11.1D Paleontological Resources Assessment

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Frances Yau
Project Manager
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Via email: frances.yau@mbakerintl.com

Subject: Paleontological Resource Assessment for the 3700 Riverside Drive Mixed-Use Project, City of Burbank, Los Angeles County, California

Dear Ms. Yau:

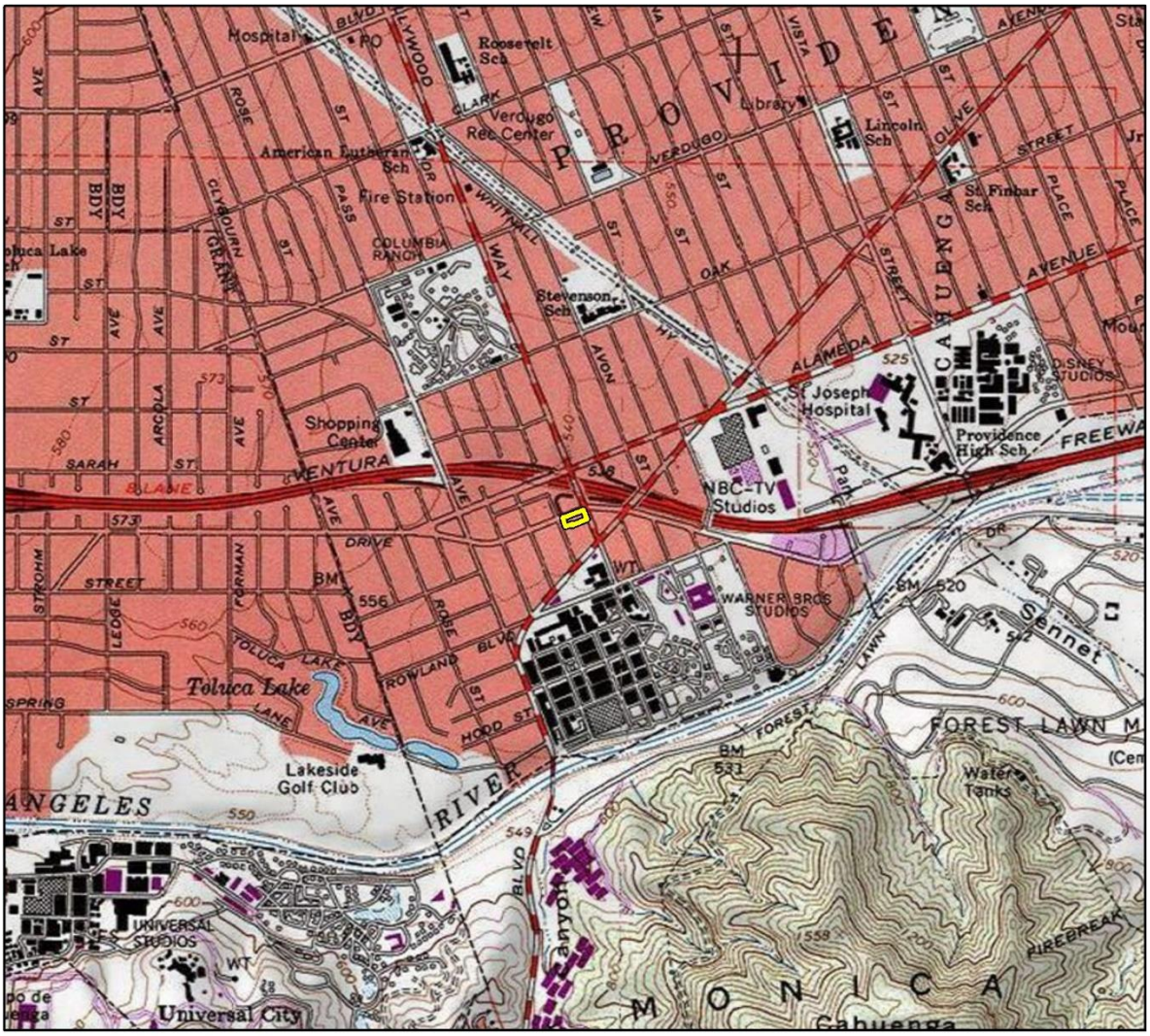
Rincon Consultants, Inc. (Rincon) conducted a paleontological resource assessment for the proposed 3700 Riverside Drive Mixed-Use Project (project) located in the City of Burbank, Los Angeles County, California. Rincon prepared this study under contract to Michael Baker International for use by the City of Burbank (City) in support of the draft Initial Study and Mitigated Negative Declaration being prepared pursuant to the California Environmental Quality Act (CEQA). The goals of this assessment are to identify the geologic units that may be impacted by development of the project, determine the paleontological sensitivity of geologic units underlying the project site, assess the potential for impacts to paleontological resources from development of the project, and recommend mitigation measures to reduce impacts to scientifically significant paleontological resources, pursuant to CEQA.

This paleontological resource assessment consisted of a fossil locality record search at the Natural History Museum of Los Angeles County (NHMLAC), a review of existing geologic maps and paleontological locality data, and a review of primary literature regarding fossiliferous geologic units within the project site and vicinity. Following the literature review and records search, this report assesses the paleontological sensitivity of the geologic units underlying the project site, determines the potential for impacts to significant paleontological resources, and proposes mitigation measures to reduce impacts to less than significant levels.

Project Location and Description

The project site is located at 3700 Riverside Drive, Burbank, Los Angeles County, California (Figure 1) and depicted on the United States Geological Survey (USGS) *Burbank* CA 7.5-minute quadrangle. The approximately 0.61-acre site is located on three parcels (i.e., Accessor's Parcel Numbers 1485-005-004, -014 and -015) along Riverside Drive, between North Hollywood Way and North Screenland Drive (Figure 2). The proposed project involves demolition of the existing carwash facility (comprised of two single-story structures) and construction of a seven-story, 82,723-gross square food mixed-use development. The proposed mixed-use development would consist of 49 condominium units (four would be designated as affordable housing units), 2,000 square feet of ground level commercial/retail

Figure 1 Regional Vicinity



Imagery provided by National Geographic Society, Esri and its licensors © 2020. Burbank Quadrangle. T01N R14W S22. The topographic representation depicted in this map may not portray all of the features currently found in the vicinity today and/or features depicted in this map may havechanged since the original topographic map was assembled.

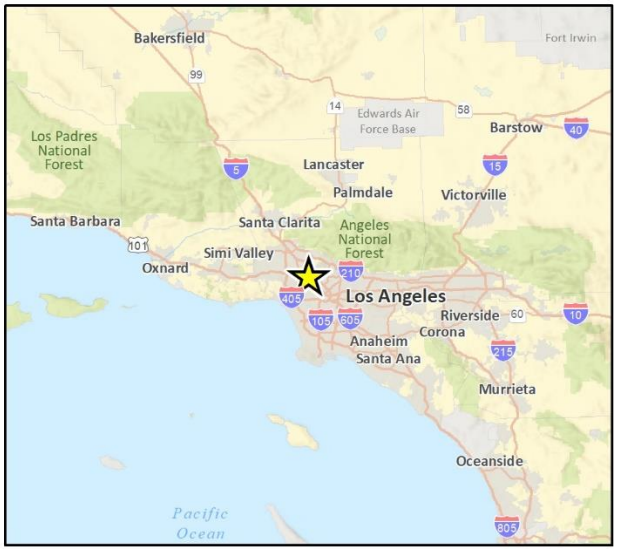


Figure 2 Project Location

Imagery provided by Microsoft Bing and its licensors © 2020.

use, a pocket park, and surface and subterranean parking. Project ground disturbance associated with the subterranean garage may reach depths of approximately 12 feet below ground surface.

Regulatory Setting

Fossils are remains of ancient, commonly extinct organisms, and as such are nonrenewable resources. The fossil record is a document of the evolutionary history of life on earth, and fossils can be used to understand evolutionary pattern and process, rates of evolutionary change, past environmental conditions, and the relationships among modern species (i.e., systematics). The fossil record is a non-renewable scientific and educational resource, and individual fossils are afforded protection under federal, state, and local environmental laws, where applicable.

State Regulations

California Environmental Quality Act

Paleontological resources are protected under CEQA, which states in part a project will "normally" have a significant effect on the environment if it, among other things, will disrupt or adversely affect a paleontological site except as part of a scientific study. Specifically, in Section VII(f) of Appendix G of the State CEQA Guidelines, the Environmental Checklist Form, the question is posed thus: "Will the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature." To determine the uniqueness of a given paleontological resource, it must first be identified or recovered (i.e., salvaged). Therefore, CEQA mandates mitigation of adverse impacts, to the extent practicable, to paleontological resources.

CEQA does not define "a unique paleontological resource or site." However, the Society of Vertebrate Paleontology (SVP) has defined a "significant paleontological resource" in the context of environmental review as follows:

> 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 typically to be older than recorded human history and/or older than middle Holocene (i.e., older than about 5,000 radiocarbon years) (SVP 2010).

The loss of paleontological resources meeting the criteria outlined above (i.e., a significant paleontological resource) would be a significant impact under CEQA, and the CEQA lead agency is responsible for ensuring that impacts to paleontological resources are mitigated, where practicable, in compliance with CEQA and other applicable statutes.

California Public Resources Code

Section 5097.5 of the Public Resources Code 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.

Here "public lands" means those owned by, or under the jurisdiction of, the state or any city, county, district, authority, or public corporation, or any agency thereof. Consequently, public agencies are required to comply with Public Resources Code Section 5097.5 for their own activities, including construction and maintenance, and for permit actions (e.g., encroachment permits) undertaken by others.

Local Regulations

City of Burbank

The *Open Space and Conservation Element* of the City of Burbank 2035 General Plan contains the following policy and program relating to paleontological resources that are relevant and/or applicable to the current project:

> **Policy 6.1.** Recognize and maintain cultural, historical, archeological, and paleontological structures and sites essential for community life and identity.
>
> **Program OSC-7**. If paleontological resources are discovered during earthmoving activities associated with future development projects, the construction crew shall immediately cease work in the vicinity of the find and notify the City. The project applicant(s) shall retain a qualified paleontologist to evaluate the resource and prepare a recovery plan in accordance with Society of Vertebrate Paleontology guidelines (1996). The recovery plan shall include, but is not limited to, a field survey, construction monitoring, sampling and data recovery procedures, museum storage coordination for any specimen recovered, and a report of findings. Recommendations in the recovery plan that are determined by the lead agency to be necessary and feasible shall be implemented before construction activities can resume at the site where the paleontological resources were discovered.

Methods

Rincon evaluated the paleontological sensitivity of the geologic units which underlie the project site using the results of the paleontological locality search and review of existing information in the scientific literature concerning known fossils in those geologic units. Rincon submitted a request to the NHMLAC for a list of known fossil localities from the project site and immediate vicinity (i.e., localities recorded on the USGS *Burbank*, California 7.5-minute topographic quadrangle), reviewed geologic maps, and reviewed primary literature. Rincon also reviewed the paleontological collections of online databases, including the University of California Museum of Paleontology (UCMP) and Paleobiology Database, to identify known fossil localities in Los Angeles County from the same geologic formations and geologic units as those identified underlying the project site.

Rincon assigned paleontological sensitivities to the geologic units underlying the project site based on the type, age, and known fossil record of the underlying geologic units. The potential for impacts to significant paleontological resources is based on the potential for ground disturbance to directly impact paleontologically sensitive geologic units. The SVP (2010) has defined paleontological sensitivity and developed a system for assessing paleontological sensitivity, as discussed below.

Paleontological Sensitivity

Significant paleontological resources are fossils or assemblages of fossils that are unique, unusual, rare, diagnostically important, or are common but have the potential to provide valuable scientific information for evaluating evolutionary patterns and processes, or which could improve our understanding of paleochronology, paleoecology, paleophylogeography, or depositional histories. New or unique specimens can provide new insights into evolutionary history; however, additional specimens of even well represented lineages can be equally important for studying evolutionary pattern and process, evolutionary rates, and paleophylogeography. Even unidentifiable material can provide useful data for dating geologic units if radiometric dating is possible. As such, common fossils (especially vertebrates) may be scientifically important, and therefore considered highly significant.

The SVP (2010) describes sedimentary rock units as having high, low, undetermined, or no potential for containing significant nonrenewable paleontological resources. This criterion is based on rock units in which significant fossils have been determined by previous studies to be present or likely to be present. While these standards were written specifically to protect vertebrate paleontological resources, all fields of paleontology have adopted these guidelines, which are given here verbatim:

I. **High Potential (Sensitivity).** Rock units from which significant vertebrate or significant invertebrate fossils or significant suites of plant fossils have been recovered have a high potential for containing significant non-renewable fossiliferous resources. These units include but are not limited to, sedimentary formations and some volcanic formations which contain significant nonrenewable paleontological resources anywhere within their geographical extent, and sedimentary rock units temporally or lithologically suitable for the preservation of fossils. Sensitivity comprises both (a) the potential for yielding abundant or significant vertebrate fossils or for yielding a few significant fossils, large or small, vertebrate, invertebrate, or botanical and (b) the importance of recovered evidence for new and significant taxonomic, phylogenetic, ecologic, or stratigraphic data. Areas which contain potentially datable organic remains older than Recent, including deposits associated with nests or middens, and areas which may contain new vertebrate deposits, traces, or trackways are also classified as significant.

II. **Low Potential (Sensitivity).** Sedimentary rock units that are potentially fossiliferous, but have not yielded fossils in the past or contain common and/or widespread invertebrate fossils of well documented and understood taphonomic, phylogenetic species and habitat ecology. Reports in the paleontological literature or field surveys by a qualified vertebrate paleontologist may allow determination that some areas or units have low potentials for yielding significant fossils prior to the start of construction. Generally, these units will be poorly represented by specimens in institutional collections and will not require protection or salvage operations. However, as excavation for construction gets underway it is possible that significant and unanticipated paleontological resources might be encountered and require a change of classification from Low to High Potential and, thus, require monitoring and mitigation if the resources are found to be significant.

III. **Undetermined Potential (Sensitivity).** Specific areas underlain by sedimentary rock units for which little information is available have undetermined fossiliferous potentials. Field surveys by a qualified vertebrate paleontologist to specifically determine the potentials of the rock units are required before programs of impact mitigation for such areas may be developed.

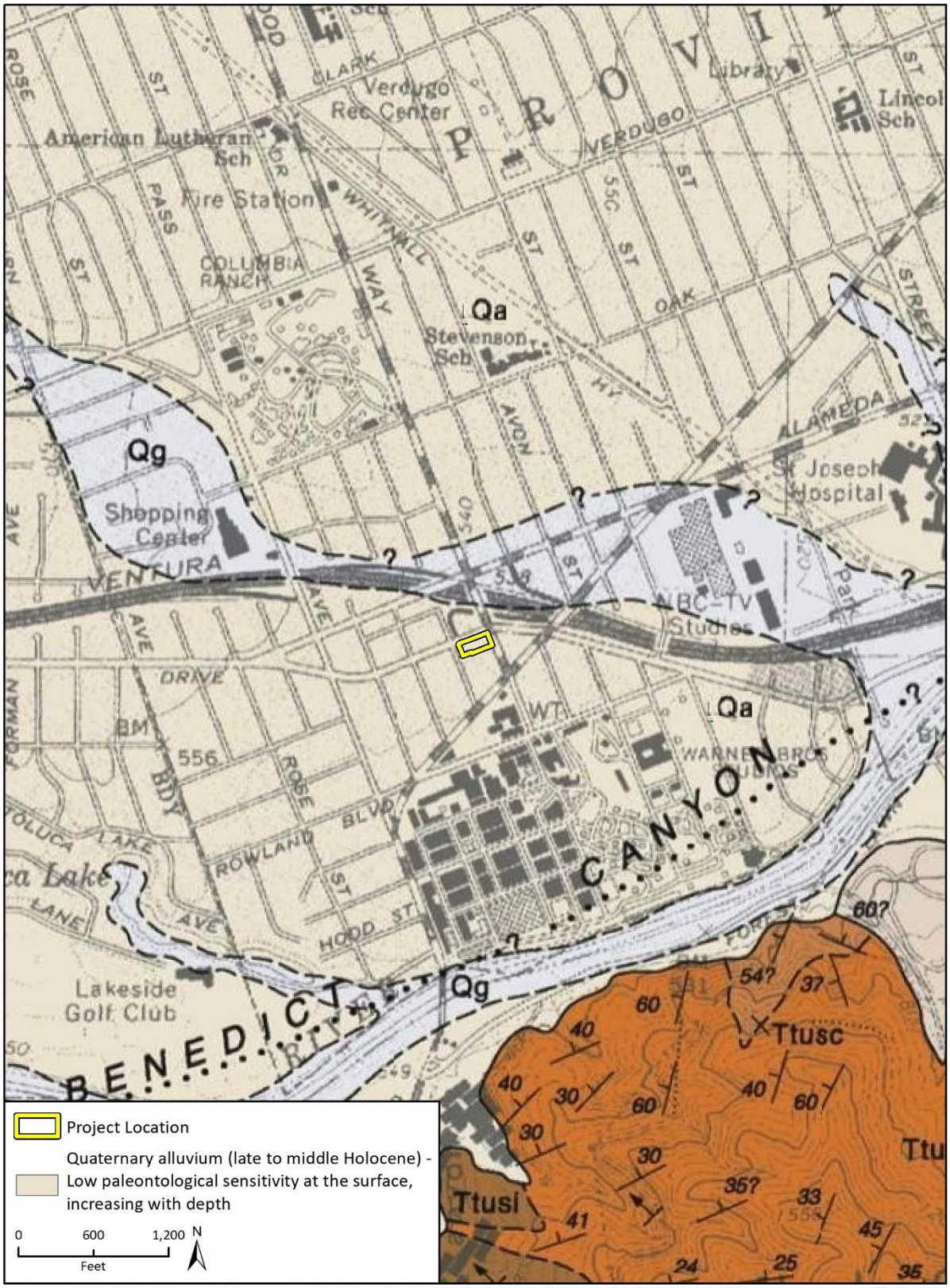
IV. **No Potential.** Rock units of metamorphic or igneous origin are commonly classified as having no potential for containing significant paleontological resources.

Geologic Setting

The project site is situated in the San Fernando Valley within the Transverse Ranges, which extend approximately 275 miles from Point Arguello in Santa Barbara County, east to the San Bernardino Mountains (California Geological Survey [CGS] 2002). Near the project site, their southern border is marked by the Anacapa-Santa Monica -Hollywood-Raymond-Cucamonga fault zone at the base of the Santa Monica Mountains (Yerkes and Campbell 2005). The San Fernando Valley is a lowland alluvial plain that encompasses the area north of the Santa Monica Mountains, west of the San Gabriel Mountains, and south of the Santa Susana Mountains (Yerkes et al. 1965). The San Fernando Valley is underlain by a structural depression that contains a thick accumulation of more than 20,000 feet of Cenozoic alluvial, shallow marine, and deep shelf sedimentary deposits (McCulloh and Beyer 2004). The San Fernando Valley is structurally complex and is transected by several faults, including the San Fernando fault, Sylmar fault zone, Mission Hills fault, and Verdugo fault (Dibblee and Ehrenspeck 1991).

The project site includes a single geologic unit mapped at the ground surface: younger Quaternary (middle to late Holocene) alluvium (Qa), derived primarily from the Los Angeles River, which flows approximately 0.5 mile south of the project site (Dibblee and Ehrenspeck 1991). These younger alluvial deposits are composed of slightly to poorly consolidated and poorly sorted floodplain deposits with various compositions of clay, sand, and gravel. Locally, middle to late Holocene alluvial deposits may be interbedded with middle to late Holocene fluvial sediments (Qg) from the nearby Los Angeles River, consisting of loose, moderately well-drained, moderately-sorted sand, silty sand, and gravel (California Department of Conservation 1998; Dibblee and Ehrenspeck 1991). However, late to middle Holocene alluvial and fluvial deposits (Qa, Qg) may transition to deposits of older alluvium (Qoa), of early Holocene to Pleistocene age, at moderate or unknown depths as discussed in more detail below. Quaternary old (early Holocene to Pleistocene) alluvium (Qoa), mapped at the surface approximately a mile southeast of the project site, is described as weakly to moderately consolidated, moderately bedded, gray to light brown pebble-gravel, sand, silt by Dibblee and Ehrenspeck (1991). Figure 3, Geologic Units and Paleontological Sensitivity of the Project Site depicts the surficial geologic units in the project site and its immediate vicinity, as well as the paleontological sensitivity within the bounds of the project site.

Figure 3 Geologic Units and Paleontological Sensitivity of the Project Site



Imagery provided by Dibblee & Ehrenspeck, "Geologic map of the Hollywood and Burbank (south 1/2) quadrangles, Los Angeles, California," 1991.

Results

Locality Search

A search of the paleontological fossil locality records at the NHMLAC resulted in no previously recorded fossil localities within the project boundary; however, at least four vertebrate localities were identified within Pleistocene alluvial deposits in the general vicinity of the project site (McLeod 2020). The nearest vertebrate fossil locality, LACM 6970, produced fossil specimens of camel (*Camelops hesternus*), bison (*Bison antiquus*), and ground sloth (*Glossotherium harlani*) approximately 1.5 miles west of the project site at depths ranging from 60 to 80 feet below ground surface. The NHMLAC reports three additional vertebrate localities (i.e., LACM 6306, LACM 6385, and LACM 6386) were identified near the Metrorail Red Line Universal City/Studio City station, less than two miles southwest of the project site. LACM 6306, LACM 6385, and LACM 6386 yielded fossilized specimens stickleback fish (Gasterosteidae), frogs (*Rana* and Hylidae), lizards (*Gerrhonotus* and *Uta*), snakes *(Thamnophis* and *Tantilla*), bird (Aves), shrew (*Sorex*), rabbit (*Sylvilagus*), and rodents (*Perognathus*, *Thomomys*, *Dipodomys*, *Microtus*, and *Peomyscus*) at depths ranging from 40 to 60 feet below ground surface (McLeod 2020). The results of the museum records search are summarized in Table 1.

Table 1 Museum Records Search Results

Locality Number	Geologic Unit	Age	Taxa	Depth of Recovery (below ground surface)
LACM 6970	Qoa	Pleistocene	Camel (*Camelops hesternus*), bison (*Bison antiquus*), ground sloth (*Glossotherium harlani*)	60 to 80 feet
LACM 6306, LACM 6385-6386	Qoa	Pleistocene	Stickleback fish (Gasterosteidae), frogs (*Rana* and Hylidae), lizards (*Gerrhonotus* and *Uta*), snakes *(Thamnophis* and *Tantilla*), bird (Aves), shrew (*Sorex*), rabbit (*Sylvilagus*), rodents (*Perognathus*, *Thomomys*, *Dipodomys*, *Microtus*, and *Peomyscus*)	40 to 60 feet

Source: McLeod 2020

Paleontological Sensitivity

The geologic units underlying the project site have a paleontological sensitivity ranging of low at the surface; with underlying units of high paleontological sensitivity. Middle to late Holocene alluvial and fluvial deposits (i.e., Qa, Qg) mapped within the project site and the immediate vicinity have a **low paleontological sensitivity** because middle to late Holocene sedimentary deposits, particularly those younger than 5,000 years old (SVP 2010), are generally too young to preserve paleontological resources. However, at moderate depth, middle to late Holocene alluvial and fluvial deposits overlie early Holocene to Pleistocene alluvium across the project site. Early Holocene to Pleistocene sedimentary deposits have a well-documented record of abundant and diverse vertebrate fauna throughout California, especially in Los Angeles County. Fossil specimens of whale, sea lion, horse, ground sloth, bison, camel, mammoth, dog, pocket gopher, turtle, ray, bony fish, shark, and bird have been reported (Agenbroad 2003; Jefferson 1985, 2010; Maguire and Holroyd 2016; McLeod 2020; Merriam 1911; Paleobiology Database 2020; Savage 1951; Savage et al. 1954; Tomiya et al. 2011; University of California Museum of

Paleontology 2020; Wilkerson et al. 2011; Winters 1954;). Therefore, early Holocene to Pleistocene alluvial deposits are assigned a **high paleontological sensitivity** based on the potential to yield scientifically significant paleontological resources.

Existing information (California Department of Conservation 1998) discusses the general range of geologic unit thicknesses in various areas of the San Fernando Valley; however, specific information on the depth at which middle to late Holocene deposits mapped at the surface become old enough to preserve paleontological resources is not available. Accurately assessing the boundaries between younger and older units is generally not possible without site-specific stratigraphic data, some form of radiometric dating or fossil analysis, so conservative estimates of the depth at which paleontologically sensitive units may occur ensures impact avoidance. Given the reported depths of recovery of nearby fossil localities (40-80 feet below the surface), available stratigraphic data, and the project site's proximity to exposures of older alluvial (i.e., Qoa), the transition to sediments sufficiently old to support fossils is unlikely to occur at depths shallower than 20 feet below ground surface (refer to Figure 3 and Table 1). Therefore, the paleontological sensitivity of the alluvial deposits within the project site is determined to be low to high, increasing at a depth of approximately 20 feet below ground surface (California Department of Conservation 1998; Dibblee and Ehrenspeck 1991; McLeod 2020).

Findings and Recommendations

Ground-disturbing activities in previously undisturbed portions of the project site underlain by geologic units with a high paleontological sensitivity (i.e., Pleistocene to early Holocene alluvial deposits) may result in significant impacts to paleontological resources under Appendix G of State CEQA Guidelines. Impacts would be significant if construction activities result in the destruction, damage, or loss of scientifically important paleontological resources and associated stratigraphic and paleontological data. The activities may include grading, excavation, or other activities that disturb substantial quantities of the subsurface geologic units with a high paleontological sensitivity.

As currently proposed, project ground disturbance would reach a maximum depth of approximately 12 feet for excavations associated with the subterranean parking of the mixed-use development. In the project site, the middle to late Holocene deposits overlie the paleontologically-sensitive Pleistocene to early Holocene sediments at an unknown depth but unlikely at depths shallower than 20 feet below ground surface (California Department of Conservation 1998; Dibblee and Ehrenspeck 1991; McLeod 2020). Given that the fossiliferous deposits may occur at greater depths than anticipated project disturbance and that the project site has been previously disturbed, the potential for encountering fossil resources during project-related ground disturbance is low and impacts to paleontological resources are not anticipated.

Further paleontological resources work is not recommended at this time; however, the following measures are recommended in the case of unanticipated fossil discoveries in the event that high sensitivity units occur at depths of less than 12 feet. These measures would apply only to those phases of project construction that involve ground disturbance, and would ensure that any unanticipated fossils present on site are preserved and would ensure that potential impacts to paleontological resources would be less than significant by providing for the recovery, identification, and curation of previously unrecovered fossils.

Worker's Environmental Awareness Program

Prior to any project ground disturbance, a Worker's Environmental Awareness Program (WEAP) will be prepared and used to train all site personnel prior to the start of work. The WEAP training will include at a minimum the following information:

- Review of local and state laws and regulations pertaining to paleontological resources.
- Types of fossils that could be encountered during ground disturbing activity.
- Photos of example fossils that could occur on site for reference.
- Instructions on the procedures to be implemented should unanticipated fossils be encountered during construction, including stopping work in the vicinity of the find and contacting a qualified professional paleontologist.

Unanticipated Discovery

In the event an unanticipated fossil discovery is made during the course of project development, construction activity should be halted in the immediate vicinity of the fossil, and a qualified professional paleontologist should be notified and retained to evaluate the discovery, determine its significance and if additional mitigation or treatment is warranted. Work in the area of the discovery will resume once the find is properly documented and authorization is given to resume construction work. Any significant paleontological resources found during construction monitoring will be prepared, identified, analyzed, and permanently curated in an approved regional museum repository.

If you have any questions regarding this Paleontological Resource Assessment, please contact us.

Sincerely,

Rincon Consultants, Inc.

Jorge Mendieta, BA
Associate Paleontologist

David Daitch, Ph.D.
Paleontological Principal Investigator

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