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## MEMORANDUM

**DATE:** October 7, 2015

**TO:** Pam Reading, LSA Associates, Inc.

**FROM:** Sarah Rieboldt, Ph.D., LSA Associates, Inc.

**SUBJECT:** Paleontological Analysis of the Seaside Assisted Living Facility Project, City of Seaside, Monterey County, California (LSA Project No. SEZ1402)

## INTRODUCTION

The Seaside Assisted Living Project (project) proposes to develop a high-quality assisted living facility in the City of Seaside, Monterey County, California. The project consists of an Assisted Living Facility, a Memory Care Facility, a Co-Housing Facility, and associated amenities. Development of this project will involve demolition of the existing 5,000-square foot building; removal of existing pavement and minor structures; removal and/or relocation of existing wet and dry utilities; clearing and grading the project area; construction of the three new facilities, parking areas, and driveways; and landscaping. The project is located on approximately 5.47 acres.

This memorandum was prepared to ensure compliance with all applicable State regulations and guidelines regarding paleontological resources, including the California Environmental Quality Act (CEQA): Public Resources Code (PRC) Division 13, Chapter 2.6; the *State CEQA Guidelines*: California Code of Regulations, Title 14, Chapter 3, Appendix G; and PRC 5097.5. It addresses the potential for the project to adversely impact paleontological resources and, if needed, includes mitigation measures and other recommendations to minimize these impacts.

## METHODOLOGY

LSA Associates, Inc. (LSA) examined geologic maps of the project area and reviewed relevant geological and paleontological literature to determine which geologic units are present within the project area and whether fossils have been recovered from those or similar geologic units elsewhere in the region. A search for known fossil localities was also conducted through the online collections database of the University of California Museum of Paleontology (UCMP) at the University of California, Berkeley, in order to determine the status and extent of previously recorded paleontological resources within and surrounding the project area.

## RESULTS

The project is located in the southern part of the Coast Ranges Geomorphic Province of California (California Geological Survey, 2002). The Coast Ranges Geomorphic Province is characterized by mountain ranges and valleys that stretch for 600 miles from the Oregon border to the Santa Ynez River in Santa Barbara County (Norris and Webb, 1976). These mountains and valleys trend in a northwest direction, subparallel to the direction of the San Andreas Fault (California Geological

Survey, 2002; Norris and Webb, 1976). The province can be divided into northern and southern subprovinces: divided by San Francisco Bay (Norris and Webb, 1976). Although geologically very similar to the northern ranges, the southern ranges lie west of the San Andreas Fault zone and are better known because of their oil and gas resources, clearer exposures, and more intensive development (Norris and Webb, 1976). Within the province, basement rocks consist of Jurassic and Cretaceous (201.3–66 million years ago [Ma]) igneous, metamorphic, and marine sedimentary rocks that formed in island arc, subduction zone, and deep to shallow marine environments (Howard, 1979; Norris and Webb, 1976). These basement rocks are overlain by Cenozoic (less than 66 Ma) sedimentary rocks that accumulated in deep to shallow and eventually continental environments (Howard, 1979; Norris and Webb, 1976).

According to geologic mapping by Wagner et al. (2002), the project area contains Late Pleistocene (11,700–126,000 years ago) sediments of the Older Dune Sand. These sediments consist of sand that was blown in to the area and has since been stabilized by vegetation. The Older Dune Sand accumulated during the Rancholabrean North American Land Mammal Age (NALMA) (11,000–240,000 years ago). Rancholabrean fossils have been found in alluvial deposits of the same age across California. Common examples of Rancholabrean vertebrate fossils include ground sloth, dire wolf, saber-toothed cat, camel, bison, mammoth, horse, rodent, bird, reptile, and amphibian fossils (Bell et al., 2004; Jefferson, 1991a, b).

The locality search conducted through the online collections database at the UCMP identified four fossil localities from Pleistocene deposits within Monterey County. These localities have produced specimens of giant ground sloth (*Glossotherium* [*Paramylodon*]), bison (*Bison latifrons*), camel (*Camelops*), and horse (*Equus johnstoni*).

## RECOMMENDATIONS

The project area is underlain by Late Pleistocene Older Dune Sand, and deposits of this age elsewhere in the County and across California have produced scientifically significant paleontological resources. As such, these deposits are considered to have high paleontological sensitivity. Because excavation during the course of the project will reach these paleontologically sensitive deposits, there is a potential for the project to impact paleontological resources. In order to mitigate potential adverse impacts to nonrenewable paleontological resources, LSA recommends the following procedures:

- A paleontologist shall be hired to develop a Paleontological Resource Impact Mitigation Program (PRIMP) for this project. The PRIMP shall include the methods that will be used to protect paleontological resources that may exist within the project area, as well as procedures for monitoring, fossil preparation and identification, curation into a repository, and preparation of a report at the conclusion of grading.
- Excavation and grading activities in deposits with a high paleontological sensitivity rating shall be monitored by a qualified paleontologist following a PRIMP. Specific monitoring levels may be determined based on more detailed excavation plans for the project.
- If paleontological resources are encountered during the course of ground disturbance, the paleontological monitor shall have the authority to temporarily redirect construction away from the area of the find in order to assess its significance.

- Collected resources shall be prepared to the point of identification, identified to the lowest taxonomic level possible, cataloged, and curated into the permanent collections of a scientific institution.
- At the conclusion of the monitoring program, a report of findings shall be prepared to document the results of the monitoring program.
- In the event that paleontological resources are encountered when a paleontological monitor is not present, work in the immediate area of the find shall be redirected and a paleontologist should be contacted to assess the find for significance. If determined to be significant, the fossil shall be collected from the field.

By following the above procedures, potential impacts to nonrenewable paleontological resources would be avoided.

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