PALEONTOLOGICAL ASSESSMENT FOR THE IDI LOGISTICS ECKHOFF STREET PROJECT

CITY OF ORANGE, COUNTY OF ORANGE

APNs 386-371-20, -31, and -32

Prepared on Behalf of:

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March 30, 2021

Paleontological Database Information

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Report Date:	March 30, 2021
Report Title:	Paleontological Assessment for the IDI Logistics Eckhoff Street Project, City of Orange, County of Orange
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Prepared for:	City of Orange 300 East Chapman Avenue Orange, California 92602
Prepared by:	Brian F. Smith and Associates, Inc. 14010 Poway Road, Suite A Poway, California 92064
Assessor's Parcel Numbers:	386-371-20, -31, and -32
USGS Quadrangle:	*Orange, California* (7.5 minute)
Study Area:	12.69 acres
Key Words*:*	Paleontological assessment; city of Orange; Orange County; Holocene alluvial fan deposits; no paleontological sensitivity; no paleontological monitoring required.

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I. INTRODUCTION AND LOCATION

A paleontological resource assessment has been completed for the IDI Logistics Eckhoff Street Project (Assessor's Parcel Numbers [APNs] 386-371-20, -31, and -32) located southeast of the intersection of Eckhoff Street and Collins Avenue in the city of Orange, Orange County, California (Figures 1 and 2). The western half of the project is situated within Section 25, Township 4 South, Range 10 West, and the eastern half is situated within Section 30, Township 4 South, Range 9 West on the USGS *Orange, California* topographic quadrangle (see Figure 2). The 12.69-acre project proposes the demolition of the existing commercial warehouses and their replacement with two new warehouse structures and associated parking.

II. REGULATORY SETTING

The California Environmental Quality Act (CEQA), which is patterned after the National Environmental Policy Act, is the overriding environmental document that sets the requirement for protecting California's cultural and paleontological resources. The document does not establish specific rules that must be followed but mandates that governing permitting agencies (lead agencies) set their own guidelines for the protection of nonrenewable paleontological resources under their jurisdiction.

State of California

Under Guidelines for the Implementation of CEQA, as amended in December 2018 (California Code of Regulations [CCR] Title 14, Division 6, Chapter 3, Sections 15000 et seq.), procedures define the types of activities, persons, and public agencies required to comply with CEQA. Section 15063 of the CCR provides a process by which a lead agency may review a project's potential impact to the environment, whether the impacts are significant, and provide recommendations, if necessary. In the Environmental Checklist, one of the questions to answer is, "Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?" (Appendix G, Section VII, Part f). California Public Resources Code Section 5097.5 states:

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

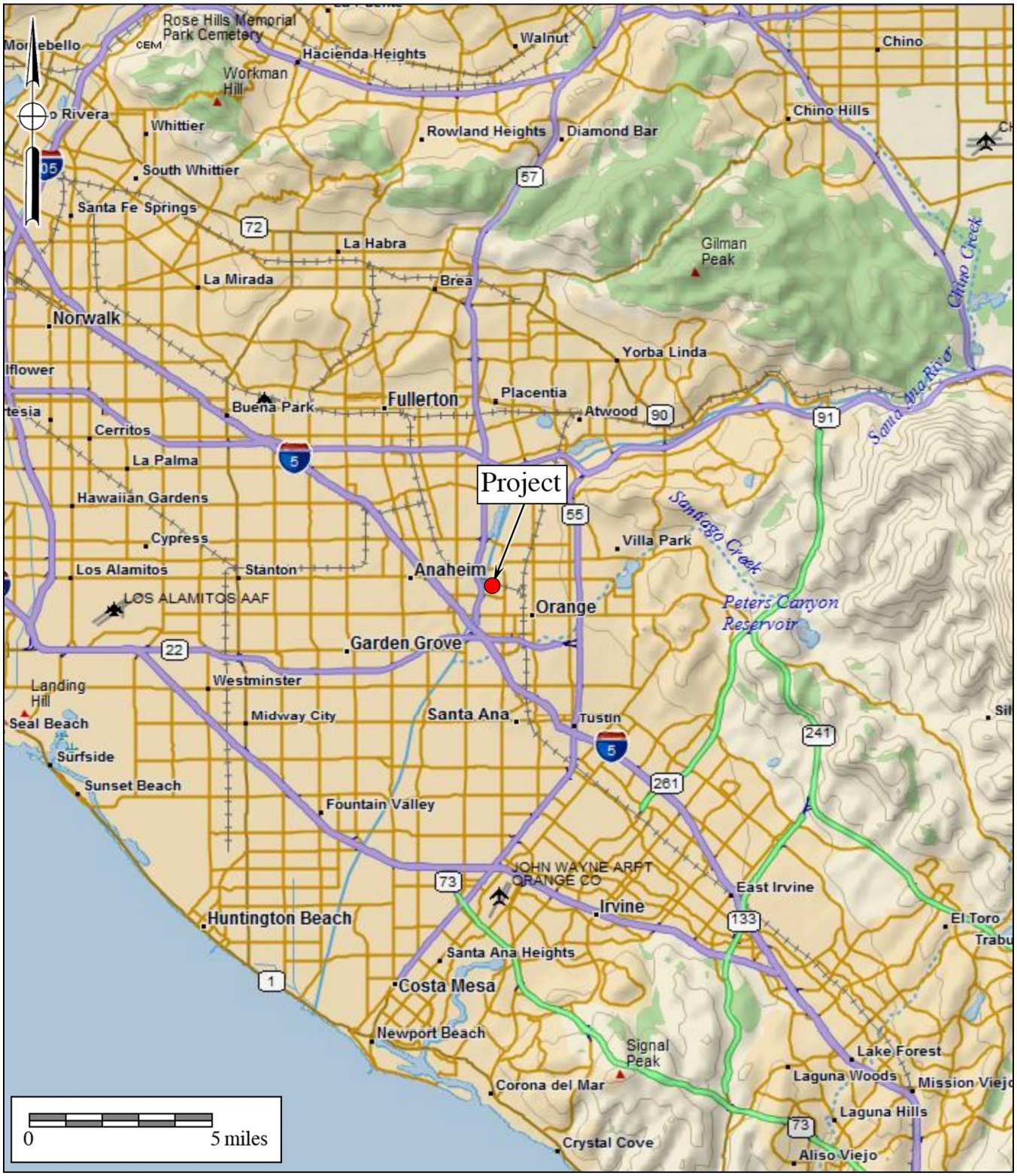


Figure 1

General Location Map

The IDI Logistics Eckhoff Street Project

DeLorme (1:250,000)

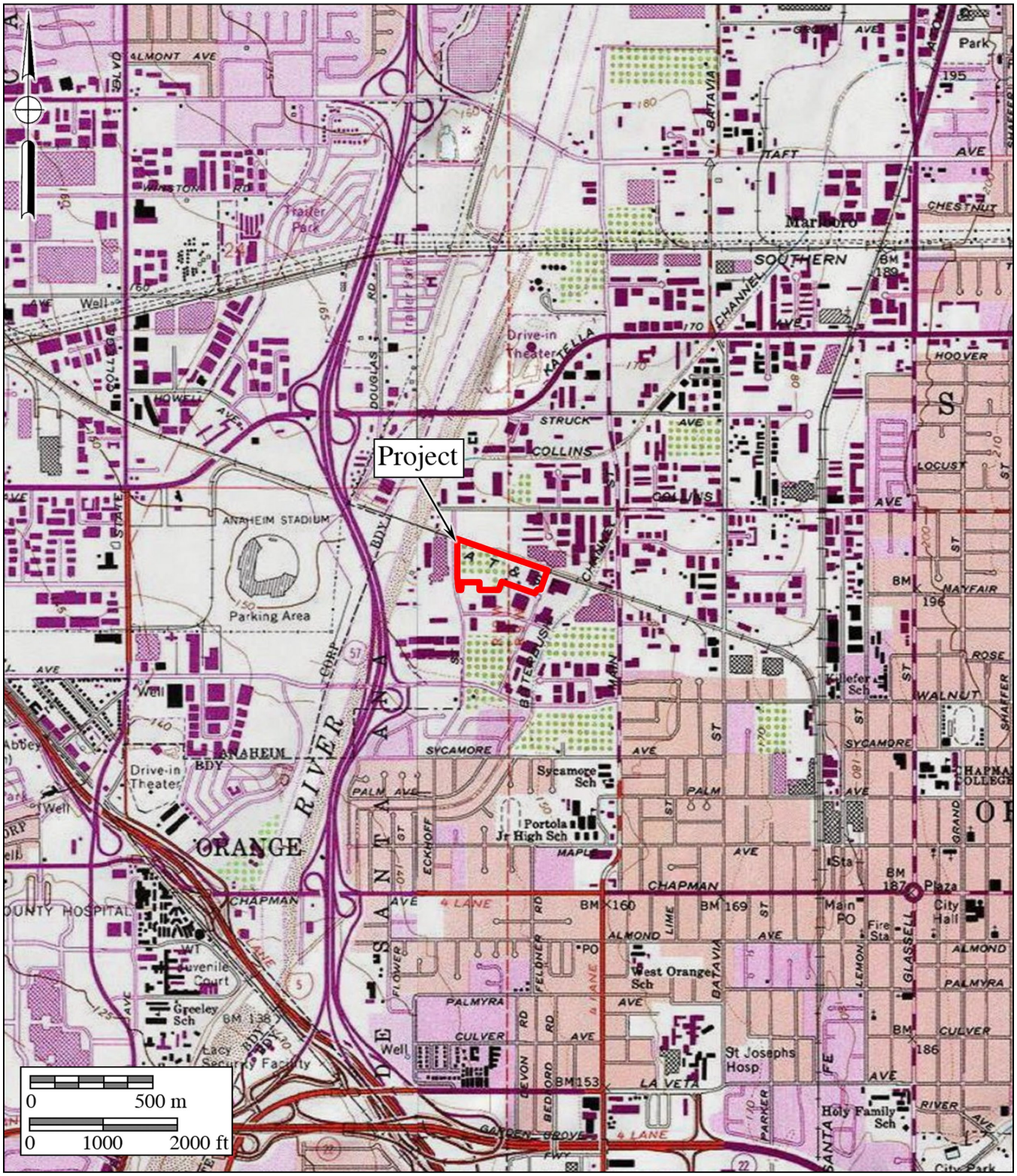


Figure 2

Project Location Map

The IDI Logistics Eckhoff Street Project

USGS *Anaheim* and *Orange* Quadrangles (7.5-minute series)

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

County of Orange

Section 2-5-27(c) of Article 2 of the Codified Ordinances of Orange County includes protection measures for "natural, cultural, structural, and archeological resources" in recreational areas and mandates that:

> No person shall possess, destroy, injure, deface, remove, dig, or disturb from its natural state any fossilized or nonfossilized paleontological specimens, cultural or archaeological resources, or the parts thereof in any park, beach or recreational facility. (County of Orange 2005)

Similarly, Section 2-5-227(c) of Article 9 of the Codified Ordinances of Orange County includes protection measures for "natural, cultural, structural, and archeological resources" in privately owned parks and mandates that:

> No person shall possess, destroy, injure, deface, remove, dig, or disturb from its natural state any fossilized or nonfossilized paleontological specimens, cultural or archaeological resources, or the parts thereof in any designated park. (County of Orange 2005)

Eisentraut and Cooper (2002) introduced a curation model and monitoring and mitigation guidelines for the conservation of archaeological and paleontological materials in the County of Orange. This document and its recommendations were subsequently adopted by the Orange County Board of Supervisors and now provide a standard for the paleontological profession to use in the paleontological mitigation process in Orange County. In 2009, the John D. Cooper Archaeology and Paleontology Center ("the Cooper Center") was formally organized in Santa Ana with the intent to provide a repository to receive future incoming collections. Operation of the Cooper Center was initially a joint partnership between the County of Orange and California State University, Fullerton. In 2019, Orange County Parks (OC Parks) took over administration of the facility.

City of Orange

Paleontological resources are not covered in the City's general plan or environmental impact report (City of Orange 2010).

III. GEOLOGY

The current path of the Santa Ana River lies just west of the IDI Logistics Eckhoff Street Project. Geologically, the surficial sediments across the project are mapped as Holocene and late Pleistocene young alluvial fan deposits (yellow areas labeled "Qyf_a" on Figure 3) consisting of unconsolidated sandy alluvium with gravel and silt (Morton and Miller 2006); however, it should be noted that the sheet indicating the correlation of the map units shows only a Holocene age for these deposits. During the Holocene, activity of the Santa Ana River points to widespread sheet flooding and wandering, as indicated by extensive and continuous "younger" sand and silt deposits (Greenwood and Pridmore 1997). Mapped east of the project, at higher elevations, are various late to middle Pleistocene old alluvial fan deposits (amber areas labeled "Qof" on Figure 3), consisting of moderately to well-consolidated silt, sand, and gravel (Morton and Miller 2006).

IV. PALEONTOLOGICAL RESOURCES

Definition

Paleontological resources are the remains of prehistoric life that have been preserved in geologic strata. These remains are called fossils and include bones, shells, teeth, and plant remains (including their impressions, casts, and molds) in the sedimentary matrix, as well as trace fossils such as footprints and burrows. Fossils are considered older than 5,000 years of age (Society of Vertebrate Paleontology 2010) but may include younger remains (subfossils), for example, when viewed in the context of local extinction of the organism or habitat. Fossils are considered a nonrenewable resource under state and county policies (see Section II of this report).

Paleontological Resource Records Search

A paleontological records search was performed by the paleontological curator of the OC Parks Division of Orange County and is attached in Appendix B (Gelnaw 2021). The records search found that no fossils are recorded within the subject property or in the vicinity of the project. The nearest fossil localities are approximately five miles east of the project in much older geologic formations. In sedimentary deposits similar to those at the project, the nearest fossil localities are located in Tustin, approximately 7.5 miles to the southeast. In addition, Gelnaw (2021) explains that "Shallow excavations in the younger Quaternary alluvium in the proposed project area are unlikely to uncover any significant vertebrate fossils."

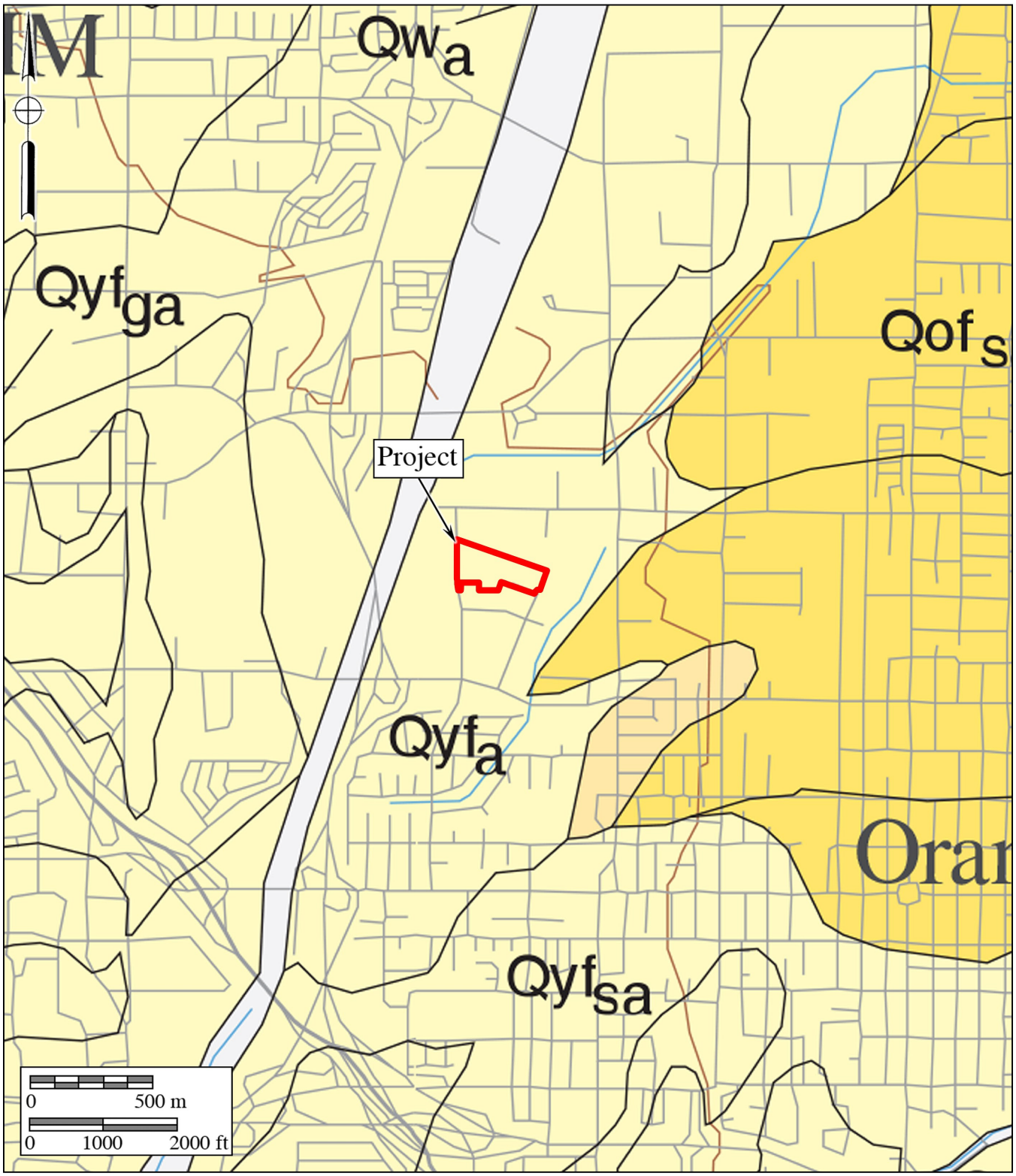


Figure 3

Geologic Map

The IDI Logistics Eckhoff Street Project

Geology after Morton and Miller (2006)

V. PALEONTOLOGICAL SENSITIVITY

Overview

The degree of paleontological sensitivity of any particular area is based upon a number of factors, including the documented presence of fossiliferous resources on a site or in nearby areas, the presence of documented fossils within a particular geologic formation or lithostratigraphic unit, and whether or not the original depositional environment of the sediments is one that might have been conducive to the accumulation of organic remains that might have become fossilized over time. Holocene alluvium, such as that present at the project, is generally considered to be geologically too young to contain significant, nonrenewable paleontological resources (*i.e.,* fossils) and, therefore, is typically assigned a low paleontological sensitivity. Pleistocene (greater than 11,700 years old) alluvial and alluvial fan deposits, however, often yield important Ice Age terrestrial vertebrate fossils, such as extinct mammoths, mastodons, giant ground sloths, extinct species of horse, bison, and camel, saber-toothed cats, and others. Therefore, these Pleistocene sediments are accorded a high paleontological resource sensitivity.

Professional Standards

The Society of Vertebrate Paleontology (2010) drafted guidelines outlining procedures that include:

> [E]valuating the potential for impacts of a proposed action on paleontological resources and for mitigating those impacts. Impact mitigation includes pre-project survey and salvage, monitoring and screen washing during excavation to salvage fossils, conservation and inventory, and final reports and specimen curation. The objective of these procedures is to offer standard methods for assessing potential impacts to fossils and mitigating these impacts.

The guidelines include four categories of paleontological sensitivity for geologic units (formations) that might be impacted by a proposed project, as listed below:

- *High Potential:* Rock units from which vertebrate or significant invertebrate, plant, or trace fossils have been recovered.
- *Undetermined Potential:* Rock units for which little information is available concerning their paleontological content, geologic age, and depositional environment, and that further study is needed to determine the potential of the rock unit.
- *Low Potential:* Rock units that are poorly represented by fossil specimens in institutional collections or based upon a general scientific consensus that only preserve fossils in rare circumstances.
- *No Potential:* Rock units that have no potential to contain significant paleontological

resources, such as high-grade metamorphic rocks and plutonic igneous rocks.

Orange County Paleontological Sensitivity Assessment

The sedimentary formations exposed within the IDI Logistics Eckhoff Street Project are Holocene-aged young alluvial fan deposits. Eisentraut and Cooper (2002) and Rivin and Sutton (2010) have ranked geologically young surficial sediments such as those mapped within the project as having no paleontological sensitivity. In general, fossils are not found in Holocene deposits, due to their young age.

VI. FINDINGS AND RECOMMENDATIONS

Research has revealed the presence of Holocene to late Pleistocene young alluvial fan deposits mapped across the surface of the IDI Logistics Eckhoff Street Project. Within the coastal plains of Orange County, young alluvial fan sediments rarely produce terrestrial vertebrate fossils. Young alluvial fan sedimentary deposits, such as those underlying the project, are typically assigned a low paleontological sensitivity. However, Eisentraut and Cooper (2002) and Rivin and Sutton (2010) have ranked geologically young surficial sediments such as those mapped within the project as having no paleontological sensitivity. All of these factors support the recommendation that paleontological monitoring should not be required during mass grading, trenching, and excavation activities in Holocene young alluvial fan sediments at the project. However, if paleontological resources are inadvertently discovered, a paleontological Mitigation Monitoring and Reporting Program (MMRP) should be implemented at the project. A proposed MMRP is detailed below. When implemented with the provisions of CEQA and the guidelines of the Society of Vertebrate Paleontology (2010), this MMRP would mitigate any adverse impacts (loss or destruction) to potential nonrenewable paleontological resources (fossils), if present, to a level below significant.

Proposed Paleontological MMRP

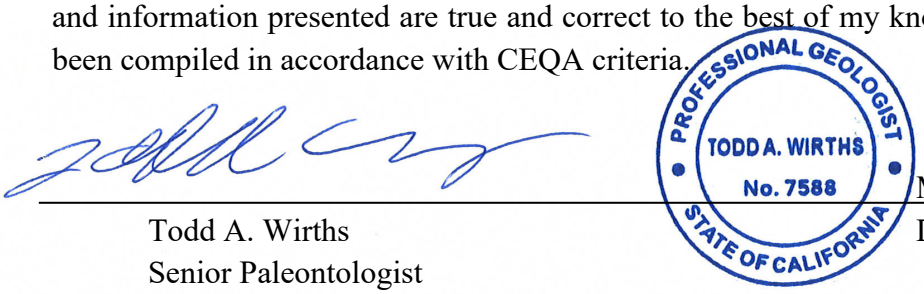
1. If paleontological resources are discovered during earth disturbance activities, the discovery shall be cordoned off with a 50-foot radius buffer to protect the discovery from further potential damage and an Orange County-qualified paleontologist shall be consulted to assess the discovery. If the paleontologist determines that the discovery is significant, an MMRP shall be initiated, which will include appropriate monitoring of earth disturbance activities.
2. Monitoring may be reduced if the potentially fossiliferous units are not present in the subsurface or, if present, are determined by qualified paleontological personnel upon exposure and examination to have a low potential to contain or yield fossil resources.
3. Paleontological monitors will be equipped to salvage fossils as they are unearthed to avoid construction delays and to remove samples of sediments that are likely to

contain the remains of small fossil invertebrates and vertebrates. The monitor must be empowered to temporarily halt or divert equipment to allow for the removal of abundant or large specimens in a timely manner.

4. Paleontological salvage during trenching and boring activities is typically from the generated spoils and does not delay the trenching or drilling activities. Fossils will be collected and placed in cardboard flats or plastic buckets and identified by field number, collector, and date collected. Notes will be taken on the map location and stratigraphy of the discovery site, which will be photographed before it is vacated and the fossils are removed to a safe place.
5. Particularly small invertebrate fossils typically represent multiple specimens of a limited number of organisms, and a scientifically suitable sample can be obtained from one to several five-gallon buckets of fossiliferous sediment. If it is possible to dry screen the sediment in the field, a concentrated sample may consist of one or two buckets of material. For vertebrate fossils, the test is usually the observed presence of small pieces of bones within the sediments. If present, as many as 20 to 40 five-gallon buckets of sediment can be collected and returned to a separate facility to wet-screen the sediment. In the laboratory, individual fossils are cleaned of extraneous matrix, any breaks are repaired, and the specimen, if needed, is stabilized by soaking in an archivally approved acrylic hardener (*e.g.,* a solution of acetone and Paraloid B-72).
6. Recovered specimens will be prepared to a point of identification and permanent preservation, including screen-washing sediments to recover small vertebrates and invertebrates if indicated by the results of test sampling. Preparation of any individual vertebrate fossils is often more time-consuming than that of invertebrate fossils.
7. All fossils must be deposited in an accredited institution (university or museum) that maintains collections of paleontological materials. All costs of the paleontological monitoring and mitigation program, including any one-time charges by the receiving institution, are the responsibility of the developer. Typically, the Cooper Center in Santa Ana is the preferred repository for fossils found in Orange County.
8. A final monitoring and mitigation report of findings and significance will be prepared, including lists of all fossils recovered and necessary maps and graphics to accurately record their original location(s). A letter documenting receipt and acceptance of all fossil collections by the receiving institution must be included in the final report. The report, when submitted to and accepted by the appropriate lead agency (*e.g.,* the City of Orange), will signify satisfactory completion of the project program to mitigate impacts to any nonrenewable paleontological resources.

VII. CERTIFICATION

I hereby certify that the statements furnished above and in the attached exhibits present the data and information required for this paleontological report, and that the facts, statements, and information presented are true and correct to the best of my knowledge and belief, and have been compiled in accordance with CEQA criteria.



March 30, 2021

Todd A. Wirths
Senior Paleontologist
California Professional Geologist No. 7588

Date

VIII. REFERENCES

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County of Orange. 2005. County Ordinances, Division 5; Revised: February 2005. Electronic document, https://occonservation.org/wp-content/uploads/2020/05/RPRT-Closures.pdf, accessed March 26, 2021.

Eisentraut, P.J. and Cooper, J.D. 2002. Final Report, Development of a model curation program for Orange County's Archaeological & Paleontological Collections. Unpublished report prepared for the County of Orange, Public Facilities and Resources Department, Harbors, Beaches and Parks, Santa Ana, California.

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APPENDIX A

Qualifications of Key Personnel

Todd A. Wirths, MS, PG No. 7588

Senior Paleontologist

Brian F. Smith and Associates, Inc.
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Education

Master of Science, Geological Sciences, San Diego State University, California **1995**

Bachelor of Arts, Earth Sciences, University of California, Santa Cruz **1992**

Professional Certifications

California Professional Geologist #7588, 2003
Riverside County Approved Paleontologist
San Diego County Qualified Paleontologist
Orange County Certified Paleontologist
OSHA HAZWOPER 40-hour trained; current 8-hour annual refresher

Professional Memberships

Board member, San Diego Geological Society
San Diego Association of Geologists; past President (2012) and Vice President (2011)
South Coast Geological Society
Southern California Paleontological Society

Experience

Mr. Wirths has more than a dozen years of professional experience as a senior-level paleontologist throughout southern California. He is also a certified California Professional Geologist. At BFSA, Mr. Wirths conducts on-site paleontological monitoring, trains and supervises junior staff, and performs all research and reporting duties for locations throughout Los Angeles, Ventura, San Bernardino, Riverside, Orange, San Diego, and Imperial Counties. Mr. Wirths was formerly a senior project manager conducting environmental investigations and remediation projects for petroleum hydrocarbon-impacted sites across southern California.

Selected Recent Reports

2019 *Paleontological Assessment for the 10575 Foothill Boulevard Project, City of Rancho Cucamonga, San Bernardino County, California*. Prepared for T&B Planning, Inc. Report on file at Brian F. Smith and Associates, Inc., Poway, California.

2019 *Paleontological Resource Impact Mitigation Program (PRIMP) for the Speedway TPM 37676 Project, Temescal Valley, Riverside County, California.* Prepared for Speedway Development. Report on file at Brian F. Smith and Associates, Inc., Poway, California.

2019 *Paleontological Assessment for the MorningStar Marguerite Project, Mission Viejo, Orange County, California.* Prepared for T&B Planning. Report on file at Brian F. Smith and Associates, Inc., Poway, California.

2019 *Paleontological Monitoring Report for the Nimitz Crossing Project, City of San Diego.* Prepared for Voltaire 24, LP. Report on file at Brian F. Smith and Associates, Inc., Poway, California.

2019 *Paleontological Resource Impact Mitigation Program (PRIMP) for the Jack Rabbit Trail Logistics Center Project, City of Beaumont, Riverside County, California.* Prepared for JRT BP 1, LLC. Report on file at Brian F. Smith and Associates, Inc., Poway, California.

2020 *Paleontological Monitoring Report for the Oceanside Beachfront Resort Project, Oceanside, San California.* Prepared for S.D. Malkin Properties. Report on file at Brian F. Smith and Associates, Inc., Poway, California.

2020 *Paleontological Resource Impact Mitigation Program for the Nakase Project, Lake Forest, Orange County, San California.* Prepared for Glenn Lukos Associates, Inc. Report on file at Brian F. Smith and Associates, Inc., Poway, California.

2020 *Paleontological Resource Impact Mitigation Program for the Sunset Crossroads Project, Banning, Riverside County*. Prepared for NP Banning Industrial, LLC. Report on file at Brian F. Smith and Associates, Inc., Poway, California.

2020 *Paleontological Assessment for the Ortega Plaza Project, Lake Elsinore, Riverside County*. Prepared for Empire Design Group. Report on file at Brian F. Smith and Associates, Inc., Poway, California.

2020 *Paleontological Resource Record Search Update for the Green River Ranch III Project, Green River Ranch Specific Plan SP00-001, City of Corona, California*. Prepared for Western Realco. Report on file at Brian F. Smith and Associates, Inc., Poway, California.

2020 *Paleontological Assessment for the Cypress/Slover Industrial Center Project, City of Fontana, San Bernardino County, California*. Prepared for T&B Planning, Inc. Report on file at Brian F. Smith and Associates, Inc., Poway, California.

2020 *Paleontological Monitoring Report for the Imperial Landfill Expansion Project (Phase VI, Segment C-2), Imperial County, California*. Prepared for Republic Services, Inc. Report on file at Brian F. Smith and Associates, Inc., Poway, California.

2021 *Paleontological Assessment for the Manitou Court Logistics Center Project, City of Jurupa Valley, Riverside County, California*. Prepared for Link Industrial. Report on file at Brian F. Smith and Associates, Inc., Poway, California.

2021 *Paleontological Resource Impact Mitigation Program for the Del Oro (Tract 36852) Project, Menifee, Riverside County*. Prepared for D.R. Horton. Report on file at Brian F. Smith and Associates, Inc., Poway, California.

2021 *Paleontological Assessment for the Alessandro Corporate Center Project (Planning Case PR-2020-000519), City of Riverside, Riverside County, California*. Prepared for OZI Alessandro, LLC. Report on file at Brian F. Smith and Associates, Inc., Poway, California.

2021 *Paleontological Monitoring Report for the Boardwalk Project, La Jolla, City of San Diego*. Prepared for Project Management Advisors, Inc. Report on file at Brian F. Smith and Associates, Inc., Poway, California.

APPENDIX B

Paleontological Records Search

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JULIA BIDWELL
DIRECTOR
OC HOUSING & COMMUNITY DEVELOPMENT

RENEE RAMIREZ
DIRECTOR
OC COMMUNITY SERVICES

STACY BLACKWOOD
DIRECTOR
OC PARKS

JULIE QUILLMAN
COUNTY LIBRARIAN
OC PUBLIC LIBRARIES

OC Community Resources

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Mr. Wirths:

I have thoroughly searched our paleontology collection records for the locality and specimen data for the proposed IDI Eckhoff Street Project, BSA project no. 21-053, in the City of Orange, Orange County, project area as outlined on the portion of the Orange USGS topographic quadrangle map that you sent to me via e-mail on March 11, 2021. The area is underlain by young alluvial fan deposits[1] from the nearby Santa Ana River. We do not have any fossil localities that lie directly within the proposed site boundaries and the nearest localities with fossils in our collection from the equivalent geologic unit are approximately 7.5 miles to the southeast, in the city of Tustin. There are also no fossil localities known from older alluvial fan deposits near the proposed project area. The nearest geological units with known localities are the Puente and Topanga formations, approximately 5 miles east of the proposed project area.

Shallow excavations in the younger Quaternary alluvium in the proposed project area are unlikely to uncover any significant vertebrate fossils. If fossils are recovered during excavation, they should be deposited in an accredited and permanent scientific institution for the benefit of current and future generations. If any fossils are recovered during excavation, then sediment samples should also be collected and processed to determine the small fossil potential in the proposed project area. Because of the rarity of fossils in the Santa Ana River floodplain, any fossils recovered would have potential significance for understanding late Quaternary climatic evolution in the Los Angeles Basin.

This records search covers only the Orange County Paleontology Collections curated at the Cooper Lab. It is not intended to be a thorough paleontological survey of the proposed project area covering other institutional records, a literature survey, or any potential on-site survey. The Natural History Museum of Los Angeles County and the San Diego Museum of Natural History both have extensive collections originating from Orange County and should also be consulted to evaluate the paleontological impact risk.

Literature Cited:

1. Morten, D.M. and F.K. Miller. 2006. Geologic Map of the San Bernardino and Santa Ana 30' x 60' quadrangles, California. U.S. Geological Survey Open File Report 2006-1217.

Respectfully yours,

March 26, 2021

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Paleontology Curator
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