



**PHASE I PALEONTOLOGICAL RESOURCES ASSESSMENT
TENTATIVE TRACT MAP 38094 PROJECT
CITY OF RIVERSIDE, RIVERSIDE COUNTY, CALIFORNIA**

Prepared on Behalf of:

Coastal Commercial Properties

Prepared for:

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Type of Study: Paleontological resources assessment

Paleontological Localities within Area of Potential Impact: None

Project Location: USGS 7.5' Topographic Quadrangle Riverside East, Section 29 of Township 03 South, Range 04 West

APNs: 266-130-016, 266-130-023, and 266-130-024

Project Area: 17.5 acres

Date of Field Survey: March 4, 2021

Key Words: Paleontology, CEQA, Riverside, RCLIS, Negative Survey, Low Sensitivity, Kvt

MANAGEMENT SUMMARY

Coastal Commercial Properties proposes the construction of a residential housing community (Project), located within the City of Riverside in Riverside County, California. The Project involves the construction of single family detached homes, with associated parking and open spaces. Material Culture Consulting, Inc. (MCC) was retained by E|P|D Solutions, Inc. to conduct a Phase I paleontological resource investigation of the Project Area in accordance with the California Environmental Quality Act (CEQA). This assessment included a locality search, an examination of geologic maps and paleontological literature, and a pedestrian field survey.

No significant paleontological resources were identified directly within the Project Area during the locality search or the field survey. The Riverside County Land Information System (RCLIS) GIS data reveals the entirety of the Project Area lies within an area mapped as Low Potential (L). Low Potential indicates the absence of geologic formations or mappable rock units that have yielded few fossils in the past, based on available literature and museum record. Low sensitivity also includes geological units that have produced on a rare occasion under unusual circumstances. Per the Riverside County General Plan, whenever existing information indicates that a site proposed for development has low paleontological sensitivity, no direct mitigation is required unless a fossil is encountered during site development. Should a fossil be encountered, the County Geologist shall be notified and a paleontologist shall be retained by the project proponent. The paleontologist shall document the extent and potential significance of the paleontological resources on the site and establish appropriate mitigation measures for further site development. Based on the above findings and County standards, MCC recommends no monitoring for this project, as the underlying igneous rock unit is not suitable for the preservation of fossils.

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INTRODUCTION

Coastal Commercial Properties proposes the construction of a single family, detached residential housing community, located within the City of Riverside in Riverside County, California. The Project involves the construction of single family detached homes, with associated parking and open spaces. Material Culture Consulting, Inc. (MCC) was retained by E|P|D Solutions, Inc. to conduct a Phase I paleontological investigation of the Project Area. This paleontological resource assessment was conducted in compliance with the California Environmental Quality Act (CEQA), Public Resources Code (13 PRC) 2100, (14 CAC) 15000, Appendix G, Section J, (PRC) 2100-21177, Appendix G, (PRC) 5097.5 and guidelines in accordance to Society of Vertebrate Paleontology (2010) standards and City of Riverside policy. This study included a locality records search and field survey to determine whether the proposed project would impact any significant paleontological resources. According to these regulations and guidelines, if development of a Project has the potential to result in significant impacts to paleontological resources, a plan must be developed to mitigate those impacts to a level which is less than significant. This assessment documents the potential for encountering paleontological resources during development of this Project and provides recommendations on how to mitigate impacts to those resources.

PROJECT LOCATION AND DESCRIPTION

The Project is located within the City of Riverside in Riverside County, California (Figure 1). The Project Area lies at the northeast corner of the intersection of Wood Road and Lurin Avenue (Figures 2 and 3). The Project Area is bounded to the north by Krameria Avenue, to the east by Dant Street, to the south by Lurin Avenue, and to the west by Wood Road. Residential development surrounds the area in all directions, with current construction taking place south of Lurin Avenue. Specifically, the proposed Project is located in Section 29, within Township 3 South, Range 4 West on the U.S. Geological Survey (USGS) *Riverside East 7.5'* topographic quadrangle (San Bernardino Baseline Meridian) (Figure 2). The Project Area consists of three parcels: 266-130-016, 266-130-023, and 266-130-024. Presently, the Project Area exists as a vacant lot with an already developed residence in the southwest corner of the area.

PROJECT PERSONNEL

Jennifer Kelly, M.S., a Qualified Riverside County Paleontologist, served as the Principal Investigator for the study. Ms. Kelly conducted the paleontological resource literature and map reviews, oversaw the field study, and provided quality control for this report. Ms. Kelly has a M.Sc. in Geology from California State University, Long Beach. Ms. Kelly has over ten years of experience in environmental and paleontological compliance in California (See Appendix A).

MCC Archaeologist and Cross-trained Paleontologist Erika McMullin, B.A., co-authored this report and conducted the pedestrian survey. MCC Project Manager and GIS Specialist Julia Carvajal, M.A., provide all GIS support for the report. MCC Project Manager Sonia Sifuentes, M.Sc., provided technical peer review for the report.

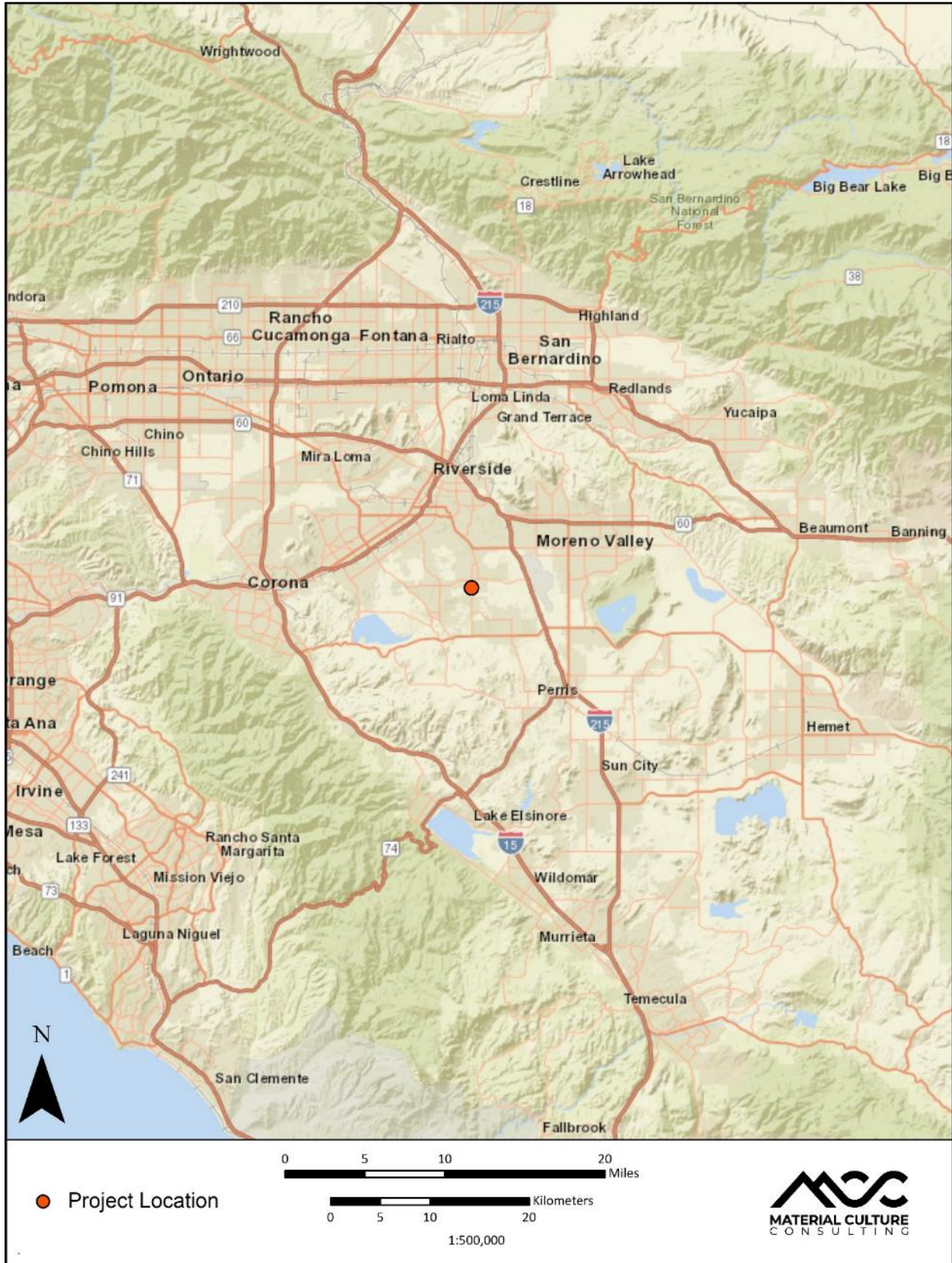


Figure 1. Tentative Tract Map 38094 Project Vicinity (1:500,000)

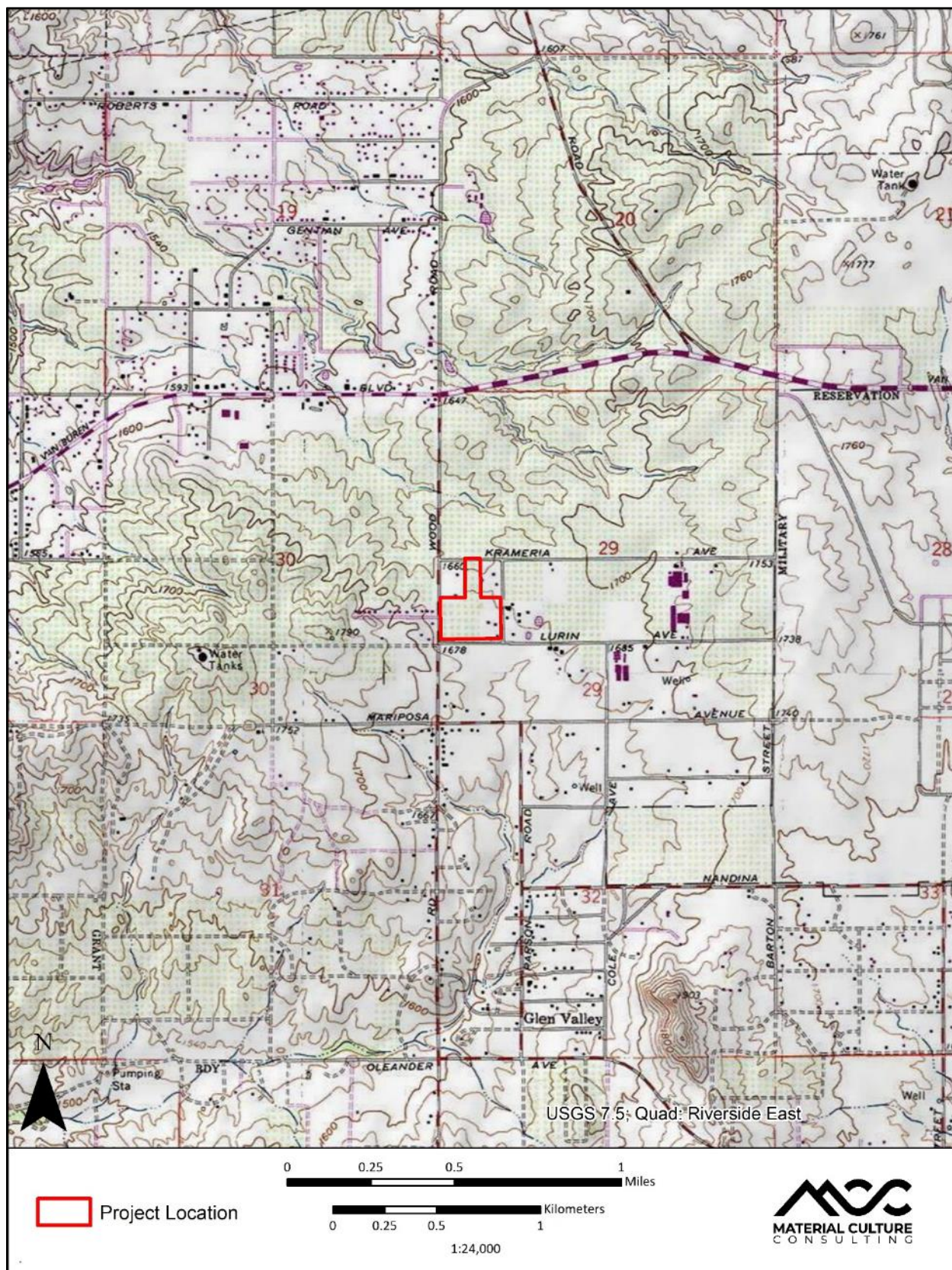


Figure 2. Tentative Tract Map 38094 Project Location (1:24,000, as depicted on Riverside East USGS 7.5 Minute Quadrangle)

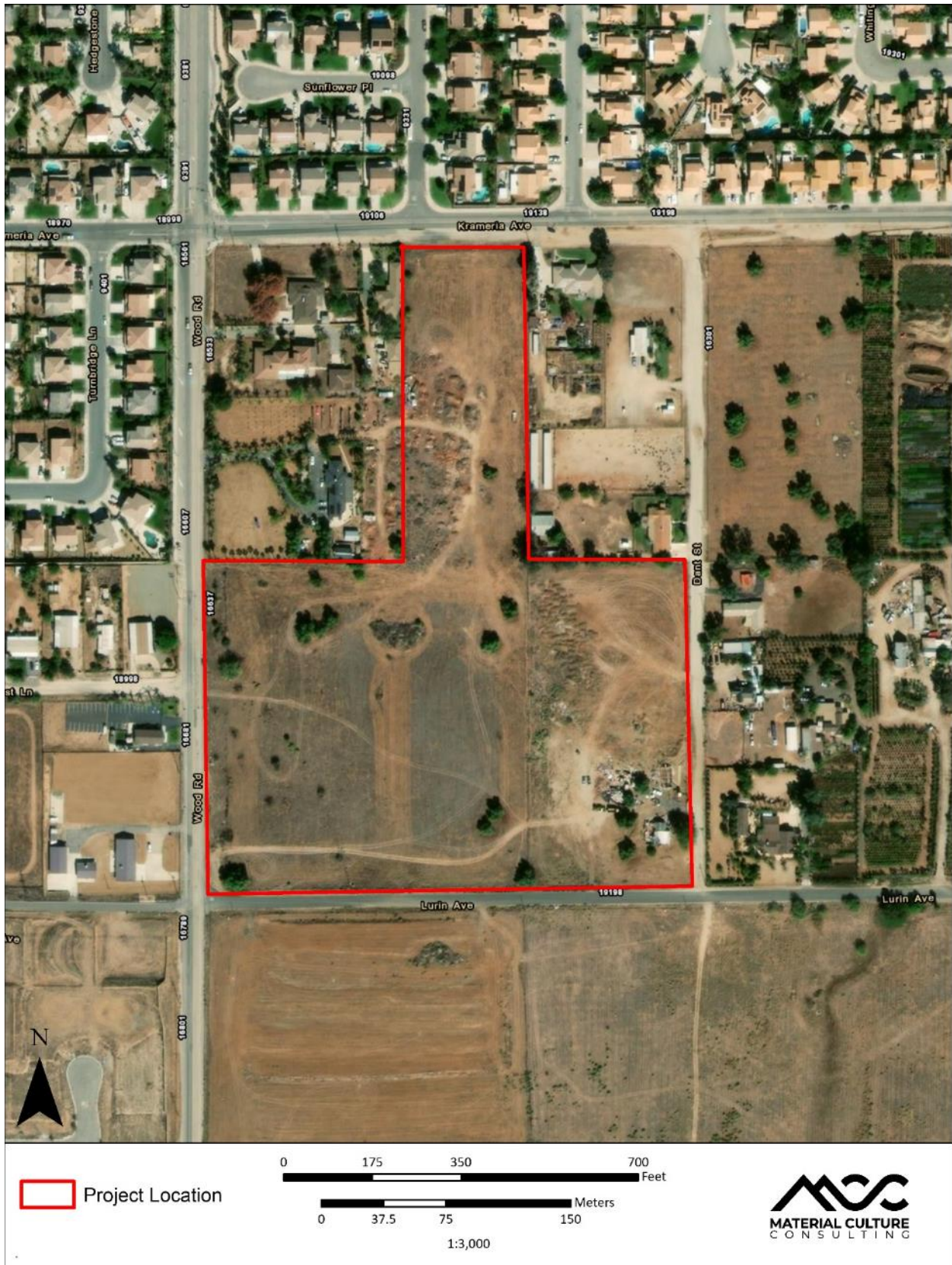


Figure 3. Tentative Tract Map 38094 Project Area (1:3,000, as depicted on aerial photograph)

ENVIRONMENTAL SETTING

The Project Area is located within the City of Riverside in Riverside County. Riverside County is situated within the Peninsular Ranges Geologic Province, and the Project Area itself is located within northwestern Riverside County, which opens up to the east onto the San Jacinto Valley. One of the northernmost ranges, Temescal Mountains, is located approximately 3.5 miles south of the Project Area. The Santa Ana River, located approximately 8 miles northwest of the Project Area, is the major drainage in the general region, with a river system flowing in an overall general northeast to southwest direction, emptying into the Pacific Ocean near Newport Beach and Huntington Beach. The Project Area is located within a relatively flat valley, with elevations averaging approximately 510 m (1675 ft.) above mean sea level (AMSL). A gradual, less than 10-degree west facing slope is present. The highest point is in the northern portion of the Project Area. To the north are the Jurupa Mountains, an east-west trending small mountain range that is approximately eight miles long and three miles wide (Daly 1931). Vegetation in much of the area has been altered by historical and modern development. Previously, the Project Area served as an orchard although it is no longer present. Vegetation observed included citrus trees, peach trees, olive trees, pepper trees, palm tree, prickly pear cactus, weeds, and grasses. The western region of Riverside County enjoys a mild Mediterranean climate characterized by warm, dry summers and cool, moist winters.

GEOLOGICAL CONTEXT

The *Riverside East* quadrangle lies in the northern part of the Peninsular Ranges geomorphic province, within the central part of the Perris Block. The Perris Block is a structurally stable, internally cohesive mass of crustal rocks bounded on the east by the San Jacinto fault zone, bounded on the west by the Elsinore and Chino fault zones, on the north by the Cucamonga fault zone (Morton and Matti 1989; Morton and Cox 1988), and on the south by a series of sedimentary basins (Morton and Matti 1989). The quadrangle is underlain predominately by Cretaceous plutonic rocks, a part of the Peninsular Ranges batholith complex (Morton and Cox 1988). Batholithic rocks represent a wide range of mafic to intermediate composition rocks in this unit, ranging from diorite and granite to tonalite (Morton and Cox 1988). Specifically, the Project Area is mapped as lying within the Val Verde tonalite (Kvt) (Morton and Cox 1988, Figure 4). The principal rock type of Val Verde pluton outcrops here, consisting of gray, medium to coarse-grained tonalite.

Val Verde tonalite (Kvt) is a gray-weathering, relatively homogeneous, massive- to well-foliated, medium- to coarse-grained, hypautomorphic-granular biotite-hornblende tonalite; it is the primary rock type of the Val Verde pluton. It contains some biotite and hornblende, quartz and plagioclase (Morton and Cox 1988). This rock unit, due to its formation deep underground from a magmatic source, is not fossiliferous and has a low paleontological sensitivity. It is overlain by a thin veneer of Recent sediments; however, these sediments are extensively reworked by agricultural earthmoving and are unlikely to contain any in-situ fossils.

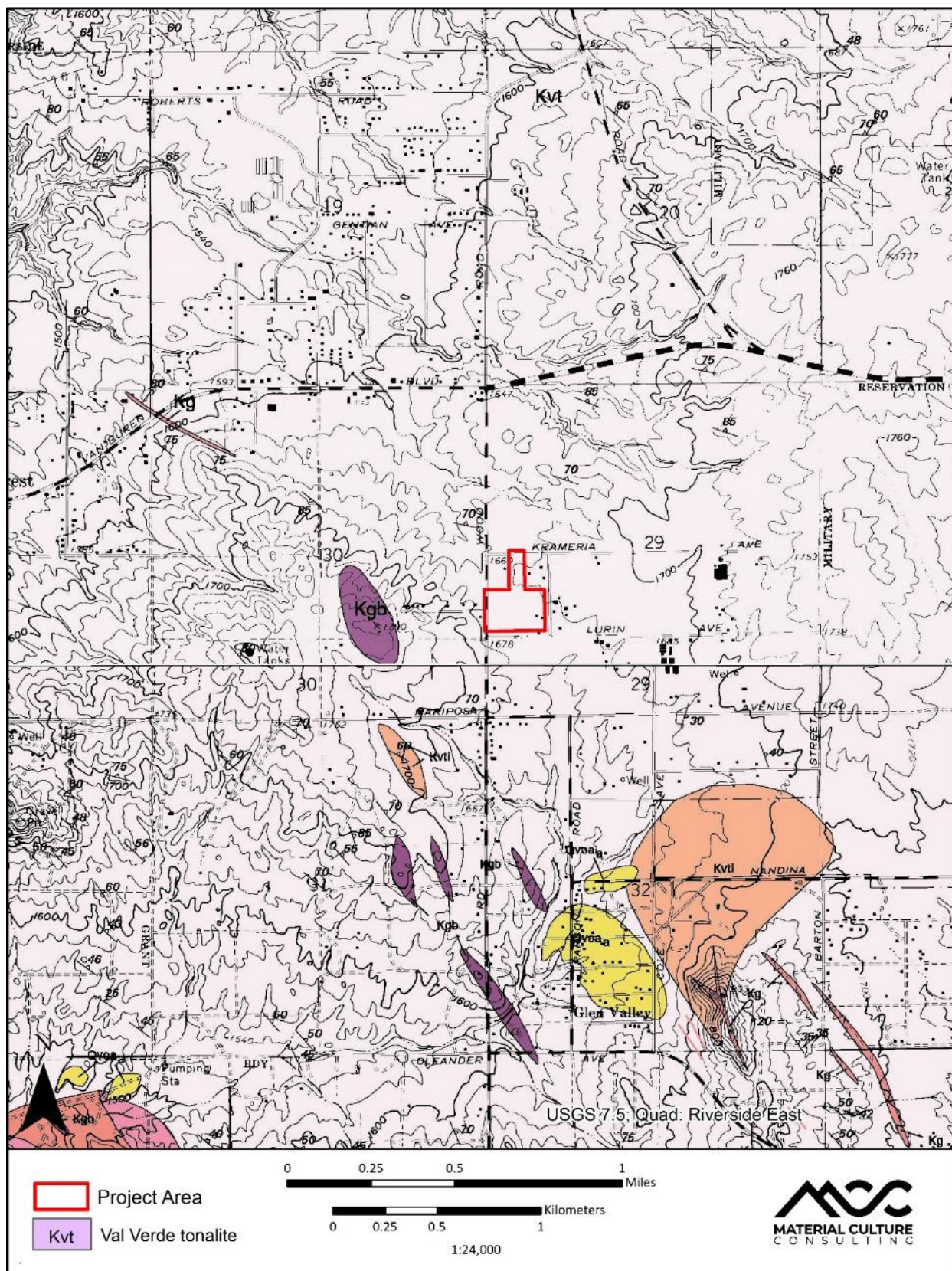


Figure 4. Tentative Tract Map 38094 Geologic Map (from Morton and Cox 1988)

RESEARCH DESIGN

Paleontological resources (fossils) are the remains of prehistoric life that provide an invaluable window into the past. These remains can be bones, teeth, shells, wood or leaves, or trace fossils (including burrows and trackways). The Society for Vertebrate Paleontology (SVP) generally considers any resource greater than 5,000 years old to be a fossil (SVP 2010). Fossils are considered non-renewable resources and in California, impacts to paleontological resources must be considered pursuant to CEQA requirements for environmental reviews.

The paleontological resources assessment was conducted according to CEQA, Public Resources Code (13 PRC) 2100, (14 CAC) 15000, Appendix G, Section J, (PRC) 2100-21177, Appendix G, (PRC) 5097.5. The paleontological resources assessment was conducted to evaluate the potential existence of resources that would require a preparation of a monitoring plan and monitoring activities, in order to reduce impacts to a less than significant level. Guidelines set forth by the City of Riverside were consulted to ensure that all local and state requirements were met.

CITY OF RIVERSIDE GENERAL PLAN

The City of Riverside has not established local CEQA significance thresholds and therefore, significance will be determined by utilizing Appendix G of the CEQA Guidelines (City of Riverside 2007a). In addition, the City of Riverside's General Plan 2025 requires protection of paleontological resources under the Policy HP-1.3 of the Historic Preservation Element: "The City shall protect sites of archaeological and paleontological significance and ensure compliance with all applicable State and federal cultural resources protection and management laws in its planning and project review process" (City of Riverside 2007b).

METHODS

LITERATURE AND MAP REVIEW AND LOCALITY SEARCH

The literature review included an examination of geologic maps of the Project Area and a review of relevant geological and paleontological literature to determine which geologic units are present within the Project Area and whether fossils have been recovered from those geologic units elsewhere in the region. As geologic units may extend over large geographic areas and contain similar lithologies and fossils, the literature review includes areas well beyond the Project Area. The results of this literature review include an overview of the geology of the Project Areas and a discussion of the paleontological sensitivity (or potential) of the geologic units within the Project Area. The RCLIS also provides a paleontological resource sensitivity map to determine the required impact mitigation used in environmental assessments of development proposals (RCLIS 2021). This map was consulted by MCC staff on March 3, 2021.

The purpose of a locality search is to establish the status and extent of previously recorded paleontological resources within and adjacent to the study area for a given project. In January 2021, a locality search was conducted through the Natural History Museum of Los Angeles County (LACM) of Los Angeles (Appendix B). This search identified any vertebrate localities in the LACM records that exist near the Project Area in the same or similar deposits.

PALEONTOLOGICAL RESOURCES SURVEY METHODS

The survey stage is important in a Project's environmental assessment phase to verify the exact location of each identified paleontological resource (if any), the condition or integrity of the resource, and provides invaluable information on the type of sediment present within the Project Area, which informs the assessment of paleontological sensitivity. On March 4, 2021, MCC qualified archaeologist and cross-trained paleontologist Erika McMullin conducted a pedestrian survey of the Project Area. Special attention was paid to any graded and disturbed areas that offered a better view of the underlying sediment. The purpose of a field survey is to note the sediments in the Project Area, relocate any known paleontological localities, and identify any unrecorded paleontological resources exposed on the surface. In this way, impacts to existing, unrecorded paleontological material may be mitigated prior to the beginning of ground-disturbing activities and portions of the Project Area that are more likely to contain paleontological resources may be identified.

RESULTS

LACM LOCALITY SEARCH AND LITERATURE REVIEW RESULTS

The record search results from the LACM (Bell 2021, Appendix B) do not indicate any fossils have been found directly within the Project Area, nor within a 1-mile radius. The surficial deposits of the proposed Project Area, as shown by geologic mapping, consist of igneous rocks, which do not preserve fossil resources (Bell 2021). Additional literature was consulted, including The University of California Museum of Paleontology (UCMP)'s Miocene Mammal Mapping Project (MioMap), with no fossil localities within the area of the Project (Carrasco et al. 2005). The Riverside County Land Information Systems (RCLIS) GIS map indicates that the Project Area has low sensitivity to produce paleontological resources during ground disturbing activities (Figure 5). Low Potential (L) indicates the absence of geologic formations or mappable rock units that have yielded few fossils in the past, based on available literature and museum record (RCLIS 2021). Low potential also includes geological units that have produced on a rare occasion under unusual circumstances.

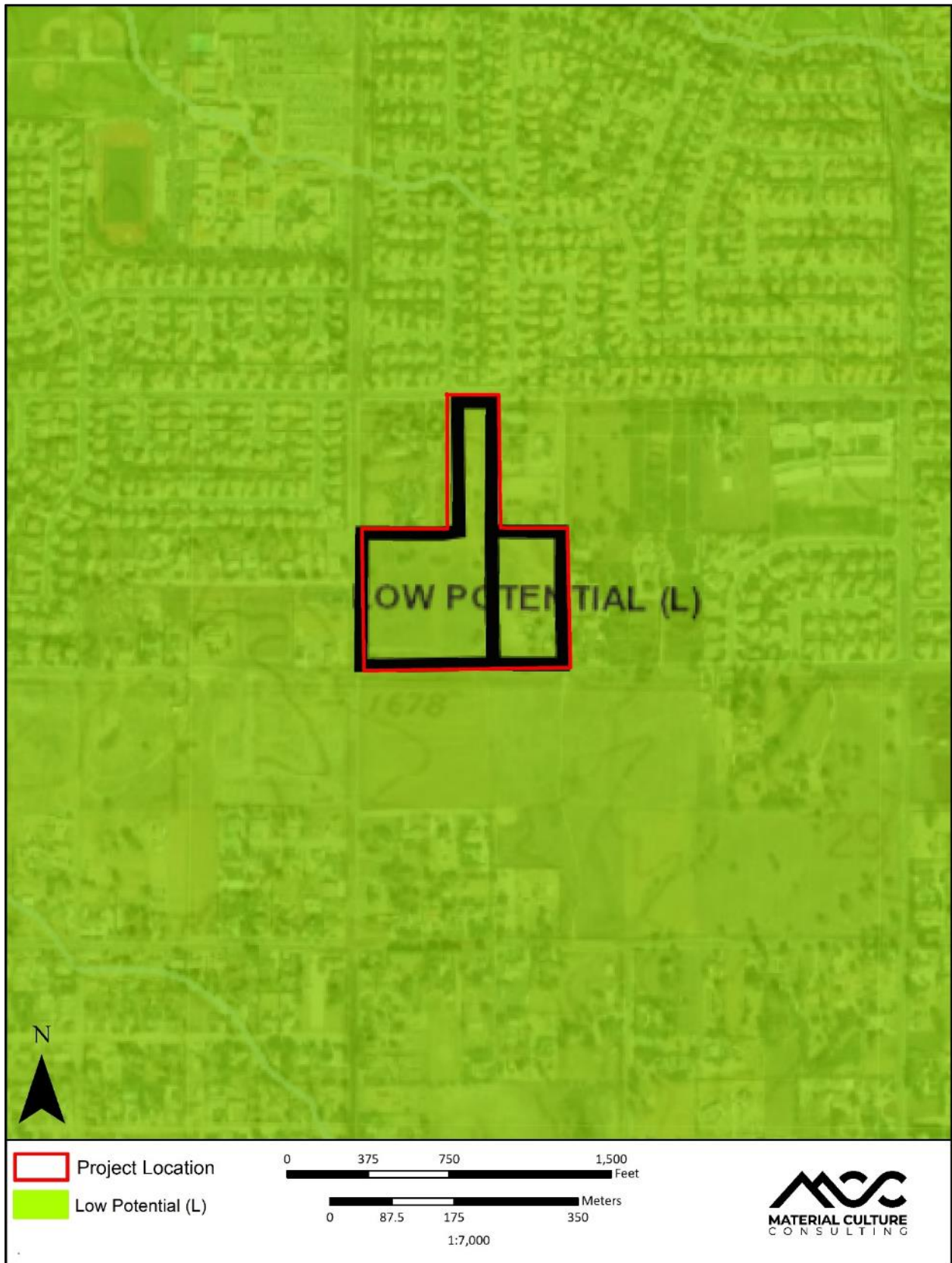


Figure 5. Tentative Tract Map 38094 Paleontological Sensitivity (from the RCLIS 2021)

PALEONTOLOGICAL FIELD SURVEY

During the course of fieldwork, survey conditions were good (Figures 7 through 22). Ground visibility in the entire Project Area ranged from poor to excellent (5-90%) due to density of overgrown grass and weeds. The average surface visibility was good (75%). The eastern and northwestern portion of the Project Area had lowered visibility (5-25%). Areas with poorer visibility were surveyed in 5-meter transects instead of 10-meter transects. Presently, the Project Area exists as a grassy field with a gradual west-facing slope of less than 10-degrees. Construction on Wood Road was taking place. A portion (approximately 0.43 acres) of the Project on the western boundary was being used by the construction crew. The area had some equipment, machinery, work vehicles, and construction material. A residential home was present in southeast corner of Lurin Avenue and Dant Street. The area around the active construction site and the immediate area around the home and the house itself was not surveyed (Figure 6).

Overall, the Project Area is highly disturbed. Evidence of construction vehicles and agricultural machinery was observed throughout the Project Area. Disking by machinery looks to have taken place recently as evident by overturned soil. Piles of cut trees were present in the northernmost portion. In addition, remnants of a modern irrigation system was observed. Multiple dirt roads are located throughout the Project area, including in the northern portion of the Project Area leading from the area to residential homes outside of the Project. Modern dumping was also observed throughout the Project Area, including building materials and concrete foundation. Soil in the area consisted of brown fine to coarse-grained sandy loam with pebble to small boulder inclusions of gray granitic-tonalitic material and quartz material. The sediments present may be imported at one time to improve the soil conditions of the orchard (Figures 10 and 11). No paleontological resources were observed during the field survey.



Figure 6. Survey results map (1:3,000, as depicted on aerial photograph)



Figure 7. Project Overview from western corner on Wood Rd, view southeast



Figure 8. Representative photograph of soil from western portion of Project Area, plan view



Figure 9. Project Overview looking at western corner, view west



Figure 10. Representative photo of coarse-grained sandy loam in central portion of Project Area, plan view



Figure 11. Project Overview looking towards intersection of Lurin Ave and Wood Rd., view southwest



Figure 12. Project overview of northern portion with chopped wood pile in background, view north



. **Figure 13.** Project overview from northern boundary, view south



Figure 14. Representative photograph of soil from northern portion of Project Area, plan view



Figure 15. Project overview of eastern portion with low visibility, view south



Figure 16. Project overview of eastern portion with greater visibility, view south



Figure 17. Representative photograph of reddish-brown, coarse-grained sandy loam with granitic inclusions in eastern portion, plan view



Figure 18. Representative photograph of brown, coarse-grained sandy loam with granitic inclusions in eastern portion, plan view



Figure 19. Overview of residential home in southeastern corner of Project Area, plan northeast



Figure 20. Overview of Project Area looking towards Lurin Ave, view south



Figure 21. Representative photograph of mowing disturbance, view north



Figure 22. Representative photograph of dirt access road in Project Area, view north

CONCLUSIONS AND RECOMMENDATIONS

MCC conducted a Phase I paleontological resource assessment of the Project Area that included a fossil locality records search and an intensive pedestrian survey. No significant paleontological resources were identified within the Project Area during the locality search or field survey. The geologic unit, Val Verde tonalite, mapped within the Project Area is unlikely to contain significant fossil remains. In addition, LACM noted that no significant fossils have been found within Project Area or in similar sediment mapped units as the geologic unit is not suitable to preserve fossils. The Project Area as mapped by RCLIS has Low Potential based on geologic formations or mapped rock units that are known to not contain significant paleontological resources.

RECOMMENDED MITIGATION

Based on the results of the Phase I paleontological resource assessment, the proposed Project Area is considered to have low sensitivity for the potential to impact paleontological resources during construction activities. Based on the above findings, MCC recommends no direct mitigation for the Project. Per Riverside County requirements, should a fossil be encountered, the County Geologist shall be notified and a paleontologist shall be retained by the project proponent. The paleontologist shall document the extent and potential significance of the paleontological resources on the site and establish appropriate mitigation measures for further site development.

CERTIFICATION: I hereby certify that the statements furnished above and in the attached exhibits present the data and information required for this report, and that the facts, statements, and information presented are true and correct to the best of my knowledge and belief.

Date: March 22, 2021

Signature: _____



Name: Jennifer Kelly, MSc., Geology
Riverside County Qualified Paleontologist

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