PALEONTOLOGICAL ASSESSMENT FOR THE 5088 EDISON AVENUE PROJECT

CITY OF CHINO, SAN BERNARDINO COUNTY, CALIFORNIA

APNs 1021-011-16 and -17

Lead Agency:

City of Chino
13220 Central Avenue
Chino, California 91710

Preparer:

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Project Proponent:

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May 31, 2024

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Paleontological Database Information

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Report Title:	Paleontological Assessment for the 5088 Edison Avenue Project, City of Chino, San Bernardino County, California
Prepared for:	T&B Planning, Inc. 8690 Aero Drive, Suite 115, PMB 383 San Diego, California 92123
Submitted to:	City of Chino 13220 Central Avenue Chino, California 91710
USGS Quadrangle:	Unsectioned area of Township 2 South, Range 8 West of the *Prado Dam* and *Ontario, California* (7.5-minute) USGS quadrangles
Assessor's Parcel Numbers:	1021-011-16 and -17
Study Area:	Approximately 18 acres
Key Words:	Paleontological assessment; Pleistocene alluvial fan deposits; High sensitivity; City of Chino.

Table of Contents

Appendices

List of Figures

I. INTRODUCTION AND LOCATION

A paleontological resource assessment has been completed for the 5088 Edison Avenue Project, located on the north side of Edison Avenue between Monte Vista and Central avenues in the city of Chino, San Bernardino County, California (Figures 1 and 2). The project consists of two parcels (Assessor's Parcel Numbers [APNs] 1021-011-16 and -17) totaling approximately 18 acres. On the U.S. Geological Survey (USGS) 1:24,000-scale (7.5-minute) *Prado Dam* and *Ontario, California* topographic quadrangle maps, the project is situated within Township 2 South, Range 8 West, of the San Bernardino Baseline and Meridian (see Figure 2). The property, all of which is currently developed for commercial/industrial use, is being considered for redevelopment as a 394,230-square-foot industrial warehouse facility.

As the lead agency, the City of Chino has required the preparation of a paleontological assessment to evaluate the project's potential to yield paleontological resources. The paleontological assessment of the project included a review of paleontological literature and fossil locality records for a previous project in the area, a review of the underlying geology, and recommendations to mitigate impacts to potential paleontological resources. A paleontological survey of the project was not attempted since the parcels are covered with pavement and buildings.

II. REGULATORY SETTING

The California Environmental Quality Act (CEQA), which is patterned after the National Environmental Policy Act, is the overriding environmental regulation that sets the requirement for protecting California's paleontological resources. CEQA 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 Implementation of the California Environmental Quality Act," 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 CEQA's Environmental Checklist Form, 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). This is to ensure compliance with California Public Resources Code Section 5097.5, the law that protects nonrenewable resources, including fossils, which is paraphrased below:

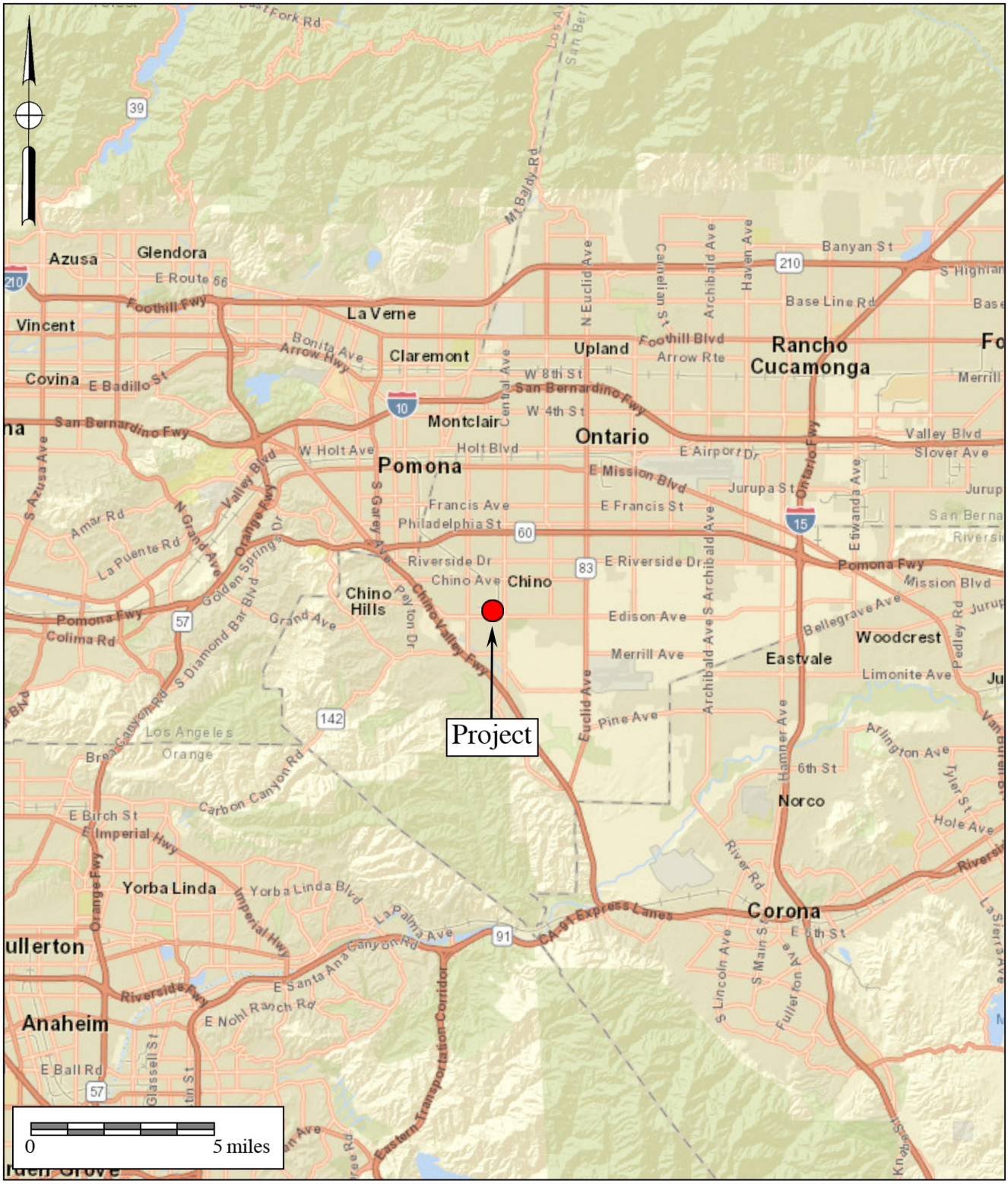

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Figure 1

General Location Map

The 5088 Edison Avenue Project

ESRI Street Map

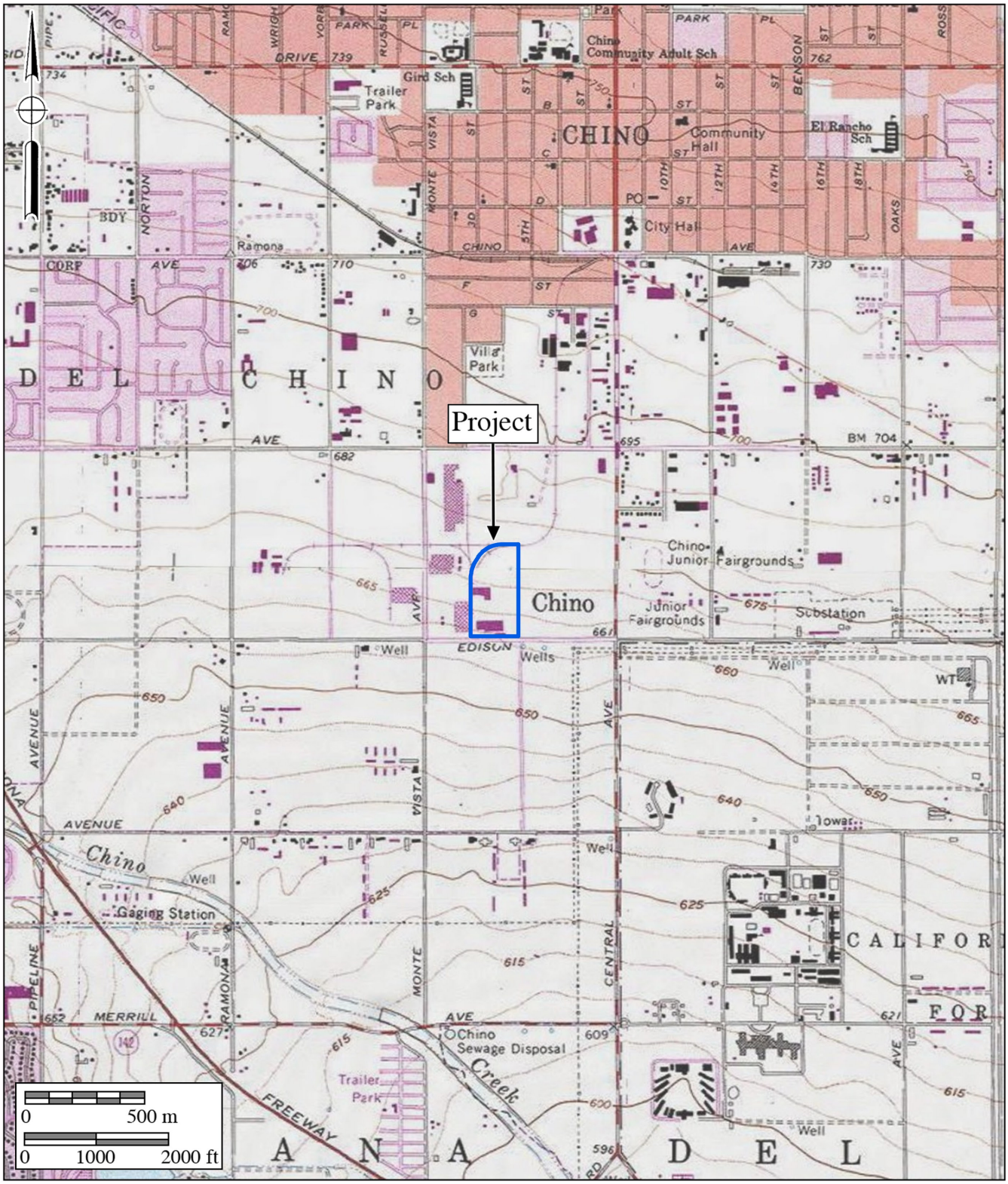

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Figure 2

Project Location Map

The 5088 Edison Avenue Project

USGS *Ontario* and *Prado Dam* Quadrangles (7.5-minute series)

a) A person shall not 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.
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.
c) A violation of this section is a misdemeanor.

City of Chino

The City of Chino General Plan (City of Chino 2010) sets forth the goals and policies for the City to manage future growth and land uses. Chapter 9 of the General Plan, Open Space and Conservation Element, contains the following policies designed to protect paleontological resources within the City:

- Goal OCS-7: Preserve Chino's connection to its history.
  - Policy P3: In the event that unknown archaeological or paleontological resources are discovered during construction, the Planning Division shall be notified immediately. All construction shall stop and an archaeologist meeting the Secretary of the Interior's Professional Qualifications Standards in prehistoric or historical archaeology should be retained to evaluate the discovered resources and recommend appropriate action. (City of Chino 2010)

III. GEOLOGY

The project is located in the Pomona Valley, the surface of which is covered by middle Holocene-aged young alluvial fan deposits, "Unit 3" (gray areas labeled "Qyf_{3a}" on Figure 3, after Morton and Miller 2006). These deposits are composed of slightly to moderately consolidated sandy deposits having slightly to moderately dissected surfaces. Slightly younger Holocene alluvial fan deposits are west of the project (yellow areas labeled "Qyf_5" on Figure 3). These Holocene deposits overlie older, Pleistocene-aged alluvial fan deposits at various depths in the region.

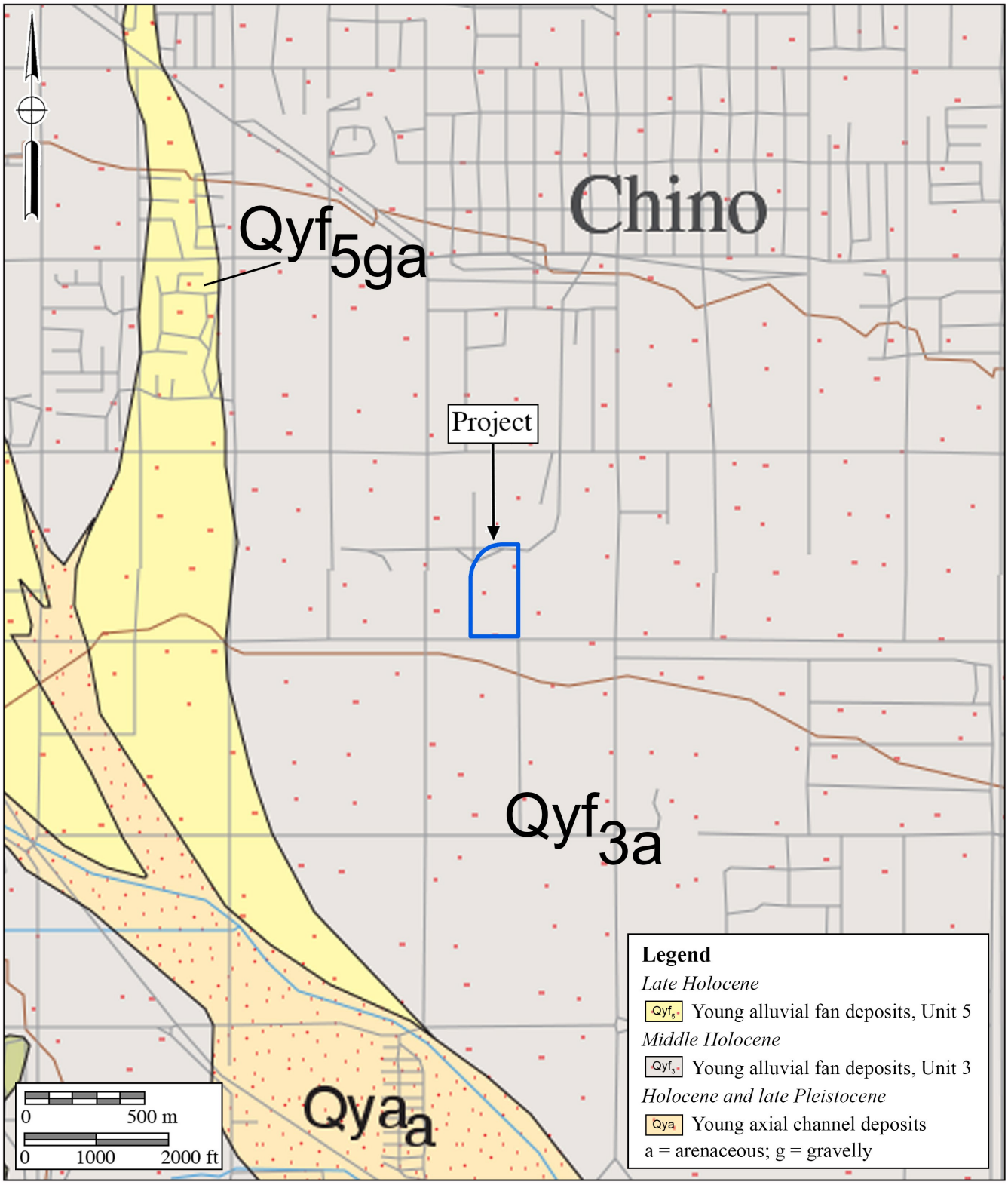

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Figure 3

Geologic Map

The 5088 Edison Avenue Project

Geology after 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 [SVP] 2010) but may include younger remains (subfossils) when viewed in the context of local extinction of the organism or habitat, for example. Fossils are considered a nonrenewable resource under state and local guidelines (see Section II of this report).

Fossil Locality Search

A paleontological literature review and collections and records search was performed for the project using reports obtained for prior nearby projects from the Division of Geological Sciences at the San Bernardino County Museum (SBCM), the Los Angeles County Museum of Natural History (LACM), and, finally, with data from published and unpublished paleontological literature. A paleontological records search was solicited from the SBCM for this project, but the SBCM could not complete the request in time for this report.

Records searches indicate that the closest locality held by the LACM is located approximately two miles west of the project in the English Canyon area of Chino Hills, consisting of late Pleistocene-aged remains of a prehistoric horse and a camel (LACM locality [loc.] 1728; Jefferson 2009). Other fossil localities, SBCM locs. 5.1.9 and 5.1.10, are located approximately one mile south of the project at Telephone Avenue and Chino Hills Parkway in the city of Chino and consist of the remains of a giant ground sloth, as well as those of a horse and camel. These fossils are also late Pleistocene in age (Jefferson 2009). The depths below the surface of these LACM and SBCM localities were not recorded, but are located in deposits mapped as Holocene alluvium that cover the fossil-bearing Pleistocene deposits, similar to the geologic setting at the current project.

Ongoing monitoring is currently being conducted by BFSA Environmental Services (BFSA) at the Ontario Ranch Business Park Project, located at the very southwest corner of Ontario, about two miles east-southeast of the current project. As-of-yet unidentified fossil bones yielded during grading for the Ontario Ranch Business Park Project indicate that Pleistocene deposits below the cover of Holocene alluvium are as shallow as nine feet deep or less. Farther south, along Kimball Avenue, BFSA monitors have recovered Pleistocene freshwater mollusks from about 10 feet deep at the currently ongoing Altitude Business Centre Project in Chino.

V. PALEONTOLOGICAL SENSITIVITY

Overview

The degree of paleontological sensitivity of any particular area is based on 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 may have become fossilized over time. Holocene alluvium is generally considered to be geologically too young to contain significant nonrenewable paleontological resources (*i.e.,* fossils) and thus is typically assigned a low paleontological sensitivity. Pleistocene (over 11,700 years old) alluvial and alluvial fan deposits in the Inland Empire, however, often yield important terrestrial vertebrate fossils, such as extinct mammoths, mastodons, giant ground sloths, extinct species of horse, bison, camel, saber-toothed cats, and others (Jefferson 2009). These Pleistocene sediments are thus accorded a High paleontological resource sensitivity.

Professional Standards

The SVP (2010) has drafted guidelines that 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 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 on 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.

Using these criteria, based on the regional geology and the location of the nearest-known Pleistocene fossils, the Holocene alluvial cover at the project, as mapped, has a low paleontological potential, since these sedimentary strata are too young to yield significant fossils. The underlying Pleistocene deposits are considered to have a high paleontological potential, since significant fossils are known to occur in these deposits in the region.

City of Chino Assessment of Paleontological Sensitivity

Map 5-6 in Chapter 5 of the City of Chino General Plan Update (City of Chino 2023) assigns a "Low to High Paleontologic Sensitivity" to the project area, where young alluvial fan deposits are mapped at the surface (Figure 4, as shown in red). Specific guidance or monitoring depth thresholds are not provided with the sensitivity designations in the General Plan Update.

VI. CONCLUSION AND RECOMMENDATIONS

Research indicates the likely presence of potentially fossiliferous Pleistocene old alluvial fan deposits that underlie the Holocene deposits mapped at the project. The occurrence of terrestrial vertebrate fossils from Pleistocene alluvial fan deposits in southwestern San Bernardino County is well documented. However, the depth of transition from Holocene age to Pleistocene age within the deposits at the project is not known. The "low to high" paleontological sensitivity rating assigned to these formations by the City of Chino for yielding paleontological resources supports the recommendation that paleontological monitoring be implemented during mass grading and excavation activities in these deposits to mitigate any adverse impacts (loss or destruction) to potential nonrenewable paleontological resources. Full-time monitoring of undisturbed alluvial fan deposits at the project is warranted starting at five feet below the surface. A Paleontological Resource Impact Mitigation Program (PRIMP) is suggested below that should be approved and implemented before the issuance of the grading permit.

Suggested PRIMP

The following guidelines, outlined below, are based on the findings stated above, which are consistent with the provisions of CEQA, the City of Chino, and the guidelines of the SVP (2010) for any mass grading and excavation-related activities, including utility trenching, during construction within the project. This suggested PRIMP, when implemented, would reduce potential impacts to paleontological resources to a level below significant.

1. A paleontologist shall be retained for the project and will be on-call during grading and other significant ground-disturbing activities. All mitigation programs should be performed by a qualified professional (project) paleontologist, defined as an individual with an M.S. or Ph.D. in paleontology or geology who has proven experience in paleontology and who is knowledgeable in professional paleontological procedures and techniques. Fieldwork may be conducted by a qualified paleontological monitor, defined as an individual who has experience in the collection and salvage of fossil materials. The paleontological monitor shall always work under the direction of a qualified paleontologist.

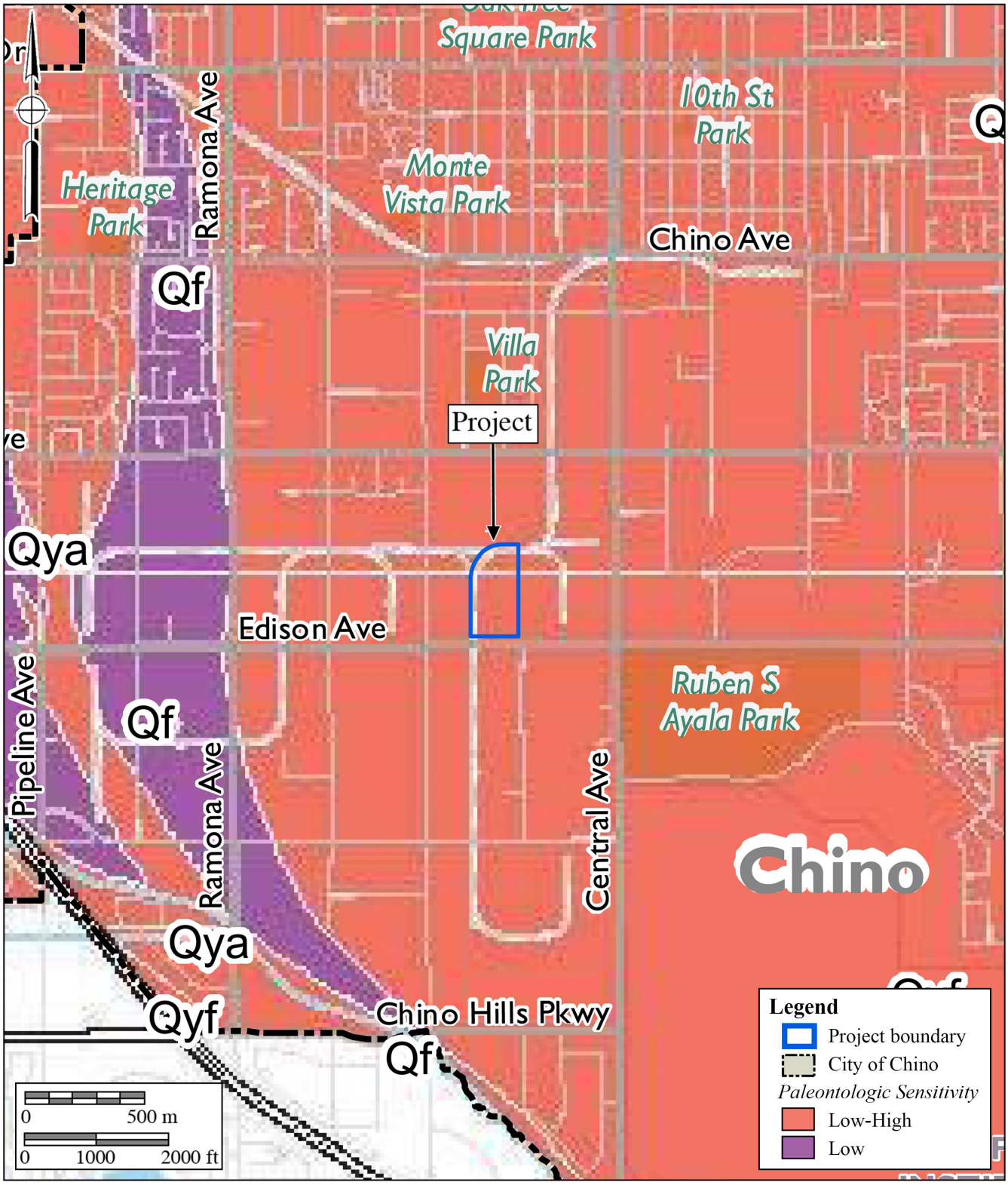

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Figure 4

Paleontological Sensitivity Map

The 5088 Edison Avenue Project

After City of Chino General Plan Update (2023)

2. Starting at five feet below the surface, monitoring should be conducted full-time in areas of grading or excavation in undisturbed alluvial fan deposits.
3. Should any paleontological resources be discovered, no further grading shall occur within 50 feet of the discovery. The monitor shall notify the project paleontologist, who will then notify the Planning Director of the City of Chino of the discovery.
4. Paleontological monitors will be equipped to salvage fossils as they are unearthed to avoid construction delays. The monitor must be empowered to temporarily halt or divert equipment to allow removal of abundant or large specimens in a timely manner. Monitoring may be reduced if the potentially fossiliferous units are not present in the subsurface or, if present, are determined upon exposure and examination by qualified paleontological personnel to have low potential to contain fossil resources.
5. Paleontological salvage during trenching and boring activities is typically from the generated spoils and does not delay the trenching or drilling activities. Fossils are collected and placed in cardboard flats or plastic buckets and identified by field number, collector, and date collected. Before the site is vacated and the fossils are moved to a safe place, notes are taken on the map location and stratigraphy of the site. On mass grading projects, discovered fossil sites are protected by flagging to prevent them from being overrun by earthmovers (scrapers) before salvage begins. Fossils are collected in a similar manner, with notes and photographs being taken before removing the fossils. If the site involves remains from a large terrestrial vertebrate, such as large bone(s) or a mammoth tusk, that is/are too large to be easily removed by a single monitor, a fossil recovery crew shall excavate around the find, encase the find within a plaster and burlap jacket, and remove it after the plaster is set. For large fossils, use of the contractor's construction equipment may be solicited to help move the jacket to a safe location.
6. Particularly small invertebrate fossils typically represent multiple specimens of a limited number of organisms, and a scientifically suitable sample can be obtained from 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.
7. In accordance with the "Microfossil Salvage" section of the SVP guidelines (2010:7), bulk sampling and screening of fine-grained sedimentary deposits (including carbonate-rich paleosols) must be performed if the deposits are identified to possess indications of producing fossil "microvertebrates" to test the feasibility of the deposit to yield fossil bones and teeth.
8. 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).

9. Recovered specimens are prepared to a point of identification and permanent preservation (not display), including screen-washing sediments to recover small invertebrates and vertebrates. Preparation of individual vertebrate fossils is often more time-consuming than preparation for accumulations of invertebrate fossils.
10. Identification and curation of specimens into a professional, accredited public museum repository with a commitment to archival conservation and permanent retrievable storage (*e.g.,* the SBCM) shall be conducted. The paleontological program should include a written repository agreement prior to the initiation of mitigation activities. Prior to curation, the lead agency (the City of Chino) will be consulted on the repository/museum to receive the fossil material.
11. A final 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). The report, when submitted to, and accepted by, the appropriate lead agency, will signify satisfactory completion of the project program to mitigate impacts to any potential nonrenewable paleontological resources (*i.e.,* fossils) that might have been lost or otherwise adversely affected without such a program in place.

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.

May 31, 2024

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

Date

VIII. REFERENCES

City of Chino. 2010. Envision Chino General Plan 2025 – Chapter 9: Open Space and Conservation Element. Adopted July 2010. https://cityofchino.org/DocumentCenter/View/403/Chino-General-Plan---09-Open-Space-and-Conservation-PDF.

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Society of Vertebrate Paleontology. 2010. Standard procedures for the assessment and mitigation of adverse impacts to paleontological resources; by the SVP Impact Mitigation Guidelines Revision Committee. Electronic document, https://vertpaleo.org/wp-content/uploads/2021/01/SVP_Impact_Mitigation_Guidelines-1.pdf.

APPENDIX A

Qualifications of Key Personnel

Todd A. Wirths, MS, PG No. 7588

Senior Paleontologist

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BFSA Environmental Services
A Perennial Company

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 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.

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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.

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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.