

APPENDIX D
Paleontological Resources Memorandum

MEMORANDUM

To: Darra Woods, Engineer, City of Oceanside Capital Improvements Project
From: Sarah Siren, M.S., GISP, Senior Paleontologist
Subject: Paleontological Resources Review – College Boulevard Improvement Project
Date: 7/30/19
cc: Joshua Saunders, AICP, Dudek
Attachment(s):

Dudek is providing this memo after completing a review of the potential for impacts to paleontological resources during construction activities for the College Boulevard Improvement Project (project). The project site is located along College Boulevard, between Old Grove Road and Waring Road, on the north side of State Route (SR-) 78, in the City of Oceanside (City) in northern San Diego County, California. The majority of the project alignment is underlain by mapped deposits of the Eocene age Santiago Formation (Geocon 2016; Kennedy et al. 2007; Wilson 1972). Based on preliminary geotechnical studies by Geocon (2016) and the records search results obtained from the San Diego Natural History Museum ([SDNHM] 2016), the Santiago Formation is known to produce scientifically significant paleontological resources throughout northern San Diego County (SDNHM 2016). These marine, estuarine, and fluvial deposits have yielded plant, invertebrate, and vertebrate fossils. Of particular note, a new genus and species of extinct, rhino-like brontothere (*Parvicornus occidentalis*) was recovered from these same age deposits north of the project area, during grading of the Ocean Ranch development (Mihlbachler and Deméré 2009). These middle Eocene age deposits have a high paleontological resource sensitivity according to the County of San Diego (2007) guidelines. The limited Holocene-age alluvial flood plain deposits underlying the alignment have a low paleontological sensitivity due to their young age (Deméré and Walsh 1993; County of San Diego 2007). Artificial fill has no paleontological resource sensitivity. Any fossil material found in either artificial fill or Holocene alluvial deposits are ex-situ and would not be considered scientifically significant, or unique.

There are a total of eighty-seven fossils localities documented by the SDNHM (2016) within a one-mile radius of the project site. All but one of these localities were discovered within the Santiago Formation. Fossils recovered include trace fossils, plant impressions, marine invertebrates, and marine and terrestrial vertebrates (SDNHM 2016). The single, additional locality is recorded from the Pleistocene age Bay Point Formation, which is not mapped within the alignment, and is not anticipated to be impacted during construction (Kennedy et al. 2007; SDNHM 2016). Uniquely fossiliferous and diverse assemblages recovered from bone beds nearby, such as the Rancho Del Oro development and Jeff's Discovery site, have produced local faunas assignable to the Uintan North American Land Mammal Age (SDNHM, 2016).

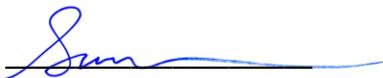
No paleontological resources were identified within the project alignment as a result of the institutional records search and desktop geological review. It is not anticipated that paleontological resources will be impacted given the limited and relatively shallow construction excavation planned within the existing roadway. However, intact paleontological resources may be encountered at depth, or along the periphery of the project, for improvements

including, but not limited to, excavation into previously undisturbed sedimentary deposits of the Santiago Formation, such as construction of retaining walls. It is likely that high sensitivity formations will be encountered at the surface on the periphery of the alignment, with the potential for impacting the Santiago Formation at depths of 5 feet or greater within the existing roadway. Given the proximity of past fossil discoveries in the area and the underlying paleontologically sensitive deposits, the project site has the potential to yield scientifically significant paleontological resources. In the event that intact paleontological resources are located on the project site, ground-disturbing activities associated with construction of the proposed project, such as grading during site preparation, have the potential to destroy a unique paleontological resource or site. Without mitigation, the potential damage to paleontological resources during construction would be a potentially significant impact. However, upon implementation of Mitigation Measure (MM)-GEO-1, impacts would be reduced to below a level of significance. Impacts of the proposed project are considered less than significant with mitigation incorporated during construction. No further mitigation is required.

MM-GEO-1 Prior to commencement of any grading activity on-site, the applicant shall retain a qualified paleontologist, subject to the review and approval of the City’s Building Official, or designee. The qualified paleontologist shall attend the preconstruction meeting and be on-site during all rough grading and other significant ground-disturbing activities in previously undisturbed Santiago Formation, if encountered. In the event that paleontological resources (e.g., fossils) are unearthed during grading, the paleontology monitor will temporarily halt and/or divert grading activity to allow recovery of paleontological resources. The area of discovery will be roped off with a 50-foot radius buffer. Once documentation and collection of the find is completed, the monitor will remove the rope and allow grading to recommence in the area of the find. The paleontologist shall prepare a Paleontological Resources Impact Mitigation Program (PRIMP) for the proposed project. The PRIMP shall be consistent with the guidelines of the Society of Vertebrate Paleontology (SVP) (2010).

If you have any questions regarding this memo, please feel free to contact me (760.846.9326 or ssiren@dudek.com).

Sincerely,



Sarah A. Siren, M.S., GISP

Senior Paleontologist, Dudek

References Cited

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