

## 4.13 PALEONTOLOGICAL RESOURCES

### Existing Conditions

Paleontology is the scientific study of life from past geologic periods, based on fossil remains. Paleontological resources (fossils) are the remains and/or traces of prehistoric animal and plant life, exclusive of human remains or artifacts. Fossil remains, such as bones, teeth, shells and leaves, are found in geologic deposits (rock formations) where they were originally buried. Some types of geologic formations contain more fossils than other formations. As a result, the potential for fossils in a given area can be predicted based on known relationships between geologic formations and fossil occurrence. Ultimately, however, an area with apparent resource potential should be examined in the field by a qualified paleontologist to determine the true potential of the site.

#### A. Potential for Fossils

The distribution of geologic formations in Lemon Grove is shown in Figure 4.10-1. Five geologic formations have been identified within the City, including the Mission Valley Formation, Lindavista Formation, San Diego Formation sandstone part, Stadium conglomerate and Santiago Peak volcanics (in order of decreasing occurrence). The respective potential for paleontological resources within these Formations is based upon "Areas within the City of San Diego which have Paleontological Significance", prepared by Kennedy (1975).

The Mission Valley Formation (Tmv) has a medium to high potential for the occurrence of paleontologic resources, because it traditionally contains a rich middle Eocene molluscan fauna. The Lindavista formation (Ql) has a very low potential for the occurrence of paleontologic resources. Only meager amounts of molluscan fauna are typically found. The San Diego Formation sandstone part (Tsdss) has a very high potential for paleontologic resources. This formation typically contains important marine mammal and invertebrate fossils. The Stadium conglomerate (Tst) has a low to medium potential for paleontologic resources. Terrestrial mammal and marine invertebrate fossils are sometimes found. The Santiago Peak Volcanics (Jsp) has a very low to low potential for paleontologic resources.

Based on previous work in and around the Lemon Grove area, two geological formations with paleontological resource potential have been particularly recognized. These include the marine and nonmarine sedimentary rocks of the Mission Valley Formation and the richly fossiliferous marine sandstones and conglomerates of the San Diego Formation. Fossils in the Mission Valley Formation have been observed in outcrops adjacent to Imperial Avenue. One such outcrop exposed on the west side of San Altos Place, just south of the intersection with Massachusetts Avenue, has yielded remains of oysters, snails and sharks (Demere, 1983).

Fossils in the San Diego Formation have been observed in outcrops in the various small canyons south of Mount Vernon Avenue and west of Imperial Avenue, as well as the canyons west of Massachusetts Avenue. Especially fossiliferous exposures were produced by development of the canyon presently occupied by Berryland Court. Fossils in these exposures include scallops, clams, snails, sea birds and whales. Many fossils were most likely destroyed during the grading phase for this project. Monitored grading operations in this formation elsewhere in San Diego County (especially in Chula Vista) have salvaged significant marine fossils. These fossils, the most important of which are the various marine mammal species (such as fur seal, walrus, sea cow, dolphin and whale) are being studied by paleontologists both in southern California and the eastern United States (Demere, 1983).

### **Threshold of Significance**

Based on the CEQA Guidelines, a project will have an impact to paleontological resources if it will:

- Disrupt or adversely affect a paleontological site.

### **Impacts**

#### **A. Plan-wide**

As shown in Figure 4.10-1, the Mission Valley and San Diego Formations comprise a substantial portion of the City. Because the City is almost completely developed, some of the original fossils may have been disturbed through prior grading and earth work. Future infill development and redevelopment may require grading and earthwork. Fossils may be destroyed during grading particularly in any undisturbed areas such as STA IV. When fossils are disturbed, the paleontologic information about past plant and animal forms is lost.

#### **B. STAs and Other Development Areas**

##### **Downtown Village (STA I)**

Only a small area in the southern portion of STA I includes one of the known fossil-bearing geologic formations. Grading/excavation within the Mission Valley Formation could impact paleontological resources.

##### **Massachusetts Station (STA II)**

The entire STA II is underlain with the Mission Valley Formation. Grading/excavation associated with redevelopment of this STA could impact paleontological resources.

### Regional Commercial (STA III)

The western portion of this STA is underlain with the San Diego Formation. This is a known fossil-bearing geologic formation. Grading/excavation within this formation could impact paleontological resources.

### West Central Residential (STA IV)

Both the San Diego and the Mission Valley Formations occur within this STA. Since this STA is undeveloped, if these formations include fossils, there is a greater probability that they would still be intact. Grading/excavation could impact paleontological resources within this STA.

### Federal Boulevard Automobile Sales District (STA V)

Both the San Diego and the Mission Valley Formations occur within this STA. While this STA is primarily built-out, any redevelopment which would require grading could impact paleontological resources.

### Skyline Commercial Center (STA VI)

The Mission Valley Formation occurs within this STA. Grading associated with the redevelopment of this site could impact paleontological resources.

### Troy Street/SR-125 Planning Area (STA VII)

The entire STA VII is underlain by the Mission Valley Formation. Potential paleontological impacts associated with the grading for the SR-125 would be mitigated by Caltrans. The remainder of the STA is developed with single-family residences. No redevelopment is proposed for the remainder of the single-family area within this STA. While the potential exists for paleontological resources to occur in this STA, no impacts are anticipated because no redevelopment is planned in this area.

### Other Development/Land Use Changes

***Multiple-Family Residential Development.*** The areas proposed for multi-family development are underlain by fossil-bearing formations. Infill development or redevelopment within these areas could impact paleontological resources.

***Industrial and Commercial Areas.*** The areas proposed for industrial and commercial development are underlain by fossil-bearing formations. Infill development or redevelopment within these areas could impact paleontological resources.

***Skyline Neighborhood Commercial Area.*** This area is underlain by the Lindavista Formation which has very low potential for the occurrence of paleontological resources. No impacts to paleontological resources are anticipated from redevelopment within this area of the City.

***Civic Center Concept Area.*** Only a small area in the southern portion of the Civic Center Concept area includes the Mission Valley Formation. Grading/excavation within the Mission Valley Formation could impact paleontological resources.

### **Mitigation Measures**

The following mitigation measure is required to reduce potential impacts to paleontologic resources to less than significant. The mitigation measure corresponds to a program in the General Plan Implementation Manual, as noted.

#### **A. Plan-wide**

***Mitigation Measure 4.13-1:*** For proposed new development or redevelopment projects, the City shall require impact assessment and mitigation according to the California Environmental Quality Act for paleontological or prehistoric resources. This process shall include determining the potential for the occurrence of significant fossils and prehistoric resources. If it is determined that potentially significant resources could occur, an investigation shall be conducted by a qualified paleontological and/or cultural resource professional to determine: 1) if resources are present, and 2) the significance of the resource. If the proposed project will impact a significant paleontological and/or prehistoric cultural resource, mitigation in the form of research, recordation, data recovery and/or in-situ preservation shall be required prior to grading. (General Plan Implementation Manual, Conservation and Recreation Program #8).

#### **B. STAs and Other Development Areas**

Mitigation Measure 4.13-1 addresses all of the STAs and other development areas. This mitigation measure will reduce potential impacts to paleontologic resources within the STAs and other development areas. No other mitigation measures are required for these specific areas of the City.

### **Level of Significance After Mitigation**

With implementation of the mitigation measure identified above, impacts related to paleontological resources will be reduced to below significance.