

**Appendix 6:  
Paleontological Report**





# Paleontological Resource Assessment

## Fulton Mall Reconstruction Project

### City of Fresno, California

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# Technical Report

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## Paleontological Resource Assessment

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Date: November 20, 2013

The purpose of this memorandum is to review and evaluate potential short- and long-term impacts to buried paleontological resources that may result from construction and implementation of the proposed Fulton Mall Project.

### Project Purpose and Need

The purpose of the proposed project is to increase mobility and access in the Fulton Mall study area by providing more convenient multi-modal access options on the Mall and its cross streets; to improve visibility of businesses, offices and other amenities in the Fulton Mall study area by improving traffic circulation, thereby encouraging additional economic development in the area; and to increase the Fulton Mall study area's consistency with the requirements and goals of proposed land use plans by making the area more accessible to the public, thereby encouraging greater public use of the area and bolstering future economic development opportunities.

### Proposed Project

The City of Fresno (City) proposes to reconstruct Fulton Mall as a complete street by reintroducing vehicle traffic lanes to the existing pedestrian mall. The Mall consists of six linear blocks that were open to traffic prior to 1964 but now do not allow public vehicle access. The Mall is bounded by Tuolumne Street to the north and Inyo Street to the south, and includes portions of three cross streets. The total length of the new roadways would be approximately 0.67 mile; a total of 0.74 mile of existing Fulton Mall right-of-way would be affected.

The "Mall" refers specifically to the pedestrian areas between adjoining buildings located on the former City streets of Fulton, Mariposa, Merced, and Kern, which function as an integrated pedestrian mall. Fresno Street and Tulare Street, which do allow vehicle traffic, run through the Mall and divide it into three roughly equal sections. Mall landscaping elements include fountains, planters, benches, sculptures, electrical systems, irrigation systems, and two "tot lots." The Mall does not include the adjoining buildings or their facades.

The City of Fresno is proposing two build options for the Fulton Mall Reconstruction Project. These two build options propose to reconstruct the Mall using "complete streets" design concepts. Complete streets are those designed to function as shared public space, or as "living streets" - for pedestrians, cyclists, outdoor businesses, and slow-moving, cautiously driven vehicles. Complete streets may include narrow roadways, corner bulb-outs, winding streets, and other traffic calming measures to lower driving speeds; street trees and other landscape elements; wide pedestrian sidewalks and crosswalks; and bicycle accommodations such as dedicated bicycle lanes or wide shoulders. The purpose of incorporating these design concepts into the proposed project is to retain portions of the historic fabric and character of the

Mall, maintaining the key elements, feeling and unique experience of a pedestrian mall in downtown Fresno.

This Draft EIR addresses two build options, which are described below.

### **Project Option 1**

Option 1 consists of reopening the Fulton Mall with two-way streets, with one lane of vehicular traffic in each direction alongside bicycle, pedestrian, and potentially other travel modes, along the length of the Fulton Mall and three cross streets: Merced between Congo Alley and Federal Alley, Mariposa between Broadway Plaza and Federal Alley, and Kern between Fulton and Federal Alley. On-street vehicle parking spaces would be reintroduced along the length of the Fulton Mall (including cross streets), mid-block pedestrian crossings would be provided, and construction of streetscape improvements would optimize the streets for the new blend of travel modes. One 11-foot-wide vehicle travel lane would run in each direction, with a parallel parking lane of 8 feet included on both sides of the streets. Sidewalks would include a typical 14-foot sidewalk on one side of the street and a 28-foot-wide promenade on the other. This promenade is intended to approximate the mall-like pedestrian experience of the original Eckbo Fulton Mall. Like the existing mall, the Option 1 promenade would feature artworks, water features, seating, and trees and would allow for walking and pedestrian-only seating, landscaping, and lighting. Pedestrians would be separated from vehicles. There are existing street rights-of-way adjacent to the new streets within the Mall that would include minor public infrastructure improvements such as new curb locations, traffic signal improvements, and lane striping. These improvements would provide transitional streetscape to accommodate the project. Under Option 1, the two tot lots present, one located near the corner of Merced and Fulton, and the other located near the corner of Kern and Fulton, would be consolidated into one larger tot lot at the Fresno County Economic Opportunities Commission campus near the intersection of Mariposa and Congo Alley.

### **Project Option 2**

Option 2 consists of reconnecting the street grid similar to Option 1, but would include rebuilding distinctive elements of the Fulton Mall in five to six specific locations, known as “vignettes,” in their exact current size and configuration. The vignettes are intended to preserve existing shade trees and features of the historic Eckbo design, and would include many of the existing elements (sculptures, fountains, pavement pattern, trees, and so on). To accomplish this, the street would have gentle curves that would allow for greater preservation of historic features including fountains, art and existing shade trees. One 11-foot-wide vehicle travel lane would run in each direction and would curve through the vignettes. Outside the vignette areas, the street would straighten, and the landscape would include, where possible, an 8-foot-wide parallel parking lane, as well as a pedestrian-only walking, seating, vegetation, and public art area that varies between 14 and 44 feet wide on each sides of the street. Within the vignettes, there would be no parking lane, and the existing Fulton Mall landscape elements would be kept intact as much as possible. The remaining space on each side of the street would be dedicated to pedestrian travel, seating, vegetation, and artwork. There are existing street rights-of-way adjacent to the new streets within the Mall that would include minor public infrastructure improvements such as new curb locations, traffic signal improvements, and lane striping. These improvements would provide transitional streetscape to accommodate the project. Under Option 2, the two tot lots present, one located near the corner of Merced and Fulton, and the other located near the corner of Kern and Fulton, would be consolidated into one larger tot lot at the Fresno County Economic Opportunities Commission campus near the intersection of Mariposa and Congo Alley.

## Environmental Setting

### ***Topography***

The Fulton Mall project study area consists predominantly of developed land consistent with the characteristics of an urban center. Single- and multi-story buildings are located throughout the project study area. Fulton Mall and the Cross Malls consist of paved pedestrian pathways. The project study area has generally flat topography at an elevation of approximately 290 feet above mean sea level.

### ***Climate***

The City of Fresno has an "inland Mediterranean" climate including long, hot, dry summers and short, foggy winters with low rainfall. The average winter temperatures are in the high 50s degrees Fahrenheit (°F); temperatures below freezing are unusual. Average summer temperatures are in the 90s °F; however, over the greater Fresno area the average is 95 °F. Many summer days have highs exceeding 100 °F. The City of Fresno experiences, on average, a little more than 10 inches annual precipitation.

### ***Soils***

The general soil profile within Fulton Mall study area consists of four separate soil series: Delhi loamy sand, Hanford sandy loam, Madera loam, and San Joaquin sandy loam. The soils within the majority of the study area have been altered from their natural state because of grading and compaction for the construction of the existing Fulton Mall and adjacent buildings and infrastructure. It is uncertain just how deep undisturbed terrain is located below the pavement of the existing Fulton Mall.

### ***Paleontological Resource Assessment***

Finger (2013) has previously reviewed the geology and paleontological sensitivity of the whole of the City of Fresno (see Attachment 1). The geologic maps of Matthews and Burnett (1965), Page and LeBlanc (1969), and Marchand and Allwardt (1978) indicate that the entire area of concern consists of Quaternary alluvium. Matthews and Burnett (1965) mapped the surface of the project area as Pleistocene nonmarine (Qc) and Quaternary nonmarine fan deposits (Qf), the former having been more recently been referred as the Riverbank Formation and the latter consists of undifferentiated Pleistocene-Holocene alluvial sediments, respectively.

Dr. Finger found that the University of California Museum of Paleontology (UCMP) database records three Pleistocene Riverbank Formation localities (#V4401, #V65100, and #V81121) in surrounding Fresno County, all of which yielded elements of the Rancholabrean (late Pleistocene) vertebrate fauna. Locality #V81121 is referred to the Riverbank Formation, whereas the other two units are unnamed. Locality #V4401 ("Tranquility") accounts for 149 of the 151 specimens listed. Numerous specimens have been published, several of which are types for their species. The recovered faunal assemblage includes pond turtle (*Clemmys marmorata*), rattlesnake (*Crotalus*), loon (*Gavia*), broad-footed mole (*Scapanus latimanus*), jackrabbit (*Lepus*), vole (*Microtus*), wood rat (*Neotoma*), pocket gopher (*Thomomys*), badger (*Taxidea*), grey fox (*Urocyon*), true fox (*Vulpes*), coyote (*Canis latrans*), horse (*Equus*), bison (*Bison*), elk (*Cervus*), and mule deer (*Odocoileus*). Among these are type specimens of *Clemmys marmorata*, *Scapanus latimanus*, and *Canis latrans* that have been documented in scientific publication. The UCMP database also records 12 plant localities in Fresno County, in the Pleistocene alluvial deposits of the Modesto, Riverbank, and Turlock Lake formations.

Dr. Finger indicated that all undisturbed Pleistocene alluvium in the surface and subsurface of the area has the potential to contain significant paleontological resources that could be impacted by project-related excavations. Fossils tend to be spottily distributed in alluvium, occurring primarily in pointbar and

floodplain deposits. Nevertheless, Dr. Finger concluded that all Pleistocene alluvium, including undifferentiated Pleistocene-Holocene fan deposits, should be considered as having a high paleontological sensitivity. Mitigation measures associated with potential impacts to buried paleontologic resources should be developed on a project-by-project basis.

Exhibit 1 shows that the whole of the Fulton Mall Reconstruction area is located on Quaternary nonmarine fan deposits (Qf), with Pleistocene nonmarine (Qc) located about ¼ mile to the southeast. Since the Quaternary nonmarine fan deposits overlie the Pleistocene nonmarine deposits at uncertain depth at the project site, it is not known -until cuts are made- at what depth the Pleistocene nonmarine deposits will be encountered.

## **Potential Project Impacts**

### ***Short-Term Construction Impacts***

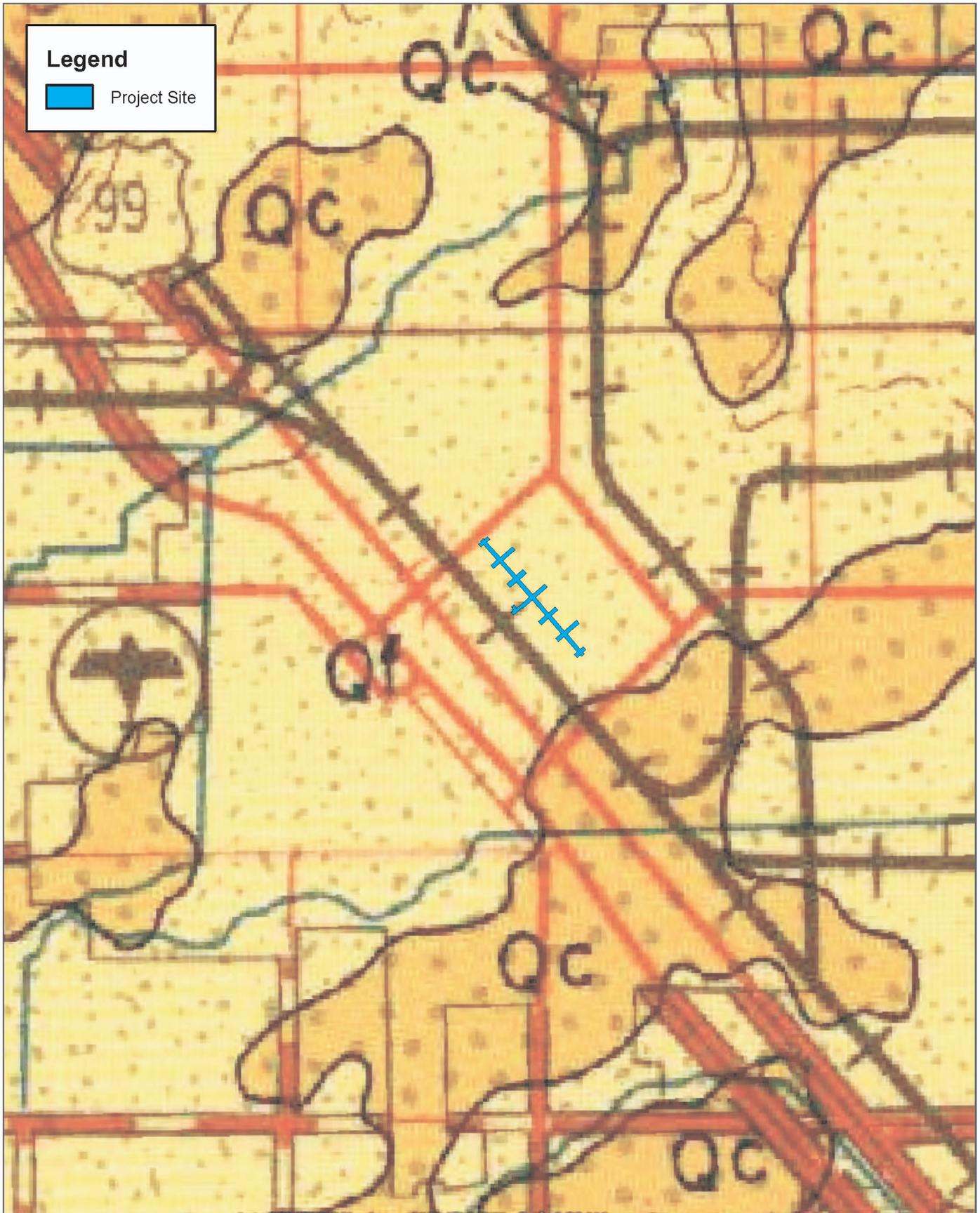
Construction of the proposed Fulton Mall project would require reconstruction activities that would disturb more than one acre and could include excavation cuts up to 15 feet below modern grade. During these activities, there is the potential that such excavation cuts below five feet could impact undisturbed Pleistocene and/or Quaternary deposits, and it is this undisturbed terrain that may contain locally significant fossil deposits. Grading activities that occur between modern grade and five feet below modern grade are expected to be disturbed given that Fulton Mall has undergone previous grading activities when the pedestrian mall and related utility improvements were constructed in the 1960s.

### ***Long-Term Operational Impacts***

Use of the conversion of Fulton Mall to a street network would not result in long-term impacts on paleontological resources because no long-term disturbance of undisturbed terrain would occur.

## **Mitigation Measures**

Prior to the issuance of grading permits, a paleontologist shall be retained to monitor excavation activities that occur five feet below modern grade. If paleontological resources are found, earth-disturbing activities shall be diverted elsewhere until the monitor has completed salvaging of the resources. For resources that are discovered, the paleontologist shall prepare, identify, and curate any paleontological resources deemed significant. The significant resources shall be sent to a City-approved depository along with a summary report.



Source: US geological survey map website ([http://ngmdb.usgs.gov/ngmdb/ngmdb\\_home.html](http://ngmdb.usgs.gov/ngmdb/ngmdb_home.html))



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## Geological Map of the Fulton Mall

