

PALEONTOLOGICAL RESOURCE ASSESSMENT FOR THE TOWNE CENTRE VIEW PROJECT

9855, 9875, AND 9885 TOWNE CENTRE DRIVE,
SAN DIEGO, CALIFORNIA

Project No. 624751
APNs 343-121-35, -36, -37, -38, -39, -42, and -43

Prepared for:

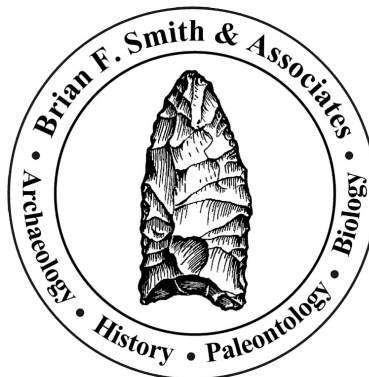
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Submitted to:

City of San Diego
Development Services Department
1222 First Avenue, MS 501
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January 29, 2021

Paleontological Database Information

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- Report Title:*** Paleontological Resource Assessment for the Towne Centre View Project, 9855, 9875, and 9885 Towne Centre Drive, San Diego, California; APNs 343-121-35, -36, -37, -38, -39, -42, and -43
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1222 First Avenue, MS 501
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- Lead Agency Identifier:*** Project No. 624751
- USGS Quadrangle:*** *Del Mar, California (7.5 minute)*
- Study Area:*** 56 acres, including the 33.5-acre Towne Centre View Project site and associated development impact area
- Key Words:*** High paleontological resource sensitivity; moderate paleontological resources sensitivity; City of San Diego; Eocene; Ardath Shale; Scripps Formation; Lindavista Formation.

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I. INTRODUCTION

This paleontological assessment report has been completed for the approximately 56-acre area that includes the 33.5-acre Towne Centre View Project site and associated development impact area (Project No. 624751), located at the northern terminus of Towne Centre Drive within the Golden Triangle area of the city of San Diego, San Diego County, California (Figures 1 to 3). The address of the project is 9855, 9875, and 9885 Towne Centre Drive (Assessor's Parcel Numbers 343-121-35, -36, -37, -38, -39, -42, and -43). On the U.S. Geological Survey, 7.5-minute, 1:24,000-scale *Del Mar, California* topographic quadrangle map, the project is located in Section 8 (projected), Township 15 South, Range 3 West, San Bernardino Base and Meridian (see Figure 2). An approximately 1.0 million square foot research and development (R&D) office campus is proposed for construction on the project. The development scope includes the demolition of the existing structures and the construction of several multiple-floor buildings. Much of the footprint of the proposed Towne Centre View Project was previously graded for the existing structures.

II. REGULATORY SETTING

The California Environmental Quality Act (CEQA), which is patterned after the National Environmental Policy Act, is the overriding environmental document that sets the requirement for protecting California's cultural and paleontological resources. The document does not establish specific rules that must be followed, but mandates that governing permitting agencies (lead agencies) set their own guidelines for the protection of nonrenewable paleontological resources under their jurisdiction.

State of California

Under Guidelines for the Implementation of CEQA, as amended December 2018 (California Code of Regulations [CCR] Title 14, Division 6, Chapter 3, Sections 15000 et seq.), procedures define the type of activities, persons, and public agencies required to comply with CEQA. Section 15063 of the CCR provides a process by which a lead agency may review a project's potential impact to the environment, whether the impacts are significant, and provide recommendations, if necessary. In the Environmental Checklist, one of the questions to answer is, "Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?" (Appendix G, Section V, Part c). California Public Resources Code (PRC) Section 5097.5 states:

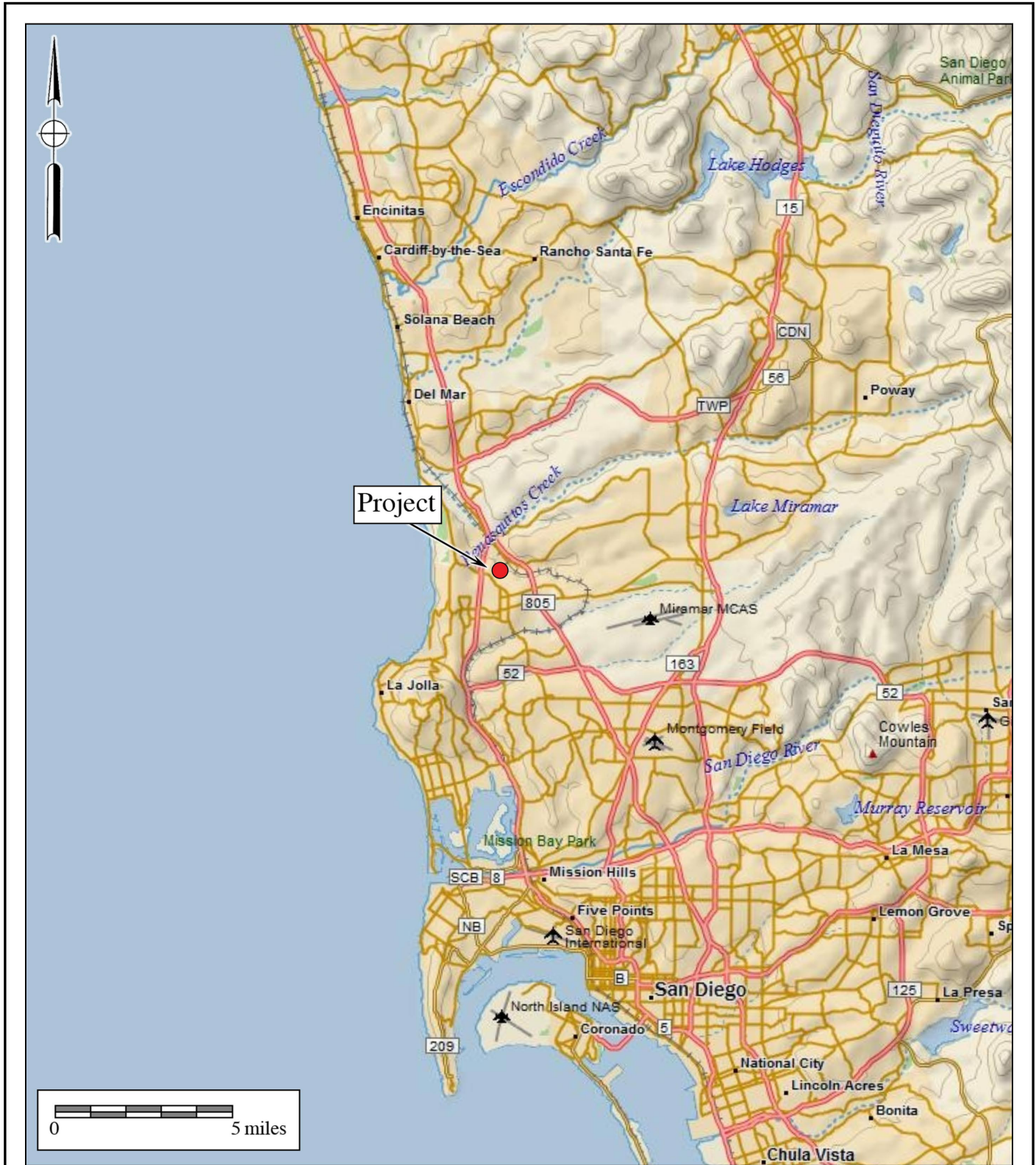


Figure 1
General Location Map
 The Towne Centre View Project
 DeLorme (1:250,000)



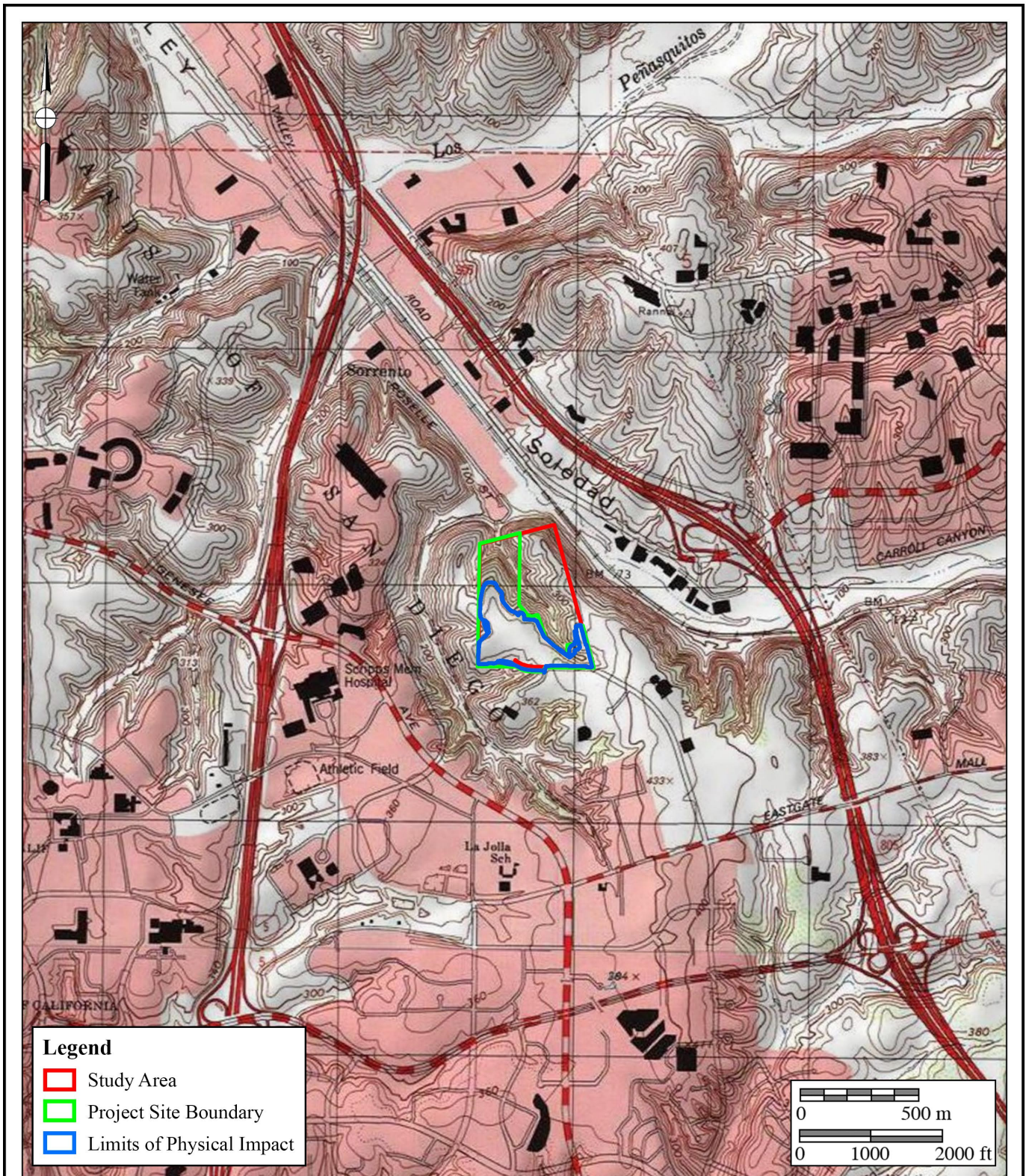


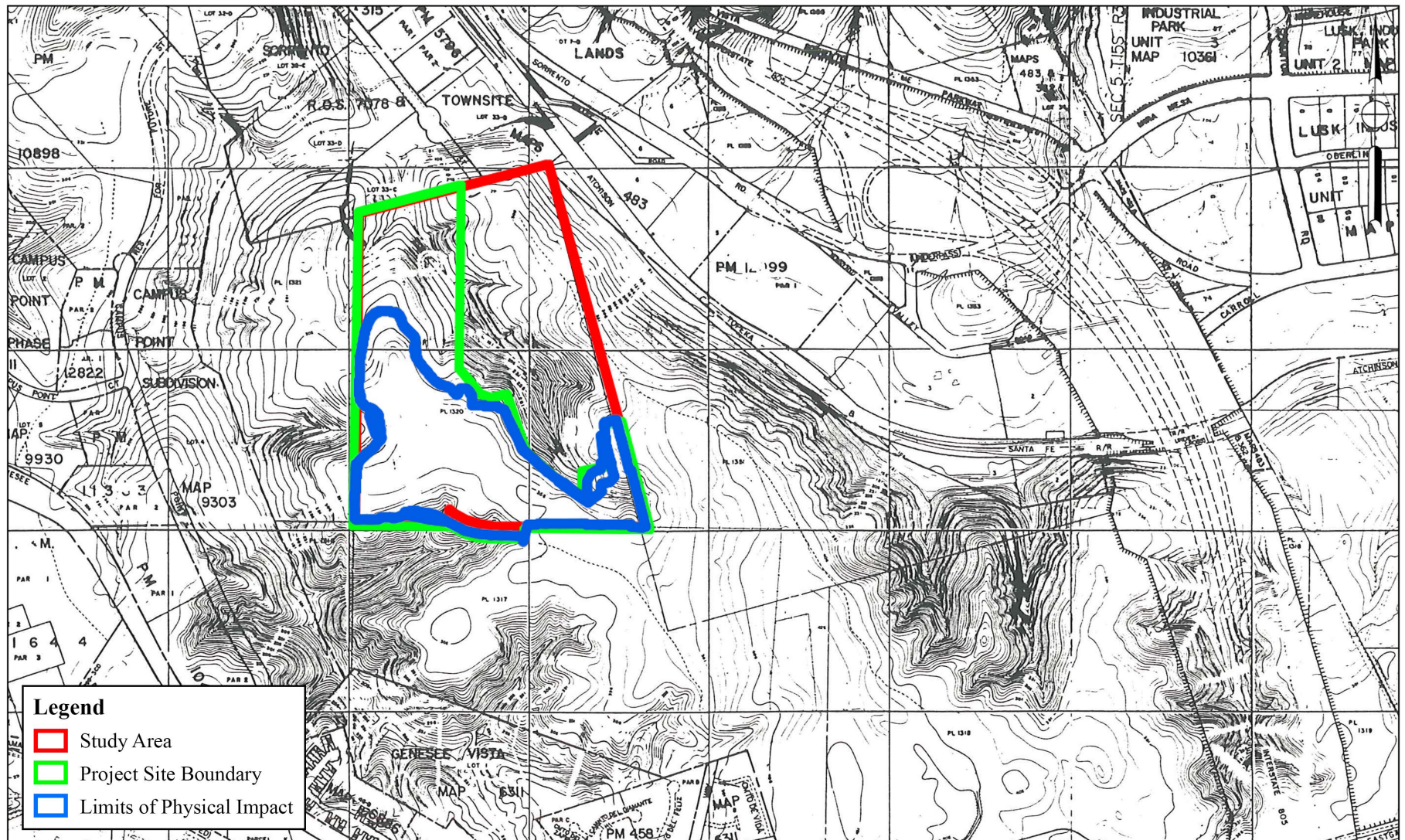
Figure 2

Project Location Map

The Towne Centre View Project

USGS *Del Mar* and *La Jolla* Quadrangles (7.5-minute series)





Legend

- ▭ Study Area
- ▭ Project Site Boundary
- ▭ Limits of Physical Impact

Figure 3

Project Location Map

The Towne Centre View Project

Shown on The City of San Diego 1" to 800' Scale Engineering Map



- a) No person shall knowingly and willfully excavate upon, or remove, destroy, injure or deface any historic or prehistoric ruins, burial grounds, archaeological or vertebrate paleontological site, including fossilized footprints, inscriptions made by human agency, rock art, or any other archaeological, paleontological or historical feature, situated on public lands, except with the express permission of the public agency having jurisdiction over such lands. Violation of this section is a misdemeanor.
- b) As used in this section, “public lands” means lands owned by, or under the jurisdiction of, the state, or any city, county, district, authority, or public corporation, or any agency thereof.
- c) As used in this section, “public lands” means lands owned by, or under the jurisdiction of, the state, or any city, county, district, authority, or public corporation, or any agency thereof.

City of San Diego

In accordance with CEQA, the City of San Diego established guidelines for potential impacts to paleontological resources (City of San Diego 2016). In this document, significance thresholds for ground disturbances and paleontological significance ratings for various geologic formations occurring within the city limits are established. In a final public environmental impact report (PEIR; City of San Diego 2007), the City provided detailed analyses and guidelines for geologic formations, the treatment and handling of fossils, and a framework for the mitigation process. This is an updated version of an earlier, stand-alone document (City of San Diego 2002).

The City’s online Land Development Manual, designed to assist in the processing and review of applications and establish requirements for the submittal of applications, additionally provides an appendix for paleontological resource grading guidelines (City of San Diego n.d. [Appendix C]), generally similar to the guidelines presented in the PEIR (City of San Diego 2007). City Ordinance O-20919 (City of San Diego 2018 [Appendix C]) updated the Land Development Manual’s paleontology appendix to include grading thresholds for paleontological resources, which were already available in other prior city documents (*e.g.*, City of San Diego 2002, 2007, 2016).

III. GEOLOGY

Geologic mapping of the region by Kennedy (1975) indicates the project is mapped as being underlain by three rock units (Figure 4). The east-west trending Torrey Pines fault is shown bisecting the project. Quaternary terrace deposits mapped as the Lindavista Formation cover the surface of the southern and eastern areas of the study area (yellow areas with blue dots labeled “Qln” on Figure 4). These terrace deposits are described as Quaternary very old paralic deposits by Kennedy and Tan (2008), equivalent to deposits of the Linda Vista and Tecolote marine terraces

(approximately 855,000 and 800,000 years old, respectively), and are composed of indurated, very fine to coarse-grained sands with lenses of gravels of cobbles derived from eastern sources of Eocene-aged conglomerates. Based on data recorded by staff of the Paleontology Department of the San Diego Natural History Museum (SDNHM) during the previous development at the project, the lower elevation of the Lindavista Formation ranged from approximately 341 to 346 feet, while the highest elevation recorded was 353.9 feet (McComas 2020a). Fossils from the Lindavista Formation are generally rare.

Eocene-aged marine formations underlie the Quaternary terrace deposits at the study area (Kennedy 1975). The Scripps Formation represents shallow to moderately deep marine sediments deposited approximately 47 million years ago, and are shown on Figure 4 as the blue formation labeled “Tsc” in the northern portion of the study area. The Scripps Formation is conformable with the underlying and slightly older, moderate to deep marine Ardath Shale, shown on Figure 4 as the green formation labeled “Ta.” In general, the Scripps Formation is mostly composed of sandstone with discontinuous basal conglomerates, while the Ardath Shale is mostly composed of siltstones and shales, with minor sandstone (Kennedy 1975). Fossils from the Scripps Formation and the Ardath Shale are locally common.

IV. PALEONTOLOGICAL RESOURCES

Definition

Paleontological resources are the remains of prehistoric life that have been preserved in geologic strata. These remains are called fossils and include bones, shells, teeth, and plant remains (including their impressions, casts, and molds) in the sedimentary matrix, as well as trace fossils such as footprints and burrows. Fossils are considered older than 5,000 years of age (Society of Vertebrate Paleontology 2010), but may include younger remains (subfossils) when viewed in the context of local extinction of the organism or habitat, for example. Fossils are considered a nonrenewable resource under state and city guidelines (Section II of this report, above).

Fossil Records Search

A project-specific paleontological records search was performed by the SDNHM (McComas 2020b; Appendix B). The collections search reviewed records of fossil localities held by the museum within one mile of the project boundaries. The results of the records search by the SDNHM indicate 84 fossil localities exist within one mile of the project, and include two within the proposed development area boundaries, all from the Eocene-aged marine formations. Complete summaries of the fossil-yielding potential of the Scripps Formation and the Ardath Shale can be found in the report by McComas (2020b) in Appendix B.

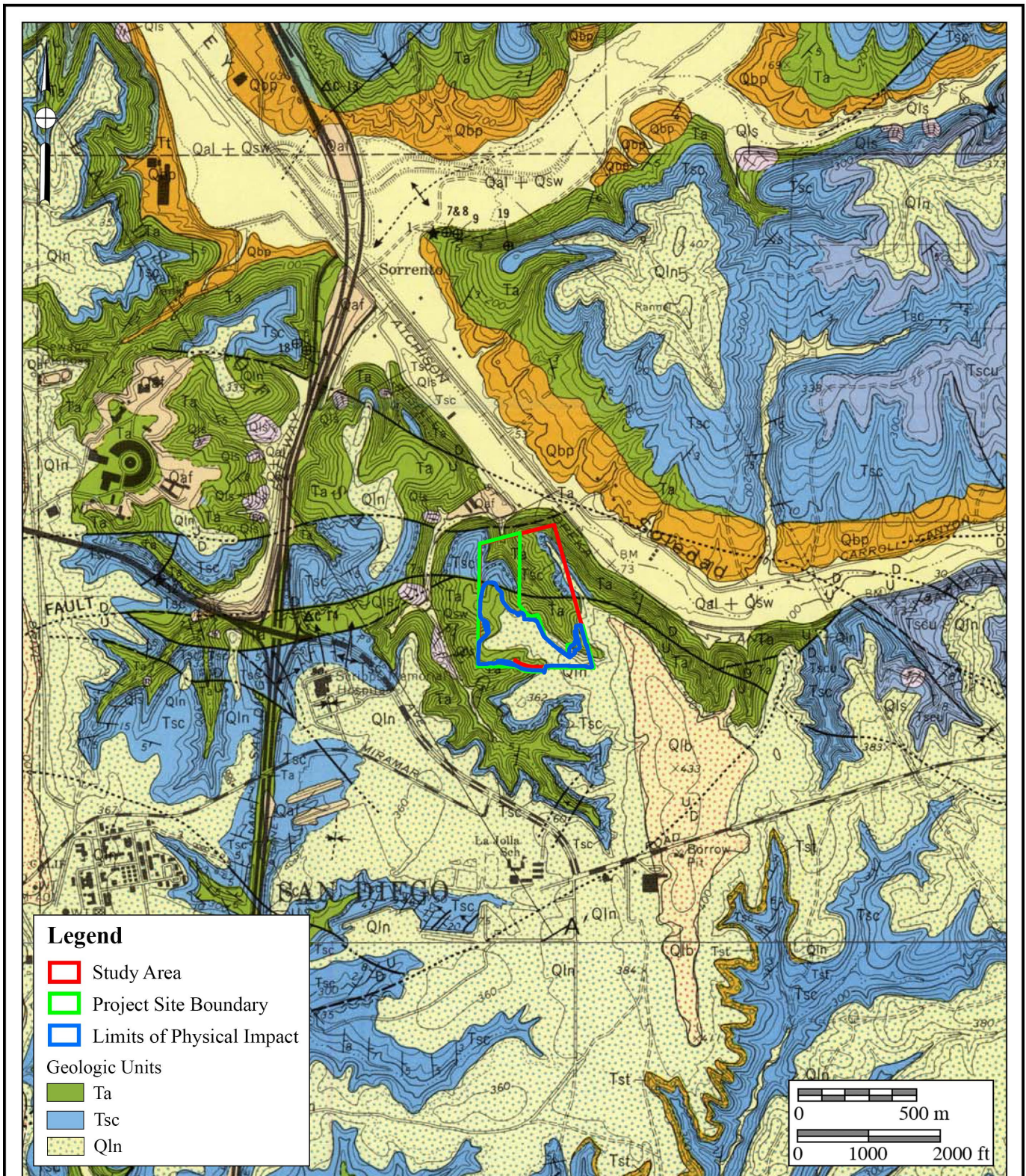


Figure 4

Geologic Map

The Towne Centre View Project

Geology after Kennedy (1975)



One on-site fossil locality is located in the southeast corner of the current proposed development area and was recovered during the Eastgate Acres development project in 1999, and is from the Scripps Formation (San Diego Society of Natural History locality [SDSNH loc.] 4316). This locality is reported to consist of various bivalve and gastropod mollusks, as well as crustacean burrows and terrestrial plant remains, according to the SDNHM online paleontological collections database (SDNHM n.d). The other on-site locality is SDSNH loc. 6126, collected from the Ardath Shale, is also mostly composed of bivalve and gastropod mollusks, as well as ghost shrimp and heart urchin remains (SDNHM n.d). Specimens from SDSNH loc. 6126 were collected in 2008 during the Summit Pointe Plaza construction project, and are located in the southwest corner of the current project. Fossils from both of these localities occurred in the form of molds and casts, as the shell material composing the organisms had long ago dissolved away as a result of geologic processes.

The records search indicated that the SDNHM does not have any fossil localities from the Lindavista Formation (Quaternary paralic deposits) within one mile of the Towne Centre View Project (McComas 2020b). An in-house records search revealed the closest known fossils from the Lindavista Formation are SDSNH locs. 4290 and 4291, located about 1.5 miles northwest of the project, consisting of impressions (molds and casts) of common shallow marine and tidal environment bivalve species. Their origin from the Lindavista Formation is notable in that fossils from this formation are rare (SDNHM n.d).

The SDNHM records search report by McComas (2020b) concluded that the current project has the potential to impact paleontological resources. In addition, the report indicated that “[a]ny proposed excavation activities that extent deep enough to encounter previously undisturbed deposits of these geologic units [i.e., below the depth of any previously imported artificial fill] have the potential to impact the paleontological resources preserved therein. If such excavation is required for Project construction, implementation of a complete paleontological resource mitigation program during ground disturbing activities is recommended” (McComas 2020b). This recommendation is based on the moderate to high paleontological resource sensitivities of the affected geological units and prior fossil localities from within and nearby the current project.

Field Survey

A field survey of the Towne Centre View Project was conducted on June 25, 2020, by personnel supervised by Todd A. Wirths, a qualified City of San Diego paleontologist and Principal Investigator. No fossils were observed during the field survey. This is not surprising since the fossil types expected to potentially occur at the project would normally disintegrate within a few weeks if left exposed at the surface, based on the molds and casts of invertebrate fossils composing SDSNH locs. 4316 and 6126 previously collected at the project.

V. PALEONTOLOGICAL SENSITIVITY

Overview

The degree of paleontological sensitivity of any particular area is based on a number of factors, including the documented presence of fossiliferous resources on a site or in nearby areas, the presence of documented fossils within a particular geologic formation or lithostratigraphic unit, and whether or not the original depositional environment of the sediments is one that might have been conducive to the accumulation of organic remains that might have become fossilized over time. Both the Scripps Formation and the Ardatth Shale are potentially very fossiliferous, yielding a variety of microfossils, bryozoa, coral, mollusks, crabs, and fish, as well as fossil plants (Hanna 1927; Quayle 1932; Bukry and Kennedy 1969; Fitch 1969; Givens and Kennedy 1979; Squires 1991; Schweitzer and Feldman 2002).

Late Quaternary (Holocene) alluvium is generally considered to be geologically too young to contain significant nonrenewable paleontological resources (i.e., fossils) and is thus typically assigned a low paleontological sensitivity. The older, Pleistocene (more than 11,700 years old) terrace and fluvial deposits in San Diego County, however, often yield important Ice Age terrestrial vertebrate fossils, such as extinct mammoths, mastodons, giant ground sloths, extinct species of horse, bison, camel, and others (Deméré, et al. 2013; SDNHM n.d.). The only published report on the paleontology of the middle Quaternary (more than 500,000 years old) Lindavista Formation is that by Kennedy (1973) for marine molluscan fossils found in the Tierrasanta area of San Diego.

Professional Standard

The Society of Vertebrate Paleontology drafted guidelines outlining procedures that include:

[E]valuating the potential for impacts of a proposed action on paleontological resources and for mitigating those impacts. Impact mitigation includes pre-project survey and salvage, monitoring and screen washing during excavation to salvage fossils, conservation and inventory, and final reports and specimen curation. The objective of these procedures is to offer standard methods for assessing potential impacts to fossils and mitigating these impacts. (Society of Vertebrate Paleontology 2010)

The guidelines include four categories of paleontological sensitivity for geologic units (formations) that might be impacted by a proposed project, as listed below:

- High Potential: Rock units from which vertebrate or significant invertebrate, plant, or trace fossils have been recovered.
- Undetermined Potential: Rock units for which little information is available concerning

their paleontological content, geologic age, and depositional environment, and that further study is needed to determine the potential of the rock unit.

- *Low Potential:* Rock units that are poorly represented by fossil specimens in institutional collections or based upon a general scientific consensus that only preserve fossils in rare circumstances.
- *No Potential:* Rock units that have no potential to contain significant paleontological resources, such as high-grade metamorphic rocks and plutonic igneous rocks.

City of San Diego Assessment

The City of San Diego has applied a paleontological sensitivity rating system for all the rock formations within the city limits (City of San Diego 2002, 2007, 2016, 2018). Ratings of “high,” “moderate,” and “low” sensitivity are based on a formation’s past proclivity to yield fossils, and potential for grading activities to significantly impact paleontological resources that a formation may contain. In some cases, formations may have two sensitivity ratings depending on specific neighborhoods. The Scripps Formation and the Ardath Shale are assigned a high paleontological sensitivity, whereas the paralic deposits of the Lindavista Formation in this area of San Diego are assigned a moderate sensitivity (City of San Diego 2002, 2007, 2016, 2018).

The City requires paleontological mitigation monitoring when formations are assigned high or moderate paleontological sensitivity ratings, but implementation of monitoring depends on the amount of grading proposed (City of San Diego n.d., 2002, 2007, 2016, 2018). Paleontological monitoring is not required for grading in formations with a low sensitivity rating. Thresholds triggering the monitoring requirement for grading in formations with a high or moderate sensitivity are established as follows:

- For formations with a high sensitivity rating, monitoring is required when grading disturbs more than 1,000 cubic yards and is 10 feet or greater in depth;
- For formations with a moderate sensitivity rating, monitoring is required when grading disturbs more than 2,000 cubic yards and is 10 feet or greater in depth;
- When a fossil locality is mapped (“Kennedy maps”) on or nearby the project (City of San Diego 2002, 2007, 2016) or when grading occurs within 100 feet of a mapped fossil locality (City of San Diego 2018), full-time monitoring is required; and
- Monitoring may be required when shallow grading (less than 10 feet deep) occurs at sites that were previously graded and unweathered formations are present at the surface (City of San Diego 2002).

VI. CONCLUSIONS AND RECOMMENDATIONS

A recent geotechnical report for the Towne Centre View Project indicated that grading for the project “will consists of cuts and fills on the order of 50 and 15 feet, respectively” (Love et al.

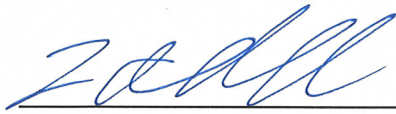
2020). Geotechnical exploratory borings conducted by Geocon Inc. indicated the presence of previously placed and undocumented fill to depths as shallow as five feet at the project; furthermore, some geotechnical borings encountered formational sediments at-grade level (Love et al. 2020). Therefore, grading and excavation activities at the proposed Towne Centre View Project will significantly impact the underlying geologic formations. The formations that would be impacted include the Quaternary-aged Lindavista Formation, the Eocene-aged Scripps Formation, and the Eocene-aged Ardath Shale. Based on their potential to yield significant paleontological resources, the Lindavista Formation is assigned a moderate paleontological sensitivity, while the Scripps Formation and the Ardath Shale are assigned a high paleontological sensitivity by the City of San Diego, in agreement with Society of Vertebrate Paleontology guidelines (Society of Vertebrate Paleontology 2010). Fossils have previously been recovered at within the proposed development area, and over 80 fossil localities have been recovered from within one mile of the study area, from the same Eocene geologic formations as those underlying the project. Therefore, grading activities at the project have the potential to significantly impact paleontological resources. On this basis, a Mitigation Monitoring and Reporting Program (MMRP) is recommended for implementation at the project, prior to issuance of applicable grading and demolition permits. Full-time monitoring for paleontological resources in undisturbed formations is recommended, starting at the surface.

The recommended MMRP shall follow the guidelines established by the City of San Diego (n.d., 2002, 2007, 2018). Guidelines for paleontology by the City are quite comprehensive; therefore, “General Grading Guidelines for Paleontological Resources” (City of San Diego n.d.) and the subsequent ordinance (Ordinance No. O-20919; City of San Diego 2018) is provided in Appendix C.

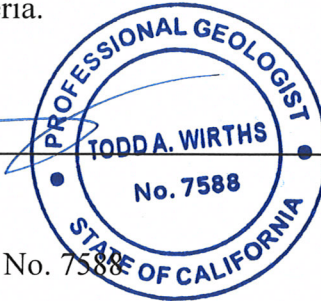
Based upon the grading that occurred at the project for the previous developments and the location of the Eocene invertebrate fossils collected during that period (1999 and 2008), the current surface layout of the Lindavista Formation may not reflect that shown as mapped on Figure 4. It is even possible that almost all the Lindavista Formation has been graded away. According to SDNHM records for SDSNH loc. 6126, the locality has been buried by an unstated thickness of fill (McComas 2020a). This scenario, if present, would not change the monitoring recommendations or the MMRP for monitoring of undisturbed formations; however, paleontological mitigation monitoring of the grading of fill materials present at the project is not warranted.

VII. CERTIFICATION

I hereby certify that the statements furnished above and in the attached exhibits present the data and information required for this paleontological report, and that the facts, statements, and information presented are true and correct to the best of my knowledge and belief, and have been compiled in accordance with CEQA criteria.



Todd A. Wirths
Senior Paleontologist
California Professional Geologist No. 7588



January 29, 2021

Date

VIII. REFERENCES

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APPENDIX A

Qualifications of Key Personnel

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Education

Master of Science, Geological Sciences, San Diego State University, California 1995

Bachelor of Arts, Earth Sciences, University of California, Santa Cruz 1992

Professional Certifications

California Professional Geologist #7588, 2003

Riverside County Approved Paleontologist

San Diego County Qualified Paleontologist

Orange County Certified Paleontologist

OSHA HAZWOPER 40-hour trained; current 8-hour annual refresher

Professional Memberships

Board member, San Diego Geological Society

San Diego Association of Geologists; past President (2012) and Vice President (2011)

South Coast Geological Society

Southern California Paleontological Society

Experience

Mr. Wirths has more than a dozen years of professional experience as a senior-level paleontologist throughout southern California. He is also a certified California Professional Geologist. At BFSa, Mr. Wirths conducts on-site paleontological monitoring, trains and supervises junior staff, and performs all research and reporting duties for locations throughout Los Angeles, Ventura, San Bernardino, Riverside, Orange, San Diego, and Imperial Counties. Mr. Wirths was formerly a senior project manager conducting environmental investigations and remediation projects for petroleum hydrocarbon-impacted sites across southern California.

Selected Recent Reports

2019 *Paleontological Assessment for the Eastvale Self Storage Project, City of Eastvale, Riverside County, California.* Prepared for Gossett Development, Inc. Report on file at Brian F. Smith and Associates, Inc., Poway, California.

2019 *Paleontological Resource Impact Mitigation Monitoring Program for the IPT Perris DC III Western/Nandina Project, Perris, Riverside County, California.* Prepared for IPT/Black Creek Group. Report on file at Brian F. Smith and Associates, Inc., Poway, California.

- 2019 *Paleontological Assessment for the 10407 Elm Avenue Project, City of Fontana, San Bernardino County, California.* Prepared for Advantage Environmental Consultants, Inc. Report on file at Brian F. Smith and Associates, Inc., Poway, California.
- 2019 *Paleontological Assessment for the 10575 Foothill Boulevard Project, City of Rancho Cucamonga, San Bernardino County, California.* Prepared for T&B Planning, Inc. Report on file at Brian F. Smith and Associates, Inc., Poway, California.
- 2019 *Paleontological Resource Impact Mitigation Program (PRIMP) for the Speedway TPM 37676 Project, Temescal Valley, Riverside County, California.* Prepared for Speedway Development. Report on file at Brian F. Smith and Associates, Inc., Poway, California.
- 2019 *Paleontological Assessment for the Natwar Project, Perris, Riverside County, California.* Prepared for Advantage Environmental Consultants, LLC. Report on file at Brian F. Smith and Associates, Inc., Poway, California.
- 2019 *Paleontological Resource and Mitigation Monitoring Assessment, Beyond Food Mart, City of Perris, Riverside County, California.* Prepared for T&B Planning, Inc. Report on file at Brian F. Smith and Associates, Inc., Poway, California.
- 2019 *Paleontological Assessment for the MorningStar Marguerite Project, Mission Viejo, Orange County, California.* Prepared for T&B Planning. Report on file at Brian F. Smith and Associates, Inc., Poway, California.
- 2019 *Paleontological Monitoring Report for the West Markham Project (TR 33587), City of Perris, Riverside County, California.* Prepared for Markham JP/ARA, LLC. Report on file at Brian F. Smith and Associates, Inc., Poway, California.
- 2019 *Paleontological Monitoring and Mitigation Report for the Artesa at Menifee Town Center Project Site, Sherman Road and La Piedra Road, Menifee, Riverside County, California.* Prepared for MBK Real Estate. Report on file at Brian F. Smith and Associates, Inc., Poway, California.
- 2019 *Paleontological Monitoring Report, Diarq Residence, La Jolla, City of San Diego, San Diego County, California.* Prepared for West Way Drive, LLC. Report on file at Brian F. Smith and Associates, Inc., Poway, California.
- 2019 *Paleontological Monitoring Report for the Nimitz Crossing Project, City of San Diego.* Prepared for Voltaire 24, LP. Report on file at Brian F. Smith and Associates, Inc., Poway, California.
- 2019 *Paleontological Resource Impact Mitigation Program (PRIMP) for the Jack Rabbit Trail Logistics Center Project, City of Beaumont, Riverside County, California.* Prepared for JRT BP 1, LLC. Report on file at Brian F. Smith and Associates, Inc., Poway, California.
- 2020 *Paleontological Monitoring Report for the Oceanside Beachfront Resort Project, Oceanside, San California.* Prepared for S.D. Malkin Properties. Report on file at Brian F. Smith and Associates, Inc., Poway, California.
- 2020 *Paleontological Resource Impact Mitigation Program for the Nakase Project, Lake Forest, Orange County, San California.* Prepared for Glenn Lukos Associates, Inc. Report on file at Brian F. Smith and Associates, Inc., Poway, California.

APPENDIX B

Records Search Report

SAN DIEGO NATURAL HISTORY MUSEUM

22 June 2020

Todd Wirths
Brian F. Smith and Associates, Inc.
14010 Poway Road
Poway, California 92064

RE: Paleontological Records Search – Towne Centre (Project 20-103)

Dear Mr. Wirths:

This letter presents the results of a paleontological records search conducted for the Towne Centre project (Project), located in the northern portion of the University City Neighborhood, within the University Community Planning Area of the City of San Diego, San Diego County, California. The Project site is located at 9855, 9875, and 9885 Towne Centre Drive, and is bordered to the west, north, and east by undeveloped land, and to the south by Towne Centre Drive.

Methods

A review of published geological maps covering the Project site and surrounding area was conducted to determine the specific geologic units underlying the Project site. Each geologic unit was subsequently assigned a paleontological resource sensitivity following City of San Diego guidelines (City of San Diego, 2016). In addition, a search of the paleontological collection records housed at the San Diego Natural History Museum (SDNHM) was conducted in order to determine if any documented fossil collection localities occur at the Project site or within the immediate surrounding area.

Results

Published geological reports (e.g., Kennedy and Tan, 2008) covering the Project area indicate that the proposed Project has the potential to impact middle Pleistocene-age very old paralic deposits (broadly equivalent to the Lindavista Formation), the middle Eocene-age Scripps Formation, and the middle Eocene-age Ardath Shale. These geologic units and their paleontological sensitivity are summarized below. The SDNHM has total of 84 recorded fossil localities from the Scripps Formation and Ardath Shale (or undifferentiated deposits of these geologic units) within one mile of the Project site, discussed in more detail below.

very old paralic deposits (Lindavista Formation) – The marine and/or non-marine terrace deposits of the early to middle Pleistocene-age Lindavista Formation underlie the highest elevation southern and northeastern portions of the Project site at the surface. More specifically, these deposits rest on the Lindavista terrace (approximately 855,000 years old) and Tecolote terrace (approximately 800,000 years old) of Kern and Rockwell (1992), and are broadly equivalent (respectively) to units 9 and 10, very old paralic deposits, of Kennedy and Tan (2008). The SDNHM does not have any recorded fossil collection localities from the Lindavista Formation within a 1-mile radius of the Project site. Elsewhere in San Diego County, the Lindavista Formation has produced remains of nearshore marine invertebrates (e.g., clams, scallops, snails, barnacles, and sand dollars), as well as sparse remains of marine vertebrates (e.g., sharks and baleen whales). Fossils have primarily been recovered from localities in Tierrasanta and

Mira Mesa where the Lindavista Formation is assigned a high paleontological sensitivity; elsewhere in San Diego County, including in the vicinity of the Project site, the Lindavista Formation is assigned a moderate paleontological sensitivity.

Scripps Formation – The marine continental shelf deposits of the early middle Eocene-age (approximately 47 million years old) Scripps Formation are exposed in the northern portion of the Project site, where they overlie the Ardath Shale. The SDNHM has 38 fossil collection localities from the Scripps Formation within a 1-mile radius of the Project site, which yielded trace fossils (e.g., naticid borings, burrows, arthropod trackways, and a coprolite) and fossil impressions or remains of plants (e.g., seeds, leaves, and woody debris of vascular plants, including horsetail, magnolia, and tropical almond), marine invertebrates (e.g., foraminifers, snails, clams, mussels, oysters, tusk shells, nautilus, shrimp, crabs, and heart urchins), and marine vertebrates (e.g., sharks, rays, and bony fish). One of these localities is located in the southeastern portion of the Project site: SDSNH Locality 4316, unearthed during construction of the Eastgate Acres industrial/office development in 1999). An additional five fossil collection localities from undifferentiated deposits of the Scripps Formation and Ardath Shale are located within a 1-mile radius of the Project site, and yielded a similar assemblage of marine invertebrates. The Scripps Formation regularly produces fossil remains of marine organisms (e.g., clams, snails, crabs, sharks, rays, and bony fish). Remains of fossil reptiles (e.g., crocodiles and turtles) and terrestrial mammals (e.g., uinatheres, brontotheres, rhinoceroses, and artiodactyls) have also been recovered from the Scripps Formation. Based on the diverse fossil assemblages known from this unit, as well as the co-occurrence of marine invertebrate and terrestrial vertebrate fossils, the Scripps Formation has been assigned a high paleontological sensitivity.

Ardath Shale – The marine outer shelf deposits of the middle Eocene-age (approximately 48 to 47 million years old) Ardath Shale are exposed across the majority of the Project site. The SDNHM has 41 fossil collection localities from the Ardath Shale within a 1-mile radius of the Project site, which yielded trace fossils (e.g., naticid, worm, and sponge borings, burrows, and fecal pellets) and fossil impressions or remains of plants (e.g., seeds, leaves, and woody debris of vascular plants, including magnolia, tropical mangrove, and tropical almond), marine invertebrates (e.g., foraminifers, sponges, bryozoans, brachiopods, snails, clams, mussels, oysters, tusk shells, nautilus, shrimp, crabs, and heart urchins), and marine vertebrates (e.g., sharks and bony fish), and an isolated rodent incisor. One of these localities is located in the southwestern portion of the Project site: SDSNH Locality 6126, discovered during 2008 grading for the construction of Summit Pointe Plaza). The Ardath Shale has been assigned a high paleontological sensitivity for the diverse and well-preserved fossils of marine invertebrates it produces.

Summary and Recommendations

The high paleontological sensitivity of the Scripps Formation and Ardath Shale and the moderately paleontological sensitivity of the Lindavista Formation in San Diego County (Deméré and Walsh, 1993), as well as the presence of fossil collection localities within the Project site and nearby, suggests the potential for construction of the proposed Project to result in impacts to paleontological resources. Any proposed excavation activities that extend deep enough to encounter previously undisturbed deposits of these geologic units (i.e., below the depth of any previously imported artificial fill) have the potential to impact the paleontological resources preserved therein. If such excavation is

required for Project construction, implementation of a complete paleontological resource mitigation program during ground-disturbing activities is recommended.

The fossil collection locality information contained within this paleontological record search should be considered private and is the sole property of the San Diego Natural History Museum. Any use or reprocessing of information contained within this document beyond the scope of the Towne Centre project is prohibited.

If you have any questions concerning these findings please feel free to contact me at kmccomas@sdnhm.org.

Sincerely,

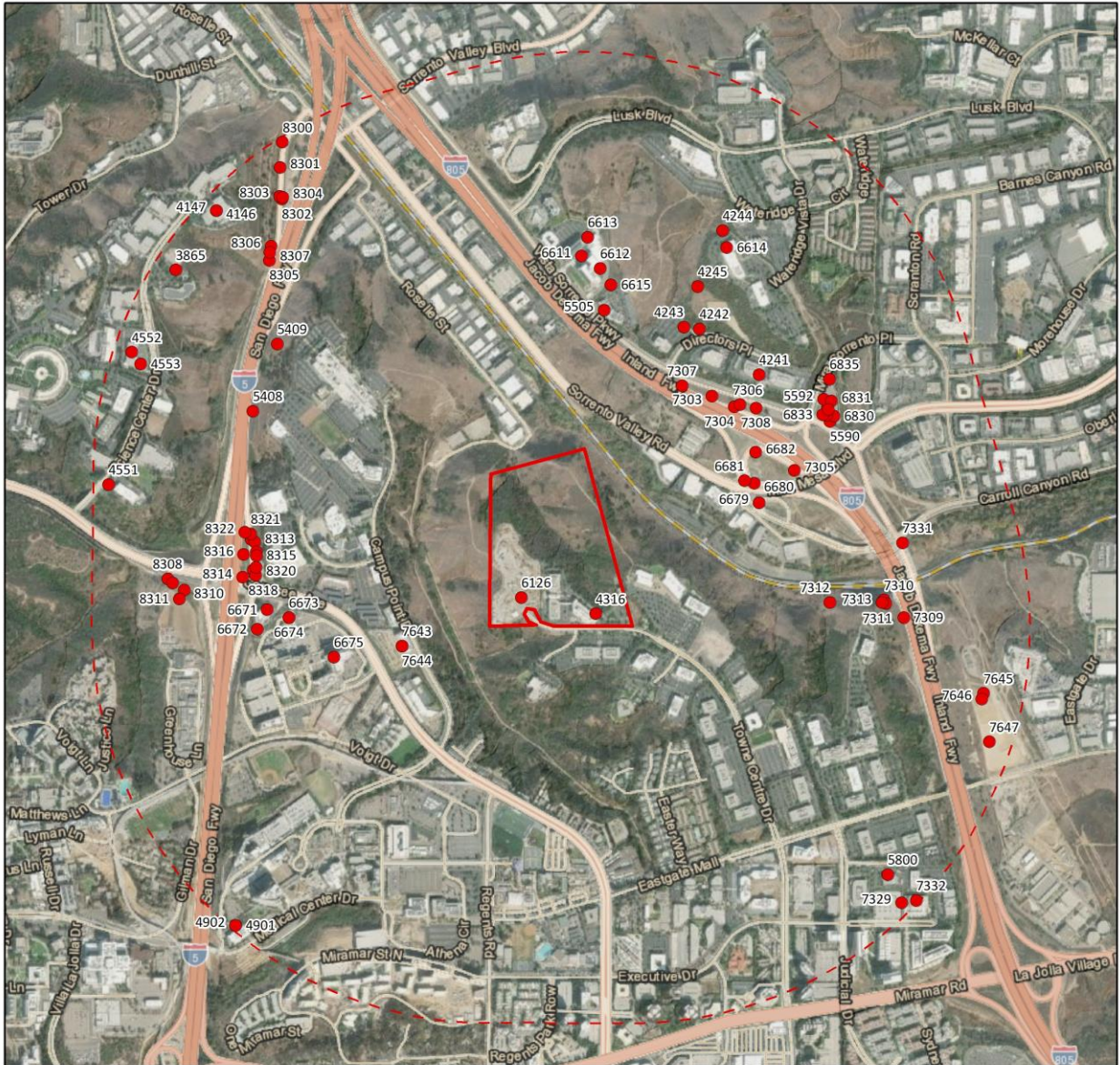


Katie McComas, M.S.
Paleontological Report Writer & GIS Specialist
San Diego Natural History Museum

*Enc: Figure 1: Project map
Appendix: List of SDNHM fossil localities in the vicinity of the Project*

Literature Cited

- City of San Diego. 2016. California Environmental Quality Act, Significance Determination Thresholds. Development Services Department, 86 p.
- Deméré, T.A., and S.L. Walsh. 1993. Paleontological Resources, County of San Diego. Unpublished technical report prepared for the San Diego County Department of Public Works: 1–68.
- Kennedy, M.P., and Tan, S.S. 2008. Geologic Map of the San Diego 30' x 60' Quadrangle, California. California Geological Survey, Regional Geologic Map Series 1:100,000 scale, map no. 3.
- Kern, J.P., and Rockwell, T.K. 1992. Chronology and deformation of Quaternary marine shorelines, San Diego County, California. In, Quaternary Coasts of the United States: Marine and Lacustrine Systems. Society of Economic Paleontologists and Mineralogists, Special Publication 48: 377–382.
- San Diego Natural History Museum (SDNHM), unpublished paleontological collections data.

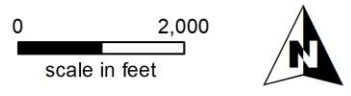


Sources: World Transportation, World Imagery, and Terrain Hillshade, Esri et al., 2020

- Project boundary
- 1 mile radius buffer
- SDSNH localities



Figure 1: Project Map
 Towne Centre
 City of San Diego, San Diego County, California



Appendix: Locality List
San Diego Natural History Museum
Department of Paleontology

Locality Number	Locality Name	Location	Elevation (feet)	Geologic Unit	Era	Period	Epoch
4146	Advanced Tissue Studies # 2	City of San Diego, San Diego County, California	276	Scripps Formation	Cenozoic	Paleogene	Eocene
4147	Advanced Tissue Studies # 1	City of San Diego, San Diego County, California	282	Scripps Formation	Cenozoic	Paleogene	Eocene
4316	Eastgate Acres	City of San Diego, San Diego County, California	343	Scripps Formation	Cenozoic	Paleogene	Eocene
4552	Torrey Pines Science Center Lot 18, No 1	City of San Diego, San Diego County, California		Scripps Formation	Cenozoic	Paleogene	middle Eocene
4901	UCSD Veterans Affairs Medical Center	City of San Diego, San Diego County, California	290	Scripps Formation	Cenozoic	Paleogene	Eocene
5590	Mira Sorrento Place	City of San Diego, San Diego County, California	188	Scripps Formation	Cenozoic	Paleogene	middle Eocene
5591	Mira Sorrento Place	City of San Diego, San Diego County, California	250	Scripps Formation	Cenozoic	Paleogene	middle Eocene
5592	Mira Sorrento Place	City of San Diego, San Diego County, California	198	Scripps Formation	Cenozoic	Paleogene	middle Eocene
5800	La Jolla Commons	City of San Diego, San Diego County, California	358	Scripps Formation	Cenozoic	Paleogene	middle Eocene
6672	Scripps La Jolla Cardiovascular Institute	City of San Diego, San Diego County, California	297	Scripps Formation	Cenozoic	Paleogene	middle Eocene
6673	Scripps La Jolla Cardiovascular Institute	City of San Diego, San Diego County, California	299	Scripps Formation	Cenozoic	Paleogene	middle Eocene
6674	Scripps La Jolla Cardiovascular Institutue	City of San Diego, San Diego County, California	320	Scripps Formation	Cenozoic	Paleogene	middle Eocene
6675	Scripps La Jolla Cardiocascular Institute	City of San Diego, San Diego County, California	329	Scripps Formation	Cenozoic	Paleogene	middle Eocene
6830	SDG&E Mira Sorrento Substation	City of San Diego, San Diego County, California	160	Scripps Formation	Cenozoic	Paleogene	middle Eocene
6831	SDG&E Mira Sorrento Substation	City of San Diego, San Diego County, California	168	Scripps Formation	Cenozoic	Paleogene	middle Eocene
6832	SDG&E Mira Sorrento Substation	City of San Diego, San Diego County, California	195	Scripps Formation	Cenozoic	Paleogene	middle Eocene
6833	SDG&E Mira Sorrento Substation	City of San Diego, San Diego County, California	194	Scripps Formation	Cenozoic	Paleogene	middle Eocene
6834	SDG&E Mira Sorrento Substation	City of San Diego, San Diego County, California	201	Scripps Formation	Cenozoic	Paleogene	middle Eocene
6835	SDG&E Mira Sorrento Substation	City of San Diego, San Diego County, California	182	Scripps Formation	Cenozoic	Paleogene	middle Eocene
7304	Skanska I805N HOV BRT	City of San Diego, San Diego County, California	166	Scripps Formation	Cenozoic	Paleogene	middle Eocene
7305	Skanska I805N HOV BRT	City of San Diego, San Diego County, California	180	Scripps Formation	Cenozoic	Paleogene	middle Eocene
7306	Skanska I805N HOV BRT	City of San Diego, San Diego County, California	180	Scripps Formation	Cenozoic	Paleogene	middle Eocene
7307	Skanska I805N HOV BRT	City of San Diego, San Diego County, California	150	Scripps Formation	Cenozoic	Paleogene	middle Eocene
7308	Skanska I805N HOV BRT	City of San Diego, San Diego County, California	169	Scripps Formation	Cenozoic	Paleogene	middle Eocene
7309	Skanska I805N HOV BRT	City of San Diego, San Diego County, California	248	Scripps Formation	Cenozoic	Paleogene	middle Eocene

Appendix: Locality List
San Diego Natural History Museum
Department of Paleontology

Locality Number	Locality Name	Location	Elevation (feet)	Geologic Unit	Era	Period	Epoch
7310	Skanska I805N HOV BRT	City of San Diego, San Diego County, California	275	Scripps Formation	Cenozoic	Paleogene	middle Eocene
7311	Skanska I805N HOV BRT	City of San Diego, San Diego County, California	280	Scripps Formation	Cenozoic	Paleogene	middle Eocene
7312	Skanska I805N HOV BRT	City of San Diego, San Diego County, California	285	Scripps Formation	Cenozoic	Paleogene	middle Eocene
7313	Skanska I805N HOV BRT	City of San Diego, San Diego County, California	300	Scripps Formation	Cenozoic	Paleogene	middle Eocene
7329	Nexus Esplanade	City of San Diego, San Diego County, California	302	Scripps Formation	Cenozoic	Paleogene	middle Eocene
7331	Nexus Esplanade	City of San Diego, San Diego County, California	352	Scripps Formation	Cenozoic	Paleogene	middle Eocene
7332	Nexus Esplanade	City of San Diego, San Diego County, California	358	Scripps Formation	Cenozoic	Paleogene	middle Eocene
8321	Caltrans I-5/Genesee Ave Interchange	City of San Diego, San Diego County, California	269	Scripps Formation	Cenozoic	Paleogene	middle Eocene
8322	Caltrans I-5/Genesee Ave Interchange	City of San Diego, San Diego County, California	278	Scripps Formation	Cenozoic	Paleogene	middle Eocene
7644	9880 Campus Point Drive	City of San Diego, San Diego County, California	299	Scripps Formation	Cenozoic	Paleogene	middle Eocene
7645	NCPWF Geotechnical Investigation, Eastgate Mall	City of San Diego, San Diego County, California	366	Scripps Formation	Cenozoic	Paleogene	middle Eocene
7646	NCPWF Geotechnical Investigation, Eastgate Mall	City of San Diego, San Diego County, California	377	Scripps Formation	Cenozoic	Paleogene	middle Eocene
7647	NCPWF Geotechnical Investigation, Eastgate Mall	City of San Diego, San Diego County, California	376	Scripps Formation	Cenozoic	Paleogene	middle Eocene
4241	Corporate Research Park	City of San Diego, San Diego County, California	203	Scripps/Ardath	Cenozoic	Paleogene	middle Eocene
4242	Corporate Research Park	City of San Diego, San Diego County, California	190	Scripps/Ardath	Cenozoic	Paleogene	middle Eocene
4243	Corporate Research Park	City of San Diego, San Diego County, California	205	Scripps/Ardath	Cenozoic	Paleogene	middle Eocene
4244	Corporate Research Park	City of San Diego, San Diego County, California	363	Scripps/Ardath	Cenozoic	Paleogene	middle Eocene
4245	Corporate Research Park	City of San Diego, San Diego County, California	270	Scripps/Ardath	Cenozoic	Paleogene	middle Eocene
3865	Neurocrine Biosciences	City of San Diego, San Diego County, California	286	Ardath Shale	Cenozoic	Paleogene	middle Eocene
4551	Torrey Pines Science Center Lot 12, No 1	City of San Diego, San Diego County, California	280	Ardath Shale	Cenozoic	Paleogene	middle Eocene
4553	Torrey Pines Science Center Lot 18, No 2	City of San Diego, San Diego County, California	275	Ardath Shale	Cenozoic	Paleogene	middle Eocene
4902	UCSD Veterans Affairs Medical Center	City of San Diego, San Diego County, California	290	Ardath Shale	Cenozoic	Paleogene	Eocene
5408	I-5 between Genesee St. & I-805	City of San Diego, San Diego County, California	193	Ardath Shale	Cenozoic	Paleogene	middle Eocene
5409	I-5 between Genesee St. & I-805	City of San Diego, San Diego County, California	260	Ardath Shale	Cenozoic	Paleogene	Eocene
5505	Dunham Parking Garage	City of San Diego, San Diego County, California	358	Ardath Shale	Cenozoic	Paleogene	middle Eocene

Appendix: Locality List
San Diego Natural History Museum
Department of Paleontology

Locality Number	Locality Name	Location	Elevation (feet)	Geologic Unit	Era	Period	Epoch
6126	Summit Pointe Plaza	City of San Diego, San Diego County, California	321	Ardath Shale	Cenozoic	Paleogene	middle Eocene
6611	SDPOB	City of San Diego, San Diego County, California	124	Ardath Shale	Cenozoic	Paleogene	middle Eocene
6612	SDPOB	City of San Diego, San Diego County, California	130	Ardath Shale	Cenozoic	Paleogene	middle Eocene
6613	SDPOB	City of San Diego, San Diego County, California	141	Ardath Shale	Cenozoic	Paleogene	middle Eocene
6614	SDPOB	City of San Diego, San Diego County, California	145	Ardath Shale	Cenozoic	Paleogene	middle Eocene
6615	SDPOB	City of San Diego, San Diego County, California	157	Ardath Shale	Cenozoic	Paleogene	middle Eocene
6671	Scripps La Jolla Cardiovascular Institute	City of San Diego, San Diego County, California	256	Ardath Shale	Cenozoic	Paleogene	middle Eocene
6679	Caltrans 805 Carroll Canyon Road	City of San Diego, San Diego County, California	82	Ardath Shale	Cenozoic	Paleogene	middle Eocene
6680	Caltrans 805 Carroll Canyon Road	City of San Diego, San Diego County, California	101	Ardath Shale	Cenozoic	Paleogene	middle Eocene
6681	Caltrans 805 Carroll Canyon Road	City of San Diego, San Diego County, California	111	Ardath Shale	Cenozoic	Paleogene	middle Eocene
6682	Caltrans 805 Carroll Canyon Road	City of San Diego, San Diego County, California	131	Ardath Shale	Cenozoic	Paleogene	middle Eocene
7303	Skanska I805N HOV BRT	City of San Diego, San Diego County, California	130	Ardath Shale	Cenozoic	Paleogene	middle Eocene
8300	Caltrans I-5/Genesee Ave Interchange	City of San Diego, San Diego County, California	52	Ardath Shale	Cenozoic	Paleogene	middle Eocene
8301	Caltrans I-5/Genesee Ave Interchange	City of San Diego, San Diego County, California	70	Ardath Shale	Cenozoic	Paleogene	middle Eocene
8302	Caltrans I-5/Genesee Ave Interchange	City of San Diego, San Diego County, California	85	Ardath Shale	Cenozoic	Paleogene	middle Eocene
8303	Caltrans I-5/Genesee Ave Interchange	City of San Diego, San Diego County, California	87	Ardath Shale	Cenozoic	Paleogene	middle Eocene
8304	Caltrans I-5/Genesee Ave Interchange	City of San Diego, San Diego County, California	99	Ardath Shale	Cenozoic	Paleogene	middle Eocene
8305	Caltrans I-5/Genesee Ave Interchange	City of San Diego, San Diego County, California	142	Ardath Shale	Cenozoic	Paleogene	middle Eocene
8306	Caltrans I-5/Genesee Ave Interchange	City of San Diego, San Diego County, California	153	Ardath Shale	Cenozoic	Paleogene	middle Eocene
8307	Caltrans I-5/Genesee Ave Interchange	City of San Diego, San Diego County, California	161	Ardath Shale	Cenozoic	Paleogene	middle Eocene
8308	Caltrans I-5/Genesee Ave Interchange	City of San Diego, San Diego County, California	254	Ardath Shale	Cenozoic	Paleogene	middle Eocene
8309	Caltrans I-5/Genesee Ave Interchange	City of San Diego, San Diego County, California	263	Ardath Shale	Cenozoic	Paleogene	middle Eocene
8310	Caltrans I-5/Genesee Ave Interchange	City of San Diego, San Diego County, California	273	Ardath Shale	Cenozoic	Paleogene	middle Eocene
8311	Caltrans I-5/Genesee Ave Interchange	City of San Diego, San Diego County, California	297	Ardath Shale	Cenozoic	Paleogene	middle Eocene
8312	Caltrans I-5/Genesee Ave Interchange	City of San Diego, San Diego County, California	239	Ardath Shale	Cenozoic	Paleogene	middle Eocene

Appendix: Locality List
 San Diego Natural History Museum
 Department of Paleontology

Locality Number	Locality Name	Location	Elevation (feet)	Geologic Unit	Era	Period	Epoch
8313	Caltrans I-5/Genesee Ave Interchange	City of San Diego, San Diego County, California	252	Ardath Shale	Cenozoic	Paleogene	middle Eocene
8314	Caltrans I-5/Genesee Ave Interchange	City of San Diego, San Diego County, California	254	Ardath Shale	Cenozoic	Paleogene	middle Eocene
8315	Caltrans I-5/Genesee Ave Interchange	City of San Diego, San Diego County, California	267	Ardath Shale	Cenozoic	Paleogene	middle Eocene
8316	Caltrans I-5/Genesee Ave Interchange	City of San Diego, San Diego County, California	270	Ardath Shale	Cenozoic	Paleogene	middle Eocene
8317	Caltrans I-5/Genesee Ave Interchange	City of San Diego, San Diego County, California	270	Ardath Shale	Cenozoic	Paleogene	middle Eocene
8318	Caltrans I-5/Genesee Ave Interchange	City of San Diego, San Diego County, California	280	Ardath Shale	Cenozoic	Paleogene	middle Eocene
8319	Caltrans I-5/Genesee Ave Interchange	City of San Diego, San Diego County, California	278	Ardath Shale	Cenozoic	Paleogene	middle Eocene
8320	Caltrans I-5/Genesee Ave Interchange	City of San Diego, San Diego County, California	287	Ardath Shale	Cenozoic	Paleogene	middle Eocene
7643	9880 Campus Point Drive	City of San Diego, San Diego County, California	296	Ardath Shale	Cenozoic	Paleogene	middle Eocene

APPENDIX C

City of San Diego Guidelines for Paleontology

- Appendix P, City of San Diego Land Development Manual: General Grading Guidelines for Paleontological Resources
- City Ordinance O-20919

LAND DEVELOPMENT MANUAL
APPENDIX P

GENERAL GRADING GUIDELINES FOR
PALEONTOLOGICAL RESOURCES

Paleontological resources (i.e., fossils) are the buried remains and/or traces of prehistoric organisms (i.e., animals, plants, and microbes). Body fossils such as bones or teeth, shells, leaves, and wood, as well as trace fossils such as tracks, trails, burrows, and footprints, are found in the geologic deposits (formations) within which they were originally buried. Fossil remains are considered important if they are: 1) well preserved; 2) taxonomically identifiable; 3) type/topotypic specimens; 4) age diagnostic; 5) useful in environmental reconstruction; or 6) represent new, rare, and/or endemic taxa.

Fossils are typically found buried in geologic deposits of sedimentary rock layers. They are exposed by natural weathering as well as by manmade earthmoving operations. Paleontological resources may be encountered during grading/excavation activities associated with project construction (e.g., residential subdivision projects, new roadway projects, urban redevelopment projects, or utility installation/improvement projects) where such work would be performed in previously undisturbed geologic deposits/formations/rock units (i.e., not in artificial fill materials).

The mapping of geologic deposits/formations/rock units can be located in the published geologic maps by Kennedy and Tan, 2008 all areas of the City of San Diego except Otay Mesa; and Todd, 2004 for the Otay Mesa area. The maps use colors to indicate the geographic distribution of individual geologic deposits/formations/rock units, with a map legend for reference of the geologic deposits/formations/rock units that are present in the project area. The geologic maps are available through the California Geological Survey and United State Geological Survey. Online digital versions of 1:100,000 scale maps are available at the following websites: <https://ngmdb.usgs.gov/mapview/>; http://www.conservation.ca.gov/cgs/rghm/rgm/Pages/preliminary_geologic_maps.aspx; and <https://pubs.usgs.gov/of/2004/1361/>.

These General Grading Guidelines for Paleontological Resources do not replace the Significance Determination Thresholds set forth in Land Development Manual Appendix A for Paleontological Resources.

The following is the standard monitoring requirement that shall be placed on grading plans and implemented when required pursuant to LDC section 142.0151:

I. Prior to Permit Issuance

Entitlements Plan Check

Prior to issuance of any construction permits, including but not limited to, the first Grading Permit, Demolition Plans/Permits and Building Plans/Permits or a Notice to Proceed for Subdivisions, but prior to the first preconstruction meeting, whichever is applicable, the City Engineer (CE) and/or Building Inspector (BI) shall verify that the requirements for Paleontological Monitoring have been noted on the appropriate construction documents.

1. The applicant shall submit a letter of verification to Resident Engineer (RE) and/or Building Inspector (BI) identifying the qualified Principal Investigator (PI) for the project and the names of all persons involved in the paleontological monitoring program. A qualified PI is defined as a person with a Ph.D. or M.S. or equivalent in paleontology or closely related field (e.g., sedimentary or stratigraphic geology, evolutionary biology, etc.) with demonstrated knowledge of southern California paleontology and geology, and documented experience in professional paleontological procedures and techniques.

2. II. Prior to Start of Construction

A. Verification of Records Search

1. The PI shall provide verification to RE and/or BI that a site specific records search has been completed. Verification includes, but is not limited to a copy of a confirmation letter from the San Diego Natural History Museum, or another relevant institution that maintains paleontological collections recovered from sites within the City of San Diego.
2. The letter shall introduce any pertinent information concerning expectations and probabilities of discovery during trenching and/or grading activities.

B. PI Shall Attend Preconstruction Meetings

1. Prior to beginning any work that requires monitoring, the Applicant shall arrange a Preconstruction Meeting that shall include the PI, Construction Manager (CM) and/or Grading Contractor, RE, and BI, as appropriate. The qualified paleontologist (PI) shall attend any grading/excavation related Preconstruction Meetings to make comments and/or suggestions concerning the Paleontological Monitoring program with the Construction Manager and/or Grading Contractor.

- a. If the PI is unable to attend the Preconstruction Meeting, the Applicant shall schedule a focused Preconstruction Meeting with the PI, RE, CM or BI, if appropriate, prior to the start of any work that requires monitoring.
2. Identify Areas to be Monitored

Prior to the start of any work that requires monitoring, the PI shall submit a Paleontological Monitoring Exhibit (PME) based on the appropriate construction documents (reduced to 11x17) to RE and/or BI identifying the areas to be monitored including the delineation of grading/excavation limits. The PME shall be based on the results of a site specific records search as well as information regarding existing known geologic conditions (e.g., geologic deposits as listed in the Paleontological Monitoring Determination Matrix below).
3. When Monitoring Will Occur
 - a. Prior to the start of any work, the PI shall also submit a construction schedule to the RE and/or BI indicating when and where monitoring will occur.
 - b. The PI may submit a detailed letter to RE and/or BI prior to the start of work or during construction requesting a modification to the monitoring program. This request shall be based on relevant information such as review of final construction documents and geotechnical reports which indicate conditions such as depth of excavation and/or thickness of artificial fill overlying bedrock, presence or absence of fossils , etc., which may reduce or increase the potential for resources to be present.

III. During Construction

- A. Monitor Shall be Present During Grading/Excavation/Trenching
 1. The paleontological monitor shall be present full-time during grading/excavation/trenching activities as identified on the PME that could result in impacts to formations with high and moderate resource sensitivity. **The Construction Manager is responsible for notifying the PI, RE and/or BI of changes to any construction activities such as in the case of a potential safety concern within the area being monitored. In certain circumstances OSHA safety requirements may necessitate modification of the PME.**
 2. The PI may submit a detailed letter to RE and/or BI during construction requesting a modification to the monitoring program when a field condition such as trenching activities that do not encounter previously undisturbed and paleontologically sensitive geologic deposits as previously assumed, and/or when unique/unusual fossils are encountered, which may reduce or increase the potential for paleontological resources to be present.

3. The paleontological monitor shall document field activity via the Consultant Site Visit Record (CSV). The CSV's shall be emailed by the CM to the RE and/or BI the first day of monitoring, the last day of monitoring, monthly (**Notification of Monitoring Completion**), and in the case of ANY discoveries.

B. Discovery Notification Process

1. In the event of a discovery, the paleontological monitor shall direct the contractor to temporarily divert trenching activities in the area of discovery and notify the RE and/or BI. The contractor shall also process a construction change for administrative purposes to formalize the documentation and recovery program, including modification to Mitigation Monitoring and Compliance (MMC).
2. The paleontological monitor shall notify the PI (unless paleontological monitor is the PI) of the discovery.
3. The PI shall notify MMC of the discovery, and shall submit documentation to MMC within 24 hours by email with photos of the resource in context.

C. Recovery of Fossils

If a paleontological resource is encountered:

1. The paleontological monitor shall salvage unearthed fossil remains, including simple excavation of exposed specimens or, if necessary as determined by the PI, plaster-jacketing of large and/or fragile specimens or more elaborate quarry excavations of richly fossiliferous deposits.
2. The paleontological monitor shall record stratigraphic and geologic data to provide a context for the recovered fossil remains, including a detailed description of all paleontological localities within the project site, as well as the lithology of fossil-bearing strata within the measured stratigraphic section, and photographic documentation of the geologic setting.

V. Post Construction

A. Preparation and Submittal of Draft Paleontological Monitoring Report

1. The PI shall submit two copies of the Draft Paleontological Monitoring Report (even if negative), prepared to the satisfaction of the Development Services Department. The Draft Paleontological Monitoring Report shall describe the methods, results, and conclusions of all phases of the Paleontological Monitoring Program (with appropriate graphics) to MMC for review and approval within 90 days following the completion of monitoring,

- a. For significant or potentially significant paleontological resources encountered during monitoring, as identified by the PI, the Paleontological Recovery Program shall be included in the Draft Monitoring Report.
 - b. The PI shall be responsible for recording (on the appropriate forms) any significant or potentially significant fossil resources encountered during the Paleontological Monitoring Program in accordance with the City's Paleontological Guidelines (revised November 2017), and submittal of such forms to the San Diego Natural History Museum and MMC with the Draft Paleontological Monitoring Report.
2. MMC shall return the Draft Paleontological Monitoring Report to the PI for revision or, for preparation of the Final Report.
 3. The PI shall submit revised Draft Paleontological Monitoring Report to MMC for approval.
 4. MMC shall provide written verification to the PI of the approved Draft Paleontological Monitoring Report.
 5. MMC shall notify the RE and/or BI, of receipt of all Draft Paleontological Monitoring Report submittals and approvals.
- B. Handling of Recovered Fossils
1. The PI shall ensure that all fossils collected are cleaned to the point of curation (e.g., removal of extraneous sediment, repair of broken specimens, and consolidation of fragile/brittle specimens) and catalogued as part of the Paleontological Monitoring Program.
 2. The PI shall ensure that all fossils are analyzed to identify stratigraphic provenance, geochronology, and taphonomic context of the source geologic deposit; that faunal material is taxonomically identified; and that curation has been completed, as appropriate.
- C. Curation of Fossil Remains: Deed of Gift and Acceptance Verification
1. The PI shall be responsible for ensuring that all fossils associated with the paleontological monitoring program for this project are permanently curated with an accredited institution that maintains paleontological collections (such as the San Diego Natural History Museum).
 2. The PI shall include an acceptance verification from the curation institution in the Final Paleontological Monitoring Report submitted to the RE and/or BI, and MMC.

D. Final Paleontological Monitoring Report(s)

1. The PI shall submit two copies of the Final Paleontological Monitoring Report to MMC (even if negative), within 90 days after notification from MMC that the Final Paleontological Monitoring Report has been approved.
2. The RE and/or BI shall, in no case, issue the Notice of Completion until receiving a copy of the approved Final Paleontological Monitoring Report from MMC, which includes the Acceptance Verification from the curation institution.

Paleontological Monitoring Determination Matrix

Geological Deposit/Formation/Rock Unit	Potential Fossil Localities	Sensitivity Rating
Alluvium (Qsw, Qal, or Qls)	All communities where this unit occurs	Low
Ardath Shale (Ta)	All communities where this unit occurs	High
Bay Point/Marine Terrace (Qbp) ¹	All communities where unit occurs	High
Cabrillo Formation (Kcs)	All communities where unit occurs	Moderate
Delmar Formation (Td)	All communities where unit occurs	High
Friars Formation (Tf)	All communities where unit occurs	High
Granite/Plutonic (Kg)	All communities where unit occurs	Zero
Lindavista Formation (Qln, Qlb) ²	A. Mira Mesa/Tierrasanta B. All other areas	A. High B. Moderate
Lusardi Formation (Kl)	Black Mountain Ranch/Lusardi Canyon Poway/Rancho Santa Fe B. All other areas	A. High B. Moderate
Mission Valley Formation (Tmv)	All communities where unit occurs	High
Mt. Soledad Formation (Tm, Tmss, Tmsc)	A. Rose Canyon B. All other areas where this unit occurs	A. High B. Moderate
Otay Formation (To)	All communities where unit occurs	High
Point Loma Formation (Kp)	All communities where unit occurs	High
Pomerado Conglomerate (Tp)	A. Scripps Ranch/Tierrasanta B. All other areas	High
River /Stream Terrace Deposits (Qt)	A. South Eastern/Chollas Valley/Fairbanks Ranch/Skyline/Paradise Hills/Otay Mesa, Nestor/San Ysidro B. All other areas	A. Moderate B. Low
San Diego Formation (Qsd)	All communities where this unit occurs.	High
Santiago Peak Volcanics (Jsp) A. Metasedimentary B. Metavolcanic	A. Black Mountain Ranch/La Jolla Valley, Fairbanks Ranch/Mira Mesa/Peñasquitos B. All other areas	A. Moderate B. Zero
Scripps Formation (Tsd)	All communities where this unit occurs	High
Stadium Conglomerate (Tst)	All communities where this unit occurs	High
Sweetwater Formation	All communities where this unit occurs	High
Torrey Sandstone (Tf)	A. Black Mountain Ranch/Carmel Valley B. All other areas	A. High B. Low

ORDINANCE NUMBER O- 20919 (NEW SERIES)

DATE OF FINAL PASSAGE MAR 22 2018

AN ORDINANCE AMENDING CHAPTER 14, ARTICLE 2, DIVISION 1 OF THE SAN DIEGO MUNICIPAL CODE BY AMENDING SECTION 142.0101, AMENDING SECTION 142.0130 BY AMENDING THE EDITOR'S NOTE, AND ADDING NEW SECTION 142.0151, RELATING TO PALEONTOLOGICAL RESOURCES AND GRADING PROPOSED AS PART OF THE 11TH UPDATE TO THE LAND DEVELOPMENT CODE.

WHEREAS, paleontological resources may be encountered during grading activities associated with project construction in undisturbed geologic deposits, formations, and rock units; and

WHEREAS, paleontological monitoring requirements have historically been applied on a project-by-project basis during the City's California Environmental Quality Act development review process; and

WHEREAS, to avoid adverse impacts to paleontological resources, consistent regulations related to grading and paleontological monitoring are desired; and

WHEREAS, this Ordinance is being processed with the 11th update to the Land Development Code as a separate ordinance; NOW, THEREFORE,

BE IT ORDAINED, by the Council of the City of San Diego, as follows:

Section 1. That Chapter 14, Article 2, Division 1 of the San Diego Municipal Code is amended by amending section 142.0101, amending section 142.0130 by amending the editor's note, and by adding new section 142.0151, to read as follows:

§142.0101 Purpose of Grading Regulations

The purpose of these regulations is to address slope stability, protection of property, erosion control, water quality, landform preservation, and paleontological resources preservation, and to protect the public health, safety, and welfare of persons, property, and the environment.

§142.0130 Development Standards for Grading

(a) through (b) [No change in text.]

EDITORS NOTE: The Land Development Manual includes:

Coastal Bluffs and Beaches Guidelines

Biology Guidelines

Historical Resources Guidelines

Submittal Requirements for Deviations within the Coastal Overlay Zone

See RR-292248 for the Coastal Bluffs and Beaches Guidelines of the Land

Development Code; RR-292249 for the Biology Guidelines of the Land

Development Code; RR-292250 for the Historical Resources Guidelines of the

Land Development Code; RR-292251 for the Submittal Requirements for

Deviations within the Coastal Overlay Zone of the Land Development Code.

General Grading Guidelines for Paleontological Resources

§142.0151 Paleontological Resources Requirements for Grading Activities

- (a) Paleontological resources monitoring shall be required in accordance with the General Grading Guidelines for Paleontological Resources in the Land Development Manual for any of the following:

- (1) *Grading* that involves 1,000 cubic yards or greater, and 10 feet or greater in depth, in a High Resource Potential Geologic Deposit/Formation/Rock Unit; or
 - (2) *Grading* that involves 2,000 cubic yards or greater, and 10 feet or greater in depth, in Moderate Resource Potential Geologic Deposit/Formation/Rock Unit; or
 - (3) *Grading* on a fossil recovery site or within 100 feet of the mapped location of a fossil recovery site.
- (b) If paleontological resources, as defined in the General Grading Guidelines for Paleontological Resources, are discovered during *grading*, notwithstanding Section 142.0151(a), all *grading* in the area of discovery shall cease until a qualified paleontological monitor has observed the discovery, and the discovery has been recovered in accordance with the General Grading Guidelines for Paleontological Resources.

Section 2. That a full reading of this Ordinance is dispensed with prior to passage, a written copy having been made available to the Council and the public prior to the day of its passage.

Section 3. That prior to becoming effective, this Ordinance shall be submitted to the San Diego County Regional Airport Authority (SDCRAA) for a consistency determination.

That if the SDCRAA finds this Ordinance consistent with the Airport Land Use Compatibility Plans (ALUCP) for San Diego International Airport, Marine Corps Air Station (MCAS) Miramar, Gillespie Field, Montgomery Field, and Brown Field Airports (collectively, Airports), this Ordinance shall take effect and be in force no sooner than the thirtieth day from

and after the finding of consistency, except that the provisions of this Ordinance inside the Coastal Overlay Zone, which are subject to California Coastal Commission jurisdiction as a City of San Diego Local Coastal Program amendment shall not take effect until the date the California Coastal Commission unconditionally certifies those provisions as a local coastal program amendment.

That if the SDCRAA determines that this Ordinance is inconsistent or conditionally consistent, subject to proposed modifications, with the ALUCPs for the Airports, the Ordinance shall be submitted to the City Council for reconsideration.

That if the SDCRAA determines that this Ordinance is conditionally consistent with the ALUCPs for the Airports, but that consistency is subject to proposed modifications, the City Council may amend this Ordinance to accept the proposed modifications, and this Ordinance as amended shall take effect and be in force on the thirtieth day from and after its final passage, except that the provisions of this Ordinance as amended inside the Coastal Overlay Zone, which are subject to California Coastal Commission jurisdiction as a City of San Diego Local Coastal Program amendment shall not take effect until the date the California Coastal Commission unconditionally certifies those provisions as a local coastal program amendment.

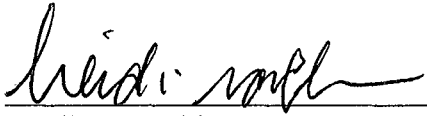
That a proposed decision by the City Council to overrule a determination of inconsistency or to reject the proposed modifications for a finding of conditional consistency shall include the findings required pursuant to Public Utilities Code section 21670 and require a two-thirds vote. The proposed decision and findings shall be forwarded to the SDCRAA, the California Department of Transportation, Division of Aeronautics, and the airport operators for the Airports. The City Council shall hold a second hearing not less than 45 days from the date the proposed decision and findings were provided, at which hearing any comments submitted by

the public agencies shall be considered and a final decision to overrule a determination of inconsistency shall require a two-thirds vote.

That if the City Council makes a final decision to overrule a determination of inconsistency, this Ordinance shall take effect and be in force on the thirtieth day from and after that final decision, except that the provisions of this Ordinance inside the Coastal Overlay Zone, which are subject to California Coastal Commission jurisdiction as a City of San Diego Local Coastal Program amendment shall not take effect until the date California Coastal Commission unconditionally certifies those provisions as a local coastal program amendment.

Section 4. That no permits shall be issued for development that is inconsistent with the provisions of this Ordinance unless complete applications for such permits are submitted to the City prior to the date on which the applicable provisions of this Ordinance become effective.

APPROVED: MARA W. ELLIOTT, City Attorney

By 
Heidi K. Vonblum
Deputy City Attorney

HKV:nja
01/08/18
Or.Dept: Planning
Doc. No.: 1661906

I hereby certify that the foregoing Ordinance was passed by the Council of the City of San Diego, at this meeting of MAR 20 2018.

ELIZABETH S. MALAND
City Clerk

By *Dinda Brwin*
Deputy City Clerk

Approved: 3/22/18
(date)

Kevin L. Faulconer
KEVIN L. FAULCONER, Mayor

Vetoed: _____
(date)

KEVIN L. FAULCONER, Mayor

STRIKEOUT ORDINANCE

OLD LANGUAGE: ~~Struck Out~~

NEW LANGUAGE: Double Underline

ORDINANCE NUMBER O-_____ (NEW SERIES)

DATE OF FINAL PASSAGE _____

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HKV:nja
01/05/18
Or.Dept: Planning
Doc. No.: 1661198

Passed by the Council of The City of San Diego on MAR 20 2018, by the following vote:

Councilmembers	Yeas	Nays	Not Present	Recused
Barbara Bry	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Lorie Zapf	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Chris Ward	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Myrtle Cole	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mark Kersey	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Chris Cate	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Scott Sherman	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
David Alvarez	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Georgette Gomez	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Date of final passage MAR 22 2018

AUTHENTICATED BY:

KEVIN L. FAULCONER
Mayor of The City of San Diego, California.

(Seal)

ELIZABETH S. MALAND
City Clerk of The City of San Diego, California.

By Gina Dravin, Deputy

I HEREBY CERTIFY that the foregoing ordinance was not finally passed until twelve calendar days had elapsed between the day of its introduction and the day of its final passage, to wit, on

MAR 06 2018, and on MAR 22 2018.

I FURTHER CERTIFY that said ordinance was read in full prior to passage or that such reading was dispensed with by a vote of five members of the Council, and that a written copy of the ordinance was made available to each member of the Council and the public prior to the day of its passage.

(Seal)

ELIZABETH S. MALAND
City Clerk of The City of San Diego, California.

By Gina Dravin, Deputy

Office of the City Clerk, San Diego, California
Ordinance Number O- <u>20919</u>