Late Prehistoric Period Hunting Camp in El Toro, Orange County, California	RMW Paleo Associates, Inc.	Within ½-mile
OR-00798	1985	Bissell, Ronald M.	Archaeological Survey of the Canada Apartments Property in El Toro, Orange County, California	RMW Paleo Associates, Inc.	Within ½-mile
OR-00799	1985	Bissell, Ronald M.	Archaeological Survey of Property Belonging to the William Lyon Company El Toro, Orange County, California	RMW Paleo Associates, Inc.	Within ½-mile
OR-00875	1987	Bissell, Ronald M.	Cultural Resources Reconnaissance of the Canada Ridge Lane Property, El Toro, Orange County, California	RMW Paleo Associates, Inc.	Within ½-mile
OR-00909	1988	Bissell, Ronald M.	Cultural Resources Reconnaissance of Tentative Parcel 83-110, El Toro, Orange County	RMW Paleo Associates, Inc.	Within ½-mile
OR-00940	1988	Bissell, Ronald M.	Interim Report Test Excavation of Nine Archaeological Sites on the Pacific Commerce CenterProperty, El Toro Area, Orange County California	RMW Paleo Associates, Inc.	Within ¼-mile

CHRIS Report Number	Year	Author(s)	Report Title	Affiliation	Distance from Project Area
OR-01022	1989	Del Chario, Kathleen C., V. Drummy-Chapel, and C. R. Demcak	Cultural Resource Assessment for the Allen-McColloch Pipeline (amp) Flow Augmentation Project Reaches S4b/s5	ARM	Within ½-mile
OR-01088	1990	Brock, James P.	Report on Archaeological Monitoring of Rough Grading of Bake Parkway From Portola Parkway to Station 159+40.81, El Toro, California	Archaeological Advisory Group	Within ½-mile
OR-01372	1994	Brown, Joan C.	Mitigation and Monitoring of Eight Prehistoric Archaeological Sites, CA-ORA-510, CA-ORA-647, CA-ORA-648, CA-ORA-1062, CA-ORA-1063, CA-ORA-1065, CA-ORA-1066, CA-ORA-1171, Located in Southern Orange County, California	RMW Paleo Associates, Inc.	Within ½-mile
OR-01567	1997	Jertberg, Patricia R.	Archaeological Services for 25781 Atlantic Ocean Drive, Lake Forest (permit #w007506)	Petra Resources Inc.	Within ¼-mile
OR-01583	1974	Nicoll, Gerald A.	Archaeology and Paleontology Report for Rancho De Los Alisos Area, Orange County, California	G.A. Nicoll and Associates	Within ½-mile
OR-01678	1998	Jertberg, Patricia R.	Archaeological Services for Tract 13344, Lot 6, 25741 Atlantic Ocean Drive, Pacific Commercentre, Lake Forest, Orange County, California	Petra Resources Inc.	Within ½-mile
OR-01679	1998	Jertberg, Patricia R.	Archaeological Services for Tract 13343, Lot 5, Pacific Commercentre, Lake Forest	Petra Resources Inc.	Within ½-mile
OR-01696	1998	Jertberg, Patricia R.	Archaeological Services for Tract 13344, Lot 13, 26012 Atlantic Ocean Drive, and Lot 39, 26021 Commercentre Drive, Lake Forest	Petra Resources, Inc.	Within ½-mile
OR-01697	1998	Jertberg, Patricia R.	Archaeological Services for Tract 13343, Lot 1, 20571 Crescent Bay Drive, Lake Forest	Petra Resources, Inc.	Within ½-mile
OR-02211	2001	Hoover, Anne M.	Cultural Resources Reconnaissance and Monitoring of Pacific Commercentre, and Mitigation of CA-ORA-1581, City of Lake Forest, County of Orange, Ca	RMW Paleo Associates, Inc.	Within ½-mile
OR-02218	2000	Brock, James P.	Archaeological Assessment for the Proposed Comfort Inn Project, 20768 Lake Forest Drive, Orange County, Ca	Archaeological Advisory Group	Within ½-mile
OR-02219	2000	White, Robert S., White, Laurie, and Minch, John	Archaeological and Paleontological Assessments of a 12.05 Acre Parcel Located Just East of Dimension Drive and Enterprise Way in Lake Forest, Orange County	Archaeological Associates, Ltd.	Adjacent to Project Area
OR-03063	2001	Bonner, Wayne H.	Records Search Results for Sprint Pcs Facility Og65xc417d (the Pacific World Site), Located at 25791 Commercentre Drive, El Toro in Orange County, California	Michael Brandman Associates	Within ½-mile
OR-03744	2009	Carolyn Losee	Cultural Resources Investigation for T-Mobile LA33498A "The Arbors" 26356 Vintage Woods Road, Lake Forest, Orange County, CA 92630	Archaeological Resources Technology	Within ½-mile
OR-03748	2009	Patrick O. Maxon	Phase II Archaeological Evaluation CA-ORA- 1004 & CA-ORA-1150	Bonterra Consulting	Within ½-mile
OR-03749	2008	Patrick O. Maxon	Phase I Cultural Resources Reconnaissance Survey- Proposed Alton Parkway Extension Project, Including Baker Ranch, Lake Forest, CA	BonTerra Consulting	Within ½-mile

CHRIS Report Number	Year	Author(s)	Report Title	Affiliation	Distance from Project Area
OR-03770	2009	Clark, Fatima	Results of the Cultural Resource Assessment for the Southern California Edison Replacement of Deteriorated Pole Nos. 2140160E, 2140170E, 2140171E, 2140178E, 2140179E, and 2280425; Orange County, California; WO 4805-0557	PCR Services Corporation	Within ¼-mile
OR-03840	2009	Marken, Mitch	Phase I Archaeological Assessment for the IRWD Baker Regional Water Treatment Plant Project, Orange County, CA	ESA	Within ½-mile
OR-03992	2010	Bray, Madeleine	Archaeological Addendum Report for the IRWD Baker Regional Water Treatment Plant Project, Orange County, CA	ESA	Within 1-mile
OR-04358	1999	Gust, Sherrl	Archaeological and Paleontological Monitoring Report for Serrano Creek Business Center, Lake Forest, California	RMW Paleo Associates, Inc.	Within ½-mile
OR-04574	2011	Brunzell, David	Cultural Resources Assessment of the Crown Castle USA Southern California Metro PCS DAS Project, Orange and Los Angeles Counties, California (BCR Consulting Project No. SYN1007)	BCR Consulting	Within 1-mile

The records search identified twelve previously recorded cultural resources within a ½ -mile radius of the Project Area. Resources identified in the records search include twelve prehistoric resources. The closest cultural resource, P-30-000037, is located along and within the northwest edge the Project Area.

Table 2. Previously Recorded Cultural Resources within ½ -mile Radius of Project Area

Primary Number	Trinomial	Age	Attributes	NRHP/CRHR	Distance from Project Area
P-30-000037	CA-ORA-000037	Prehistoric	AP01 (Unknown)	Unknown	Within Project Area
P-30-000040	CA-ORA-000040	Prehistoric	AP02 (Lithic Scatter)	Unknown	Within ½-mile
P-30-000510	CA-ORA-000510	Prehistoric	AP02 (Lithic Scatter)	Unknown	Within ¼ -mile
P-30-001057	CA-ORA-001057	Prehistoric	AP02 (Lithic Scatter); AP08 (Stone Feature)	Unknown	Within ¼ -mile
P-30-001062	CA-ORA-001062	Prehistoric	AP02 (Lithic Scatter)	Unknown	Within ¼ -mile
P-30-001064	CA-ORA-001064	Prehistoric	AP02 (Lithic Scatter)	Unknown	Within ½-mile
P-30-001065	CA-ORA-001065	Prehistoric	AP02 (Lithic Scatter)	Unknown	Within ½-mile
P-30-001171	CA-ORA-001171	Prehistoric	AP02 (Lithic Scatter)	Unknown	Within ½-mile
P-30-001581	CA-ORA-001581	Prehistoric	AP02 (Lithic Scatter); AP15 (Habitation Debris)	Unknown	Within ¼ -mile
P-30-100311	n/a	Prehistoric	AP02 (Lithic Scatter)	Unknown	Within ½-mile
P-30-100438	n/a	Prehistoric	AP02 (Lithic Scatter)	Unknown	Within ½-mile
P-30-100439	n/a	Prehistoric	AP02 (Lithic Scatter)	Unknown	Within ½-mile

Several additional sources were consulted for this Project as well (see Table 3). These additional sources did not identify significant potential for historic era or prehistoric cultural resources.

Table 3. Other Sources Reviewed for the Project Area

Source	Results
National Register of Historic Places (1979-2002 & supplements)	Negative
Historical United States Geological Survey topographic maps (USGS 2012)	Project Area has been used for groves since at least 1938 with major development starting in early 1990s. Project Area has not changed since early 2000s.
Historical United States Department of Agriculture aerial photos	Project Area has been used for groves since at least 1938 with major development starting in early 1990s. Project Area has not changed since early 2000s.
California Register of Historical Resources (1992-2010)	Negative
California Inventory of Historic Resources (1976-2010)	Negative
California Historical Landmarks (1995 & supplements to 2010)	Negative
California Points of Historical Interest (1992 to 2010)	Negative
Local Historical Register Listings	Negative
Bureau of Land Management General Land Office Records (BLM GO 2008)	Two land grants from late 1800s for Jose Serrano.

A review of historical aerials and topographic maps show the Project Area was developed for agricultural development, planting of groves, as late as 1938. During this time, a barn was built and remains presently. The groves continued until the early 1990s when commercial development began around the Project Area.



Figure 6. Project Area with groves (as depicted on 1938 aerial photograph)



Figure 7. Project Area with groves (as depicted on 1967 aerial photograph)



Figure 8. Project Area with commercial developments (as depicted on 1993 aerial photograph)



Figure 9. Project Area with increased commercial developments (as depicted on 2003 aerial photograph)

NATIVE AMERICAN OUTREACH AND BACKGROUND RESEARCH RESULTS

As a result of the effort to contact the eighteen Native American Tribes or individuals identified by the NAHC, MCC received two responses. These responses came in the form of letters, emails and phone calls. Below is a summary of the responses provided by Native American Tribes.
On August 8, 2020, MCC received an email from Brandy, Historic Preservation Technician for Gabrieleno Band of Mission Indians. Ms. Salas requested the Lead Agency's contact information.

On September 9, 2020 MCC placed a phone call to Anthony Morales, Chairperson for Gabrielino/Tongva San Gabriel Band of Mission Indians. Mr. Morales stated that due to the Project Area's location, the Project warrants archaeological and Native American monitoring, but would like to be updated once the survey and record search results have been conducted in order to provide a positive answer. After updating Mr. Morales on November 3, 2020, Mr. Morales stated that the tribe requests a Native American monitor if an archaeological monitor is present. He also requested to be updated as the project progresses.

On September 9, 2020 MCC placed a phone call to Robert Dorame, Chairperson for Gabrielino-Tongva Tribe. Mr. Dorame would like to be updated once the survey and record search results have been conducted before giving the tribe's response. On November 3, 2020, Mr. Dorame was updated with the record search and survey results. He informed MCC the tribe requests to be notified if any cultural resources or human remains, regardless of the coroner's decision, are observed or impacted during construction.

On September 9, 2020 MCC placed a call to the San Luis Rey Band of Mission Indians. Ms. Cami stated that Project Area is out of tribe's boundaries and defers to Juaneno Band of Mission Indians Acjachemen Nation-Belardes.

On September 9, 2020 MCC spoke to Joseph Ontiveros, Cultural Resource Director for Soboba Band of Luiseño Indians. Mr. Ontiveros deferred the Project to other tribes in the area.

As of November 3, 2020, MCC has not received any additional responses from the remaining NAHC-listed groups or individuals we contacted for information. Should MCC receive additional responses once the final report is submitted, the information will be passed on to EPD Solutions to be added to the report as an addendum. NAHC and Native American correspondence materials, including our communication attempts, are provided as Appendix C.

PALEONTOLOGICAL RECORDS SEARCH RESULTS

The locality search at LACM did not yield any fossil localities within the Project Area and no fossil localities within one mile of the Project Area (See Appendix D) (Bell 2020). The Project Area is geologically mapped with surficial deposits of younger Quaternary alluvium, the Capistrano Formation, and the Topanga Formation (Bell 2020). While the younger Quaternary alluvium deposits typically do not contain significant vertebrate fossils within the uppermost layers, the Capistrano Formation and the Topanga Formation are known to have a high sensitivity for producing fossils, as well as potential older Quaternary deposits at unknown depth (Raschke 1984). The closest vertebrate fossil localities from the Capistrano Formation is LACM VP 5500, which is located approximately less ½ mile southeast of the Project Area. At an unknown depth, a seal (Pinnipedia) was produced. The next closest vertebrate fossil locality from the Capistrano Formation is LACM VP 4666-4668, located approximately ¾-mile west of the Project Area, near El Toro Road and Trabuco Road. This locality produced mammals including eared seals (Otariidae) at 22 feet below ground surface. LACM IP 7706, invertebrate fossils from the Topanga Formation was produced at an unknown depth and is located approximately 1 mile west of the Project Area. Another locality, LACM VP 7546-7547, from the Capistrano Formation, located approximately 1-mile northwest of the Project. The locality was produced at an unknown depth and contained dolphins (Pontoporiidae) and seal (Imagotariinae). LACM VP 3491, from the Capistrano Formation, is located approximately 2 miles southwest of the Project Area. It produced include sharks (Carcharodon, Isurus), teleost fishes (Teleostei), eared seals (Otariidae) and toothed whale (Odontoceti) at an unknown depth. Additional literature was consulted, including The University of California Museum of Paleontology (UCMP)'s Miocene Mammal Mapping Project (MioMap), resulting in four recorded fossil localities within the area of the Project (Carrasco et al. 2005). The four localities were identified 3-miles east of the Project Are and produced bird specimens (Chendytes milleri, Oceanodroma, and Mancallinae). Three of the localities, LACM 4555, LACM 4554, and LACM 4559 are deposits from the Vaqueros Formation. The other locality, LACM 2385, was produced from the Topanga Formation. The results are detailed below in Table 4.

Table 4. Previously Recorded Paleontological Localities with 3-mile Radius of Project Area

Locality Number	Location	Formation	Taxa	Depth	Distance to Project Area
LACM VP 5500	East of Lake Forest Drive between Vintage Road on the north & Pittsford Drive on the south	Capistrano Formation	Seals (Pinnipedia)	Unknown	Within ½-mile
LACM VP 4666-4668	West of El Toro Road & north of Trabuco Road	Capistrano Formation	Mammals, including eared seals (Otariidae)	22 ft bgs	Within ¾-mie
LACM IP 7706	1-mile W.S.W. of El Toro	Topanga Formation	Invertebrates	Unknown	Within 1-mile
LACM VP 7546-7547	N. side of Blake Parkway, W. of state highway 241	Capistrano Formation	Dolphin (Pontoporiidae), seal (Imagotariinae)	Unknown	Within 1-mile
LACM VP 3491	Cheery Street & El Toro Road	Capistrano Formation	Shark (Carcharodon, Isurus; teleost fishes (Teleostei); eared seals (Otariidae); toothed whale (Odontoceti)	Unknown	Within 2-miles

Locality Number	Location	Formation	Taxa	Depth	Distance to Project Area
LACM 2373	Upper Oso Reservoir	Vaqueros Formation	Bird (Chendytes milleri)	Unknown	Within 3-miles
LACM 2374	Upper Oso Reservoir	Vaqueros Formation	Bird (Oceanodroma)	Unknown	Within 3-miles
LACM 2543	Upper Oso Reservoir	Vaqueros Formation	Bird (Mancallinae)	Unknown	Within 3-miles
LACM 2385	Upper Oso Reservoir	Topanga Canyon	Bird (Chendytes milleri)	Unknown	Within 3-miles

Key: VP-Vertebrate Paleontology; IP-Invertebrate Paleontology; bgs-below ground surface

CULTURAL AND PALEONTOLOGICAL FIELD SURVEY RESULTS

Erika McMullin, MCC Archaeologist and Cross-Trained Paleontologist, conducted the cultural and paleontological survey of the Project Area on September 17, 2020. During fieldwork, overall survey conditions were fair, and ground visibility varied throughout the Project Area due to present structures and dense vegetation. The entirety of the Project Area is encompassed by multiple structures, including two residential houses, a barn, a garden, a corral, and equestrian facilities (Figures 10-16). Therefore, the entire Project Area has been subjected to intense surface and subsurface modification from construction of the buildings, landscaping, and use. Some areas of the Project Area were inaccessible due to dense vegetation, steep slope, and fencing. Vegetation consisted of oak trees, oak scrub, poison oak, flowering tobacco, eucalyptus trees, pine trees, palm trees, tall grasses and weeds, with some residential landscaping present. The ground surface was obscured by pine duff, oak litter, and 4-6 feet tall weeds. Ground visibility varied throughout the Project Area; overall it was poor, ranging from 0-25%, due to dense vegetation (Figures 17-20). Soil is comprised of light brown to dark brown sandy silt with pebble to cobble sized inclusions of rounded to sub-rounded granitic material (Figures 21-26). Imported gravel was noted in some areas. The surveyable portions of the Project Area are highly disturbed due to many of the pathways being trafficked by vehicles, pedestrians, and farm animals. Other disturbances to the Project Area include modern refuse located on Linear Lane, faunalturbation, and refuse and debris from residence occupation (Figures 27-28). Within the Project Area is an historic-era barn. The barn will not be altered in any way or impacted by the Project. No paleontological resources were discovered during the intensive-pedestrian survey. The archaeological survey resulted in one newly observed historic site being identified, EM-SITE-001. The site is comprised of five glass bottles and one bi-metal, tear tab can fragment. The site dates between 1924 to 1985, but likely dates to the late 1930s to mid-1940s During this time, the area existed as an agricultural area and the bottles may represent this event. It is located approximately 15-20 ft. (4.5-6 meters) west of Linear Lane, and 15 ft. (4.5 m) east of Serrano Creek. The site is heavily disturbed as modern refuse is scattered within and outside of the concentration. The site boundaries may extend outside of the observed area due to heavy oak litter covering the surface floor. Previously recorded site P-30-000037, was not relocated during the survey due to the area being inaccessible (steep slope), and having dense vegetation surrounding the area.



Figure 10. Overview of barn and animal pens from Serrano Creek, view east.



Figure 11. Overview of barn, view northwest.



Figure 12. Overview of animal pens behind barn, view west.



Figure 13. Overview of residence near Linear Lane, view south.



Figure 14. Overview of area near residential home with compacted dirt area, view north.



Figure 15. Overview of corral with tall weeds, view west.



Figure 16. Overview of residential home near Canada Road, view northwest.



Figure 17. Representative photo of vegetation and modern refuse within Project Area, view west.



Figure 18. Representation of ground visibility and vegetation near Linear Lane, view north.



Figure 19. Representative photo of surficial soil observed within Project Area in gated area near Linear Lane, view south.



Figure 20. Representative photo of ground visibility in western portion of Project Area, view northwest.



Figure 21. Representative photo of ground visibility in western portion of Project Area, view south.



Figure 22. Representative of ground visibility in western portion of Project Area, plan view.



Figure 23. Representative photo of surficial soil observed within Project Area, plan view.



Figure 24. Representative photo of surficial soil, with imported gravel observed within Project Area, plan view.



Figure 25. Representative photo of surficial soil observed within Project Area, plan view.



Figure 26. Representative photo of surficial soil observed within Project Area, plan view.



Figure 27. Representative photo of modern refuse disturbance, plan view.



Figure 28. Representative photo of faunalturbation noted throughout Project Area, plan view.

CONCLUSIONS AND RECOMMENDATIONS

CULTURAL RESOURCES CONCLUSIONS

The Phase I cultural resource assessment of the Project Area included a CHRIS records search, NAHC outreach, background research, and a field pedestrian survey. The records search results indicated 12 previously recorded resources within the Project Area. The closest resource to the Project, P-30-000037, is located within the Project Area. Review of historic aerials and topographic maps shows agricultural development began in the 1930s. During the review of historic aerials, the barn was confirmed as a historic-era built environment resource located in the Project Area. The barn will not be removed or remodeled during construction. NAHC outreach efforts, two Native American tribes/contacts deferred to other tribes for any further consultation related to the Project. Three other tribes expressed interest in the project. Gabrielino Band of Mission Indians-Kizh Nation requested the lead agency's contact information. Gabrielino/Tongva San Gabriel Band of Mission Indians requests a Native American monitor presence to accompany an archaeologist. Gabrielino Tongva Indians of California asks to be notified if any cultural resources and/or human remains are observed during construction.

CULTURAL RESOURCES RECOMMENDATIONS

The potential for encountering significant cultural resources within the Project Area is considered high, due to a positive pedestrian survey and 12 previously recorded resources within ½-mile of the Project Area, with 1 resource being within the Project Area. Prior to the start of construction, a cultural resources management plan (CRMP) should be prepared and implemented. It is recommended the Project's CRMP implement the following:

- If the historic structure will be impacted by the Project, formal evaluation by a qualified Architectural Historian is required.
- Archaeological monitoring during all initial ground-disturbance activities, including vegetation removal, site preparation, demolition of historic structures, and grading up to three feet below surface, in order to quickly assess any discoveries of cultural resources during initial project implementation.
- Development of an inadvertent discovery plan in place to expediently address archaeological and / or tribal cultural resource discoveries should these be encountered during any phase of development associated with the Project. In the event that these resources are inadvertently discovered during ground-disturbing activities, work must be halted within 50 feet of the find until it can be evaluated by a qualified archaeologist. Construction activities could continue in other areas. If the discovery proves to be significant, additional work, such as data recovery excavation, may be warranted and would be discussed in consultation with the appropriate regulatory agency(ies).
- Procedures of conduct following the discovery of human remains on non-federal lands have been mandated by California Health and Safety Code §7050.5, PRC §5097.98 and the California Code of Regulations (CCR) §15064.5(e). According to the provisions in CEQA, should human remains be encountered, all work in the immediate vicinity of the burial must cease, and any necessary steps to ensure the integrity of the immediate area must be taken. The Orange County Coroner shall be immediately notified and must then determine whether the remains are Native American. If the Coroner determines the remains are Native American, the Coroner has 24 hours to notify the NAHC, who will in turn, notify the person they identify as the Most-Likely-Descendent (MLD) of any human remains. Further actions will be determined, in part, by the desires of the MLD. The MLD has 48 hours to make recommendations regarding the disposition of the remains following notification from the NAHC of the discovery. If the MLD does not make recommendations within 48 hours, the owner shall, with appropriate dignity, reinter the remains in an area of the property secure from further disturbance. Alternatively, if the owner does not accept the MLD's recommendations, the owner or the descendent may request mediation by the NAHC.

PALEONTOLOGICAL RESOURCES CONCLUSIONS

The Phase I paleontological resource assessment of the Project Area included a locality records search, literature review, and a field pedestrian survey. No significant paleontological resources were identified within the Project Area during the locality search or the field survey. The geologic units mapped within the Project Area are comprised of younger Quaternary fan alluvium and exposures of the Capistrano Formation. While younger Quaternary deposits typically do not contain significant vertebrate fossils within the uppermost layers, deposits from the Capistrano Formation have a high sensitivity for containing vertebrate fossils. There are nearby localities from similar sedimentary deposits to those found within 1-mile of the proposed Project Area. MCC recommends the Project Area be considered high sensitivity, and to have the potential for construction activities of the proposed project to impact underlying paleontological resources.

PALEONTOLOGICAL RESOURCES RECOMMENDATIONS

Excavation has the potential to impact the paleontologically sensitive older Quaternary sediments at depth. MCC recommends that a paleontological resource mitigation program (PRMP) be put in place to monitor, salvage, and curate any recovered fossils associated with the current study area, should these be unearthed during ground disturbance within the Project Area. It is recommended the Project's PRMP implement the following:

- A trained and qualified paleontological monitor should perform spot-check and/or monitoring of any excavations on the Project that have the potential to impact paleontological resources in undisturbed native sediments below 5 feet in depth. The monitor will have the ability to redirect construction activities to ensure avoidance of adverse impacts to paleontological resources.
- The Project paleontologist may re-evaluate the necessity for paleontological monitoring after examination of the affected sediments during excavation, with approval from Lead Agency and Client representatives.
- Any potentially significant fossils observed shall be collected and recorded in conjunction with best management practices and SVP professional standards.
- Any fossils recovered during mitigation should be deposited in an accredited and permanent scientific institution for the benefit of current and future generations.
- A report documenting the results of the monitoring, including any salvage activities and the significance of any fossils, will be prepared and submitted to the appropriate personnel.

REFERENCES

Bean, L.J.
1972 Mukat's People: The Cahuilla Indians of Southern California. University of California Press, Berkeley.
1978 "Cahuilla." In *Handbook of North American Indians*, Volume 8. *California*, volume edited by Robert F. Heizer, pp. 575-587 (W. T. Sturtevant, general editor). The Smithsonian Institution, Washington, D.C.

Bean, L.J. and C.R. Smith
1978 "Gabrielino." In *Handbook of North American Indians, Volume 8. California*. Volume edited by Robert F. Heizer, pp. 538-549 (W. T. Sturtevant, general editor). The Smithsonian Institution, Washington, D.C.

Bean, L.J. and K.S. Saubel
1972 *Temalpakh: Cahuilla Indian Knowledge and Usage of Plants*. Malki Museum Press, Banning, CA.

Bean, L.J. and F.C. Shipek
1978 "Luiseño." In *Handbook of North American Indians*, Volume 8. *California*, volume edited by Robert F. Heizer, pp. 538-549 (W. T. Sturtevant, general editor). The Smithsonian Institution, Washington, D.C.

Bell, A.
2020 *Paleontological Records Search for the proposed Great Scott Project, in the City of Lake Forest, Orange County, project area*.

Bureau of Land Management (BLM)
2016 Potential Fossil Yield Classification (PFYC) System for Paleontological Resources on Public Lands. Instruction Memorandum No. 2016-124. Released July 20, 2016

BLM GLO (Bureau of Land Management Government Land Office)
2008 Land Grant Records Search Tool. Available online at:http://www.glorecords.blm.gov/PatentSearch/Default.asp. Last accessed September 10, 2020.

Byrd, B.F. and L.M Raab
2007 "Prehistory of the Southern Bight: Models for a New Millennium." In *Colonization, Culture, and Complexity: California's Chaotic Prehistory*, Editors: T. L. Jones and K. A. Klar. New York: Alta Mira Press, pp.215-228

California Department of Water Resources
2004 "California's Groundwater - Bulletin 118, Coastal Plain of Orange County Groundwater Basin". February. Available online at: https://water.ca.gov/-/media/DWR-Website/Web-Pages/Programs/Groundwater-Management/Bulletin-118/Files/2003-B118-Basin-Descriptions/B118-Basin-Boundary-Description-2003---8_001.pdf. Last Accessed February 5, 2020.

City of Lake Forest
2020 "Environmental Impact Report-2040 Lake Forest General Plan" Available online at: https://lakeforestca.gov/DocumentCenter/View/10440/Final-EIR_Lake-Forest-GP_5-20-20-. Last accessed September 10, 2020.

Chartkoff, J.L. and K.K. Chartkoff.
1984 *The Archaeology of California*. Menlo Park: Stanford University Press.

Department of Toxic Substances Control
2013 *Initial Study Remedial Action Plan for Ascon Landfill Site, Ascon Landfill Site, Huntington Beach, California.* Prepared for Southern California Cleanup Operations Branch.

Drover, C. E., Koerper, H.C., and Langenwalter, P. II

1983 "Early Holocene Human Adaptation on the Southern California Coast: A Summary Report of Investigations at the Irvine Site (CA-Ora-64), Newport Bay, Orange County, California". *Pacific Coast Archaeological Society Quarterly*19(3 & 4): 1-84.

DuBois, C.
1908 "The Religion of the Luiseño and Diegueno Indians of Southern California." In *University of California Publications in American Archaeology and Ethnology* 8(3):69-186, Berkeley, California.

Erlandson, J. and R. Colten
1991 An Archaeological Context for Archaeological Sites on the California Coast. *Hunter- Gatherers of the Early Holocene Coastal California*, edited by J. Erlandson and R.Colten.

Fagan, B.M.
1991 *Ancient North America: The Archaeology of a Continent.* London: Thames and Hudson.
2003 *Before California: An Archaeologist Looks at Our Earliest Inhabitants*. New York: Alta Mira Press.

Galvin Preservation Associates Inc.
2014 City of Huntington Beach Historic Context and Survey Report. Prepared for City of Hunting Beach Planning and Building Department.

Hallan-Gibson, P.
1986 *The Golden Promise: An Illustrated History of Orange County*. Windsor Publishers.

Johnson, B. E.
1962 "California's Gabrielino Indians". *Fedrick Webb Hodge Anniversary Fund Publication* No. 8, Southwest Museum, Los Angeles.

Koerper, H .C. ,and C. E. Drover
1983 Chronology Building for Coastal Orange County, The Case from CAOra-119-A. *Pacific Coast Archaeological Society Quarterly* 19(2):1-34.

Koerper, H., Mason, R., and Peterson, M.
2003 "Complexity, Demography and Change in Late Holocene Orange County". In Erlandson, J. and T. Jones (eds),*Catalysts to Complexity: The Late Holocene on the California Coast*. Perspectives in California Archaeology, Institute of Archaeology, University of California, Los Angeles.

Kroeber, A.L.
1976 Handbook of Indians of California. Reprint of 1925 original edition, Dover Publications, New York.

Los Angeles Almanac
2019 "Map of Territories of Original Peoples with County Boundaries in Southern California" (2019). Derived from Handbook of North American Indians, Vol. 8, California, William C. Sturtevant (Gen. Editor) & Robert F. Heizer (Vol. Editor), 1978. Available at: http://www.laalmanac.com/history/hi05.php].

Martin, P.S.
1967 Prehistoric Overkill. *Pleistocene Extinctions: The Search for a Cause*, edited by P. Martin and H.E. Wright. Yale University Press: NewHaven.
1973 The Discovery of America. *Science*179(4077):969-974.

Mason, R., Koerper, H., and Langenwalter, P.
1997 "Middle Holocene adaptations on the Newport Coast of Orange County". In Erlandson, J. and M. Glassow, *Archaeology of the California Coast during the Middle Holocene*, Perspectives in California Archaeology, Institute of Archaeology, University of California, Los Angeles

McCawley, W.
1996 *First Angelinos: The Gabrielino Indians of Los Angeles*. Malki Museum Press/Ballena Press, Banning, CA.

Moratto, M.J.
1984 California Archaeology. San Diego: Academic Press.

Moss, M.L. and J. Erlandson
1995 Reflections on North American Coast Prehistory. *Journal of World Prehistory*9(1):1-46.

Padon, B.
1998 *Cultural Resource Review for Groundwater Replenishment System Program EIR/Tier I/EIS, Orange County Water District and County Sanitation Districts of Orange County.* Available at South Coast Central Information Center.

Raschke, R. E.
1984 Early and middle Miocene vertebrates from the Santa Ana Mountains, California. In: B. Butler, J. Gant, and C. J. Stadum eds., The Natural Sciences of Orange County: Memoirs of the Natural History Foundation of Orange County. Vol. 1, pp. 61-67.

Schoellhamer, J. E., J.G. Vedder, R.F. Yerkes and D.M. Kinney.
1981 Geology of the northern Santa Ana Mountains, California. U.S. Geological Survey Professional Paper 420-D.

Scott, E. and K. Springer
2003 CEQA and Fossil Preservation in Southern California. The Environmental Monitor, Winter: 4-10, 17.

Scott, E., K. Springer, and J. C. Sagebiel
2004 "Vertebrate Paleontology in the Mojave Desert: The Continuing Importance of "Follow-Through" in Preserving Paleontological Resources" in The Human Journey and Ancient Life in California's Deserts, Proceedings from the 2001 Millennium Conference, M. W. Allen and Reed, J. editors: 65-70.

Society of Vertebrate Paleontologists (SVP)
2010 Standard Procedures for the Assessment and Mitigation of Adverse Impacts to Paleontological Resources. Online: http://vertpaleo.org/PDFS/68/68c554bb-86f1- 442f-a0dc-25299762d36c.pdf

Wallace, W. J.
1955 "A Suggested Chronology for Southern California Coastal Archaeology". *Southwestern Journal of Anthropology.* Vol 2: 214-230.

Warren, Claude N.
1967 "Cultural Tradition and Ecological Adaptation on the Southern California Coast". In *Archaic Prehistory in the Western United States*, edited by C. Irwin-Williams, pp. 1-14. *Eastern New Mexico University Contributions in Anthropology*1(3).

Woodburne, M.O., and Golz, D.J.,
1972 "Stratigraphy of the Punchbowl Formation, Cajon Valley, Southern California." In Univ. Calif. Pub. Geol. Sci.,V 92, 73pp

Appendix A
Qualifications

Tria Belcourt, M.A., RPA
President and Principal Environmental Specialist

Tria Belcourt oversees and is responsible for the entire work process at Material Culture Consulting. She is responsible for planning, supervising, and overseeing field projects, including responsibility for the professional quality of evaluations and recommendations. Tria has primary accountability for the technical completeness and competence of work conducted by her staff. She is responsible for development of work plans and/or research designs, for performance of crew chiefs, for selection standards and limitations on work assignments of crew members, for analysis and interpretation of field data, for integration of fieldwork results into comparative regional perspectives, and for preparation of reports. Tria's advanced academic training and more than sixteen years of professional archaeological experience has included rigorous training and application of anthropological and archaeological theory and methods, and in recording, collecting, handling, analyzing, evaluating, and reporting cultural property data, relative to the type and scope of work proposed.

Tria has been an archaeological project manager and principal investigator for over nine years, leading and managing several complex compliance projects throughout the State of California and in Southern Nevada, which have involved each step of cultural resource compliance and management. Prior to this, she spent six years as a field technician and crew chief on projects throughout California and the Southeastern United States. Her experience includes conducting background research, field survey, resource testing and formal NRHP/CRHR evaluation, data recovery plan development and implementation. She has prepared hundreds of technical reports for all of the above to state and federal standards, including following BLM standards for GIS spatial data management and technical reporting – ranging from simple clearance forms, to letter reports, to extensive data recovery reports. She was the lead preparer of the Fort Irwin Integrated Cultural Resource Management Plan (2009-2013) and has also prepared several cultural resource management plans for state regulated projects. She has overseen and conducted archaeological monitoring and management of unanticipated discovery of resources, including Native American human remains on federal lands (and repatriation of the remains), and reported the results and outcomes of cultural resource monitoring efforts in lengthy technical reports. Finally, Tria regularly provides third party and QA/QC review of cultural resource technical documents, due to her keen understanding of state and federal regulations and laws governing the management of cultural resources throughout the state of California.

EDUCATION

2014 Graduate Certificate in Environmental Management of Military Lands, Colorado State University
2010 Professional Certification in CEQA/NEPA, ICF International Corporation
2009 M.A. in Anthropology, University of Florida Gainesville, Florida
Professional Certification in GIS
2006 B.A. in Anthropology, Magna Cum Laude, University of California, Los Angeles, California

AFFILIATIONS/CERTIFICATIONS/TRAINING

- Society for Historical Archaeology (SHA)
- Society for California Archaeology (SCA)

UTILITY SECTOR EXPERIENCE

SCE Transmission Line Rating and Remediation Project (TLRR) – Control Silver Peak 66kV Subtransmission, Kern and Los Angeles Counties, California. Cultural Resource Inventory Assessment (October 2016- present). Ms. Belcourt provides project management and leadership for this SCE project, as the Principal Investigator for Archaeology, under contract to Arcadis (2016-2018) and Environmental Intelligence (2018-present). MCC is tasked with all aspects of cultural resources assessments including records searches, surveys, maintaining and generating GIS data according to SCE Schema, obtaining federal and state permits for cultural resources studies, and technical reporting.

SCE Transmission Line Rating and Remediation Project (TLRR) - Kern River 66kV, Kern and Los Angeles Counties, California. Cultural Resource Inventory Assessment (October 2016- present). Ms. Belcourt provides project management and leadership for this SCE project, as the Principal Investigator for Archaeology, under contract to Arcadis (2016-present). MCC is tasked with all aspects of cultural resources assessments including records searches, surveys, maintaining and generating GIS data according to SCE Schema, obtaining federal and state permits for cultural resources studies, and technical reporting.

SCE Transmission Line Rating and Remediation Project (TLRR) – Eldorado Pisgah Lugo 220kV Subtransmission, Kern and Los Angeles Counties, California. Cultural Resource Inventory Assessment (October 2016- present). Ms. Belcourt provides project management and leadership for this SCE project, as the Principal Investigator for Archaeology, under contract to Arcadis (2016-present). MCC is tasked with all aspects of cultural resources assessments including records searches, surveys, maintaining and generating GIS data according to SCE Schema, obtaining federal and state permits for cultural resources studies, and technical reporting.

SCE Transmission Line Rating and Remediation Project (TLRR) – Control Haiwee 115kV Subtransmission, Kern and Los Angeles Counties, California. Cultural Resource Inventory Assessment (April 2017- present). Ms. Belcourt provides project management and leadership for this SCE project, as the Principal Investigator for Archaeology, under contract to Arcadis (2016-2018) and to SWCA (2018-present). MCC is tasked with all aspects of cultural resources assessments including records searches, surveys, maintaining and generating GIS data according to SCE Schema, obtaining federal and state permits for cultural resources studies, and technical reporting.

SCE Transmission Line Rating and Remediation Project (TLRR) – Ivanpah Coolwater Kramer Inyokern 115kV Subtransmission, Kern and Los Angeles Counties, California. Cultural Resource Inventory Assessment (April 2017- present). Ms. Belcourt provides project management and leadership for this SCE project, as the Principal Investigator for Archaeology, under contract to Arcadis (2016-2018) and to SWCA (2018-present). MCC is tasked with all aspects of cultural resources assessments including records searches, surveys, maintaining and generating GIS data according to SCE Schema, obtaining federal and state permits for cultural resources studies, and technical reporting.

Pacific Gas and Electric Company (PG&E), NERC Alert Program – Archaeological Principal Investigator; throughout California; 2015 – Present. Belcourt provides oversight of all task orders and project management of on-call task orders involving cultural resource desktop reviews, records searches and field reviews for the PG&E NERC Alert program: tracking and reporting efforts, maintaining project schedule, and timely submittal of data to prime contractor (Arcadis).

Southern California Edison (SCE), On-Call and Emergency Projects – Archaeological Principal Investigator and Project Manager; throughout California, 2013 – Present. Belcourt has provided oversight of over 200 task orders for on-call and emergency projects to date, involving cultural resource desktop reviews, records searches and field reviews for deteriorated poles, system upgrades, initial studies to support capital projects, and monitoring support to replace facilities due to natural disasters. This high-volume program includes preparing and submitting budgets, managing support staff and overseeing work, tracking and reporting efforts, maintaining project schedules, and preparing technical reports and GIS datasets for submittal to prime contractor (SWCA).

Southern California Edison (SCE), Large Capital Projects – Archaeological Principal Investigator and Project Manager; throughout California, 2014 – Present. Belcourt has provided oversight of over 20 task orders for major projects to date, involving cultural resources for this contract with SWCA, Environmental Intelligence and ICF. This includes preparing and submitting budgets, managing support staff and overseeing work, tracking and reporting efforts, maintaining project schedule, and preparing technical reports and GIS datasets for submittal to prime contractors.

Southern California Edison (SCE), Small Capital Projects – Archaeological Principal Investigator and Project Manager; throughout California, 2014 – Present. Belcourt provides oversight of all task orders and project management of task orders involving cultural resources for this contract with Environmental Intelligence and ICF. This includes preparing and submitting budgets, managing support staff and overseeing work, tracking and reporting efforts, maintaining project schedule, and preparing technical reports and GIS datasets for submittal to prime contractors.

Southern California Edison (SCE), Coolwater Lugo Transmission Project —- Environmental Project Manager; San Bernardino County, California; 2014 – 2015. Belcourt provided oversight of all project management on CWLTP: tracking and reporting efforts of subconsultants (Pacific Legacy, Paleo Solutions and Urbana Preservation and Planning), maintaining project schedule and timely submittal of project deliverables to agency reviewers. Served as communication facilitator between SCE and BLM/CPUC agency reviewers. Provided final review of the Cultural Resources Technical Report (which included over 1,000 cultural resources) and the Historic Built Environment Report - prior to draft submittal to BLM.

SCE, Eldorado Ivanpah Transmission Project – In-house Consultant for Archaeology; San Bernardino County, California and Clark County, Nevada; 2010-2012. Belcourt provided complex regulatory oversight and project management regarding cultural and paleontological resource management. She developed compliance training to inform and guide construction activities and major capital project teams. She also developed and implemented internal cultural resource management programs based on project migitation measures. Tria coordinated with BLM archaeologists on discovery and management of previously unknown cultural resources identified during construction. She provided environmental analyses, technical reports, and clearance documentation for over 20 project modifications during construction without delay to project. Developed the cultural resources geodatabase for EITP and coordinated regularly with the project GIS team.

Silver State South Substation, In-house Consultant for Archaeology; Southern California Edison, Clark County, NV; 2010-2012. Provided regulatory oversight and project management regarding cultural and paleontological resource management during project licensing and scoping. Identified potential impacts to cultural and paleontological resources, developing appropriate mitigation measures in preparation for and projecting alternative conclusions.

Tehachapi Renewable Transmission Project, Multiple Roles; Southern California Edison, Segments 1-3 and Segments 6-11, Kern, Los Angeles and Orange County, CA; 2009 - Present. Tria provided service to this project over seven years in multiple roles – archaeological field monitor, project coordinator, in-house consultant at SCE, and principal investigator. She provided regulatory oversight and project management regarding cultural and paleontological resource management for all segments of TRTP. Developed and implemented internal cultural resource management programs based on the mitigation measures in the Final Environmental Impact Report/Environmental Impact Statement (FEIR/EIS) for TRTP, and for the existing Special Use Permits and Record of Decision for TRTP, issued by the Angeles National Forest (ANF). Oversaw preparation of the Historic Properties Treatment Plans, fieldwork and technical report preparation for two large-scale Phase III Data Recovery excavations on Angeles National Forest. Coordinated with ANF archaeologists on discovery and management of previously unknown cultural resources identified during construction. Provided cultural resources analyses and clearance documentation, including technical reports, for over 100 project modifications during construction without delay to project. Finally, Tria was responsible for maintaining the geospatial data for the project within the SCE cultural resources geodatabase TRTP and coordinated with the project GIS team.

Desert Tortoise Habitat Conservation Plan Area, Principal Investigator; Cadiz Inc., San Bernardino County, CA; 2013. Oversaw records search to identify the extent of previous cultural resources surveys and all previously recorded prehistoric and historic resources within the 7,500-acre Desert Tortoise Habitat Conservation Plan (HCP) area (Project Area) located on lands administered by the BLM Needles Field Office in unincorporated San Bernardino County, California.

SOLAR SECTOR EXPERIENCE

Ecoplexus California Correctional Institution Solar Project, Tehachapi, Kern County, California. Cultural and Paleontological Assessments (April 2018 – present). Belcourt provided oversight and project management for this project, involving cultural and paleontological resource desktop reviews, Native American outreach, coordinated AB52 consultation between the State of California and local tribes, arranged for the records searches and coordinated field surveys. She also oversaw production of the final technical report, project schedule, and timely submittal of data to prime contractor.

Ecoplexus Ironwood State Prison and Chuckawalla Valley State Prison Solar Project, City of Blythe, Riverside County. Cultural and Paleontological Assessments (June 2018 – present). Belcourt provided oversight and project management for this project, involving cultural and paleontological resource desktop reviews, Native American outreach, coordinated AB52 consultation between the State of California and local tribes, arranged for the records searches and coordinated field surveys. She also oversaw production of the final technical report, project schedule, and timely submittal of data to prime contractor.

Ecoplexus California State Prison Centinela Solar Project, City of Imperial, Imperial County, California. Cultural and Paleontological Assessments (August 2017 – April 2018). Belcourt provided oversight and project management for this project, involving cultural and paleontological resource desktop reviews, Native American outreach, coordinated AB52 consultation between the State of California and local tribes, arranged for the records searches and coordinated field surveys. She also oversaw production of the final technical report, project schedule, and timely submittal of data to prime contractor.

Ecoplexus Calipatiria State Prison Solar Project, City of Calipatria, Imperial County, California. Cultural and Paleontological Assessments (August 2017 – April 2018). Belcourt provided oversight and project management for this project, involving cultural and paleontological resource desktop reviews, Native American outreach, coordinated AB52 consultation between the State of California and local tribes, arranged for the records searches and coordinated field surveys. She also oversaw production of the final technical report, project schedule, and timely submittal of data to prime contractor.

Ecoplexus RJ Donovan State Prison Solar Project, San Diego, San Diego County, California. Cultural and Paleontological Assessments (March 2018 – April 2018). Belcourt provided oversight and project management for this project, involving cultural and paleontological resource desktop reviews, Native American outreach, arranged for the records searches and coordinated field surveys. She also oversaw production of the final technical report, project schedule, and timely submittal of data to prime contractor.

Ecoplexus Salinas Valley State Prison Solar Project, City of Soledad, Monterey County, California. Cultural and Paleontological Assessments (March 2018 – April 2018). Belcourt provided oversight and project management for this project, involving cultural and paleontological resource desktop reviews, Native American outreach, arranged for the records searches and coordinated field surveys. She also oversaw production of the final technical report, project schedule, and timely submittal of data to prime contractor.

Ecoplexus Correctional Training Facility Soledad Project, City of Soledad, Monterey County, California. Cultural and Paleontological Assessments (March 2018 – April 2018). Belcourt provided oversight and project management for this project, involving cultural and paleontological resource desktop reviews, Native American outreach, arranged for the records searches and coordinated field surveys. She also oversaw production of the final technical report, project schedule, and timely submittal of data to prime contractor.

SDG&E Cameron Substation Photovoltaic Project, San Diego, San Diego County, California. Cultural and Paleontological Assessments (September 2017 – present). Belcourt provided oversight and project management for this project, involving cultural and paleontological resource desktop reviews, Native American outreach, facilitated Native American consultation between County of San Diego and local tribes, arranged for the records searches and coordinated field surveys. She also oversaw production of the final technical report, project schedule, and timely submittal of data to prime contractor.

Forefront Power Beard Solar Project, Dustin Acres, Kern County, California. Cultural and Paleontological Assessments (March 2018- April 2018). Belcourt provided oversight and project management for this project, involving cultural and paleontological resource desktop reviews, Native American outreach, arranged for the records searches and coordinated field surveys. She also oversaw production of the final technical report, project schedule, and timely submittal of data to prime contractor.

Forefront Power Broadman Solar Project, Livermore, Alameda County, California. Cultural and Paleontological Assessments (February 2018- March 2018). Belcourt provided oversight and project management for this project, involving cultural and paleontological resource desktop reviews, Native American outreach, arranged for the records searches and coordinated field surveys. She also oversaw production of the final technical report, project schedule, and timely submittal of data to prime contractor.

Forefront Power Nachtigall Solar Project, Wasco, Kern County, California. Cultural and Paleontological Assessments (March 2018-April 2018). Belcourt provided oversight and project management for this project, involving cultural and paleontological resource desktop reviews, Native American outreach, arranged for the records searches and coordinated field surveys. She also oversaw production of the final technical report, project schedule, and timely submittal of data to prime contractor.

Forefront Power Rocha Solar Project, Fuller Acres, Kern County, California. Cultural and Paleontological Assessments (March 2018-April 2018). Belcourt provided oversight and project management for this project, involving cultural and paleontological resource desktop reviews, Native American outreach, arranged for the records searches and coordinated field surveys. She also oversaw production of the final technical report, project schedule, and timely submittal of data to prime contractor.

Forefront Power Shafter Solar Project, City of Shafter, Kern County, California. Cultural and Paleontological Assessments (March 2018-present). Belcourt provided oversight and project management for this project, involving cultural and paleontological resource desktop reviews, Native American outreach, arranged for the records searches and coordinated field surveys. She also oversaw production of the final technical report, project schedule, and timely submittal of data to prime contractor.

Forefront Power Anderson Twisselman Solar Project, Lost Hills, Kern County, California. California. Cultural and Paleontological Assessments (March 2018-April 2018). Belcourt provided oversight and project management for this project, involving cultural and paleontological resource desktop reviews, Native American outreach, arranged for the records searches and coordinated field surveys. She also oversaw production of the final technical report, project schedule, and timely submittal of data to prime contractor.

Forefront Power Weedpatch Solar Project, Kern County, California. Cultural and Paleontological Assessments (March 2018-present). Belcourt provided oversight and project management for this project, involving cultural and paleontological resource desktop reviews, Native American outreach, arranged for the records searches and coordinated field surveys. She also oversaw production of the final technical report, project schedule, and timely submittal of data to prime contractor.

Jennifer Kelly, M.Sc.
Paleontological Principal Investigator and Project Manager

Jennifer Kelly has experience in all aspects of paleontology. She has extensive experience with monitoring, salvage, fieldwork, project management, and report writing, as well as volunteer experience from the La Brea Tar Pits/Page Museum and the Cooper Center of Orange County (Paleontology department) and field experience as a Staff Geologist for Leighton Geotechnical. Her expertise is Geology, and she has her M.S. in Geological Sciences, emphasis in Geochemistry.

Jennifer has taught lab courses in paleontology and general geology, and also assisted with field mapping classes. Jennifer is HAZWOPER 40-hour certified and a registered Orange County paleontologist. She has authored and co-authored more than 100 paleontological compliance documents, including PRMPs, EIR, EIS, PEA, treatment plans, final monitoring reports, survey reports, and other compliance documents, in compliance with NEPA, CEQA, Caltrans and city and county laws, ordinances, regulations, and statutes.

Education

2012 M.Sc. in Geology, California State University, Long Beach, California
2005 B.S., Geology (preliminary work for entry to M.S. Geology Program), California State University, Long Beach
2004 B.A., Theater Arts, California State University, Long Beach

Certifications and Training

- 40 Hour Certification for HAZWOPER training under 29 CFR 1910. 120, CA (2013 – 2014)
- Orange County Certified Paleontologist
- San Diego County Certified Paleontologist

Recent Professional Experience in California

Paleontological Principal Investigator and Project Manager, Harvill Industrial Project, City of Jurupa Valley, Riverside County, California (2017-present). Ms. Kelly coordinated all surveying, preparation of compliance and environmental documentation for this project, and prepared the Paleontological Resources Impact Mitigation Plan (PRIMP). Kelly also oversees the paleontological monitoring program for this Project. This project is ongoing and is scheduled to be complete in 2020.

Paleontological Principal Investigator and Project Manager, Rider Commerce Center Project, Unincorporated Riverside County, California (2018-present). Ms. Kelly coordinated all surveying, preparation of compliance and environmental documentation for this project, and prepared the Paleontological Resources Impact Mitigation Plan (PRIMP). Kelly also oversees the paleontological monitoring program for this Project. This project is ongoing and is scheduled to be complete in 2020.

Paleontological Principal Investigator and Project Manager, Ontario Ranch Logistic Center, City of Ontario, County of San Bernardino, California (2018-present) Ms. Kelly coordinated all surveying, preparation of compliance and environmental documentation for this project, and authored the PRIMP for this project. Kelly also oversees the paleontological monitoring program for this Project. This project is ongoing and is scheduled to be complete in 2021.

Paleontological Principal Investigator and Project Manager, Saddleback College, City of Mission Viejo, Orange County (2018-present) Ms. Kelly coordinated all surveying, preparation of compliance and environmental documentation for this project, prepared the Paleontological Resources Impact Mitigation Plan (PRIMP), and

oversaw the paleontological monitoring program detailed in the PRIMP. Kelly is currently co-authoring the final paleontological mitigation report This project is in the final stages and is scheduled to be completed 2020.

Private Development Sector Experience

Paleontological Principal Investigator and Project Manager, Proposed Alta Vista Specific Plan Project, SC Development, City of Placentia, Orange County (2017). Ms. Kelly coordinated all surveying, preparation of compliance and environmental documentation relating to Paleontological resources for this project**.**

Paleontological Principal Investigator and Project Manager, Magnolia Tank Farm Project, SLF-HB Magnolia, LLC, City of Huntington Beach, Orange County (2017). Ms. Kelly coordinated all surveying, preparation of compliance and environmental documentation relating to Paleontological resources for this project**.**

Paleontological Principal Investigator and Project Manager, Santa Fe Springs Apartment Project, Clearwater Communities, City of Whittier, Los Angeles County (2017). Ms. Kelly coordinated all surveying, preparation of compliance and environmental documentation relating to Paleontological resources for this project**.**

Paleontological Principal Investigator and Project Manager, Rider Business Center Project, Capstone Advisor, Unincorporated Riverside County (2017). Ms. Kelly coordinated all surveying, preparation of compliance and environmental documentation relating to Paleontological resources for this project**.**

Paleontological Principal Investigator and Project Manager, Los Olivos French Valley Project, Newland Homes LLC, Unincorporated Riverside County (2017). Ms. Kelly coordinated all surveying, preparation of compliance and environmental documentation relating to Paleontological resources for this project**.**

Paleontological Principal Investigator and Project Manager, Veteran's Village Community Development Project, UHC LLC, Cathedral City, Riverside County (2017). Ms. Kelly coordinated all surveying, preparation of compliance and environmental documentation relating to Paleontological resources for this project**.**

Paleontological Principal Investigator and Project Manager, Colony Commerce East Project, CapRock Partners, City of Ontario, San Bernardino County (2016). Ms. Kelly coordinated all surveying, preparation of compliance and environmental documentation relating to Paleontological resources for this project**.**

Paleontological Principal Investigator and Project Manager, Jurupa Valley Medical Clinic Project, Boureston Company, City of Jurupa Valley, Riverside County (2016). Ms. Kelly coordinated all surveying, preparation of compliance and environmental documentation relating to Paleontological resources for this project**.**

Renewable Energy Sector Experience

Paleontological Project Manager, Tehachapi Renewable Transmission Project (TRTP), Southern California Edison (SCE), Kern County, Los Angeles County, San Bernardino County (2009-2015). Ms. Kelly conducted and led surveys along this project's right of way. She was also in charge of scheduling monitoring crews during grading in areas of paleontological sensitivity, managing and reviewing log sheets, and tracking data that is incorporated to final reports. Ms. Kelly played a valuable role with scheduling for the project's needs. She monitored, surveyed, and reported on all paleontological facets of this project as the Lead Paleontological Monitor for segment 3B, which was located near Rosamond, and for segments 4-11 which extended into Los Angeles and San Bernardino Counties. She authored more than 10 of the compliance reports for this project. She also performed monitoring on every segment of this Project.

Paleontological Project Manager, West of Devers Transmission Line Project, SCE, Riverside County, California (2009-2016). Ms. Kelly provided all project management and paleontological related services. This included proper BLM authorization and permitting to conduct surveying and a research design for field reconnaissance related to PEA, EIS/EIR documentation for the proposed transmission line. She assisted with managing documentation with laws relating to paleontological resources, among which are CEQA and NEPA compliance.

Appendix B
Cultural Resources
Record Search Results

This report contains sensitive and confidential information that is not available for public distribution. The sensitive and confidential information has been redacted from this report and is available for review by professional archaeologists and other qualified individuals at the City of Lake Forest Community Development Department.

Appendix C
NAHC and Native American Correspondence

NATIVE AMERICAN HERITAGE COMMISSION

CHAIRPERSON
Laura Miranda
Luiseño

VICE CHAIRPERSON
Reginald Pagaling
Chumash

SECRETARY
Merri Lopez-Keifer
Luiseño

PARLIAMENTARIAN
Russell Attebery
Karuk

COMMISSIONER
Marshall McKay
Wintun

COMMISSIONER
William Mungary
Paiute/White Mountain Apache

COMMISSIONER
Julie Tumamait-Stenslie
Chumash

COMMISSIONER
[**Vacant**]

COMMISSIONER
[**Vacant**]

EXECUTIVE SECRETARY
Christina Snider
Pomo

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

August 5, 2020

Tria Belcourt
Material Culture Consulting, Inc.

Via Email to: tria@materialcultureconsulting.com

Re: EPD Great Scott Project, Orange County

Dear Ms. Belcourt:

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

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

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

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

Sincerely,

Andrew Green

Andrew Green
Cultural Resources Analyst

Attachment

Native American Heritage Commission
Native American Contact List
Orange County
8/5/2020

Gabrieleno Band of Mission Indians - Kizh Nation
Andrew Salas, Chairperson
P.O. Box 393 Gabrieleno
Covina, CA, 91723
Phone: (626) 926 - 4131
admin@gabrielenoindians.org

Gabrieleno/Tongva San Gabriel Band of Mission Indians
Anthony Morales, Chairperson
P.O. Box 693 Gabrieleno
San Gabriel, CA, 91778
Phone: (626) 483 - 3564
Fax: (626) 286-1262
GTTribalcouncil@aol.com

Gabrielino /Tongva Nation
Sandonne Goad, Chairperson
106 1/2 Judge John Aiso St., #231 Gabrielino
Los Angeles, CA, 90012
Phone: (951) 807 - 0479
sgoad@gabrielino-tongva.com

Gabrielino Tongva Indians of California Tribal Council
Robert Dorame, Chairperson
P.O. Box 490 Gabrielino
Bellflower, CA, 90707
Phone: (562) 761 - 6417
Fax: (562) 761-6417
gtongva@gmail.com

Gabrielino-Tongva Tribe
Charles Alvarez,
23454 Vanowen Street Gabrielino
West Hills, CA, 91307
Phone: (310) 403 - 6048
roadkingcharles@aol.com

Juaneno Band of Mission Indians
Sonia Johnston, Chairperson
P.O. Box 25628 Juaneno
Santa Ana, CA, 92799
sonia.johnston@sbcglobal.net

Juaneno Band of Mission Indians Acjachemen Nation - Belardes
Matias Belardes, Chairperson
32161 Avenida Los Amigos Juaneno
San Juan Capisttrano, CA, 92675
Phone: (949) 293 - 8522
kaamalam@gmail.com

Juaneno Band of Mission Indians Acjachemen Nation - Belardes
Joyce Perry, Tribal Manager
4955 Paseo Segovia Juaneno
Irvine, CA, 92603
Phone: (949) 293 - 8522
kaamalam@gmail.com

Juaneno Band of Mission Indians Acjachemen Nation - Romero
Heidi Lucero, Cultural Resources Director
31411-A La Matanza Street Juaneno
San Juan Capistrano, CA, 92675
Phone: (949) 488 - 3484
sos@juaneno.com

Juaneno Band of Mission Indians Acjachemen Nation - Romero
Teresa Romero, Chairperson
31411-A La Matanza Street Juaneno
San Juan Capistrano, CA, 92675
Phone: (949) 488 - 3484
Fax: (949) 488-3294
tromero@juaneno.com

La Jolla Band of Luiseno Indians
Fred Nelson, Chairperson
22000 Highway 76 Luiseno
Pauma Valley, CA, 92061
Phone: (760) 742 - 3771

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 Resource Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources assessment for the proposed EPD Great Scott Project, Orange County.

Native American Heritage Commission
Native American Contact List
Orange County
8/5/2020

Pala Band of Mission Indians
Shasta Gaughen, Tribal Historic Preservation Officer
PMB 50, 35008 Pala Temecula Rd.
Pala, CA, 92059
Phone: (760) 891 - 3515
Fax: (760) 742-3189
sgaughen@palatribe.com
Cupeno
Luiseno

Pauma Band of Luiseno Indians
Temet Aguilar, Chairperson
P.O. Box 369
Pauma Valley, CA, 92061
Phone: (760) 742 - 1289
Fax: (760) 742-3422
bennaecalac@aol.com
Luiseno

San Luis Rey Band of Mission Indians
1889 Sunset Drive
Vista, CA, 92081
Phone: (760) 724 - 8505
Fax: (760) 724-2172
cjmojado@slrmissionindians.org
Luiseno

San Luis Rey Band of Mission Indians
San Luis Rey, Tribal Council
1889 Sunset Drive
Vista, CA, 92081
Phone: (760) 724 - 8505
Fax: (760) 724-2172
cjmojado@slrmissionindians.org
Luiseno

Santa Rosa Band of Cahuilla Indians
Lovina Redner, Tribal Chair
P.O. Box 391820
Anza, CA, 92539
Phone: (951) 659 - 2700
Fax: (951) 659-2228
lsaul@santarosacahuilla-nsn.gov
Cahuilla

Soboba Band of Luiseno Indians
Joseph Ontiveros, Cultural Resource Department
P.O. BOX 487
San Jacinto, CA, 92581
Phone: (951) 663 - 5279
Fax: (951) 654-4198
jontiveros@soboba-nsn.gov
Cahuilla
Luiseno

Soboba Band of Luiseno Indians
Scott Cozart, Chairperson
P. O. Box 487
San Jacinto, CA, 92583
Phone: (951) 654 - 2765
Fax: (951) 654-4198
jontiveros@soboba-nsn.gov
Cahuilla
Luiseno

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 Resource Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources assessment for the proposed EPD Great Scott Project, Orange County.

August 6, 2020

MATERIAL CULTURE
CONSULTING

RE: Proposed Great Scott Project, City of Lake Forest; El Toro USGS Quadrangle, Orange County, California.

Greetings,

Material Culture Consulting, Inc (MCC) is conducting the cultural resources review of the above project to support preparation of the environmental documents. The project proposes the development of a parcel in the City of Lake Forest, CA (see attached map). As part of our background research and forthcoming survey, we would like to invite you to share any knowledge of potential cultural resources within the project area. Please note - this request is **not** part of any formal local, state, or federal consultation process, and all requests for consultation should be directed to the City of Lake Forest as the Lead CEQA Agency.

Our firm contacted the Native American Heritage Commission (NAHC) on August 4, 2020 to request review of the Sacred Lands File and for a list of tribes with traditional lands and/or cultural places within the area. The NAHC responded on August 5, 2020 stating that the Sacred Lands File review resulted in **negative** results and provided your contact information as part of the list. We understand that negative results do not preclude the existence of cultural resources, and that a tribe may be the only source of information regarding the existence of a tribal cultural resource, which is why we are contacting you.

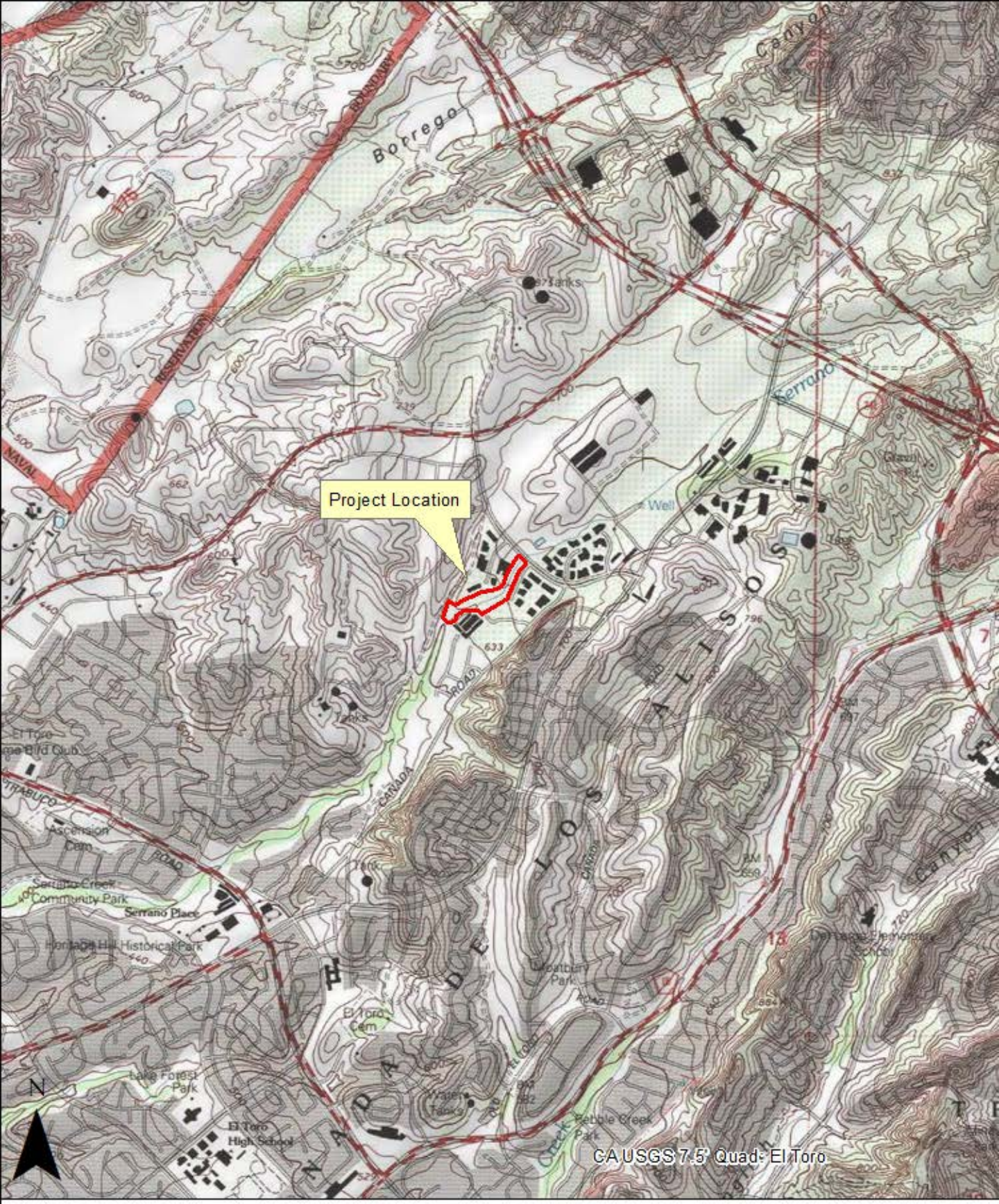
Project Location and Description

The proposed Project Area currently exists as a developed area with a home, barn, and multiple structures associated with various farm animals. It is bounded by commercial development in all cardinal directions. The Project Area is located west of Linear Lane, north of Canada Road, and Is bordered by Serrano Creek to the south and east. The Project consists of remodeling the existing house to an office, removing structures associated with animal keeping, creating gravel parking areas, and clearing some vegetation. The area of potential impact (API) would encompass a total of approximately 6.37 acres. Specifically, the proposed Project is located within Section 11 and 12 of Township 06 South and Range 08 West on the USGS El Toro quadrangle (San Bernardino Base Meridian).

Please respond at your earliest convenience if you wish to share any knowledge of cultural resources within or adjacent to the API. Any information, concerns, or recommendations regarding cultural resources within the API can be shared with me via telephone, email, or via standard mail. Thank you very much for your assistance.

Kindest regards,

Tria Belcourt, M.A., RPA
President and Principal Archaeologist
626-205-8279
tria@materialcultureconsulting.com



Project Area

0 0.25 0.5 1 Miles

0 0.25 0.5 1 Kilometers

1:24,000

MATERIAL CULTURE CONSULTING

Name/Affiliation	Date and Method of 1st Contact	Date of 1st Follow Up Attempt	Date of 2nd Follow-Up Attempt	Results	MCC Response
Andrew Salas, Chairperson Gabrieleno Band of Mission Indians - Kizh Nation P.O. Box 393 Covina, CA, 91723	Letter mailed via USPS on August 6, 2020 [EM]	E-mail sent on August 25, 2020 [EM]	Call placed and voicemail left on September 9, 2020. [EM]	On 8/8, MCC received an email from Brandy Salas requesting the lead agency's contact information.	MCC will include response within report.
Anthony Morales, Chairperson Gabrieleno/Tongva San Gabriel Band of Mission Indians P.O. Box 693 San Gabriel, CA, 91778	Letter mailed via USPS on August 6, 2020 [EM]	E-mail sent on August 25, 2020 [EM]	Call placed on September 9, 2020. [EM]	Mr. Morales stated that due to its location warrants archaeo and Native American monitoring, but would like to be updated with the survey and record search results to provide a positive answer. An update was given on 11/3/20 to Mr. Morales. He stated if arch monitoring is required, he requires a Native American monitor. He would like to be informed as the project continues.	MCC will include response within report.
Sandonne Goad, Chairperson Gabrielino /Tongva Nation 106 1/2 Judge John Aiso St., #231 Los Angeles, CA, 90012	Letter mailed via USPS on August 6, 2020 [EM]	E-mail sent on August 25, 2020 [EM]	Call was placed on September 9, 2020. Mailbox was full. [EM]	n/a	n/a

Robert Dorame, Chairperson **Gabrielino Tongva Indians of California Tribal Council** **P.O. Box 490** **Bellflower, CA, 90707**	Letter mailed via USPS on August 6, 2020 [EM]	E-mail sent on August 25, 2020 [EM]	Call was placed on September 9, 2020. Mailbox was full. [EM]	Mr. Dorame would like to be informed after the survey is completed to give the tribe's response. An update was given on 11/3/20, in the event that cultural resources or human remains are discovered or impacted, the tribe would like to be notify regardless of the coroner's decision. The reasoning is that there has been confusion recently within Orange County when discovering human remains.	MCC will include response within report.
Charles Alvarez **Gabrielino-Tongva Tribe** **23454 Vanowen Street** **West Hills, CA, 91307**	Letter mailed via USPS on August 6, 2020 [EM]	E-mail sent on August 25, 2020 [EM]	Call placed and voicemail left on September 9, 2020 [EM]	n/a	n/a
Sonia Johnston, Chairperson **Juaneno Band of Mission Indians** **P.O. Box 25628 Santa Ana, CA, 92799**	Letter mailed via USPS on August 6, 2020 [EM]	E-mail sent on August 25, 2020 [EM]	E-mail was resent on September 9, 2020. [EM]	n/a	n/a
Matias Belardes, Chairperson **Juaneno Band of Mission Indians** **Acjachemen Nation – Belardes** **32161 Avenida Los Amigos San Juan Capistrano, CA, 92675**	Letter mailed via USPS on August 6, 2020 [EM]	E-mail sent on August 25, 2020 [EM]	Call placed and directed to Joyce Perry. See below.	n/a	n/a

Joyce Perry, Tribal Manager **Juaneno Band of Mission Indians Acjachemen Nation – Belardes** **4955 Paseo Segovia** **Irvine, CA, 92603**	Letter mailed via USPS on August 6, 2020 [EM]	E-mail sent on August 25, 2020 [EM]	Call placed and voicemail left on September 9, 2020. [EM]	n/a	n/a
Heidi Lucero, Cultural Resources Director **Juaneno Band of Mission Indians Acjachemen Nation – Romero** **31411-A La Matanza Street San Juan Capistrano, CA, 92675**	Letter mailed via USPS on August 6, 2020 [EM]	E-mail sent on August 25, 2020 [EM]	Call placed on September 9, 2020. [EM]	n/a	n/a
Teresa Romero, Chairperson **Juaneno Band of Mission Indians Acjachemen Nation – Romero** **31411-A La Matanza Street San Juan Capistrano, CA, 92675**	Letter mailed via USPS on August 6, 2020 [EM]	E-mail sent on August 25, 2020 [EM]	Call was placed and directed to above contact on September 9, 2020. [EM]	n/a	n/a
Fred Nelson, Chairperson **La Jolla Band of Luiseno Indians** **22000 Highway 76** **Pauma Valley, CA, 92061**	Letter mailed via USPS on August 6, 2020 [EM]	Call placed and voicemail left on August 25, 2020 [EM]	Call placed and message left for Cultural Resource Department with secretary Nicole on September 9, 2020. [EM]	n/a	n/a
Shasta Gaughen, Tribal Historic Preservation Officer **Pala Band of Mission Indians** **PMB 50, 35008 Pala Temecula Rd.** **Pala, CA, 9205**	Letter mailed via USPS on August 6, 2020 [EM]	E-mail sent on August 25, 2020 [EM]	Call placed and voicemail left on September 9, 2020. [EM]	n/a	n/a

Temet Aguilar, Chairperson Pauma Band of Luiseno Indians P.O. Box 369 Pauma Valley, CA, 92061	Letter mailed via USPS on August 6, 2020 [EM]	E-mail sent on August 25, 2020 [EM]	Call placed and voicemail left on September 9, 2020.	n/a	n/a
San Luis Rey Band of Mission Indians 1889 Sunset Drive Vista, CA, 92081	Letter mailed via USPS on August 6, 2020 [EM]	E-mail sent on August 25, 2020 [EM]	Call placed and was directed to call Cami at (760)917-1736.	Cami stated the Project Area is out of boundaries and defers to Juaneno Band of Mission Indians Acjachemen Nation – Belardes.	MCC will include response in report.
San Luis Rey, Tribal Council San Luis Rey Band of Mission Indian 1889 Sunset Drive Vista, CA, 92081	Letter mailed via USPS on August 6, 2020 [EM]	E-mail sent on August 25, 2020 [EM]	See above	n/a	n/a
Lovina Redner, Tribal Chair Santa Rosa Band of Cahuilla Indians P.O. Box 391820 Anza, CA, 9253	Letter mailed via USPS on August 6, 2020 [EM]	E-mail sent on August 25, 2020 [EM]	Call placed and directed to send email. Email was sent to Vanessa Minott on September 9, 2020	n/a	n/a
Joseph Ontiveros, Cultural Resource Department Soboba Band of Luiseno Indians P.O. BOX 487 San Jacinto, CA, 92581	Letter mailed via USPS on August 6, 2020 [EM]	E-mail sent on August 25, 2020 [EM]	Call placed on September 9, 2020.	Mr. Ontiveros deferred the Project to tribes in the area.	MCC will include response in report.
Scott Cozart, Chairperson Soboba Band of Luiseno Indians P. O. Box 487 San Jacinto, CA, 92583	Letter mailed via USPS on August 6, 2020 [EM]	E-mail sent on August 25, 2020 [EM]	See above	n/a	n/a

Appendix D
Paleontological Resources
Records Search Results

Natural History Museum
of Los Angeles County
900 Exposition Boulevard
Los Angeles, CA 90007

tel 213.763.DINO
www.nhm.org

Research & Collections

e-mail: paleorecords@nhm.org

7 August 2020

Material Culture Consulting, Inc.
2701-B North Towne Ave
Pomona, CA 91767

Attn: Erika McMullin; erika@materialcultureconsulting.com

re: Paleontological resources for the Great Scott Project, Orange County, CA

Dear Erika:

I have conducted a thorough search of our paleontology collection records for the locality and specimen data for proposed development at Great Scott Project, Orange County, CA project area as outlined on the portion of the El Toro USGS topographic quadrangle map that you sent to me via e-mail on 4 August 2020. We do not have any fossil localities that lie directly within the proposed project area, but we do have fossil localities nearby from the same sedimentary deposits that occur in the proposed project area, either at the surface or at depth.

The following table shows the closest known localities in the collection of the Natural History Museum of Los Angeles County.

Locality Number	Location	Formation	Taxa	Depth
LACM VP 5500	east of Lake Forest Drive between Vintage Road on the north & Pittsford Drive on the south	Capistrano Formation	Seals (Pinnipedia)	unknown
LACM VP 4666-4668	West of El Toro Road & north of Trabuco Road	Capistrano Formation	Mammals, including eared seals (Otariidae)	22 ft bgs
LACM IP 7706	1 mile W.S.W. of El Toro	Topanga Formation	Invertebrates	unknown
LACM VP 7546-7547	N. side of Blake Parkway, W. of state highway 241	Capistrano Formation	Dolphin (Pontoporiidae), seal (Imagotariinae)	unknown
LACM VP 3491	Cheery Street & El Toro Road	Capistrano Formation	Shark (*Carcharodon, Isurus*; teleost fishes (Teleostei); eared seals (Otariidae); toothed whale (Odontoceti)	unknown

VP, Vertebrate Paleontology; IP, Invertebrate Paleontology; bgs, below ground surface

Excavations into fossil-bearing strata may well encounter significant fossils and should be closely monitored to quickly and professionally collect any specimens without impeding development. Also, sediment samples should be collected and processed to determine the small fossil potential in the proposed project area. Any fossils recovered during mitigation should be deposited in an accredited and permanent scientific institution for the benefit of current and future generations.

This records search covers only the records of the Natural History Museum of Los Angeles County. It is not intended to take the place of a thorough paleontological assessment of the proposed project area covering other institutional records, a literature review, or any potential on-site survey.

Sincerely,



Alyssa Bell, Ph.D.
Natural History Museum of Los Angeles County

enclosure: invoice

JM Research and Consulting

Jennifer Mermilliod, M.A.
4049 Almond Street, Suite 201
Riverside, CA 92501
Phone 951-233-6897
jennifer@jmrc.biz

MEMORANDUM

DATE: April 16, 2021

TO: Jeremy Krout
EPD Solutions, Inc.
2 Park Plaza, Suite 1120
Irvine, CA Orange, CA 92614

FROM: Jennifer Mermilliod, M.A., Principal Historian/Architectural Historian

SUBJECT: Focused Cultural Resources Survey – Historic Resources Assessment for the Great Scott Project, Lake Forest, Orange County, California

Dear Mr. Krout,

JM Research & Consulting (JMRC) completed a focused Cultural Resources Survey – Historic Resources Assessment (HRA) of 20795 & 20865 Canada Road (APN (APN 610-301-07; -20; and -21) in the City of Lake Forest, Orange County for the proposed Great Scott Project, which proposes to convert the approximately 6.37-acre subject property into an office, parking, and wood chip drying area.

The survey was requested by EPD Solutions based on the results of a Phase I-level Cultural Resources study, including archaeological investigation, completed by Material Culture Consultants in September 2020 (MCC 2020), which identified two single-family residences, barn, and ancillary structures on the project site, some of which would be demolished under the proposed project. Therefore, this HRA acts as a companion study to the MCC 2020 report to complete the Cultural Resources investigation as part of the environmental review process in compliance with CEQA (PRC §21000, et seq.) to evaluate the property for significance and eligibility for historic designation and to analyze potential impacts of the proposed project.

Jennifer Mermilliod, M.A., Principal Historian/Architectural Historian, JMRC, who exceeds the Secretary of the Interior's Professional Qualifications Standards, acted as Principal Historic Consultant and both managed and completed the study, which included consultation, coordination, and compliance applicable and relevant to cultural resources planning (see resume, Attachment B). The intensive-level survey was conducted in April 2021 and included field survey and historic and building specific research to supplement the work performed by MCC in accordance with CEQA Guidelines. Research and review of source material included previous cultural resources studies

and reports, Orange County property and assessment records, city directories, historic newspapers and secondary source accounts, and historic aerial photographs.

Once part of the Rancho Cañada de Los Alisos, the 10,668-acre Mexican land grant from Governor Juan Bautista Alvarado to Jose Antonio Fernando Serrano was purchased by Bostonian Dwight Whiting in 1884. Developed as Aliso City, Whiting subdivided the level portions, introduced the railroad, and planted olive trees, grape vineyards, and added approximately 400 acres of eucalyptus trees, some of which may be extant to the area east of the residence at 20795 Canada Road.

Fieldwork and additional historic and building specific archival research under the current HRA revealed that the property was developed from Lot F of Tract 695 as the 44.13-acre Osterman Ranch beginning in 1929. Purchased from The Whiting Company in 1928, Valencia orange trees were planted in 1929, and the easterly residence addressed as 20795 Canada Road was constructed in time for the 1930 assessment. The westerly residence addressed as 20865 Canada Road was added to the property in 1947-1953, and additional ancillary structures were added to the property over time, and both residences are severely altered. A single mature orange tree and three mature avocado trees remain just east of the westerly residence, a wind machine (1953) and early well and plant are not apparent on the site, and the former grove was removed for commercial/industrial development in the 1980s.

Bennie Willis Osterman was one of a large clan of Ostermans in the area and one of several sons of John Osterman, one of the best-known early ranchers in Orange County with a ranch in Tustin and former president of the Orange County Farm Bureau. As documented in historic newspapers, Bennie's Osterman Ranch was established prior to 1928 and this purchase of additional acreage along the Serrano Creek. Accounts describe a large estate with reservoir used partly as a swimming pool (by 1935), badminton court, horseback riding, and other entertainments in the El Toro foothills where Bennie resided with his wife, Cynthia, and two daughters and hosted many social gatherings. Osterman was active in the El Toro Farm Center, conducting research in pest control for orange and walnut trees, and in 1931 he was one of several incorporators of the Pacific Coast Bean Growers Association. Historic accounts do not document the relocation of the Ostermans from their earlier ranch to this property, or anywhere on the 44 acres, which indicates it may have been occupied by a manager for a time; however, it is clear that Mrs. Osterman was living in the easterly residence (20795) upon her death in 1965.

The Osterman Ranch has been extensively altered, and its setting is significantly compromised by reduction of the property from approximately 44.13 acres to 6.37 acres, the removal of the grove, and the modern development of its immediately adjacent former acreage. Both single-family residences have been severely altered with original architectural features enveloped by later alterations and additions. As a secondary structure, the large barn, which is in poor condition but has suffered less alteration, is unable to sufficiently convey its association apart from the context of the reduced and compromised property. Although owned, and likely occupied, by Bennie and Cynthia Osterman, who were engaged in early 20th century agriculture in the area as well as the social and cultural life of the small town, the reduced and compromised property is not strongly associated with events that have made a significant contribution to the broad patterns of our national or state history or with significant persons in our past (NR/CR Criteria A,B/1,2); does not embody distinctive characteristics of a type, period, or represent the work of a master or possess high artistic value (NR/CR C/3); and has not yielded, or is likely to yield, further information important in history or prehistory (NR/CR Criteria D/4). The ranch property does not appear to be eligible for listing in the National Register of Historic Places (NR) or California Register of Historical Resources (CR) at any level, and the City of Lake Forest does not have a local preservation ordinance with criteria for designation or maintain a local inventory. Therefore, the Osterman Ranch is assigned a California Historic Resources (CHR) code of ***6Z – Found ineligible***

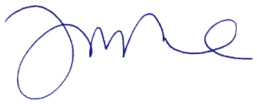
for NR, CR, or Local designation through survey evaluation. The property was fully documented on California Department of Parks and Recreation DPR forms (attached). The results of this focused study indicate that no further historic investigation is recommended.

The proposed Great Scott Project includes the demolition of the easterly residence at 20795 Canada Road and conversion of the westerly residence at 20865 Canada Road to an office. The office conversion includes the demolition of the garage and swimming pool as well as interior tenant improvements. Proposed site improvements include removing the orange and avocado trees for parking, removing animal structures, improving areas for wood chip drying flats, providing one-way vehicular access to the property from Linear Lane, and replacing eucalyptus trees in the eastern point of the property with Virginia Live Oak.

As the remains of the Osterman Ranch have been found ineligible for designation, the property is not considered a historic resource under CEQA, and no mitigation measures are recommended. The cluster of mature eucalyptus trees found to the east of the residence at 20795 Canada Road may be some of the 400 acres planted to eucalyptus by The Whiting Company in the late-1890s. It is recommended that retention of these trees be considered in the planning process; however, if removal of the eucalyptus trees does occur, this would not be considered a CEQA impact and no mitigation would be required.

Please contact me should you need any clarification or further assistance.

Regards,



Jennifer Mermilliod, Principal, JMRC

Attachment A

DPR Forms

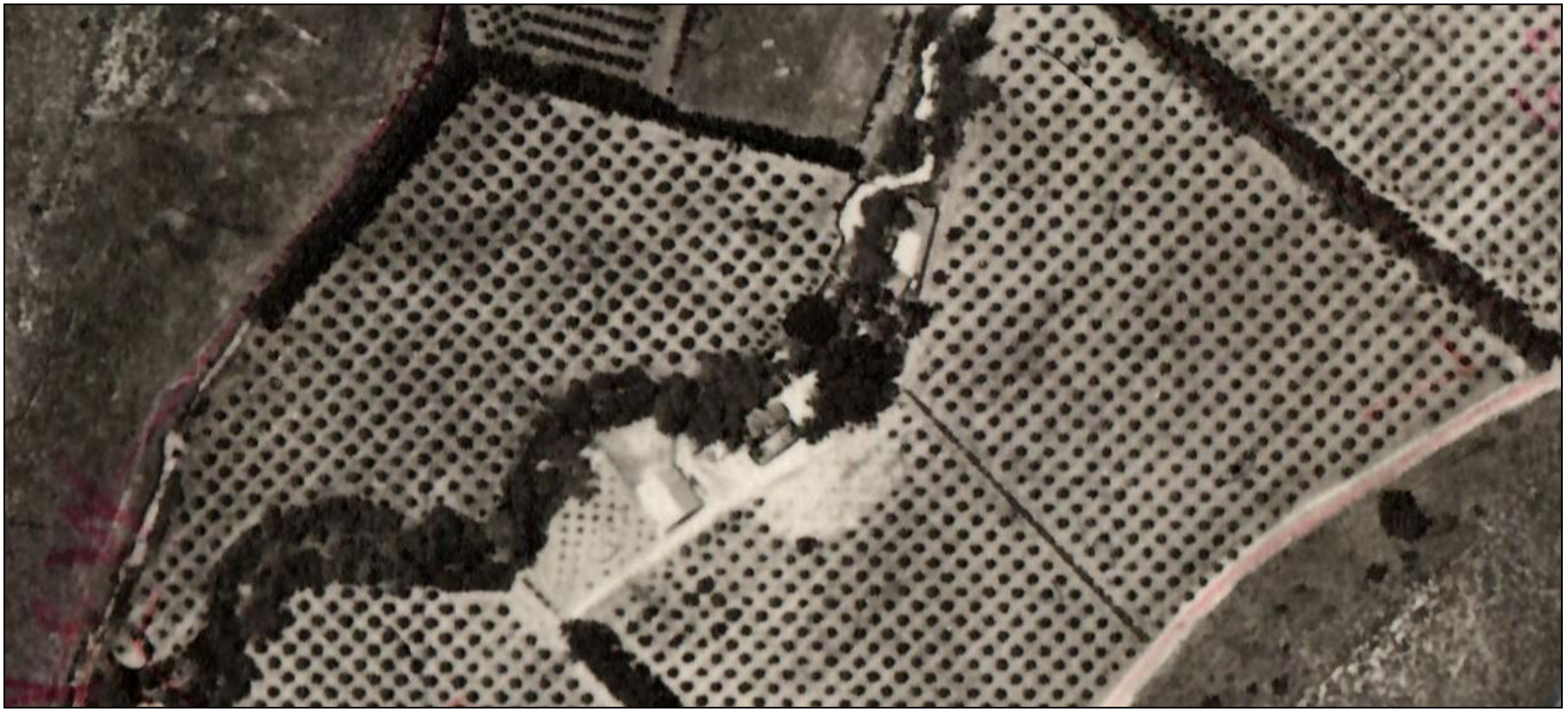
This report contains sensitive and confidential information that is not available for public distribution. The sensitive and confidential information has been redacted from this report and is available for review by professional archaeologists and other qualified individuals at the City of Lake Forest Community Development Department.

Attachment B

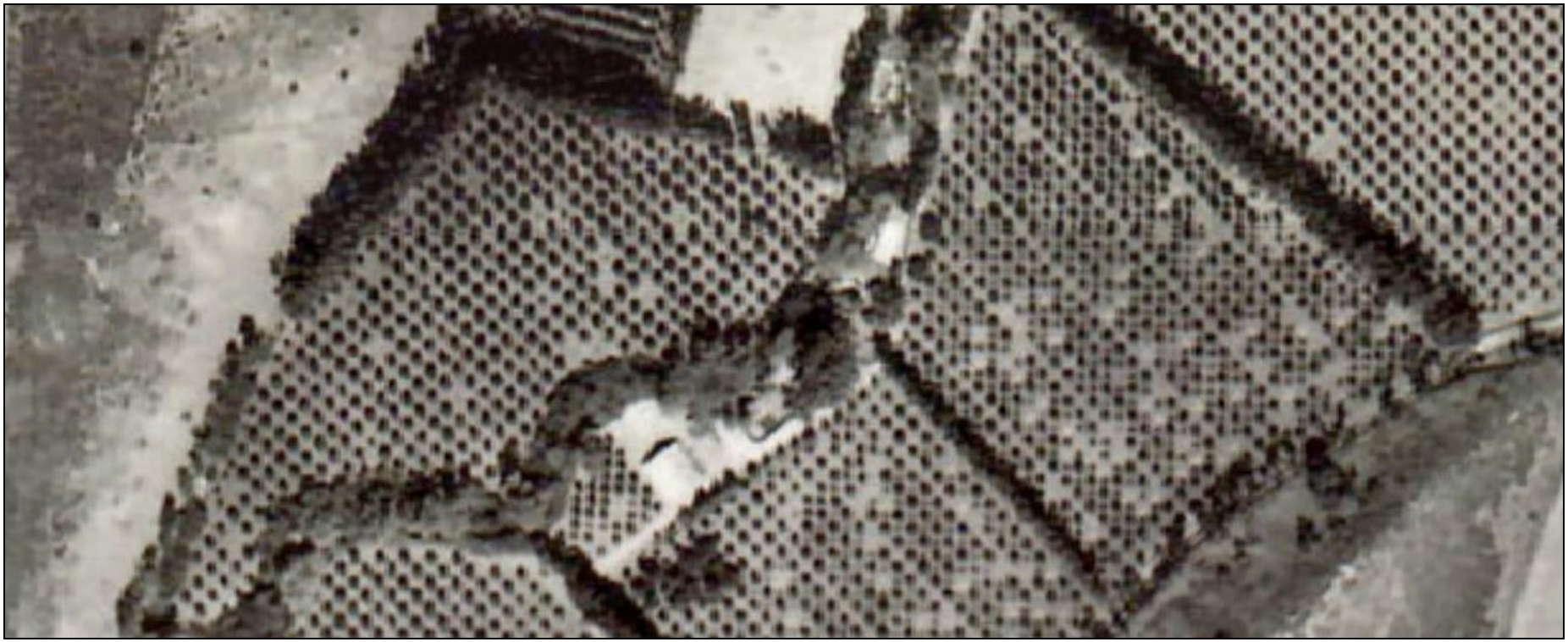
Historic Aerials



Historic Aerial 1931



Historic Aerial 1938



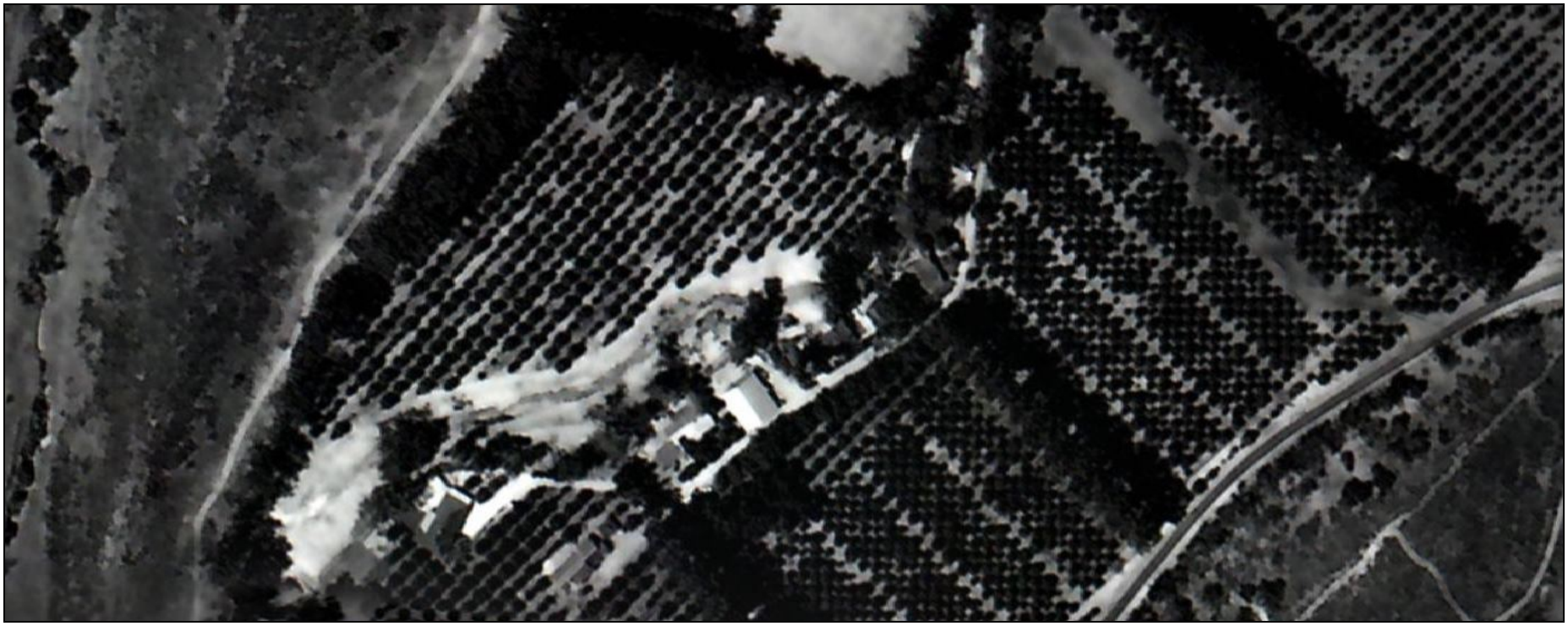
Historic Aerial 1947



Historic Aerial 1953



Historic Aerial 1960



Historic Aerial 1970

Attachment C

Professional Resume



Jennifer Mermilliod, M.A.

JM Research & Consulting

4049 Almond Street, Suite 201
Riverside, CA 92501
951-233-6897
jennifer@jmrc.biz

Statement of Qualifications & Expertise

Jennifer Mermilliod, M.A., Principal Historian/Architectural Historian exceeds the Secretary of the Interior's Professional Qualifications Standards for History and Architectural History.

Project Design, Entitlement & Consultation
Regulatory Compliance – Section 106 & CEQA
Survey, Evaluation & Context Development
Design Review, Case Planning, & Plan Check
Historic Preservation Planning, Policy & Programs
Cultural Resources Treatment & Management
National Register, California Register, & Local Registration
Presentation, Public Relations, & Outreach

Education

UC, Riverside, M.A., History, specialization in Historic Preservation, 2001
UC, Riverside, B.A., History, 2000

Professional Experience

Cultural Resources/Historic Consultant, JM Research & Consulting, since 2001
Reviewing Official under SHPO MOU, March Joint Powers Authority, since 2012
Contract Historic Preservation Senior Planner, City of Riverside, since 2016
Historic Consultant and On-film Historian, HGTV & DIY Network, Restored Show, Seasons 1-6, since 2016

Selected Projects

Preservation Planning, Policy & Programs

Determination of Eligibility, 550 E. Chapman Avenue, Orange, 2021
Mission Heritage Plaza Substantial Compliance Analysis, Wakeland Housing & Development, Riverside, 2020
National Register Nomination: Evergreen Cemetery, Riverside, 2020-2021
First American Title Company, 4th & Main Apartment Project, City of Santa Ana, 2020-2021
National Register Nomination: Bumann Ranch, Encinitas, 2020
San Jacinto General Plan Update, City of San Jacinto, 2019
Landmark Nomination: Bigelow's Bungalow, Riverside, 2018
Historic Interpretive Entry Design & Plaque: Marywood Retreat Center, Orange, 2017
San Jacinto Downtown Specific Plan, City of San Jacinto, 2017
National Register Nomination: Jefferson Elementary School, Corona, 2017
Citywide Streetlight LED Conversion Project, City of Riverside, 2017
City of Riverside North Park Pergola Collapse – Salvage & Documentation Program, City of Riverside, 2017
Landmark Plaque: The Patsy O'Toole House, Riverside, 2016
Landmark Plaque: The Nielson Pool House, Riverside, 2016
Landmark Nomination and Plaque: Camp Anza Officers Club, Riverside, 2016
History Room Design & Interpretive Display: Camp Anza Officers Club, Riverside, 2016
City of Redlands Certified Local Government Program Development, 2015
Chicago/Linden Strategic Plan, City of Riverside, 2013
National Register Nomination: Huntington Beach Public Library on Triangle Park, Huntington Beach, 2013
California Baptist University Specific Plan, Riverside, 2012
Landmark Nomination and Plaque: The Walter C. Banks Residence, Riverside, 2012
Historic District Nomination: Segment of State Route 18, Corona, 2012
Landmark Nomination and Plaque: The A.C.E. Hawthorne House and Tree, Riverside, 2012
National Register Nomination: Grand Boulevard, Corona, 2011
California Register Nomination: The Jackson Building, Riverside, 2009
Landmark Nomination and Plaque: The Jackson Building, Riverside, 2008
California Point of Historical Resources Nomination: Camarillo Ranch House, Camarillo, 2005
National Register Multiple Property Nomination: Architecture of the Arts and Crafts Movement, Pasadena, 2004
Structure of Merit Nomination: House at 3855-59 11th Street, Riverside, 2003
National Register Nomination: Camarillo Ranch House, Camarillo, 2003

CEQA Compliance
VitaPakt, Trumark Homes, Covina, 2021
Covina Bowl, Covina, 2020
La Atalaya, Altura Credit Union Member House, Riverside, 2019
Entrada, Wakeland Housing & Development, Riverside, 2019
Main Library, City of Riverside, 2018
Redlands YMCA Properties, Redlands, 2017
Marywood Retreat Center, Orange, 2013-2017
Mission Inn La Trattoria Pergola & Wine Tasting Room, Riverside, 2016
Rhunau, Rhunau, Clark Building, Riverside, 2016
Arlington Plaza, Riverside, 2016
Mission Lofts, Riverside, 2015
Lakeside Temescal Valley Project Lake Corona, Corona, CA
Harris Farm Townhomes, Riverside, 2015
Dhammakaya Retreat, Azusa, 2013
Riverside Plaza Harris' Department Store, Riverside, 2012
Old Town Plaza, San Jacinto, 2011
Pfennighausen Ranch, Pedley, County of Riverside, 2010
March Field Historic District Garage Building #113, March Joint Powers Authority, 2009
Five Points Realignment, City of Riverside, 2008
Fox Block, City of Riverside, 2007

Section 106 & CEQA Compliance
Prado Dam & Reservoir Improvement Project, Santa Ana River, 2017-present
Home Front at Camp Anza - Camp Anza Officers Club, City of Riverside, 2013-2017
HRER, Colton Undergrade & C Street Crossing Seismic Retrofit Projects, City of Colton, Caltrans District 8, 2014
HPSR & FOE, University Avenue Streetscape Project, City of Riverside, Caltrans District 8, 2005
HPSR & FOE, Victoria Avenue Streetscape & Parkway Restoration Project, City of Riverside, Caltrans District 8, 2004
HPSR, Jurupa Avenue Underpass / Mountain Avenue Crossing Closure Project, City of Riverside, Caltrans District 8, 2001

Section 106 Compliance
Entrada, Wakeland Housing & Development, Riverside, 2019
Mission Heritage Plaza & Civil Rights Museum, Wakeland Housing & Development, Riverside, 2017
HPSR, Inglewood Avenue Corridor Widening Project, City of Lawndale, Caltrans District 7, 2013
Van Buren Improvement Project, March Joint Powers Authority, County of Riverside, EDA, 2013
Wattstar Cinema and Education, Los Angeles, 2010
County of San Bernardino Lead Abatement Program, Highland, Redlands, & San Bernardino, 2003

Professional Activities

Publications
The New Home Company Announces Marywood Hills, a Historic Collection of Luxury Residences with Unobstructed Views of the City of Orange. Press Release co-authored for immediate by The New Home Company. April 2018.
The Grandest Boulevard. Riverside County Historical Commission and the Riverside County Regional Park and Open-Space District, *The Riverside County Chronicles,* Issue No. 5. Fall 2011.
Riverside Project Wins Governor's Award for Historic Preservation: 'Home Front at Camp Anza' Brings New Life to Old Officers Club. Press Release authored for immediate release by City of Riverside. October 4, 2016.
Historic Resources Inventory Database Web site: Instructions for Online Navigation. Historic Resources Database Web site User's Manual prepared for the City of Riverside. September 2002.
Historic Resources Inventory: Instructions for Recording and Viewing. Historic Resources Database User's Manual prepared for the City of Riverside. September 2001.

Awards
California Preservation Foundation Award – Latino Context, City of Riverside. 2019.
Governor's Award for Historic Preservation – Homefront at Camp Anza. 2016.
California Preservation Foundation Best Restoration Award – Homefront at Camp Anza. 2017.
IE Economic Partnership Award for Best Real Estate Development and Reuse – Homefront at Camp Anza. 2016.
Golden Nugget Award - Best Renovated, Restored, Adaptive Re-Use Residential Project – Homefront at Camp Anza. 2016.
Golden Nugget Award -Best Affordable Housing Community Under 30du/acre – Homefront at Camp Anza. 2016.

Presentations, Speaking Engagements, and Instruction
City of Riverside Cultural Heritage Board Continuing Education Program TBD 2021
Creating Space for Women: Julia Morgan, Architect, and the Riverside YWCA. Women In Tandem (WIT). COVID HOLD.
The History of the Automobile in Riverside, Riverside Historical Society Four-Part Lecture Series. 2018-2021.
Part 1. The Automobile Comes to Town: The Birth of the Automobile Industry in Riverside, 1902-1913. 2018.

Part 2. From Agriculture to Automobile: The Internalization of a New Economy, 1913-1928. 2019.
Part 3. COVID HOLD – Tentatively rescheduled April 11, 2021.
Part 4. COVID HOLD.
Historic Preservation: The Field of Public History. Notre Dame High School Career Day. September 2018.
Historic Preservation: The Field of Public History. Riverside East Rotary Club. July 2018.
Historic Preservation: The Field of Public History. Riverside Uptown Kiwanis. December 2017.
Architecture: Form, Function, and Ornamentation. Architecture Series. Diocese of San Bernardino, OLPH. October 2011.
How to Research Your Historic Home. City of Riverside Public Workshop. October 2010.
Riverside's Hidden Histories: The Gems Among Us – Nava Tires. Mission Inn Foundation and Museum. June 17, 2010.
The Art of the Survey. Riverside County Historical Commission 5th Annual Symposium. October 26, 2007.
The Field of Public History. California State University, Fullerton. Dr. Wendy Elliott Scheinberg. November 14, 2006.
Arlington Heights, the Realization and Preservation of a California Dream. CPF Conference. May 14, 2005.
How to Research Your Historic Home. Riverside County Historical Commission History Workshop. April 16, 2004.

Affiliations & Service

National Trust for Historic Preservation, General Member #58551599.
California Preservation Foundation, General Member #21244.
Old Riverside Foundation, General Member; Board of Directors (2003-2005) – facilitated mission advancement through planning and direction of annual home tour, awards program, facilities maintenance, and historic preservation advocacy.
Riverside Historic Society, Lifetime Member