

2.5 Paleontological Resources

This section of the EIR discusses existing conditions and potential impacts to paleontological resources resulting from implementation of the proposed project. The analysis is based on a review of existing paleontological resources; technical data; and applicable laws, regulations, and guidelines, and identifies measures to mitigate impacts to paleontological resources.

The assessment of the proposed project's potential to have an adverse effect on paleontological resources is based on a paleontological resources records search conducted by the San Diego Natural History Museum (SDNHM), dated 2011 (Adli 2011), review of the sensitivity map in the County of San Diego Guidelines for Determining Significance for Paleontological Resources (County of San Diego 2009), and the area geotechnical report prepared for the proposed project (CHJ Consultants 2018). The results of the analysis are presented below.

2.5.1 Existing Conditions

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 2009).

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 (County of San Diego 2009):

- 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; or
- Occupies a unique position, proximally, distally or laterally within a formation's extent or distribution.

Per the County of San Diego (County) Guidelines, paleontological sensitivity is defined as follows:

High: High resource potential and high sensitivity are assigned to geologic formations known to contain paleontological localities with rare, well preserved, critical fossil materials for stratigraphic or paleoenvironmental interpretation, and fossils providing important information about the paleoclimatic, paleobiological, and/or evolutionary history (phylogeny) of animal and plant groups. In general, formations with high resource potential are considered to have the highest potential to produce unique invertebrate fossil assemblages or unique vertebrate fossil remains and are, therefore, highly sensitive.

Moderate: Moderate resource potential and moderate sensitivity are assigned to geologic formations known to contain paleontological localities. These geologic formations are judged to have a strong, but often unproven, potential for producing unique fossil remains.

Low: Low resource potential and low sensitivity are assigned to geologic formations that, based on their relatively young age and/or high-energy depositional history, are judged unlikely to produce unique fossil remains. Low resource potential formations rarely produce fossil remains of scientific significance and are considered to have low sensitivity. However, when fossils are found in these formations, they are often very significant additions to our geologic understanding of the area.

Marginal: Marginal resource potential and marginal sensitivity are assigned to geologic formations that are composed either of volcanoclastic (derived from volcanic sources) or metasedimentary rocks, but that nevertheless have a limited probability for producing fossils from certain formations at localized outcrops. Volcanoclastic rock can contain organisms that were fossilized by being covered by ash, dust, mud, or other debris from volcanoes. Sedimentary rocks that have been metamorphosed by heat and/or pressure caused by volcanoes or plutons are called metasedimentary. If the sedimentary rocks had paleontological resources within them, those resources may have survived the metamorphism and still be identifiable within the metasedimentary rock, but since the probability of this occurring is so limited, these formations are considered marginally sensitive.

No Potential: No resource potential is assigned to geologic formations that are composed entirely of volcanic or plutonic igneous rock, such as basalt or granite, and therefore do not have any potential for producing fossil remains. These formations have no paleontological resource potential.

Geological Setting

A paleontological database records check conducted by SDNHM indicates that the sedimentary units underlying the project area have been mapped as Holocene and Late Pleistocene-age (approximately 0.01 to 0.5 million years old) young alluvial floodplain deposits (Adli 2011). The Holocene to Pleistocene-age young alluvial flood plain deposits have been assigned a low paleontological sensitivity (Adli 2011). The SDNHM report also indicates that Early Pleistocene-age (0.5 to 1.8 million years old) old alluvial flood plain deposits and Middle Eocene-age (46 to 47 million years old) fluvial strata of the Friars Formation occur in the project vicinity. The Pleistocene-age old alluvial flood plain deposits have a moderate paleontological sensitivity and the middle Eocene-age Friars Formation has a high paleontological sensitivity. However, geotechnical boring conducted for the proposed project (CHJ Consultants 2018) indicates that the area of proposed excavation consists of fill and young alluvial floodplain deposits directly overlying granitic and metamorphic bedrock, all with low, marginal, or no paleontological sensitivity.

The County of San Diego Guidelines for Determining Significance for Paleontological Resources (County of San Diego 2009), include a paleontological resources sensitivity map that indicates that the potential for encountering unique paleontological resources within the project site is low to marginal.

2.5.1.1 Regulatory Setting

State

CEQA

CEQA requires lead agencies to 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 General Plan — Conservation and Open Space Element

The following goals and policies identified in the County General Plan Conservation and Open Space Element are applicable to the proposed project (County of San Diego 2011):

- **Goal COS-9: Education and Scientific Uses.** Paleontological resources and unique geologic features conserved for educational and/or scientific purposes.

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

County of San Diego Grading Ordinance

The County Grading Ordinance requires that projects involving grading, clearing, and/or removal of natural vegetation obtain a grading permit, unless the project meets one or more of the exemptions listed in Section 87.202 of the Grading Ordinance. The grading permit is discretionary and requires compliance with CEQA. Section 87.430 of the Grading Ordinance provides that the County official (e.g., permit compliance coordinator) may require a paleontological monitor during all or selected grading operations, to monitor for the presence of paleontological resources. If fossils greater than 12 inches in any dimension are encountered, then all grading operations in the area of discovery must be suspended immediately and not resumed until authorized by the County official. The Grading Ordinance also requires immediate notification of the County official regarding the discovery. The County official must determine the appropriate resource recovery operation, which the permittee must carry out prior to the County official's authorization to resume normal grading operations (County of San Diego 2012).

2.5.2 Analysis of Project Effects and Determination as to Significance

For the purpose of this EIR, the identified significance thresholds are based on the County Guidelines for Determining Significance for Paleontological Resources (County of San Diego 2009) and CEQA.

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Guidelines for the Determination of Significance

Based on the County Guidelines for Paleontological Resources, a significant impact would occur if the proposed project: (1) directly or indirectly destroys a unique paleontological resource or site or unique geologic feature, or (2) includes activities, such as project-related grading or excavation, that disturbs 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.

Analysis

The SDNHM and the County Guidelines for Paleontological Resources indicate that the project area has low to marginal sensitivity for the presence of paleontological resources (Adli 2011; San Diego County 2009). Further, geotechnical studies indicate that the alluvial floodplain deposits with the low to marginal sensitivity rating extend to depths of at least 100 feet, well below the proposed excavation depth of 36 to 41 feet below surface (CHJ Consultants 2018). County guidelines state that, although paleontological resources are rarely discovered in areas mapped as having low to marginal potential, when fossils are discovered in these areas they are typically a significant addition to the geologic understanding of the region (County of San Diego 2009). While the SDNHM records check, the County's sensitivity maps (County of San Diego 2009), and geotechnical boring all indicate that the potential for encountering paleontological resources during implementation of the proposed project is low to marginal, impacts to any paleontological resources that are encountered could constitute a significant impact (**Impact PR-1**). In situations with low to marginal paleontological sensitivity, the County of San Diego Guidelines for Determining Significance for Paleontological Resources require the services of a Standard Monitor during construction.

2.5.3 Cumulative Impact Analysis

The geographic context for the analysis of cumulative impacts in regards to paleontological resources is defined as the community of Lakeside. Projects in this area would have the potential to result in a cumulative impact associated with paleontological resources from extensive grading, excavation, or other ground-disturbing activities that are located in an area of high or moderate sensitivity. However, cumulative projects would be regulated by state and local regulations, including CEQA and the County Grading Ordinance.

As discussed above, the proposed project is subject to the County Grading Ordinance, which requires a standard monitor to be present during grading or excavation activities at the discretion of the County, mandates the suspension of grading operations upon the discovery of fossils greater than 12 inches in any dimension, and gives the appropriate County official the authority to determine the appropriate resource recovery operations, which would be carried out prior to the County official's authorization to resume normal grading. This process will ensure that impacts to any paleontological resources identified during implementation of the proposed project would be less than significant. Projects in the cumulative study area for paleontological resources are listed in Table 1-11 in the Project Description and are shown on Figure 1-12. These include primarily commercial and residential development projects, and two sand mining projects. Of those with available environmental data, none identify potential impacts to paleontological resources. Further, all of the projects in the paleontological

cumulative study area occur in areas mapped as having low, marginal or no sensitivity for paleontological resources. These projects are unlikely to encounter significant paleontological resources, and if they do, the County of San Diego Guidelines for Determining Significance for Paleontological Resources (County of San Diego 2009) require, where appropriate, the services of a Standard Monitor to ensure impacts to paleontological resources are less than significant. Therefore, the proposed project would **not result in a cumulatively considerable impact** to unique paleontological resources.

2.5.4 Significance of Impacts Prior to Mitigation

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

Impact PR-1: Construction and operation of the proposed project has the potential to significantly impact paleontological resources. While no paleontological resources have been identified in the project area and the potential for paleontological resources within the project area is considered to be low to marginal, ground disturbing activity does have the potential to encounter paleontological resources.

2.5.5 Mitigation

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

M-PR-1: Monitoring for Paleontological Resources

Monitoring for paleontological resources requires that a Standard Monitor be designated and that the Standard Monitor watches for fossils, during initial cutting, grading or excavation of the substratum. If a fossil of greater than twelve inches in any dimension, including circumference, is encountered excavation or grading in the area where the fossil was found shall be suspended immediately, the County's Permit Compliance Coordinator shall be notified, and a Project Paleontologist shall be retained by the applicant to evaluate the significance of the find and to salvage, clean, and curate the fossil(s), and to document the find, as described below.

The Project Paleontologist is a person with a Ph.D. or Master's Degree in Paleontology or related field, and who has knowledge of San Diego County paleontology and documented experience in professional paleontological procedures and techniques. The Project Paleontologist will:

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 the Director of PDS for final approval of the mitigation, and submit an electronic copy of the report according to the County PDS's Electronic Submittal Format Guidelines.

If no fossils of greater than 12 inches in any dimension are found during grading and excavation, a letter shall be submitted to the County identifying who conducted the monitoring, stating that no fossils were found, and signed by the Standard Monitor.

If fossils meeting the description above are found and the services of a Project Paleontologist are retained, the paleontologist will prepare a report documenting the mitigation program, including field and laboratory methodology, location and the geologic and stratigraphic setting, list(s) of collected fossils and their paleontological significance, descriptions of any analyses, conclusions, and references cited. The report shall include appropriate graphics (index map, fossil localities, stratigraphic column) and photographic documentation of where the fossil(s) and other paleontological resources were found. A summary stratigraphic section shall be included that records the stratigraphic section exposed by the excavation (i.e., lithology and stratigraphic thicknesses) and

stratigraphic positions of recovered paleontological resources, to the extent possible.

Two hard copies and an electronic copy of the report shall be submitted to the County within 90 days following the collection of fossil on the project site.

2.5.6 Conclusion

With the implementation of Mitigation **M-PR-1**, which would include monitoring for paleontological resources, potential impacts to paleontological resources would be **less than significant**.