Appendix C: Cultural/Paleontological Resource Survey for Murrieta Canyon Academy

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October 18, 2019

Peter K. Carlson
Carlson Strategic Land Solutions
27134A Paseo Espada, Suite 323
San Juan Capistrano, CA 92675

Subject: Cultural/Paleontological Resource Survey for the Murrieta Canyon Academy Project, City of Murrieta, County of Riverside, California

Dear Mr. Carlson:

At the request of Carlson Strategic Land Solutions, Duke Cultural Resources Management, LLC (DUKE CRM) has conducted a cultural and paleontological assessment of the Murrieta Canyon Academy Project (Project), located in the City of Murrieta, Riverside County, California. Murrieta Valley Unified School District (MVUSD) proposes to expand the existing Murrieta Canyon Academy (MCA). The Project is approximately 5 acres. It is subject to the California Environmental Quality Act (CEQA) and the MVUSD is the lead agency for CEQA. Consistent with standard practices for California DUKE CRM conducted cultural and paleontological records searches, conducted a field survey of the Project boundaries, and prepared this report.

The Project will allow MCA to increase current capacity from 200 students to 500 students. The proposed expanded MCA buildings are generally located within the existing softball fields located immediately north of the existing campus and south of the adjacent Thompson Middle School. The existing MCA buildings are to be demolished and new parking/landscape to be constructed. The proposed Project will generally include the design of a new campus with approximately 33,000 square-feet footprint total and associated parking lot, and other site improvements. More specifically, the new campus will include construction of a single-story laboratory and classroom building, student pavilion, administration office, various academic and activity courts with additional parking and landscape at the existing campus. The proposed buildings will contain various classrooms, a library, restrooms, and storage rooms. The Project is located at the center of Section 18, Township 7 South, Range 3 West, and is depicted on the USGS *Murrieta* 7.5' quadrangle (Attachment 1 – Project Location). The Project is located on the existing MCA at 24150 Hayes Avenue, which is bound to south by Hayes Avenue, to the east by a housing development, to the north by Murrieta High School, and to the west by Thompson Middle School (Attachment 1 – Project Aerial).

BACKGROUND

The Project is situated in the northwestern portion of the northwest trending Peninsular Ranges geomorphic province. This province is distinguished by northwest-trending mountain ranges and valleys following faults branching from the San Andreas Fault. The Peninsular Ranges are bound to the east by the Colorado Desert and west into the submarine continental shelf, and they extend north to the San Bernardino – Riverside county line and south to the California state line (Norris and Webb 1976). The project is within the Elsinore Trough, a valley that is formed by vertical movement along faults associated with the San Andreas Fault system (Engle 1959; Springer, et al.

2009). Throughout the Elsinore Trough, valley sediment can exceed 2,000 feet in depth (Mann 1955). Locally, the sediments consist of fluvial deposits from the Pliocene (5.3 to 2.5 million years ago) and Pleistocene (2.5 million years ago to 11,700 years ago) Epochs that have been dissected and partially covered by subsequent fluvial deposits from the Holocene Epoch (11,700 years ago to today) (Pajak, et al. 1996). These deposits consist of Pleistocene- to Holocene-age fluvial deposits (*Qyv*) on valley floors, locally dominated by sand in the southeastern half of the Project and a sandstone member of Pauba Formation (*Qpfs*) which is composed of Pleistocene-age, cross-bedded sandstone with sparse cobble- to boulder-conglomerate beds in the northwestern half (Kennedy and Morton 2003, Attachment 1 - Project Geology).

The Project is located within the ethnographic territory of the Luiseño. The Luiseño are Takic speakers and are descended from Late Prehistoric populations of the region (Bean and Smith 1978, Shipley 1978). The Luiseño lived in sedentary and independent village groups, each with specific subsistence territories encompassing hunting, food gathering, and fishing areas. Villages were usually located in valley basins, along creeks and streams adjacent to mountain ranges where water was available. Most inland populations had access to fishing and food gathering sites on the coast though economic and subsistence practices centered upon the seasonal gathering of acorns and seeds; the hunting of deer and small mammals (Basgall 1987; Bean and Shipek 1978; Johnson and Earle 1987; Lovin 1963; White 1963)

A geoarchaeological sensitivity evaluation was undertaken for buried prehistoric and historic sites along the Murrieta Creek, within approximately 500 feet southwest of the current Project in 2006 (Onken et al. 2006). In it, the area of study directly southwest of the Project was high sensitivity, due to the potential of accumulated fluvial sediment (*Qyv*) and possible water ponding. However, the study also determined that landforms directly underlain by deposits of the Pauba Formation (*Qpfs*) had a much lower sensitivity, as the age of the sediments are older than the evidence of human occupation of California. In addition, the area was farmed for much of the 20th century. As a result of the geoarchaeological analysis from nearby areas, the Pauba Formation sandstone member (*Qpfs*) in the Project has a low potential to contain cultural material such as prehistoric archaeological sites due to its age. Similarly, the young alluvial valley deposits (*Qyv*) within the Project also have a low potential due to disturbance associated with farming and construction of the existing school.

RECORD SEARCH RESULTS

The cultural resource records search was conducted at the Eastern Information Center (EIC) of the California Historical Resources Information System (CHRIS) located at the University of California, Riverside on October 1, 2019, by Alexandria Bulato, B.A, Archaeologist. In addition, the California State Historic Property Data File (HPDF) was examined which includes the National Register of Historic Places (NRHP), California Register of Historic Resources (CRHR), the California Historic Landmarks (CHL), and the California Points of Historical Interest (CPHI).

The cultural resource records search identified sixteen cultural resources and sixty-two previous cultural resources studies within one mile of the Project. Four studies included or were directly adjacent to the Project (see Table 1). Of these, two were medium size study areas (10-50 acres) that surveyed a small portion of the site (McKenna et al. 2004; Keller 1987) and two were large study areas (>50 acres) that surveyed the entire Project area (Brown 1978; Salpas 1984). One Hundred percent of the Project area has been surveyed for cultural resources. Eight of the resources are prehistoric isolates, six are prehistoric archaeological sites, one is a historic archaeological site, and

one is a multicomponent prehistoric/historic archaeological site (see Table 2). No cultural resources were mapped within the Project.

Table 1- Reports within the Project

Report No.	Year	Author	Title
RI-00340	1978	M.A. Brown	Joaquin Ranch: Archaeological Survey Addendum Report
RI-00346	1984	Jean A. Salpas	Mitigation of Archaeological Sites on Tract 14836 and Tract 14889 Arco Development/Joaquin Ranch
RI-02115	1987	Keller, Jean Salpas	An Archaeological Assessment of Parcel 22170, Riverside County, California
RI-05028	2004	McKenna et al.	Historic Property Survey Report: Architectural Evaluation of the Sykes Ranch Residential Complex in Murrieta, Riverside County, California

Table 2-Cultural Resources within 1-Mile of the Project

Primary / Trinomial	Resource Type	Resource Description	Direction, Distance (mi)
P-33-001299/ CA-RIV-1299	Prehistoric Isolate	One scraper of unidentified material	S, 0.8
P-33-001301/ CA-RIV-1301	Prehistoric Site	Habitation site with several artifacts	SW, 0.6
P-33-001305/ CA-RIV-1305	Prehistoric/Historic Site	Multicomponent site – prehistoric habitation site consisting of multiple artifacts, historic refuse scatter	S, 0.4
P-33-001312/ CA-RIV-1312	Prehistoric Site	Sparse lithic artifact scatter	W, 0.5
P-33-013504	Historic Site	Historic site consisting of two concrete structures and farm equipment	W, 0.2
P-33-013505	Prehistoric Isolate	One quartz flake	NE, 0.2
P-33-013506	Prehistoric Isolate	One chert flake	SW, 0.6
P-33-013507	Prehistoric Isolate	One basalt core	SW, 0.6
P-33-013508	Prehistoric Isolate	Two quartz flakes	SW, 0.8
P-33-013509	Prehistoric Isolate	One metamorphic scraper	SW, 1.0
P-33-013510	Prehistoric Isolate	One andesite flake	S, 0.6
P-33-013512	Prehistoric Isolate	Two flakes and one scraper	W, 0.7
P-33-013748	Prehistoric Isolate	One andesite bifacial mano	NW, 0.5
P-33-015206	Prehistoric Isolate	Three ground stone artifacts and one flaked stone artifact	SE, 0.6
P-33-015207	Prehistoric Isolate	One unifacial basalt mano	SE, 0.9
P-33-017048	Prehistoric Isolate	Three granitic metate fragments	W, 0.15

On October 1, 2019 the Western Science Center performed a paleontological records search to locate fossil localities within, and in the vicinity of, the Project (Attachment 2 – Paleontological Records Search Results). Mr. Benjamin Scherzer, M.S., Paleontologist, also performed a search of the online University of California Museum of Paleontology collections, San Diego Natural History Museum collections, Paleobiology Database, and FAUNMAP, and other published literature for nearby fossil localities in similar deposits (within 3 miles). These searches produced multiple fossil localities, all occurring in the Pauba Formation:

- The Principe Project produced material from Pacific Mastodon, horse, pronghorn, Giant ground sloth (*Megalonyx* sp.), and others in four separate localities between 0.25 and 1 mile north of the Project;
- The Village Walk Project produced material from Pacific Mastodon, horse, turtle, and others in four separate localities 1 miles northeast of the Project;
- Copper Creek #1 and #2 produced mammoth and camelid material at an unknown depth in the Pauba Formation 1.5 miles north of the Project (Dooley, et al. 2019);
- Copper Canyon (200320) produced mastodon material at an unknown depth 1.5 miles southwest of the Project;
- Meadowlane produced horse material at an unknown depth in the Pauba Formation 1.75 miles southeast of the Project;
- California Oaks produced material from mammoth, mastodon, horse, sloth, camelid, deer, pronghorn, peccary, canid, feline, bat, weasel, porcupine, rabbit, rodent, shrew, mole, bird, turtle, lizard, snake, fish, and mollusc at an unknown depth 2.5 miles northeast of the Project (Pajak, et al. 1996) and;
- USGS M1476 produced mastodon and rodent material at an unknown depth 3 miles southeast of the Project (Repenning 1987).

Due to the numerous nearby fossil localities in Pleistocene-age deposits, the Pauba Formation sandstone member (*Qpfs*) in the Project is assigned a high paleontological sensitivity. Holocene-age deposits are too young to have accumulated or preserved enough biologic material to contain fossil resources, and are assigned a low paleontological sensitivity as a result. However, Holocene-age deposits can transition at depth into older, Pleistocene-age deposits with a high paleontological sensitivity. As a result, the Holocene-age young alluvial valley deposits (*Qyv*) in the Project are assigned a high sensitivity with depth. These findings are consistent with the General Plan for the City of Murrieta (2011).

SURVEY METHODS AND RESULTS

A combination of systematic pedestrian and reconnaissance level field survey of the Project area was conducted October 15, 2019, by cross-trained Archaeologist/Paleontologist Nicholas F. Hearth M.A., RPA. Pedestrian transects were 15 meters apart. Reconnaissance level survey was undertaken in areas of asphalt, concrete, and dense landscaping vegetation. Regardless of ground cover, the Project area was heavily disturbed by modern development. The project area is located within school buildings, baseball fields, parking lots and hardscape (Attachment 3 – Project Photographs). No new archaeological or paleontological resources were discovered during the field survey. Due to extant modern development consisting of the extant landscaping, hardscaping, buildings and utilities, the Project has low sensitivity for cultural resources such as prehistoric and historic archaeological sites.

CONCLUSION AND RECOMMENDATIONS

Our research indicates that there is a low sensitivity for cultural resources in the Project. In contrast, this research indicates a high sensitivity for paleontological resources in the deposits that underlie the northwestern half of the Project. Therefore, significant and unique paleontological resources may be impacted by the project during earth disturbing activities in this area. These impacts would be considered potentially significant. In order to reduce the potential for impacts to paleontological resources to a level that is less than significant under CEQA, paleontological monitoring is recommended during ground disturbance associated with the northwestern half of the Project.

We recommend that a paleontological monitor be present to observe ground disturbing activities in the northwestern half of the Project. The paleontological monitor shall work under the direct supervision of a qualified paleontologist (B.S. /B.A. in geology, or related discipline with an emphasis in paleontology and demonstrated experience and competence in paleontological research, fieldwork, reporting, and curation).

1. The qualified paleontologist shall be on-site at the pre-construction meeting to discuss monitoring protocols.
2. Paleontological monitoring shall start at full-time. If no paleontological resources are discovered after half of the ground disturbance has occurred, monitoring can be reduced to part-time or spot-checking.
3. The paleontological monitor shall be empowered to temporarily halt or redirect grading efforts if paleontological resources are discovered.
4. In the event of a paleontological discovery the paleontological monitor shall flag the area and notify the construction crew immediately. No further disturbance in the flagged area shall occur until the qualified paleontologist has cleared the area.
5. In consultation with the qualified paleontologist the paleontological monitor shall quickly assess the nature and significance of the find. If the specimen is not significant it shall be quickly removed and the area cleared.
6. If the discovery is significant the qualified paleontologist shall notify the MVUSD immediately.
7. In consultation with MVUSD, the qualified paleontologist shall develop a plan of mitigation which will likely include salvage excavation and removal of the find, removal of sediment from around the specimen (in the laboratory), research to identify and categorize the find, curation of the find in a local qualified repository, and preparation of a report summarizing the find.

If archaeological resources are discovered during ground disturbance MVUSD shall retain a qualified archaeologist to assess the nature and significance of the find.

If human remains are encountered, State Health and Safety Code Section 7050.5 states that no further disturbance shall occur until the County Coroner has made a determination of origin and disposition pursuant to Public Resources Code Section 5097.98. The County Coroner must be notified of the find immediately. If the remains are determined to be prehistoric, the Coroner will notify the Native American Heritage Commission (NAHC), which will determine and notify a Most Likely Descendant (MLD). With the permission of the landowner or his/her authorized representative, the MLD may inspect the site of the discovery. The MLD shall complete the inspection within 48 hours of notification by the NAHC. The MLD may recommend scientific

removal and nondestructive analysis of human remains and items associated with Native American burials. In addition, according to the California Health and Safety Code, six or more human burials at one location constitute a cemetery (Section 8100), and unauthorized disturbance of Native American cemeteries is a felony (Section 7052).

If the proposed project changes, additional survey efforts may be necessary.

If you have any questions or comments, you can contact me at (949) 303-0420 or by e-mail at curt@dukecrm.com.

Sincerely,

DUKE CULTURAL RESOURCES MANAGEMENT, LLC

Curt Duke, M.A., RPA
President/Archaeologist

Attachments:

1 - Project Maps
2 - Paleontological Records Search Results
3 - Project Photographs

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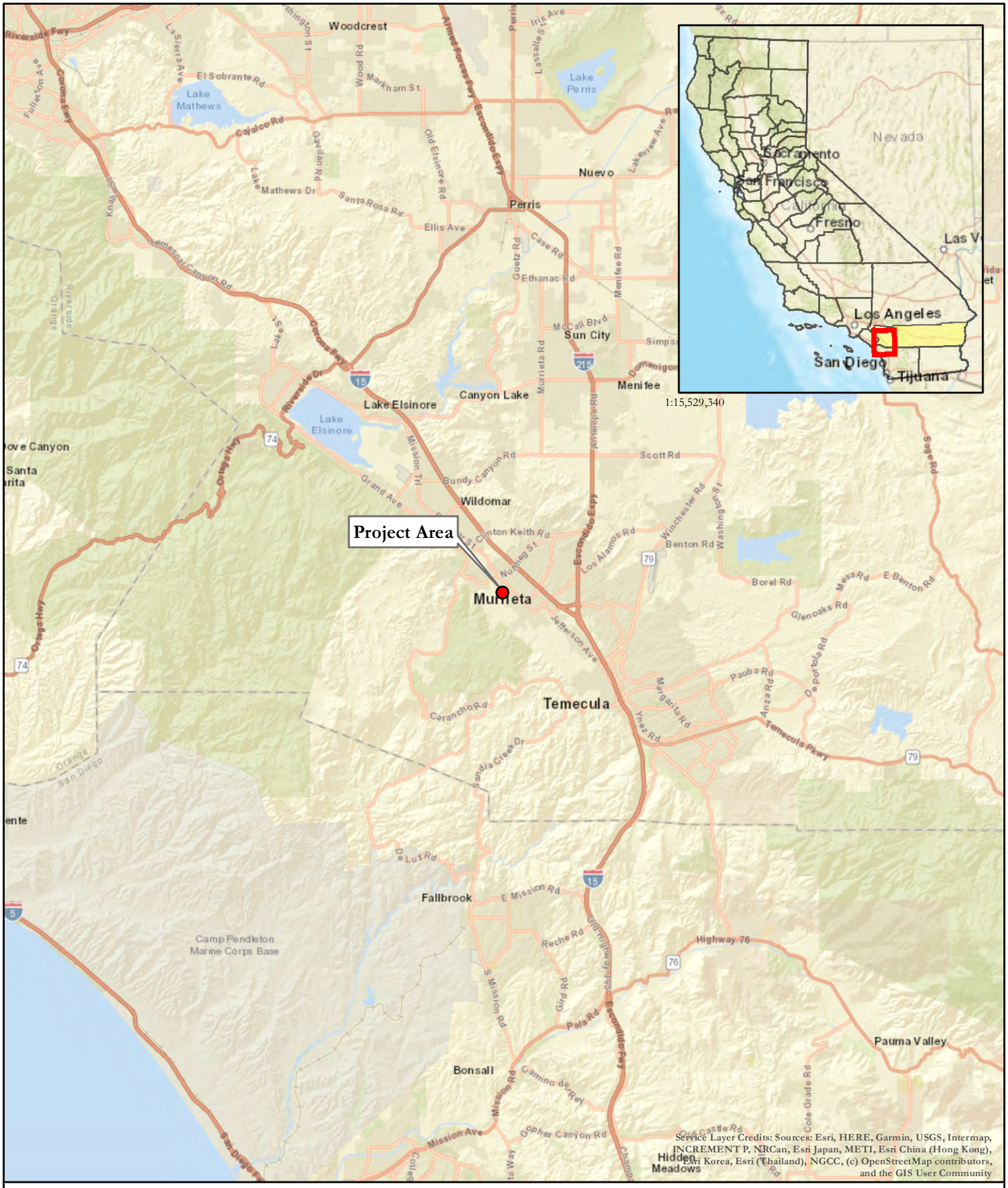


Map 1- Project Vicinity

Murrieta Canyon Academy Project, C-0309

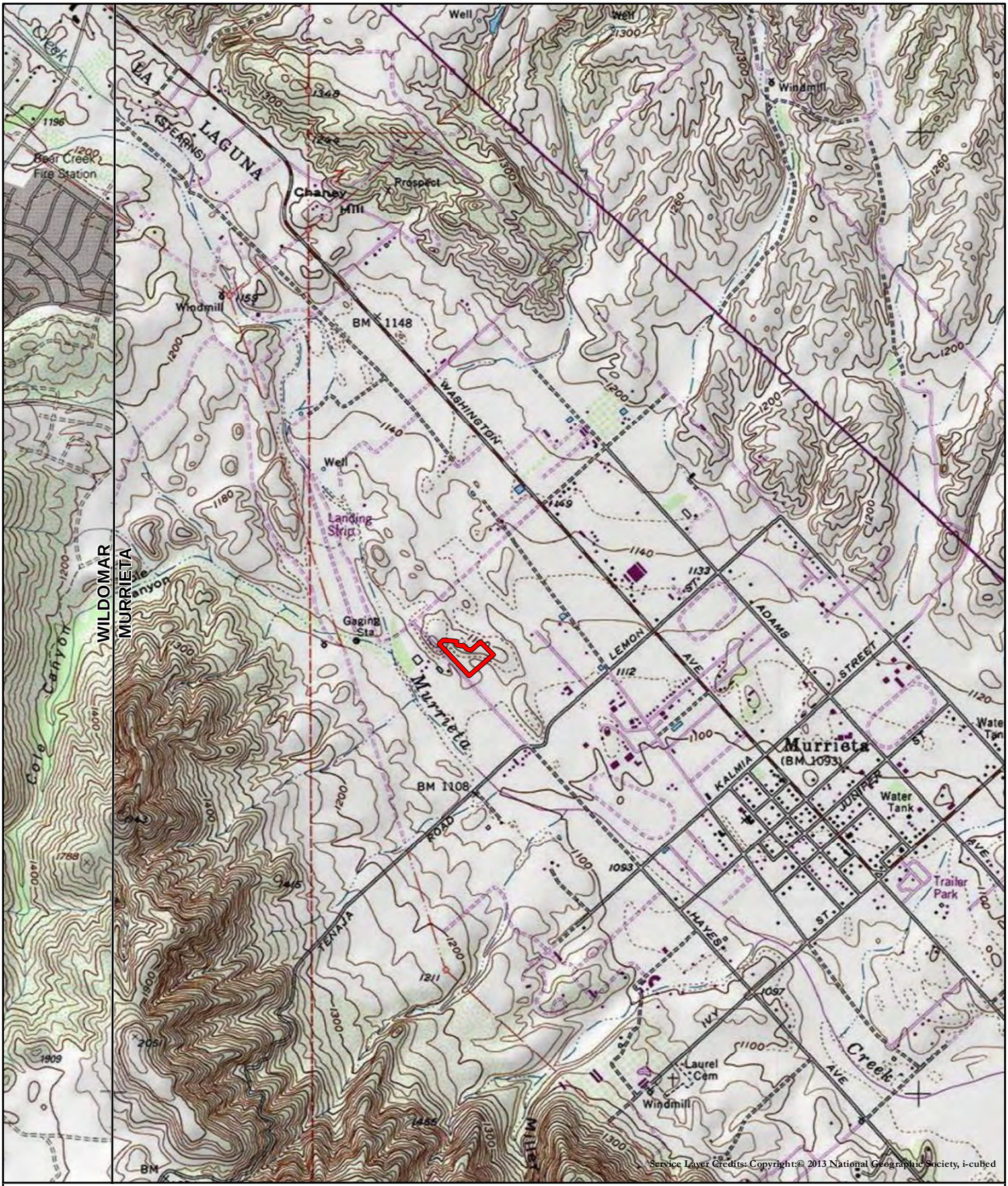
DUKE CRM

● Project Area

0 5 10 Miles

1 inch = 5 miles 1:316,800

N



Map 2- Project Location

Murrieta Canyon Academy Project, C-309

DUKE CRM

Project Area

USGS 7.5' Quads

0 0.25 0.5 Miles

0 0.25 0.5 Kilometers

N

1 inch = 2,000 feet 1:24,000

Map 3- Project Aerial

Murrieta Canyon Academy Project, C-309

DUKE CRM

Project Area

0 100 200 Feet

N

1 inch =200 feet

1:2,400

Map 4- Project Geology

Murrieta Canyon Academy Project, C-309

DUKE CRM

ATTACHMENT 2

PALEONTOLOGICAL RECORDS SEARCH RESULTS

WESTERN SCIENCE CENTER

Duke CRM
Benjamin Scherzer
118 Technology Drive, Suite 103
Irvine, CA 92618

October 1, 2019

Dear Mr. Scherzer,

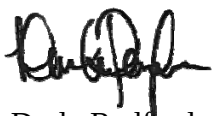
This letter presents the results of a record search conducted for the Murrieta Canyon Academy Project in the city of Murrieta, Riverside County, California. The project site is located south of Washington Avenue, north of Hayes Avenue, east of Nighthawk Way, west of Fullerton Road, an unsectioned portion of Township 7 South, Range 3 West on the Murrieta USGS 7.5 minute quadrangle.

The geologic units underlying the project area are mapped primarily as alluvial valley deposits dating from the late Pleistocene to Holocene epoch with a strand of Pauba Formation sandstone dating from the Pleistocene in the southwestern portion of the project area (Kennedy & Morton, 1993). Pleistocene alluvial and sandstone units are considered to be of high paleontological value, with Pauba Formation deposits being well documented as containing vertebrate fauna from the late Irvingtonian and Rancholabrean ages. The Western Science Center does not have localities within the project area, but does have numerous localities within a 1 mile radius associated with the Village Walk Project and the Principe Collection. The Village Walk Project resulted in over one hundred Pleistocene fossils across multiple fossil localities, including those associated with mastodon (*Mammut pacificus*), ancient horse (*Equus sp.*), turtle (*Clemmys sp.*) , and many more. The Principe Collection is a salvage collection acquired after years of development in Murrieta and Temecula with localities only approximately known. Of the localities believed to be within the one mile radius of the project area, nearly 100 fossil specimens of mastodon (*Mammut pacificus*), ancient horse (*Equus sp.*), pronghorn (*Antilocapra sp.*), giant ground sloth (*Megalonyx sp.*) and many others, have been identified. Both collections are in similarly mapped sediment to the project area.

Any fossil specimen recovered from the Murrieta Canyon Academy Project would be scientifically significant. Excavation activity associated with the development of the project area would impact the paleontologically sensitive Pleistocene alluvial and sandstone 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 about the Village Walk Project or the Principe Collection, please feel free to contact me at dradford@westerncentermuseum.org

Sincerely,



Darla Radford
Collections Manager

ATTACHMENT 3

PROJECT PHOTOGRAPHS

Project overview southeast, athletic field.

Project overview west, athletic field.

Project overview west, parking lot and landscaping.

Project overview northeast, existing school campus.