
Appendix F

Paleontological Resources Assessment

memorandum

date August 24, 2020

to Scott Sheridan
Wiley Canyon, LLC
136120 Telfair Avenue
Sylmar, CA 91342

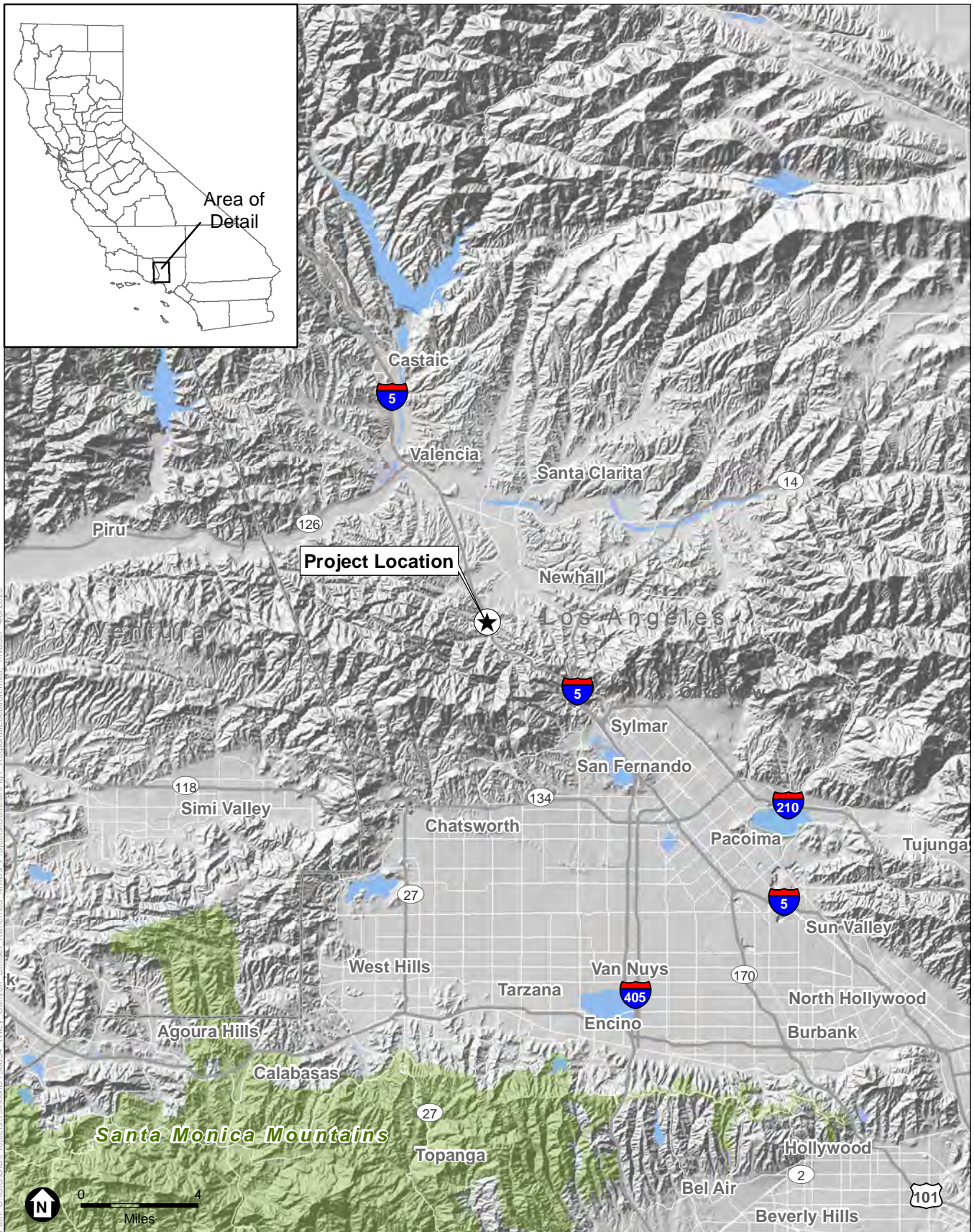
from Monica Strauss and Michael Vader
Environmental Science Associates

subject Paleontological Resources Assessment for the Wiley Canyon (Smiser Ranch) Mixed-Use Project,
City of Santa Clarita, California

Wiley Canyon, LLC (Applicant) has retained Environmental Science Associates (ESA) to prepare a paleontological resources assessment for the Wiley Canyon (Smiser Ranch) Mixed Use Project (Project) in support of an Environmental Impact Report (EIR) being prepared pursuant to the California Environmental Quality Act (CEQA). The Project encompasses an area of 31 acres and proposes the construction of three planning areas within 16 acres and consisting of 379 multifamily residential units, 8,914 square feet of retail commercial development and a 217-unit Senior Living Facility, leaving 15.2 acres of open space, landscaping or recreation areas. The site is surrounded by development and has been highly disturbed by past agricultural activities and limited commercial use. This paleontological resources assessment summarizes the methods and results of a paleontological database search from the Natural History Museum of Los Angeles County (LACM), a geologic map review, and review of available geotechnical studies to identify unique geological features and paleontological resource that could be impacted by Project activities and to assess the Project area's paleontological sensitivity. The City of Santa Clarita (City) is the lead state agency responsible for compliance with CEQA.

Project Location

The 31-acre Project area is located in west-central Los Angeles County, within the southwestern portion of the City of Santa Clarita (**Figure 1**). The Project includes Assessor Parcel Numbers (APNs) 2825-012-010 and 2825-012-011 and is located immediately east of Interstate Highway 5 (I-5), north of Calgrove Boulevard, and west of Wiley Canyon Road. Specifically, the Project is located in Sections 4 and 9 of Township 3 North, Range 14 West on the Oat Mountain, CA U.S. Geological Survey (USGS) 7.5-minute topographic quadrangle (**Figure 2**).

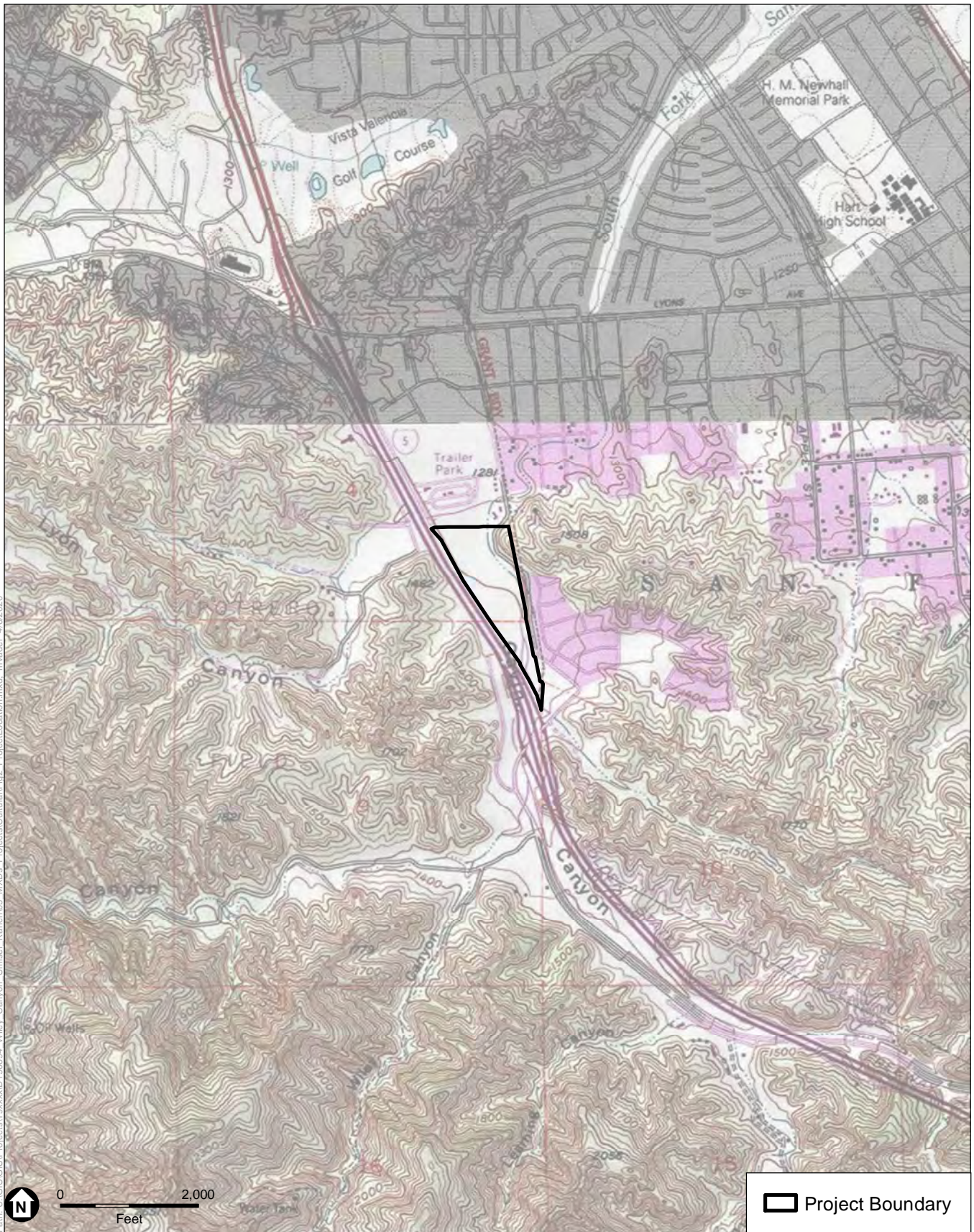


SOURCE: ESRI

Wiley Ranch (Smiser Canyon) Mixed-Use Project

Figure 1
Regional Location





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Project Description

The Project proposes the development of three planning areas within 16 acres of the 31-acre Project area, and consisting of 379 multifamily residential units, 8,914 square feet of retail commercial development and a 217-unit Senior Living Facility. The remaining 15.2 acres will be open space, landscaping, recreation areas, designated for widening of Wiley Canyon Creek and the creation of storm water basins. The Project would include 100 commercial parking stalls to be shared with the residential uses. There will be two water quality basins designated as private open space areas. The project would also include interconnected walking paths connecting all planning areas with active and passive recreation areas, featuring a central pedestrian promenade and trail along the spacious open space adjacent to Wiley Canyon.

Methods

This assessment includes a paleontological resources records search conducted by LACM, and a review of geologic maps and geotechnical studies to identify unique geologic features and paleontological resources that may be impacted by Project ground disturbance and to assess the paleontological sensitivity of the Project area. The LACM records search results are included in **Appendix A**.

Paleontological sensitivity is defined as the potential for a geologic formation to produce scientifically significant fossils. This is determined by rock type, past history of the geologic unit in producing significant fossils, and fossil localities recorded from that unit. Paleontological sensitivity is derived from the known fossil data collected from the entire geologic unit, not just from a specific survey. In its “Standard Guidelines for the Assessment and Mitigation of Adverse Impacts to Non-Renewable Paleontologic Resources,” the Society of Vertebrate Paleontology (SVP, 2010) defines four categories of paleontological sensitivity (potential) for rock units: 1) High Potential, rock units from which vertebrate or significant invertebrate, plant, or trace fossils have been recovered are considered to have a high potential for containing additional significant paleontological resources; 2) Low Potential, rock units that are poorly represented by fossil specimens in institutional collections, or based on general scientific consensus only preserve fossils in rare circumstances and the presence of fossils is the exception not the rule; 3) Undetermined Potential, rock units for which little information is available concerning their paleontological content, geologic age, and depositional environment; and 4) No Potential, rock units like high-grade metamorphic rocks (such as gneisses and schists) and plutonic igneous rocks (such as granites and diorites) that will not preserve fossil resources.

Results

Physical Setting

The Project is located within the Transverse Ranges geomorphic province. This geomorphic province is characterized as a band of west-trending mountain ranges and valleys, varying from 50 km to 130 km in width that extends about 400 km from Point Arguello on the west-northwest to the eastern San Bernardino Mountains on the east-southeast (Yerkes and Campbell 2005). The east-west grain of the Transverse Ranges Province presents a stark and abrupt interruption of the general northwesterly trends of the Peninsular Ranges Province to the south and the northwesterly to northerly grain of the California Coast Ranges, the Great Valley, the Sierra Nevada, and the Mojave Provinces to the north.

Geology

The surficial geology of the Project area as mapped by Yerkes and Campbell (2005) is largely comprised of Holocene-age (approximately < 10,000 years old) undifferentiated alluvial deposits (map unit Qa) with the northeastern corner of the Project area mapped as the Late Pliocene to the Early Pleistocene (3.6 to 1.8 million years ago) Saugus Formation (map Unit QTs) (**Figure 3**). The undifferentiated alluvial deposits are comprised of unconsolidated gravel, sand and silt in active or recently active streambeds. The Saugus formation is comprised of slightly consolidated, poorly sorted, coarse-grained, cross-bedded sandstone and pebble conglomerate.

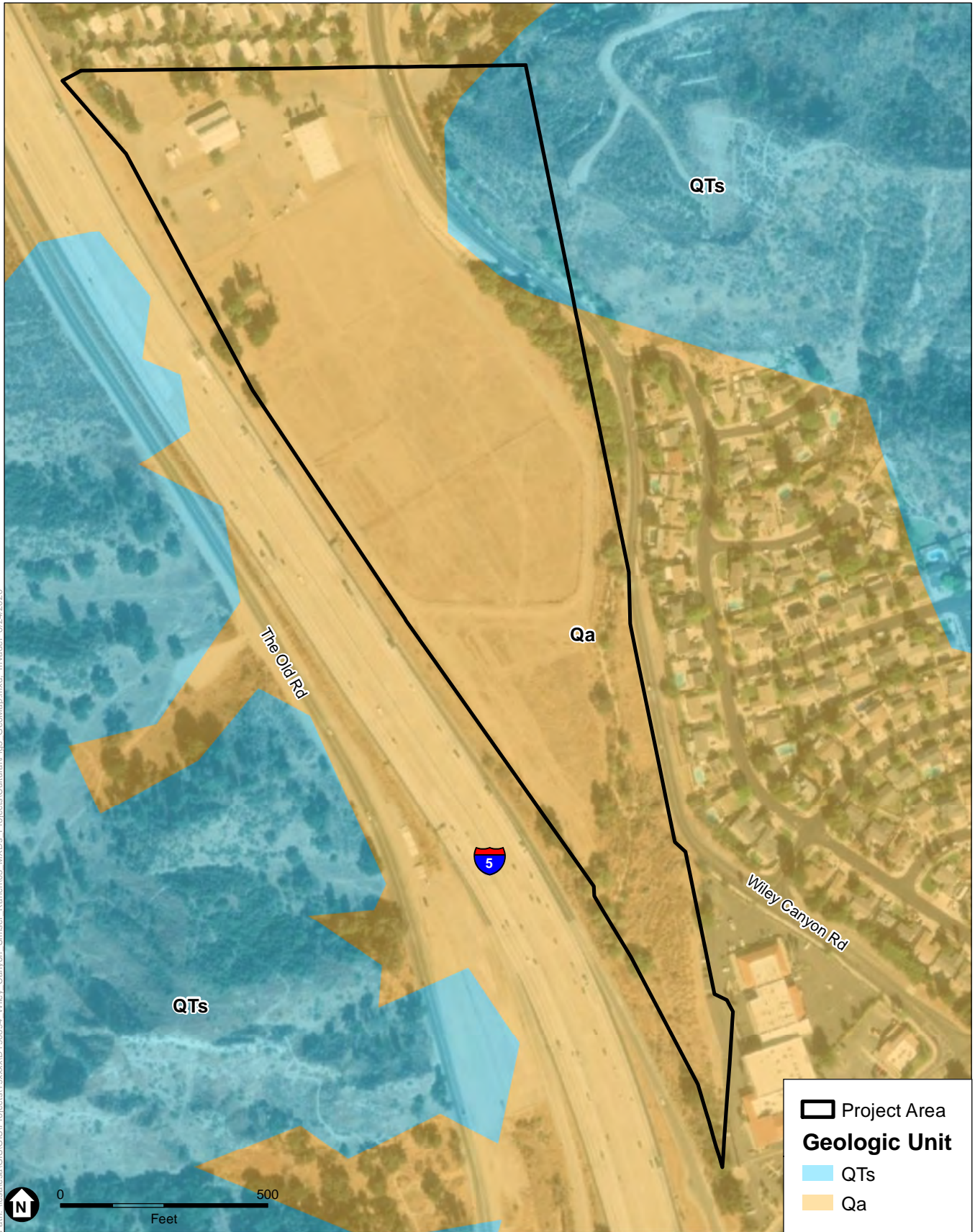
Geotechnical testing conducted within and adjacent to the Project area indicates it is largely underlain by undifferentiated quaternary alluvial and fluvial deposits consisting of brown to yellowish brown, fine- to coarse-grained sands with some gravel and cobbles, with silty to clayey sand and sandy silt interbeds (Seward and Callahan, 2018). The geotechnical testing identified the Saugus format was encountered at depths of 65-75 feet, underlying the alluvial and fluvial deposits within portions of the Project mapped as containing undifferentiated alluvial deposits.

LACM Records Search and Literature Review

The LACM reflects what is indicated as part of the geologic map review: that much of the Project is mapped as containing Holocene-age undifferentiated alluvial deposits, with the exception of the Project area's northeastern corner, which is mapped as the Saugus Formation. The Holocene-age alluvial deposits are often underlain at relatively shallow depths by Pleistocene-age (2,580,000 to 11,700 years ago) alluvial deposits, which are of appropriate age to contain paleontological resources (McLeod 2020).

The LACM records search did not identify the presence of paleontological resources within the Project area, but indicated that nine fossil localities have been recovered from Pleistocene-age alluvial deposits and the Saugus Formation within the Project vicinity. Of these nine localities, four occur within Pleistocene-age alluvial sediments and include: 1) LACM 5745 - fossil specimens of mastodon (*Mammut*) and horse (*Equus*) approximately 5 miles southeast of the Project; 2) LACM 3397 - fossil specimens of bison (*Bison*) at a depth of 75 feet below the ground surface approximately 6 miles southeast of the Project; 3) LACM 7152 – fossil specimens of mammoth (*Mammuthus*) and bison (*Bison*) approximately 6 miles southeast of the Project; and 4) LACM 1733 – fossil specimens of horse (*Equus*) approximately 6 miles southeast of the Project.

The LACM indicates that five fossil localities within the vicinity of the Project originate from the Saugus Formation and include: 1) LACM 1293 - fossil specimens of camel (*Camelidae*) approximately 3 miles northwest of the Project; 2) LACM 6803 and 6804 – fossil specimens of camel (*Camelidae*) and horse (*Equus*) approximately 3.75 miles northeast of the Project; 3) LACM 6063 - fossil specimen of horse (*Equus*) approximately 6 miles northwest of the Project; and 4). LACM 6062 – fossil specimens of alligator lizard (*Gerrhonotus*), rabbit (*Leporida*), pocket mouse (*Perognathus*), and pocket gopher (*Thomomys*) approximately 6.5 miles northwest of the Project.



SOURCE: ESRI

Wiley Canyon (Smiser Ranch) Mixed-Use Project

Paleontological Sensitivity Analysis

The geologic map and geotechnical review, as well as the LACM records search results, were used to assign paleontological sensitivity to the geologic units within the Project area, following the guidelines of the SVP (1995, 2010):

- **Alluvial deposits (Qa)** – These Holocene-age deposits are present at surface within the Project area and are too young to preserve paleontological resources; however, these deposits may be underlain at depth by older Pleistocene deposits that may contain paleontological resources. Therefore, these deposits have low to high paleontological sensitivity that increases with depth.
- **Saugus Formation (QTs)** – The Late Pliocene to Early Pleistocene Saugus Formation is mapped at the surface in the northwestern corner of the Project area and is of appropriate age to preserve paleontological resources as indicated by known fossil localities originating from similar deposits in the vicinity of the Project. Therefore, these deposits have high paleontological sensitivity.

Summary and Recommendations

The paleontological resources review identified two geologic units mapped at surface within the Project area: the Holocene-age alluvial deposits (Qa) and the Late Pliocene to Early Pleistocene-age Sespe Formation (QTs). Holocene-age alluvial deposits are mapped at the surface within much of the Project area and are likely underlain at depth by Pleistocene-age alluvium, which has high sensitivity for the presence of paleontological resources. The Late Pliocene to Early Pleistocene Sespe Formation is mapped at the surface in the Project's northeastern corner and underlies the surface alluvial deposits in the remainder of the Project area at depths of 75 feet below the ground surface. The Sespe Formation also has high sensitivity for the presence of paleontological resources. Project ground disturbing activities would extend to a maximum depth of 30 feet below the ground surface and, therefore, have the potential to contact geological units with high paleontological sensitivity per the SVP (2010) procedural guidelines. As such, there exists the potential to encounter unknown paleontological resources at surface within the northeastern portion of the Project area mapped as the Sespe Formation, and at depth in the remainder of the Project area mapped as Holocene-age alluvial deposits. Therefore, the following four mitigation measures presented below are recommended to reduce potential impacts to paleontological resources to less than significant.

Mitigation Measure PAL-1: Retain Qualified Paleontologist. Prior to the start of construction activities, the City shall retain a Qualified Paleontologist that meets the standards of the Society for Vertebrate Paleontology (2010) to carry out all mitigation measures related to paleontological resources.

Mitigation Measure PAL-2: Paleontological Resources Sensitivity Training. Prior to start of any ground disturbing activities, the Qualified Paleontologist shall conduct pre-construction worker paleontological resources sensitivity training. The Qualified Paleontologist shall contribute to any construction worker cultural resources sensitivity training either in person or via a training module. The training shall include information on what types of paleontological resources could be encountered during excavations, what to do in case an unanticipated discovery is made by a worker, and laws protecting paleontological resources. All construction personnel shall be informed of the possibility of encountering fossils and instructed to immediately inform the construction foreman or supervisor if any bones or other potential fossils are unexpectedly unearthed in an area where a paleontological monitor is not present. The

City shall ensure that construction personnel are made available for and attend the training and retain documentation demonstrating attendance.

Mitigation Measure PAL-3: Paleontological Monitoring. The Qualified Paleontologist shall supervise a paleontological monitor meeting the Society for Vertebrate Paleontology standards (2010) who shall be present during all excavations extending beyond a depth of 5 feet. Monitoring shall consist of visually inspecting fresh exposures of rock for larger fossil remains and, where appropriate, collecting wet or dry screened standard sediment samples (up to 4.0 cubic yards) of promising horizons for smaller fossil remains (SVP, 2010). Per the Society for Vertebrate Paleontology standards (2010), once 50 percent of excavations or other ground disturbing activities are complete within geologic units assigned high paleontological sensitivity and no fossils are identified, monitoring can be reduced to part-time inspections or ceased entirely if determined adequate by the Qualified Paleontologist in consultation with the City. Monitoring activities shall be documented in a Paleontological Resources Monitoring Report to be prepared by the Qualified Paleontologist at the completion of construction and shall be provided to the City within six (6) months of Project completion. If fossil resources are identified during monitoring, the report will also be filed with the Natural History Museum of Los Angeles County.

Mitigation Measure PAL-4: Inadvertent Discoveries. If a paleontological resource is discovered during construction, the paleontological monitor shall be empowered to temporarily divert or redirect grading and excavation activities in the area of the exposed resource to facilitate evaluation of the discovery. An appropriate buffer area shall be established by the Qualified Paleontologist around the find where construction activities shall not be allowed to continue. Work shall be allowed to continue outside of the buffer area. At the Qualified Paleontologist's discretion and to reduce any construction delay, the grading and excavation contractor shall assist in removing rock samples for initial processing and evaluation of the find. All significant fossils shall be collected by the paleontological monitor and/or the Qualified Paleontologist. Collected fossils shall be prepared to the point of identification and catalogued before they are submitted to their final repository. Any fossils collected shall be curated at a public, non-profit institution with a research interest in the materials, such as the Natural History Museum of Los Angeles County, if such an institution agrees to accept the fossils. If no institution accepts the fossil collection, they shall be donated to a local school in the area for educational purposes. Accompanying notes, maps, and photographs shall also be filed at the repository and/or school.

References

- McLeod, Samuel. 2020. Paleontological resources for the proposed Wiley Canyon (Smiser Ranch) Mixed-Use Project, in the City of Santa Clarita, Los Angeles County. Prepared for Environmental Science Associates by the Natural History Museum of Los Angeles County.
- Seward, Eric J. and Kevin P. Callahan. 2008. Geotechnical Summary Report for the Smiser Parcel. Prepared for Sheridan Ebbert Development by Allan E. Seward Engineering Geology, Inc.
- Society of Vertebrate Paleontology (SVP). 1995. Assessment and mitigation of adverse impacts to nonrenewable paleontologic resources: standard guidelines. *Society of Vertebrate Paleontology News Bulletin* 163:22-27.
- . 2010. *Standard Procedures for the Assessment and Mitigation of Adverse Impacts to Paleontological Resources*, http://www.vertpaleo.org/Impact_Mitigation_Guidelines.htm.
- Yerkes, Robert F., and Russell H. Campbell. 2005. Preliminary Geologic Map of the Los Angeles 30' x 60' Quadrangle, Southern California. Open-File Report 2005-1019. Electronic resource, <http://pubs.usgs.gov/of/2005/1019>, accessed April 28, 2020.

Appendix A: Natural History Museum of Los Angeles County Records Search

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

tel 213.763.DINO
www.nhm.org



Vertebrate Paleontology Section
Telephone: (213) 763-3325

e-mail: smcleod@nhm.org

6 February 2020

Environmental Science Associates
550 West C Street, Suite 750
San Diego, CA 92101

Attn: Michael Vader, Cultural Resources

re: Paleontological resources for the proposed Wiley Canyon (Smiser Ranch) Mixed-Use Project,
Project # D190894.00, in the City of Santa Clarita, Los Angeles County, project area

Dear Michael:

I have thoroughly searched our paleontology collection records for the locality and specimen data for the proposed Wiley Canyon (Smiser Ranch) Mixed-Use Project, Project # D190894.00, in the City of Santa Clarita, Los Angeles County, project area as outlined on the portion of the Oat Mountain USGS topographic quadrangle map that you sent to me via e-mail on 23 January 2020. We do not have any vertebrate fossil localities that lie directly within the proposed project area boundaries, but we do have localities nearby from the same sedimentary deposits that occur in the proposed project area, either at the surface or at depth.

In the lower lying terrain occupying most of the proposed project area there are surface deposits of younger Quaternary Alluvium. These younger Quaternary alluvial deposits typically do not contain significant vertebrate fossils in the uppermost layers, but at relatively shallow depth there are older sedimentary deposits that may well contain significant fossil vertebrate remains. Our closest fossil vertebrate locality in older Quaternary deposits is LACM 5745, southeast of the proposed project area east of the Golden State Freeway (I-5) and south of the Foothill Freeway (I-210), that contained fossil mastodon, *Mammut*, and horse, *Equus*, in fill dirt. Our next closest vertebrate fossil localities in these older Quaternary deposits occur southeast of the proposed project area at or near the Van Norman Reservoir, including LACM 3397 that produced fossil bison, *Bison*, at a seventy-five foot depth, LACM 7152 that produced fossil

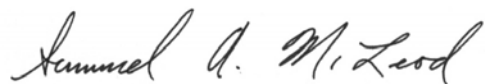
mammoth, *Mammuthus*, and bison, *Bison*, in terrace deposits and LACM 1733 that produced fossil horse, *Equus*, at unknown depth.

In the elevated terrain in the northeastern portion of the proposed project area there are exposures of the Plio-Pleistocene Saugus Formation. Our closest vertebrate fossil locality from the Saugus Formation is LACM 1293, northwest of the proposed project area on the north side of Potrero Canyon, that produced a fossil specimen of camel, Camelidae. Northeast of the proposed project area, in Saugus just southeast of the junction of Bouquet Canyon Road and Soledad Canyon Road, our Saugus Formation localities LACM 6803-6804, produced fossil specimens of camel, Camelidae, and horse, *Equus*. Slightly further northwest of the proposed project area, up the small canyon on the west side of Castaic Creek between Hasley Canyon and the Saugus - Ventura Road (Highway 126), our Saugus Formation locality LACM 6063 produced a fossil specimen of horse, *Equus*. Slightly farther north in Hasley Canyon our Saugus Formation locality LACM 6062 produced fossil specimens of alligator lizard, *Gerrhonotus*, rabbit, Leporidae, pocket mouse, *Perognathus*, and pocket gopher, *Thomomys*.

Shallow excavations in the younger Quaternary Alluvium exposed in most of the proposed project area are unlikely to encounter any significant vertebrate fossils. Deeper excavations in the proposed project area that extend down into older sedimentary deposits, or any excavations in the Saugus Formation exposed in the northeastern portion of the proposed project area, however, may well uncover significant fossil vertebrate specimens. Any substantial excavations in the proposed project area, therefore, should be closely monitored to quickly and professionally recover any potential vertebrate fossils without impeding development. Also, sediment samples should be collected and processed to determine the small fossil potential in the proposed project area. Any fossils recovered during mitigation should be deposited in an accredited and permanent scientific institution for the benefit of current and future generations.

This records search covers only the vertebrate paleontology records of the Natural History Museum of Los Angeles County. 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.

Sincerely,



Samuel A. McLeod, Ph.D.
Vertebrate Paleontology

enclosure: invoice