APPENDIX A: RECORD SEARCH REPORTS

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12 September 2016

ICF International
601 West 5th Street, Suite 900
Los Angeles, CA 90071

Attn: Mark Robinson, Senior Archaeologist / Project Manager

re: Paleontological Resources for the proposed California High Speed Rail Los Angeles to Anaheim Section Project, Los Angeles and Orange Counties, project area

Dear Mark:

I have conducted a thorough search of our Vertebrate Paleontology records for the proposed California High Speed Rail Los Angeles to Anaheim Section Project, Los Angeles and Orange Counties, project area as outlined on the portions of the Los Angeles, Southgate, Whittier, La Habra, and Anaheim USGS topographic quadrangle maps that you sent to me via e-mail on 23 August 2016. We have two vertebrate fossil localities that lie either within or adjacent to the proposed project area boundaries, and we do have localities nearby from the same sedimentary units that occur in the proposed project area, either at the surface or at depth.

From the northern terminus of the proposed project area route southward, the route crosses predominately younger Quaternary Alluvium, derived as flood plain deposits from the Los Angeles River that currently flows in a concrete channel adjacent or nearby. Just south of the Santa Monica Freeway (I-10) around Olympic Boulevard though, the proposed project area route crosses exposures of older Quaternary Alluvium.

According to the geologic mapping there are some exposures older Quaternary Alluvium in Montebello west of Rio Hondo crossed by the proposed project area route. Otherwise, there are just younger Quaternary Alluvium deposits at the surface as the proposed project area route courses east-southeastward across the Rio Hondo and San Gabriel River. Beginning around Los

Nettos, as the proposed project area route turns first southeastward then due south in Santa Fe Springs, it crosses exposures of older Quaternary Alluvium. Just south of Leffingwell Road southeastward to near La Cañada Verde Creek, the proposed project area route crosses surface deposits of younger Quaternary Alluvium. Further southeastward to Coyote Creek, the proposed project area route crosses exposures of older Quaternary Alluvium except immediately along La Mirada Creek where the surface deposits consist of younger Quaternary Alluvium.

As the proposed project area route courses first east-southeastward across Brea Creek then due east into Fullerton, the surface deposits consist entirely of younger Quaternary Alluvium. In Fullerton, where the proposed project area route turns south across Fullerton Creek then south-southeastward into Anaheim and finally east-southeastward to its southern terminus at the Santa Ana River, the proposed project area route crosses exclusively younger Quaternary Alluvium, with the deposits probably becoming finer-grained closer to the fluvial source of the Santa Ana River.

Our closest vertebrate fossil locality from these older Quaternary deposits beneath the younger Quaternary Alluvium to the northern portion of the proposed project area is LACM 2032, northeast of the northern terminus of the proposed project area route east of the Golden State Freeway near the intersection of Mission Road and Daly Street, that produced fossil specimens of pond turtle, *Clemmys mamorata*, ground sloth, *Paramylodon harlani*, mastodon, *Mammut americanum*, mammoth, *Mammuthus imperator*, horse, *Equus*, and camel, *Camelops*, at a depth of 20-35 feet below the surface. The pond turtle specimens from locality LACM 2032 were figured in the scientific literature by B.H. Brattstrom and A. Sturn (1959. A new species of fossil turtle from the Pliocene of Oregon, with notes on other fossil *Clemmys* from western North America. Bulletin of the Southern California Academy of Sciences, 58(2):65-71). Just north of locality LACM 2032, still east of the Golden State Freeway (I-5) east of Taylor Junction near the intersection of Workman Street and Alhambra Avenue, we have another older Quaternary locality, LACM 1023, where excavations for a storm drain recovered fossil specimens of turkey, *Meleagris californicus,* sabre-toothed cat, *Smilodon fatalis*, horse, *Equus*, and deer, *Odocoileus*, at unstated depth. A specimen of the turkey, *Meleagris*, from this locality was published in the scientific literature by D. W. Steadman (1980. A Review of the Osteology and Paleontology of Turkeys (Aves: Meleagridinae). Contributions in Science, Natural History Museum of Los Angeles County, 330:131-207).

To the west of this northern portion of the proposed project area route, near the intersection of Hill Street and 12th Street, our locality LACM 1755 from the older Quaternary deposits produced a fossil specimen of horse, *Equus*, at a depth of 43 feet below the street.

Further southward, where the proposed project area route crosses the Long Beach Freeway (I-710) just north of the Los Angeles River, we have two vertebrate fossil localities from Quaternary deposits, LACM 7701-7702, that occur either along or adjacent to the proposed project area. Localities LACM 7701-7702 produced fossil specimens of threespine stickleback, *Gasterosteus aculeatus*, salamander, *Batrachoseps*, lizard, Lacertilia, snake, Colubridae, rabbit, *Sylvilagus*, pocket mouse, *Microtus*, harvest mouse, *Reithrodontomys*, and pocket gopher, *Thomomys*, at depths of 11 to 34 feet below grade.

East of the middle portion of the proposed project area route, north of Leffingwell Road east of La Mirada Boulevard, our older Quaternary deposits is LACM 3347, produced a fossil specimen of horse, *Equus*, at a depth of only two feet below the surface.

East of the southern portion of the proposed project area route, west of the Santa Ana river along Rio Vista Avenue south of Lincoln Avenue, our vertebrate fossil locality LACM 1652 produced a fossil specimen of sheep, *Ovis*. Almost due east of locality LACM 1652, along Fletcher Avenue east of Glassell Street east of the Santa Ana River, our fossil locality LACM 4943 produced a specimen of fossil horse, *Equus*, at a depth of 8-10 feet below the surface.

Even relatively shallow excavations in the proposed project area may well encounter significant fossil vertebrate remains in older Quaternary deposits. Any substantial excavations in the proposed project area, therefore, should be monitored closely to quickly and professionally recover any fossil remains discovered while not impeding development. Sediment samples should also be collected and processed to determine the small fossil potential in these rock units. Any fossils recovered during mitigation should be deposited in an accredited and permanent scientific institution for the benefit of current and future generations.

This records search covers only the vertebrate paleontology records of the Natural History Museum of Los Angeles County. It is not intended to be a thorough paleontological survey of the proposed project area covering other institutional records, a literature survey, or any potential on-site survey.

Sincerely,

Samuel A. McLeod

Samuel A. McLeod, Ph.D.
Vertebrate Paleontology

enclosure: invoice

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Research & Collections

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November 26, 2023

ICF

Attn: Benjamin Vargas

re: Paleontological resources for the High Speed Rail Los Angeles to Anaheim Project

Dear Benjamin:

I have conducted a thorough search of our paleontology collection records for the locality and specimen data for proposed development at the High Speed Rail Los Angeles to Anaheim project area as outlined on the portion of the Los Angeles, South Gate, Whittier, La Habra, Anaheim, Cajon, Silverwood Lake, Hesperia, and Victorville USGS topographic quadrangle map that you sent to me via e-mail on October 26, 2023.

The following table shows the fossil localities in the collection of the Natural History Museum of Los Angeles County (NHMLA) that have been recorded within the project area:

Locality Number	Location	Formation	Taxa	Depth
LACM VP 7702	Intersection of 26th St and Atlantic Blvd, Bell Gardens	Unknown Formation (Pleistocene; silt)	Fish (*Gasterosteus*); Snake (Colubridae), Rodents (*Thomomys, Microtus, Reithrodontomys)*; Rabbit (*Sylvilagus*)	30 feet bgs

VP, Vertebrate Paleontology; bgs, below ground surface

We have additional fossil localities nearby the project area from the same sedimentary deposits that occur in the proposed project area, either at the surface or at depth.

Locality Number	Location	Formation	Taxa	Depth
LACM VP 7990	Hall of Justice building	Puente Formation, Yorba Member (claystone; siltstone & sandstone layers)	Teleostei (viperfish [*Chauliodus*], cod [Gadiformes], herring/shad/sardines [Clupeidae], mackerel/tuna/bonito [Scombridae], slickheads	Unknown depth (fossil layers at 257-321 ft above mean sea level)

Locality Number	Location	Formation	Taxa	Depth
			[Alepocephalidae], smelts [Bathylagidae], herring smelt [Argentinidae], scaly dragonfish [Stomiatidae], bristlemouths [Gonostomidae])	
LACM VP 5961	Just north of the intersection of 1st & Hill Streets, downtown LA	Puente Formation	Bristlemouth (*Cyclothone*)	Unknown (collected during Metrorail excavations)
LACM VP 7730	LAPD Headquarters; near 2nd St. and Spring St.	Fernando Formation; Repetto Member (massive clayey siltstone)	diversity of plant material & invertebrates as well as over 40 specimens of vertebrates: sharks; rays; bony fishes; bird; & marine mammals	Unknown (261-250 feet above sea level)
LACM VP 1755	Near 12th & Hill Sts	Unknown Formation (Pleistocene)	Horse (*Equus*)	43 ft bgs
LACM VP 3347	11204 Bluefield; Whittier	La Habra Formation (lacustrine silt with caliche and plant detritus)	Horse (*Equus*)	2 feet bgs
LACM VP 3524	North of Malvern Avenue & approximately 1/2 mile west of Gilbert Street; Fullerton	Terrace deposits (silty sandstone)	Ungulata	unknown
LACM VP 4185-4201	Coyote Creek, adjacent to Ralph B Clark Regional Park in West Coyote Hills	La Habra Formation (Pleistocene; sandy silt shot through with caliche)	Bison (*Bison*), camel (*Camelops*), horse (*Equus*), mammoth (*Mammuthus*), mastodon (*Mamut*), elephant clade (Proboscidea), dire wolf *(Canis dirus*), Coyote (*C. latrans*), deer (*Odocoileus*), dwarf pronghorn (*Capromeryx*),unidentified artiodactyl; sea duck (*Chendytes*)	Surface, in creek bed
LACM VP 1224, 3352, 3498, 3512, CIT209	Along the west bank of the Mojave River in Victorville, California	Shoemaker Gravel Formation	Mammoth (*Mammuthus*), Horse (*Equus*), Camel family (Camelidae), deer (Cervidae); antelope (Antilocapridae)	Unknown
LACM VP 3353	Second Street at sand & gravel pit; near top of bluff, west bank of Mojave River	Shoemaker Gravel Formation	Horse (*Equus*)	unknown
LACM VP 5943	north side of Black Butte, west of Adelanto	Unknown Formation (Holocene)	Lizard (*Lacertilia*); snake (*Ophidia*); rabbit (Lagomorpha); rodent (Rodentia)	0-9 ft bgs
LACM VP 1652	Rio Vista Avenue	Alluvium	Sheep (*Ovis*)	Unknown

Locality Number	Location	Formation	Taxa	Depth
	south of Lincoln Avenue	(Pleistocene)		(excavations for housing project)

VP, Vertebrate Paleontology; IP, Invertebrate Paleontology; bgs, below ground surface

This records search covers only the records of the NHMLA. It is not intended as a paleontological assessment of the project area for the purposes of CEQA or NEPA. Potentially fossil-bearing units are present in the project area, either at the surface or in the subsurface. As such, NHMLA recommends that a full paleontological assessment of the project area be conducted by a paleontologist meeting Bureau of Land Management or Society of Vertebrate Paleontology standards.

Sincerely,



Alyssa Bell, Ph.D.
Natural History Museum of Los Angeles County

enclosure: invoice