2.6 Paleontological Resources

This section of the EIR describes the existing paleontological resources in San Diego County. Paleontological resources include the remains and/or traces of prehistoric life (exclusive of human remains, artifacts or features), including the localities where fossils were collected and the sedimentary rock formations in which they were formed. This section evaluates existing paleontological resources, analyzes the potential impacts that may occur with implementation of the project, recommends mitigation measures to reduce or avoid impacts to these resources and examines levels of significance after mitigation.

The assessment of the project's potential to have an adverse effect on paleontological resources is based on a review of existing paleontological resources, technical data, and applicable laws, regulations, and the Guidelines for Determining Significance, Paleontological Resources (County of San Diego 2009b).

2.6.1 Existing Conditions

Paleontological resources are found in sedimentary strata of the County, which primarily underlies the coastal plain, the desert and some mountain valleys. The prehistoric life forms preserved in the sediment in these areas provide insight to the environment that existed in the County during various time periods. The defining character of paleontological resources is their geologic age. Fossils or fossil deposits are generally regarded as being older than 10,000 years, marking the end of the late Pleistocene and the beginning of the Holocene. The strata underlying areas of the County record portions of the past 450 million years of Earth's history.

Paleontological resources are the remains and/or traces of prehistoric life, exclusive of human remains, and include the localities where fossils were collected and the sedimentary rock formations from which they were obtained/derived. The defining character of fossils is their geologic age. Fossils or fossil deposits are generally regarded as older than 10,000 years, the generally accepted temporal boundary marking the end of the last Late Pleistocene glacial event and the beginning of the current period of climatic amelioration of the Holocene (County of San Diego 2009b).
A unique paleontological resource is any fossil or assemblage of fossils, or paleontological resource site or formation that meets any one of the following criteria:

- Is the best example of its kind locally or regionally.
- Illustrates a paleontological or evolutionary principle (e.g., faunal succession; plant or animal relationships).
- Provides a critical piece of paleobiological data (illustrates a portion of geologic history or provides evolutionary, paleoclimatic, paleoecological, paleoenvironmental, or biochronological data). Encompasses any part of a "type locality" of a fossil or formation.
- Contains a unique or particularly unusual assemblage of fossils.
- Occupies a unique position stratigraphically within a formation.
- Occupies a unique position, proximally, distally or laterally within a formation's extent or distribution (County of San Diego 2009b).

A review of the County's Paleontological Resources Maps and data on San Diego County's geologic formations indicates that the project is located on Upper Jurassic and Lower Cretaceous Marine and

Nonmarine geological formations that have marginal potential to contain unique paleontological resources.

2.6.1.1 Methodology

The analysis of potential impacts to paleontological resources resulting from implementation of the proposed project is based upon a review of the County's Paleontological Resources Maps (County of San Diego 2009b).

2.6.1.2 Regulatory Framework

State

CEQA

CEQA requires lead agencies to carefully consider the potential effects of a project on unique paleontological resources. CEQA requires an assessment of impacts associated with the direct or indirect destruction of unique paleontological resources or sites that are of value to the region or State.

Local

County of San Diego Grading Ordinance

Section 87.430 of the Grading Ordinance provides for the requirement of a paleontological monitor at the discretion of the County. In addition, the suspension of grading operation is required upon the discovery of fossils greater than twelve inches in any dimension. The ordinance also requires notification of the County Official (e.g., Permit Compliance Coordinator). The ordinance gives the County Official the authority to determine the appropriate resource recovery operations, which the permittee shall carry out prior to the County Official's authorization to resume normal grading operations.

County of San Diego General Plan – Conservation and Open Space Element

The primary focus of the Conservation and Open Space Element is to provide direction to future growth and development in the County of San Diego with respect to the conservation, management, and utilization of natural and cultural resources; the protection and preservation of open space; and, the provision of park and recreation resources. The Conservation and Open Space Element has several goals and policies that are relevant to paleontological resources as described below.
Goal COS-9

Educational and Scientific Uses. Paleontological resources and unique geologic features conserved for educational and/or scientific purposes.

Policies

COS-9.1 Preservation. Require the salvage and preservation of unique paleontological resources when exposed to the elements during excavation or grading activities or other development processes.

COS-9.2 Impacts of Development. Require development to minimize impacts to unique geologic features from human related destruction, damage, or loss.

2.6.2 Analysis of Project Effects and Determination as to Significance

For the purpose of this EIR, the basis for the determination of significance is the County's Guidelines for the Determination of Significance, Paleontological Resources (County of San Diego 2009b) and CEQA. The project would result in a significant impact if:

1. *Paleontological Resources:* The project proposes activities that would directly or indirectly damage a unique paleontological resource or site.

Guideline 1 is derived from CEQA. It requires the evaluation of paleontological resources to determine whether or not a proposed action will have a significant effect. Significant paleontological resources can occur in any of the rocks of San Diego County other than those that are igneous.

2.6.1.3 Issue 1: Paleontological Resources

Guidelines for Determination of Significance

According to the County of San Diego Guidelines for Determining Significance, Paleontological Resources (2009b), a significant paleontological resource impact would occur if activities are proposed that would directly or indirectly damage a unique paleontological resource or site. A significant impact to paleontological resources may occur as a result of the project, if project-related grading or excavation would disturb the substratum or parent material below the major soil horizons in any paleontologically sensitive area of the County, as shown on the San Diego County Paleontological Resources Potential and Sensitivity Map.

Impact Analysis

Paleontological resources are typically impacted when earthwork activities such as mass excavation cut into geological deposits (formations) with buried fossils. These impacts are in the form of physical destruction of fossil remains. Fossils are the remains of prehistoric animal and plant life, and they are considered to be non-renewable. Such impacts to vertebrate fossils or scientifically important invertebrate or plant fossils would be significant and would require mitigation to avoid or reduce adverse effects. The project proposes grading quantities in the amount of 43,700 cubic yards of excavation with a maximum cut slope of 15 feet. Earthwork would occur within Upper Jurassic and Lower Cretaceous Marine and Nonmarine geological formations, which have marginal potential to contain unique paleontological resources. Therefore, the proposed project could result in a potentially significant impact to unique paleontological resources (**Impact PR-1**).

2.6.3 Cumulative Impact Analysis

Cumulative projects (Table 1-3) located within the cumulative project area would have the potential to cumulatively impact paleontological resources as a result of extensive grading, excavation, or other ground-disturbing activities for those projects that are located in areas of high or moderate paleontological sensitivity. As indicated above, the project site is located on Upper Jurassic and Lower Cretaceous Marine and Nonmarine geological formations that have marginal potential to contain unique paleontological resources. With implementation of Mitigation Measure M-PR-1, the project impacts to paleontological resources would be mitigated to below a level of significance.

Similar to the proposed project, the Lake Jennings Road Subdivision Project is located on upper Cretaceous and Lower Marine and Nonmarine geological formations that have a marginal potential to contain unique paleontological resources. The Peter Rios Estates Apartment Complex Project is located on geological formations (sensitivity rating of marginal) that have a limited probability for

the presence of paleontological resources. Potential impacts to paleontological resources would be mitigated through ordinance compliance and through implementation of the following mitigation measures: grading monitoring by the grading contractor and conformance with the County's Cultural Resources Guidelines if resources are encountered. Therefore, through ordinance compliance and implementation of mitigation measures, the Lake Jennings Road Subdivision Project and Peter Rios Estates Apartment Complex Project would not result in a cumulative impact to paleontological resources. According to the Eastern Service Area Secondary Connection Project Mitigated Negative Declaration, that project is located in areas of zero and marginal paleontological sensitivity levels. The Lakeside Tractor Supply Project is located on igneous rock and has no potential for producing fossil remains. The cumulative projects would have no significant impact to paleontological resources. Therefore, the project's contribution would not be cumulatively considerable and would be less than significant.

2.6.4 Significance of Impacts Prior to Mitigation

The following significant impact related to paleontological resources would occur with project implementation:

Impact PR-1: Earthwork would occur within Upper Jurassic and Lower Cretaceous Marine and Nonmarine geological formations, which have marginal potential to contain unique paleontological resources. The proposed project could result in a potentially significant impact to unique paleontological resources (**Impact PR-1**).

2.6.5 Mitigation Measures

Implementation of the following mitigation measure is proposed to reduce impacts to paleontological resources to less than significant.

M-PR-1 A Standard Monitor (e.g., grading contractor) shall perform incidental paleontological resource monitoring during initial cutting, grading or excavation. A Standard Monitor is any one person who is on the site during all the original cutting of undisturbed substratum. A Standard Monitor must be designated by the Applicant and given the responsibility of watching for fossils so that the project is in conformance with Section 87.430 of the Grading Ordinance. If a fossil of greater than twelve inches in any dimension, including circumference, is encountered during excavation or grading, all excavation operations in the area where the fossil was found shall be suspended immediately, the Department of Planning & Development Services (PDS) shall be notified, and a Project Paleontologist approved by the County shall be retained by the applicant to assess the significance of the find and, if the fossil is significant, to oversee the salvage program, including salvaging, cleaning, and curating the fossil(s), and documenting the find.

a. If paleontological resources are discovered, the following tasks shall be completed by or under the supervision of the Project Paleontologist:

    1. Salvage unearthed fossil remains, including simple excavation of exposed specimens or, if necessary, plaster-jacketing of large and/or fragile specimens, or richly fossiliferous deposits;

    2. Record stratigraphic and geologic data to provide a context for the recovered fossil remains, typically including a detailed description of all paleontological localities within the project site, as well as the

lithology of fossil-bearing strata within the measured stratigraphic section, if feasible, and photographic documentation of the geologic setting;

3. Prepare collected fossil remains for curation, to include cleaning the fossils by removing the enclosing rock material, stabilizing fragile specimens using glues and other hardeners, if necessary, and repairing broken specimens;
4. Curate, catalog and identify the fossil remains to the lowest taxon possible, inventory specimens, assign catalog numbers, and enter the appropriate specimen and locality data into a collection database; and
5. Transfer the cataloged fossil remains to an accredited institution (museum or university) in California that maintains paleontological collections for archival storage and/or display. The transfer shall include copies of relevant field notes, maps, stratigraphic sections, and photographs.
6. Prepare a Paleontological Resources Mitigation Report summarizing the field and laboratory methods used, the stratigraphic units inspected, the types of fossils recovered, and the significance of the fossils collected.
7. Submit two hard copies of the final Paleontological Resources Mitigation Report to PDS for final approval of the mitigation, and submit an electronic copy of the report according to the County PDS Electronic Submittal Format Guidelines.

b. If no fossils of greater than 12 inches in any dimension are found during grading excavation, a letter shall be submitted to the Department of Planning & Development Services identifying who conducted the monitoring, stating that no fossils were found, and signed by the Standard Monitor. The letter shall be submitted to the County within 90 days following cessation of grading and excavation. The format of the letter shall follow the format provided in Appendix D of the County of San Diego's Guidelines for Determining Significance for Paleontological Resources.

2.6.6 Conclusion

Implementation of the proposed project could result in significant impacts to paleontological resources. Earthwork would occur within Upper Jurassic and Lower Cretaceous Marine and Nonmarine geological formations, which have marginal potential to contain unique paleontological resources. However, with implementation of Mitigation Measure M-PR-1, which requires paleontological monitoring during excavation, the impact would be reduced to below a level of significance.

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