

June 16, 2017

Jeanne Ogar
GPA Consulting
617 S. Olive St. #910
Los Angeles, CA 90014

Subject: Paleontological Letter Report for the Golden Avenue Bridge Replacement and Rehabilitation Project, BRL-5269(025) (DUKE CRM Project C-0219)

Dear Ms. Ogar:

Duke Cultural Resources Management, LLC (DUKE CRM) is under contract to GPA Consulting (GPA) and the City of Placentia to produce a paleontological letter report for the Golden Avenue Bridge Replacement and Rehabilitation Project, located in the City of Placentia, Orange County, California (see Appendix A). This report has been prepared to comply with the California Environmental Quality Act (CEQA). DUKE CRM conducted paleontological research to identify any resources that may be impacted by the proposed project.

The City of Placentia is proposing to replace and widen the existing Golden Avenue Bridge over Carbon Creek. The existing 2-lane bridge was built in 1934, and is considered functionally obsolete and structurally deficient, according to a Bridge Inspection Report prepared by Caltrans, dated September 29, 2011. The project would include replacing and widening the bridge to provide two traffic lanes and shoulders that would meet American Association of State Highway and Transportation Officials minimum standards. The new bridge would also include curb, gutter, and sidewalks in compliance with American with Disabilities Act standards, as well as lighting and drainage facilities. The project would also require approach work and would result in a longer bridge structure.

The Golden Avenue Bridge Area of Potential Effects was delineated to include all resources that could potentially be directly or indirectly affected by the project. The areas of direct effects include the areas where physical impacts will occur. These are generally limited to the proposed and existing right-of-way and include the horizontal and vertical areas ranging from 400 to 500 feet to a maximum depth of 15 feet associated with ground disturbing activities.

Paleontological Resources and Sensitivity

The geology of the project area has been mapped by Morton and Miller (2006) at a scale of 1:100,000. A review of this map indicated that the project area is underlain by young alluvial fan deposits (*Q_{yf,sa}*) from the late Pleistocene Epoch (2.5 million years ago to 11,700 years ago) and Holocene Epoch (11,700 years ago to today) in the western portion, and very old alluvial fan deposits (*Q_{vof,sa}*) from the early to middle Pleistocene Epoch (2.5 million years ago to 11,700 years ago) in the eastern portion.

A paleontological records search was conducted by the Los Angeles County Museum of Natural History. The search did not reveal any fossil localities in the project area, but it did document a fossil locality nearby (within 5 miles) in similarly aged deposits which produced remains of *Equus* (horse) at a depth of 8 – 10 feet (Appendix B). A search of the on-line files of the University of California, Museum of Paleontology and The Paleobiology Database revealed multiple nearby (within 5 miles) fossil localities in Pleistocene-age sediments containing the remains of large and small mammals, bird, reptile, amphibian, bird, fish and invertebrates.

The young alluvial fan deposits (*Q_{yf}*) are too recent to have accumulated or fossilized paleontological resources, and are assigned a low sensitivity. The very old alluvial fan deposits (*Q_{vof}*), however, have produced multiple nearby fossil localities, and are assigned a high sensitivity. In addition, the very close proximity of the young alluvial fan deposits to the very old alluvial fan deposits suggests the young alluvial fan deposits could be very thin and quickly transition into high-sensitivity very old alluvial fan deposits at depth.

Impacts Analysis and Recommendations

DUKE CRM evaluated the proposed project for impacts to paleontological resources according to CEQA. The records search did not identify any paleontological resources within the project boundaries, but did produce multiple fossil localities in similarly aged sediment within 5 miles. Deeper ground disturbance may encounter deposits of Pleistocene-age very old alluvial fan deposits, which have a high sensitivity for containing paleontological resources. If paleontological resources are encountered during ground disturbing activities, this would result in a potentially significant impact to paleontological resources according to CEQA. Considering the potential to encounter sediments with high paleontological sensitivity in the project area, it is recommended that a Paleontological Identification and Evaluation Report (PIR/PER) be conducted.

Thank you for contacting DUKE CRM on this request. If you have any questions or comments, you can contact DUKE CRM at (949) 356-6660 or by e-mail at curt@dukecrm.com.

Sincerely,

DUKE CULTURAL RESOURCES MANAGEMENT, LLC



Curt Duke, M.A. RPA
Archaeologist/President

Appendix A: Project Maps
Appendix B: Paleontological Records Search Results

APPENDIX A

Project Maps

APPENDIX B

Paleontological Records Search Results