PALEONTOLOGIC RESOURCE TECHNICAL REPORT
LOS ANGELES RAIL RAPID TRANSIT PROJECT (METRO RAIL)
MINIMUM OPERABLE SEGMENT 2, CANDIDATE ALIGNMENTS 1 TO 5

Prepared for

U.S. Department of Transportation
Urban Mass Transportation Administration, Region IX
Two Embarcadero Center, Suite 620
San Francisco, California 94111

Southern California Rapid Transit District
425 South Main Street
Los Angeles, California 90013

Prepared by

E. Bruce Lander
Engineering-Science, Inc.
P.O. Box 7107
Pasadena, California 91109

ES ENGINEERING-SCIENCE

September 1987

PALEONTOLOGIC RESOURCE TECHNICAL REPORT
LOS ANGELES RAIL RAPID TRANSIT PROJECT (METRO RAIL)
MINIMUM OPERABLE SEGMENT 2, CANDIDATE ALIGNMENTS 1 TO 5

Prepared for

U.S. Department of Transportation
Urban Mass Transportation Administration, Region IX
Two Embarcadero Center, Suite 620
San Francisco, California 94111

Southern California Rapid Transit District
425 South Main Street
Los Angeles, California 90013

Prepared by

E. Bruce Lander
Engineering-Science, Inc.
P.O. Box 7107
Pasadena, California 91109

September 1987

TABLE OF CONTENTS

INTRODUCTION

This report was prepared in support of the Supplemental Environmental Impact Statement (EIS)/Subsequent Environmental Impact Report for the Los Angeles Metro Rail Project (U.S. Department of Transportation Urban Mass Transportation Administration and Southern California Rapid Transit District (DOT/SCRTD), 1987), and supplements the previous paleontologic resource technical report (Westec Services, Inc., 1983), which was prepared for the original EIS (DOT/SCRTD, 1983). This technical report presents additional paleontologic resource information for Minimum Operable Segments (MOS) 1 and 2 that was not included in the original technical report for MOS-1, as well as information on the results of the current paleontologic mitigation program for MOS-1. New site information was aquired during a records search conducted at the Natural History Museum of Los Angeles County (LACM). This information is presented below by formation. The additional taxa recorded from these formations could be uncovered by excavation of the same formations during construction of the Metro Rail system.

PALEONTOLOGIC RESOURCES

Topanga Group

Not reported in the previous technical report were the occurrences of marine and continental vertebrates from the Topanga Group in the central Santa Monica Mountains. Whale, shark, and ray remains have been collected in association with marine invertebrates in the Cold Creek Member of the Topanga Canyon Formation (below Conejo Volcanics), and horse, camel, and rodent remains have been recovered from the underlying Fernwood Member. Oakeshott (1958) and Reynolds (1987) have reported oreodont (land mammal) remains from the Topanga? Group in the San Fernando Valley.

Puente Formation

Marine vertebrate and invertebrate remains have been recovered from the Puente Formation as a result of the paleontologic mitigation program for MOS-1. Bivalve mollusks (clams) identified as Nucula (Lamb, 1987) were collected from this unit (Navin, 1987; Williams, 1987) at an elevation of 205 feet in the vertical shafts (Pier U-1, -2) that are being excavated under the Pershing Square Garage for the Fifth/Hill Station. A shark tooth identified as Isurus (mako shark) (Lamb, 1987) was collected in the vertical shaft excavation for the Wilshire/Alvarado Station.

Not reported in the previous technical report were the recovery of fossil land plants and a horse in association with marine vertebrates from exposures of the Puente Formation in the Puente and San Jose Hills (Chaney, 1921; Lander, 1985; Reynolds, 1985; Stock, 1928).

Fernando Formation

Marine invertebrates have been collected in the Fernando Formation at the intersections of Wilshire Boulevard and Lucas Street (LACM 136, between Wilshire/Alvarado and Seventh/Flower Stations), Seventh and Hope Streets (LACM 1058, just east of Seventh/Flower Station), and Fourth and Hill Streets (LACM 5967, within Fifth/Hill Station site), all within the MOS-1 alignment. These occurrences were not reported in the original technical report. Lander (1985) has reported whale remains from the Fernando Formation in the Puente Hills.

San Pedro Formation

Exposures of the San Pedro Formation have produced diverse continental and marine vertebrate and associated marine invertebrate assemblages on the Palos Verdes Peninsula (Kennedy, 1975).

Quaternary Alluvium, Lower Part (= Palos Verdes Sand)

No additional record of fossil remains from the lower part of the Quaternary alluvium was found during the data search conducted for this resource assessment.

Quaternary Alluvium, Upper Part

Reynolds (1987) has reported the occurrence of mammoth remains from the Quaternary alluvium at LACM 3250. This locality is 800 feet east of the northern segment of Candidate Alignment 1 of MOS-2, between the Wilshire/Vermont and Vermont/Beverly Stations, and at a depth of 8 feet. Reynolds (1987) has also reported bison, horse, and mammoth remains from this unit in the San Fernando Valley at depths ranging from 75 to 170 feet.

REFERENCES

Chaney, R.W., 1921, A fossil flora from the Puente Formation of the Monterey Group: American Journal of Science, 5(2):90-92.

Kennedy, G.L., 1975, Paleontologic record of areas adjacent to the Los Angeles and Long Beach Harbors, Los Angeles County, California, In Soule, D.F., and O'Guri, M., editors, Marine studies of San Pedro Bay, California, Part 9, Paleontology, p. 1-71: Allan Hancock Foundation Harbors Environmental Projects and The Office of Sea Grant Programs, University of Southern California.

Lamb, R.V., 1987, Paleontologic Monitor, Metro Rail Project, Greenwood and Associates, personal communication with E. Bruce Lander, Engineering-Science, Inc.

Lander, E.B., 1985, Paleontologic resource investigation, proposed Pacific Texas Pipeline Project: Engineering-Science, Inc.; prepared for U.S. Bureau of Land Management and Los Angeles Harbor Department.

Navin, S.J., 1987, Resident Engineer, Metro Rail Project, Ralph M. Parsons Company, personal communication with E. Bruce Lander, Engineering-Science, Inc.

Oakeshott, G.B., 1958, Geology and mineral deposits of the San Fernando Quadrangle, Los Angeles County, California: California Division of Mines and Geology Bulletin 172.

Reynolds, R.E., 1985, Paleontologic salvage, Robert O. Townsend Junior High School site, San Bernardino County, California: San Bernardino County Museum.

Reynolds, R.E., 1987, Paleontologic assessment, Angeles Pipeline Project EIR/EIS: ERT; prepared for U.S. Forest Service and California Department of Transportation.

Stock, C., 1928, A tooth of Hipparion mohavense from the Puente Formation, California: Carnegie Institute of Washington, 393:49-53.

U.S. Department of Transportation Urban Mass Transportation Administration and Southern California Rapid Transit District (DOT/SCRTD), 1983, Final Environmental Impact Statement, Los Angeles Rail Rapid Transit Project, Metro Rail.

DOT/SCRTD, 1987, Final Supplemental Environmental Impact Statement/Subsequent Environmental Impact Report, Los Angeles Rail Rapid Transit Project, Metro Rail.

Westec Services, Inc. 1983, Technical report, paleontological resources, Los Angeles Rail Rapid Transit Project, "Metro Rail"; prepared for U.S. Department of Transportation Urban Mass Transportation Administration and Southern California Rapid Transit District.

Williams, C.T., 1987, Lead Environmental Engineer, Metro Rail Project, Engineering-Science, Inc., personnel communication with E. Bruce Lander, Engineering-Science, Inc.