



**PALEOSERVICES**  
SAN DIEGO NATURAL HISTORY MUSEUM

## Paleontological Resources Technical Report

U-Stor-It Winchester  
Riverside County, California

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## Executive Summary

This technical report provides an assessment of paleontological resources for the proposed U-Stor-It Winchester project (“Project”) site, located at 33890 Winchester Road in the unincorporated community of Winchester in southwestern Riverside County, California. The purpose of this report is to identify and summarize paleontological resources that occur within the Project site and immediate vicinity, identify Project elements (if any) that may negatively impact paleontological resources, and provide (if necessary) recommendations to reduce any potential negative impacts to less than significant levels. The report includes the results of institutional records searches conducted at the San Diego Natural History Museum (SDNHM) and Western Science Center (WSC), and a paleontological field survey of the Project site.

The 11.125-acre Project site comprises Assessor’s Parcel Number (APN) 472-110-038, and is currently undeveloped. The site is located immediately southeast of Winchester Road/State Route 79 (SR-79) and south of Elmhurst Lane and Coventry Lane, and is surrounded by rural residential and agricultural uses and open space. The Project proposes to construct a combination of self-storage (113,915 square feet), to include seven single-story buildings (one of which will contain office space), and recreational vehicle (RV) storage (approximately 130 spaces). Other associated site improvements are proposed to include interior driveways, a bioretention/detention basin, and subgrade utilities/storm water management systems. A portion of Coventry Lane extending east and south from the northeastern corner of the Project site to its intersection with Keller Road will also be widened and paved.

Based on the site-specific geotechnical report, the proposed Project site is underlain at the surface by early to middle Pleistocene-age (approximately 2.58 million to 129,000 years old) very old axial-channel deposits (Qvoa) measuring 5 to 7 feet thick, which are in turn underlain by phyllite (Trmp) that is part of a complex of primarily metasedimentary rocks of Triassic age (approximately 252 to 201 million years old) referred to as “rocks of Menifee Valley.” These existing conditions at the surface of the Project site were generally confirmed during a pedestrian survey of the Project site. Limited exposures of Qvoa deposits were inspected in the southern portion of the site, and consisted of at least 4 feet of tan to moderate yellowish brown, massive, silty very fine-grained sandstone with sparse 0.5- to 1.5-inch diameter clasts. Elsewhere within the site, only surface or near surface exposures were observed, with a veneer of loose gravel scattered across isolated patches of the northern portion of the site. Trmp strata were not observed within the site. No fossils were documented during the field survey.

Institutional records searches conducted at SDNHM and WSC found no recorded fossil collection localities within a one-mile radius of the Project site. However, multiple localities have been documented in Pleistocene-age alluvial deposits exposed elsewhere in western Riverside County. For example, significant fossils were discovered south of Hemet (spanning the area located between 4 miles NNE and 8 miles NE of the Project site) in Pleistocene-age braided stream and lake deposits exposed during construction of the Diamond Valley Lake project. Recovered fossils from this project represent a diversity of “Ice Age” mammals (e.g., ground sloth, weasel, skunk, badger, wolf, saber-toothed cat, American lion, puma, peccary, camel, pronghorn antelope, deer, bison, mastodon, and mammoth). Additional fossil localities have been documented in Pleistocene-age alluvial deposits north of the City of Temecula and in the cities of Menifee, San Jacinto, and Moreno Valley. Neither the WSC nor SDNHM have any recorded fossil collection localities from Triassic-aged metasedimentary rocks in the vicinity of the Project site. However, poorly preserved and deformed fossils of large crinoid stems and bivalves of probable Triassic age have been reported from a calc-silicate rock within the “rocks of Menifee Valley” complex located east of Sun City in the City of Menifee.

A high paleontological sensitivity is assigned to the Qvoa deposits underlying the Project site, based on the documented occurrence of fossils in similar deposits elsewhere in western Riverside County. An

undetermined paleontological sensitivity is assigned to the Trmp strata underlying the Project site, based on its Triassic age, original marine depositional setting, low-grade metamorphism, and the reported occurrence of rare, poorly preserved, but scientifically important crinoid and bivalve fossils from the “rocks of Menifee Valley” in southwestern Riverside County.

Construction of the proposed Project has the potential to impact paleontological resources during earthwork impacting Qvoa or Trmp deposits. Thus, implementation of a paleontological mitigation program centered around paleontological monitoring is recommended, as outlined in the provided Mitigation Measures 1–7. Implementation of the paleontological mitigation program will reduce any Project-related impacts to paleontological resources to a level that is less than significant.

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# 1.0 Introduction

## 1.1 Project Description

This technical report provides an assessment of paleontological resources for the proposed U-Stor-It Winchester project (“Project”) site, located at 33890 Winchester Road in the unincorporated community of Winchester in southwestern Riverside County, California (Figure 1). The 11.125-acre Project site comprises Assessor’s Parcel Number (APN) 472-110-038, and is currently undeveloped. The site is located immediately southeast of Winchester Road/State Route 79 (SR-79) and south of Elmhurst Lane and Coventry Lane, and is surrounded by rural residential and agricultural uses and open space. The Project proposes to construct a combination of self-storage (approximately 113,915 square feet), to include seven single-story buildings (one of which will contain office space), and recreational vehicle (RV) storage (approximately 130 spaces). Other associated site improvements are proposed to include interior driveways, a bioretention/detention basin, and subgrade utilities/storm water management systems. A portion of Coventry Lane extending southeast and then south from the northeastern corner of the Project site to its intersection with Keller Road will also be widened and paved.

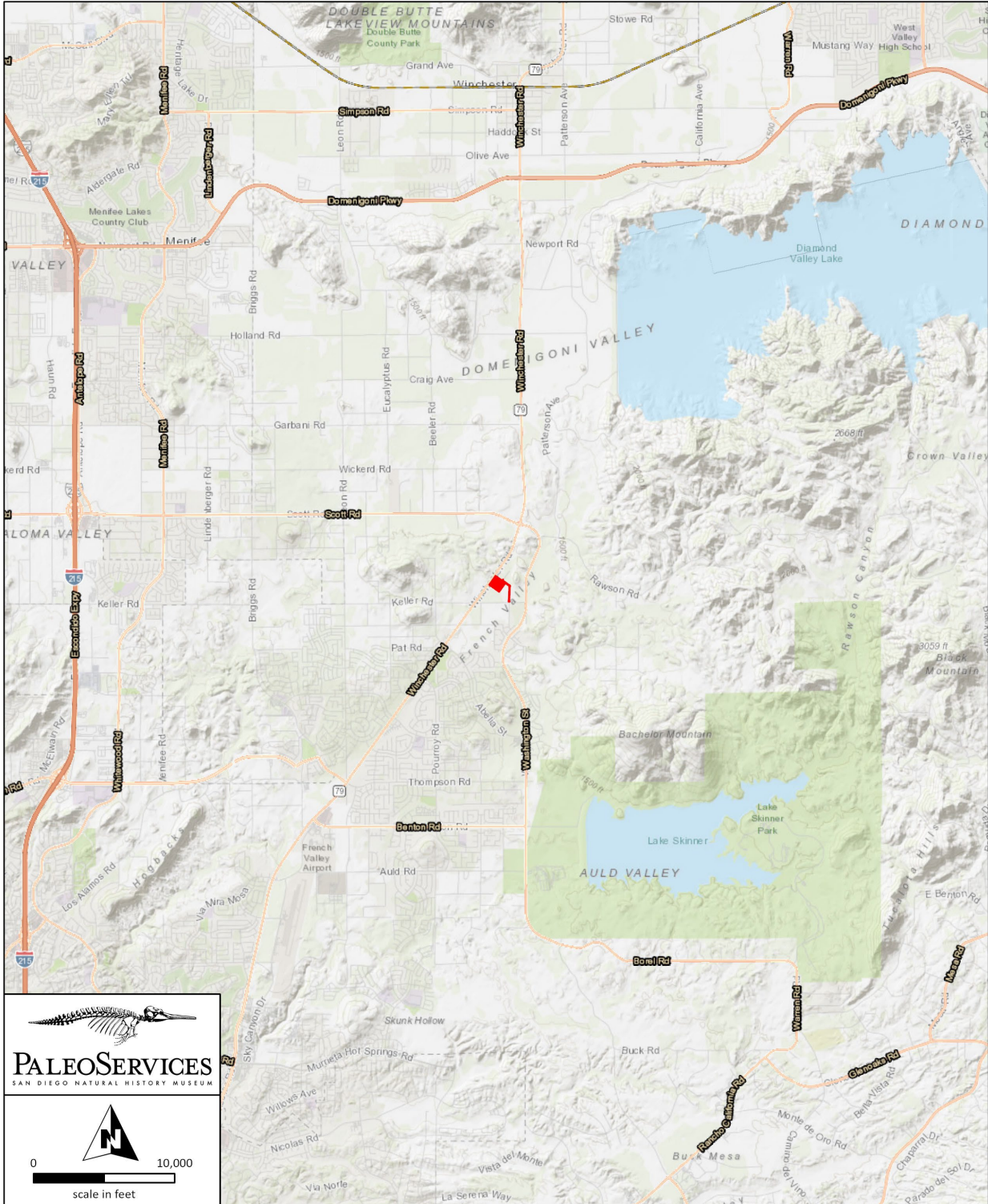
## 1.2 Scope of Work

A paleontological resource assessment was conducted in order to evaluate whether the proposed Project has the potential to negatively impact paleontological resources. The assessment addresses potential impacts to paleontological resources that may occur during construction of the proposed Project by summarizing existing paleontological resource data at the Project site, evaluating the significance of these resources, examining potential Project-related impacts to paleontological resources, and, if necessary, suggesting mitigation measures to reduce impacts to paleontological resources to less than significant levels. The assessment includes the results of a literature review of relevant geological and paleontological reports, institutional records searches of the paleontological collections at the San Diego Natural History Museum (SDNHM) and Western Science Center (WSC), and a paleontological field survey of the Project site. This technical report was prepared by Zev Brook, Katie M. McComas, and Thomas A. Deméré of the Department of PaleoServices, SDNHM.

## 1.3 Definition of Paleontological Resources

As defined here, paleontological resources (i.e., fossils) are the buried remains and/or traces of prehistoric organisms (i.e., animals, plants, and microbes). Body fossils such as bones, teeth, shells, leaves, and wood, as well as trace fossils such as tracks, trails, burrows, and footprints, are found in the geologic units/formations within which they were originally buried. The primary factor determining whether an object is a fossil or not is not how the organic remain or trace is preserved (e.g., “petrified”), but rather the age of the organic remain or trace. Although typically it is assumed that fossils must be older than ~11,700 years (i.e., the generally accepted end of the last glacial period of the Pleistocene Epoch), organic remains older than recorded human history and/or older than middle Holocene (about 5,000 radiocarbon years) can also be considered to represent fossils (Society of Vertebrate Paleontology [SVP], 2010).

Fossils are considered important scientific and educational resources because they serve as direct and indirect evidence of prehistoric life and are used to understand the history of life on Earth, the nature of past environments and climates, the membership and structure of ancient ecosystems, and the pattern and process of organic evolution and extinction. In addition, fossils are considered to be non-renewable resources because typically the organisms they represent no longer exist. Thus, once destroyed, a particular fossil can never be replaced.



Sources: Terrain Hillshade, World Transportation, World Topographic Map, Esri, 2023  
 Figure 1: Project overview map, U-Stor-It Winchester, Riverside County, California

Finally, paleontological resources can be thought of as including not only the actual fossil remains and traces, but also the fossil collection localities and the geologic units containing those localities. The locality includes both the geographic and stratigraphic context of fossils—the place on the earth and stratum (deposited during a particular time in earth’s history) from which the fossils were collected. Localities themselves may persist for decades, in the case of a fossil-bearing outcrop that is protected from natural or human impacts, or may be temporarily exposed and ultimately destroyed, as is the case for fossil-bearing strata uncovered by erosion or construction. Localities are documented with a set of coordinates and a measured stratigraphic section tied to elevation detailing the lithology of the fossil-bearing stratum as well as that of overlying and underlying strata. This information provides essential context for any future scientific study and educational use of the recovered fossils.

### 1.3.1 Definition of Significant Paleontological Resources

The California Environmental Quality Act (CEQA, Public Resources Code Section 21000 et seq.) dictates that a paleontological resource is considered significant if it “has yielded, or may be likely to yield, information important in prehistory or history” (Section 15064.5, [a][3][D]). The Society of Vertebrate Paleontology (SVP) has further defined significant paleontological resources as consisting of “fossils and fossiliferous deposits[...]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” (SVP, 2010).

## 1.4 Regulatory Framework

Paleontological resources are considered scientifically and educationally significant nonrenewable resources, and as such they are protected under state (e.g., California Environmental Quality Act [CEQA]) and local (Riverside County) laws, regulations, and ordinances, outlined below.

### 1.4.1 State

Notable State legislative protection for paleontological resources includes the California Environmental Quality Act.

The **California Environmental Quality Act (CEQA, Public Resources Code Section 21000 et seq.)** protects paleontological resources on both state and private lands in California. This act requires the identification of environmental impacts of a Project, the determination of significance of the impacts, and the identification of alternative and/or mitigation measures to reduce adverse environmental impacts. The Guidelines for the Implementation of CEQA (Title 14, Chapter 3, California Code of Regulations: 15000 et seq.) outlines these necessary procedures for complying with CEQA.

Paleontological resources are specifically included as a question in the CEQA Environmental Checklist (Section 15023, Appendix G): “Will the proposed project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.” Also applicable to paleontological resources is the checklist question: “Does the project have the potential to... eliminate important examples of major periods of California history or pre-history.”

Most CEQA lead agencies follow the definitions and guidelines provided by SVP (2010), which are in line with industry standards (e.g., Murphey et al., 2019). As advised by SVP (2010), impacts to paleontological resources can be minimized to a level below the threshold of significance through 1.) the permanent preservation of a fossil locality and its contained fossil resources); or 2.) the implementation of a paleontological mitigation program that would reduce any adverse impacts to a level below the threshold of significance through the salvage and permanent storage of any salvaged fossils in an established scientific institution.

### 1.4.2 Local

The Multipurpose Open Space Element of the **Riverside County General Plan** (County of Riverside, 2015) identifies the occurrence of important historical, archaeological, and paleontological resources within the County. Several policies of the County's General Plan Multipurpose Open Space Element address paleontological resources directly, and provide the following recommendations:

- Policy OS 19.6: Whenever existing information indicates that a site proposed for development has high paleontological sensitivity ... a paleontological resource impact mitigation program (PRIMP) shall be filed with the County Geologist prior to site grading. The PRIMP shall specify the steps to be taken to mitigate impacts to paleontological resources.
- Policy OS 19.7: Whenever existing information indicates that a site proposed for development has low paleontological sensitivity ... no direct mitigation is required unless a fossil is encountered during site development. Should a fossil be encountered, the County Geologist shall be notified and a paleontologist shall be retained by the project proponent. The paleontologist shall document the extent and potential significance of the paleontological resources on the site and establish appropriate mitigation measures for further site development.
- Policy OS 19.8: Whenever existing information indicates that a site proposed for development has undetermined paleontological sensitivity ... a report shall be filed with the County Geologist documenting the extent and potential significance of the paleontological resources on site and identifying mitigation measures for the fossil and for impacts to significant paleontological resources prior to approval of that department.
- Policy OS 19.9: Whenever paleontological resources are found, the County Geologist shall direct them to a facility within Riverside County for their curation, including the Western Science Center in the City of Hemet.

As outlined below, in Section 2.3, Riverside County has provided criteria to assess the sensitivity of paleontological resources.

## 2.0 Methods

### 2.1 Paleontological Records Searches and Literature Review

Paleontological records searches were conducted at the SDNHM and WSC in order to determine if any documented fossil collection localities occur within the Project site or immediate surrounding area. The SDNHM records search involved examination of the paleontological database for any records of known fossil collection localities from sedimentary deposits similar to those underlying the Project site within an approximately one-mile radius. A formal records search of the paleontological collections at the WSC was also requested and is appended to this report (WSC, 2023; Appendix A).

Additionally, a review was conducted of relevant published geologic mapping (e.g., Dibblee and Minch, 2003; Morton et al., 2003; Morton and Miller, 2006), published geological and paleontological reports (e.g., Springer et al., 2009, 2010), and other relevant literature (e.g., unpublished paleontological mitigation reports). This approach was followed in recognition of the direct relationship between paleontological resources and the geologic units within which they are entombed. Knowing the geologic

history of a particular area and the fossil productivity of geologic units that occur in that area, makes it possible to predict where fossils may, or may not, be encountered.

## 2.2 Paleontological Field Survey

A paleontological field survey of the Project site was conducted on August 7, 2023 by Gino Calvano and Kirstin L. Mueller of the Department of PaleoServices, SDNHM. The purpose of the field survey was to confirm the published geologic mapping, to field check the results of the literature and records searches, and to determine the paleontological potential/sensitivity of the strata underlying the Project site. The field survey included inspection of available natural and man-made exposures within the Project site in order to collect stratigraphic data (e.g., bedding type, thickness, geologic contacts), detailed lithologic descriptions of strata (e.g., color, sorting of grains, texture, sedimentary structures, and grain size of sedimentary rocks), and to prospect for any fossil remains present at the surface. The proposed improvements to Coventry Lane were added after the field survey was completed; based on the lack of available exposures observed during the field survey of the Project site, a separate survey of the Coventry Lane alignment was not recommended.

During the survey, the field paleontologists were equipped with standard field equipment (e.g., rock hammer, camera, hand lens, folding tape measure) and an iPhone loaded with Esri's Field Maps app that was used to view relevant maps and collect field data. Collected field data included waypoints that were keyed to field notes and photographs.

## 2.3 Paleontological Resource Assessment Criteria

The County of Riverside has developed standards for assessing paleontological potential/sensitivity that are based, in part, on the standards set forth by the SVP (2010), and that also take into account the possibility for adverse impacts due to human influence. The County recognizes a tripartite scale: High Potential (High A and High B subcategories), Low Potential, and Undetermined Potential.

The specific criteria for each scale of Paleontological Potential/Sensitivity is included below.

### 2.3.1 High Potential/Sensitivity

High sensitivity is assigned to geologic units known to contain paleontological localities with rare, well-preserved, critical fossil materials for stratigraphic or paleoenvironmental interpretation, and fossils providing important information about the paleobiology and evolutionary history (phylogeny) of animal and plant groups. Generally speaking, highly sensitive formations produce vertebrate fossil remains or are considered to have the potential to produce such remains.

In Riverside County, High Paleontological Potential A is assigned to rock units present immediately at the surface, while High Paleontological Potential B is assigned to rock units found at a depth of 4 feet or greater below existing grade.

### 2.3.2 Low Potential/Sensitivity

Low sensitivity is assigned to geologic units that, based on their relative youthful age and/or high-energy depositional history, are judged unlikely to produce important fossil remains. Typically, low sensitivity formations produce invertebrate fossil remains in low abundance. Low paleontological potential is also assigned to geologic formations that are entirely igneous in origin and therefore have no potential for producing fossil remains, or to artificial fill materials which lose the stratigraphic/geologic context of any contained organic remains (e.g., fossils).

### 2.3.3 Undetermined Potential/Sensitivity

Undetermined sensitivity is assigned to geologic units that exhibit geologic features and preservational conditions that suggest significant fossils could be present, but little information about the geology and/or paleontological resources of the unit or the area is known. This may indicate the unit or area is poorly studied, and field surveys may be useful for more precisely determining the paleontological sensitivity.

## 2.4 Paleontological Impact Analysis

Direct impacts to paleontological resources occur when earthwork activities (e.g., mass grading, utility trenching, etc.) cut into the geologic units within which fossils are buried and physically destroy the fossil remains. As such, only earthwork activities that will disturb potentially fossil-bearing sedimentary deposits (i.e., those rated with a high or undetermined paleontological potential) have the potential to significantly impact paleontological resources. Paleontological mitigation typically is recommended to reduce any negative impacts to paleontological resources to less than significant levels.

The purpose of the impact analysis is to determine which (if any) of the proposed Project-related earthwork activities may disturb potentially fossil-bearing geologic units, and where and at what depths this earthwork will occur. The paleontological impact analysis involved analysis of available project documents, and comparison with geological and paleontological data gathered during the records searches, literature review, and field survey.

## 3.0 Results

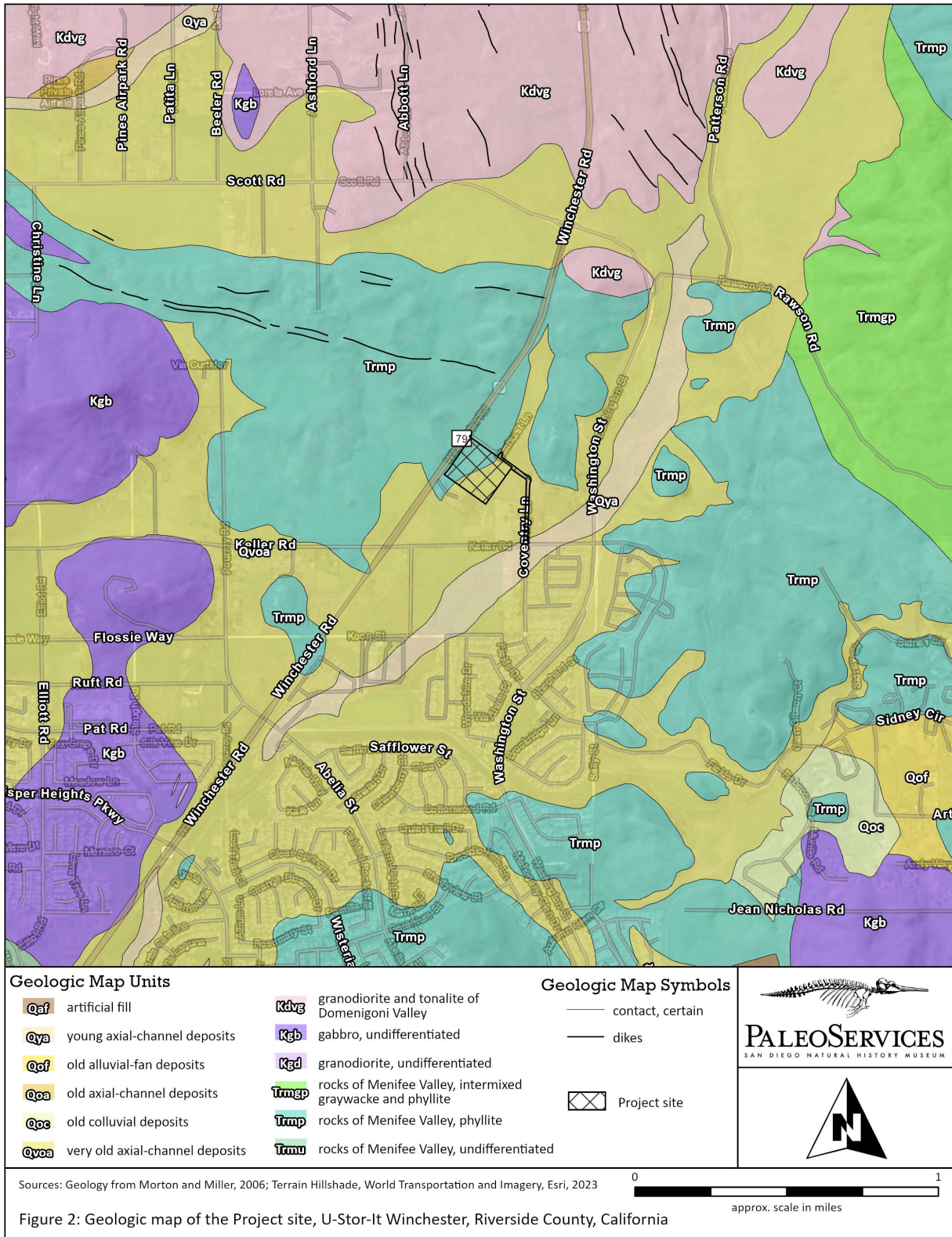
### 3.1 Results of the Records Searches and Literature Review

#### 3.1.1 Project Geology

**Geologic setting:** The proposed Project site is located within the Perris Block of the Peninsular Ranges Geomorphic Province (English, 1926; Norris and Webb, 1990). This geologic structural block is surficially expressed as a relatively low relief, weathered basin punctuated by resistant hills and small mountains, and is surrounded by the Sana Ana Mountains to the west and south, the San Jacinto Mountains to the east, and the San Gabriel and San Bernardino Mountains to the north. The Perris Block is a fault-controlled region, with the San Jacinto Fault to the northeast and the Elsinore Fault to the southwest. Faulting is responsible for the uplift of the surrounding mountain ranges, and the down drop of the Perris Block. As a consequence, the surrounding mountain ranges are actively being eroded, and the sediments derived from this erosion have in the past been, and are still being, deposited in the basin lowlands as alluvial fans and/or stream channel deposits. These surficial deposits overlie a deeply weathered mass of Cretaceous plutonic igneous rocks of the Peninsular Ranges Batholith and older metasedimentary basement rocks.

**Project-specific geology:** As mapped by Morton et al. (2003) and Morton and Miller (2006), the proposed Project site is underlain by pre-batholithic phyllite (abbreviated as Trmp on mapping by Morton and Miller, 2006) that is part of a complex of primarily metasedimentary rocks of Triassic age (approximately 252 to 201 million years old) referred to as “rocks of Menifee Valley” in published reports. In the southeastern half of the Project site, these metasedimentary rocks are overlain by early to middle Pleistocene-age (approximately 2.58 million to 129,000 years old) very old axial-channel deposits (abbreviated as Qvoa on mapping by Morton and Miller, 2006) (Figure 2). Holocene-age (less

than 11,700 years old) young alluvial deposits are mapped at the surface by Morton and Miller (2006) in the southernmost portion of the Coventry Lane alignment.



In contrast, the published geologic mapping of Dibblee and Minch (2008) depicts Holocene-age alluvium underlying the entirety of the Project site at the surface, with Paleozoic or Mesozoic metasedimentary rocks (schist) exposed along the opposite side of Winchester Road. Finally, the site-specific geotechnical report indicates that the entire site is underlain at the surface by very old axial-channel deposits to depths of 5 to 7 feet below ground surface (bgs), and that these deposits are in turn underlain by Triassic phyllite to the maximum explored depth of 12 feet bgs (Earth Strata Geotechnical Services, Inc., 2021).

The Triassic-age metasedimentary rocks underlying this area represent the remnants of “roof pendants” that were metamorphosed during intrusion by magmas of the Cretaceous-age Peninsular Ranges Batholith. Although the actual intrusion of these subduction generated magmas occurred at depths of up to 10 miles below the Earth’s surface, subsequent uplift and erosion over the past 90 million years has resulted in them being exposed today in the resistant hills surrounding the Project site. The Triassic-age “rocks of Menifee Valley” underlying the Project site are characterized as black and fissile phyllite (Morton et al., 2003; Morton and Miller, 2006).

The early to middle Pleistocene-age very old axial-channel deposits were derived from weathering and erosion of the uplifted plutonic igneous bedrock exposed in the hills to the east of the Project site (e.g., Bachelor Mountain, Black Mountain), which were then carried downslope by the action of local streams and deposited on the valley floor. These deposits consist of brown to light brown, fine- to coarse-grained silty sand and sandy silt (Earth Strata Geotechnical Services, Inc., 2021).

### 3.1.2 Project Paleontology

A records search request of paleontological collections data at the WSC generated a response that there are no recorded WSC fossil collection localities within a one-mile radius of the proposed Project site, but does note that localities are documented in the region in similar Pleistocene-age alluvial deposits (WSC, 2023; Appendix A). These documented localities have produced fossil remains of mammoth (*Mammuthus columbi*), mastodon (*Mammut pacificus*), saber toothed cats (*Smilodon fatalis*), camel (*Camelops hesternus*) ancient horse (*Equus* sp.), and other Pleistocene-age large-bodied and small-bodied vertebrates that lived during the Pleistocene. In particular, the WSC houses the significant fossil collection recovered from numerous localities discovered during construction of Diamond Valley Lake, with localities spanning the area located between 4 miles NNE and 8 miles NE of the Project site in the City of Hemet. There, Pleistocene-age braided stream and lake deposits exposed during construction produced fossil remains of “Ice Age” mammals (e.g., ground sloth, weasel, skunk, badger, wolf, saber-toothed cat, American lion, puma, peccary, camel, pronghorn antelope, deer, bison, mastodon, and mammoth), along with a variety of small-bodied vertebrates (e.g., frogs, toads, turtles, tortoise, lizards, snakes, birds, rabbits, and rodents) (Springer et al., 2009, 2010).

A search of the SDNHM paleontological records found no documented fossil collection localities within a one-mile radius of the proposed Project site. The nearest SDNHM fossil localities from Pleistocene-age alluvial deposits lie approximately 9 miles southwest of the Project site, and were discovered during paleontological monitoring of mass grading for the Harveston residential development, located north of the City of Temecula along the east side of Interstate 15 (SDNHM, unpublished paleontological collections data). The two documented localities produced a partial skull of a mammoth and an isolated mammoth tusk. One additional SDNHM fossil locality from similar Pleistocene-age alluvial deposits is located approximately 15 miles to the northeast in the San Jacinto Valley within the City of San Jacinto, where fossil remains of Pleistocene-age freshwater physid snails and frogs, as well as terrestrial colubrid snakes, lizards, and rodents (including the pocket gopher *Thomomys* sp.) were discovered at a depth of 10 feet below ground surface (bgs) during paleontological monitoring of mass grading for a new middle school (SDNHM, unpublished paleontological collections data).

The San Bernardino County Museum (SBCM) reports several recorded paleontological collection localities from Pleistocene alluvial deposits in the northeastern and eastern portions of the City of Menifee, approximately 6 miles northwest of the Project site. These fossil localities yielded fossil remains of Pleistocene-age western camel (*Camelops hesternus*) and small-bodied vertebrates including lizards, rodents, and rabbits (SBCM, 2010).

Neither the WSC nor SDNHM have any recorded fossil collection localities from Triassic-aged metasedimentary rocks in the vicinity of the Project site. However, poorly preserved and deformed fossils of large crinoid stems and bivalves of probable Triassic age have been reported from calc-silicate rocks within the “rocks of Menifee Valley” complex located east of Sun City in the City of Menifee (Morton and Miller, 2006).

### 3.2 Results of the Paleontological Field Survey

As observed during the paleontological field survey, the Project site is generally flat-lying and the entire site is covered with dry vegetation and grasses (Figure 3). The only exposures of the underlying sedimentary deposits occur in the form of gopher holes, patches of bare earth among the vegetation, and four abandoned geotechnical test pits located in the southern portion of the site (Figure 4). These exposures were inspected to document the lithology of the deposits on site and to prospect for any fossil remains.



**Figure 3.** Overview of the Project site, which is generally flat-lying and covered with dense dry vegetation. Photo taken facing west from Winchester Road.



**Figure 4.** Available exposures of the underlying sedimentary deposits within the Project site: a gopher hole (top left), bare ground among vegetation (top right), and previously excavated test pits (bottom, with SDNHM paleontologist Gino Calvano standing at the base of the pit).

Exposures of the early to middle Pleistocene-age very old axial-channel deposits observed in the southern portion of the site consisted of at least 4 feet of tan to moderate yellowish brown, massive, silty very fine-grained sandstone with sparse 0.5- to 1.5-inch diameter lithic clasts (Figure 5). In isolated patches in the northern portion of the site, a veneer of loose gravel was scattered across the ground surface (see top right, Figure 4). Exposures of Triassic-age phyllite were not identified within the site.

No fossils were encountered during the paleontological field survey.



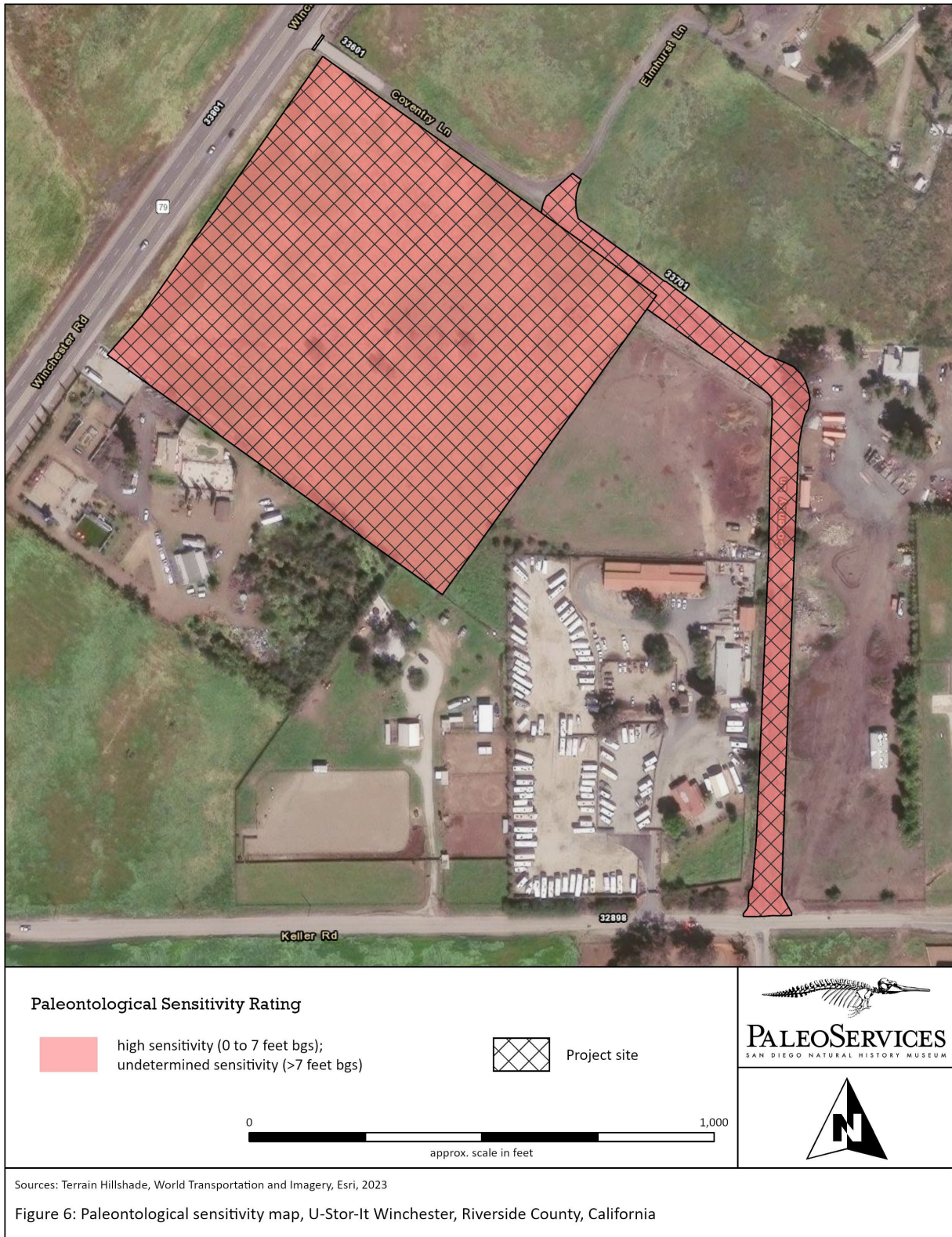
**Figure 5.** View of the sidewall of a previously excavated test pit located in the southern portion of the site, and close up of very old axial-channel deposits at right. Folding ruler in the left photo measures 3 feet tall.

### 3.3 Results of the Paleontological Resource Assessment

The County of Riverside (2023) assigns the entirety of the Project site an undetermined paleontological sensitivity. This assignment is based on small-scale (1:250,000) geologic mapping by Rogers (1965), which depicts Upper Jurassic metasedimentary rocks underlying the entire Project site. However, based on the site-specific geotechnical report (Earth Strata Geotechnical Services, Inc., 2021), early to middle Pleistocene-age very old axial-channel deposits are present across the upper 5 to 7 feet of the site, with Triassic-age phyllite located below these deposits.

Early to middle Pleistocene-age very old axial-channel deposits are assigned a high paleontological sensitivity. This rating is supported by the documented occurrence of scientifically significant terrestrial vertebrate fossils from similar deposits nearby and elsewhere in western Riverside County. Phyllite of the Triassic-age “rocks of Meniffee Valley” is assigned an unknown paleontological sensitivity, based on its Triassic age, original marine depositional setting, low grade of metamorphism, and the reported occurrence of rare, poorly preserved, and scientifically important crinoid and bivalve fossils from the

“rocks of Menifee Valley” in southwestern Riverside County. These conditions are summarized in Figure 6.



### 3.4 Results of the Paleontological Impact Analysis

Based on the resubmitted construction plans (dated 18 November 2024), the single-story self-storage buildings will be located in the northwestern half and along the southeastern edge of the site, with six of the buildings paralleling Winchester Road and one building located parallel and adjacent to Coventry Lane. RV surface parking lots will be located in the southeastern half of the site. A bioretention/detention basin will be located in the southern corner of the site. A storm water drain will be constructed that extends from a low point located along the west side of the Project site to an outlet crossing under Winchester Road.

Construction earthwork is anticipated to include: remedial grading for the creation of level building pads (estimated to extend 5 to 7 feet bgs in areas where structures are proposed, and 3 to 5 feet in parking/driveway areas, based on geotechnical recommendations by Earth Strata Geotechnical Services, Inc., 2021), trenching for subgrade utilities/storm water drains (estimated to extend ~5 feet or more bgs), excavation for the bioretention/detention basin (estimated to extend ~5 feet bgs), and superficial excavation related to the installation of hardscaping and landscaping (estimated to extend less than ~2 feet bgs). Offsite improvements to Coventry Lane will consist of expanding the road to be 24 feet wide with four-foot-wide graded shoulders on both sides. These improvements are also anticipated to require superficial excavation (estimated to extend less than ~2 feet bgs).

Based on the site-specific preliminary geotechnical report (Earth Strata Geotechnical Services, Inc., 2021), construction earthwork will occur in areas that are directly underlain by early to middle Pleistocene-age very old axial-channel deposits, which are assigned a high paleontological sensitivity. These deposits are in turn underlain at depths ranging from 5 to 7 feet bgs by phyllite of the Triassic-age “rocks of Menifee Valley,” which is assigned an undetermined paleontological sensitivity.

As summarized in Table 1, impacts to paleontological resources are possible where excavation will impact previously undisturbed deposits of high and undetermined paleontological sensitivity geologic units. Such excavations are anticipated to include site-wide remedial grading and trenching for the storm drain along the west side of the developed area. Because finished grades are within several feet of existing grades, the remaining on-site excavations, including trenching for subgrade utilities, excavation of the bioretention/detention basin, and superficial excavations associated with installation of hardscaping and landscaping, are likely to take place within materials that were already disturbed during site grading, and these excavations are therefore unlikely to impact paleontological resources. In addition, the shallow earthwork associated with improvements to Coventry Lane is anticipated to impact previously disturbed and/or weathered deposits that are not likely to contain well-preserved fossil remains, and are therefore also deemed unlikely to impact paleontological resources.

## 4.0 Recommendations & Conclusions

Implementation of a paleontological mitigation program, in the form of paleontological monitoring, is recommended for earthwork at the Project site that will directly impact previously undisturbed and unweathered early to middle Pleistocene-age very old axial-channel deposits (Qvoa) or the underlying Triassic-age phyllite of the “rocks of Menifee Valley” (Trmp).

Implementation of the following mitigation measures will reduce any Project-related impacts to paleontological resources to a level that is less than significant. The mitigation measures outlined below are based on established industry best practices (Murphey et al., 2019).

**Table 1.** Summary of Project impacts and paleontological monitoring recommendations.

| Project Components                                 | Anticipated Depth of Earthwork | Impact Analysis        | Monitoring recommended? |
|--|--------------------------------|------------------------|-------------------------|
| Site remedial grading                              | 3 to 7 feet bgs                | Impacts possible       | <u>Yes</u>              |
| Trenching for on-site subgrade utilities           | Estimated 5 feet bgs           | No impacts anticipated | No                      |
| Trenching for storm water drain to Winchester Road | Estimated 5 feet bgs           | Impacts possible       | <u>Yes</u>              |
| Bioretention/detention basin excavation            | Estimated 5 feet bgs           | No impacts anticipated | No                      |
| Hardscaping, landscaping                           | Estimated less than 2 feet bgs | No impacts anticipated | No                      |
| Offsite widening/paving of Coventry Lane           | Estimated less than 2 feet bgs | No impacts anticipated | No                      |

## 4.1 Mitigation Measures

1. Prior to the start of earthwork, a qualified Project Paleontologist shall be retained to oversee the paleontological mitigation program and shall attend the pre-construction meeting to consult with Project contractors concerning excavation schedules, paleontological field techniques, and safety issues. A qualified Project Paleontologist is defined as an individual with an M.S. or Ph.D. emphasizing paleontology and sedimentary geology that is experienced with paleontological procedures and techniques, who is knowledgeable in the geology and paleontology of Riverside County, and who has worked as a paleontological mitigation project supervisor for at least two years. In addition, a professional repository shall be designated to receive and curate any discovered fossils. A professional repository is defined as a recognized paleontological specimen repository (e.g., an AAM-accredited museum or university) with a permanent curator, and should be capable of storing fossils in a facility with adequate security against theft, loss, damage, fire, pests, and adverse climate conditions (e.g., Western Science Center).
2. A paleontological monitor shall be on-site on a full-time basis during earthwork impacting previously undisturbed and unweathered early to middle Pleistocene-age very old axial-channel deposits (which are assigned a high paleontological sensitivity, and are present near the surface to depths of 5 to 7 feet bgs) and on a part-time basis during earthwork impacting Triassic-age phyllite of the “Rocks of Menifee Valley” (which are assigned an undetermined paleontological sensitivity and are present in the subsurface at depths of 5 to 7 feet or more bgs). A paleontological monitor is defined as an individual with a college degree emphasizing paleontology with experience in the recognition and salvage of fossil materials or who has two years of demonstrable equivalent experience in the recognition and salvage of fossil materials. The paleontological monitor shall work under the direction of the Project Paleontologist. The paleontological monitor shall be equipped to salvage fossils as they are unearthed, to avoid construction delays, and to remove samples of sediments that are likely to contain small fossil invertebrates and vertebrates. Monitors shall be empowered to temporarily halt or divert equipment to allow removal of abundant or large specimens. Paleontological monitoring may be reduced (e.g., to part-time monitoring or spot-checking) or eliminated, at the discretion of the Project Paleontologist and in consultation with appropriate agencies (e.g., Project proponent,

County of Riverside representatives). Changes to the paleontological monitoring schedule shall be based on the results of the mitigation program as it unfolds during site development, and evaluation of current and anticipated conditions in the field.

3. If fossils are discovered, the Project Paleontologist (or paleontological monitor) shall make an initial assessment to determine their significance. All identifiable vertebrate fossils (large or small) and uncommon invertebrate, plant, and trace fossils are considered to be significant and shall be recovered (SVP, 2010). Representative samples of common invertebrate, plant, and trace fossils shall also be recovered. Although fossil salvage can often be completed in a relatively short period of time, the Project Paleontologist (or paleontological monitor) shall be allowed to temporarily direct, divert, or halt earthwork at his or her discretion during the initial assessment phase if additional time is required to salvage fossils. If it is determined by the Project Paleontologist that the fossil(s) should be recovered, the recovery shall be completed in a timely manner. Some fossil specimens (e.g., a large mammal skeleton) may require an extended salvage period. Because of the potential for the recovery of small fossil remains (e.g., isolated teeth of small vertebrates), it may be necessary to collect bulk-matrix samples for screen washing.
4. In the event that fossils are discovered during a time when a paleontological monitor is not on site (i.e., an inadvertent discovery), earthwork within the vicinity of the discovery site shall temporarily halt, and the Project Paleontologist shall be contacted to evaluate the significance of the discovery. If the inadvertent discovery is determined to be significant, the fossils shall be recovered, as outlined in Mitigation Measure 3.
5. Fossil remains collected during monitoring and salvage shall be cleaned, repaired, sorted, taxonomically identified, and cataloged as part of the mitigation program. Fossil preparation may also include screen-washing of bulk matrix samples for microfossils or other laboratory analyses (e.g., radiometric carbon dating), if warranted in the discretion of the Project Paleontologist. Fossil preparation and curation activities may be conducted at the laboratory of the contracted Project Paleontologist, at an appropriate outside agency, and/or at the designated repository, and shall follow the standards of the designated repository.
6. Prepared fossils, along with copies of all pertinent field notes, photos, and maps, shall be curated at a professional repository. The Project Paleontologist shall have a written repository agreement with the professional repository prior to the initiation of mitigation activities.
7. A final summary report shall be completed at the conclusion of the monitoring and curation phases of work, and shall summarize the results of the mitigation program. A copy of the paleontological monitoring report shall be submitted to the County of Riverside and to the designated museum repository. The report and specimen inventory, when submitted to the County of Riverside with confirmation of the curation of recovered specimens into an established, accredited repository, shall signify completion of the program to mitigate impacts to paleontological resources.

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# Appendix A

Records Search Results: Western Science Center



August 16<sup>th</sup>, 2023

San Diego Natural History Museum, Department of PaleoServices  
Katie McComas  
1788 El Prado  
San Diego, CA 92101

Dear Ms. McComas,

This letter presents the results of a record search conducted for the Winchester Road U-Stor-It Project in the city of Winchester, Riverside County, California. The project site is located along Winchester Road, north of Keller Road, on Township 6 South, Range 2 West, Section 21 on the *Winchester, CA* USGS 7.5 minute quadrangle.

The geologic units underlying this project are mapped as alluvial deposits dating from the Pleistocene to the Holocene epochs, along with Cretaceous units of mica, feldspar, and quartz (Dibblee and Minch 2003; this map notes that the alluvial units here, while marked as Holocene aged, may include fossiliferous units in basin areas). Pleistocene alluvial units are considered to be of high paleontological sensitivity. The Western Science Center does not have localities within the project area or within a 1-mile radius, but does have numerous fossil localities in similarly mapped units throughout California.

Any fossil specimen from the Winchester Road U-Stor-It Project would be scientifically significant. Excavation activity associated with the development of the project area would impact the paleontologically sensitive Pleistocene alluvial units, and it is the recommendation of the Western Science Center that a paleontological resource mitigation program be put in place to monitor, salvage, and curate any recovered fossils associated with the study area.

If you have any questions, or would like further information, please feel free to contact me at [bstoneburg@westerncentermuseum.org](mailto:bstoneburg@westerncentermuseum.org).

Sincerely,

A handwritten signature in black ink, appearing to read 'Brittney Stoneburg', written in a cursive style.

Brittney Elizabeth Stoneburg, MSc  
Collections Manager