APPENDIX A-D: PALEONTOLOGICAL RESOURCES ASSESSMENT

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PALEONTOLOGICAL RESOURCES TECHNICAL REPORT FOR THE 6300 WEST THIRD STREET PROJECT, LOS ANGELES, CALIFORNIA

February 2019

PREPARED FOR

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Paleontological resources can be damaged or destroyed through uncontrolled public disclosure of information regarding their location. This document contains sensitive information regarding the nature and location of paleontological sites that should not be disclosed to the general public or unauthorized persons.

Paleontological Resources Technical Report for the 6300 West Third Street Project, Los Angeles, California

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SWCA Project No. 49872

February 2019

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EXECUTIVE SUMMARY

Purpose and Scope: The Holland Partner Group retained SWCA Environmental Consultants (SWCA) to conduct a paleontological resources study for the proposed 6300 West Third Street Project (project) located in the Los Angeles, California. The Holland Partner Group proposes to demolish two existing buildings and surface parking lot and construct one 8-story, mixed-use commercial and residential building on a 7.5-acre property located at 6300 West Third Street (project site). The eastern half of the shopping center currently occupied by Kmart and other retail tenants would be demolished and replaced by new construction. Ground-disturbing construction activities would involve grading, excavation, shoring tie-backs, and drilling of soldier piles conducted using loaders, excavators, compactors, hauling trucks, and a drill. The maximum anticipated depth of excavation below existing surface grade is approximately 30 feet. The ground disturbing activities proposed by the project are defined as the area of potential impact (API), which measures 3.25 acres (141,753 square feet).

This paleontological resources study is intended to characterize and describe paleontological resources identified within the API that could be affected by ground-disturbing activities associated with the project. This report includes a review of laws, ordinances, and regulations relevant to this project, as well as a records search from the Natural History Museum of Los Angeles County (LACM) and a review of geologic mapping, the scientific literature, and previous geotechnical investigations at the project site. This study was completed in compliance with federal statutes (The Antiquities Act of 1906; The National Environmental Policy Act of 1969; The Omnibus Public Lands Act; etc.) as well as California state statutes (the California Environmental Quality Act [CEQA] and the California Public Resources Code) and following the professional standards of the Society of Vertebrate Paleontology (SVP).

Dates of Investigation: A records search was requested from the Natural History Museum of Los Angeles County (LACM) on April 4, 2018. This report was completed in September 2018.

Findings: The surface of the API is currently paved and consists of surface parking lots and existing buildings. The subsurface of the site consists primarily of older alluvium, with the southeastern corner composed of younger alluvium overlying older alluvium at an estimated depth of 1 m (3 feet). Older alluvium has high paleontological sensitivity because it is of an age known to preserve fossil resources and has a well-established record of fossil preservation throughout the Los Angeles Basin. No previously recorded fossil localities were identified within the project site or API during the records search. The LACM has records of fossil localities from within 1 km (0.62 mile) of the project site.

Conclusion: The depth of excavation for the project is approximately 30 feet below the surface within the older alluvium. Older alluvium has a record of preserving fossil resources in the Los Angeles Basin. Construction activities on the site would comply with applicable regulatory measures to minimize impacts on known and unknown paleontological resources. In addition, considering the location of the site, and the potential for paleontological resources to be present on it, this report contains measures designed to reduce potential impacts to less than significant levels. These measures include: retaining a qualified paleontologist, preparing a paleontological resource monitoring and mitigation program, conducting a worker environmental awareness program training, and monitoring for fossil resources. These measures contain standards to ensure that any discovered resources are not significantly impacted. The measures have been developed in accordance with the standards established by the Society of Vertebrate Paleontology (SVP) and are consistent with the guidance in the Conservation Element of the City of Los Angeles General Plan. Similar mitigation measures have been used throughout California to protect paleontological resources while allowing timely completion of construction. Regulatory compliance and adherence to these measures will reduce impacts of the project to paleontological resources to less-than-significant levels.

Disposition of Data: This report will be on file with the following entities: City of Los Angeles, The Holland Partner Group, and SWCA's Pasadena office.

CONTENTS

FIGURES

APPENDICES

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INTRODUCTION

The Holland Partner Group retained SWCA Environmental Consultants (SWCA) to provide paleontological resources services in support of the 6300 West Third Street Project (project) in Los Angeles, California (Figure 1–Figure 3). The project proposes to demolish two existing buildings and surface parking lot and construct one 8-story, mixed-use commercial and residential building on a 7.5-acre property located at 6300 West Third Street (project site). The ground disturbing activities proposed by the project are defined as the area of potential impact (API)[1], which occupies the eastern portion of the project site and measures 3.25 acres (141,753 square feet). SWCA performed a desktop analysis to assess paleontological conditions throughout the project site and API and reviewed relevant technical documents and museum databases on paleontological resources. The desktop research is summarized in this paleontological resources technical report (PRTR), which documents the existing paleontological conditions within the project site and API.

Paleontological Resources Study Personnel

SWCA Lead Paleontologist Alyssa Bell, Ph.D., conducted the paleontological analysis and authored this report. Geographic Information Systems (GIS) Specialist John Walls produced the figures. SWCA Paleontological Resources Principal Investigator Russell Shapiro, Ph.D., reviewed this report. SWCA project managers Chris Millington, M.A. and Alex Wesson. B.A. provided oversight on this project.

PROJECT DESCRIPTION

Proposed Project Work

The project site is at the southeast corner of Third Street and Fairfax Avenue in the city of Los Angeles, California. The site is a rectangular parcel currently occupied by a two-story commercial structure with a basement level and an associated asphalt-paved parking lot. The site is bounded by Third Street to the north by an existing commercial development, and by Fairfax Avenue to the west, by South Ogden Drive to the east, and by an alleyway and Hancock Park Elementary School to the south.

The Holland Partner Group proposes to redevelop the existing commercial center located at the southeastern corner of Fairfax Avenue and Third Street. The project anticipates 83,994 square feet of new commercial floor area, 5 stories of multi-family residential, three levels of above-grade parking and retail, and 2 levels of underground parking. The eastern half of the shopping center currently occupied by Kmart and other retail tenants would be demolished and replaced by new construction. Ground-disturbing construction activities would involve grading, excavation, shoring tie-backs, and drilling of soldier piles conducted using loaders, excavators, compactors, hauling trucks, and a drill. The maximum anticipated depth of excavation below existing surface grade is approximately 30 feet. The API for the project includes all areas in which ground disturbances are proposed to occur.

[1] Whereas the project's geographic location and results of the background research reference the project site, references to the API are made when potential impacts under CEQA are specifically being considered, e.g., in the discussion of paleontological resources sensitivity and impact analysis stated in the conclusion.

Figure 1. Project location and vicinity.

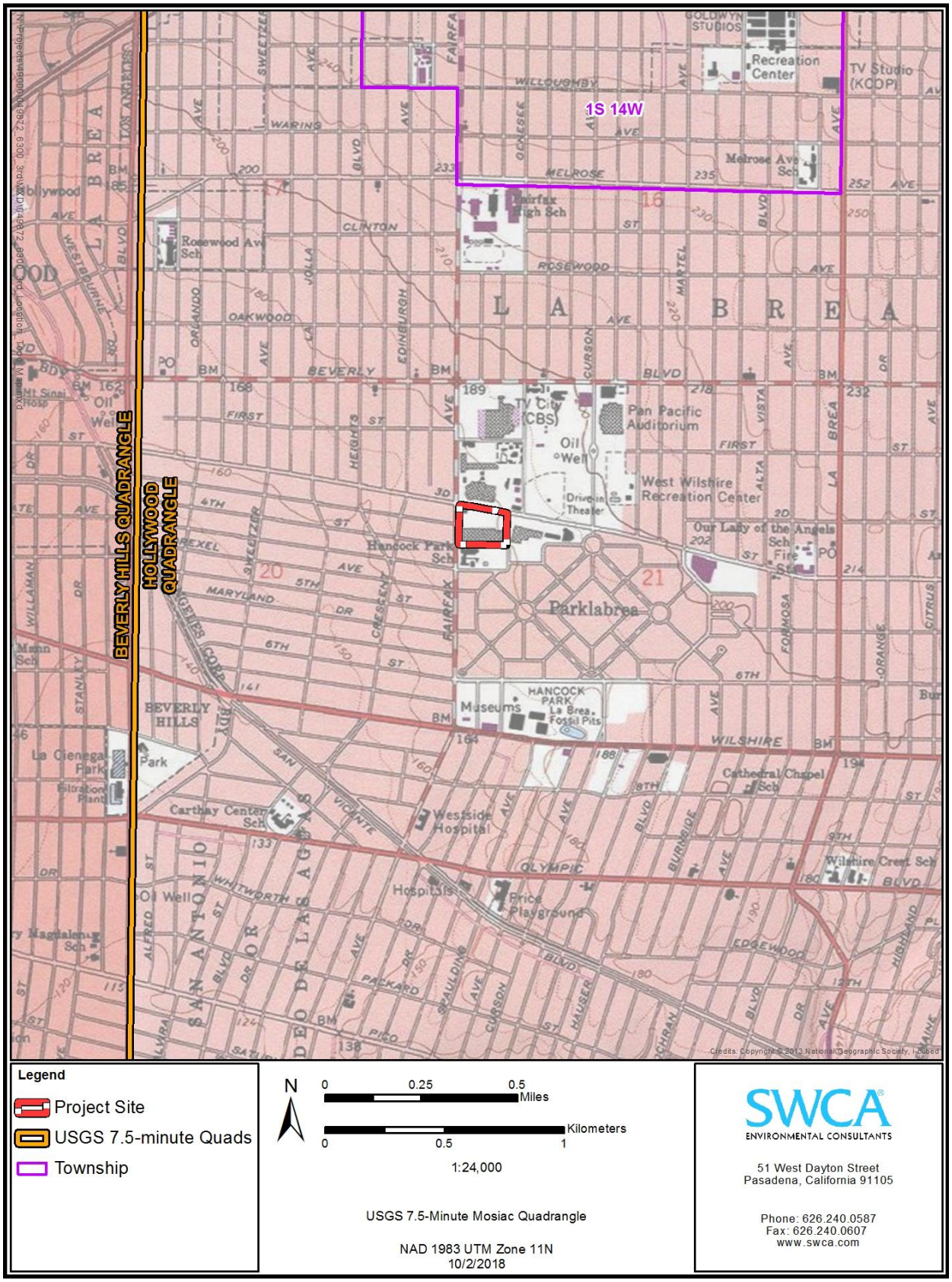

Figure 2. Project site location plotted on the USGS Hollywood California, 7.5-minute quadrangle.

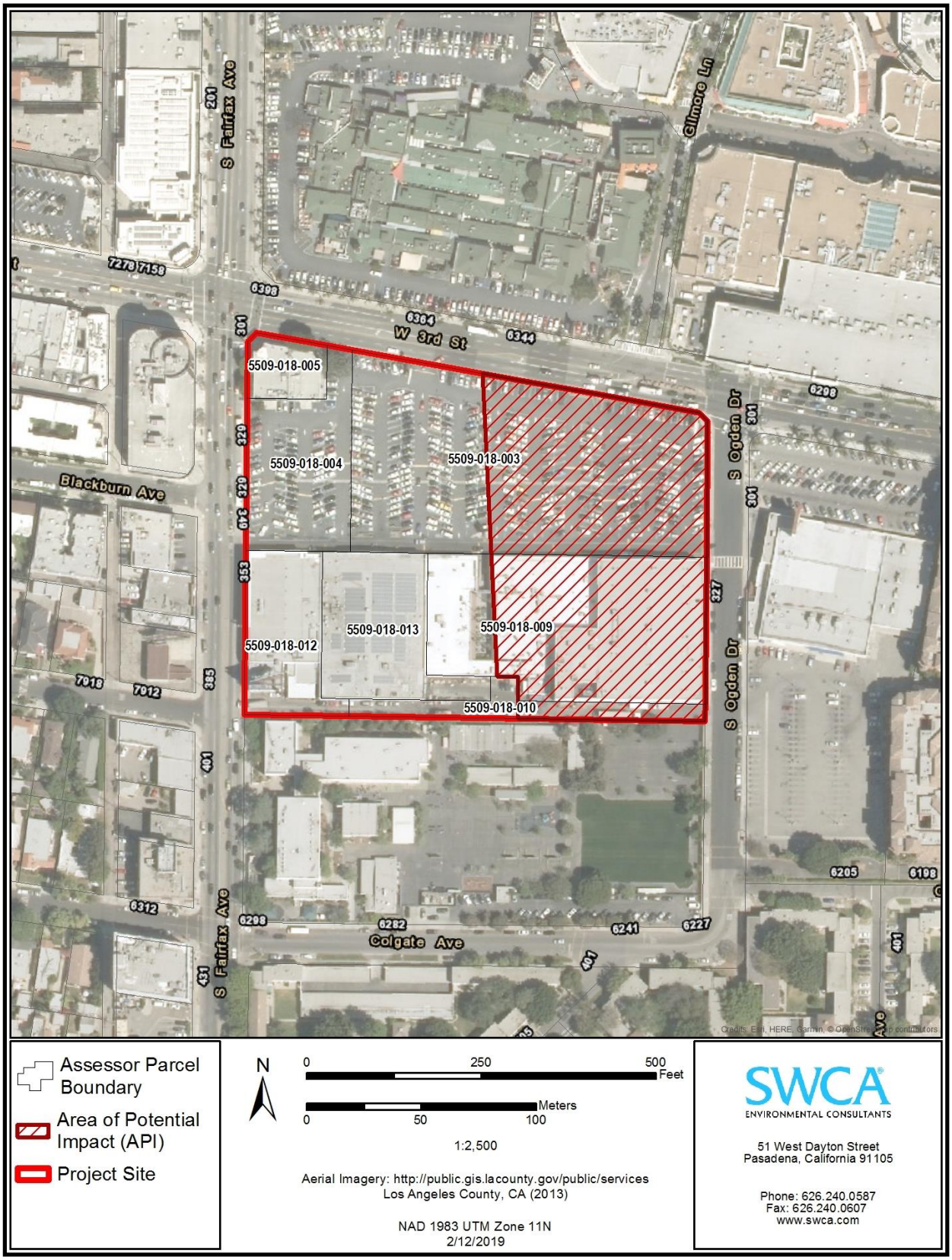

Figure 3. Project site and API plotted on an aerial photograph and street map.

DEFINITION AND SIGNIFICANCE OF PALEONTOLOGICAL RESOURCES

Paleontology is a multidisciplinary science that combines elements of geology, biology, chemistry, and physics to understand the history of life on earth. Paleontological resources, or fossils, are the remains, imprints, or traces of once-living organisms preserved in rocks and sediments (Murphey and Daitch 2007). Therefore, a wide range of material is represented in the fossil record, including bones and teeth, soft tissues, shells, wood, leaf impressions, footprints, burrows, and microscopic remains, which may vary in their degree of mineralization

The fossil record is the only evidence that life on earth has existed for more than 3.6 billion years. Fossils are considered nonrenewable resources because the organisms they represent no longer exist. Thus, once destroyed, a fossil can never be replaced (Murphey and Daitch 2007). Fossils are important scientific and educational resources and can be used to:

- study the phylogenetic relationships amongst extinct organisms, as well as their relationships to modern groups;
- elucidate the taphonomic, behavioral, temporal, and diagenetic pathways responsible for fossil preservation, including the biases inherent in the fossil record;
- reconstruct ancient environments, climate change, and paleoecological relationships;
- provide a measure of relative geologic dating, which forms the basis for biochronology and biostratigraphy, and is an independent and corroborating line of evidence for isotopic dating;
- study the geographic distribution of organisms and tectonic movements of land masses and ocean basins through time;
- study patterns and processes of evolution, extinction, and speciation; and
- identify past and potential future human-caused effects to global environments and climates (Murphey and Daitch 2007).

REGULATORY SETTING

Paleontological resources are limited, nonrenewable resources of scientific, cultural, and educational value and are afforded protection under federal and state laws and regulations. This study satisfies project requirements in accordance with both federal and state regulations. This analysis also complies with guidelines and criteria specified by the Society of Vertebrate Paleontology (1995, 2010).

Federal Regulations

Paleontological Resources Preservation, Omnibus Public Lands Act, Public Law 111-011, Title VI, Subtitle D (PRPA), 2009

This legislation directs the Secretaries of the U.S. Department of the Interior (USDI) and U.S. Department of Agriculture (USDA) to manage and protect paleontological resources on federal land using "scientific principles and expertise." To formulate a consistent paleontological resources management framework, the Paleontological Resources Preservation Act (PRPA) incorporates most of the recommendations from the report of the Secretary of the Interior titled *Assessment of Fossil Management on Federal and Indian Lands* (USDI 2000). In passing the PRPA, Congress officially recognized the scientific importance of paleontological resources on some federal lands by declaring that fossils from these lands are federal property that must be preserved and protected. The PRPA codifies existing policies of the Bureau of Land

Management (BLM), National Park Service (NPS), U.S. Forest Service (USFS), Bureau of Reclamation, and U.S. Fish and Wildlife Service (USFWS), and provides the following:

- uniform criminal and civil penalties for illegal sale and transport, and theft and vandalism of fossils from federal lands;
- uniform minimum requirements for paleontological resource-use permit issuance (terms, conditions, and qualifications of applicants);
- uniform definitions for "paleontological resources" and "casual collecting;" and
- uniform requirements for curation of federal fossils in approved repositories.

Federal Land Policy and Management Act (FLPMA) of 1976

The Federal Land Policy and Management Act (FLPMA) of 1976 (43 U.S. Code [USC] 1712[c], 1732[b]); Section 2, Federal Land Management and Policy Act of 1962 [30 USC 611]; Subpart 3631.0 et seq.), Federal Register Vol. 47, No. 159, 1982, does not refer specifically to fossils. However, "significant fossils" are understood and recognized in policy as scientific resources. Permits, which authorize the collection of significant fossils for scientific purposes, are issued under the authority of FLPMA. Under FLPMA, federal agencies are charged to:

- manage public lands in a manner that protects the quality of scientific, scenic, historical, ecological, environmental, air and atmospheric, archaeological, and water resources, and, where appropriate, preserve and protect certain public lands in their natural condition (Section 102[a][8] [11]);
- periodically inventory public lands so that the data can be used to make informed land-use decisions (Section 102[a][2]); and
- regulate the use and development of public lands and resources through easements, licenses, and permits (Section 302[b]).

The National Environmental Policy Act (NEPA) of 1969

The National Environmental Policy Act of 1969 (NEPA), as amended (Public Law [PL] 91-190, 42 USC 4321-4347, January 1, 1970, as amended by PL 94-52, July 3, 1975, PL 94-83, August 9, 1975, and PL 97-258 Section 4(b), Sept. 13, 1982) recognizes the continuing responsibility of the federal government to "preserve important historic, cultural, and natural aspects of our national heritage…" (Section 101 [42 USC Section 4321]; No. 382). With the passage of the PRPA, paleontological resources are considered a significant resource, and it is therefore now standard practice to include paleontological resources in NEPA studies in all instances where there is a possible impact.

Antiquities Act of 1906

The Antiquities Act of 1906 (16 USC 431-433) states, in part:

> That any person who shall appropriate, excavate, injure or destroy any historic or prehistoric ruin or monument, or any object of antiquity, situated on lands owned or controlled by the Government of the United States, without the permission of the Secretary of the Department of the Government having jurisdiction over the lands on which said antiquities are situated, shall upon conviction, be fined in a sum of not more than five hundred dollars or be imprisoned for a period of not more than ninety days, or shall suffer both fine and imprisonment, in the discretion of the court.

Although there is no specific mention of natural or paleontological resources in the Act itself, or in the Act's uniform rules and regulations (Title 43 Part 3, Code of Federal Regulations [43 CFR 3]), the term "objects

of antiquity" has been interpreted to include fossils by the NPS, BLM, USFS, and other federal agencies. Permits to collect fossils on lands administered by federal agencies are authorized under this Act. However, due to the large gray areas left open to interpretation due to the imprecision of the wording, agencies are hesitant to interpret this act as governing paleontological resources.

State Regulations

California Environmental Quality Act (CEQA)

CEQA is the principal statute governing environmental review of projects occurring in the state and is codified at Public Resources Code (PRC) Section 21000 et seq. CEQA requires lead agencies to determine if a proposed project would have a significant effect on the environment, including significant effects on paleontological resources. Guidelines for the Implementation of CEQA, as amended December 1, 2016 (Title 14, Chapter 3, California Code of Regulations 15000 et seq.), define procedures, types of activities, persons, and public agencies required to comply with CEQA, and include as one of the questions to be answered in the Environmental Checklist (Section 15023, Appendix G, Section XIV, Part a) the following: "Will the proposed project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?"

Public Resources Code (PRC) Section 5097.5

Requirements for paleontological resource management are included in the PRC Division 5, Chapter 1.7, Section 5097.5, and Division 20, Chapter 3, Section 30244, which states:

> 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, 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.

These statutes prohibit the removal, without permission, of any paleontological site or feature from lands under the jurisdiction of the state or any city, county, district, authority, or public corporation, or any agency thereof. Consequently, local agencies are required to comply with PRC 5097.5 for their own activities, including construction and maintenance, as well as for permit actions (e.g., encroachment permits) undertaken by others. PRC Section 5097.5 also establishes the removal of paleontological resources as a misdemeanor, and requires reasonable mitigation of adverse impacts to paleontological resources from developments on public (state, county, city, and district) lands.

Local Regulations

City of Los Angeles General Plan

The Conservation Element of the City of Los Angeles General Plan recognizes paleontological resources in Section 3: "Archeological and Paleontological" (II-3), and contains an objective (II-5) to protect the city's archaeological and paleontological resources for historical, cultural, research and/or educational purposes. The General Plan also states:

> Pursuant to CEQA, if a land development project is within a potentially significant paleontological area, the developer is required to contact a bona fide paleontologist to arrange for assessment of the potential impact and mitigation of potential disruption of or damage to the site. If significant paleontological resources are uncovered during project

> execution, authorities are to be notified and the designated paleontologist may order excavations stopped, within reasonable time limits, to enable assessment, removal or protection of the resources (City of Los Angeles 2001:II-5).

RESOURCE ASSESSMENT GUIDELINES

Resource guidelines are designed to protect against the loss of any identifiable fossil that could yield information important to prehistory, or that embodies the distinctive characteristics of a type of organism, environment, period of time, or geographic region. Direct impacts on paleontological resources primarily concern the potential destruction of nonrenewable paleontological resources and the loss of information associated with these resources. This includes the unauthorized collection of fossil remains. If potentially fossiliferous bedrock or surficial sediments are disturbed, the disturbance could result in the destruction of paleontological resources and subsequent loss of information. At the project-specific level, direct impacts can be reduced to a less-than-significant level through regulatory compliance and with the implementation of paleontological mitigation, when needed

The CEQA Guidelines provides a threshold of significance for impacts to paleontological resources that states "would the project directly or indirectly destroy a significant paleontological resource or unique geologic feature" (Appendix G, State CEQA Guidelines). In general, for project areas underlain by paleontologically sensitive geologic units, the greater the amount of ground disturbance, the higher the potential for significant impacts to paleontological resources. For project areas directly underlain by geologic units with no paleontological sensitivity, there is no potential for impacts on paleontological resources unless sensitive geologic units that underlie the non-sensitive unit are also affected. This report assesses the sensitivity of the site in relation to the applicable CEQA thresholds of significance.

Professional Standards

The Society of Vertebrate Paleontology (SVP) has established standard guidelines that outline professional protocols and practices for conducting paleontological resource assessments and surveys, monitoring and mitigation, data and fossil recovery, sampling procedures, and specimen preparation, identification, analysis, and curation (1995, 2010). The recommended mitigation measures below incorporate these performance standards and protocols. Most practicing professional vertebrate paleontologists adhere closely to the SVP's assessment, mitigation, and monitoring requirements as specifically provided in its standard guidelines. Most state regulatory agencies with paleontological laws, ordinances, regulations, and standards accept and use the professional standards set forth by the SVP.

As defined by the SVP, significant paleontological resources are defined as:

> fossils and fossiliferous deposits, here defined as consisting of identifiable vertebrate fossils, large or small, uncommon invertebrate, plant, and trace fossils, and other data that provide taphonomic, taxonomic, phylogenetic, paleoecologic, stratigraphic, and/or biochronologic information. Paleontological resources are considered to be older than recorded human history and/or older than middle Holocene (i.e., older than about 5,000 radiocarbon years). (SVP 2010:11).

Based on the definitions of the SVP (2010), all identifiable vertebrate fossils are considered to have significant scientific value. This is because vertebrate fossils are relatively uncommon, and only rarely will a fossil locality yield a statistically significant number of specimens of the same genus. Therefore, every vertebrate fossil found has the potential to provide significant new information about the taxon it represents, its paleoenvironment, and/or its distribution. Furthermore, all geologic units in which vertebrate fossils have previously been found are considered to have high sensitivity. Identifiable plant and invertebrate

fossils are considered significant if found in association with vertebrate fossils or if defined as significant by project paleontologists, specialists, or local government agencies.

A geologic unit known to contain significant fossils is considered sensitive to adverse impacts if there is a high probability that earth-moving or ground-disturbing activities in that rock unit will either disturb or destroy fossil remains directly or indirectly. This definition of sensitivity differs fundamentally from the definition for archaeological resources as follows:

> It is extremely important to distinguish between archaeological and paleontological (fossil) resource sites when defining the sensitivity of rock units. The boundaries of archaeological sites define the areal extent of the resource. Paleontological sites, however, indicate that the containing sedimentary rock unit or formation is fossiliferous. The limits of the entire rock formation, both areal and stratigraphic, therefore define the scope of the paleontological potential in each case (SVP 1995).

Many archaeological sites contain features visually detectable on the surface. In contrast, fossils are often contained within surficial sediments or bedrock, and are therefore not observable or detectable unless exposed by erosion or human activity.

In summary, paleontologists cannot know either the quality or quantity of fossils prior to natural erosion or human-caused exposure. As a result, even in the absence of fossils on the surface, it is necessary to assess the sensitivity of rock units based on their known potential to produce significant fossils elsewhere within the same geologic unit (both within and outside the study area), a similar geologic unit, or based on whether the unit in question was deposited in a type of environment known to be favorable for fossil preservation. Monitoring by experienced paleontologists greatly increases the probability that fossils will be discovered during ground-disturbing activities and that, if these remains are significant, successful mitigation and salvage efforts may be undertaken to prevent adverse impacts to these resources.

Paleontological Sensitivity

Paleontological sensitivity is defined as the potential for a geologic unit to produce scientifically significant fossils. This is determined by rock type, 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 Procedures for the Assessment and Mitigation of Adverse Impacts to Paleontological Resources," the SVP (2010:1–2) defines four categories of paleontological sensitivity (potential) for rock units: high, low, undetermined, and no potential:

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. Rocks units classified as having high potential for producing paleontological resources include, but are not limited to, sedimentary formations and some volcaniclastic formations (e.g., ash or tephra), and some low-grade metamorphic rocks which contain significant paleontological resources anywhere within their geographical extent, and sedimentary rock units temporally or lithologically suitable for the preservation of fossils (e.g., middle Holocene and older, fine-grained fluvial sandstone, argillaceous and carbonate-rich paleosols, cross-bedded point bar sandstone, fine-grained marine sandstone, etc.). Paleontological potential consists of both a) the potential for yielding abundant or significant vertebrate fossils or for yielding a few significant fossils, large or small, vertebrate, invertebrate, plant, or trace fossils and b) the importance of recovered evidence for new and significant taxonomic, phylogenetic, paleoecologic, taphonomic, biochronologic, or stratigraphic data. Rock units which contain potentially datable organic remains older than late Holocene, including deposits associated with animal nests or

middens, and rock units which may contain new vertebrate deposits, traces, or trackways are also classified as having high potential."

Low Potential. "Reports in the paleontological literature or field surveys by a qualified professional paleontologist may allow determination that some rock units have low potential for yielding significant fossils. Such rock units will be 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, e.g. basalt flows or Recent colluvium. Rock units with low potential typically will not require impact mitigation measures to protect fossils."

Undetermined Potential. "Rock units for which little information is available concerning their paleontological content, geologic age, and depositional environment are considered to have undetermined potential. Further study is necessary to determine if these rock units have high or low potential to contain significant paleontological resources. A field survey by a qualified professional paleontologist to specifically determine the paleontological resource potential of these rock units is required before a paleontological resource impact mitigation program can be developed. In cases where no subsurface data are available, paleontological potential can sometimes be determined by strategically located excavations into subsurface stratigraphy."

No Potential. "Some rock units have no potential to contain significant paleontological resources, for instance high-grade metamorphic rocks (such as gneisses and schists) and plutonic igneous rocks (such as granites and diorites). Rock units with no potential require no protection or impact mitigation measures relative to paleontological resources" (SVP 2010:1–2).

METHODS

This PRTR is based on a desktop review of available scientific literature, geologic maps, a records search from the Natural History Museum of Los Angeles County (LACM), and a geotechnical study of the project site by Geocon West Inc. (Geocon 2018). This PRTR conforms to industry standards as developed by the SVP (1995, 2010). The purpose of this analysis is to 1) determine whether any previously recorded fossil localities occur in the project site, 2) assess the potential for disturbance of these localities during construction, and 3) evaluate the paleontological sensitivity of the project site and API.

RESULTS

Literature Search Results

Geologic Setting

The project site is located in the Los Angeles Basin, a structural depression approximately 80 km (50 miles) long and 32 km (20 miles) wide in the northernmost Peninsular Ranges Geomorphic Province (Ingersoll and Rumelhart 1999). The Los Angeles Basin developed as a result of tectonic forces and the San Andreas Fault zone, with subsidence occurring 18 to 3 million years ago (Ma; Critelli et al. 1995). Although sediments dating back to the Cretaceous (66 Ma) are preserved in the basin, continuous sedimentation began in the middle Miocene (around 13 Ma; Yerkes et al. 1965). Since that time, sediments have been eroded into the basin from the surrounding highlands, resulting in thousands of feet of accumulation (Yerkes et al. 1965). Most of these sediments are marine until sea level dropped in the Pleistocene (2.58 Ma to 11,700 years ago) and deposition of the alluvial sediments that compose the uppermost units in the Los Angeles Basin began.

The Los Angeles Basin is further subdivided into four structural blocks; the project site is in the Central Block, where sediments range from 9,754 to 10,668 m (32,000–35,000 feet) thick (Yerkes et al. 1965). The

Central Block is wedge shaped and extends from the Santa Monica Mountains in the northwest, where it is about 16 km (10 miles) wide, to the San Joaquin Hills to the southeast, where it widens to around 32 km (20 miles) across (Yerkes et al. 1965).

Locally, the project site is located in the alluvial plain between the Baldwin Hills to the southwest and the Santa Monica Mountains to the north. The Baldwin Hills form a chain of low hills that were uplifted by folding and later modified by faulting associated with the Inglewood Fault and its offshoots, which bisect the hills (Hamilton and Meehan 1971). The Santa Monica Mountains form the northern boundary of the Los Angeles Basin, where basement rocks overlain by approximately 4,420 m (14,500 feet) of late Cretaceous to Pleistocene sediments were uplifted in the early Pliocene along the Santa Monica Fault Zone (Yerkes et al. 1965). Erosion of sediments from these highlands into the basin has controlled sediment deposition in and around the project site up to the present day.

Project Geology

Yerkes (1997) mapped the geology in the vicinity of the project site at a scale of 1:24,000 (Figure 4). The surficial geology of the project site consists primarily of older alluvium (Qao in Figure 4), with younger alluvium (Qay2) present in the southeast corner of the project site and API. These units are discussed below.

Young Alluvium (Qay2). Young alluvium is present at the surface of the southeastern corner of the project site and API. This unit consists of unconsolidated gravel, sand, silt, and clay in active drainages, and is less than 1,000 years old (Yerkes 1997). This unit is too young to preserve fossil resources, and therefore is assigned low paleontological sensitivity. However, this unit is very thin (0–3 m [0–9 feet] thick), and overlies older alluvium, discussed below, which has high paleontological sensitivity. Ground-disturbing activity that extends through the young alluvium risks disturbing fossil resources in the underlying older alluvium.

Older Alluvium (Qao). Older alluvium is present at the surface across most of the project site and API. Sediments mapped as older alluvium consist of moderately to well-consolidated gravel, sand, silt, and clay deposited in the basin during the late Pleistocene, approximately 78,000 to 11,700 years ago (Yerkes 1997). These Pleistocene sediments have a rich fossil history in southern California, including within 1 km (0.62 mile) of the project site (Jefferson 1991a, 1991b; McLeod 2018; Miller 1971; Reynolds and Reynolds 1991; Springer et al. 2009). The most common Pleistocene terrestrial mammal fossils include the bones of mammoth, bison, deer, and small mammals, but other taxa, including horse, lion, cheetah, wolf, camelid, antelope, peccary, mastodon, capybara, and giant ground sloth, have been reported (Graham and Lundelius 1994), as well as reptiles such as frogs, salamanders, and snakes (Hudson and Brattstrom 1977). In addition to illuminating the striking differences between southern California in the Pleistocene and today, this abundant fossil record has been vital in studies of extinction (e.g., Barnosky et al. 2004; Sandom et al., 2014), ecology (e.g., Connin et al. 1998), and climate change (e.g., Roy et al. 1996; Shapiro 2016).

Records Search Results

The data provided by the LACM indicates that although there are no reported fossil localities in the project site or API, fossils have been reported from older alluvium within 1 km (0.62 mile) of the project site (McLeod 2018). The closest fossil localities known to the LACM in older alluvial sediments are located across Third Street from the project site, and were discovered during construction for The Grove shopping center. Immediately north of the project site, LACM 7495 preserved specimens of pond turtle (*Clemmys*), garter snake (*Thamnophis*), mammoth (*Mammuthus columbi*), cottontail rabbit (*Sylvilagus*), kangaroo rat (*Dipodomys*), meadow mouse (*Microtus*), pocket gopher (*Thomomys*), horse (*Equus occidentalis*), bison (*Bison antiquus*), and camel (*Camelops hesternus*) at a depth of about 10 feet below ground surface (bgs;

McLeod 2018). Just to the east of LACM 7495, LACM 7478 produced fossil specimens of pocket gopher (*Thomomys*) at a depth of 46 feet bgs (McLeod 2018).

To the east of the project site in Park La Brea, south of Third Street, localities LACM 7513 through 7516 were found between Curson Avenue and Genesee Avenue, and localities LACM 7417 through 7518 were found near the intersection of Fuller Avenue and Third Street. These localities produced a similar fauna to those found at The Grove, including garter snake (*Thamnophis*), ground sloth (*Glossotherium harlani*), cottontail rabbit (*Sylvilagus*), kangaroo rat (*Dipodomys*), meadow mouse (*Microtus californicus*), deer mouse (*Peromyscus*), pocket gopher (*Thomomys*), spotted skunk (*Spilogale*), horse (*Equus occidentalis*), and camel (*Camelops hesternus*) at depths as shallow as 3 feet bgs (McLeod 2018).

Paleontological Sensitivity

The review of the literature and the records of the LACM indicate that older alluvium found at the shallow subsurface of the API has high paleontological sensitivity, whereas younger alluvium has low sensitivity but overlies older alluvium at potentially shallow depths (Figure 5). Older alluvium has a record of preserving significant fossil resources in the Los Angeles Basin, as demonstrated by the review of the scientific literature and the LACM records search conducted for this assessment. Older alluvium is likely to occur underneath the younger alluvium identified in the southeast corner of the API beginning at depths of 1 m (3 feet). This depth is an estimate based on the generally thin nature of young alluvium (Yerkes 1997) as well as the shallow depth of other fossil deposits in the vicinity of the project site (McLeod 2018).

The Rancho La Brea Tar Pits are located less than 1.6 km (1 mile) to the southeast of the project site. The asphaltic deposits at the Rancho La Brea Tar Pits have preserved some of the best Ice Age fossil assemblages known in the world. The asphaltic deposits are not known to extend to the north and are not expected to be present in the subsurface of the project site and API (McLeod 2018). This is further supported by the geotechnical assessment, which did not identify asphaltic sediments in any of the subsurface borings (Geocon 2018).

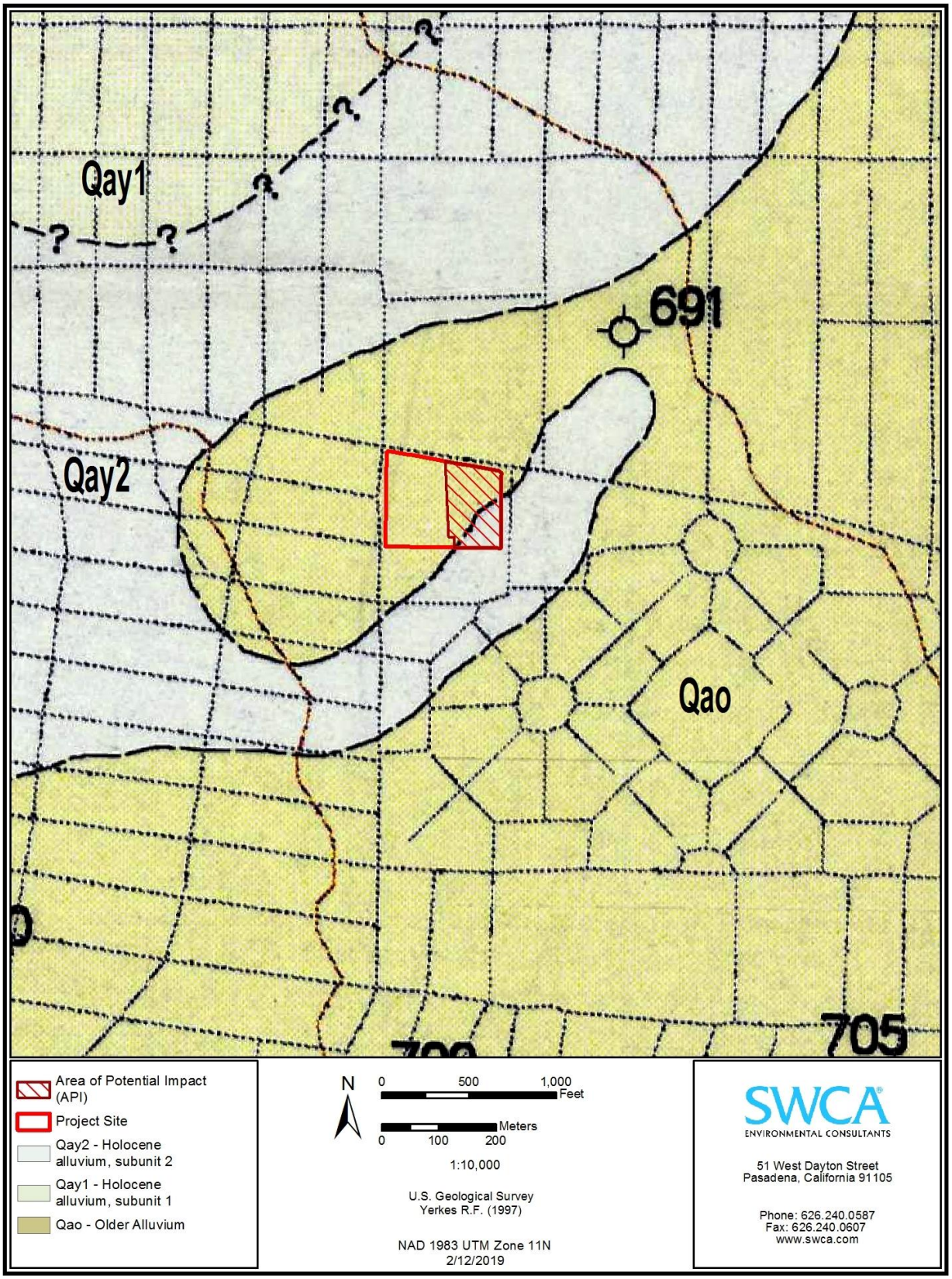

Figure 4. Geology of the API, project site, and vicinity.

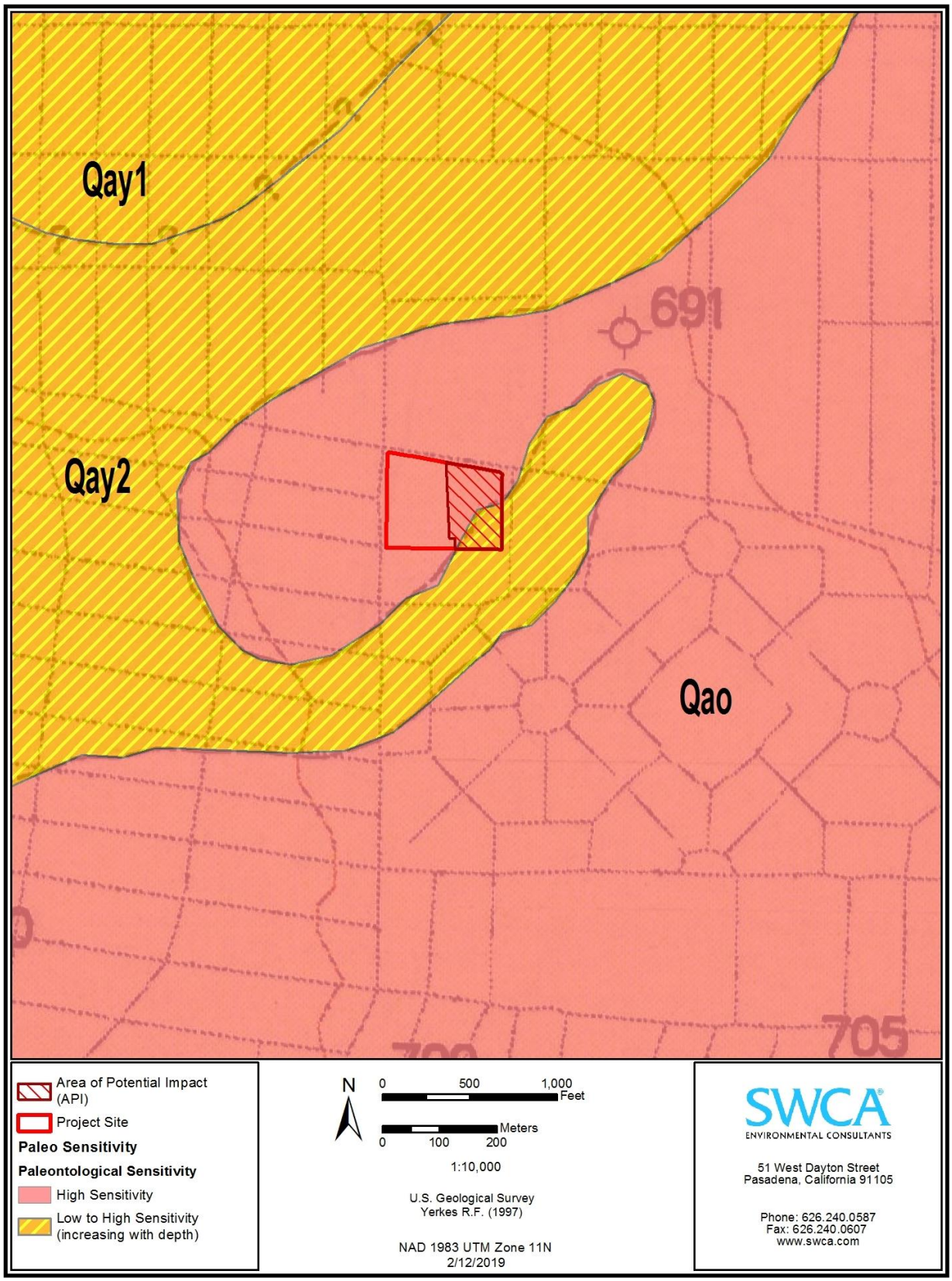

Figure 5. Paleontological sensitivity of the API, project site, and vicinity.

CONCLUSION

The review of the literature and the records of the LACM indicate that older alluvium found at the surface of the API has high paleontological sensitivity, younger alluvium identified in the southeast corner of the API has low sensitivity but overlies older alluvium at potentially shallow depths beginning at 1 m (3 feet) deep. Older alluvium has a record of preserving significant fossil resources in the Los Angeles Basin. The estimated depth of excavation for the project is approximately 30 feet below the surface within the older alluvium.

Construction at the project site would adhere to applicable regulatory compliance measures intended to reduce and avoid creating significant impacts to paleontological resources in the event of a discovery during grading, excavation, or other soil disturbing activities. As noted above, certain soils in the API have high sensitivity based on reviewed databases. Accordingly, to ensure that potential impacts to significant fossil resources that may be present in the API are clearly less than significant, SWCA recommends the mitigation measures outlined below. These mitigation measures have been developed in accordance with, and incorporate the performance standards of, the SVP (2010) and City of Los Angeles General Plan Conservation Element. At the discretion of the project proponent, the mitigation measures for paleontological resource may be implemented in concert with those measures established for archaeological resources including, but not limited to, preparation of a monitoring program, worker training, monitoring, and reporting. These measures will reduce impacts to paleontological resources to less-than-significant levels.

- **MM Paleo-1: Retain a Qualified Paleontologist**. Prior to the issuance of a grading permit, the project proponent shall retain a qualified paleontologist, defined as a paleontologist who meets the Society of Society of Vertebrate Paleontology (SVP) standards for a Principal Investigator or Project Paleontologist, to carry out all mitigation measures related to paleontological resources. The qualified paleontologist shall submit a letter of retention to the project proponent no fewer than 15 days before any grading or excavation activities commence. The letter shall include a resume for the qualified paleontologist that demonstrates fulfillment of the SVP standards.
- **MM Paleo-2: Prepare Paleontological Resources Monitoring and Mitigation Program (PRMMP).** Before any grading activities start, the qualified paleontologist shall prepare a PRMMP. This program shall contain specific monitoring and mitigation requirements including construction worker training, monitoring protocols, protocol for identifying the conditions under which additional or reduced levels of monitoring (e.g., spot-checking) may be appropriate, fossil salvage and data collection protocols in the event of an unanticipated discovery, curation facilities for any significant fossils that may be salvaged, and a final report summarizing the results of the program. The PRMMP shall adhere to and incorporate the performance standards and practices from the 2010 SVP *Standard procedures for the assessment and mitigation of adverse impacts to paleontological resources*. The qualified paleontologist shall submit the final PRMMP to the project proponent and the Department of City Planning (DCP) for their records before project excavation activities start.
- **MM Paleo-3: Worker's Environmental Awareness Program (WEAP).** The qualified paleontologist shall develop and oversee implementation of a WEAP to train the construction crew on the requirements for preserving fossil resources, as well as procedures and standards to follow, in the event of a fossil discovery. This training program shall be given to the crew before excavation work commences and shall include documentation for the workers that includes that memorializes the standards and protocols of the WEAP training.
- **MM Paleo-4: Monitor for Fossil Resources.** All ground disturbances in the API that occur in undisturbed sediments mapped as older alluvium (Qao) shall be monitored. Excavation or any other ground disturbances occurring in the southeast corner of the project site within younger alluvial

sediments shall be monitored when the ground disturbances exceed 1 m (3 feet) in depth. Monitoring shall be conducted by a qualified paleontologist or under the supervision of qualified paleontologist, as stipulated in the PRMMP. The qualified paleontologist may periodically inspect construction activities to adjust the level of monitoring in response to subsurface conditions. Full-time monitoring can be reduced to part-time inspections or stopped entirely if determined adequate by the qualified paleontologist. Paleontological monitoring shall include inspection of exposed sedimentary units during active excavations within sensitive geologic sediments.

In the event of a fossil discovery, whether by the paleontological monitor or a member of the construction crew, all work shall cease in a 15-m (50-foot) radius of the find while the qualified paleontologist assesses the fossil and documents its discovery. Paleontological monitors shall record pertinent geologic data and collect sediment samples from the fossil localities. The qualified paleontological monitor shall follow the SVP's 2010 *Standard procedures for the assessment and mitigation of adverse impacts to paleontological resources* if the resource requires salvage. A repository, e.g., LACM, shall be identified and a curatorial arrangement shall be signed prior to collection of fossils. Recovered fossils shall be prepared to the point of curation, identified by qualified experts, listed in a database to facilitate analysis, and deposited in a designated paleontological curation facility.

Within 14 days of concluding the paleontological monitoring, the qualified paleontologist shall prepare a memorandum stating that the paleontological monitoring requirement has been fulfilled and summarize the results of any paleontological finds. The memo shall be submitted to the project proponent and DCP. Following submittal of the memo, the qualified paleontologist shall prepare a technical report documenting the methods and results of all work completed under the PRMMP, including, if any, treatment of paleontological materials, results of specimen processing, analysis, and research, and final curation arrangements.

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Appendix A.
Natural History Museum of Los Angeles County Records Search Results

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of Los Angeles County
900 Exposition Boulevard
Los Angeles, CA 90007

tel 213.763.DINO
www.nhm.org

NATURAL HISTORY MUSEUM
LOS ANGELES COUNTY

Vertebrate Paleontology Section
Telephone: (213) 763-3325

e-mail: smcleod@nhm.org

2 July 2018

SWCA Environmental Consultants
51 West Dayton Street
Pasadena, CA 91105

Attn: Alyssa Bell, Ph.D., Lead Paleontologist

re: Paleontological resources for the proposed 6300 West 3rd Street Project, SWCA Project # 49872, in the City of Los Angeles, Los Angeles County, project area

Dear Alyssa:

I have conducted a thorough search of our paleontology collection records for the locality and specimen data for proposed 6300 West 3rd Street Project, SWCA Project # 49872, in the City of Los Angeles, Los Angeles County, project area as outlined on the portion of the Burbank USGS topographic quadrangle map that you sent to me via e-mail on 28 June 2018. We do not have any vertebrate fossil localities that lie directly within the proposed project area boundaries, but we do have localities very nearby from the same sedimentary deposits that occur in the proposed project area.

The surficial deposits in the entire proposed project area consist of older Quaternary Alluvium that grades down into older Quaternary deposits typically referred to as the Palos Verdes Sand in this area. We have several vertebrate fossil localities from excavations at the adjacent Park La Brea: LACM 7513-7516, immediately east of the proposed project area south of Third Street between Curson Avenue and Genesee Avenue; and LACM 7517-7518, further east of the proposed project area south of Third Street near the intersection with Fuller Avenue. These localities produced a similar fauna containing fossil specimens of garter snake, *Thamnophis*, ground sloth, *Glossotherium harlani*, cottontail rabbit, *Sylvilagus*, kangaroo rat, *Dipodomys*, meadow mouse, *Microtus californicus*, deer mouse, *Peromyscus*, pocket gopher, *Thomomys*, spotted skunk, *Spilogale*, horse, *Equus occidentalis*, and camel, *Camelops hesternus*,

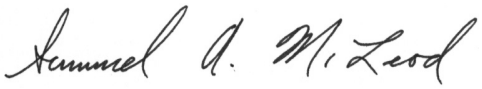
at depths as shallow as 3 feet. We have two vertebrate fossil localities from excavations for the adjacent The Grove project: LACM 7495, directly north of the proposed project area, that produced a fossil fauna containing specimens of pond turtle, *Clemmys*, garter snake, *Thamnophis*, mammoth, *Mammuthus columbi*, cottontail rabbit, *Sylvilagus*, kangaroo rat, *Dipodomys*, meadow mouse, *Microtus*, pocket gopher, *Thomomys*, horse, *Equus occidentalis*, bison, *Bison antiquus*, and camel, *Camelops hesternus*, at a depth of about 10 feet; and LACM 7478, just east of north of the proposed project area, that produced fossil specimens of pocket gopher, *Thomomys*, at a depth of 46 feet.

We have a great number of vertebrate fossil localities further south of the proposed project area at the internationally famous Rancho La Brea deposits in Hancock Park and from Brea deposits in the surrounding vicinity. These Brea deposits apparently do not extend as far north as the proposed project area.

Even shallow excavations in the proposed project area have a good chance of uncovering significant vertebrate fossils in older Quaternary sediments exposed and at depth. Any substantial excavations in the proposed project area, therefore, should be closely monitored to quickly and professionally collect any specimens without impeding development. Sediment samples from the proposed project area should also be collected and processed to determine the small fossil potential of the site. 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