

4.4 CULTURAL RESOURCES

INTRODUCTION

The purpose of this section is to evaluate potential impacts on cultural resources including archaeological, historical, and paleontological resources that could occur with implementation of the Project.

Archaeology is the recovery and study of material evidence of human life and culture of past ages. Over time, this material evidence becomes buried, fragmented or scattered or otherwise hidden from view. It is not always evident from a field survey if archaeological resources exist within a given area. Thus, the possible presence of archaeological materials must often be determined based upon secondary indicators, including the presence of geographic, vegetative, and rock features which are known or thought to be associated with early human life and culture, as well as knowledge of events or material evidence in the surrounding area. Archaeological resources may include both prehistoric remains and remains dating to the historical period. Prehistoric (or Native American) archaeological resources are physical properties resulting from human activities that predate written records and are generally identified as isolated finds or sites. Prehistoric resources can include village sites, temporary camps, lithic (stone tool) scatters, rock art, roasting pits/hearths, milling features, rock features, and burials. Historic archaeological resources can include refuse heaps, bottle dumps, ceramic scatters, privies, foundations, and burials and are generally associated in California with the Spanish Mission Period to the mid-20th century of the American Period.

Historical resources are buildings, structures, sites, places, or objects which are listed in or eligible for listing in the National Register of Historic Places, California Register of Historical Resources or a local register of historical resources. Architectural, engineering, or landscape resources from the historic period such as buildings, roads, bridges, aqueducts, or agricultural properties that are determined to be historically significant or significant in architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California may be considered to be a historical resource, provided the determination is supported by substantial evidence in light of the whole record.

Paleontology is a branch of geology that studies the life forms of the past, especially prehistoric life forms, through the study of plant and animal fossils. Paleontological resources represent a limited, non-renewable, and impact-sensitive scientific and educational resource. As defined in this section, paleontological resources are the fossilized remains or traces of multi-cellular invertebrate and vertebrate animals and multi-cellular plants, including their imprints from a previous geologic period. Fossil remains such as bones, teeth, shells, and leaves are found in the geologic deposits (rock formations) where they were originally buried. Paleontological resources include not only the actual fossil remains, but also the collecting localities, and the geologic formations containing those localities.

The analysis of cultural resources presented in this section is primarily derived from Cultural and Paleontological Resources Due Diligence Records Search and Survey Results report ("Cultural Resources Study") prepared by LSA Associates, Inc. (LSA) in June 2006 and supplemental information prepared by PCR in 2012. The Cultural Resources Study evaluated a 116-acre project area, which included the current project area. The LSA Cultural Resources Study is provided in Appendix D of this EIR. PCR supplemented the Cultural Resources Study with regard to the Prehistoric Background discussion to incorporate relevant background information on inland Southern California. Since no new development or ground disturbing

activities (i.e., grading, excavation) have occurred on the project site since 2006, with the exception of limited trenching activities as part of the geotechnical evaluation, the results of Cultural Resources Study remain valid and have been incorporated into this analysis. Also, it is acknowledged that a fire occurred on the project site in 2008, which burned much of the vegetation on the site. However, since 2008, the low- to mid-lying vegetation on the project site has grown back.

1. ENVIRONMENTAL SETTING

a. Regulatory Framework

(1) State Level

(a) Archaeological and Historical Resources

California Register of Historical Resources

Per California Public Resources Code Section 5024.1(a), the California Register of Historical Resources (California Register) is “an authoritative listing and guide to be used by state and local agencies, private groups, and citizens in identifying the existing historical resources of the state and to indicate which resources deserve to be protected, to the extent prudent and feasible, from substantial adverse change.” The criteria for eligibility for the California Register are based upon National Register of Historic Places (National Register) criteria.¹ Certain resources are determined by the statute to be automatically included in the California Register, including California properties formally determined eligible for, or listed in, the National Register of Historic Places.²

To be eligible for the California Register of Historical Resources, a pre-historic or historic property must be significant at the local, state, and/or federal level under one or more of the following criteria:

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

A resource eligible for the California Register must meet one of the criteria of significance described above and retain enough of its historic character or appearance (integrity) to be recognizable as a historical resource and to convey the reason for its significance. It is possible that a historic resource may not retain sufficient integrity to meet the criteria for listing in the National Register, but it may still be eligible for listing in the California Register.

¹ California Public Resources Code § 5024.1(b).

² California Public Resources Code § 5024.1(d).

Additionally, the California Register consists of resources that are listed automatically and those that must be nominated through an application and public hearing process. The California Register automatically includes the following:

- California properties listed on the National Register of Historic Places and those formally Determined Eligible for the National Register of Historic Places.
- California Registered Historical Landmarks from No. 770 onward.
- Those California Points of Historical Interest that have been evaluated by the OHP and have been recommended to the State Historical Commission for inclusion on the California Register.

Other resources that may be nominated to the California Register include:

- Historical resources with a significance rating of Category 3 through 5.³
- Individual historical resources.
- Historical resources contributing to historic districts.
- Historical resources designated or listed as local landmarks, or designated under any local ordinance, such as an historic preservation overlay zone.

California Environmental Quality Act

CEQA is the principal statute governing environmental review of projects occurring in the State. CEQA requires lead agencies to determine if a proposed project would have a significant effect on archaeological resources (PRC Sections 21000 et seq.). As defined in Section 21083.2 of the Public Resources Code a “unique” archaeological resource is 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:

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

In addition, CEQA Section 15064.5 broadens the approach to CEQA by using the term “historical resource” instead of “unique archaeological resource.” The *CEQA Guidelines* recognize that certain archaeological resources may also have significance. The Guidelines recognize that a historical resource includes: (1) a resource in the California Register of Historical Resources; (2) a resource included in a local register of historical resources, as defined in Public Resources Code Section 5020.1 (k) or identified as significant in a historical resource survey meeting the requirements of Public Resources Code Section 5024.1 (g); and (3)

³ *Those properties identified as eligible for listing in the National Register of Historic Places, the California Register of Historical Resources, and/or a local jurisdiction register.*

any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California by the lead agency, provided the lead agency's determination is supported by substantial evidence in light of the whole record.

If a lead agency determines that an archaeological site is a historical resource, the provisions of Section 21084.1 of the Public Resources Code and Section 15064.5 of the *CEQA Guidelines* apply. If an archaeological site does not meet the criteria for a historical resource contained in the Guidelines, then the site is to be treated in accordance with the provisions of Public Resources Code Section 21083.2, which refer to a unique archaeological resource. The Guidelines note that if an archaeological resource is neither a unique archaeological nor a historical resource, the effects of the project on those resources shall not be considered a significant effect on the environment (CEQA Guidelines Section 15064.5(c)(4)).

(b) Paleontological Resources

Paleontological resources are also afforded protection under Appendix G (part V) of the *CEQA Guidelines*, which provides guidance relative to significant impacts on paleontological resources, stating that "a project will normally result in a significant impact on the environment if it will ...directly or indirectly destroy a unique paleontological resource or site or unique geologic feature."

(2) Local Level

(a) County of Orange General Plan

The Resources Element of the County's General Plan includes goals and policies regarding the conservation and management of cultural resources. The Project's consistency with the applicable goals and policies is discussed in the impact analysis below.

b. Existing Conditions

(1) Prehistoric Background

Prehistory is most easily discussed chronologically, in terms of environmental change and recognized cultural developments. Several chronologies have been proposed for inland Southern California, the most widely accepted of which is Wallace's four-part Horizon format (1955), which was later updated and revised by Claude Warren (1968). The advantages and weaknesses of southern California chronological sequences are reviewed by Warren (in Moratto 1984), Chartkoff and Chartkoff (1984), and Heizer (1978). The following discussion is based on Warren's (1968) sequence, but the time frames have been adjusted to reflect more recent archaeological findings, interpretations, and advances in radiocarbon dating.

(a) Paleo-Indian Period (ca. 13,000 – 11,000 years before present [YBP])

Little is known of Paleo-Indian peoples in inland southern California. However, the following provides a discussion of the Paleo-Indian Period cultural history for North America. Recent discoveries in the Americas have challenged the theory that the first Americans migrated from Siberia, following a route from the Bering Strait into Canada and the Northwest Coast sometime after the Wisconsin Ice Sheet receded (ca. 14,000 YBP), and before the Bering Land Bridge was submerged (ca. 12,000 YBP). A coastal migration route somewhat before that time is also possible. The timing, manner, and location of this crossing are a matter of

debate among archaeologists, but the initial migration probably occurred as the Laurentide Ice Sheet melted along the Alaskan Coast and interior Yukon. The earliest radiocarbon dates from the Paleo-Indian Period in North America come from the Arlington Springs Woman site on Santa Rosa Island. These human remains date to approximately 13,000 YBP (Johnson et al. 2002). Other early Paleo-Indian sites include the Monte Verde Creek site in Chile (Meltzer et al. 1997) and the controversial Meadowcroft Rockshelter in Pennsylvania. Both sites have early levels dated roughly at 12,000 YBP. Life during the Paleo-Indian Period was characterized by highly mobile hunting and gathering. Prey included megafauna such as mammoth and technology included a distinctive flaked stone toolkit that has been identified across much of North America and into Central America. They likely used some plant foods, but the Paleo-Indian toolkit recovered archaeologically does not include many tools that can be identified as designed specifically for plant processing.

The megafauna that appear to have been the focus of Paleo-Indian life went extinct during a warming trend that began approximately 10,000 years ago, and both the extinction and climatic change (which included warmer temperatures in desert valleys and reduced precipitation in mountain areas) were factors in widespread cultural change. Subsistence and social practices continued to be organized around hunting and gathering, but the resource base was expanded to include a wider range of plant and game resources. Technological traditions also became more localized and included tools specifically for the processing of plants and other materials. This constellation of characteristics has been given the name "Archaic" and it was the most enduring of cultural adaptations to the North American environment.

(b) Archaic Period (ca. 11,000 – 3,500 YBP)

The earliest Archaic Period life in inland southern California has been given the name San Dieguito tradition, after the San Diego area where it was first identified and studied (Warren 1968). Characteristic artifacts include stemmed projectile points, crescents and leaf-shaped knives, which suggest a continued subsistence, focus on large game, although not megafauna of the earlier Paleo-Indian period. Milling equipment appears in the archaeological record at approximately 7,500 years ago (Moratto 1984:158). Artifact assemblages with this equipment include basin milling stones and unshaped manos, projectile points, flexed burials under cairns, and cogged stones, and have been given the name La Jolla Complex (7,500–3,000 YBP). The transition from San Dieguito life to La Jolla life appears to have been an adaptation to drying of the climate after 8,000 YBP, which may have stimulated movements of desert peoples to the coastal regions, bringing milling stone technology with them. Groups in the coastal regions focused on mollusks, while inland groups relied on wild-seed gathering and acorn collecting.

(c) Late Prehistoric Period (ca. 3,500 YBP – A.D. 1769)

Cultural responses to environmental changes around 4,000–3,000 YBP included a shift to more land-based gathering practices. This period was characterized by the increasing importance of acorn processing, which supplemented the resources from hunting and gathering. Meighan (1954) identified the period after A.D. 1400 as the San Luis Rey complex. San Luis Rey I (A.D. 1400–1750) is associated with bedrock mortars and milling stones, cremations, small triangular projectile points with concave bases and Olivella beads. The San Luis Rey II (A.D. 1750–1850) period is marked by the addition of pottery, red and black pictographs, cremation urns, steatite arrow straighteners and non-aboriginal materials (Meighan 1954:223, Keller and McCarthy 1989:6). Work at Cole Canyon and other sites in southern California suggests that this complex, and the ethnographically described life of the native people of the region, were well established by at least 1,000 YBP (Keller and McCarthy 1989:80).

(d) Ethnographic Background

The project site is located along the fringes of territories traditionally affiliated with the Gabrielino and Juaneño ethnographic groups at European contact. A brief review of the ethnography of these groups is provided below.

Gabrielino

The Gabrielino territory included the Los Angeles Basin, the coast of Aliso Creek in Orange County to the south, and Topanga Canyon in the north, the four southern Channel Islands, and watersheds of the Los Angeles, San Gabriel, and Santa Ana Rivers. Their name is derived from their association with Mission San Gabriel (Bean and Smith 1978). The Gabrielino were not the first inhabitants of the Los Angeles Basin, but arrived around 500 B.C. The language of the Gabrielino people has been identified as a Cupan language within the Takic family, which is part of the larger Uto-Aztec language family. Uto-Aztec speakers arrived in southern California in what is known as the Shoshonean migration, which current archaeological and linguistic evidence suggests originated in the Great Basin and displaced the already established Hokan speakers. The Gabrielino were advanced in their culture, social organization, religious beliefs, and art and material production. Class differentiation, inherited chieftainship, and intervillage alliances were all components of Gabrielino society. At the time of European contact, the Gabrielino were actively involved in trade using shell and beads as currency. The Gabrielino were known for excellent artisanship in the form of pipes, ornaments, cooking implements, inlay work, and basketry. The Gabrielinos evolved an effective economic system which managed food reserves (storage and processing), exchanged goods, and disturbed resources. Data collected and presented by Kroeber (1925) indicate that homes were made of tule mats on a framework of poles, but size and shape have not been recorded. Basketry and steatite vessels were used rather than ceramics; ceramics became common only toward the end of the mission period in the nineteenth century. The Gabrielino held some practices in common with other neighboring groups in southern California, such as the use of jimsonweed in ceremonies as did the Luiseño and Juaneño, but details of the practices and the nature of cultural interaction between the Gabrielino and other groups in southern California are currently unknown.

Juaneño

The project site is located near the traditional territory of the Juaneño, or Acjachemen (A-ha-che-men). The territory of the Juaneño was bounded to the north by the Aliso Creek Watershed where they shared a tribal boundary with the Gabrielino. Their territory was bounded to the east by the crest of the Santa Ana Mountains, the south by San Onofre Creek, and west by the Pacific Ocean (Kroeber 1976:636). The term Juaneño derives from the Mission San Juan Capistrano and has been used to refer to those Takic speakers associated with that mission. The term Luiseño derives from the mission named San Luis Rey and has been used in southern California to refer to those Takic-speaking people associated with Mission San Luis Rey (Bean and Shipek 1978). The Juaneño have been considered by many scholars to have similar lifeways as their Luiseño neighbors to the south and east. Although some scholars separated Juaneño and Luiseño on the basis of linguistic differences, later studies (White 1963:91) indicate that they are ethnologically and linguistically one ethnic nationality.

Like many California tribes, the Juaneño were organized in permanent villages of 50 to 250 people that were concentrated near watercourses and the coast, which allowed exploitation of not only the much-needed water, but also the resulting floral and faunal communities that thrived in those areas. Seasonal settlements were also established to harvest acorns, a California staple, and to hunt game in the interior. Marine

mammals, fish, and shellfish were also exploited on the coast and goods were traded between Juaneño clans and surrounding groups such as the Luiseño, Gabrielino, Serrano, and Cahuilla (Bean and Shipek 1978). Women and men wore grass skirts and animal skins with elaborate jewelry made of shells and seeds. Families lived in dome-shaped huts made of willow and tule, and ate an acorn mush called *wi-wush*. Other foods included fish (from mountain streams and the ocean), roasted deer and rabbit, seeds, greens, roots, tubers, shellfish, fruit, and other terrestrial and marine mammals. Hunting was performed with bows and arrows, snares, and throwing sticks. In addition, elaborate stone bowls, grinding stones, tools, and baskets were made from local raw material if not traded in. The Juaneño were also a deeply spiritual people who celebrated their religion in sacred ceremonies of dance and song (Juaneño Band 2005).

(2) Cultural Resources Records Search

To determine the presence of any known cultural resources on the project site and within a half-mile radius of the project site the following tasks were conducted: a cultural resources records search through the California Historical Resources Information System-South Central Coastal Information Center (CHRIS-SCCIC), a Sacred Lands File (SLF) search through the California Native American Heritage Commission (NAHC) and follow-up Native American consultation [including initiation of consultation pursuant to Senate Bill 18 (Chapter 905, Statutes of 2004)], a paleontological records search through the Natural History Museum of Los Angeles County (NHMLAC), a review of geologic maps, and a pedestrian survey of the project site. It is noted that the NHMLAC is the appropriate location to conduct paleontological records searches for both Los Angeles and Orange Counties, in addition to surrounding regions. The above-references tasks are described in further detail below.

(a) CHRIS-SCCIC Search

A cultural resource records search was conducted at the CHRIS-SCCIC at the California State University, Fullerton. The records search included a review of all recorded historical resources and archaeological sites within a half-mile radius of the project site as well as a review of cultural resource reports and historic topographic maps on file. In addition, the California Points of Historical Interest (CPHI), the California Historical Landmarks (CHL), the California Register of Historical Resources (California Register), the National Register of Historic Places (National Register), and the California State Historic Resources Inventory (HRI) listings were reviewed as part of the records search. The purpose of the records search was to determine whether or not there are previously recorded archaeological or historical resources within the project site that require evaluation and inclusion in the impact analysis. The results also provide a basis for assessing the sensitivity of the project site for additional and buried resources.

Results of the cultural resources records search revealed that no cultural resources have been previously recorded within the project site. Three surveys to the north and northwest of the project site yielded the identification of one prehistoric archaeological site and two isolated prehistoric artifacts. One additional prehistoric archaeological site is recorded southeast of the project site.

(b) Sacred Lands File Search and Follow-Up Native American Consultation

On July 5, 2012, the County submitted a Notice of Preparation letter to the NAHC, which responded on July 11 with the results of an SLF search of the project site. Results of the SLF search through the NAHC *did not* indicate any known Native American cultural resources from the NAHC archives within the project site.

On July 31, 2012, PCR subsequently initiated SB 18 (Chapter 905, Statutes of 2004) consultation with the Native American groups identified by the NAHC as having affiliation with the project vicinity on behalf of and in coordination with the County. SB 18 consultation provides the Native American community an opportunity to express their views to the County regarding tribal “cultural places” within or near the project site. Initial consultation was in the form of a letter sent via certified mail that indicated the project site, briefly described the nature of the Project, and provided contact information for personnel at the County for consultation inquiries. PCR received one response from Mr. John Tommy Rosas of the Tongva Ancestral Territorial Tribal Nation (TATTN). The correspondence from Mr. Rosas indicated that he will provide supplemental comments following government-to-government consultation pursuant to SB 18 (Chapter 905, Statutes of 2004). The County of Orange on January 15, 2013 provided Mr. Rosas a consultation letter requesting further input from TATTN. No supplemental comments were provided by Mr. Rosas after January 15, 2013.

(c) Paleontological Resources Records Search and Geologic Map Review

A paleontological records search was commissioned through the NHMLAC in Los Angeles, California. This institution maintains files of regional paleontological site records as well as supporting maps and documents. The record search entailed an examination of current geologic maps and known fossil localities inside and within the surrounding region of the project site. Results of the record search indicate whether or not there are previously recorded paleontological resources or fossiliferous geological formations within the project site. The results also provide a basis for assessing the sensitivity of the project site for additional and buried paleontological resources. Copies of Orange County paleontological records (such as published literature and geologic maps) maintained at their offices were also reviewed.

Results of the paleontological resources records search through the NHMLAC revealed that no vertebrate fossil localities from the NHMLAC database have been recorded within the project site. The results did indicate that several localities have been recorded nearby in the same sedimentary deposits and formations that underlie the project site. Reviews of geologic maps indicate that sediments from the Late Miocene Yorba and Sycamore Canyon Members of the Puente Formation, Quaternary landslides, and older and younger Quaternary Alluvium underlie the project site. All of these geologic units, except for younger Quaternary Alluvium, are conducive to retaining paleontological resources. According to the NHMLAC records, locality LACM 7508 was recovered in older Quaternary Alluvium in Soquel Canyon approximately 2.5 miles north of the project site that produced the remains of a ground sloth and horse. The NHMLAC also has many localities mapped within the Yorba Member of the Puente Formation within both the Chino and Puente Hills that include complete fish skeletons, sea lion remains, whales, and porpoises. According to available records, microfossils, invertebrates, plants, and vertebrates (i.e., sea mammals, birds, and fish) have been recovered from the Sycamore Canyon Member of the Puente Formation.

(d) Pedestrian Survey

A pedestrian survey of the project site was conducted as part of the Cultural Resources Study to identify archaeological, historical, and paleontological resources. The survey focused on areas that were accessible to the surveyors, including ridges, hilltops, canyon bottoms, and along dirt roadways. For areas that were surveyed, the ground surface was examined for archaeological, historical, and paleontological resources. No archaeological, historical, or paleontological resources were identified during the pedestrian survey of the project site.

It is noted that the off-site areas where the Project roadways extensions would occur off of Via del Agua and Aspen Way are highly disturbed. The off-site area that would encompass the Project's future roadway extension at the terminus of Aspen Way consists of fill materials. The off-site area that would encompass the Project's future roadway extension off of Via del Agua consists of rip rap materials within a stormwater-related improvement area. Due to their disturbed nature, neither of these areas has the potential for surface cultural resources and did not warrant further pedestrian survey efforts beyond those conducted in the Cultural Resources Study.

2. ENVIRONMENTAL IMPACTS

a. Methodology

As described above, to determine the presence of any known cultural resources on the project site and within a half-mile radius of the project site the following tasks were conducted: a cultural resources records search through the CHRIS-SCCIC, a Sacred Lands File (SLF) search through the California NAHC and follow-up Native American consultation, a paleontological records search through the NHMLAC, a review of geologic maps, and a pedestrian survey of the project site. Based on the results of the above-referenced tasks, a determination is made whether or not the site has the potential to encounter potential unknown cultural resources. If the Project has the potential to encounter previously unknown cultural resources, mitigation measures are prescribed.

b. Thresholds of Significance

Appendix G of the *CEQA Guidelines* and the County of Orange Environmental Analysis Checklist provide thresholds of significance to determine whether a project would have a significant environmental impact regarding cultural resources. Based on the size and scope of the Project and the potential for cultural resources impacts, the thresholds identified below are included for evaluation in this EIR.

Would the Project:

Threshold 1: Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5 of the CEQA Guidelines (refer to Impact Statement 4.4-1);

Threshold 2: Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5 of the CEQA Guidelines (refer to Impact Statement 4.4-2);

Threshold 3: Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature (refer to Impact Statement 4.4-3); and

Threshold 4: Disturb any human remains, including those interred outside of formal cemeteries (refer to Impact Statement 4.4-4).

c. Project Design Features

There are no Project Design Features (PDFs) applicable to cultural resources.

d. Analysis of Project Impacts

HISTORICAL RESOURCES

Threshold	Would the project cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5 of the CEQA Guidelines?
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- 4.4-1 *No historic resources are located on the project site. As such, there is no potential for the Project to cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5 of the CEQA Guidelines. No impact would occur in this regard.*

According to the CHRIS-SCCIC, no previously recorded historical resources were identified within the project site and no new historical resources within the project site were identified during the pedestrian survey. Review of historic aerial photographs and topographic maps reveals that the existing oil wells and derricks within the project site were constructed between 1965 and 1972.⁴ However, the facilities have been altered since their original construction and therefore do not meet the criteria for listing in the California Register and do not qualify as historical resources as defined in Section 15064.5 of the CEQA Guidelines. As a result, the Project would not cause a substantial adverse change in the significance of a known historical resource as defined in CEQA Section 15064.5. No impact would occur in this regard.

ARCHAEOLOGICAL RESOURCES

Threshold	Would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5 of the CEQA Guidelines?
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- 4.4-2 *Implementation of the Project would not cause a substantial adverse change in the significance of a known archaeological resource pursuant to Section 15064.5 of the CEQA Guidelines. However, there is potential for the Project to impact previously undiscovered archaeological resources during construction activities associated with the Project. This potentially significant impact would be reduced to a less than significant level with implementation of the prescribed mitigation measures.*

According to the CHRIS-SCCIC, no previously recorded archaeological resources were identified within the project site and no archaeological resources within the project site were identified during the pedestrian survey. Three surveys to the north and northwest of the project site yielded the identification of one prehistoric archaeological site and two isolated prehistoric artifacts while one additional prehistoric archaeological site has been recorded southeast of the project site. These results confirm the presence of past prehistoric occupation in the vicinity of the project site. However, given the setting of the site on a hillside location that is not in close proximity to a stream or river, it is unlikely that the site was previously inhabited or occupied (i.e., a village) by Native Americans or other pre-historic peoples. Further, no resources are known to occur on the site or in immediate proximity to the site. Based on these considerations, the overall sensitivity and potential for discovery of surface archaeological resources is considered to be low. According to geologic maps, sediments of the Late Miocene Yorba and Sycamore

⁴ *Historicalaerials.com; 1972 Aerial Photograph, 1965 Topographical Quadrangle Map*

Canyon Members of the Puente Formation, Quaternary landslides, and older and younger Quaternary Alluvium underlie the project site at unknown depths. All of these geologic units, except for younger Quaternary Alluvium, are not conducive to retaining archaeological resources given their old age. Thus, the overall sensitivity and potential for buried archaeological resources is also considered to be low, with the exception at locations consisting of younger Quaternary Alluvium. It is possible that previously undiscovered buried archaeological resources exist within the ridge tops and canyon floors of the project site where younger Quaternary Alluvium is more likely to be present. Since excavations associated with construction of the Project could reach depths of up to 60 feet below the ground surface, it is conservatively concluded that the Project could result in potentially significant impacts to buried archaeological resources. As a result, Mitigation Measures 4.4-1 to 4.4-4 are prescribed to ensure that potentially significant impacts to previously unknown archaeological resources that are unexpectedly discovered during Project implementation are reduced to a less than significant level.

These mitigation measures require the identification, cataloguing, and preservation of significant archaeological resources, thereby documenting the area's cultural history. Initially, there is a requirement for the presence of an archaeological monitor during grading on the flatter areas of the project site where there is the highest likelihood of encountering resources (Mitigation Measure 4.4-1). If resources are encountered, project site work would be diverted from the area until a treatment plan is developed (Mitigation Measure 4.4-2). A final report encompassing the resources identified and the treatment plan would be prepared when architectural monitoring is concluded (Mitigation Measure 4.4-3). There is also a requirement for halting ground-disturbing activities, should resources be encountered, until an archaeological monitor is present (Mitigation Measure 4.4-4).

Mitigation Measures

Mitigation Measure 4.4-1 Prior to the issuance of any grading permit, the Applicant shall provide written evidence to the Manager, OC Planning, that the Applicant has retained a qualified archaeological monitor to conduct spot-check observations of construction excavations into younger Quaternary Alluvium during construction-related ground disturbing activities (i.e., grading and excavation). The spot-check observations shall target the flatter areas of the project site such as hilltops, ridge lines, and canyon bottoms, which are more conducive to retaining archaeological resources since such areas were prime locations for pre-historic occupation as compared to areas of steeper topography.

Mitigation Measure 4.4-2 In the event that archaeological resources are unearthed during ground-disturbing activities, the archaeological monitor shall be empowered to halt or redirect ground-disturbing activities away from the vicinity of the find so that the find can be evaluated. Work shall be allowed to continue outside of the vicinity of the find. All archaeological resources unearthed by Project construction activities shall be evaluated by the archaeologist. The Applicant shall coordinate with the archaeologist and the County to develop an appropriate treatment plan for the resources. Treatment may include implementation of archaeological data recovery excavations to remove the resource or preservation in place. All archaeological resources recovered shall be documented on California Department of Parks and Recreation Site Forms to be filed with the South Central Coastal Information Center. The landowner, in consultation with the archaeologist and the County shall designate repositories in the event that archaeological material is recovered.

Mitigation Measure 4.4-3 The archaeological monitor shall prepare a final report at the conclusion of archaeological monitoring. The report shall be submitted by the Applicant to the County, the South Central Information Center, and representatives of other appropriate or concerned agencies to signify the satisfactory completion of the Project and required mitigation measures. The report shall include a description of resources unearthed, if any, treatment of the resources, and evaluation of the resources with respect to the California Register of Historical Resources.

Mitigation Measure 4.4-4 If archaeological resources are encountered during implementation of the Project when the archaeological monitor is not present, ground-disturbing activities shall temporarily be redirected from the vicinity of the find. The Applicant shall immediately notify a qualified archaeologist of the find. The archaeologist shall coordinate with the Applicant as to the immediate treatment of the find until a proper site visit and evaluation is made by the archaeologist. The Applicant shall then follow the procedures outlined in Mitigation Measure 4.4-2. The archaeologist shall also determine the need for full-time archaeological monitoring for any ground-disturbing activities in the area of the find thereafter and training of construction workers, as appropriate.

PALEONTOLOGICAL RESOURCES/UNIQUE GEOLOGIC FEATURE

Threshold	Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?
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4.4-3 *Implementation of the Project would not directly or indirectly destroy a known unique paleontological resource or site or unique geologic feature. However, there is potential for the Project to impact previously undiscovered paleontological resources at depth during construction excavations associated with the Project. This potentially significant impact would be reduced to a less than significant level with implementation of the prescribed mitigation measures.*

Results of the paleontological resources records search through the NHMLAC revealed that no vertebrate fossil localities from the NHMLAC database have been recorded within the project site and no paleontological resources were identified within the project site during the pedestrian survey. The record search results did indicate that several localities have been recorded nearby in the same sedimentary deposits and formations that underlie the project site. Reviews of geologic maps indicate that sediments from the Late Miocene Yorba and Sycamore Canyon Members of the Puente Formation, Quaternary landslides, and older and younger Quaternary Alluvium underlie the project site. All of these geologic units, except for younger Quaternary Alluvium, are conducive to retaining paleontological resources. According to the NHMLAC records, locality LACM 7508 was recovered in older Quaternary Alluvium in Soquel Canyon approximately 2.5 miles north of the project site that produced the remains of a ground sloth and horse. The NHMLAC also has many localities mapped within the Yorba Member of the Puente Formation within both the Chino and Puente Hills that include complete fish skeletons, sea lion remains, whales, and porpoises. According to LSA's records, microfossils, invertebrates, plants, and vertebrates (i.e., sea mammals, birds, and fish) have been recovered from the Sycamore Canyon Member of the Puente Formation. Since excavations associated with construction of the Project could reach depths of up to 60 feet below the ground surface, the Project has the potential to encounter buried paleontological resources. As a result, Mitigation Measures 4.4-5 to 4.4-8 are recommended to ensure that potentially significant impacts on previously unknown

paleontological resources that are unexpectedly discovered during Project implementation are reduced to a less than significant level.

This series of mitigation measures require the identification, cataloguing, and preservation of significant paleontological resources, thereby documenting the area's paleontological history. A qualified paleontologist would be required to attend a meeting before ground-disturbing activities begin and prepare a monitoring program as well as supervise a paleontological monitor during excavation (Mitigation Measure 4.4-5). If fossils are found, excavation activity is to be redirected to allow for fossil identification, recovery, and subsequent disposition (Mitigation Measures 4.4-6 and 4.4-7). At the conclusion of this effort, the paleontologist would be required to prepare a report summarizing the results of the monitoring and salvaging efforts (Mitigation Measure 4.4-8).

Mitigation Measures

Mitigation Measure 4.4-5 Prior to issuance of any grading permit, the Applicant shall retain a qualified paleontologist who shall attend a pre-grading/excavation meeting and develop a paleontological monitoring program for excavations into sediments associated with the fossiliferous older Quaternary Alluvium, Yorba and Sycamore Canyon Members of the Puente Formation, and Quaternary landslides deposits. A qualified paleontologist is defined as a paleontologist meeting the criteria established by the Society for Vertebrate Paleontology. The qualified paleontologist shall supervise a paleontological monitor who shall be present at such times as required by the paleontologist during construction excavations into the fossiliferous deposits mentioned above. Monitoring shall consist of visually inspecting fresh exposures of rock for larger fossil remains and, where appropriate, collecting wet or dry screened sediment samples of promising horizons for smaller fossil remains. The frequency of monitoring shall be determined by the paleontologist and shall be based on the rate of excavation and grading activities, the materials being excavated, and the depth of excavation, and if found, the abundance and type of fossils encountered.

Mitigation Measure 4.4-6 If a potential fossil is found, the paleontological monitor shall be allowed to temporarily divert or redirect grading and excavation activities in the area of the exposed fossil to facilitate evaluation and, if necessary, salvage. At the paleontologist's discretion and to reduce any construction delay, the grading and excavation contractor shall assist in removing rock samples for initial processing. Any fossils encountered and recovered shall be prepared to the point of identification and catalogued before they are donated to their final repository. Any fossils collected shall be donated to a public, non-profit institution with a research interest in the materials, such as the Natural History Museum of Los Angeles County or the John D. Cooper Archaeological and Paleontological Curation Center at the California State University, Fullerton. Accompanying notes, maps, and photographs shall also be filed at the repository.

Mitigation Measure 4.4-7 The paleontologist and/or paleontological monitor shall conduct sampling and screening of the underlying sediments at the project site for the presence or absence of microfossils. The monitor shall collect various samples (consisting of approximately 200 pounds of sediment) from the spoils piles, sidewalls, or bottoms of an exposed excavation pit across the project site and use wet- or dry-screening techniques

off-site for the recovery of microfossils. If the sample yields an appropriate concentration of microfossils, a bulk sediment sample may be warranted.

Mitigation Measure 4.4-8 Prior to the release of the grading bond, the paleontologist shall prepare a report summarizing the results of the monitoring and salvaging efforts, the methodology used in these efforts, as well as a description of the fossils collected and their significance. The report shall be submitted by the Applicant for approval by the Manager, OC Planning. In addition, the report shall be submitted to the Natural History Museum of Los Angeles County, and other appropriate or concerned agencies to signify the satisfactory completion of the Project and required mitigation measures.

HUMAN REMAINS

Threshold	Would the project disturb any human remains, including those interred outside of formal cemeteries?
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4.4-4 *Implementation of the Project would not disturb any known human remains, including those interred outside of formal cemeteries. However, there is potential for the Project to impact previously undiscovered human remains at depth during construction excavations associated with the Project. This potentially significant impact would be reduced to a less than significant level with implementation of the prescribed mitigation measure.*

A SLF search for the project site from the NAHC failed to indicate the presence of Native American cultural resources in the SLF database within the project site. The cultural resources records search through the CHRIS-SCCIC revealed that no recorded human remains have been identified within the project site or a half-mile radius and no human remains were identified during the pedestrian survey. While it is possible that human remains were not identified during the pedestrian survey as a result of the historic land use, dirt roadway construction and operation, and dense vegetation that obstructed the ground surface during the survey, the overall sensitivity of the project site with respect to buried human remains appears to be low. However, in the unlikely event that previously unknown human remains are encountered during construction, Mitigation Measure 4.4-9 is prescribed to ensure that potentially significant impacts to these resources are reduced to a less than significant level. In the event that human remains are discovered during ground-disturbing activities, and they are determined to be of Native American descent, the County Coroner would be required to notify the Native American Heritage Commission which is then required to notify The Most Likely Descendant (MLD). While the MLD or the absence of one, the landowner determines treatment preferences (removal, recovery, or reinternment, etc.) for the remains, ground-disturbing activity in the area of the discovery would be required to be halted.

Mitigation Measures

Mitigation Measure 4.4-9 If human remains are encountered unexpectedly during implementation of the Project, State Health and Safety Code Section 7050.5 requires that no further disturbance shall occur until the County Coroner has made the necessary findings as to origin and disposition pursuant to PRC Section 5097.98. If the remains are determined to be of Native American descent, the coroner has 24 hours to notify the Native American Heritage Commission (NAHC). The NAHC shall then identify the

person(s) thought to be the Most Likely Descendent (MLD). The MLD may, with the permission of the land owner, or his or her authorized representative, inspect the site of the discovery of the Native American remains and may recommend to the owner or the person responsible for the excavation work means for treating or disposing, with appropriate dignity, the human remains and any associated grave goods. The MLD shall complete their inspection and make their recommendation within 48 hours of being granted access by the land owner to inspect the discovery. The recommendation may include the scientific removal and nondestructive analysis of human remains and items associated with Native American burials. Upon the discovery of the Native American remains, the landowner shall ensure that the immediate vicinity, according to generally accepted cultural or archaeological standards or practices, where the Native American human remains are located, is not damaged or disturbed by further development activity until the landowner has discussed and conferred, as prescribed in this mitigation measure, with the MLD regarding their recommendations, if applicable, taking into account the possibility of multiple human remains. The landowner shall discuss and confer with the descendants all reasonable options regarding the descendants' preferences for treatment.

Whenever the NAHC is unable to identify a MLD, or the MLD identified fails to make a recommendation, or the landowner or his or her authorized representative rejects the recommendation of the descendants and the mediation provided for in Subdivision (k) of Section 5097.94, if invoked, fails to provide measures acceptable to the landowner, the landowner or his or her authorized representative shall inter the human remains and items associated with Native American human remains with appropriate dignity on the property in a location not subject to further and future subsurface disturbance.

CONSISTENCY WITH COUNTY OF ORANGE GENERAL PLAN

(1) County of Orange General Plan

The County's General Plan contains a goals and policies that are relevant to cultural resources, which are presented in the General Plan Resources Element. As discussed below in **Table 4.4-1, Project Consistency with Orange County General Plan**, the Project would be consistent with the applicable goals and policies of the County of Orange General Plan pertaining to cultural resources.

Table 4.4-1

Project Consistency with Orange County General Plan

Goals, Objectives and Policies	Project Consistency
Resources Element	
Cultural-Historic Resources	
Goal 2 To encourage through a resource management effort the preservation of the county's cultural and historic heritage.	Consistent. As discussed within this Section, a cultural resources analysis was conducted for the Project, which consisted of records searches and field reconnaissance. No known historic, archaeological, or paleontological resources occur on the project site. According to the analysis, the potential for unknown archaeological resources to occur on the project site is low, while there is a higher level of potential for unknown paleontological resources to occur on the site. The analysis prescribes

Table 4.4-1 (Continued)**Project Consistency with Orange County General Plan**

Goals, Objectives and Policies	Project Consistency
	mitigation measures to ensure that potentially significant impacts to previously unknown archaeological or paleontological resources that could be discovered during construction activities are reduced to a less than significant level. Implementation of the prescribed mitigation measures would ensure consistency with the cultural resources policies.
Objective 2.2 Take all reasonable and proper steps to achieve the preservation of archaeological and paleontological remains, or their recovery and analysis to preserve cultural, scientific, and educational values.	Consistent. Should archaeological or paleontological remains be discovered during Project implementation, reasonable and proper steps to preserve such resources would be implemented as prescribed by Mitigation Measures 4.4-1 to 4.4-8 within this Section, which are intended to facilitate the recovery and analysis of important cultural and paleontological resources that may occur on the subject property.
Objective 2.3 Take all reasonable and proper steps to achieve the preservation and use of significant historic resources including properties of historic, historic architectural, historic archaeological, and/or historic preservation value.	Consistent. Should historic archaeological resources be discovered during Project implementation, reasonable and proper steps to preserve such resources would be implemented as prescribed by Mitigation Measures 4.4-1 to 4.4-8 within this Section.
Objective 2.4 Provide assistance to County agencies in evaluating the cultural environmental impact of proposed projects and reviewing EIRs.	Consistent. A Cultural Resources Study was prepared for the Project by qualified archaeologists. The study provides important information related to the potential for cultural and scientific resources to exist on the site and is the basis for the analysis of cultural and scientific resources presented in the EIR.
Cultural Resources Policies The following policies addressing archaeological, paleontological, and historical resources shall be implemented at appropriate stage(s) of planning, coordinated with the processing of a project application, as follows: <ul style="list-style-type: none">▪ Identification of resources shall be completed at the earliest stage of project planning and review such as general plan amendment or zone change.▪ Evaluation of resources shall be completed at intermediate stages of project planning and review such as site plan review, subdivision map approval, or at an earlier stage of project review.▪ Final preservation actions shall be completed at final stages of project planning and review such as grading, demolition, or at an earlier stage of project review.	Consistent. As discussed within this Section, a cultural and paleontological resources analysis was conducted for the Project, which consisted of records searches and field reconnaissance. According to the analysis, the potential for unknown archaeological resources to occur on the project site is low, while there is a higher level of potential for unknown paleontological resources to occur on the site. The analysis prescribes mitigation measures to ensure that potentially significant impacts to previously unknown archaeological or paleontological resources that could be discovered during construction activities are reduced to a less than significant level. Implementation of the prescribed mitigation measures would ensure consistency with the cultural resources policies.

Table 4.4-1 (Continued)**Project Consistency with Orange County General Plan**

Goals, Objectives and Policies	Project Consistency
<p>Archaeological Resources Policies</p> <ul style="list-style-type: none"> ▪ To identify archaeological resources through literature and records research and surface surveys. ▪ To evaluate archaeological resources through subsurface testing to determine significance and extent. ▪ To observe and collect archaeological resources during the grading of a project. ▪ <u>To preserve archaeological resources by:</u> <ul style="list-style-type: none"> ○ Maintaining them in an undisturbed condition, or ○ Excavating and salvaging materials and information in a scientific manner. 	<p>Consistent. As part of the Cultural Resources Study, a literature and records search, in addition field reconnaissance, was conducted to identify potential archaeological resources on the project site. Although no known archaeological resources exist on the site, consistent with these policies and per the prescribed mitigation measures, should archaeological resources be encountered during Project construction activities, an archaeologist would prescribe an appropriate treatment plan for such resources that may include implementation of archaeological data recovery excavations to remove the resource or preservation in place. Any such resources would be assessed and treated in a scientific manner.</p>
<p>Paleontological Resources Policies</p> <ul style="list-style-type: none"> ▪ To identify paleontological resources through literature and records research and surface surveys. ▪ To monitor and salvage paleontological resources during the grading of a project. ▪ To preserve paleontological resources by maintaining them in an undisturbed condition. ▪ To develop, utilize, and promote effective technical conservation and restoration strategies. 	<p>Consistent. As part of the Cultural Resources Study, a literature and records search, in addition field reconnaissance, was conducted to identify potential paleontological resources on the project site. Although no known paleontological resources exist on the site, consistent with these policies and per the prescribed mitigation measures, should paleontological resources be encountered during Project construction activities, a paleontologist would prescribe an appropriate treatment plan for removal of such resources.</p>

Source PCR Services Corporation, 2013.

3. CUMULATIVE IMPACTS

4.4-5 *The Project combined with the related projects could significantly impact archaeological and paleontological resources in the project area. However, implementation of mitigation measures by the related projects and the Project, cumulative impacts on archaeological and paleontological resources would be less than significant, and the Project's contribution to such impacts would not be cumulatively considerable.*

As described above, the Project would result in no impacts to historic resources; therefore, the Project does not have the potential to contribute to cumulative impacts regarding historic resources.

Although the Project—in conjunction with the effects of past projects, other current projects, and probable future projects (including the Esperanza Hills Project) — could result in the disturbance of archaeological and paleontological resources throughout the cumulative study area (see Section 3.0 of this EIR for a map

and list of the 18 related projects in the surrounding area.), standard conditions of approval and mitigation measures required for each project would reduce the impacts to less than significant levels. Despite the site-specific nature of the resources, mitigation required for the identification and protection of unknown or undocumented resources would reduce the potential for significant cumulative impacts. On a cumulative level, data recovered from a site, combined with data from other sites in the region, would allow for the examination and evaluation of the diversity of human activities in the region. As a result, the Project's contribution to cumulative cultural resources impacts would not be considerable and are, therefore, less than significant.

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