APPENDIX E.1:
Paleontological Resources Evaluation

March 2, 2026

City of Costa Mesa
77 Fair Drive
Costa Mesa, CA 92626

RE: Paleontological Assessment Memorandum for the Fairview Developmental Center Specific Plan, Orange County, California

To Whom It May Concern:

ECORP Consulting, Inc. (ECORP) completed a thorough investigation of the potential for construction of the Fairview Developmental Center (Proposed Project) to result in direct impacts to paleontological resources (Figure 1). This investigation included a paleontological record search through the Natural History Museum of Los Angeles County (NHMLAC) and a desktop study of the geology and paleontology of the Proposed Project Area.

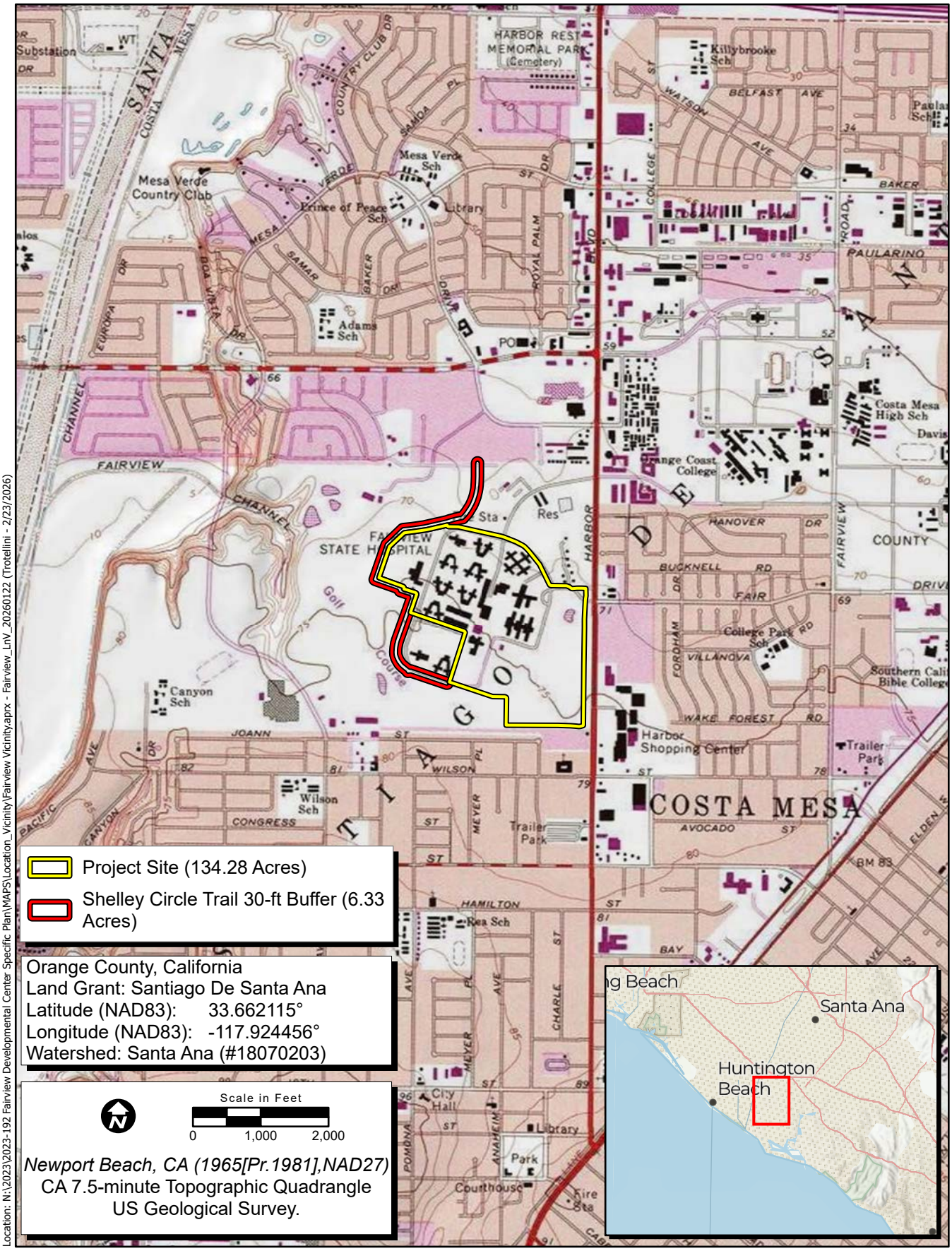
The Proposed Project is a specific plan for the development of a mixed-used community on the site of the Fairview Development Center facility. The Proposed Project includes a minimum of 2,300 dwelling units, with the potential for as many as 4,000 dwelling units, ranging from two- and three-story townhomes to buildings up to 12 stories in height. The Proposed Project also includes up to 35,000 square feet of commercial space, at least 14 acres of publicly accessible open space, and the development of a trail on the eastern side of the Proposed Project Area. Access will be from the existing entry point on Fairview Drive and a proposed second entry point from Harbor Boulevard in the southeast portion of the Proposed Project Area. The proposed new access includes construction of a roadway through the Mesa Linda Golf Course. As many as six holes on the golf course would be reconfigured as part of roadway construction (ECORP 2026).

The Proposed Project Area consists of approximately 134 acres of land located in an unsectioned portion of the Santiago de Santa Ana land grant, Township 6 South, Range 10 West, San Bernardino Base and Meridian, as depicted on the 1965 U.S. Geological Survey Newport Beach, California 7.5-Minute Quadrangle (Figure 1). The Proposed Project Area comprises two parcels, which are identified by Assessor's Parcel Numbers 988-420-01 and 420-012-16 (ECORP 2026).

GEOLOGIC SETTING

The Proposed Project Area is located at the northern end of the Peninsular Ranges Geomorphic Province—a 900-mile-long, northwest–southeast-trending structural block that extends from the Transverse Ranges in the north to the tip of Baja California in the south, including the Los Angeles Basin (Norris and Webb 1976). The province is characterized by northwest–southeast-trending mountains and valleys that parallel the San Andreas Fault Zone.

2525 Warren Drive ● Rocklin, CA 95677 ● Tel: (916) 782-9100 ● Fax: (916) 782-9134 ● www.ecorpconsulting.com



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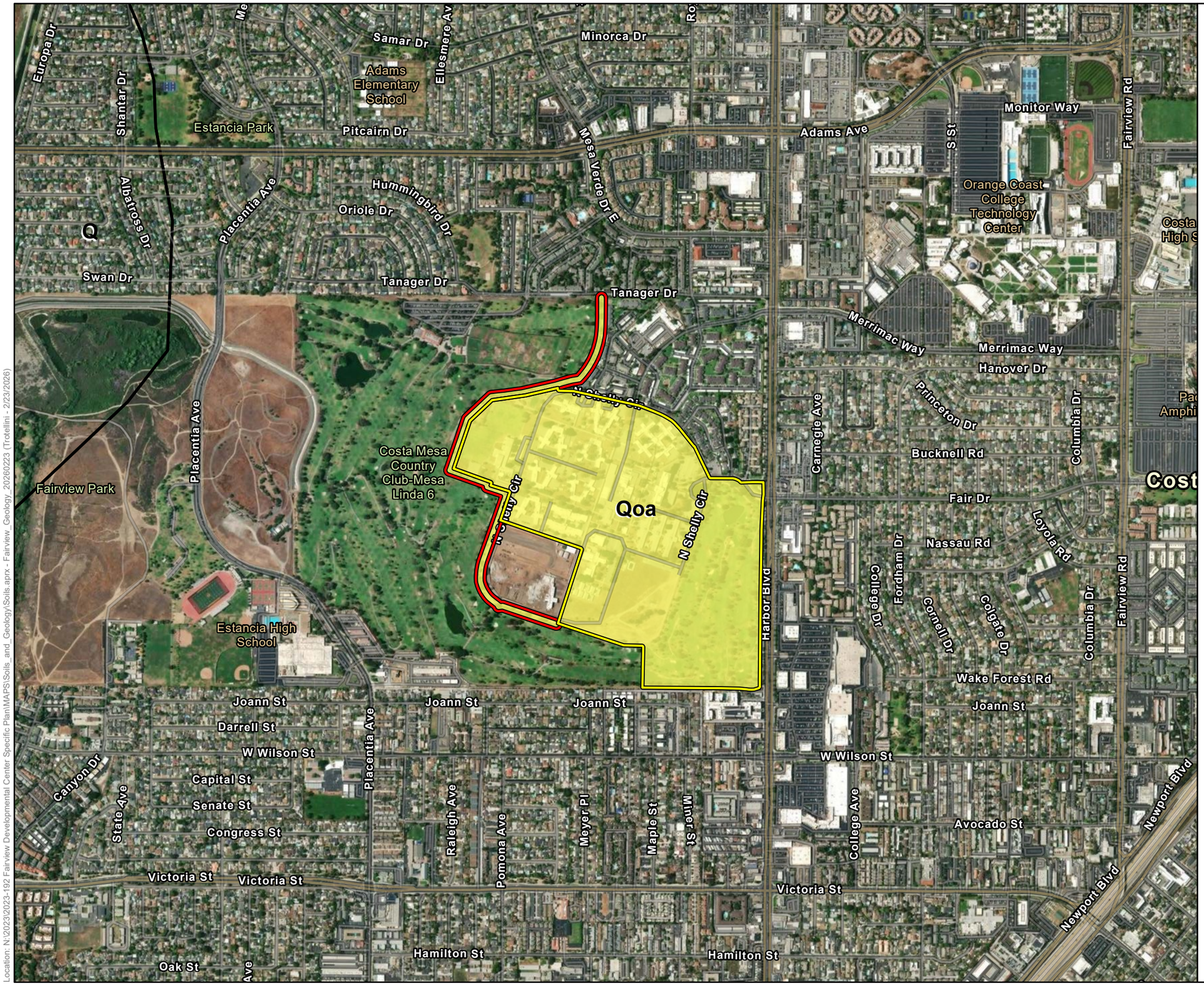
Map Date: 1/22/2026
Sources: ESRI, USGS

Figure 1. Project Location and Vicinity



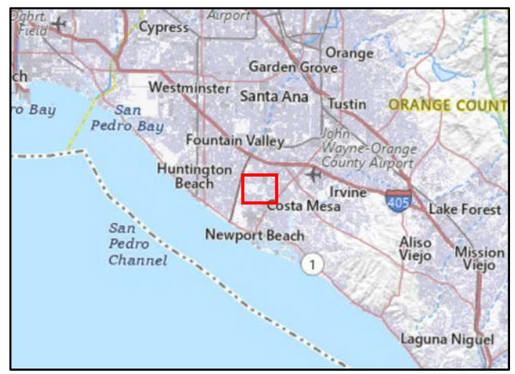
Map Features

- Project Site (134.28 Acres)
- Shelley Circle Trail 30-ft Buffer (6.33 Acres)

Geologic Units within Project Boundary

- Qoa - Older alluvium, lake, playa, and terrace deposits

Sources: ESRI, Vantor (2025)
California Department of Conservation - Geologic Atlas of California (2010)



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Map Date: 12/15/2025

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

Scale in Feet
0 1,000

Figure 2. Geologic Units

2023-192 Fairview Developmental Center Specific Plan

Morton and Miller (2006) indicate that the Proposed Project Area consists of old paralic deposits overlain by alluvial-fan deposits (late to middle Pleistocene) capped by thin, younger, locally derived, sandy alluvial fan deposits. Quaternary older alluvium (Figure 2) of late to middle Pleistocene age is known to produce paleontological resources if those depths are reached during construction activities. Approximately 3.5 miles northeast of the Proposed Project Area, geotechnical studies at the proposed residential development at 3150 Bear Street indicated that the Quaternary-age alluvial fan deposits consisted of olive brown, yellowish brown, brown, and brownish gray clay, silty clay, sandy clay, clayey sands, and silty sands (Zepeda et al. 2024).

RECORD SEARCH RESULTS

ECORP conducted a paleontological record search through the NHMLAC located in Los Angeles, California. The NHMLAC did not have any records of previous finds recorded directly within the Proposed Project Area; however, fossil localities from sedimentary deposits similar to those that may occur within the Proposed Project Area—either at the surface or at depth—are located nearby (Bell 2025) (Table 1). The NHMLAC did, however, have a record of fossils of sea turtle (Cheloniidae), camel (Camelidae), and mammoth (*Mammuthus* sp.) bones from older Quaternary deposits underlying the younger Quaternary deposits.

In addition to the record search results, ECORP conducted reviews of published and unpublished literature. Approximately 3 miles north of the Proposed Project Area, during the construction of the Costa Mesa Hive Live Project, Daniels et al. (2024) of Michael Baker International conducted a record search through the NHMLAC. The record search identified 10 known fossil localities in the collection from Pleistocene alluvial deposits in the vicinity of the Proposed Project Area, including freshwater invertebrate fossils such as clams and bryozoans, and vertebrate fossils such as camels, horses, and mammoths.

ECORP conducted a search through the NHMLAC for the Ganahl Lumber Costa Mesa Property located at 1100 SE Bristol Street, approximately 2.5 miles northeast of the Proposed Project Area (ECORP 2014). Shallow deposits consisted of marine younger Quaternary Terrace deposits, which are typically void of significant vertebrate fossils.

Table 1. Closest Known Fossil Localities			
Location	Formation	Taxa	Depth
Newport Bay Mesa	Unknown formation (Pleistocene)	Invertebrates (*Dentalium, Chione, Lucinoma, Cyclocardia, Pomaulax, Epilucina, Luchisca, Clinocardium, Balanus, Pododesmus,* Muricidae, *Turritella, Mytilus, Dendrostrea, Chalmys, Patinopecten, Euvola,* *Crasssadoma*, Bryozoa, Echinoidea, and other uncatalogued specimens)	Unknown
Near the intersection of Superior Ave. and Pacific Coast Highway; Newport Beach	Terrace deposits (Pleistocene, silty sandstones)	Horse (*Equus*), other unspecified mammals; Invertebrates: clam (*Tivela*, *Donax*, *Lucinisca*), scaphopod (*Dentalum*, *Antalis*), marine gastropods (*Glossaulax*, *Chlorostoma*)	Unknown (found during grading for parking lot construction)
On U.S. Route 101; west of the viaduct [bridge], a 1-mile exposure of fossiliferous beds	Palos Verdes Sand, bed 40–60 feet thick	Invertebrates (*Yoldia, Tivela, Penitella, Petricola, Semele, Tellina, Leukoma, Glycymeris, Leptopecten, Lucinisca, Macoma, Dentalum, Paciocinebrina, Cryptomya, Cumingia, Donax, Nassarius, Callianax, Nutricola, Seila, Turritella, Gari*, and others) Legless lizard (*Anniella*), tree frog (*Hyla*), gopher snake (*Pituophis*), garter snake (Thamnophis), kingsnake *(Lampropeltis)*, ring-necked snake *(Diadophis*), garter snake (*Thamnophis*), long-nosed snake (*Rhinocheilus*), coachwhip (*Masticophis*), salamander (*Enatina*), slender salamander (*Batrachoseps*), skinks (*Plestiodon*), alligator lizard (*Gerrhonotus*), toad (*Bufo*), side-blotched lizard *(Uta*), spiny lizard (*Sceloporus*), climbing salamander (*Aneides*), turtle (*Clemmys*); quail (*Callipepla*), rail (*Rallus*); vole (*Microtus*), pocket gopher (*Thomomys*), shrew *(Sorex*), kangaroo rat (*Dipodomys*), cottontail rabbit (*Sylvilagus*), mole (*Scapanus*), harvest mouse (*Reithrodontomys*), deer mouse (*Peromyscus*), pack rat (*Neotoma*), chipmunk (*Eutamias*), bat (Chiroptera), Mammoth *(Mammuthus*), horse (*Equus*), bison (*Bison*); stickleback	Surface
The Huntington Beach Urban Center Sand Borrow Area, North of Pacific Coast Highway and West of Huntington Dr.	Unknown formation (Pleistocene sands)	(Gasterosteus), houndshark (Triakis); Land snails (Gastropoda)	Unknown
Near intersection of 19th St. and Anaheim Ave. in Costa Mesa	Unknown formation (Pleistocene)	Proboscidea	Unknown

RECOMMENDATIONS

Within California, late-Pleistocene fossils may appear anywhere from 8 to 10 feet in depth. The sensitivity for producing fossils may range from low (Holocene alluvium) to high (Pleistocene alluvium) with depth. Prior to issuance of a grading permit, the Proposed Project applicant should consult with a paleontologist to confirm whether grading would occur at depths that may encounter highly sensitive sediments. If so, ECORP recommends full time paleontological monitoring by a qualified paleontologist. However, because Holocene sediment of low sensitivity is found on the surface and the depth of this sediment is unknown, a paleontologist may be on call until excavations reach a depth of paleontological interest, in which case the following mitigation measure should be implemented:

GEO-1: Unanticipated Discovery of a Paleontological Resource: If paleontological resources (i.e., fossil remains) are discovered during excavation activities, the contractor will notify the City and cease excavation within 50 feet of the find until a qualified paleontological professional can provide an evaluation of the site. The qualified paleontological professional will evaluate the significance of the find and recommend appropriate measures for the disposition of the site (e.g., fossil recovery, curation, data recovery, and/or monitoring). Construction activities may continue on other parts of the construction site while evaluation and treatment of the paleontological resource takes place.

If you have any questions about the information presented in this letter, please contact me at nkottachchi@ecorpconsulting.com or (916) 708-5330.

Sincerely,

Nkottachchi

Niranjala Kottachchi
Paleontological Program Manager

REFERENCES

Daniels, J.T., Garcia, R., Kloess, P., and Beherec, M. 2024. *Michael Baker International: Cultural and Paleontological Resources Identification Memorandum for the Costa Mesa Hive Live Project, City of Costa Mesa, Orange County, California*, 68p.

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Personal Communication

Alyssa Bell. 2025. Natural History Museum of Los Angeles County. Email dated December 21. Paleontological Record Search.