Appendix F2 Paleontological Resources Technical Memo

Appendices

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PALEONTOLOGY - ARCHAEOLOGY - HISTORY

PALEONTOLOGICAL RESOURCES TECHNICAL MEMO FOR THE MUSEUM HOUSE PROJECT, CITY OF NEWPORT BEACH, ORANGE COUNTY, CALIFORNIA

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Project Number: 3773
Type of Study: Paleontological resources assessment
USGS 7.5' Quadrangle: Newport Beach
Area: 2 acres
Key Words: Old Quaternary Deposits, Pleistocene fossils

INTRODUCTION

PURPOSE OF STUDY

The objective of this Paleontological Resources Technical Memo is to review available information on known resources within a half mile of the proposed project to demolish the current Orange County Museum of Art and replace it with a residential tower. The City of Newport Beach is located in Orange County, California (Figure 1). A zoning change requested for the project will require a General Plan amendment.

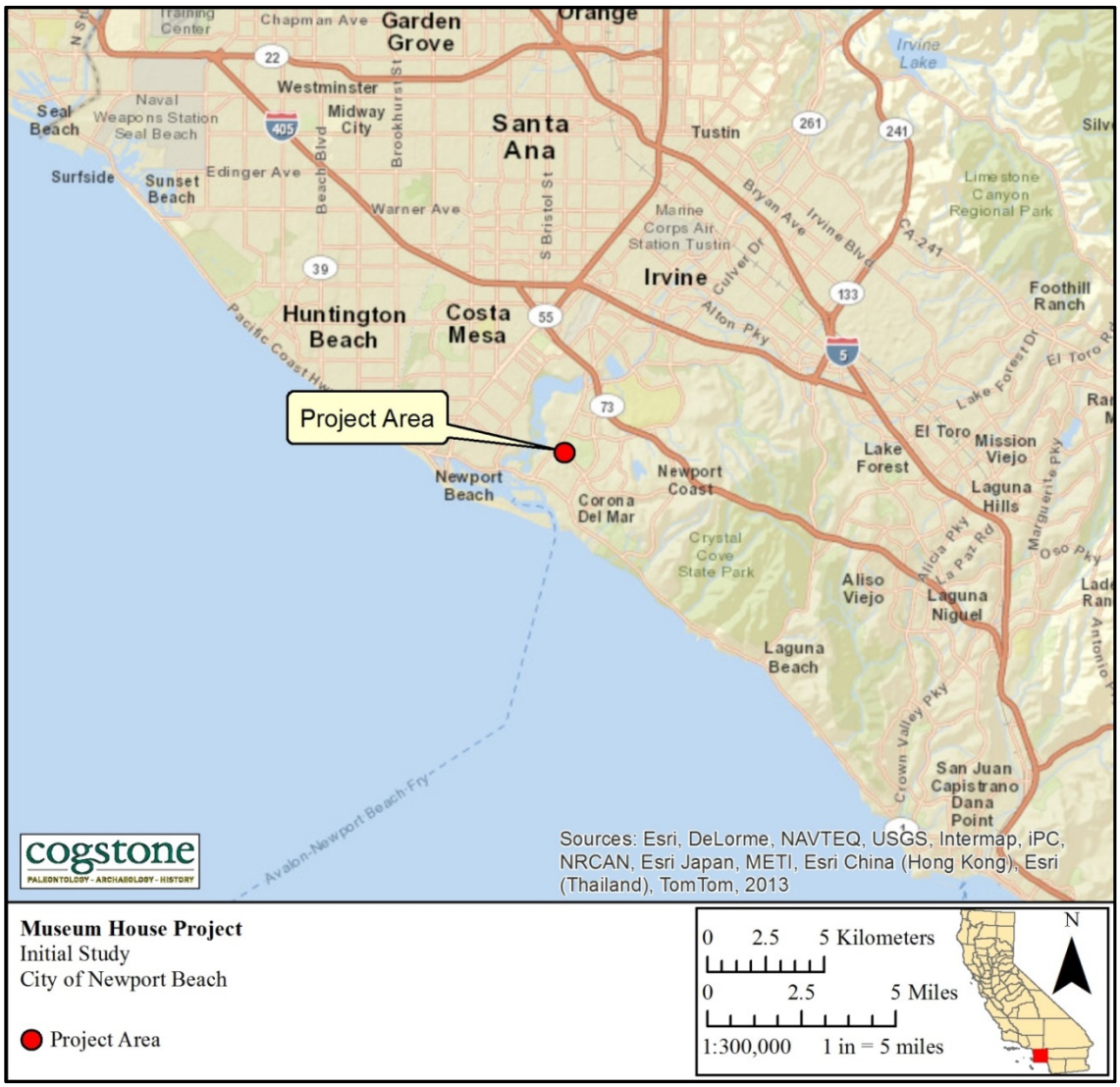

Figure 1. Project vicinity

PROJECT LOCATION

The proposed Museum House Project is located on approximately 2 acres generally located within Newport Center at 850 San Clemente Drive in the City of Newport Beach (Figure 1. The Project is bounded by Santa Cruz Drive to the east, Santa Barbara Drive to the west, San Joaquin Hills Road to the north, and San Clemente Drive to the south. Specifically, the Project is located within Section 25 of Township 6 South, Range 10 West within the Newport Beach USGS 7.5 minute quadrangle (Figure 2). The property consists of the Orange County Museum of Art (OCMA) building, a single-story museum and exhibition space.

The proposed Project consists of a 26-story condominium tower and a two-level subterranean garage within the two acre site. Development of the Project would require demolishing the existing OCMA building, removing the surface parking lot, grubbing onsite vegetation, and removing all 43 ornamental trees onsite. Depth of excavation would be at least 20 feet for the underground garage.

The Project footprint is within the one mile radius of areas previously studied for the Newport Beach Land Use Element Amendment Supplemental EIR completed in 2014 (City of Newport Beach). Paleontological resource work for that project included a record search at the Natural History Museum and background research (Valasik et al.) and is reutilized here.

PROJECT PERSONNEL

Cogstone Resource Management Inc. (Cogstone) conducted the cultural resources studies. Sherri Gust served as the Principal Investigator and wrote the report. Gust is a Qualified Principal Paleontologist and Registered Professional Archaeologist. She has a M.S. in Anatomy (Evolutionary Morphology) from the University of Southern California, a B.S. in Anthropology from the University of California at Davis and over 30 years of experience in California.

Molly Valasik prepared the maps. Valasik has a M.A. in Anthropology from Kent State University and 6 years of experience in Southern California archaeology.

Figure 2. Project location on aerial

REGULATORY ENVIRONMENT

CALIFORNIA ENVIRONMENTAL QUALITY ACT OF 1970, AS AMENDED

CEQA declares that it is state policy to "take all action necessary to provide the people of this state with...historic environmental qualities." It further states that public or private projects financed or approved by the state are subject to environmental review by the state. All such projects, unless entitled to an exemption, may proceed only after this requirement has been satisfied. CEQA requires detailed studies that analyze the environmental effects of a proposed project. In the event that a project is determined to have a potential significant environmental effect, the act requires that alternative plans and mitigation measures be considered.

CEQA includes historic and archaeological resources as integral features of the environment. If paleontological resources are identified as being within the proposed project area, the sponsoring agency must take those resources into consideration when evaluating project effects. The level of consideration may vary with the importance of the resource.

DEFINITION OF SIGNIFICANCE FOR PALEONTOLOGICAL RESOURCES

Only qualified, trained paleontologists with specific expertise in the type of fossils being evaluated can determine the scientific significance of paleontological resources. Fossils are considered to be significant if one or more of the following criteria apply:

1. The fossils provide information on the evolutionary relationships and developmental trends among organisms, living or extinct;
2. The fossils provide data useful in determining the age(s) of the rock unit or sedimentary stratum, including data important in determining the depositional history of the region and the timing of geologic events therein;
3. The fossils provide data regarding the development of biological communities or interaction between paleobotanical and paleozoological biotas;
4. The fossils demonstrate unusual or spectacular circumstances in the history of life;
5. The fossils are in short supply and/or in danger of being depleted or destroyed by the elements, vandalism, or commercial exploitation, and are not found in other geographic locations.

As so defined, significant paleontological resources are determined to be fossils or assemblages of fossils that are unique, unusual, rare, uncommon, or diagnostically important. Significant

fossils can include remains of large to very small aquatic and terrestrial vertebrates or remains of plants and animals previously not represented in certain portions of the stratigraphy. Assemblages of fossils that might aid stratigraphic correlation, particularly those offering data for the interpretation of tectonic events, geomorphologic evolution, and paleoclimatology are also critically important. Paleontological remains are recognized as nonrenewable resources significant to the history of life (Scott and Springer 2003).

BACKGROUND CONTEXT

The City is situated in the northern Peninsular Ranges Geomorphic Province. This province is comprised of a series of mountain ranges separated by northwest trending valleys paralleling faults that branch off from the San Andreas Fault to the east. The Peninsular Ranges Province is located in the southwestern corner of California and is bound by the Transverse Range Province to the north and the Transverse Range and Colorado Desert to the east (Wagner 2002).

The project area is mapped as Pleistocene Old Paralic Deposits (Figure 4, Morton and Miller 2006; older maps identify this as marine terrace deposits). This rock unit consists of nearshore marine and non-marine deposits laid down near the coastline during the middle to late Pleistocene (781,000 to 11,700 years ago). These deposits consist of poorly sorted, moderately permeable, reddish-brown, interdigitated strandline, beach, estuarine and colluvial deposits of silt, sand, and gravel.

The paralic deposits are broken into seven units based on age of the sediments and location in the map quadrangle with Unit 7 being the youngest (80,000 years old) and Unit 1 the oldest (450,000 years old). In some areas, the old paralic deposits are overlain by a thin, discontinuous layer of younger alluvial sand deposits (unit Qopf) (Morton and Miller 2006).

Below the Old Paralic Deposits is bedrock of the Monterey Formation which was deposited in a marine setting during the Miocene (5.3 to 23 million years ago). It is made up of white to pale brown, finely laminated siltstone interbedded with tan, fine to medium grained feldspar-rich sandstone (Morton and Miller 2006).

LITERATURE REVIEW AND RECORD SEARCHES

PALEONTOLOGY

A record search was conducted by staff of the Natural History Museum of Los Angeles County (McLeod 2013). No fossils are known within the Project Area. A large number of fossils are known on the east side of Newport Back Bay in proximity to the Project Area in Older Quaternary sediments. Fossil specimens belonging to 111 taxa of mammals, sharks, rays, fish, amphibians, reptiles and birds, including fossils belonging to 17 extinct taxa, have been recovered from the 15 fossil localities recorded in this area (Table 4; McLeod 2013).

TABLE 4. FOSSILS FROM QUATERNARY DEPOSITS LOCALLY
† = indicates that the animal is extinct

Group	Common Name	Taxon
Mammals	pronghorn	Antilocapra americana
	ancient bison	†Bison antiquus
	giant bison	†Bison latifrons
	extinct western camel	†Camelops hesternus
	American llama	†Tanupolama stevensi
	mule deer	Odocoileus hemionus
	dire wolf	†Canis dirus
	sea otter	Enhydra lutris
	spotted skunk	Spilogale
	fur seal	Archtocephalus
	sea lion	Eumetopias
	sea lion	Zalophus
	northern elephant seal	Mirounga angustirostris
	rorqual whale	Balaenoptera
	dolphin	Lagenorhynchus
	pallid bat	Antrozuous pallidus
	desert shrew	Notiosorex crawfordi
	ornate shrew	Sorex ornatus
	desert cottontail	Sylvilagus audubonii
	brush rabbit	Sylvilagus bachmani
	western horse	†Equus occidentalis
	California tapir	†Tapirus californicus
	Merriam's tapir	†Tapirus merriami
	mammoth	†Mammuthus
	mastodon	†Mammut
	California vole	Microtus californicus

Group	Common Name	Taxon
	dusky-footed woodrat	Neotoma fuscipes
	canyon mouse	Peromyscus crinitus
	deer mouse	Peromyscus maniculatus
	western harvest mouse	Reithrodontomys megalotis
	Botta's pocket gopher	Thomomys bottae
	agile kangaroo rat	Dipodomys agilis
	California pocket mouse	Perognathus californicus
	California ground squirrel	Spermophilus beecheyi
	giant ground sloth	†Megalonyx
	Shasta ground sloth	†Nothrotheriops shastensis
	Harlan's ground sloth	†Paramylodon
Sharks and rays	dusky shark	Charcharhinus obscurus
	tiger shark	Galeocerdo
	Pacific shark	Galeorhinus zyopterus
	lemon shark	Negaprion
	blue shark	Prionace
	scalloped hammerhead	Sphyrna lewini
	smooth hammerhead	Sphyrna zygaena
	leopard shark	Triakis semifasciata
	spotted ratfish	Hydrolagus colliei
	horn shark	Heterodontus francisci
	cow shark	Hexanchus
	common thresher	Alopias vulpinus
	sand shark	Carcharias
	basking shark	Cetorhinus maximus
	megalodon	†Carcharocles megalodon
	great white shark	Carcharodon carcharias
	mackerel shark	†Carcharodon sulcidens
	common blue-grey shark	Isurus glaucus
	shortfin mako shark	Isurus oxyrinchus
	salmon shark	Lamna ditropis
	bat ray	Myliobatis californicus
	round stingray	Urolophus
	bramble shark	Echinorhinus
	knifetooth dogfish	Scymnodon ringens
	spiny dogfish	Squalus acanthias
	Pacific angelshark	Squantina californica
Fish	snake eel	Ophichthus
	specklefin midshipman	Porichthys myriaster
	basketweave cusk-eel	Otophidium scrippsi

Group	Common Name	Taxon
	spotted cusk-eel	Otophidium taylori
	billfish	Istiophoridae
	California sheephead	Pimelometopon pulchrum
	white seabass	Cynoscion nobilis
	white croaker	Genyonemus lineatus
	queenfish	Seriphus politus
	giant sea bass	Stereolepis gigas
	porgies	Sparidae
	sanddab	Paralichthys
	English sole	Parophrys vetulus
	Pacific staghorn sculpin	Leptocottus armatus
Amphibians	western toad	Bufo boreas
	Pacific tree frog	Hyla regilla
	northern red-legged frog	Rana aurora
	arboreal salamander	Aneides lugubris
Reptiles	racer snake	Coluber
	common kingsnake	Lampropeltis getulus
	whip snake	Masticophis flagellum
	garter snake	Thamnophis
	western rattlesnake	Crotalus viridus
	green sea turtle	Chelonia mydas
	tortoise	Testudinidae
Birds	hawk	Accipiter
	sea eagle	Haliaeetus
	greater white-fronted goose	Anser albifrons
	lesser scaup	Aythya affinis
	Canada goose	Branta canadensis
	sea duck	†Chendytes lawi
	white-winged scoter	Melanitta deglandi
	gull	Larus
	western willet	Catoptrophorus inornatus
	jaeger	Stercorarius
	quail	Lophortyx
	black-throated loon	Gavia arctica
	great northern loon	Gavia immer
	red-throated loon	Gavia stellata
	crow	Corvus
	blackbird	Agelaius
	Brandt's cormorant	Phalacrocorax penicillatus
	Del Rey gannet	†Morus reyana

Group	Common Name	Taxon
	western grebe	Aechmophorus occidentalis
	short-tailed albatross	Diomedea albatrus
	northern fulmar	Fulmarus glacialis
	sooty shearwater	Puffinus griseus
	black-vented shearwater	Puffinus opisthomelas

CONCLUSIONS AND RECOMMENDATIONS

The project geotechnical report confirms that the project is sited on Pleistocene Old Paralic Deposits (marine terrace deposits) to depths of approximately 20 feet below the modern surface (Group Delta 2015). All subsurface excavation anticipated for tower supports and underground parking have a high sensitivity to encounter paleontological resources.

As part of the grading permit application, the applicant shall retain a qualified paleontologist to provide a paleontological resources mitigation plan and implement that plan. An executed curation agreement shall be part of the plan and the project proponent shall bear all expenses of the mitigation program including curation of materials meeting significance criteria.

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