Appendix A

Air Quality and Greenhouse Gas Impact Study

TTM 38222

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City of Rancho Mirage, CA

Prepared for:

Lauren Reese
The Altum Group
72140 Magnesia Falls, Suite 1
Rancho Mirage, CA 92270

Prepared by:

MD Acoustics, LLC
Mike Dickerson, INCE; Tyler Klassen
1197 Los Angeles Ave, Ste C-256
Simi Valley, CA 93065

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MD ACOUSTICS
Sound Solutions for Planning and Design

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GLOSSARY OF TERMS

AQMP	Air Quality Management Plan
CAAQS	California Ambient Air Quality Standards
CARB	California Air Resources Board
CEQA	California Environmental Quality Act
CFCs	Chlorofluorocarbons
CH_4	Methane
CNG	Compressed natural gas
CO	Carbon monoxide
CO_2	Carbon dioxide
CO_2e	Carbon dioxide equivalent
DPM	Diesel particulate matter
GHG	Greenhouse gas
HFCs	Hydrofluorocarbons
LST	Localized Significant Thresholds
$MTCO_2e$	Metric tons of carbon dioxide equivalent
$MMTCO_2e$	Million metric tons of carbon dioxide equivalent
NAAQS	National Ambient Air Quality Standards
NOx	Nitrogen Oxides
NO_2	Nitrogen dioxide
N_2O	Nitrous oxide
O_3	Ozone
PFCs	Perfluorocarbons
PM	Particle matter
PM10	Particles that are less than 10 micrometers in diameter
PM2.5	Particles that are less than 2.5 micrometers in diameter
PMI	Point of maximum impact
PPM	Parts per million
PPB	Parts per billion
RTIP	Regional Transportation Improvement Plan
RTP	Regional Transportation Plan
SCAQMD	South Coast Air Quality Management District
SF_6	Sulfur hexafluoride
SIP	State Implementation Plan
SOx	Sulfur Oxides
SRA	Source/Receptor Area
SSAB	Salton Sea Air Basin
TAC	Toxic air contaminants
VOC	Volatile organic compounds
WRCC	Western Regional Climate Center

1.0 Introduction

1.1 Purpose of Analysis and Study Objectives

This air quality and greenhouse gas (GHG) analysis was prepared to evaluate whether the estimated criteria pollutants and GHG emissions generated from the project would cause a significant impact to the air resources in the project area. This assessment was conducted within the context of the California Environmental Quality Act (CEQA, California Public Resources Code Sections 21000, et seq.). The assessment is consistent with the methodology and emission factors endorsed by South Coast Air Quality Management District (SCAQMD), California Air Resource Board (CARB), and the United States Environmental Protection Agency (US EPA).

1.2 Project Summary

1.2.1 Site Location

The project site is located along Vista del Sol, between Country Club Drive and Frank Sinatra Drive in Rancho Mirage, California, as shown in Exhibit A. The site is currently zoned as residential estate use with vacant residential use to the north, east, and south. Land use category to the west is zoned as institutional with hospital land use type.

1.2.2 Project Description

The Project proposes the construction of approximately 9 single-family residences on an approximately 10.122-acres. Exhibit B demonstrates the site plan for the project.

Construction activities within the Project area will consist of site preparation, grading, building, paving, and architectural coating. Table 1 summarizes the land use description for the Project Site.

Table 1: Land Use Summary

Land Use	Unit Amount	Size Metric
Single Family Housing[1]	9	Units
Other Asphalt Surfaces[2]	2.53	Acre
[1] Units cover 7.59 acres. [2] Street paving approx. 25% of total 10.122-acre site.		

1.2.3 Sensitive Receptors

Sensitive receptors are considered land uses or other types of population groups that are more sensitive to air pollution than others due to their exposure. Sensitive population groups include children, the elderly, the acutely and chronically ill, and those with cardio-respiratory diseases. For CEQA purposes, a sensitive receptor would be a location where a sensitive individual could remain for 24-hours or longer, such as residences, hospitals, and schools (etc.).

The closest existing sensitive receptors (to the site area) is a single-family residence 120 feet (36 meters) east of the project boundary.

1.3 Executive Summary of Findings and Mitigation Measures

The following is a summary of the analysis results:

Construction-Source Emissions
Project construction-source emissions would not exceed applicable regional thresholds of significance established by the SCAQMD. For localized emissions, the project will not exceed applicable Localized Significance Thresholds (LSTs) established by the SCAQMD.

Project construction-source emissions would not conflict with the Basin Air Quality Management Plan (AQMP). As discussed herein, the project will comply with all applicable SCAQMD construction-source emission reduction rules and guidelines. Project construction source emissions would not cause or substantively contribute to violation of the California Ambient Air Quality Standards (CAAQS) or National Ambient Air Quality Standards (NAAQS).

Established requirements addressing construction equipment operations, and construction material use, storage, and disposal requirements act to minimize odor impacts that may result from construction activities. Moreover, construction-source odor emissions would be temporary, short-term, and intermittent in nature and would not result in persistent impacts that would affect substantial numbers of people. Potential construction-source odor impacts are therefore considered less-than-significant.

Operational-Source Emissions
The project operational-sourced emissions would not exceed applicable regional thresholds of significance established by the SCAQMD. Project operational-source emissions would not result in or cause a significant localized air quality impact as discussed in the Operations-Related Local Air Quality Impacts section of this report. Additionally, project-related traffic will not cause or result in CO concentrations exceeding applicable state and/or federal standards (CO “hotspots). Project operational-source emissions would therefore not adversely affect sensitive receptors within the vicinity of the project.

Project operational-source emissions would not conflict with the Basin Air Quality Management Plan (AQMP). The project's emissions meet SCAQMD regional thresholds and will not result in a significant cumulative impact. The project does not propose any such uses or activities that would result in potentially significant operational-source odor impacts. Potential operational-source odor impacts are therefore considered less-than significant.

Project-related GHG emissions meet the County of Riverside Climate Action Plan (CAP) Update screening threshold of 3,000 metric tons of carbon dioxide equivalents (MTCO2e) per year and are also considered to be less than significant. The project also complies with the goals of the CARB Scoping Plan, AB-32, and SB-32**.**

Mitigation Measures

A. Construction Measures

Adherence to SCAQMD Rule 403 is required.

No construction mitigation required.

B. Operational Measures to Reduce Greenhouse Gas Emissions

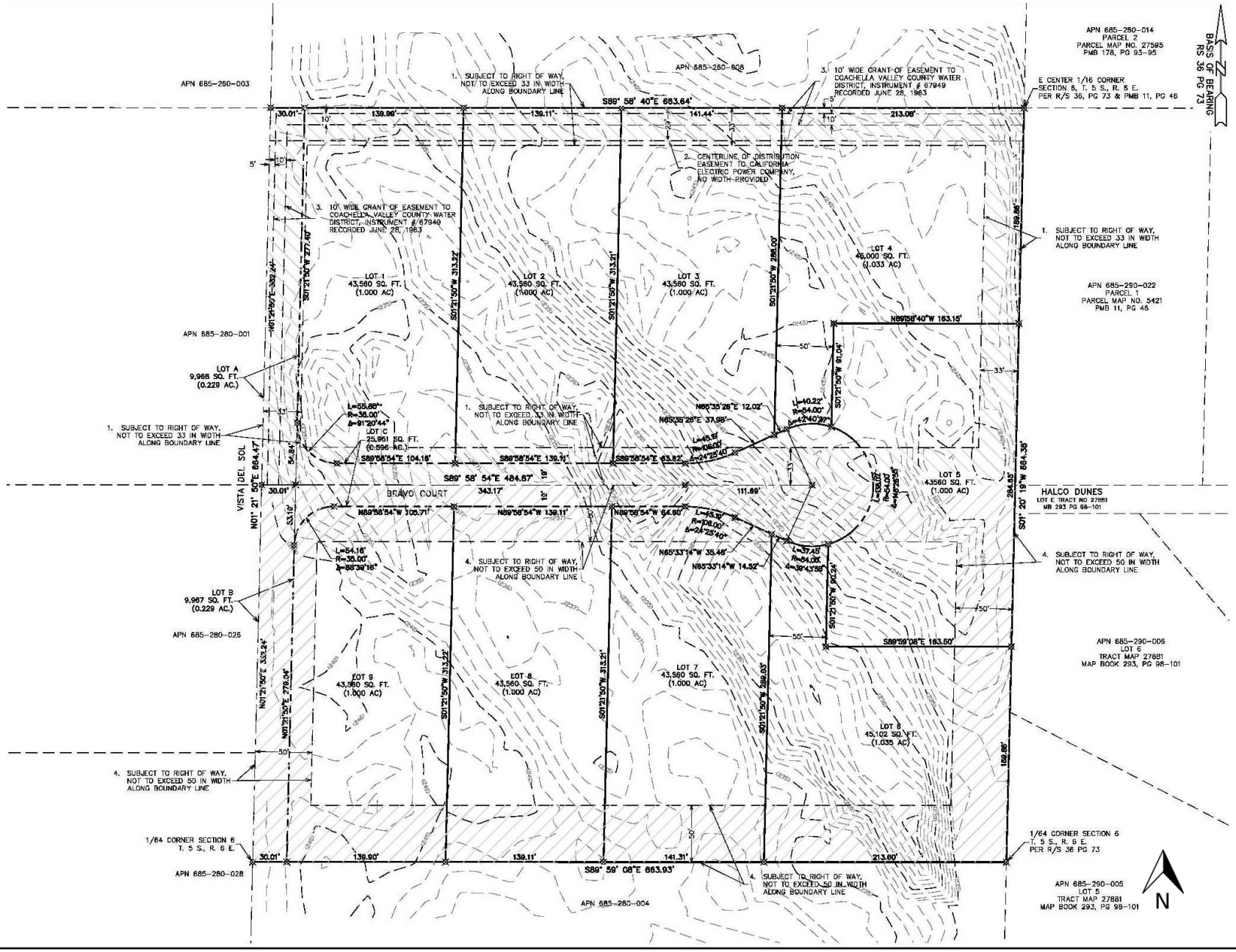
No operational mitigation required.

Exhibit A

Location Map

Exhibit B

Site Plan



2.0 Regulatory Framework and Background

2.1 Air Quality Regulatory Setting

Air pollutants are regulated at the national, state, and air basin level; each agency has a different level of regulatory responsibility. The United States Environmental Protection Agency (EPA) regulates at the national level. The California Air Resources Board (ARB) regulates at the state level. The South Coast Air Quality Management District (SCAQMD) regulates at the air basin level.

2.1.1 National and State

The EPA is responsible for global, international, and interstate air pollution issues and policies. The EPA sets national vehicle and stationary source emission standards, oversees approval of all State Implementation Plans, provides research and guidance for air pollution programs, and sets National Air Quality Standards, also known as federal standards. There are six common air pollutants, called criteria pollutants, which were identified from the provisions of the Clean Air Act of 1970.

- Ozone
- Nitrogen Dioxide
- Lead
- Particulate Matter (PM10 and PM2.5)
- Carbon Monoxide
- Particulate Matter
- Sulfur Dioxide

The federal standards were set to protect public health, including that of sensitive individuals; thus, the standards continue to change as more medical research is available regarding the health effects of the criteria pollutants. Primary federal standards are the levels of air quality necessary, with an adequate margin of safety, to project the public health.

A State Implementation Plan is a document prepared by each state describing existing air quality conditions and measures that will be followed to attain and maintain federal standards. The State Implementation Plan for the State of California is administered by the ARB, which has overall responsibility for statewide air quality maintenance and air pollution prevention. California's State Implementation Plan incorporates individual federal attainment plans for regional air districts—air district prepares their federal attainment plan, which sent to ARB to be approved and incorporated into the California State Implementation Plan. Federal attainment plans include the technical foundation for understanding air quality (e.g., emission inventories and air quality monitoring), control measures and strategies, and enforcement mechanisms. See http://www.arb.ca.gov/research/aaqs/aaqs.htm for additional information on criteria pollutants and air quality standards.

The federal and state ambient air quality standards are summarized in Table 2 and can also be found at http://www.arb.ca.gov/research/aaqs/aaqs2.pdf.

Table 2: Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards[1]		National Standards[2]		
		Concentrations[3]	Method[4]	Primary[3,5]	Secondary[3,6]	Method[7]
Ozone (O3)	1-Hour	0.09 ppm	Ultraviolet Photometry	- -	Same as Primary Standard	Ultraviolet Photometry
	8-Hour	0.070 ppm		0.070 ppm (147 µg/m³)		
Respirable Particulate Matter (PM10)[8]	24-Hour	50 µg/m³	Gravimetric or Beta Attenuation	150 µ/m³	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	20 µg/m³		- -		
Fine Particulate Matter (PM2.5)[8]	24-Hour	- -	- -	35 µg/m³	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	12 µg/m³	Gravimetric or Beta Attenuation	12 µg/m³	15 µg/m³	
Carbon Monoxide (CO)	1-Hour	20 ppm (23 µg/m³)	Non-Dispersive Infrared Photometry (NDIR)	35 ppm (40 µg/m³)	- -	Non-Dispersive Infrared Photometry (NDIR)
	8-Hour	9.0 ppm (10 µg/m³)		9 ppm (10 µg/m³)	- -	
	8-Hour (Lake Tahoe)	6 ppm (7 µg/m³)		- -	- -	
Nitrogen Dioxide (NO_2)[9]	1-Hour	0.18 ppm (339 µg/m³)	Gas Phase Chemiluminescence	100 ppb (188 µg/m³)	- -	Gas Phase Chemiluminescence
	Annual Arithmetic Mean	0.030 ppm (357 µg/m³)		0.053 ppm (100 µg/m³)	Same as Primary Standard	
Sulfur Dioxide (SO_2)[10]	1-Hour	0.25 ppm (655 µg/m³)	Ultraviolet Fluorescence	75 ppb (196 µg/m³)	- -	Ultraviolet Fluorescence; Spectrophotometry (Pararosaniline Method)
	3-Hour	- -		- -	0.5 ppm (1300 mg/m³)	
	24-Hour	0.04 ppm (105 µg/m³)		0.14 ppm (for certain areas)[10]	- -	
	Annual Arithmetic Mean	- -		0.130ppm (for certain areas)[10]	- -	
Lead[11,12]	30 Day Average	1.5 µg/m³	Atomic Absorption	- -		
	Calendar Qrtr	- -		1.5 µg/m³ (for certain areas)[12]	Same as Primary Standard	High Volume Sampler and Atomic Absorption
	Rolling 3-Month Average	- -		0.15 µg/m³		
Visibility Reducing Particles[13]	8-Hour	See footnote 13	Beta Attenuation and Transmittance through Filter Tape	No National Standards		
Sulfates	24-Hour	25 µg/m³	Ion Chromatography			
Hydrogen Sulfide	1-Hour	0.03 ppm (42 µg/m³)	Ultraviolet Fluorescence			
Vinyl Chloride[11]	24-Hour	0.01 ppm (26 µg/m³)	Gas Chromatography			

Notes:

1. California standards for ozone, carbon monoxide (except 8-hour Lake Tahoe), sulfur dioxide (1 and 24 hour), nitrogen dioxide, and particulate matter (PM10, PM2.5, and visibility reducing particles), are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.

2. National standards (other than ozone, particulate matter, and those based on annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest 8-hour concentration measured at each site in a year, averaged over three years, is equal to or less than the standard. For PM10, the 24 hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m³ is equal to or less than one. For PM2.5, the 24 hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. Contact the U.S. EPA for further clarification and current national policies.

3. Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25°C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.

4. Any equivalent measurement method which can be shown to the satisfaction of the ARB to give equivalent results at or near the level of the air quality standard may be used.

5. National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.

6. National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

7. Reference method as described by the U.S. EPA. An “equivalent method” of measurement may be used but must have a “consistent relationship to the reference method” and must be approved by the U.S. EPA.

8. On December 14, 2012, the national annual PM2.5 primary standard was lowered from 15 µg/m^3 to 12.0 µg/m^3. The existing national 24-hour PM2.5 standards (primary and secondary) were retained at 35 µg/m^3, as was the annual secondary standard of 15 µg/m^3. The existing 24-hour PM10 standards (primary and secondary) of 150 µg/m^3 also were retained. The form of the annual primary and secondary standards is the annual mean, averaged over 3 years.

9. To attain the 1-hour national standard, the 3-year average of the annual 98th percentile of the 1-hour daily maximum concentrations at each site must not exceed 100 ppb. Note that the national 1-hour standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the national 1-hour standard to the California standards the units can be converted from ppb to ppm. In this case, the national standard of 100 ppb is identical to 0.100 ppm.

10. On June 2, 2010, a new 1-hour SO2 standard was established and the existing 24-hour and annual primary standards were revoked. To attain the 1-hour national standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 ppb. The 1971 SO2 national standards (24-hour and annual) remain in effect until one year after an area is designated for the 2010 standard, except that in areas designated nonattainment for the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved.

    Note that the 1-hour national standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the 1-hour national standard to the California standard the units can be converted to ppm. In this case, the national standard of 75 ppb is identical to 0.075 ppm.

11. The ARB has identified lead and vinyl chloride as 'toxic air contaminants' with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.

12. The national standard for lead was revised on October 15, 2008 to a rolling 3-month average. The 1978 lead standard (1.5 µg/m^3 as a quarterly average) remains in effect until one year after an area is designated for the 2008 standard, except that in areas designated nonattainment for the 1978 standard, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standard are approved.

13. In 1989, the ARB converted both the general statewide 10-mile visibility standard and the Lake Tahoe 30-mile visibility standard to instrumental equivalents, which are "extinction of 0.23 per kilometer" and "extinction of 0.07 per kilometer" for the statewide and Lake Tahoe Air Basin standards, respectively.

Several pollutants listed in Table 2 are not addressed in this analysis. Analysis of lead is not included in this report because the project is not anticipated to emit lead. Visibility-reducing particles are not explicitly addressed in this analysis because particulate matter is addressed. The project is not expected to generate or be exposed to vinyl chloride because proposed project uses do not utilize the chemical processes that create this pollutant and there are no such uses in the project vicinity. The proposed project is not expected to cause exposure to hydrogen sulfide because it would not generate hydrogen sulfide in any substantial quantity.

2.1.2 South Coast Air Quality Management District

The agency for air pollution control for the Salton Sea Air Basin (basin) is the South Coast Air Quality Management District (SCAQMD). SCAQMD is responsible for controlling emissions primarily from stationary sources. SCAQMD maintains air quality monitoring stations throughout the basin. SCAQMD, in coordination with the Southern California Association of Governments, is also responsible for developing, updating, and implementing the Air Quality Management Plan (AQMP) for the basin. An AQMP is a plan prepared and implemented by an air pollution district for a county or region designated as nonattainment of the federal and/or California ambient air quality standards. The term nonattainment area is used to refer to an air basin where one or more ambient air quality standards are exceeded.

Every three (3) years the SCAQMD prepares a new AQMP, updating the previous plan and having a 20-year horizon.

On March 23, 2017 CARB approved the 2016 AQMP. The 2016 AQMP is a regional blueprint for achieving the federal air quality standards and healthful air.

The 2016 AQMP includes both stationary and mobile source strategies to ensure that rapidly approaching attainment deadlines are met, that public health is protected to the maximum extent feasible, and that the region is not faced with burdensome sanctions if the Plan is not approved or if the NAAQS are not met on time. As with every AQMP, a comprehensive analysis of emissions, meteorology, atmospheric chemistry, regional growth projections, and the impact of existing control measures is updated with the latest data and methods. The most significant air quality challenge in the Basin is to reduce nitrogen oxide (NOx) emissions sufficiently to meet the upcoming ozone standard deadlines. The primary goal of the 2016 AQMP is to meet clean air standards and protect public health, including ensuring benefits to environmental justice and disadvantaged communities. Now that the plan has been approved by CARB, it has been forwarded to the U.S. Environmental Protection Agency for its review. If approved by EPA, the plan becomes federally enforceable.

South Coast AQMD has initiated the development of the 2022 AQMP to address the attainment of the 2015 8-hour ozone standard (70 ppb) for South Coast Air Basin and Coachella Valley. To support the development of mobile source strategies for the 2022 AQMP, South Coast AQMD, in conjunction with California Air Resources Board, has established Mobile Source Working Groups which are open to all interested parties..

South Coast Air Quality Management District Rules
The AQMP for the basin establishes a program of rules and regulations administered by SCAQMD to obtain attainment of the state and federal standards. Some of the rules and regulations that apply to this Project include, but are not limited to, the following:

SCAQMD Rule 402 prohibits a person from discharging from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health or safety of any such persons or the public, or which cause, or have a natural tendency to cause, injury or damage to business or property.

SCAQMD Rule 403 governs emissions of fugitive dust during construction and operation activities. Compliance with this rule is achieved through application of standard Best Management Practices, such as application of water or chemical stabilizers to disturbed soils, covering haul vehicles, restricting vehicle speeds on unpaved roads to 15 miles per hour, sweeping loose dirt from paved site access roadways, cessation of construction activity when winds exceed 25 mph, and establishing a permanent ground cover on finished sites.

Rule 403 requires that fugitive dust be controlled with best available control measures so that the presence of such dust does not remain visible in the atmosphere beyond the property line of the emission source. In addition, Rule 403 requires implementation of dust suppression techniques to prevent fugitive dust from creating a nuisance off site. Applicable suppression techniques are indicated below and include but are not limited to the following:

- Apply nontoxic chemical soil stabilizers according to manufacturers' specifications to all inactive construction areas (previously graded areas in active for 10 days or more).
- Water active sites at least three times daily.
- Cover all trucks hauling dirt, sand, soil, or other loose materials, or maintain at least 2 feet of freeboard in accordance with the requirements of California Vehicle Code (CVC) section 23114.
- Pave construction access roads at least 100 feet onto the site from the main road.
- Reduce traffic speeds on all unpaved roads to 15 mph or less.
- Suspension of all grading activities when wind speeds (including instantaneous wind gusts) exceed 25 mph.
- Bumper strips or similar best management practices shall be provided where vehicles enter and exit the construction site onto paved roads or wash off trucks and any equipment leaving the site each trip.
- Replanting disturbed areas as soon as practical.
- During all construction activities, construction contractors shall sweep on-site and off-site streets if silt is carried to adjacent public thoroughfares, to reduce the amount of particulate matter on public streets.

SCAQMD Rule 1113 governs the sale, use, and manufacturing of architectural coating and limits the VOC content in paints and paint solvents. This rule regulates the VOC content of paints available during construction. Therefore, all paints and solvents used during construction and operation of project must comply with Rule 1113.

Idling Diesel Vehicle Trucks – Idling for more than 5 minutes in any one location is prohibited within California borders.

Rule 2702. The SCAQMD adopted Rule 2702 on February 6, 2009, which establishes a voluntary air quality investment program from which SCAQMD can collect funds from parties that desire certified GHG emission reductions, pool those funds, and use them to purchase or fund GHG emission reduction projects within two years, unless extended by the Governing Board. Priority will be given to projects that result in co-benefit emission reductions of GHG emissions and criteria or toxic air pollutants within environmental justice areas. Further, this voluntary program may compete with the cap-and-trade program identified for implementation in CARB's Scoping Plan, or a Federal cap and trade program.

2.1.3 Local

Local jurisdictions, such as the County of Riverside and Community of Winchester, have the authority and responsibility to reduce air pollution through their police power and decision-making authority. Specifically, the County and City are responsible for the assessment and mitigation of air emissions resulting from its land use decisions. The County and City are also responsible for the implementation of transportation control measures as outlined in the 2016 AQMP. Examples of such measures include bus turnouts, energy-efficient streetlights, and synchronized traffic signals. In accordance with CEQA requirements and the CEQA review process, the County and City assesses the air quality impacts of

new development projects, requires mitigation of potentially significant air quality impacts by conditioning discretionary permits, and monitors and enforces implementation of such mitigation.

The County relies on the expertise of the SCAQMD and utilizes the SCAQMD CEQA Air Quality Handbook as the guidance document for the environmental review of plans and development proposals within its jurisdiction.

County of Riverside General Plan

The Air Quality Element of the County of Riverside General Plan summarizes air quality issues in the Basin, air quality-related plans and programs administered by federal, state, and special purpose agencies, and establishes goals and policies to improve air quality. These goals and policies in the Air Quality Element that relate to the proposed project include:

Multi-jurisdictional Cooperation:

AQ 1.1 Promote and participate with regional and local agencies, both public and private, to protect and improve air quality.

AQ 1.2 Support the Southern California Association of Government's (SCAG) Regional Growth Management Plan by developing intergovernmental agreements with appropriate governmental entities such as the Western Riverside Council of Governments (WRCOG), the Coachella Valley Association of Governments (CVAG), sanitation districts, water districts, and those subregional entities identified in the Regional Growth Management Plan.

AQ 1.3 Participate in the development and update of those regional air quality management plans required under federal and state law, and meet all standards established for clean air in these plans.

AQ 1.4 Coordinate with the SCAQMD and MDAQMD to ensure that all elements of air quality plans regarding reduction of air pollutant emissions are being enforced.

AQ 1.5 Establish and implement air quality, land use and circulation measures that improve not only the County's environment but the entire regions.

AQ 1.6 Establish a level playing field by working with local jurisdictions to simultaneously adopt policies similar to those in this Air Quality Element.

AQ 1.7 Support legislation which promotes cleaner industry, clean fuel vehicles and more efficient burning engines and fuels.

AQ 1.8 Support the introduction of federal, state or regional enabling legislation to permit the County to promote inventive air quality programs, which otherwise could not be implemented.

AQ 1.9 Encourage, publicly recognize and reward innovative approaches that improve air quality.

AQ 1.10 Work with regional and local agencies to evaluate the feasibility of implementing a system of charges (e.g., pollution charges, user fees, congestion pricing and toll roads) that requires individuals who undertake polluting activities to bear the economic cost of their actions where possible.

AQ 1.11 Involve environmental groups, the business community, special interests, and the general public in the formulation and implementation of programs that effectively reduce airborne pollutants.

Sensitive Receptors:

AQ 2.1 The County land use planning efforts shall assure that sensitive receptors are separated and protected from polluting point sources to the greatest extent possible.

AQ 2.2 Require site plan designs to protect people and land uses sensitive to air pollution through the use of barriers and/or distance from emissions sources when possible.

AQ 2.3 Encourage the use of pollution control measures such as landscaping, vegetation and other materials, which trap particulate matter or control pollution.

Stationary Pollution Sources:

AQ 4.1 Encourage the use of building materials/methods which reduce emissions.

AQ 4.2 Require the use of all feasible efficient heating equipment and other appliances, such as water heaters, swimming pool heaters, cooking equipment, refrigerators, furnaces and boiler units.

AQ 4.3 Require centrally heated facilities to utilize automated time clocks or occupant sensors to control heating where feasible.

AQ 4.5 Require stationary pollution sources to minimize the release of toxic pollutants through:

- Design features;
- Operating procedures;
- Preventive maintenance;
- Operator training; and
- Emergency response planning

AQ 4.6 Require stationary air pollution sources to comply with applicable air district rules and control measures.

AQ 4.7 To the greatest extent possible, require every project to mitigate any of its anticipated emissions which exceed allowable emissions as established by the SCAQMD, MDAQMD, SOCAB, the Environmental Protection Agency and the California Air Resources Board.

AQ 4.8 Expand, as appropriate, measures contained in the County's Fugitive Dust Reduction Program for the Coachella Valley to the entire County.

AQ 4.9 Require compliance with SCAQMD Rules 403 and 403.1, and support appropriate future measures to reduce fugitive dust emanating from construction sites.

AQ 4.10 Coordinate with the SCAQMD and MDAQMD to create a communications plan to alert those conducting grading operations in the County of first, second, and third stage smog alerts, and when wind speeds exceed 25 miles per hour. During these instances all grading operations should be suspended.

Energy Efficiency and Conservation:

AQ 5.1 Utilize source reduction, recycling and other appropriate measures to reduce the amount of solid waste disposed of in landfills.

AQ 5.4 Encourage the incorporation of energy-efficient design elements, including appropriate site orientation and the use of shade and windbreak trees to reduce fuel consumption for heating and cooling.

Particulate Matter:

AQ 15.1 Identify and monitor sources, enforce existing regulations, and promote stronger controls to reduce particulate matter.

Multi-jurisdictional Cooperation:

AQ 16.1 Cooperate with local, regional, state and federal jurisdictions to better control particulate matter.

Control Measures:

AQ 17.1 Reduce particulate matter from agriculture, construction, demolition, debris hauling, street cleaning, utility maintenance, railroad rights-of-way, and off-road vehicles to the extent possible.

AQ 17.3 Identify and create a control plan for areas within the County prone to wind erosion of soil.

AQ 17.4 Adopt incentives, regulations and/or procedures to manage paved and unpaved roads and parking lots so they produce the minimum practicable level of particulates.

AQ 17.5 Adopt incentives and/or procedures to limit dust from agricultural lands and operations, where applicable.

AQ 17.6 Reduce emissions from building materials and methods that generate excessive pollutants, through incentives and/or regulations.

2.2 Greenhouse Gas Regulatory Setting

2.2.1 International

Many countries around the globe have made an effort to reduce GHGs since climate change is a global issue.

Intergovernmental Panel on Climate Change. In 1988, the United Nations and the World Meteorological Organization established the Intergovernmental Panel on Climate Change to assess the scientific, technical and socio-economic information relevant to understanding the scientific basis of risk of human-induced climate change, its potential impacts, and options for adaptation and mitigation.

United Nations. The United States participates in the United Nations Framework Convention on Climate Change (UNFCCC) (signed on March 21, 1994). Under the Convention, governments gather and share information on greenhouse gas emissions, national policies, and best practices; launch national strategies for addressing greenhouse gas emissions and adapting to expected impacts, including the provision of financial and technological support to developing countries; and cooperate in preparing for adaptation to the impacts of climate change.

The 2014 UN Climate Change Conference in Lima Peru provided a unique opportunity to engage all countries to assess how developed countries are implementing actions to reduce emissions.

Kyoto Protocol. The Kyoto Protocol is a treaty made under the UNFCCC and was the first international agreement to regulate GHG emissions. It has been estimated that if the commitments outlined in the Kyoto Protocol are met, global GHG emissions could be reduced by an estimated 5 percent from 1990 levels during the first commitment period of 2008 – 2012 (UNFCCC 1997). On December 8, 2012, the Doha Amendment to the Kyoto Protocol was adopted. The amendment includes: New commitments for Annex I Parties to the Kyoto Protocol who agreed to take on commitments in a second commitment period from 2013 – 2020; a revised list of greenhouse gases (GHG) to be reported on by Parties in the second commitment period; and Amendments to several articles of the Kyoto Protocol which specifically referenced issues pertaining to the first commitment period and which needed to be updated for the second commitment period.

2.2.2 National

Greenhouse Gas Endangerment. On December 2, 2009, the EPA announced that GHGs threaten the public health and welfare of the American people. The EPA also states that GHG emissions from on-road vehicles contribute to that threat. The decision was based on *Massachusetts v. EPA* (Supreme

Court Case 05-1120) which argued that GHGs are air pollutants covered by the Clean Air Act and that the EPA has authority to regulate those emissions.

Clean Vehicles. Congress first passed the Corporate Average Fuel Economy law in 1975 to increase the fuel economy of cars and light duty trucks. The law has become more stringent over time. On May 19, 2009, President Obama put in motion a new national policy to increase fuel economy for all new cars and trucks sold in the United States. On April 1, 2010, the EPA and the Department of Transportation's National Highway Safety Administration announced a joint final rule establishing a national program that would reduce greenhouse gas emissions and improve fuel economy for new cars and trucks sold in the United States.

The first phase of the national program would apply to passenger cars, light-duty trucks, and medium-duty passenger vehicles, covering model years 2012 through 2016. They require these vehicles to meet an estimated combined average emissions level of 250 grams of carbon dioxide per mile, equivalent to 35.5 miles per gallon if the automobile industry were to meet this carbon dioxide level solely through fuel economy improvements. Together, these standards would cut carbon dioxide emissions by an estimated 960 million metric tons and 1.8 billion barrels of oil over the lifetime of the vehicles sold under the program (model years 2012-2016). The second phase of the national program would involve proposing new fuel economy and greenhouse gas standards for model years 2017 – 2025 by September 1, 2011.

On October 25, 2010, the EPA and the U.S. Department of Transportation proposed the first national standards to reduce greenhouse gas emissions and improve fuel efficiency of heavy-duty trucks and buses. For combination tractors, the agencies are proposing engine and vehicle standards that begin in the 2014 model year and achieve up to a 20 percent reduction in carbon dioxide emissions and fuel consumption by the 2018 model year. For heavy-duty pickup trucks and vans, the agencies are proposing separate gasoline and diesel truck standards, which phase in starting in the 2014 model year and achieve up to a 10 percent reduction for gasoline vehicles and 15 percent reduction for diesel vehicles by 2018 model year (12 and 17 percent respectively if accounting for air conditioning leakage). Lastly, for vocational vehicles, the agencies are proposing engine and vehicle standards starting in the 2014 model year which would achieve up to a 10 percent reduction in fuel consumption and carbon dioxide emissions by 2018 model year.

Issued by NHTSA and EPA in March 2020 (published on April 30, 2020 and effective after June 29, 2020), the Safer Affordable Fuel-Efficient Vehicles Rule would maintain the CAFE and CO2 standards applicable in model year 2020 for model years 2021 through 2026. The estimated CAFE and CO2 standards for model year 2020 are 43.7 mpg and 204 grams of CO2 per mile for passenger cars and 31.3 mpg and 284 grams of CO2 per mile for light trucks, projecting an overall industry average of 37 mpg, as compared to 46.7 mpg under the standards issued in 2012. This Rule also excludes CO2-

equivalent emission improvements associated with air conditioning refrigerants and leakage (and, optionally, offsets for nitrous oxide and methane emissions) after model year 2020.[1]

Mandatory Reporting of Greenhouse Gases. On January 1, 2010, the EPA started requiring large emitters of heat-trapping emissions to begin collecting GHG data under a new reporting system. Under the rule, suppliers of fossil fuels or industrial greenhouse gases, manufacturers of vehicles and engines, and facilities that emit 25,000 metric tons or more per year of greenhouse gas emissions are required to submit annual reports to the EPA.

Climate Adaption Plan. The EPA Plan identifies priority actions the Agency will take to incorporate considerations of climate change into its programs, policies, rules and operations to ensure they are effective under future climatic conditions. The following link provides more information on the EPA Plan: https://www.epa.gov/arc-x/planning-climate-change-adaptation

2.2.3 California

California Code of Regulations (CCR) Title 24, Part 6. CCR Title 24, Part 6: California's Energy Efficiency Standards for Residential and Nonresidential Buildings (Title 24) were first established in 1978 in response to a legislative mandate to reduce California's energy consumption. The standards are updated periodically to allow consideration and possible incorporation of new energy efficiency technologies and methods. Although it was not originally intended to reduce GHG emissions, electricity production by fossil fuels results in GHG emissions and energy efficient buildings require less electricity. Therefore, increased energy efficiency results in decreased GHG emissions.

The Energy Commission adopted 2008 Standards on April 23, 2008 and Building Standards Commission approved them for publication on September 11, 2008. These updates became effective on August 1, 2009. 2013, 2016, and 2019 standards have been approved and became effective July 1, 2014, January 1, 2016, and January 1, 2020, respectively.

California Code of Regulations (CCR) Title 24, Part 11. All buildings for which an application for a building permit is submitted on or after January 1, 2020 must follow the 2019 standards. Energy efficient buildings require less electricity; therefore, increased energy efficiency reduces fossil fuel consumption and decreases greenhouse gas emissions. The following links provide more information on Title 24, Part 11:
https://www.dgs.ca.gov/BSC/Codes
https://www.energy.ca.gov/sites/default/files/2020-03/Title_24_2019_Building_Standards_FAQ_ada.pdf

California Green Building Standards On January 12, 2010, the State Building Standards Commission unanimously adopted updates to the California Green Building Standards Code, which went into effect

[1] National Highway Traffic Safety Administration (NHTSA) and U.S. Environmental Protection Agency (USEPA), 2018. Federal Register / Vol. 83, No. 165 / Friday, August 24, 2018 / Proposed Rules, The Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule for Model Years 2021–2026 Passenger Cars and Light Trucks 2018. Available at: https://www.gpo.gov/fdsys/pkg/FR-2018-08-24/pdf/2018-16820.pdf.

on January 1, 2011. The Housing and Community Development (HCD) updated CALGreen through the 2015 Triennial Code Adoption Cycle, during the 2016 to 2017 fiscal year. During the 2019-2020 fiscal year, the Department of Housing and Community Development (HCD) updated CALGreen through the 2019 Triennial Code Adoption Cycle.

The Code is a comprehensive and uniform regulatory code for all residential, commercial and school buildings. CCR Title 24, Part 11: California Green Building Standards (Title 24) became effective in 2001 in response to continued efforts to reduce GHG emissions associated with energy consumption. CCR Title 24, Part 11 now require that new buildings reduce water consumption, employ building commissioning to increase building system efficiencies, divert construction waste from landfills, and install low pollutant-emitting finish materials. One focus of CCR Title 24, Part 11 is water conservation measures, which reduce GHG emissions by reducing electrical consumption associated with pumping and treating water. CCR Title 24, Part 11 has approximately 52 nonresidential mandatory measures and an additional 130 provisions for optional use. Some key mandatory measures for commercial occupancies include specified parking for clean air vehicles, a 20 percent reduction of potable water use within buildings, a 50 percent construction waste diversion from landfills, use of building finish materials that emit low levels of volatile organic compounds, and commissioning for new, nonresidential buildings over 10,000 square feet.

The 2019 CalGreen Code includes the following changes and/or additional regulations:

Single-family homes built with the 2019 standards will use about 7 percent less energy due to energy efficiency measures versus those built under the 2016 standards. Once rooftop solar electricity generation is factored in, homes built under the 2019 standards will use about 53 percent less energy than those under the 2016 standards. Nonresidential buildings will use about 30 percent less energy due mainly to lighting upgrades[2].

HCD modified the best management practices for stormwater pollution prevention adding Section 5.106.2 for projects that disturb one or more acres of land. This section requires projects that disturb one acre or more of land or less than one acre of land but are part of a larger common plan of development or sale must comply with the post-construction requirement detailed in the applicable National Pollutant Discharge Elimination System (NPDES) General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities issued by the State Water Resources Control Board. The NPDES permits require post-construction runoff (post-project hydrology) to match the preconstruction runoff pre-project hydrology) with installation of post-construction stormwater management measures.

HCD added sections 5.106.4.1.3 and 5.106.4.1.5 in regards to bicycle parking. Section 5.106.4.1.3 requires new buildings with tenant spaces that have 10 or more tenant-occupants, provide secure

[2] https://ww2.energy.ca.gov/title24/2019standards/documents/2018_Title_24_2019_Building_Standards_FAQ.pdf

bicycle parking for 5 percent of the tenant-occupant vehicular parking spaces with a minimum of one bicycle parking facility. In addition, Section 5.106.4.1.5 states that acceptable bicycle parking facility for Sections 5.106.4.1.2 through 5.106.4.1.4 shall be convenient from the street and shall meeting one of the following: (1) covered, lockable enclosures with permanently anchored racks for bicycles; (2) lockable bicycle rooms with permanently anchored racks; or (3) lockable, permanently anchored bicycle lockers.

HCD amended section 5.106.5.3.5 allowing future charging spaces to qualify as designated parking for clean air vehicles.

HCD updated section 5.303.3.3 in regards to showerhead flow rates. This update reduced the flow rate to 1.8 GPM.

HCD amended section 5.304.1 for outdoor potable water use in landscape areas and repealed sections 5.304.2 and 5.304.3. The update requires nonresidential developments to comply with a local water efficient landscape ordinance or the current California Department of Water Resource's' Model Water Efficient Landscape Ordinance (MWELO), whichever is more stringent. Some updates were also made in regards to the outdoor potable water use in landscape areas for public schools and community colleges.

HCD updated Section 5.504.5.3 in regards to the use of MERV filters in mechanically ventilated buildings. This update changed the filter use from MERV 8 to MERV 13.

The California Green Building Standards Code does not prevent a local jurisdiction from adopting a more stringent code as state law provides methods for local enhancements. The Code recognizes that many jurisdictions have developed existing construction and demolition ordinances, and defers to them as the ruling guidance provided they provide a minimum 50-percent diversion requirement. The code also provides exemptions for areas not served by construction and demolition recycling infrastructure. State building code provides the minimum standard that buildings need to meet in order to be certified for occupancy. Enforcement is generally through the local building official. The following link provides more on CalGreen Building Standards:
http://www.bsc.ca.gov/Home/CALGreen.aspx

Executive Order S-3-05. California Governor issued Executive Order S-3-05, GHG Emission, in June 2005, which established the following targets:

- By 2010, California shall reduce greenhouse gas emissions to 2000 levels;
- By 2020, California shall reduce greenhouse gas emissions to 1990 levels.
- By 2050, California shall reduce greenhouse gas emissions to 80 percent below 1990 levels.

The executive order directed the secretary of the California Environmental Protection Agency (CalEPA) to coordinate a multi-agency effort to reduce GHG emissions to the target levels. To comply with the Executive Order, the secretary of CalEPA created the California Climate Action Team (CAT), made up of

members from various state agencies and commissions. The team released its first report in March 2006. The report proposed to achieve the targets by building on the voluntary actions of businesses, local governments, and communities and through State incentive and regulatory programs.

Executive Order S-01-07. Executive Order S-1-07 was issued in 2007 and proclaims that the transportation sector is the main source of GHG emissions in the State, since it generates more than 40 percent of the State's GHG emissions. It establishes a goal to reduce the carbon intensity of transportation fuels sold in the State by at least ten percent by 2020. This Order also directs CARB to determine whether this Low Carbon Fuel Standard (LCFS) could be adopted as a discrete early-action measure as part of the effort to meet the mandates in AB 32.

On April 23, 2009 CARB approved the proposed regulation to implement the low carbon fuel standard and began implementation on January 1, 2011. The low carbon fuel standard is anticipated to reduce GHG emissions by about 16 MMT per year by 2020. CARB approved some amendments to the LCFS in December 2011, which were implemented on January 1, 2013. In September 2015, the Board approved the re-adoption of the LCFS, which became effective on January 1, 2016, to address procedural deficiencies in the way the original regulation was adopted. In 2018, the Board approved amendments to the regulation, which included strengthening and smoothing the carbon intensity benchmarks through 2030 in-line with California's 2030 GHG emission reduction target enacted through SB 32, adding new crediting opportunities to promote zero emission vehicle adoption, alternative jet fuel, carbon capture and sequestration, and advanced technologies to achieve deep decarbonization in the transportation sector.

The LCFS is designed to encourage the use of cleaner low-carbon transportation fuels in California, encourage the production of those fuels, and therefore, reduce GHG emissions and decrease petroleum dependence in the transportation sector. Separate standards are established for gasoline and diesel fuels and the alternative fuels that can replace each. The standards are "back-loaded", with more reductions required in the last five years, than the first five years. This schedule allows for the development of advanced fuels that are lower in carbon than today's fuels and the market penetration of plug-in hybrid electric vehicles, battery electric vehicles, fuel cell vehicles, and flexible fuel vehicles. It is anticipated that compliance with the low carbon fuel standard will be based on a combination of both lower carbon fuels and more efficient vehicles.

Reformulated gasoline mixed with corn-derived ethanol at ten percent by volume and low sulfur diesel fuel represent the baseline fuels. Lower carbon fuels may be ethanol, biodiesel, renewable diesel, or blends of these fuels with gasoline or diesel as appropriate. Compressed natural gas and liquefied natural gas also may be low carbon fuels. Hydrogen and electricity, when used in fuel cells or electric vehicles are also considered as low carbon fuels for the low carbon fuel standard.

SB 97. Senate Bill 97 (SB 97) was adopted August 2007 and acknowledges that climate change is a prominent environmental issue that requires analysis under CEQA. SB 97 directed the Governor's Office of Planning and Research (OPR), which is part of the State Resource Agency, to prepare, develop, and transmit to CARB guidelines for the feasible mitigation of GHG emissions or the effects of GHG

emissions, as required by CEQA, by July 1, 2009. The Resources Agency was required to certify and adopt those guidelines by January 1, 2010.

Pursuant to the requirements of SB 97 as stated above, on December 30, 2009 the Natural Resources Agency adopted amendments to the state CEQA guidelines that address GHG emissions. The CEQA Guidelines Amendments changed 14 sections of the CEQA Guidelines and incorporate GHG language throughout the Guidelines. However, no GHG emissions thresholds of significance are provided and no specific mitigation measures are identified. The GHG emission reduction amendments went into effect on March 18, 2010 and are summarized below:

- Climate action plans and other greenhouse gas reduction plans can be used to determine whether a project has significant impacts, based upon its compliance with the plan.
- Local governments are encouraged to quantify the greenhouse gas emissions of proposed projects, noting that they have the freedom to select the models and methodologies that best meet their needs and circumstances. The section also recommends consideration of several qualitative factors that may be used in the determination of significance, such as the extent to which the given project complies with state, regional, or local GHG reduction plans and policies. OPR does not set or dictate specific thresholds of significance. Consistent with existing CEQA Guidelines, OPR encourages local governments to develop and publish their own thresholds of significance for GHG impacts assessment.
- When creating their own thresholds of significance, local governments may consider the thresholds of significance adopted or recommended by other public agencies, or recommended by experts.
- New amendments include guidelines for determining methods to mitigate the effects of greenhouse gas emissions in Appendix F of the CEQA Guidelines.
- OPR is clear to state that "to qualify as mitigation, specific measures from an existing plan must be identified and incorporated into the project; general compliance with a plan, by itself, is not mitigation."
- OPR's emphasizes the advantages of analyzing GHG impacts on an institutional, programmatic level. OPR therefore approves tiering of environmental analyses and highlights some benefits of such an approach.
- Environmental impact reports (EIRs) must specifically consider a project's energy use and energy efficiency potential.

AB 32. The California State Legislature enacted AB 32, the California Global Warming Solutions Act of 2006. AB 32 requires that greenhouse gases emitted in California be reduced to 1990 levels by the year 2020. "Greenhouse gases" as defined under AB 32 include carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. ARB is the state agency charged with monitoring and regulating sources of greenhouse gases. AB 32 states the following:
Global warming poses a serious threat to the economic well-being, public health, natural resources, and the environment of California. The potential adverse impacts of global warming include the exacerbation of air quality problems, a reduction in the quality and supply of water to the state from the Sierra snowpack, a rise in sea levels resulting in the displacement of thousands of coastal

businesses and residences, damage to marine ecosystems and the natural environment, and an increase in the incidences of infectious diseases, asthma, and other human health-related problems.

The ARB Board approved the 1990 greenhouse gas emissions level of 427 million metric tons of carbon dioxide equivalent (MMTCO2e) on December 6, 2007 (California Air Resources Board 2007). Therefore, emissions generated in California in 2020 are required to be equal to or less than 427 MMTCO2e. Emissions in 2020 in a "business as usual" scenario are estimated to be 596 MMTCO2e.

Under AB 32, the ARB published its Final Expanded List of Early Action Measures to Reduce Greenhouse Gas Emissions in California. Discrete early action measures are currently underway or are enforceable by January 1, 2010. The ARB has 44 early action measures that apply to the transportation, commercial, forestry, agriculture, cement, oil and gas, fire suppression, fuels, education, energy efficiency, electricity, and waste sectors. Of these early action measures, nine are considered discrete early action measures, as they are regulatory and enforceable by January 1, 2010. The ARB estimates that the 44 recommendations are expected to result in reductions of at least 42 MMTCO2e by 2020, representing approximately 25 percent of the 2020 target.

The ARB's Climate Change Scoping Plan (Scoping Plan) contains measures designed to reduce the State's emissions to 1990 levels by the year 2020 (California Air Resources Board 2008). The Scoping Plan identifies recommended measures for multiple greenhouse gas emission sectors and the associated emission reductions needed to achieve the year 2020 emissions target—each sector has a different emission reduction target. Most of the measures target the transportation and electricity sectors. As stated in the Scoping Plan, the key elements of the strategy for achieving the 2020 greenhouse gas target include:

- Expanding and strengthening existing energy efficiency programs as well as building and appliance standards;
- Achieving a statewide renewables energy mix of 33 percent;
- Developing a California cap-and-trade program that links with other Western Climate Initiative partner programs to create a regional market system;
- Establishing targets for transportation-related greenhouse gas emissions for regions throughout California and pursuing policies and incentives to achieve those targets;
- Adopting and implementing measures pursuant to existing State laws and policies, Including California's clean car standards, goods movement measures, and the Low Carbon Fuel Standard; and
- Creating targeted fees, including a public goods charge on water use, fees on high global warming potential gases, and a fee to fund the administrative costs of the State's long-term commitment to AB 32 implementation.

In addition, the Scoping Plan differentiates between "capped" and "uncapped" strategies. "Capped" strategies are subject to the proposed cap-and-trade program. The Scoping Plan states that the inclusion of these emissions within the cap-and trade program will help ensure that the year 2020

emission targets are met despite some degree of uncertainty in the emission reduction estimates for any individual measure. Implementation of the capped strategies is calculated to achieve a sufficient amount of reductions by 2020 to achieve the emission target contained in AB 32. "Uncapped" strategies that will not be subject to the cap-and-trade emissions caps and requirements are provided as a margin of safety by accounting for additional greenhouse gas emission reductions.[4]

Senate Bill 100. Senate Bill 100 (SB 100) requires 100 percent of total retail sales of electricity in California to come from eligible renewable energy resources and zero-carbon resources by December 31, 2045. SB 100 was adopted September 2018.

The interim thresholds from prior Senate Bills and Executive Orders would also remain in effect. These include Senate Bill 1078 (SB 1078), which requires retail sellers of electricity, including investor-owned utilities and community choice aggregators, to provide at least 20 percent of their supply from renewable sources by 2017. Senate Bill 107 (SB 107) which changed the target date to 2010. Executive Order S-14-08, which was signed on November 2008 and expanded the State's Renewable Energy Standard to 33 percent renewable energy by 2020. Executive Order S-21-09 directed the CARB to adopt regulations by July 31, 2010 to enforce S-14-08. Senate Bill X1-2 codifies the 33 percent renewable energy requirement by 2020.

SB 375. Senate Bill 375 (SB 375) was adopted September 2008 and aligns regional transportation planning efforts, regional GHG emission reduction targets, and land use and housing allocation. SB 375 requires Metropolitan Planning Organizations (MPO) to adopt a sustainable communities strategy (SCS) or alternate planning strategy (APS) that will prescribe land use allocation in that MPOs Regional Transportation Plan (RTP). CARB, in consultation with each MPO, will provide each affected region with reduction targets for GHGs emitted by passenger cars and light trucks in the region for the years 2020 and 2035. These reduction targets will be updated every eight years but can be updated every four years if advancements in emissions technologies affect the reduction strategies to achieve the targets. CARB is also charged with reviewing each MPO's sustainable communities strategy or alternate planning strategy for consistency with its assigned targets.

The proposed project is located within the Southern California Association of Governments (SCAG), which has authority to develop the SCS or APS. For the SCAG region, the targets set by CARB are at eight percent below 2005 per capita GHG emissions levels by 2020 and 13 percent below 2005 per capita GHG emissions levels by 2035. On April 4, 2012, SCAG adopted the 2012-2035 Regional Transportation Plan / Sustainable Communities Strategy (RTP/SCS), which meets the CARB emission reduction requirements.

On September 3, 2020, SCAG's Regional Council approved and fully adopted the Connect SoCal (2020–2045 Regional Transportation Plan/Sustainable Communities Strategy), and the addendum to the Connect SoCal Program Environmental Impact Report. Connect SoCal is a long-range visioning plan that builds upon and expands land use and transportation strategies established over several planning cycles to increase mobility options and achieve a more sustainable growth pattern. Connect SoCal outlines more than $638 billion in transportation system investments through 2045. Connect SoCal is supported by a combination of transportation and land use strategies that help the region achieve

state greenhouse gas emission reduction goals and federal Clean Air Act requirements, preserve open space areas, improve public health and roadway safety, support our vital goods movement industry and utilize resources more efficiently. By integrating the Forecasted Development Pattern with a suite of financially constrained transportation investments, Connect SoCal can reach the regional target of reducing greenhouse gases, or GHGs, from autos and light-duty trucks by 8 percent per capita by 2020, and 19 percent by 2035 (compared to 2005 levels).

City and County land use policies, including General Plans, are not required to be consistent with the RTP and associated SCS or APS. However, new provisions of CEQA would incentivize, through streamlining and other provisions, qualified projects that are consistent with an approved SCS or APS and categorized as "transit priority projects."

Assembly Bill 939, Assembly Bill 341, and Senate Bill 1374. Assembly Bill 939 (AB 939) requires that each jurisdiction in California to divert at least 50 percent of its waste away from landfills, whether through waste reduction, recycling or other means. AB 341 requires at least 75 percent of generated waste be source reduced, recycled, or composted by the year 2020. Senate Bill 1374 (SB 1374) requires the California Integrated Waste Management Board to adopt a model ordinance by March 1, 2004 suitable for adoption by any local agency to require 50 to 75 percent diversion of construction and demolition of waste materials from landfills.

Executive Order S-13-08. Executive Order S-13-08 indicates that "climate change in California during the next century is expected to shift precipitation patterns, accelerate sea level rise and increase temperatures, thereby posing a serious threat to California's economy, to the health and welfare of its population and to its natural resources." Pursuant to the requirements in the order, the 2009 California Climate Adaptation Strategy (California Natural Resource Agency 2009) was adopted, which is the "… first statewide, multi-sector, region-specific, and information-based climate change in California, identifying and exploring strategies to adapt to climate change, and specifying a direction for future research.

Executive Order B-30-15. Executive Order B-30-15, establishing a new interim statewide greenhouse gas emission reduction target to reduce greenhouse gas emissions to 40 percent below 1990 levels by 2030, was signed by Governor Brown in April 2015.

Executive Order B-29-15. Executive Order B-29-15, mandates a statewide 25% reduction in potable water usage and was signed into law on April 1, 2015.

Executive Order B-37-16. Executive Order B-37-16, continuing the State's adopted water reduction, was signed into law on May 9, 2016. The water reduction builds off the mandatory 25% reduction called for in EO B-29-15.

Executive Order N-79-20. Executive Order N-79-20 was signed into law on September 23, 2020 and mandates 100 percent of in-state sales of new passenger cars and trucks be zero-emission by 2035; 100 percent of medium- and heavy-duty vehicles in the state be zero-emission vehicles by 2045 for all

operations where feasible and by 2035 for drayage trucks; and to transition to 100 percent zero-emission off-road vehicles and equipment by 2035 where feasible.

2.2.4 South Coast Air Quality Management District

The Project is within the Salton Sea Air Basin, which is under the jurisdiction of the South Coast Air Quality Management District (SCAQMD). SCAQMD Regulation XXVII currently includes three rules:

- The purpose of Rule 2700 is to define terms and post global warming potentials.
- The purpose of Rule 2701, SoCal Climate Solutions Exchange, is to establish a voluntary program to encourage, quantify, and certify voluntary, high quality certified greenhouse gas emission reductions in the SCAQMD.
- Rule 2702, Greenhouse Gas Reduction Program, was adopted on February 6, 2009. The purpose of this rule is to create a Greenhouse Gas Reduction Program for greenhouse gas emission reductions in the SCAQMD. The SCAQMD will fund projects through contracts in response to requests for proposals or purchase reductions from other parties.

SCAQMD Threshold Development

The SCAQMD has established recommended significance thresholds for greenhouse gases for local lead agency consideration ("SCAQMD draft local agency threshold"). SCAQMD has published a five-tiered draft GHG threshold which includes a 10,000 metric ton of CO_2e per year for stationary/industrial sources and 3,000 metric tons of CO_2e per year significance threshold for residential/commercial projects (South Coast Air Quality Management District 2010c). Tier 3 is anticipated to be the primary tier by which the SCAQMD will determine significance for projects. The Tier 3 screening level for stationary sources is based on an emission capture rate of 90 percent for all new or modified projects. A 90-precent emission capture rate means that 90 percent of total emissions from all new or modified stationary source projects would be subject to CEQA analysis. The 90-percent capture rate GHG significance screening level in Tier 3 for stationary sources was derived using the SCAQMD's annual Emissions Reporting Program.

The current draft thresholds consist of the following tiered approach:

- Tier 1 consists of evaluating whether or not the project qualifies for any applicable exemption under CEQA.
- Tier 2 consists of determining whether or not the project is consistent with a greenhouse gas reduction plan. If a project is consistent with a qualifying local greenhouse gas reduction plan, it does not have significant greenhouse gas emissions.
- Tier 3 consists of screening values, which the lead agency can choose but must be consistent. A project's construction emissions are averaged over 30 years and are added to a project's operational emissions. If a project's emissions are under one of the following screening thresholds, then the project is less than significant:
  - All land use types: 3,000 MTCO2e per year

  - Based on land use types: residential is 3,500 MTCO2e per year; commercial is 1,400 MTCO2e per year; and mixed use is 3,000 MTCO2e per year

- Tier 4 has the following options:
  - Option 1: Reduce emissions from business as usual by a certain percentage; this percentage is currently undefined
  - Option 2: Early implementation of applicable AB 32 Scoping Plan measures
  - Option 3: Year 2020 target for service populations (SP), which includes residents and employees: 4.8 MTCO2e/SP/year for projects and 6.6 MTCO2e/SP/year for plans;
  - Option 3, 2035 target: 3.0 MTCO2e/SP/year for projects and 4.1 MTCO2e/SP/year for plans
- Tier 5 involves mitigation offsets to achieve target significance threshold.

2.2.5 Local

County of Riverside Climate Action Plan

The County of Riverside's Climate Action Plan Update (CAP) was completed in November 2019. The CAP Update describes Riverside County's GHG emissions for the year 2017, projects how these emissions will increase into 2020, 2030, and 2050, and includes strategies to reduce emissions to a level consistent with the State of California's emissions reduction targets. The CAP Update sets a target to reduce community-wide GHG emission emissions by 15 percent from 2008 levels by 2020, 49 percent by 2030, and 83 percent by 2050.

Appendix D of the Riverside County CAP Update also states that project's that do not exceed the CAP's screening threshold of 3,000 MTCO2e per year are considered to have less than significant GHG emissions and are in compliance with the County's CAP Update. Therefore, to determine whether the project's GHG emissions are significant, this analysis uses the County of Riverside CAP Update screening threshold of 3,000 MTCO2e per year for all land use types. Projects that do not exceed emissions of 3,000 MTCO2e per year are also required to include the following efficiency measures:

- Energy efficiency matching or exceeding the Title 24 requirements in effect as of January 2017, and
- Water conservation measures that matches the California Green Building Code in effect as of January 2017.

Projects that exceed emissions of 3,000 MTCO2e per year are also required to use Screening Tables. Projects that garner at least 100 points will be consistent with the reduction quantities anticipated in the County's CAP Update. Consistent with CEQA Guidelines, such projects would be determined to have a less than significant individual and cumulative impact for GHG emissions. Those projects that do not garner 100 points using the Screening Tables will need to provide additional analysis to determine the significance of GHG emissions.

In order to meet the state-wide efficiency metric targets, the CAP must demonstrate that it can reduce community-wide emissions to 6.6 MT CO2e/SP (or 944,737 MT CO2e total based on an estimated 2020

service population of 143,142) by 2020 and 4.4 MT CO2e/SP (or 1,334,243 MT CO2e based on an estimated 2030 service population of 303,237) by 2030.

Therefore, to determine whether the project's GHG emissions are significant, this analysis uses the County of Riverside CAP Update and SCAQMD draft local agency tier 3 screening threshold of 3,000 MTCO2e.

The project will be subject to the latest requirements of the California Green Building and Title 24 Energy Efficiency Standards (currently 2019) which would reduce project-related greenhouse gas emissions.

3.0 Setting

3.1 Existing Physical Setting

The project site is located in the City of Rancho Mirage within the County of Riverside, which is part of the Salton Sea Air Basin (SSAB). The middle part of Riverside County (between San Gorgonio Pass and Joshua Tree National Monument), belongs in the Salton Sea Air Basin (SSAB), along with Imperial County. The SSAB portion of Riverside County is separated from the South Coast Air Basin region by the San Jacinto Mountains and from the Mojave Desert Air Basin to the east by the Little San Bernardino Mountains.

3.1.1 Local Climate and Meteorology

During the summer, the SSAB is generally influenced by a Pacific Subtropical High Cell that sits off the coast, inhibiting cloud formation and encouraging daytime solar heating. The SSAB is rarely influenced by cold air masses moving south from Canada and Alaska, as these systems are weak and diffuse by the time they reach the desert. Most desert moisture arrives from infrequent warm, moist, and unstable air masses from the south. The SSAB averages between three and seven inches of precipitation per year.

The Coachella Valley is a geographically and meteorologically unique area wholly contained within the Salton Sea Air Basin. The region is currently impacted by significant air pollution levels caused by the transport of pollutants from coastal air basins to the west, primarily ozone, and locally generated PM10. The mountains surrounding the region isolate the Valley from coastal influences and create a hot and dry low-lying desert (see Table 3). As the desert heats up it draws cooler coastal air through the narrow San Gorgonio Pass, generating strong and sustained winds that cross the fluvial (water caused) and aeolian (wind) erosion zones in the Valley. These strong winds suspend and transport large quantities of sand and dust, reducing visibility, damaging property, and constituting a significant health threat.

The temperature and precipitation levels for the City of Palm Springs, closest monitoring station to the project site, are in Table 3. Table 3 shows that July is typically the warmest month and December is typically the coolest month. Rainfall in the project area varies considerably in both time and space. Almost all the annual rainfall comes from the fringes of mid-latitude storms from late November to early April, with summers being almost completely dry.

<Table 3, next page>

Table 3: Meteorological Summary

Month	Temperature (˚F)		Average Precipitation (inches)
	Average High	Average Low	
January	69.6	42.1	1.14
February	73.6	45.3	1.02
March	79.4	48.6	0.59
April	86.9	54	0.17
May	94.4	60.2	0.05
June	103.1	66.7	0.06
July	108.3	74.8	0.2
August	106.9	74.2	0.3
September	101.8	67.9	0.34
October	91.6	59.2	0.26
November	78.7	48.8	0.47
December	70.1	42.1	0.93
Annual Average	**88.7**	**57**	**5.53**

Notes:
[1] Source: https://wrcc.dri.edu/cgi-bin/cliMAIN.pl?caplms+sca

3.1.2 Local Air Quality

The SCAQMD is divided into 38 air-monitoring areas with a designated ambient air monitoring station representative of each area. The project site is located in the City of Rancho Mirage within the County of Riverside in the Coachella Valley (Area 30). The nearest air monitoring station to the project site is the Palm Springs – Fire Station (Palm Springs Station) approximately 10 miles northwest of the site. However, this location does not provide all ambient weather data. Therefore, additional data was pulled from the SCAQMD historical data for the Coachella Valley Area (Area 30) for both sulfur dioxide and carbon monoxide to provide the existing levels. Table 4 presents the monitored pollutant levels within the vicinity. However, it should be noted that due to the air monitoring station distance from the project site, recorded air pollution levels at the air monitoring station reflect with varying degrees of accuracy, local air quality conditions at the project site.

<Table 4, next page>

Table 4: Local Area Air Quality Levels from Palm Springs Air Monitoring Station[1]

	Year		
Pollutant (Standard)[2]	**2018**	**2019**	**2020**
Ozone:			
Maximum 1-Hour Concentration (ppm)	0.111	0.100	0.119
Days > CAAQS (0.09 ppm)	**11**	**5**	**9**
Maximum 8-Hour Concentration (ppm)	0.099	0.084	0.094
Days > NAAQS (0.07 ppm)	**56**	**34**	**49**
Days > CAAQS (0.070 ppm)	**58**	**39**	**53**
Carbon Monoxide:			
Maximum 1-Hour Concentration (ppm)	1.1	1.3	0.8
Days > NAAQS (20 ppm)	0	0	0
Maximum 8-Hour Concentration (ppm)	0.8	0.7	0.5
Days > NAAQS (9 ppm)	0	0	0
Nitrogen Dioxide:			
Maximum 1-Hour Concentration (ppm)	0.043	0.041	0.047
Days > NAAQS (0.25 ppm)	0	0	0
Sulfur Dioxide:[3]			
Maximum 1-Hour Concentration (ppm)	-	-	-
Days > CAAQS (0.25 ppm)	-	-	-
Inhalable Particulates (PM10):			
Maximum 24-Hour Concentration (ug/m^3)	422.3	75.6	129.8
Days > NAAQS (150 ug/m^3)	2	0	*
Days > CAAQS (50 ug/m^3)	0	6	*
Annual Average (ug/m^3)	22.9	20.7	23.2
Annual > NAAQS (50 ug/m^3)	No	No	No
Annual > CAAQS (20 ug/m^3)	**Yes**	**Yes**	**Yes**
Ultra-Fine Particulates (PM2.5):			
Maximum 24-Hour Concentration (ug/m^3)	30.2	15.5	23.9
Days > NAAQS (35 ug/m^3)	**0**	**0**	**0**
Annual Average (ug/m^3)	6	6	6.4
Annual > NAAQS (15 ug/m3)	No	No	No
Annual > CAAQS (12 ug/m^3)	No	No	No

[1.] Source: obtained from https://www.aqmd.gov/home/air-quality/air-quality-data-studies/historical-data-by-year and /or https://www.arb.ca.gov/adam/topfour/topfour1.php.
[2] CAAQS = California Ambient Air Quality Standard; NAAQS = National Ambient Air Quality Standard; ppm = parts per million
[3] No data available.

The monitoring data presented in Table 4 shows that ozone is the air pollutant of primary concern in the project area, which are detailed below.

Ozone

During the 2018 to 2020 monitoring period, the State 1-hour concentration standard for ozone has been exceeded between five and eleven days each year at the Palm Springs Station. The State 8-hour ozone standard has been exceeded between 39 and 58 days each year over the past three years at the Palm Springs Station. The Federal 8-hour ozone standard has been exceeded between 34 and 56 days each year over the past three years at the Palm Springs Station.

Ozone is a secondary pollutant as it is not directly emitted. Ozone is the result of chemical reactions between other pollutants, most importantly hydrocarbons and NO_2, which occur only in the presence of bright sunlight. Pollutants emitted from upwind cities react during transport downwind to produce the oxidant concentrations experienced in the area. Many areas of the SCAQMD contribute to the ozone levels experienced at the monitoring station, with the more significant areas being those directly upwind.

Carbon Monoxide
CO is another important pollutant that is due mainly to motor vehicles. During the 2018 to 2020 monitoring period, the Federal 1-hour and 8-hour concentration standards for CO were not exceeded.

Nitrogen Dioxide
During the 2018 to 2020 monitoring period, the Federal 1-hour concentration standard for Nitrogen Dioazide has not been exceeded.

Sulfur Dioxide
The Coachella Valley Area did not have SO_2 data available for the last three years.

Particulate Matter
During the 2018 to 2020 monitoring period, the Palm Springs Station recorded two days of exceedance of the Federal 24-hour PM10 concentration standard and an exceedance in the State PM10annual average standard.

During the same period, the Palm Springs Station did not record an exceedance of the Federal 24-hour standard for PM2.5.

According to the EPA, some people are much more sensitive than others to breathing fine particles (PM10 and PM2.5). People with influenza, chronic respiratory and cardiovascular diseases, and the elderly may suffer worsening illness and premature death due to breathing these fine particles. People with bronchitis can expect aggravated symptoms from breathing in fine particles. Children may experience decline in lung function due to breathing in PM10 and PM2.5. Other groups considered sensitive are smokers and people who cannot breathe well through their noses. Exercising athletes are also considered sensitive, because many breathe through their mouths during exercise.

3.1.3 Attainment Status

The EPA and the ARB designate air basins where ambient air quality standards are exceeded as “nonattainment” areas. If standards are met, the area is designated as an “attainment” area. If there is inadequate or inconclusive data to make a definitive attainment designation, they are considered “unclassified.” National nonattainment areas are further designated as marginal, moderate, serious, severe, or extreme as a function of deviation from standards. Each standard has a different definition, or ‘form’ of what constitutes attainment, based on specific air quality statistics. For example, the Federal 8-hour CO standard is not to be exceeded more than once per year; therefore, an area is in

attainment of the CO standard if no more than one 8-hour ambient air monitoring values exceeds the threshold per year. In contrast, the federal annual $PM_{2.5}$ standard is met if the three-year average of the annual average $PM_{2.5}$ concentration is less than or equal to the standard. Table 5 lists the attainment status for the criteria pollutants in the basin.

Table 5: Coachella Valley Portion of the Salton Sea Air Basin Attainment Status

Pollutant	Averaging Time	National Standards[1]	Attainment Date[2]	California Standards[2]
1979 1-Hour Ozone[3]	1-Hour (0.12 ppm)	Attainment	11/15/2007 (Attained 12/31/2013)	Nonattainment
	1-Hour (0.09 ppm)	-	-	Nonattainment
2015 8-Hour Ozone[4]	8-Hour (0.070 ppm)	Pending - Expect Nonattainment (Severe)	Pending	Nonattainment
2008 8-Hour Ozone[4]	8-Hour (0.075 ppm)	Nonattainment (Severe-15)	7/20/2027	-
1997 8-Hour Ozone[4]	8-Hour (0.08 ppm)	Nonattainment (Severe-15)	6/15/2019	-
CO	1-Hour (20 ppm) 8-hour (9.0 ppm)	-	-	Attainment
	1-Hour (35 ppm) 8-Hour (9 ppm)	Unclassifiable/ Attainment	N/A (attained)	-
NO_2[7]	1-hour (0.18 ppm) Annual (0.03 ppm)	-	-	Attainment
	1-Hour (100 ppb) Annual (0.053 ppm)	Unclassifiable/ Attainment	N/A (attained)	-
SO_2[8]	1-Hour (0.25 ppm) 24-Hour (0.04 ppm)	-	-	Attainment
	1-Hour (75 ppb)	Designations Pending	N/A	-
	24-Hour (0.14 ppm) Annual (0.03 ppm)	Unclassifiable/ Attainment	Unclassifiable/Attainment	
PM10[6]	24-Hour (50 µg/m³) Annual (20 50 µg/m³)	-	-	Nonattainment
	24-Hour (150 µg/m³)	Nonattainment (Serious)	12/31/2006	-
PM2.5[5]	Annual (12.0 µg/m³)	-	-	Attainment
	24-Hour (35 µg/m³)	Unclassifiable/ Attainment	N/A (attained)	-
Lead	3-Months Rolling (0.15 µg/m³)	Unclassifiable/ Attainment	Unclassifiable/Attainment	Attainment

Notes:
[1] Obtained from 2016 AQMP, SCAQMD, 2016. EPA often only declares Nonattainment areas; everywhere else is listed as Unclassified/Attainment or Unclassifiable.
[2] A design value below the NAAQS for data through the full year or smog season prior to the attainment date is typically required for attainment demonstration.
[3] The 1979 1-hour ozone NAAQS (0.12 ppm) was revoked, effective 6/15/05; the Southeast Desert Modified Air Quality Management Area, including the Coachella Valley, had not timely attained this standard by the 11/15/07 "severe-17" deadline, based on 2005-2007 data; on 8/25/14, U.S. EPA proposed a clean data finding based on 2011-2013 data and a determination of attainment for the former 1-hour ozone NAAQS for the Southeast Desert nonattainment area; this rule was finalized by U.S. EPA on 4/15/15, effective 5/15/15, and included preliminary 2014 data
[4] The 2008 8-hour ozone NAAQS (0.075 ppm) was revised to 0.070 ppm, effective 12/28/15 with classifications and implementation goals to be finalized by 10/1/17; the 1997 8-hour ozone NAAQS (0.08 ppm) was revoked in the 2008 ozone NAAQS implementation rule, effective 4/6/15; there are continuing obligations under the 1997 and 2008 ozone NAAQS until they are attained
[5] The annual PM2.5 standard was revised on 1/15/13, effective 3/18/13, from 15 to 12 µg/m3
[6] The annual PM10 standard was revoked, effective 12/18/06; the 24-hour PM10 NAAQS attainment deadline was 12/31/2006; the Coachella Valley Attainment Re-designation Request and PM10 Maintenance Plan was postponed by U.S. EPA pending additional monitoring and analysis in the southeastern Coachella Valley
[7] New 1-hour NO2 NAAQS became effective 8/2/10; attainment designations 1/20/12; annual NO2 NAAQS retained
[8] The 1971 Annual and 24-hour SO2 NAAQS were revoked, effective 8/23/10; however, these 1971 standards will remain in effect until one year after U.S. EPA promulgates area designations for the 2010 SO2 1-hour standard; final area designations expected by 12/31/2020 with SSAB expected to be designated Unclassifiable/Attainment

3.2 Greenhouse Gases

Constituent gases of the Earth's atmosphere, called atmospheric greenhouse gases (GHG), play a critical role in the Earth's radiation amount by trapping infrared radiation emitted from the Earth's surface, which otherwise would have escaped to space. Prominent greenhouse gases contributing to this process include carbon dioxide (CO_2), methane (CH_4), ozone, water vapor, nitrous oxide (N_2O), and chlorofluorocarbons (CFCs). This phenomenon, known as the Greenhouse Effect, is responsible for maintaining a habitable climate. Anthropogenic (caused or produced by humans) emissions of these greenhouse gases in excess of natural ambient concentrations are responsible for the enhancement of the Greenhouse Effect and have led to a trend of unnatural warming of the Earth's natural climate, known as global warming or climate change. Emissions of gases that induce global warming are attributable to human activities associated with industrial/manufacturing, agriculture, utilities, transportation, and residential land uses. Transportation is responsible for 41 percent of the State's greenhouse gas emissions, followed by electricity generation. Emissions of CO_2 and nitrous oxide (NO_2) are byproducts of fossil fuel combustion. Methane, a potent greenhouse gas, results from off-gassing associated with agricultural practices and landfills. Sinks of CO_2, where CO_2 is stored outside of the atmosphere, include uptake by vegetation and dissolution into the ocean. Table 6 provides a description of each of the greenhouse gases and their global warming potential.

Additional information is available: https://www.arb.ca.gov/cc/inventory/data/data.htm

<Table 6, next page>

Table 6: Description of Greenhouse Gases

Greenhouse Gas	Description and Physical Properties	Sources
Nitrous oxide	Nitrous oxide (N_20),also known as laughing gas is a colorless gas. It has a lifetime of 114 years. Its global warming potential is 298.	Microbial processes in soil and water, fuel combustion, and industrial processes. In addition to agricultural sources, some industrial processes (nylon production, nitric acid production) also emit N_20.
Methane	Methane (CH_4) is a flammable gas and is the main component of natural gas. It has a lifetime of 12 years. Its global warming potential is 25.	A natural source of CH_4 is from the decay of organic matter. Methane is extracted from geological deposits (natural gas fields). Other sources are from the decay of organic material in landfills, fermentation of manure, and cattle farming.
Carbon dioxide	Carbon dioxide (CO_2) is an odorless, colorless, natural greenhouse gas. Carbon dioxide's global warming potential is 1. The concentration in 2005 was 379 parts per million (ppm), which is an increase of about 1.4 ppm per year since 1960.	Natural sources include decomposition of dead organic matter; respiration of bacteria, plants, animals, and fungus; evaporation from oceans; and volcanic outgassing. Anthropogenic sources are from burning coal, oil, natural gas, and wood.
Chlorofluorocarbons	CFCs are nontoxic, nonflammable, insoluble, and chemically unreactive in the troposphere (the level of air at the earth's surface). They are gases formed synthetically by replacing all hydrogen atoms in methane or methane with chlorine and/or fluorine atoms. Global warming potentials range from 3,800 to 8,100.	Chlorofluorocarbons were synthesized in 1928 for use as refrigerants, aerosol propellants, and cleaning solvents. They destroy stratospheric ozone, therefore their production was stopped as required by the Montreal Protocol.
Hydrofluorocarbons	Hydrofluorocarbons (HFCs) are a group of greenhouse gases containing carbon, chlorine, and at least one hydrogen atom. Global warming potentials range from 140 to 11,700.	Hydrofluorocarbons are synthetic manmade chemicals used as a substitute for chlorofluorocarbons in applications such as automobile air conditioners and refrigerants.
Perfluorocarbons	Perfluorocarbons (PFCs) have stable molecular structures and only break down by ultraviolet rays about 60 kilometers above the Earth's surface. They have a lifetime 10,000 to 50,000 years. They have a global warming potential range of 6,200 to 9,500.	Two main sources of perfluorocarbons are primary aluminum production and semiconductor manufacturing.
Sulfur hexafluoride	Sulfur hexafluoride (SF_6) is an inorganic, odorless, colorless, and nontoxic, nonflammable gas. It has a lifetime of 3,200 years. It has a high global warming potential, 23,900.	This gas is manmade and used for insulation in electric power transmission equipment, in the magnesium industry, in semiconductor manufacturing, and as a tracer gas for leak detection.

Notes:
1. Sources: Intergovernmental Panel on Climate Change 2014a and Intergovernmental Panel on Climate Change 2014b. https://www.ipcc.ch/publications_and_data/ar4/wg1/en/ch2s2-10-2.html

4.0 Modeling Parameters and Assumptions

4.1 Construction

Typical emission rates from construction activities were obtained from CalEEMod Version 2020.4.0 CalEEMod is a computer model published by the SCAQMD for estimating air pollutant emissions. The CalEEMod program uses the EMFAC2017 computer program to calculate the emission rates specific for the southwestern portion of Riverside County for construction-related employee vehicle trips and the OFFROAD2011 computer program to calculate emission rates for heavy truck operations. EMFAC2017 and OFFROAD2011 are computer programs generated by CARB that calculates composite emission rates for vehicles. Emission rates are reported by the program in grams per trip and grams per mile or grams per running hour. Using CalEEMod, the peak daily air pollutant emissions were calculated and presented below. These emissions represent the highest level of emissions for each of the construction phases in terms of air pollutant emissions.

The analysis assesses the emissions associated with the construction of the proposed project as indicated in Table 1. Per the project owner, the proposed project is to be operational in 2023; therefore, construction is estimated to start no sooner than the first quarter of 2022 and be completed by 2023. The phases of the construction activities which have been analyzed below are: 1) grading, 2) building, 3) paving, and 4) architectural coating. For details on construction modeling and construction equipment for each phase, please see Appendix A.

The project will be required to comply with existing SCAQMD rules for the reduction of fugitive dust emissions. SCAQMD Rule 403 establishes these procedures. Compliance with this rule is achieved through application of standard best management practices in construction and operation activities, such as application of water or chemical stabilizers to disturbed soils, managing haul road dust by application of water, covering haul vehicles, restricting vehicle speeds on unpaved roads to 15 mph, sweeping loose dirt from paved site access roadways, cessation of construction activity when winds exceed 25 mph and establishing a permanent, stabilizing ground cover on finished sites. In addition, projects that disturb 50 acres or more of soil or move 5,000 cubic yards of materials per day are required to submit a Fugitive Dust Control Plan or a Large Operation Notification Form to SCAQMD. Based on the size of the Project area (approximately 20.26 acres) and the fact that the project won't export more than 5,000 cubic yards of material a day a Fugitive Dust Control Plan or Large Operation Notification would not be required.

SCAQMD's Rule 403 minimum requirements require that the application of the best available dust control measures are used for all grading operations and include the application of water or other soil stabilizers in sufficient quantity to prevent the generation of visible dust plumes. Compliance with Rule 403 would require the use of water trucks during all phases where earth moving operations would occur. Compliance with Rule 403 is required.

4.2 Operations

Operational or long-term emissions occur over the life of the Project. Both mobile and area sources generate operational emissions. Area source emissions arise from consumer product usage, heaters that consume natural gas, gasoline-powered landscape equipment, and architectural coatings (painting). Mobile source emissions from motor vehicles are the largest single long-term source of air pollutants from the operation of the Project. Small amounts of emissions would also occur from area sources such as the consumption of natural gas for heating, hearths, from landscaping emissions, and consumer product usage. The operational emissions were estimated using the latest version of CalEEMod.

Mobile Sources
Mobile sources include emissions from the additional vehicle miles generated from the proposed project. The vehicle trips associated with the proposed project are based upon the trip generation rates give in the Traffic Scoping Agreement (Integrated Engineering Group) which uses the ITE 10th Trip Generation Manual.

The program then applies the emission factors for each trip which is provided by the EMFAC2017 model to determine the vehicular traffic pollutant emissions. The CalEEMod default trip lengths were used in this analysis. Please see CalEEMod output comments sections in Appendix A and B for details.

Area Sources
Area sources include emissions from consumer products, landscape equipment and architectural coatings. Landscape maintenance includes fuel combustion emissions from equipment such as lawn mowers, rototillers, shredders/grinders, blowers, trimmers, chain saws, and hedge trimmers, as well as air compressors, generators, and pumps. As specifics were not known about the landscaping equipment fleet, CalEEMod defaults were used to estimate emissions from landscaping equipment.

Per SCAQMD Rule 1113 as amended on June 3, 2011, the architectural coatings that would be applied after January 1, 2014 will be limited to an average of 50 grams per liter or less for buildings and 100 grams per liter or less for parking lot striping; however, no changes were made to the CalEEMod architectural coating default values.

Energy Usage
2020.4.0 CalEEMod defaults were utilized.

4.3 Localized Construction Analysis

The SCAQMD has published a “Fact Sheet for Applying CalEEMod to Localized Significance Thresholds” (South Coast Air Quality Management District 2011b). CalEEMod calculates construction emissions based on the number of equipment hours and the maximum daily disturbance activity possible for each piece of equipment. In order to compare CalEEMod reported emissions against the localized significance threshold lookup tables, the CEQA document should contain in its project design features or its mitigation measures the following parameters:

1. The off-road equipment list (including type of equipment, horsepower, and hours of operation) assumed for the day of construction activity with maximum emissions.
2. The maximum number of acres disturbed on the peak day.
3. Any emission control devices added onto off-road equipment.
4. Specific dust suppression techniques used on the day of construction activity with maximum emissions.

The construction equipment showing the equipment associated with the maximum area of disturbance is shown in Table 7.

Table 7: Construction Equipment Assumptions[1]

Activity	Equipment	Number	Acres/8hr-day	Total Acres
Grading	Excavators	2	0.5	1.0
	Graders	1	0.5	0.5
	Rubber Tired Dozers	1	0.5	0.5
	Scrapers	2	0.5	1.0
	Tractors/Loaders/Backhoes	2	0.5	1.0
Total Per Phase				4.0

Notes:
[1.] Source: CalEEMod output and South Coast AQMD, Fact Sheet for Applying CalEEMod to Localized Significance Thresholds. http://www.aqmd.gov/docs/default-source/ceqa/handbook/localized-significance-thresholds/caleemod-guidance.pdf?sfvrsn=2

As shown in Table 7, the maximum number of acres disturbed in a day would be 4.0 acres during grading.

The local air quality emissions from construction were analyzed using the SCAQMD's Mass Rate Localized Significant Threshold Look-up Tables and the methodology described in Localized Significance Threshold Methodology, prepared by SCAQMD, revised July 2008. The Look-up Tables were developed by the SCAQMD in order to readily determine if the daily emissions of CO, NOx, PM10, and PM2.5 from the proposed project could result in a significant impact to the local air quality. The emission thresholds were based on the Coachella Valley source receptor area (SRA 30) and a disturbance of 2 acres per day, to be conservative, at a distance of 25 meters (82 feet).

4.4 Localized Operational Analysis

For operational emissions, the screening tables for a disturbance area of 2 acres per day, to be conservative, and a distance of 25 meters were used to determine significance. The tables were compared to the project's onsite operational emissions.

5.0 Thresholds of Significance

5.1 Air Quality Thresholds of Significance

5.1.1 CEQA Guidelines for Air Quality

The CEQA Guidelines define a significant effect on the environment as "a substantial, or potentially substantial, adverse change in the environment." To determine if a project would have a significant impact on air quality, the type, level, and impact of emissions generated by the project must be evaluated.

The following air quality significance thresholds are contained in Appendix G of the CEQA Guidelines. A significant impact would occur if the project would:

a) Conflict with or obstruct implementation of the applicable air quality plan;

b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable national or state ambient air quality standard;

c) Expose sensitive receptors to substantial pollutant concentrations; or

d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

While the final determination of whether a project is significant is within the purview of the Lead Agency pursuant to Section 15064(b) of the CEQA Guidelines, SCAQMD recommends that its quantitative air pollution thresholds be used to determine the significance of project emissions. If the Lead Agency finds that the project has the potential to exceed these air pollution thresholds, the project should be considered to have significant air quality impacts. There are daily emission thresholds for construction and operation of a proposed project in the basin.

5.1.2 Regional Significance Thresholds for Construction Emissions

The following CEQA significance thresholds for construction emissions are established for the Basin:

- 75 pounds per day (lbs/day) of VOC
- 100 lbs/day of NO_x
- 550 lbs/day of CO
- 150 lbs/day of PM_{10}
- 55 lbs/day of $PM_{2.5}$
- 150 lbs/day of SO_2

Projects in the basin with construction-related emissions that exceed any of the emission thresholds are considered to be significant under SCAQMD guidelines.

5.1.3 Regional Significance Thresholds for Operational Emissions

The daily operational emissions significance thresholds for the basin are as follows:

- 55 pounds per day (lbs/day) of VOC
- 55 lbs/day of NO_x
- 550 lbs/day of CO
- 150 lbs/day of PM_{10}
- 55 lbs/day of $PM_{2.5}$
- 150 lbs/day of SO_2

Local Microscale Concentration Standards The significance of localized project impacts under CEQA depends on whether ambient CO levels in the vicinity of the project are above or below State and federal CO standards. If ambient levels are below the standards, a project is considered to have a significant impact if project emissions result in an exceedance of one or more of these standards. If ambient levels already exceed a State or federal standard, project emissions are considered significant if they increase 1-hour CO concentrations by 1.0 ppm or more or 8-hour CO concentrations by 0.45 ppm or more. The following are applicable local emission concentration standards for CO:

- California State 1-hour CO standard of 20.0 ppm
- California State 8-hour CO standard of 9.0 ppm

5.1.4 Thresholds for Localized Significance

Project-related construction air emissions may have the potential to exceed the State and Federal air quality standards in the project vicinity, even though these pollutant emissions may not be significant enough to create a regional impact to the Salton Sea Air Basin. In order to assess local air quality impacts the SCAQMD has developed Localized Significant Thresholds (LSTs) to assess the project-related air emissions in the project vicinity. The SCAQMD has also provided Final Localized Significant Threshold Methodology (LST Methodology), June 2003, which details the methodology to analyze local air emission impacts. The Localized Significant Threshold Methodology found that the primary emissions of concern are NO2, CO, PM10, and PM2.5.

The emission thresholds were calculated based on the Perris Valley source receptor area (SRA 30) and a disturbance of 2 acres per day, to be conservative, at a distance of 25 meters (82 feet), for construction and 2 acres a day, to be conservative, for screening of localized operational emissions.

5.2 Greenhouse Gas Thresholds of Significance

5.2.1 CEQA Guidelines for Greenhouse Gas

CEQA Guidelines define a significant effect on the environment as “a substantial, or potentially substantial, adverse change in the environment.” To determine if a project would have a significant impact on greenhouse gases, the type, level, and impact of emissions generated by the project must be evaluated.

The following greenhouse gas significance thresholds are contained in Appendix G of the CEQA Guidelines, which were amendments adopted into the Guidelines on March 18, 2010, pursuant to SB 97. A significant impact would occur if the project would:

(a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment; or

(b) Conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases.

However, despite this, currently neither the CEQA statutes, OPR guidelines, nor the draft proposed changes to the CEQA Guidelines prescribe thresholds of significance or a particular methodology for performing an impact analysis; as with most environmental topics, significance criteria are left to the judgment and discretion of the Lead Agency. As previously discussed (Section 2.2.4 of this report), SCAQMD has drafted interim GHG thresholds and the County of Riverside CAP Update has adopted a GHG threshold. The County of Riverside CAP Update screening threshold of 3,000 metric tons per year of CO2e was used in this analysis.

5.3 Toxic Air Contaminants

The threshold for toxic air contaminants (TACs) has a maximum incremental cancer risk of 10 per million and a non-cancer (acute and chronic) hazard index of 1.0 or greater. An exceedance to these values would be considered a significant impact.

6.0 Air Quality Emissions Impact

6.1 Construction Air Quality Emissions Impact

The latest version of CalEEMod was used to estimate the onsite and offsite construction emissions. The emissions incorporate Rule 402 and 403. Rule 402 and 403 (fugitive dust) are not considered mitigation measures as the project by default is required to incorporate these rules during construction; however, these rules must be incorporated into the CalEEMod model as mitigation measures.

6.1.1 Regional Construction Emissions

The construction emissions for the project would not exceed the SCAQMD's daily emission thresholds at the regional level as demonstrated in Table 8, and therefore would be considered less than significant.

Table 8: Regional Significance - Construction Emissions (pounds/day)

Activity	Pollutant Emissions (pounds/day)					
	VOC	NOx	CO	SO_2	PM10	PM2.5
Grading						
On-Site[2]	3.62	38.84	29.04	0.06	5.22	2.93
Off-Site[3]	0.07	0.05	0.76	0.00	0.22	0.06
Total	**3.70**	**38.90**	**29.80**	**0.06**	**5.45**	**2.99**
Building Construction						
On-Site[2]	1.71	15.62	16.36	0.03	0.81	0.76
Off-Site[3]	0.22	1.06	2.21	0.01	0.69	0.20
Total	**1.92**	**16.67**	**18.58**	**0.04**	**1.50**	**0.96**
Paving						
On-Site[2]	1.36	10.19	14.58	0.02	0.51	0.47
Off-Site[3]	0.05	0.04	0.53	0.00	0.17	0.05
Total	**1.41**	**10.23**	**15.11**	**0.02**	**0.68**	**0.51**
Architectural Coating						
On-Site[2]	6.79	1.30	1.81	0.00	0.07	0.07
Off-Site[3]	0.03	0.02	0.35	0.00	0.11	0.03
Total	**6.83**	**1.33**	**2.16**	**0.00**	**0.18**	**0.10**
Total of overlapping phases[4]	**10.16**	**28.22**	**35.85**	**0.06**	**2.36**	**1.57**
SCAQMD Thresholds	**75**	**100**	**550**	**150**	**150**	**55**
Exceeds Thresholds	No	No	No	No	No	No

Notes:
[1] Source: CalEEMod Version 2020.4.0
[2] On-site emissions from equipment operated on-site that is not operated on public roads.
[3] Off-site emissions from equipment operated on public roads.
[4] Construction, architectural coatings and paving phases may overlap.

6.1.2 Localized Construction Emissions

The data provided in Table 9 shows that none of the analyzed criteria pollutants would exceed the local emissions thresholds at the nearest sensitive receptors. Therefore, a less than significant local air quality impact would occur from construction of the proposed project.

Table 9: Localized Significance – Construction

Phase	On-Site Pollutant Emissions (pounds/day)[1]			
	NOx	CO	PM10	PM2.5
Grading	38.84	29.04	5.22	2.93
Building Construction	15.62	16.36	0.81	0.76
Paving	10.19	14.58	0.51	0.47
Architectural Coating	1.30	1.81	0.07	0.07
Total of overlapping phases	**27.11**	**32.76**	**1.39**	**1.30**
SCAQMD Threshold for 25 meters (82 feet) or less[2]	**191**	**1,299**	**7**	**5**

Notes:
[1] Source: Calculated from CalEEMod and SCAQMD's Mass Rate Look-up Tables for two acres, to be conservative, in Coachella Valley Source Receptor Area (SRA 30). Project will disturb a maximum of 4.0 acres per day (see Table 7).
[2] The nearest sensitive receptor is located 35 meters east; therefore, the 25-meter threshold has been used.

6.1.3 Construction-Related Human Health Impacts

Regarding health effects related to criteria pollutant emissions, the applicable significance thresholds are established for regional compliance with the state and federal ambient air quality standards, which are intended to protect public health from both acute and long-term health impacts, depending on the potential effects of the pollutant. Because regional and local emissions of criteria pollutants during construction of the project would be below the applicable thresholds, it would not contribute to long-term health impacts related to nonattainment of the ambient air quality standards. Therefore, significant adverse acute health impacts as a result of project construction are not anticipated.

6.1.4 Odors

Potential sources that may emit odors during construction activities include the application of materials such as asphalt pavement. The objectionable odors that may be produced during the construction process are of short-term in nature and the odor emissions are expected cease upon the drying or hardening of the odor producing materials. Diesel exhaust and VOCs would be emitted during construction of the project, which are objectionable to some; however, emissions would disperse rapidly from the project site and therefore should not reach an objectionable level at the nearest sensitive receptors. Due to the short-term nature and limited amounts of odor producing materials being utilized, no significant impact related to odors would occur during construction of the proposed project.

The SCAQMD recommends that odor impacts be addressed in a qualitative manner. Such an analysis shall determine whether the project would result in excessive nuisance odors, as defined under the California Code of Regulations and Section 41700 of the California Health and Safety Code, and thus would constitute a public nuisance related to air quality.

Potential sources that may emit odors during the on-going operations of the proposed project would include odor emissions from vehicle emissions. Due to the distance of the nearest receptors from the project site and through compliance with SCAQMD's Rule 402 no significant impact related to odors would occur during the on-going operations of the proposed project.

6.1.5 Construction-Related Toxic Air Contaminant Impact

The greatest potential for toxic air contaminant emissions would be related to diesel particulate emissions associated with heavy equipment operations during construction of the proposed project. The Office of Environmental Health Hazard Assessment (OEHHA) has issued the Air Toxic Hot Spots Program Risk Assessment Guidelines and Guidance Manual for the Preparation of Health Risk Assessments, February 2015 to provide a description of the algorithms, recommended exposure variates, cancer and noncancer health values, and the air modeling protocols needed to perform a health risk assessment (HRA) under the Air Toxics Hot Spots Information and Assessment Act of 1987. Hazard identification includes identifying all substances that are evaluated for cancer risk and/or non-cancer acute, 8-hour, and chronic health impacts. In addition, identifying any multi-pathway substances that present a cancer risk or chronic non-cancer hazard via non-inhalation routes of exposure.

Given the relatively limited number of heavy-duty construction equipment and construction schedule, the proposed project would not result in a long-term substantial source of toxic air containment emissions and corresponding individual cancer risk. Furthermore, construction-based particulate matter (PM) emissions (including diesel exhaust emissions) do not exceed any local or regional thresholds. Therefore, no significant short-term toxic air contaminant impacts would occur during construction of the proposed project.

6.2 Operational Air Quality Emissions Impact

6.2.1 Regional Operational Emissions

The operations-related criteria air quality impacts created by the proposed project have been analyzed through the use of CalEEMod model. The operating emissions were based on year 2024, which is the anticipated opening year for the project per the Traffic Scoping Agreement (Integrated Engineering Group). The summer and winter emissions created by the proposed project's long-term operations were calculated and the highest emissions from either summer or winter are summarized in Table 10.

Table 10: Regional Significance - Unmitigated Operational Emissions (lbs/day)

Activity	Pollutant Emissions (pounds/day)[1]					
	VOC	NOx	CO	SO2	PM10	PM2.5
Area Sources[2]	2.78	0.20	5.32	0.01	0.69	0.69
Energy Usage[3]	0.01	0.06	0.03	0.00	0.01	0.01
Mobile Sources[4]	0.26	0.31	2.70	0.01	0.62	0.17
Total Emissions	**3.05**	**0.57**	**8.05**	**0.02**	**1.32**	**0.87**
SCAQMD Thresholds	**55**	**55**	**550**	**150**	**150**	**55**
Exceeds Threshold?	No	No	No	No	No	No

Notes:
[1] Source: CalEEMod Version 2020.4.0
[2] Area sources consist of emissions from consumer products, architectural coatings, and landscaping equipment.
[3] Energy usage consists of emissions from on-site natural gas usage.
[4] Mobile sources consist of emissions from vehicles and road dust.

Table 10 provides the project's unmitigated operational emissions. Table 10 shows that the project does not exceed the SCAQMD daily emission threshold and regional operational emissions are considered to be less than significant.

6.2.2 Localized Operational Emissions

Table 11 shows the calculated emissions for the proposed operational activities compared with appropriate LSTs. The LST analysis only includes on-site sources; however, the CalEEMod software outputs do not separate on-site and off-site emissions for mobile sources. For a worst-case scenario assessment, the emissions shown in Table 11 include all on-site project-related stationary sources and 10% of the project-related new mobile sources.[3] This percentage is an estimate of the amount of project-related new vehicle traffic that will occur on-site.

Table 11: Localized Significance – Unmitigated Operational Emissions

On-Site Emission Source	On-Site Pollutant Emissions (pounds/day)[1]			
	NOx	CO	PM10	PM2.5
Area Sources[2]	0.20	5.32	0.69	0.69
Energy Usage[3]	0.06	0.03	0.01	0.01
On-Site Vehicle Emissions[4]	0.03	0.27	0.06	0.02
Total Emissions	**0.29**	**5.62**	**0.76**	**0.71**
SCAQMD Threshold for 25 meters (82 feet)[5]	**191**	**1,299**	**2**	**2**
Exceeds Threshold?	No	No	No	No

Notes:
[1] Source: Calculated from CalEEMod and SCAQMD's Mass Rate Look-up Tables for one acre, to be conservative, in Coachella Valley Source Receptor Area (SRA 30).
[2] Area sources consist of emissions from consumer products, architectural coatings, and landscaping equipment.
[3] Energy usage consists of emissions from generation of electricity and on-site natural gas usage.
[4] On-site vehicular emissions based on 1/10 of the gross vehicular emissions and road dust.
[5] The nearest sensitive receptor is located 35 meters east; therefore, the 25 meter threshold has been used.

Table 11 indicates that the local operational emission would not exceed the LST thresholds at the nearest sensitive receptors, located adjacent to the project. Therefore, the project will not result in significant Localized Operational emissions.

6.2.3 Operations-Related Human Health Impacts

As stated previously, regarding health effects related to criteria pollutant emissions, the applicable significance thresholds are established for regional compliance with the state and federal ambient air quality standards, which are intended to protect public health from both acute and long-term health

[3] The project site is approximately 0.09 miles in length at its longest point; therefore the on-site mobile source emissions represent approximately 1/77th of the shortest CalEEMod default distance of 6.9 miles. Therefore, to be conservative, 1/10th the distance (dividing the mobile source emissions by 10) was used to represent the portion of the overall mobile source emissions that would occur on-site.

impacts, depending on the potential effects of the pollutant. Because regional and local emissions of criteria pollutants during operation of the project would be below the applicable thresholds, it would not contribute to long-term health impacts related to nonattainment of the ambient air quality standards. Therefore, significant adverse acute health impacts as a result of project operation are not anticipated.

6.3 CO Hot Spot Emissions

CO is the pollutant of major concern along roadways because the most notable source of CO is motor vehicles. For this reason, CO concentrations are usually indicative of the local air quality generated by a roadway network and are used as an indicator of potential local air quality impacts. Local air quality impacts can be assessed by comparing future without and with project CO levels to the State and Federal CO standards which were presented in above in Section 5.0.

To determine if the proposed project could cause emission levels in excess of the CO standards discussed above in Section 5.0, a sensitivity analysis is typically conducted to determine the potential for CO "hot spots" at a number of intersections in the general project vicinity. Because of reduced speeds and vehicle queuing, "hot spots" potentially can occur at high traffic volume intersections with a Level of Service E or worse.

Micro-scale air quality emissions have traditionally been analyzed in environmental documents where the air basin was a non-attainment area for CO. However, the SCAQMD has demonstrated in the CO attainment redesignation request to EPA that there are no "hot spots" anywhere in the air basin, even at intersections with much higher volumes, much worse congestion, and much higher background CO levels than anywhere in Riverside County. If the worst-case intersections in the air basin have no "hot spot" potential, any local impacts will be below thresholds.

CalEEMod output showed that the project would generate 82 average daily trips. The 1992 Federal Attainment Plan for Carbon Monoxide (1992 CO Plan) showed that an intersection which has a daily traffic volume of approximately 100,000 vehicles per day would not violate the CO standard. The volume of traffic at project buildout would be well below 100,000 vehicles and below the necessary volume to even get close to causing a violation of the CO standard. Therefore no CO "hot spot" modeling was performed and no significant long-term air quality impact is anticipated to local air quality with the on-going use of the proposed project.

6.4 Cumulative Regional Air Quality Impacts

Cumulative projects include local development as well as general growth within the project area. However, as with most development, the greatest source of emissions is from mobile sources, which travel well out of the local area. Therefore, from an air quality standpoint, the cumulative analysis would extend beyond any local projects and when wind patterns are considered, would cover an even larger area. Accordingly, the cumulative analysis for the project's air quality must be generic by nature.

The project area is out of attainment for both ozone and PM10 particulate matter. Construction and operation of cumulative projects will further degrade the local air quality, as well as the air quality of

the Salton Sea Air Basin. The greatest cumulative impact on the quality of regional air cell will be the incremental addition of pollutants mainly from increased traffic from residential, commercial, and industrial development and the use of heavy equipment and trucks associated with the construction of these projects. Air quality will be temporarily degraded during construction activities that occur separately or simultaneously. However, in accordance with the SCAQMD methodology, projects that do not exceed the SCAQMD criteria or can be mitigated to less than criteria levels are not significant and do not add to the overall cumulative impact. The project does not exceed any of the thresholds of significance and therefore is considered less than significant.

6.5 Air Quality Compliance

The California Environmental Quality Act (CEQA) requires a discussion of any inconsistencies between a proposed project and applicable General Plans and Regional Plans (CEQA Guidelines Section 15125). The regional plan that applies to the proposed project includes the SCAQMD Air Quality Management Plan (AQMP). Therefore, this section discusses any potential inconsistencies of the proposed project with the AQMP.

The purpose of this discussion is to set forth the issues regarding consistency with the assumptions and objectives of the AQMP and discuss whether the proposed project would interfere with the region's ability to comply with Federal and State air quality standards. If the decision-makers determine that the proposed project is inconsistent, the lead agency may consider project modifications or inclusion of mitigation to eliminate the inconsistency.

The SCAQMD CEQA Handbook states that "New or amended General Plan Elements (including land use zoning and density amendments), Specific Plans, and significant projects must be analyzed for consistency with the AQMP." Strict consistency with all aspects of the plan is usually not required A proposed project should be considered to be consistent with the AQMP if it furthers one or more policies and does not obstruct other policies. The SCAQMD CEQA Handbook identifies two key indicators of consistency:

(1) Whether the project will result in an increase in the frequency or severity of existing air quality violations or cause or contribute to new violations, or delay timely attainment of air quality standards or the interim emission reductions specified in the AQMP.

(2) Whether the project will exceed the assumptions in the AQMP in 2016 or increments based on the year of project buildout and phase.

Both of these criteria are evaluated in the following sections.

A. Criterion 1 - Increase in the Frequency or Severity of Violations

Based on the air quality modeling analysis contained in this Air Analysis, short-term construction impacts will not result in significant impacts based on the SCAQMD regional and local thresholds of significance. This Air Analysis also found that, long-term operations impacts will not result in significant impacts based on the SCAQMD local and regional thresholds of significance.

Therefore, the proposed project is not projected to contribute to the exceedance of any air pollutant concentration standards and is found to be consistent with the AQMP for the first criterion.

B. Criterion 2 - Exceed Assumptions in the AQMP?

Consistency with the AQMP assumptions is determined by performing an analysis of the proposed project with the assumptions in the AQMP. The emphasis of this criterion is to ensure that the analyses conducted for the proposed project are based on the same forecasts as the AQMP. The 2016-2040 Regional Transportation/Sustainable Communities Strategy, prepared by SCAG, 2016, includes chapters on: the challenges in a changing region, creating a plan for our future, and the road to greater mobility and sustainable growth. These chapters currently respond directly to federal and state requirements placed on SCAG. Local governments are required to use these as the basis of their plans for purposes of consistency with applicable regional plans under CEQA. For this project, the City of Rancho Mirage General Plan defines the assumptions that are represented in the AQMP.

The proposed project has a current land use classification of Residential Estate according to the City of Rancho Mirage Land Use and Zoning Map. The proposed project is to develop the site with 9 single family residences. Therefore, the proposed project would not result in an inconsistency with the land use designation in the City's General Plan. Therefore, the proposed project is not anticipated to exceed the AQMP assumptions for the project site and is found to be consistent with the AQMP for the second criterion.

Based on the above, the proposed project will not result in an inconsistency with the SCAQMD AQMP. Therefore, a less than significant impact will occur.

7.0 Greenhouse Gas Impact Analysis

7.1 Construction Greenhouse Gas Emissions Impact

The greenhouse gas emissions from project construction equipment and worker vehicles are shown in Table 12. The emissions are from all phases of construction. The total construction emissions amortized over a period of 30 years are estimated at 14.18 metric tons of CO_2e per year. Annual CalEEMod output calculations are provided in Appendix B.

Table 12: Construction Greenhouse Gas Emissions

Activity	Emissions ($MTCO_2e$)[1]		
	Onsite	**Offsite**	**Total**
Grading	82.46	2.70	85.16
Building Construction	233.11	82.05	315.16
Paving	20.19	1.31	21.50
Coating	2.56	0.88	3.43
Total	338.32	86.94	425.26
Averaged over 30 years[2]	11.28	2.90	14.18

Notes:
[1.] $MTCO_2e$=metric tons of carbon dioxide equivalents (includes carbon dioxide, methane and nitrous oxide).
[2.] The emissions are averaged over 30 years because the average is added to the operational emissions, pursuant to SCAQMD.
* CalEEMod output (Appendix B)

7.2 Operational Greenhouse Gas Emissions Impact

Operational emissions occur over the life of the project. The operational emissions for the project are 136.20 metric tons of CO_2e per year (see Table 13). Furthermore, as shown in Table 13, the project's total emissions (with incorporation of construction related GHG emissions) would be 150.37 metric tons of CO_2e per year. These emissions do not exceed the County of Riverside CAP Update and SCAQMD screening threshold of 3,000 metric tons of CO_2e per year. Therefore, the project's GHG emissions are considered to be less than significant.

<Table 13 next page>

Table 13: Opening Year Unmitigated Project-Related Greenhouse Gas Emissions

Category	Greenhouse Gas Emissions (Metric Tons/Year)[1]					
	Bio-CO2	NonBio-CO_2	CO_2	CH_4	N_2O	CO_2e
Area Sources[2]	0.96	1.99	2.94	0.00	0.00	3.04
Energy Usage[3]	0.00	26.30	26.30	0.00	0.00	26.44
Mobile Sources[4]	0.00	97.03	97.03	0.01	0.00	98.46
Solid Waste[5]	2.16	0.00	2.16	0.13	0.00	5.36
Water[6]	0.19	2.08	2.27	0.02	0.00	2.89
Construction[7]	0.00	13.21	13.21	0.00	0.00	14.18
Total Emissions	3.31	140.61	143.92	0.16	0.01	**150.37**
County of Riverside CAP and SCAQMD Draft Screening Threshold						**3,000**
Exceeds Threshold?						**No**

Notes:
[1] Source: CalEEMod Version 2020.4.0
[2] Area sources consist of GHG emissions from consumer products, architectural coatings, and landscape equipment.
[3] Energy usage consist of GHG emissions from electricity and natural gas usage.
[4] Mobile sources consist of GHG emissions from vehicles.
[5] Solid waste includes the CO_2 and CH_4 emissions created from the solid waste placed in landfills.
[6] Water includes GHG emissions from electricity used for transport of water and processing of wastewater.
[7] Construction GHG emissions based on a 30 year amortization rate.

7.3 Greenhouse Gas Plan Consistency

The proposed project would have the potential to conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of GHGs. As stated previously, the County of Riverside has adopted a Climate Action Plan; therefore, the project and its GHG emissions have been compared to the goals of the County of Riverside CAP Update.

Consistency with the County of Riverside CAP Update

Per the County's CAP Update, the County adopted its first CAP in 2015 which set a target to reduce emissions back to 1990 levels by the year 2020 as recommended in the AB 32 Scoping Plan. Furthermore, the goals and supporting measures within the County's CAP Update are proposed to reflect and ensure compliance with changes in the local and State policies and regulations such as SB 32 and California's 2017 Climate Change Scoping Plan. Therefore, compliance with the County's CAP in turn reflects consistency with the goals of the CARB Scoping Plan, Assembly Bill (AB) 32 and Senate Bill (SB) 32.

Appendix D of the Riverside County CAP Update also states that project's that do not exceed the CAP's screening threshold of 3,000 MTCO2e per year are considered to have less than significant GHG emissions and are in compliance with the County's CAP Update. According to the County's CAP Update, projects that do not exceed emissions of 3,000 MTCO2e per year are also required to include the following efficiency measures:

- Energy efficiency matching or exceeding the Title 24 requirements in effect as of January 2017, and

- Water conservation measures that matches the California Green Building Code in effect as of January 2017.

As stated above, the GHG emissions generated by the proposed project would not exceed the County of Riverside CAP Update screening threshold of 3,000 metric tons per year of CO2e.

8.0 Energy Analysis

Information from the CalEEMod 2020.4.0 Daily and Annual Outputs contained in the air quality and greenhouse gas analyses above was utilized for this analysis. The CalEEMod outputs detail project related construction equipment, transportation energy demands, and facility energy demands.

8.1 Construction Energy Demand

8.1.1 Construction Equipment Electricity Usage Estimates

Electrical service will be provided by Southern California Edison (SCE). Based on the 2017 National Construction Estimator, Richard Pray (2017)[4], the typical power cost per 1,000 square feet of building construction per month is estimated to be $2.32. The project plans to develop the site with 331,000 square feet of new single-family houses over the course of approximately 17 months.[5] Based on Table 14, the total power cost of the on-site electricity usage during the construction of the proposed project is estimated to be approximately $13,039.67. As shown in Table 14, the total electricity usage from Project construction related activities is estimated to be approximately 237,085 kWh.[6]

Table 14: Project Construction Power Cost and Electricity Usage

Power Cost (per 1,000 square foot of building per month of construction)	Total Building Size (1,000 Square Foot)[1]	Construction Duration (months)	Total Project Construction Power Cost
$2.32	331	17	$13,039.67

Cost per kWh	Total Project Construction Electricity Usage (kWh)
$0.06	237,085

* Assumes the project will be under the GS-1 General Service rate under SCE.

[4] Pray, Richard. 2017 National Construction Estimator. Carlsbad: Craftsman Book Company, 2017.
[5] As stated in the project description, the project involves the demolition of approximately 70,000 square feet of existing residences.
[6] LADWP's Small Commercial & Multi-Family Service (A-1) is approximately $0.06 per kWh of electricity Southern California Edison (SCE). Rates & Pricing Choices: General Service/Industrial Rates. https://library.sce.com/content/dam/sce-doclib/public/regulatory/historical/electric/2020/schedules/general-service-&-industrial-rates/ELECTRIC_SCHEDULES_GS-1_2020.pdf

8.1.2 Construction Equipment Fuel Estimates

Using the CalEEMod data input, the project's construction phase would consume electricity and fossil fuels as a single energy demand, that is, once construction is completed their use would cease. CARB's 2017 Emissions Factors Tables show that on average aggregate fuel consumption (gasoline and diesel fuel) would be approximately 18.5 hp-hr-gal.[7] As presented in Table 15 below, project construction activities would consume an estimated 49,374 gallons of diesel fuel.

Table 15: Construction Equipment Fuel Consumption Estimates

Phase	Number of Days	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor	HP hrs/ day	Total Fuel Consumption (gal diesel fuel)[1,2]
Grading	30	Excavators	2	8	158	0.38	961	1,558
	30	Graders	1	8	187	0.41	613	995
	30	Rubber Tired Dozers	1	8	247	0.4	790	1,282
	30	Scrapers	2	8	367	0.48	2,819	4,571
	30	Tractors/Loaders/Backhoes	2	8	97	0.37	574	931
Building Construction	300	Cranes	1	7	231	0.29	469	7,604
	300	Forklifts	3	8	89	0.2	427	6,928
	300	Generator Sets	1	8	84	0.74	497	8,064
	300	Tractors/Loaders/Backhoes	3	7	97	0.37	754	12,222
	300	Welders	1	8	46	0.45	166	2,685
Paving	20	Pavers	2	8	130	0.42	874	944
	20	Paving Equipment	2	8	132	0.36	760	822
	20	Rollers	2	8	80	0.38	486	526
Architectural Coating	20	Air Compressors	1	6	78	0.48	225	243
CONSTRUCTION FUEL DEMAND (gallons of diesel fuel)								**49,374**

Notes:
[1]Using Carl Moyer Guidelines Table D-21 Fuel consumption rate factors (bhp-hr/gal) for engines less than 750 hp.
(Source: https://www.arb.ca.gov/msprog/moyer/guidelines/2017gl/2017_gl_appendix_d.pdf)
[2]Discrepancies are due to rounding.

[7] Aggregate fuel consumption rate for all equipment was estimated at 18.5 hp-hr/day (from CARB's 2017 Emissions Factors Tables and fuel consumption rate factors as shown in Table D-21 of the Moyer Guidelines: (https://www.arb.ca.gov/msprog/moyer/guidelines/2017gl/2017_gl_appendix_d.pdf).

8.1.3 Construction Worker Fuel Estimates

It is assumed that all construction worker trips are from light duty autos (LDA) along area roadways. With respect to estimated VMT, the construction worker trips would generate an estimated 236,670 VMT. Vehicle fuel efficiencies for construction workers were estimated in the air quality and greenhouse gas analysis using information generated using CARB's EMFAC model (see Appendix C for details). Table 16 shows that an estimated 7,647 gallons of fuel would be consumed for construction worker trips.

Table 16: Construction Worker Fuel Consumption Estimates

Phase	Number of Days	Worker Trips/Day	Trip Length (miles)[1]	Vehicle Miles Traveled	Average Vehicle Fuel Economy (mpg)	Estimated Fuel Consumption (gallons)[2]
Grading	30	20	14.7	8,820	30.95	285
Building Construction	300	50	14.7	220,500	30.95	7,124
Paving	20	15	14.7	4,410	30.95	142
Architectural Coating	20	10	14.7	2,940	30.95	95
Total Construction Worker Fuel Consumption						**7,647**

Notes:
[1]Assumptions for the worker trip length and vehicle miles traveled are consistent with CalEEMod 2020.4.0 defaults.
[2]Discrepancies are due to rounding.

8.1.4 Construction Vendor/Hauling Fuel Estimates

Tables 17 and 18 show the estimated fuel consumption for vendor and hauling during building construction and architectural coating. With respect to estimated VMT, the vendor and hauling trips would generate an estimated 39,330 VMT. For the architectural coatings it is assumed that the contractors would be responsible for bringing coatings and equipment with them in their light duty vehicles.[8] Tables 17 and 18 show that an estimated 4,266 gallons of fuel would be consumed for vendor and hauling trips. It is anticipated there will be no hauling trips for this project.

<Tables 17 & 18, next page>

[8] Vendors delivering construction material or hauling debris from the site during grading would use medium to heavy duty vehicles with an average fuel consumption of 9.22 mpg for medium heavy-duty trucks and 6.74 mpg for heavy heavy-duty trucks (see Appendix C for details).

Table 17: Construction Vendor Fuel Consumption Estimates (MHD Trucks)[1]

Phase	Number of Days	Vendor Trips/Day	Trip Length (miles)	Vehicle Miles Traveled	Average Vehicle Fuel Economy (mpg)	Estimated Fuel Consumption (gallons)
Grading	30	0	6.9	0	9.22	0
Building Construction	300	19	6.9	39,330	9.22	4,266
Paving	20	0	6.9	0	9.22	0
Architectural Coating	20	0	6.9	0	9.22	0
Total Vendor Fuel Consumption						**4,266**

Notes:
[1] Assumptions for the vendor trip length and vehicle miles traveled are consistent with CalEEMod 2020.4.0 defaults.

Table 18: Construction Hauling Fuel Consumption Estimates (HHD Trucks)[1]

Phase	Number of Days	Hauling Trips/Day	Trip Length (miles)	Vehicle Miles Traveled	Average Vehicle Fuel Economy (mpg)	Estimated Fuel Consumption (gallons)
Grading	30	0	20	0	6.74	0
Building Construction	300	0	20	0	6.74	0
Paving	20	0	20	0	6.74	0
Architectural Coating	20	0	20	0	6.74	0
Total Construction Hauling Fuel Consumption						**0**

Notes:
[1]Assumptions for the hauling trip length and vehicle miles traveled are consistent with CalEEMod 2020.40 defaults.

8.1.5 Construction Energy Efficiency/Conservation Measures

Construction equipment used over the approximately 17-month construction phase would conform to CARB regulations and California emissions standards and is evidence of related fuel efficiencies. In addition, the CARB Airborne Toxic Control Measure limits idling times of construction vehicles to no more than five minutes, thereby minimizing unnecessary and wasteful consumption of fuel due to unproductive idling of construction equipment. Furthermore, the project has been designed in compliance with California's Energy Efficiency Standards and 2019 CALGreen Standards.

Construction of the proposed residential development would require the typical use of energy resources. There are no unusual project characteristics or construction processes that would require the use of equipment that would be more energy intensive than is used for comparable activities; or equipment that would not conform to current emissions standards (and related fuel efficiencies). Equipment employed in construction of the project would therefore not result in inefficient wasteful, or unnecessary consumption of fuel.

8.2 Operational Energy Demand

Energy consumption in support of or related to project operations would include transportation energy demands (energy consumed by employee and patron vehicles accessing the project site) and facilities energy demands (energy consumed by building operations and site maintenance activities).

8.2.1 Transportation Fuel Consumption

The largest source of operational energy use would be vehicle operation of customers. The site is located in an urbanized area just in close proximity to transit stops. Using the CalEEMod output, it is assumed that an average trip for autos were assumed to be 16.6 miles, light trucks were assumed to travel an average of 6.9 miles, and 3- 4-axle trucks were assumed to travel an average of 8.4 miles[9]. To show a worst-case analysis, as the proposed project is a residential project, it was assumed that vehicles would operate 365 days per year. Table 19 shows the worst-case estimated annual fuel consumption for all classes of vehicles from autos to heavy-heavy trucks.[10] Table 19 shows that an estimated 13,265 gallons of fuel would be consumed per year for the operation of the proposed project.

Table 19: Estimated Vehicle Operations Fuel Consumption

Vehicle Type	Vehicle Mix	Number of Vehicles	Average Trip (miles)[1]	Daily VMT	Average Fuel Economy (mpg)	Total Gallons per Day	Total Annual Fuel Consumption (gallons)
Light Auto	Automobile	46	16.6	766	31.82	24.07	8,787
Light Truck	Automobile	5	6.69	35	27.16	1.27	464
Light Truck	Automobile	16	6.69	105	25.6	4.10	1,497
Medium Truck	Automobile	11	6.69	74	20.81	3.56	1,299
Light Heavy Truck	2-Axle Truck	2	8.4	17	13.81	1.23	449
Light Heavy Truck 10,000 lbs +	2-Axle Truck	1	8.4	5	14.18	0.32	117
Medium Heavy Truck	3-Axle Truck	1	8.4	8	9.58	0.87	319
Heavy Heavy Truck	4-Axle Truck	1	8.4	7	7.14	0.91	333
Total		82	8.7838	1,016	18.76	36.34	--
Total Annual Fuel Consumption							**13,265**

Notes:
[1] The trip generation assessment, the project is to generate 82 total net new trips after reduction of existing uses. Default CalEEMod vehicle fleet mix utilized.
[1]Based on the size of the site and relative location, trips were assumed to be local rather than regional.

Trip generation generated by the proposed project are consistent with other similar residential uses of similar scale and configuration as reflected in the Trip Generation Assessment (Fehr Peers, April 22,

[9] CalEEMod default distance for H-W (home-work) or C-W (commercial-work) is 16.6 miles; 6.9 miles for H-S (home-shop) or C-C (commercial-customer); and 8.4 miles for H-O (home-other) or C-O (commercial-other).
[10] Average fuel economy based on aggregate mileage calculated in EMFAC 2017 for opening year (2023). See Appendix C for EMFAC output.

2021). That is, the proposed project does not propose uses or operations that would inherently result in excessive and wasteful vehicle trips, nor associated excess and wasteful vehicle energy consumption. Therefore, project transportation energy consumption would not be considered inefficient, wasteful, or otherwise unnecessary.

8.2.2 Facility Energy Demands (Electricity and Natural Gas)

The annual natural gas and electricity demands were provided per the CalEEMod output and are provided in Table 20.

Table 20: Project Unmitigated Annual Operational Energy Demand Summary[1]

Natural Gas Demand	kBTU/year
Single Family Housing	254,582
Total	254,582
Electricity Demand	**kWh/year**
Single Family Housing	71,682
Total	71,682

Notes:
[1]Taken from the CalEEMod 2020.4.0 annual output.

As shown in Table 20, the estimated electricity demand for the proposed project is approximately 71,682 kWh per year. In 2019, the residential sector of the County of Riverside consumed approximately 7,337 million kWh of electricity.[11] In addition, the estimated natural gas consumption for the proposed project is approximately 254,582 kBTU per year. In 2019, the non-residential sector of the County of Riverside consumed approximately 305 million therms of gas.[12] Therefore, the increase in both electricity and natural gas demand from the proposed project is insignificant compared to the County's 2019 demand.

8.3 Renewable Energy and Energy Efficiency Plan Consistency

Regarding federal transportation regulations, the project site is located in an already developed area. Access to/from the project site is from existing roads. These roads are already in place so the project would not interfere with, nor otherwise obstruct intermodal transportation plans or projects that may be proposed pursuant to the ISTEA because SCAG is not planning for intermodal facilities in the project area.

Regarding the State's Energy Plan and compliance with Title 24 CCR energy efficiency standards, the applicant is required to comply with the California Green Building Standard Code requirements for

[11] California Energy Commission, Electricity Consumption by County. https://ecdms.energy.ca.gov/elecbycounty.aspx
[12] California Energy Commission, Gas Consumption by County. http://ecdms.energy.ca.gov/gasbycounty.aspx

energy efficient buildings and appliances as well as utility energy efficiency programs implemented by the SCE and Southern California Gas Company.

Regarding the State's Renewable Energy Portfolio Standards, the project would be required to meet or exceed the energy standards established in the California Green Building Standards Code, Title 24, Part 11 (CALGreen). CalGreen Standards require that new buildings reduce water consumption, employ building commissioning to increase building system efficiencies, divert construction waste from landfills, and install low pollutant-emitting finish materials.

9.0 References

The following references were used in the preparing this analysis.

California Air Pollution Control Officers Association
2009 Health Risk Assessments for Proposed Land Use Projects

California Air Resources Board
2008 Resolution 08-43

2008 Recommended Approaches for Setting Interim Significance Thresholds for Greenhouse Gases under the California Environmental Quality Act

2008 ARB Recommended Interim Risk Management Policy for Inhalation-Based Residential Cancer Risk – Frequently Asked Questions

2008 Climate Change Scoping Plan, a framework for change.

2011 Supplement to the AB 32 Scoping Plan Functional Equivalent Document

2014 First Update to the Climate Change Scoping Plan, Building on the Framework Pursuant to AB32, the California Global Warming Solutions Act of 2006. May.

2018 Historical Air Quality, Top 4 Summary

City of Rancho Mirage
2013 Land Use and Zoning Map

County of Riverside
2015 County of Riverside General Plan. December 8.

2019 County of Riverside Climate Action Plan Update. November.

Governor's Office of Planning and Research
2008 CEQA and Climate: Addressing Climate Change Through California Environmental Quality Act (CEQA) Review

2009 CEQA Guideline Sections to be Added or Amended

Integrated Engineering Group
2020 Scoping Agreement for Traffic Impact Study Central Avenue Gas Station, County of Riverside, CA. December 16.

Office of Environmental Health Hazard Assessment

2015 Air Toxics Hot Spots Program Risk Assessment Guidelines

South Coast Air Quality Management District

1993 CEQA Air Quality Handbook

2005 Rule 403 Fugitive Dust

2007 2007 Air Quality Management Plan

2008 Final Localized Significance Threshold Methodology, Revised

2011 Appendix A Calculation Details for CalEEMod

2012 Final 2012 Air Quality Management Plan

2016 Final 2016 Air Quality Management Plan

Appendix A:

CalEEMod Daily Emission Output

TTM 38222 - South Coast AQMD Air District, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

TTM 38222

South Coast AQMD Air District, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	2.53	Acre	2.53	110,206.80	0
Single Family Housing	9.00	Dwelling Unit	7.59	16,200.00	26

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	31
Climate Zone	10			**Operational Year**	2023
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	390.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Project area is 10.122 acres, including 2.53 acres paving (25% of area)

Construction Phase -

Grading - Project area is 10.122 acres

Woodstoves - No woodstoves

Construction Off-road Equipment Mitigation -

Waste Mitigation - AB 341 requires each jurisdiction in CA to divert at least 75% of their waste away from landfills by 2020.

Table Name	Column Name	Default Value	New Value
tblLandUse	LotAcreage	2.92	7.59

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	3.6937	38.8919	29.8049	0.0641	9.4271	1.6362	11.0634	3.7130	1.5053	5.2184	0.0000	6,217.2400	6,217.2400	1.9496	0.0689	6,267.4370
2023	6.8243	15.1818	18.2742	0.0353	0.6805	0.7069	1.3874	0.1833	0.6652	0.8484	0.0000	3,428.6683	3,428.6683	0.7176	0.0652	3,463.9133
Maximum	**6.8243**	**38.8919**	**29.8049**	**0.0641**	**9.4271**	**1.6362**	**11.0634**	**3.7130**	**1.5053**	**5.2184**	**0.0000**	**6,217.2400**	**6,217.2400**	**1.9496**	**0.0689**	**6,267.4370**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	3.6937	38.8919	29.8049	0.0641	3.8130	1.6362	5.4492	1.4843	1.5053	2.9896	0.0000	6,217.2400	6,217.2400	1.9496	0.0689	6,267.4370
2023	6.8243	15.1818	18.2742	0.0353	0.6805	0.7069	1.3874	0.1833	0.6652	0.8484	0.0000	3,428.6683	3,428.6683	0.7176	0.0652	3,463.9133
Maximum	**6.8243**	**38.8919**	**29.8049**	**0.0641**	**3.8130**	**1.6362**	**5.4492**	**1.4843**	**1.5053**	**2.9896**	**0.0000**	**6,217.2400**	**6,217.2400**	**1.9496**	**0.0689**	**6,267.4370**

TTM 38222 - South Coast AQMD Air District, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	55.54	0.00	45.09	57.20	0.00	36.74	0.00	0.00	0.00	0.00	0.00	0.00

TTM 38222 - South Coast AQMD Air District, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	2.7767	0.1953	5.3199	0.0117		0.6916	0.6916		0.6916	0.6916	84.3023	163.3375	247.6398	0.2527	5.7200e-003	255.6622
Energy	7.5200e-003	0.0643	0.0274	4.1000e-004		5.2000e-003	5.2000e-003		5.2000e-003	5.2000e-003		82.0572	82.0572	1.5700e-003	1.5000e-003	82.5448
Mobile	0.2622	0.2864	2.6991	6.0600e-003	0.6182	4.2900e-003	0.6225	0.1647	3.9900e-003	0.1687		623.7113	623.7113	0.0374	0.0253	632.1953
Total	**3.0464**	**0.5460**	**8.0464**	**0.0182**	**0.6182**	**0.7011**	**1.3193**	**0.1647**	**0.7008**	**0.8655**	**84.3023**	**869.1060**	**953.4083**	**0.2917**	**0.0326**	**970.4024**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	2.7767	0.1953	5.3199	0.0117		0.6916	0.6916		0.6916	0.6916	84.3023	163.3375	247.6398	0.2527	5.7200e-003	255.6622
Energy	7.5200e-003	0.0643	0.0274	4.1000e-004		5.2000e-003	5.2000e-003		5.2000e-003	5.2000e-003		82.0572	82.0572	1.5700e-003	1.5000e-003	82.5448
Mobile	0.2622	0.2864	2.6991	6.0600e-003	0.6182	4.2900e-003	0.6225	0.1647	3.9900e-003	0.1687		623.7113	623.7113	0.0374	0.0253	632.1953
Total	**3.0464**	**0.5460**	**8.0464**	**0.0182**	**0.6182**	**0.7011**	**1.3193**	**0.1647**	**0.7008**	**0.8655**	**84.3023**	**869.1060**	**953.4083**	**0.2917**	**0.0326**	**970.4024**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Grading	Grading	2/12/2022	3/25/2022	5	30	
2	Building Construction	Building Construction	3/26/2022	5/19/2023	5	300	
3	Paving	Paving	5/20/2023	6/16/2023	5	20	
4	Architectural Coating	Architectural Coating	6/17/2023	7/14/2023	5	20	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 90

Acres of Paving: 2.53

Residential Indoor: 32,805; Residential Outdoor: 10,935; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 6,612 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Grading	8	20.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	50.00	19.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	10.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.2 Grading - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					9.2036	0.0000	9.2036	3.6538	0.0000	3.6538			0.0000			0.0000
Off-Road	3.6248	38.8435	29.0415	0.0621		1.6349	1.6349		1.5041	1.5041		6,011.4105	6,011.4105	1.9442		6,060.0158
Total	**3.6248**	**38.8435**	**29.0415**	**0.0621**	**9.2036**	**1.6349**	**10.8385**	**3.6538**	**1.5041**	**5.1579**		**6,011.4105**	**6,011.4105**	**1.9442**		**6,060.0158**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0689	0.0485	0.7634	2.0200e-003	0.2236	1.3400e-003	0.2249	0.0593	1.2300e-003	0.0605		205.8294	205.8294	5.3500e-003	4.8900e-003	207.4211
Total	**0.0689**	**0.0485**	**0.7634**	**2.0200e-003**	**0.2236**	**1.3400e-003**	**0.2249**	**0.0593**	**1.2300e-003**	**0.0605**		**205.8294**	**205.8294**	**5.3500e-003**	**4.8900e-003**	**207.4211**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.2 Grading - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.5894	0.0000	3.5894	1.4250	0.0000	1.4250			0.0000			0.0000
Off-Road	3.6248	38.8435	29.0415	0.0621		1.6349	1.6349		1.5041	1.5041	0.0000	6,011.4105	6,011.4105	1.9442		6,060.0158
Total	**3.6248**	**38.8435**	**29.0415**	**0.0621**	**3.5894**	**1.6349**	**5.2243**	**1.4250**	**1.5041**	**2.9291**	**0.0000**	**6,011.4105**	**6,011.4105**	**1.9442**		**6,060.0158**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0689	0.0485	0.7634	2.0200e-003	0.2236	1.3400e-003	0.2249	0.0593	1.2300e-003	0.0605		205.8294	205.8294	5.3500e-003	4.8900e-003	207.4211
Total	**0.0689**	**0.0485**	**0.7634**	**2.0200e-003**	**0.2236**	**1.3400e-003**	**0.2249**	**0.0593**	**1.2300e-003**	**0.0605**		**205.8294**	**205.8294**	**5.3500e-003**	**4.8900e-003**	**207.4211**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.3 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612		2,554.3336	2,554.3336	0.6120		2,569.6322
Total	**1.7062**	**15.6156**	**16.3634**	**0.0269**		**0.8090**	**0.8090**		**0.7612**	**0.7612**		**2,554.3336**	**2,554.3336**	**0.6120**		**2,569.6322**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0346	0.8841	0.3031	3.6300e-003	0.1217	9.2400e-003	0.1309	0.0350	8.8400e-003	0.0439		390.7718	390.7718	0.0131	0.0567	407.9819
Worker	0.1722	0.1211	1.9085	5.0600e-003	0.5589	3.3400e-003	0.5622	0.1482	3.0700e-003	0.1513		514.5736	514.5736	0.0134	0.0122	518.5528
Total	**0.2068**	**1.0052**	**2.2116**	**8.6900e-003**	**0.6805**	**0.0126**	**0.6931**	**0.1833**	**0.0119**	**0.1952**		**905.3453**	**905.3453**	**0.0265**	**0.0689**	**926.5348**

TTM 38222 - South Coast AQMD Air District, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.3 Building Construction - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612	0.0000	2,554.3336	2,554.3336	0.6120		2,569.6322
Total	**1.7062**	**15.6156**	**16.3634**	**0.0269**		**0.8090**	**0.8090**		**0.7612**	**0.7612**	**0.0000**	**2,554.3336**	**2,554.3336**	**0.6120**		**2,569.6322**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0346	0.8841	0.3031	3.6300e-003	0.1217	9.2400e-003	0.1309	0.0350	8.8400e-003	0.0439		390.7718	390.7718	0.0131	0.0567	407.9819
Worker	0.1722	0.1211	1.9085	5.0600e-003	0.5589	3.3400e-003	0.5622	0.1482	3.0700e-003	0.1513		514.5736	514.5736	0.0134	0.0122	518.5528
Total	**0.2068**	**1.0052**	**2.2116**	**8.6900e-003**	**0.6805**	**0.0126**	**0.6931**	**0.1833**	**0.0119**	**0.1952**		**905.3453**	**905.3453**	**0.0265**	**0.0689**	**926.5348**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.3 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.5728	14.3849	16.2440	0.0269		0.6997	0.6997		0.6584	0.6584		2,555.2099	2,555.2099	0.6079		2,570.4061
Total	**1.5728**	**14.3849**	**16.2440**	**0.0269**		**0.6997**	**0.6997**		**0.6584**	**0.6584**		**2,555.2099**	**2,555.2099**	**0.6079**		**2,570.4061**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0210	0.6897	0.2715	3.4600e-003	0.1217	4.0200e-003	0.1257	0.0350	3.8400e-003	0.0389		372.4588	372.4588	0.0125	0.0539	388.8400
Worker	0.1597	0.1072	1.7587	4.9000e-003	0.5589	3.1500e-003	0.5620	0.1482	2.9000e-003	0.1511		500.9996	500.9996	0.0120	0.0113	504.6672
Total	**0.1807**	**0.7969**	**2.0302**	**8.3600e-003**	**0.6805**	**7.1700e-003**	**0.6877**	**0.1833**	**6.7400e-003**	**0.1900**		**873.4583**	**873.4583**	**0.0245**	**0.0652**	**893.5072**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.3 Building Construction - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.5728	14.3849	16.2440	0.0269		0.6997	0.6997		0.6584	0.6584	0.0000	2,555.2099	2,555.2099	0.6079		2,570.4061
Total	**1.5728**	**14.3849**	**16.2440**	**0.0269**		**0.6997**	**0.6997**		**0.6584**	**0.6584**	**0.0000**	**2,555.2099**	**2,555.2099**	**0.6079**		**2,570.4061**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0210	0.6897	0.2715	3.4600e-003	0.1217	4.0200e-003	0.1257	0.0350	3.8400e-003	0.0389		372.4588	372.4588	0.0125	0.0539	388.8400
Worker	0.1597	0.1072	1.7587	4.9000e-003	0.5589	3.1500e-003	0.5620	0.1482	2.9000e-003	0.1511		500.9996	500.9996	0.0120	0.0113	504.6672
Total	**0.1807**	**0.7969**	**2.0302**	**8.3600e-003**	**0.6805**	**7.1700e-003**	**0.6877**	**0.1833**	**6.7400e-003**	**0.1900**		**873.4583**	**873.4583**	**0.0245**	**0.0652**	**893.5072**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Paving - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0327	10.1917	14.5842	0.0228		0.5102	0.5102		0.4694	0.4694		2,207.5841	2,207.5841	0.7140		2,225.4336
Paving	0.3314					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.3642**	**10.1917**	**14.5842**	**0.0228**		**0.5102**	**0.5102**		**0.4694**	**0.4694**		**2,207.5841**	**2,207.5841**	**0.7140**		**2,225.4336**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0479	0.0322	0.5276	1.4700e-003	0.1677	9.4000e-004	0.1686	0.0445	8.7000e-004	0.0453		150.2999	150.2999	3.6000e-003	3.3900e-003	151.4002
Total	**0.0479**	**0.0322**	**0.5276**	**1.4700e-003**	**0.1677**	**9.4000e-004**	**0.1686**	**0.0445**	**8.7000e-004**	**0.0453**		**150.2999**	**150.2999**	**3.6000e-003**	**3.3900e-003**	**151.4002**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Paving - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0327	10.1917	14.5842	0.0228		0.5102	0.5102		0.4694	0.4694	0.0000	2,207.5841	2,207.5841	0.7140		2,225.4336
Paving	0.3314					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.3642**	**10.1917**	**14.5842**	**0.0228**		**0.5102**	**0.5102**		**0.4694**	**0.4694**	**0.0000**	**2,207.5841**	**2,207.5841**	**0.7140**		**2,225.4336**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0479	0.0322	0.5276	1.4700e-003	0.1677	9.4000e-004	0.1686	0.0445	8.7000e-004	0.0453		150.2999	150.2999	3.6000e-003	3.3900e-003	151.4002
Total	**0.0479**	**0.0322**	**0.5276**	**1.4700e-003**	**0.1677**	**9.4000e-004**	**0.1686**	**0.0445**	**8.7000e-004**	**0.0453**		**150.2999**	**150.2999**	**3.6000e-003**	**3.3900e-003**	**151.4002**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Architectural Coating - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	6.6007					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1917	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708		281.4481	281.4481	0.0168		281.8690
Total	**6.7924**	**1.3030**	**1.8111**	**2.9700e-003**		**0.0708**	**0.0708**		**0.0708**	**0.0708**		**281.4481**	**281.4481**	**0.0168**		**281.8690**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0319	0.0214	0.3517	9.8000e-004	0.1118	6.3000e-004	0.1124	0.0296	5.8000e-004	0.0302		100.1999	100.1999	2.4000e-003	2.2600e-003	100.9334
Total	**0.0319**	**0.0214**	**0.3517**	**9.8000e-004**	**0.1118**	**6.3000e-004**	**0.1124**	**0.0296**	**5.8000e-004**	**0.0302**		**100.1999**	**100.1999**	**2.4000e-003**	**2.2600e-003**	**100.9334**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Architectural Coating - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	6.6007					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1917	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708	0.0000	281.4481	281.4481	0.0168		281.8690
Total	**6.7924**	**1.3030**	**1.8111**	**2.9700e-003**		**0.0708**	**0.0708**		**0.0708**	**0.0708**	**0.0000**	**281.4481**	**281.4481**	**0.0168**		**281.8690**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0319	0.0214	0.3517	9.8000e-004	0.1118	6.3000e-004	0.1124	0.0296	5.8000e-004	0.0302		100.1999	100.1999	2.4000e-003	2.2600e-003	100.9334
Total	**0.0319**	**0.0214**	**0.3517**	**9.8000e-004**	**0.1118**	**6.3000e-004**	**0.1124**	**0.0296**	**5.8000e-004**	**0.0302**		**100.1999**	**100.1999**	**2.4000e-003**	**2.2600e-003**	**100.9334**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.2622	0.2864	2.6991	6.0600e-003	0.6182	4.2900e-003	0.6225	0.1647	3.9900e-003	0.1687		623.7113	623.7113	0.0374	0.0253	632.1953
Unmitigated	0.2622	0.2864	2.6991	6.0600e-003	0.6182	4.2900e-003	0.6225	0.1647	3.9900e-003	0.1687		623.7113	623.7113	0.0374	0.0253	632.1953

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Other Asphalt Surfaces	0.00	0.00	0.00		
Single Family Housing	84.96	85.86	76.95	286,850	286,850
Total	84.96	85.86	76.95	286,850	286,850

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Other Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Single Family Housing	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3

4.4 Fleet Mix

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Other Asphalt Surfaces	0.543139	0.060749	0.184760	0.130258	0.023830	0.006353	0.011718	0.009137	0.000812	0.000509	0.024193	0.000750	0.003791
Single Family Housing	0.543139	0.060749	0.184760	0.130258	0.023830	0.006353	0.011718	0.009137	0.000812	0.000509	0.024193	0.000750	0.003791

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	7.5200e-003	0.0643	0.0274	4.1000e-004		5.2000e-003	5.2000e-003		5.2000e-003	5.2000e-003		82.0572	82.0572	1.5700e-003	1.5000e-003	82.5448
NaturalGas Unmitigated	7.5200e-003	0.0643	0.0274	4.1000e-004		5.2000e-003	5.2000e-003		5.2000e-003	5.2000e-003		82.0572	82.0572	1.5700e-003	1.5000e-003	82.5448

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Single Family Housing	697.486	7.5200e-003	0.0643	0.0274	4.1000e-004		5.2000e-003	5.2000e-003		5.2000e-003	5.2000e-003		82.0572	82.0572	1.5700e-003	1.5000e-003	82.5448
Total		**7.5200e-003**	**0.0643**	**0.0274**	**4.1000e-004**		**5.2000e-003**	**5.2000e-003**		**5.2000e-003**	**5.2000e-003**		**82.0572**	**82.0572**	**1.5700e-003**	**1.5000e-003**	**82.5448**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0.697486	7.5200e-003	0.0643	0.0274	4.1000e-004		5.2000e-003	5.2000e-003		5.2000e-003	5.2000e-003		82.0572	82.0572	1.5700e-003	1.5000e-003	82.5448
Total		**7.5200e-003**	**0.0643**	**0.0274**	**4.1000e-004**		**5.2000e-003**	**5.2000e-003**		**5.2000e-003**	**5.2000e-003**		**82.0572**	**82.0572**	**1.5700e-003**	**1.5000e-003**	**82.5448**

6.0 Area Detail

TTM 38222 - South Coast AQMD Air District, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	2.7767	0.1953	5.3199	0.0117		0.6916	0.6916		0.6916	0.6916	84.3023	163.3375	247.6398	0.2527	5.7200e-003	255.6622
Unmitigated	2.7767	0.1953	5.3199	0.0117		0.6916	0.6916		0.6916	0.6916	84.3023	163.3375	247.6398	0.2527	5.7200e-003	255.6622

TTM 38222 - South Coast AQMD Air District, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0362					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.3598					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	2.3583	0.1867	4.5770	0.0117		0.6875	0.6875		0.6875	0.6875	84.3023	162.0000	246.3023	0.2514	5.7200e-003	254.2925
Landscaping	0.0224	8.5600e-003	0.7429	4.0000e-005		4.1100e-003	4.1100e-003		4.1100e-003	4.1100e-003		1.3375	1.3375	1.2900e-003		1.3697
Total	**2.7767**	**0.1953**	**5.3199**	**0.0117**		**0.6916**	**0.6916**		**0.6916**	**0.6916**	**84.3023**	**163.3375**	**247.6398**	**0.2527**	**5.7200e-003**	**255.6622**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0362					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.3598					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	2.3583	0.1867	4.5770	0.0117		0.6875	0.6875		0.6875	0.6875	84.3023	162.0000	246.3023	0.2514	5.7200e-003	254.2925
Landscaping	0.0224	8.5600e-003	0.7429	4.0000e-005		4.1100e-003	4.1100e-003		4.1100e-003	4.1100e-003		1.3375	1.3375	1.2900e-003		1.3697
Total	**2.7767**	**0.1953**	**5.3199**	**0.0117**		**0.6916**	**0.6916**		**0.6916**	**0.6916**	**84.3023**	**163.3375**	**247.6398**	**0.2527**	**5.7200e-003**	**255.6622**

7.0 Water Detail

7.1 Mitigation Measures Water

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

TTM 38222 - South Coast AQMD Air District, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

TTM 38222

South Coast AQMD Air District, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	2.53	Acre	2.53	110,206.80	0
Single Family Housing	9.00	Dwelling Unit	7.59	16,200.00	26

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	31
Climate Zone	10			**Operational Year**	2023
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	390.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Project area is 10.122 acres, including 2.53 acres paving (25% of area)

Construction Phase -

Grading - Project area is 10.122 acres

Woodstoves - No woodstoves

Construction Off-road Equipment Mitigation -

Waste Mitigation - AB 341 requires each jurisdiction in CA to divert at least 75% of their waste away from landfills by 2020.

Table Name	Column Name	Default Value	New Value
tblLandUse	LotAcreage	2.92	7.59

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	3.6973	38.8965	29.7316	0.0640	9.4271	1.6362	11.0634	3.7130	1.5053	5.2184	0.0000	6,205.2716	6,205.2716	1.9496	0.0697	6,255.5593
2023	6.8261	15.2260	18.1158	0.0350	0.6805	0.7069	1.3875	0.1833	0.6652	0.8484	0.0000	3,400.2666	3,400.2666	0.7176	0.0661	3,435.7617
Maximum	**6.8261**	**38.8965**	**29.7316**	**0.0640**	**9.4271**	**1.6362**	**11.0634**	**3.7130**	**1.5053**	**5.2184**	**0.0000**	**6,205.2716**	**6,205.2716**	**1.9496**	**0.0697**	**6,255.5593**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	3.6973	38.8965	29.7316	0.0640	3.8130	1.6362	5.4492	1.4843	1.5053	2.9896	0.0000	6,205.2716	6,205.2716	1.9496	0.0697	6,255.5593
2023	6.8261	15.2260	18.1158	0.0350	0.6805	0.7069	1.3875	0.1833	0.6652	0.8484	0.0000	3,400.2666	3,400.2666	0.7176	0.0661	3,435.7617
Maximum	**6.8261**	**38.8965**	**29.7316**	**0.0640**	**3.8130**	**1.6362**	**5.4492**	**1.4843**	**1.5053**	**2.9896**	**0.0000**	**6,205.2716**	**6,205.2716**	**1.9496**	**0.0697**	**6,255.5593**

TTM 38222 - South Coast AQMD Air District, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	55.54	0.00	45.09	57.20	0.00	36.74	0.00	0.00	0.00	0.00	0.00	0.00

TTM 38222 - South Coast AQMD Air District, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	2.7767	0.1953	5.3199	0.0117		0.6916	0.6916		0.6916	0.6916	84.3023	163.3375	247.6398	0.2527	5.7200e-003	255.6622
Energy	7.5200e-003	0.0643	0.0274	4.1000e-004		5.2000e-003	5.2000e-003		5.2000e-003	5.2000e-003		82.0572	82.0572	1.5700e-003	1.5000e-003	82.5448
Mobile	0.2529	0.3079	2.5978	5.7700e-003	0.6182	4.2900e-003	0.6225	0.1647	3.9900e-003	0.1687		594.6206	594.6206	0.0385	0.0263	603.4323
Total	**3.0371**	**0.5675**	**7.9450**	**0.0179**	**0.6182**	**0.7011**	**1.3193**	**0.1647**	**0.7008**	**0.8655**	**84.3023**	**840.0153**	**924.3175**	**0.2927**	**0.0336**	**941.6394**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	2.7767	0.1953	5.3199	0.0117		0.6916	0.6916		0.6916	0.6916	84.3023	163.3375	247.6398	0.2527	5.7200e-003	255.6622
Energy	7.5200e-003	0.0643	0.0274	4.1000e-004		5.2000e-003	5.2000e-003		5.2000e-003	5.2000e-003		82.0572	82.0572	1.5700e-003	1.5000e-003	82.5448
Mobile	0.2529	0.3079	2.5978	5.7700e-003	0.6182	4.2900e-003	0.6225	0.1647	3.9900e-003	0.1687		594.6206	594.6206	0.0385	0.0263	603.4323
Total	**3.0371**	**0.5675**	**7.9450**	**0.0179**	**0.6182**	**0.7011**	**1.3193**	**0.1647**	**0.7008**	**0.8655**	**84.3023**	**840.0153**	**924.3175**	**0.2927**	**0.0336**	**941.6394**

TTM 38222 - South Coast AQMD Air District, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Grading	Grading	2/12/2022	3/25/2022	5	30	
2	Building Construction	Building Construction	3/26/2022	5/19/2023	5	300	
3	Paving	Paving	5/20/2023	6/16/2023	5	20	
4	Architectural Coating	Architectural Coating	6/17/2023	7/14/2023	5	20	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 90

Acres of Paving: 2.53

Residential Indoor: 32,805; Residential Outdoor: 10,935; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 6,612 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Grading	8	20.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	50.00	19.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	10.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

TTM 38222 - South Coast AQMD Air District, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.2 Grading - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					9.2036	0.0000	9.2036	3.6538	0.0000	3.6538			0.0000			0.0000
Off-Road	3.6248	38.8435	29.0415	0.0621		1.6349	1.6349		1.5041	1.5041		6,011.4105	6,011.4105	1.9442		6,060.0158
Total	**3.6248**	**38.8435**	**29.0415**	**0.0621**	**9.2036**	**1.6349**	**10.8385**	**3.6538**	**1.5041**	**5.1579**		**6,011.4105**	**6,011.4105**	**1.9442**		**6,060.0158**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0725	0.0530	0.6901	1.9100e-003	0.2236	1.3400e-003	0.2249	0.0593	1.2300e-003	0.0605		193.8611	193.8611	5.4100e-003	5.1900e-003	195.5435
Total	**0.0725**	**0.0530**	**0.6901**	**1.9100e-003**	**0.2236**	**1.3400e-003**	**0.2249**	**0.0593**	**1.2300e-003**	**0.0605**		**193.8611**	**193.8611**	**5.4100e-003**	**5.1900e-003**	**195.5435**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.2 Grading - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.5894	0.0000	3.5894	1.4250	0.0000	1.4250			0.0000			0.0000
Off-Road	3.6248	38.8435	29.0415	0.0621		1.6349	1.6349		1.5041	1.5041	0.0000	6,011.4105	6,011.4105	1.9442		6,060.0158
Total	**3.6248**	**38.8435**	**29.0415**	**0.0621**	**3.5894**	**1.6349**	**5.2243**	**1.4250**	**1.5041**	**2.9291**	**0.0000**	**6,011.4105**	**6,011.4105**	**1.9442**		**6,060.0158**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0725	0.0530	0.6901	1.9100e-003	0.2236	1.3400e-003	0.2249	0.0593	1.2300e-003	0.0605		193.8611	193.8611	5.4100e-003	5.1900e-003	195.5435
Total	**0.0725**	**0.0530**	**0.6901**	**1.9100e-003**	**0.2236**	**1.3400e-003**	**0.2249**	**0.0593**	**1.2300e-003**	**0.0605**		**193.8611**	**193.8611**	**5.4100e-003**	**5.1900e-003**	**195.5435**

TTM 38222 - South Coast AQMD Air District, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.3 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612		2,554.3336	2,554.3336	0.6120		2,569.6322
Total	**1.7062**	**15.6156**	**16.3634**	**0.0269**		**0.8090**	**0.8090**		**0.7612**	**0.7612**		**2,554.3336**	**2,554.3336**	**0.6120**		**2,569.6322**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0340	0.9227	0.3140	3.6400e-003	0.1217	9.2800e-003	0.1309	0.0350	8.8700e-003	0.0439		390.9674	390.9674	0.0131	0.0567	408.1984
Worker	0.1812	0.1325	1.7253	4.7600e-003	0.5589	3.3400e-003	0.5622	0.1482	3.0700e-003	0.1513		484.6527	484.6527	0.0135	0.0130	488.8587
Total	**0.2152**	**1.0552**	**2.0393**	**8.4000e-003**	**0.6805**	**0.0126**	**0.6932**	**0.1833**	**0.0119**	**0.1952**		**875.6201**	**875.6201**	**0.0266**	**0.0697**	**897.0571**

TTM 38222 - South Coast AQMD Air District, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.3 Building Construction - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612	0.0000	2,554.3336	2,554.3336	0.6120		2,569.6322
Total	**1.7062**	**15.6156**	**16.3634**	**0.0269**		**0.8090**	**0.8090**		**0.7612**	**0.7612**	**0.0000**	**2,554.3336**	**2,554.3336**	**0.6120**		**2,569.6322**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0340	0.9227	0.3140	3.6400e-003	0.1217	9.2800e-003	0.1309	0.0350	8.8700e-003	0.0439		390.9674	390.9674	0.0131	0.0567	408.1984
Worker	0.1812	0.1325	1.7253	4.7600e-003	0.5589	3.3400e-003	0.5622	0.1482	3.0700e-003	0.1513		484.6527	484.6527	0.0135	0.0130	488.8587
Total	**0.2152**	**1.0552**	**2.0393**	**8.4000e-003**	**0.6805**	**0.0126**	**0.6932**	**0.1833**	**0.0119**	**0.1952**		**875.6201**	**875.6201**	**0.0266**	**0.0697**	**897.0571**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.3 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.5728	14.3849	16.2440	0.0269		0.6997	0.6997		0.6584	0.6584		2,555.2099	2,555.2099	0.6079		2,570.4061
Total	**1.5728**	**14.3849**	**16.2440**	**0.0269**		**0.6997**	**0.6997**		**0.6584**	**0.6584**		**2,555.2099**	**2,555.2099**	**0.6079**		**2,570.4061**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0201	0.7239	0.2803	3.4600e-003	0.1217	4.0400e-003	0.1257	0.0350	3.8600e-003	0.0389		373.1322	373.1322	0.0125	0.0541	389.5550
Worker	0.1686	0.1172	1.5916	4.6100e-003	0.5589	3.1500e-003	0.5620	0.1482	2.9000e-003	0.1511		471.9245	471.9245	0.0122	0.0120	475.8007
Total	**0.1887**	**0.8411**	**1.8718**	**8.0700e-003**	**0.6805**	**7.1900e-003**	**0.6877**	**0.1833**	**6.7600e-003**	**0.1900**		**845.0567**	**845.0567**	**0.0246**	**0.0661**	**865.3557**

TTM 38222 - South Coast AQMD Air District, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.3 Building Construction - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.5728	14.3849	16.2440	0.0269		0.6997	0.6997		0.6584	0.6584	0.0000	2,555.2099	2,555.2099	0.6079		2,570.4061
Total	**1.5728**	**14.3849**	**16.2440**	**0.0269**		**0.6997**	**0.6997**		**0.6584**	**0.6584**	**0.0000**	**2,555.2099**	**2,555.2099**	**0.6079**		**2,570.4061**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0201	0.7239	0.2803	3.4600e-003	0.1217	4.0400e-003	0.1257	0.0350	3.8600e-003	0.0389		373.1322	373.1322	0.0125	0.0541	389.5550
Worker	0.1686	0.1172	1.5916	4.6100e-003	0.5589	3.1500e-003	0.5620	0.1482	2.9000e-003	0.1511		471.9245	471.9245	0.0122	0.0120	475.8007
Total	**0.1887**	**0.8411**	**1.8718**	**8.0700e-003**	**0.6805**	**7.1900e-003**	**0.6877**	**0.1833**	**6.7600e-003**	**0.1900**		**845.0567**	**845.0567**	**0.0246**	**0.0661**	**865.3557**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Paving - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0327	10.1917	14.5842	0.0228		0.5102	0.5102		0.4694	0.4694		2,207.5841	2,207.5841	0.7140		2,225.4336
Paving	0.3314					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.3642**	**10.1917**	**14.5842**	**0.0228**		**0.5102**	**0.5102**		**0.4694**	**0.4694**		**2,207.5841**	**2,207.5841**	**0.7140**		**2,225.4336**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0506	0.0352	0.4775	1.3800e-003	0.1677	9.4000e-004	0.1686	0.0445	8.7000e-004	0.0453		141.5774	141.5774	3.6500e-003	3.6000e-003	142.7402
Total	**0.0506**	**0.0352**	**0.4775**	**1.3800e-003**	**0.1677**	**9.4000e-004**	**0.1686**	**0.0445**	**8.7000e-004**	**0.0453**		**141.5774**	**141.5774**	**3.6500e-003**	**3.6000e-003**	**142.7402**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Paving - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0327	10.1917	14.5842	0.0228		0.5102	0.5102		0.4694	0.4694	0.0000	2,207.5841	2,207.5841	0.7140		2,225.4336
Paving	0.3314					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.3642**	**10.1917**	**14.5842**	**0.0228**		**0.5102**	**0.5102**		**0.4694**	**0.4694**	**0.0000**	**2,207.5841**	**2,207.5841**	**0.7140**		**2,225.4336**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0506	0.0352	0.4775	1.3800e-003	0.1677	9.4000e-004	0.1686	0.0445	8.7000e-004	0.0453		141.5774	141.5774	3.6500e-003	3.6000e-003	142.7402
Total	**0.0506**	**0.0352**	**0.4775**	**1.3800e-003**	**0.1677**	**9.4000e-004**	**0.1686**	**0.0445**	**8.7000e-004**	**0.0453**		**141.5774**	**141.5774**	**3.6500e-003**	**3.6000e-003**	**142.7402**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Architectural Coating - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	6.6007					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1917	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708		281.4481	281.4481	0.0168		281.8690
Total	**6.7924**	**1.3030**	**1.8111**	**2.9700e-003**		**0.0708**	**0.0708**		**0.0708**	**0.0708**		**281.4481**	**281.4481**	**0.0168**		**281.8690**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0337	0.0235	0.3183	9.2000e-004	0.1118	6.3000e-004	0.1124	0.0296	5.8000e-004	0.0302		94.3849	94.3849	2.4300e-003	2.4000e-003	95.1601
Total	**0.0337**	**0.0235**	**0.3183**	**9.2000e-004**	**0.1118**	**6.3000e-004**	**0.1124**	**0.0296**	**5.8000e-004**	**0.0302**		**94.3849**	**94.3849**	**2.4300e-003**	**2.4000e-003**	**95.1601**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Architectural Coating - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	6.6007					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1917	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708	0.0000	281.4481	281.4481	0.0168		281.8690
Total	**6.7924**	**1.3030**	**1.8111**	**2.9700e-003**		**0.0708**	**0.0708**		**0.0708**	**0.0708**	**0.0000**	**281.4481**	**281.4481**	**0.0168**		**281.8690**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0337	0.0235	0.3183	9.2000e-004	0.1118	6.3000e-004	0.1124	0.0296	5.8000e-004	0.0302		94.3849	94.3849	2.4300e-003	2.4000e-003	95.1601
Total	**0.0337**	**0.0235**	**0.3183**	**9.2000e-004**	**0.1118**	**6.3000e-004**	**0.1124**	**0.0296**	**5.8000e-004**	**0.0302**		**94.3849**	**94.3849**	**2.4300e-003**	**2.4000e-003**	**95.1601**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.2529	0.3079	2.5978	5.7700e-003	0.6182	4.2900e-003	0.6225	0.1647	3.9900e-003	0.1687		594.6206	594.6206	0.0385	0.0263	603.4323
Unmitigated	0.2529	0.3079	2.5978	5.7700e-003	0.6182	4.2900e-003	0.6225	0.1647	3.9900e-003	0.1687		594.6206	594.6206	0.0385	0.0263	603.4323

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Other Asphalt Surfaces	0.00	0.00	0.00		
Single Family Housing	84.96	85.86	76.95	286,850	286,850
Total	84.96	85.86	76.95	286,850	286,850

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Other Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Single Family Housing	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3

4.4 Fleet Mix

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Other Asphalt Surfaces	0.543139	0.060749	0.184760	0.130258	0.023830	0.006353	0.011718	0.009137	0.000812	0.000509	0.024193	0.000750	0.003791
Single Family Housing	0.543139	0.060749	0.184760	0.130258	0.023830	0.006353	0.011718	0.009137	0.000812	0.000509	0.024193	0.000750	0.003791

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	7.5200e-003	0.0643	0.0274	4.1000e-004		5.2000e-003	5.2000e-003		5.2000e-003	5.2000e-003		82.0572	82.0572	1.5700e-003	1.5000e-003	82.5448
NaturalGas Unmitigated	7.5200e-003	0.0643	0.0274	4.1000e-004		5.2000e-003	5.2000e-003		5.2000e-003	5.2000e-003		82.0572	82.0572	1.5700e-003	1.5000e-003	82.5448

TTM 38222 - South Coast AQMD Air District, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Single Family Housing	697.486	7.5200e-003	0.0643	0.0274	4.1000e-004		5.2000e-003	5.2000e-003		5.2000e-003	5.2000e-003		82.0572	82.0572	1.5700e-003	1.5000e-003	82.5448
Total		**7.5200e-003**	**0.0643**	**0.0274**	**4.1000e-004**		**5.2000e-003**	**5.2000e-003**		**5.2000e-003**	**5.2000e-003**		**82.0572**	**82.0572**	**1.5700e-003**	**1.5000e-003**	**82.5448**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0.697486	7.5200e-003	0.0643	0.0274	4.1000e-004		5.2000e-003	5.2000e-003		5.2000e-003	5.2000e-003		82.0572	82.0572	1.5700e-003	1.5000e-003	82.5448
Total		**7.5200e-003**	**0.0643**	**0.0274**	**4.1000e-004**		**5.2000e-003**	**5.2000e-003**		**5.2000e-003**	**5.2000e-003**		**82.0572**	**82.0572**	**1.5700e-003**	**1.5000e-003**	**82.5448**

6.0 Area Detail

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	2.7767	0.1953	5.3199	0.0117		0.6916	0.6916		0.6916	0.6916	84.3023	163.3375	247.6398	0.2527	5.7200e-003	255.6622
Unmitigated	2.7767	0.1953	5.3199	0.0117		0.6916	0.6916		0.6916	0.6916	84.3023	163.3375	247.6398	0.2527	5.7200e-003	255.6622

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0362					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.3598					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	2.3583	0.1867	4.5770	0.0117		0.6875	0.6875		0.6875	0.6875	84.3023	162.0000	246.3023	0.2514	5.7200e-003	254.2925
Landscaping	0.0224	8.5600e-003	0.7429	4.0000e-005		4.1100e-003	4.1100e-003		4.1100e-003	4.1100e-003		1.3375	1.3375	1.2900e-003		1.3697
Total	**2.7767**	**0.1953**	**5.3199**	**0.0117**		**0.6916**	**0.6916**		**0.6916**	**0.6916**	**84.3023**	**163.3375**	**247.6398**	**0.2527**	**5.7200e-003**	**255.6622**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0362					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.3598					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	2.3583	0.1867	4.5770	0.0117		0.6875	0.6875		0.6875	0.6875	84.3023	162.0000	246.3023	0.2514	5.7200e-003	254.2925
Landscaping	0.0224	8.5600e-003	0.7429	4.0000e-005		4.1100e-003	4.1100e-003		4.1100e-003	4.1100e-003		1.3375	1.3375	1.2900e-003		1.3697
Total	**2.7767**	**0.1953**	**5.3199**	**0.0117**		**0.6916**	**0.6916**		**0.6916**	**0.6916**	**84.3023**	**163.3375**	**247.6398**	**0.2527**	**5.7200e-003**	**255.6622**

7.0 Water Detail

7.1 Mitigation Measures Water

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Appendix B:

CalEEMod Annual Emission Output

TTM 38222 - South Coast AQMD Air District, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

TTM 38222

South Coast AQMD Air District, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	2.53	Acre	2.53	110,206.80	0
Single Family Housing	9.00	Dwelling Unit	7.59	16,200.00	26

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	31
Climate Zone	10			**Operational Year**	2023
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	390.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Project area is 10.122 acres, including 2.53 acres paving (25% of area)

Construction Phase -

Grading - Project area is 10.122 acres

Woodstoves - No woodstoves

Construction Off-road Equipment Mitigation -

Waste Mitigation - AB 341 requires each jurisdiction in CA to divert at least 75% of their waste away from landfills by 2020.

Table Name	Column Name	Default Value	New Value
tblLandUse	LotAcreage	2.92	7.59

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	0.2462	2.2514	2.2908	4.5000e-003	0.2082	0.1067	0.3149	0.0737	0.0999	0.1736	0.0000	396.3050	396.3050	0.0845	6.4100e-003	400.3276
2023	0.1698	0.8770	1.0799	2.0400e-003	0.0362	0.0412	0.0773	9.7400e-003	0.0387	0.0484	0.0000	179.2969	179.2969	0.0354	3.0600e-003	181.0923
Maximum	**0.2462**	**2.2514**	**2.2908**	**4.5000e-003**	**0.2082**	**0.1067**	**0.3149**	**0.0737**	**0.0999**	**0.1736**	**0.0000**	**396.3050**	**396.3050**	**0.0845**	**6.4100e-003**	**400.3276**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	0.2462	2.2514	2.2908	4.5000e-003	0.1240	0.1067	0.2307	0.0403	0.0999	0.1402	0.0000	396.3046	396.3046	0.0845	6.4100e-003	400.3272
2023	0.1698	0.8770	1.0799	2.0400e-003	0.0362	0.0412	0.0773	9.7400e-003	0.0387	0.0484	0.0000	179.2967	179.2967	0.0354	3.0600e-003	181.0922
Maximum	**0.2462**	**2.2514**	**2.2908**	**4.5000e-003**	**0.1240**	**0.1067**	**0.2307**	**0.0403**	**0.0999**	**0.1402**	**0.0000**	**396.3046**	**396.3046**	**0.0845**	**6.4100e-003**	**400.3272**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**34.46**	**0.00**	**21.47**	**40.07**	**0.00**	**15.06**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**1-1-2022**	**3-31-2022**	0.6787	0.6787
2	**4-1-2022**	**6-30-2022**	0.6024	0.6024
3	**7-1-2022**	**9-30-2022**	0.6090	0.6090
4	**10-1-2022**	**12-31-2022**	0.6109	0.6109
5	**1-1-2023**	**3-31-2023**	0.5460	0.5460
6	**4-1-2023**	**6-30-2023**	0.4535	0.4535
7	**7-1-2023**	**9-30-2023**	0.0407	0.0407
		Highest	0.6787	0.6787

TTM 38222 - South Coast AQMD Air District, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.1045	3.4000e-003	0.1501	1.5000e-004		9.1100e-003	9.1100e-003		9.1100e-003	9.1100e-003	0.9560	1.9887	2.9447	3.0000e-003	6.0000e-005	3.0390
Energy	1.3700e-003	0.0117	4.9900e-003	7.0000e-005		9.5000e-004	9.5000e-004		9.5000e-004	9.5000e-004	0.0000	26.2980	26.2980	1.3300e-003	3.8000e-004	26.4443
Mobile	0.0444	0.0555	0.4679	1.0400e-003	0.1080	7.6000e-004	0.1088	0.0288	7.1000e-004	0.0295	0.0000	97.0310	97.0310	6.1800e-003	4.2800e-003	98.4607
Waste						0.0000	0.0000		0.0000	0.0000	2.1639	0.0000	2.1639	0.1279	0.0000	5.3609
Water						0.0000	0.0000		0.0000	0.0000	0.1860	2.0825	2.2685	0.0193	4.7000e-004	2.8914
Total	**0.1503**	**0.0707**	**0.6230**	**1.2600e-003**	**0.1080**	**0.0108**	**0.1188**	**0.0288**	**0.0108**	**0.0396**	**3.3059**	**127.4001**	**130.7060**	**0.1577**	**5.1900e-003**	**136.1962**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.1045	3.4000e-003	0.1501	1.5000e-004		9.1100e-003	9.1100e-003		9.1100e-003	9.1100e-003	0.9560	1.9887	2.9447	3.0000e-003	6.0000e-005	3.0390
Energy	1.3700e-003	0.0117	4.9900e-003	7.0000e-005		9.5000e-004	9.5000e-004		9.5000e-004	9.5000e-004	0.0000	26.2980	26.2980	1.3300e-003	3.8000e-004	26.4443
Mobile	0.0444	0.0555	0.4679	1.0400e-003	0.1080	7.6000e-004	0.1088	0.0288	7.1000e-004	0.0295	0.0000	97.0310	97.0310	6.1800e-003	4.2800e-003	98.4607
Waste						0.0000	0.0000		0.0000	0.0000	0.5410	0.0000	0.5410	0.0320	0.0000	1.3402
Water						0.0000	0.0000		0.0000	0.0000	0.1860	2.0825	2.2685	0.0193	4.7000e-004	2.8914
Total	**0.1503**	**0.0707**	**0.6230**	**1.2600e-003**	**0.1080**	**0.0108**	**0.1188**	**0.0288**	**0.0108**	**0.0396**	**1.6830**	**127.4001**	**129.0831**	**0.0618**	**5.1900e-003**	**132.1755**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**49.09**	**0.00**	**1.24**	**60.83**	**0.00**	**2.95**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Grading	Grading	2/12/2022	3/25/2022	5	30	
2	Building Construction	Building Construction	3/26/2022	5/19/2023	5	300	
3	Paving	Paving	5/20/2023	6/16/2023	5	20	

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

4	Architectural Coating	Architectural Coating	6/17/2023	7/14/2023	5	20	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 90

Acres of Paving: 2.53

Residential Indoor: 32,805; Residential Outdoor: 10,935; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 6,612 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Grading	8	20.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Building Construction	9	50.00	19.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	10.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Grading - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1381	0.0000	0.1381	0.0548	0.0000	0.0548	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0544	0.5827	0.4356	9.3000e-004		0.0245	0.0245		0.0226	0.0226	0.0000	81.8019	81.8019	0.0265	0.0000	82.4633
Total	**0.0544**	**0.5827**	**0.4356**	**9.3000e-004**	**0.1381**	**0.0245**	**0.1626**	**0.0548**	**0.0226**	**0.0774**	**0.0000**	**81.8019**	**81.8019**	**0.0265**	**0.0000**	**82.4633**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.2 Grading - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0100e-003	8.1000e-004	0.0106	3.0000e-005	3.2900e-003	2.0000e-005	3.3100e-003	8.7000e-004	2.0000e-005	8.9000e-004	0.0000	2.6785	2.6785	7.0000e-005	7.0000e-005	2.7017
Total	**1.0100e-003**	**8.1000e-004**	**0.0106**	**3.0000e-005**	**3.2900e-003**	**2.0000e-005**	**3.3100e-003**	**8.7000e-004**	**2.0000e-005**	**8.9000e-004**	**0.0000**	**2.6785**	**2.6785**	**7.0000e-005**	**7.0000e-005**	**2.7017**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0538	0.0000	0.0538	0.0214	0.0000	0.0214	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0544	0.5827	0.4356	9.3000e-004		0.0245	0.0245		0.0226	0.0226	0.0000	81.8018	81.8018	0.0265	0.0000	82.4632
Total	**0.0544**	**0.5827**	**0.4356**	**9.3000e-004**	**0.0538**	**0.0245**	**0.0784**	**0.0214**	**0.0226**	**0.0439**	**0.0000**	**81.8018**	**81.8018**	**0.0265**	**0.0000**	**82.4632**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.2 Grading - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0100e-003	8.1000e-004	0.0106	3.0000e-005	3.2900e-003	2.0000e-005	3.3100e-003	8.7000e-004	2.0000e-005	8.9000e-004	0.0000	2.6785	2.6785	7.0000e-005	7.0000e-005	2.7017
Total	**1.0100e-003**	**8.1000e-004**	**0.0106**	**3.0000e-005**	**3.2900e-003**	**2.0000e-005**	**3.3100e-003**	**8.7000e-004**	**2.0000e-005**	**8.9000e-004**	**0.0000**	**2.6785**	**2.6785**	**7.0000e-005**	**7.0000e-005**	**2.7017**

3.3 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1706	1.5616	1.6363	2.6900e-003		0.0809	0.0809		0.0761	0.0761	0.0000	231.7252	231.7252	0.0555	0.0000	233.1131
Total	**0.1706**	**1.5616**	**1.6363**	**2.6900e-003**		**0.0809**	**0.0809**		**0.0761**	**0.0761**	**0.0000**	**231.7252**	**231.7252**	**0.0555**	**0.0000**	**233.1131**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.3 Building Construction - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.4300e-003	0.0928	0.0308	3.6000e-004	0.0120	9.3000e-004	0.0129	3.4600e-003	8.9000e-004	4.3400e-003	0.0000	35.4577	35.4577	1.1900e-003	5.1500e-003	37.0206
Worker	0.0168	0.0136	0.1774	4.8000e-004	0.0549	3.3000e-004	0.0552	0.0146	3.1000e-004	0.0149	0.0000	44.6417	44.6417	1.2300e-003	1.2000e-003	45.0288
Total	**0.0202**	**0.1063**	**0.2082**	**8.4000e-004**	**0.0668**	**1.2600e-003**	**0.0681**	**0.0180**	**1.2000e-003**	**0.0192**	**0.0000**	**80.0994**	**80.0994**	**2.4200e-003**	**6.3500e-003**	**82.0494**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1706	1.5616	1.6363	2.6900e-003		0.0809	0.0809		0.0761	0.0761	0.0000	231.7250	231.7250	0.0555	0.0000	233.1128
Total	**0.1706**	**1.5616**	**1.6363**	**2.6900e-003**		**0.0809**	**0.0809**		**0.0761**	**0.0761**	**0.0000**	**231.7250**	**231.7250**	**0.0555**	**0.0000**	**233.1128**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.3 Building Construction - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.4300e-003	0.0928	0.0308	3.6000e-004	0.0120	9.3000e-004	0.0129	3.4600e-003	8.9000e-004	4.3400e-003	0.0000	35.4577	35.4577	1.1900e-003	5.1500e-003	37.0206
Worker	0.0168	0.0136	0.1774	4.8000e-004	0.0549	3.3000e-004	0.0552	0.0146	3.1000e-004	0.0149	0.0000	44.6417	44.6417	1.2300e-003	1.2000e-003	45.0288
Total	**0.0202**	**0.1063**	**0.2082**	**8.4000e-004**	**0.0668**	**1.2600e-003**	**0.0681**	**0.0180**	**1.2000e-003**	**0.0192**	**0.0000**	**80.0994**	**80.0994**	**2.4200e-003**	**6.3500e-003**	**82.0494**

3.3 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0786	0.7192	0.8122	1.3500e-003		0.0350	0.0350		0.0329	0.0329	0.0000	115.9024	115.9024	0.0276	0.0000	116.5917
Total	**0.0786**	**0.7192**	**0.8122**	**1.3500e-003**		**0.0350**	**0.0350**		**0.0329**	**0.0329**	**0.0000**	**115.9024**	**115.9024**	**0.0276**	**0.0000**	**116.5917**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.3 Building Construction - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.0300e-003	0.0362	0.0138	1.7000e-004	5.9900e-003	2.0000e-004	6.1900e-003	1.7300e-003	1.9000e-004	1.9200e-003	0.0000	16.9073	16.9073	5.7000e-004	2.4500e-003	17.6515
Worker	7.8000e-003	5.9900e-003	0.0818	2.3000e-004	0.0274	1.6000e-004	0.0276	7.2800e-003	1.4000e-004	7.4300e-003	0.0000	21.7337	21.7337	5.5000e-004	5.5000e-004	21.9121
Total	**8.8300e-003**	**0.0422**	**0.0956**	**4.0000e-004**	**0.0334**	**3.6000e-004**	**0.0338**	**9.0100e-003**	**3.3000e-004**	**9.3500e-003**	**0.0000**	**38.6410**	**38.6410**	**1.1200e-003**	**3.0000e-003**	**39.5636**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0786	0.7192	0.8122	1.3500e-003		0.0350	0.0350		0.0329	0.0329	0.0000	115.9022	115.9022	0.0276	0.0000	116.5915
Total	**0.0786**	**0.7192**	**0.8122**	**1.3500e-003**		**0.0350**	**0.0350**		**0.0329**	**0.0329**	**0.0000**	**115.9022**	**115.9022**	**0.0276**	**0.0000**	**116.5915**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.3 Building Construction - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.0300e-003	0.0362	0.0138	1.7000e-004	5.9900e-003	2.0000e-004	6.1900e-003	1.7300e-003	1.9000e-004	1.9200e-003	0.0000	16.9073	16.9073	5.7000e-004	2.4500e-003	17.6515
Worker	7.8000e-003	5.9900e-003	0.0818	2.3000e-004	0.0274	1.6000e-004	0.0276	7.2800e-003	1.4000e-004	7.4300e-003	0.0000	21.7337	21.7337	5.5000e-004	5.5000e-004	21.9121
Total	**8.8300e-003**	**0.0422**	**0.0956**	**4.0000e-004**	**0.0334**	**3.6000e-004**	**0.0338**	**9.0100e-003**	**3.3000e-004**	**9.3500e-003**	**0.0000**	**38.6410**	**38.6410**	**1.1200e-003**	**3.0000e-003**	**39.5636**

3.4 Paving - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0103	0.1019	0.1458	2.3000e-004		5.1000e-003	5.1000e-003		4.6900e-003	4.6900e-003	0.0000	20.0269	20.0269	6.4800e-003	0.0000	20.1888
Paving	3.3100e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0136**	**0.1019**	**0.1458**	**2.3000e-004**		**5.1000e-003**	**5.1000e-003**		**4.6900e-003**	**4.6900e-003**	**0.0000**	**20.0269**	**20.0269**	**6.4800e-003**	**0.0000**	**20.1888**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Paving - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.7000e-004	3.6000e-004	4.9100e-003	1.0000e-005	1.6500e-003	1.0000e-005	1.6600e-003	4.4000e-004	1.0000e-005	4.5000e-004	0.0000	1.3040	1.3040	3.0000e-005	3.0000e-005	1.3147
Total	**4.7000e-004**	**3.6000e-004**	**4.9100e-003**	**1.0000e-005**	**1.6500e-003**	**1.0000e-005**	**1.6600e-003**	**4.4000e-004**	**1.0000e-005**	**4.5000e-004**	**0.0000**	**1.3040**	**1.3040**	**3.0000e-005**	**3.0000e-005**	**1.3147**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0103	0.1019	0.1458	2.3000e-004		5.1000e-003	5.1000e-003		4.6900e-003	4.6900e-003	0.0000	20.0268	20.0268	6.4800e-003	0.0000	20.1888
Paving	3.3100e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0136**	**0.1019**	**0.1458**	**2.3000e-004**		**5.1000e-003**	**5.1000e-003**		**4.6900e-003**	**4.6900e-003**	**0.0000**	**20.0268**	**20.0268**	**6.4800e-003**	**0.0000**	**20.1888**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Paving - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.7000e-004	3.6000e-004	4.9100e-003	1.0000e-005	1.6500e-003	1.0000e-005	1.6600e-003	4.4000e-004	1.0000e-005	4.5000e-004	0.0000	1.3040	1.3040	3.0000e-005	3.0000e-005	1.3147
Total	**4.7000e-004**	**3.6000e-004**	**4.9100e-003**	**1.0000e-005**	**1.6500e-003**	**1.0000e-005**	**1.6600e-003**	**4.4000e-004**	**1.0000e-005**	**4.5000e-004**	**0.0000**	**1.3040**	**1.3040**	**3.0000e-005**	**3.0000e-005**	**1.3147**

3.5 Architectural Coating - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0660					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.9200e-003	0.0130	0.0181	3.0000e-005		7.1000e-004	7.1000e-004		7.1000e-004	7.1000e-004	0.0000	2.5533	2.5533	1.5000e-004	0.0000	2.5571
Total	**0.0679**	**0.0130**	**0.0181**	**3.0000e-005**		**7.1000e-004**	**7.1000e-004**		**7.1000e-004**	**7.1000e-004**	**0.0000**	**2.5533**	**2.5533**	**1.5000e-004**	**0.0000**	**2.5571**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Architectural Coating - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.1000e-004	2.4000e-004	3.2700e-003	1.0000e-005	1.1000e-003	1.0000e-005	1.1000e-003	2.9000e-004	1.0000e-005	3.0000e-004	0.0000	0.8694	0.8694	2.0000e-005	2.0000e-005	0.8765
Total	**3.1000e-004**	**2.4000e-004**	**3.2700e-003**	**1.0000e-005**	**1.1000e-003**	**1.0000e-005**	**1.1000e-003**	**2.9000e-004**	**1.0000e-005**	**3.0000e-004**	**0.0000**	**0.8694**	**0.8694**	**2.0000e-005**	**2.0000e-005**	**0.8765**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0660					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.9200e-003	0.0130	0.0181	3.0000e-005		7.1000e-004	7.1000e-004		7.1000e-004	7.1000e-004	0.0000	2.5533	2.5533	1.5000e-004	0.0000	2.5571
Total	**0.0679**	**0.0130**	**0.0181**	**3.0000e-005**		**7.1000e-004**	**7.1000e-004**		**7.1000e-004**	**7.1000e-004**	**0.0000**	**2.5533**	**2.5533**	**1.5000e-004**	**0.0000**	**2.5571**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Architectural Coating - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.1000e-004	2.4000e-004	3.2700e-003	1.0000e-005	1.1000e-003	1.0000e-005	1.1000e-003	2.9000e-004	1.0000e-005	3.0000e-004	0.0000	0.8694	0.8694	2.0000e-005	2.0000e-005	0.8765
Total	**3.1000e-004**	**2.4000e-004**	**3.2700e-003**	**1.0000e-005**	**1.1000e-003**	**1.0000e-005**	**1.1000e-003**	**2.9000e-004**	**1.0000e-005**	**3.0000e-004**	**0.0000**	**0.8694**	**0.8694**	**2.0000e-005**	**2.0000e-005**	**0.8765**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0444	0.0555	0.4679	1.0400e-003	0.1080	7.6000e-004	0.1088	0.0288	7.1000e-004	0.0295	0.0000	97.0310	97.0310	6.1800e-003	4.2800e-003	98.4607
Unmitigated	0.0444	0.0555	0.4679	1.0400e-003	0.1080	7.6000e-004	0.1088	0.0288	7.1000e-004	0.0295	0.0000	97.0310	97.0310	6.1800e-003	4.2800e-003	98.4607

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Other Asphalt Surfaces	0.00	0.00	0.00		
Single Family Housing	84.96	85.86	76.95	286,850	286,850
Total	84.96	85.86	76.95	286,850	286,850

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Other Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Single Family Housing	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Other Asphalt Surfaces	0.543139	0.060749	0.184760	0.130258	0.023830	0.006353	0.011718	0.009137	0.000812	0.000509	0.024193	0.000750	0.003791
Single Family Housing	0.543139	0.060749	0.184760	0.130258	0.023830	0.006353	0.011718	0.009137	0.000812	0.000509	0.024193	0.000750	0.003791

5.0 Energy Detail

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	12.7125	12.7125	1.0700e-003	1.3000e-004	12.7781
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	12.7125	12.7125	1.0700e-003	1.3000e-004	12.7781
NaturalGas Mitigated	1.3700e-003	0.0117	4.9900e-003	7.0000e-005		9.5000e-004	9.5000e-004		9.5000e-004	9.5000e-004	0.0000	13.5855	13.5855	2.6000e-004	2.5000e-004	13.6662
NaturalGas Unmitigated	1.3700e-003	0.0117	4.9900e-003	7.0000e-005		9.5000e-004	9.5000e-004		9.5000e-004	9.5000e-004	0.0000	13.5855	13.5855	2.6000e-004	2.5000e-004	13.6662

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Single Family Housing	254582	1.3700e-003	0.0117	4.9900e-003	7.0000e-005		9.5000e-004	9.5000e-004		9.5000e-004	9.5000e-004	0.0000	13.5855	13.5855	2.6000e-004	2.5000e-004	13.6662
Total		**1.3700e-003**	**0.0117**	**4.9900e-003**	**7.0000e-005**		**9.5000e-004**	**9.5000e-004**		**9.5000e-004**	**9.5000e-004**	**0.0000**	**13.5855**	**13.5855**	**2.6000e-004**	**2.5000e-004**	**13.6662**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Single Family Housing	254582	1.3700e-003	0.0117	4.9900e-003	7.0000e-005		9.5000e-004	9.5000e-004		9.5000e-004	9.5000e-004	0.0000	13.5855	13.5855	2.6000e-004	2.5000e-004	13.6662
Total		**1.3700e-003**	**0.0117**	**4.9900e-003**	**7.0000e-005**		**9.5000e-004**	**9.5000e-004**		**9.5000e-004**	**9.5000e-004**	**0.0000**	**13.5855**	**13.5855**	**2.6000e-004**	**2.5000e-004**	**13.6662**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	71681.9	12.7125	1.0700e-003	1.3000e-004	12.7781
Total		**12.7125**	**1.0700e-003**	**1.3000e-004**	**12.7781**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	71681.9	12.7125	1.0700e-003	1.3000e-004	12.7781
Total		**12.7125**	**1.0700e-003**	**1.3000e-004**	**12.7781**

6.0 Area Detail

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.1045	3.4000e-003	0.1501	1.5000e-004		9.1100e-003	9.1100e-003		9.1100e-003	9.1100e-003	0.9560	1.9887	2.9447	3.0000e-003	6.0000e-005	3.0390
Unmitigated	0.1045	3.4000e-003	0.1501	1.5000e-004		9.1100e-003	9.1100e-003		9.1100e-003	9.1100e-003	0.9560	1.9887	2.9447	3.0000e-003	6.0000e-005	3.0390

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	6.6000e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0657					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0295	2.3300e-003	0.0572	1.5000e-004		8.5900e-003	8.5900e-003		8.5900e-003	8.5900e-003	0.9560	1.8371	2.7930	2.8500e-003	6.0000e-005	2.8836
Landscaping	2.8000e-003	1.0700e-003	0.0929	0.0000		5.1000e-004	5.1000e-004		5.1000e-004	5.1000e-004	0.0000	0.1517	0.1517	1.5000e-004	0.0000	0.1553
Total	**0.1045**	**3.4000e-003**	**0.1501**	**1.5000e-004**		**9.1000e-003**	**9.1000e-003**		**9.1000e-003**	**9.1000e-003**	**0.9560**	**1.9887**	**2.9447**	**3.0000e-003**	**6.0000e-005**	**3.0390**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	6.6000e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0657					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0295	2.3300e-003	0.0572	1.5000e-004		8.5900e-003	8.5900e-003		8.5900e-003	8.5900e-003	0.9560	1.8371	2.7930	2.8500e-003	6.0000e-005	2.8836
Landscaping	2.8000e-003	1.0700e-003	0.0929	0.0000		5.1000e-004	5.1000e-004		5.1000e-004	5.1000e-004	0.0000	0.1517	0.1517	1.5000e-004	0.0000	0.1553
Total	**0.1045**	**3.4000e-003**	**0.1501**	**1.5000e-004**		**9.1000e-003**	**9.1000e-003**		**9.1000e-003**	**9.1000e-003**	**0.9560**	**1.9887**	**2.9447**	**3.0000e-003**	**6.0000e-005**	**3.0390**

7.0 Water Detail

7.1 Mitigation Measures Water

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	2.2685	0.0193	4.7000e-004	2.8914
Unmitigated	2.2685	0.0193	4.7000e-004	2.8914

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0.586386 / 0.369678	2.2685	0.0193	4.7000e-004	2.8914
Total		**2.2685**	**0.0193**	**4.7000e-004**	**2.8914**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0.586386 / 0.369678	2.2685	0.0193	4.7000e-004	2.8914
Total		**2.2685**	**0.0193**	**4.7000e-004**	**2.8914**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.5410	0.0320	0.0000	1.3402
Unmitigated	2.1639	0.1279	0.0000	5.3609

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	10.66	2.1639	0.1279	0.0000	5.3609
Total		**2.1639**	**0.1279**	**0.0000**	**5.3609**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	2.665	0.5410	0.0320	0.0000	1.3402
Total		**0.5410**	**0.0320**	**0.0000**	**1.3402**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Appendix C:

EMFAC2017 Output

Calendar Year: 2022
Season: Annual
Vehicle Classification: EMFAC2007 Categories
Units: miles/day for VMT, trips/day for Trips, tons/day for Emissions, 1000 gallons/day for Fuel Consumption

Region	Calendar Year	Vehicle Ca	Model Year	Speed	Fuel	Population	Trips	Fuel Consumption	Fuel Consumption	Total Fuel Consumption	VMT	Total VMT	Miles Per Gallon	Vehicle Class
South Coast AQMD	2022	HHDT	Aggregate	Aggregate	Gasoline	77.82251	1557.073	1.914672095	1914.672095	1984478.157	7970.981	13381402.09	**6.74**	HHD
South Coast AQMD	2022	HHDT	Aggregate	Aggregate	Diesel	108362	1118617	1982.563485	1982563.485		13373431			
South Coast AQMD	2022	LDA	Aggregate	Aggregate	Gasoline	6542832	30915701	8178.144259	8178144.259	8226568.36	2.52E+08	254602375.4	**30.95**	LDA
South Coast AQMD	2022	LDA	Aggregate	Aggregate	Diesel	58937.5	279973.4	48.42410045	48424.10045		2358230			
South Coast AQMD	2022	LDA	Aggregate	Aggregate	Electricity	127532.6	637025.4	0	0		5177709			
South Coast AQMD	2022	LDT1	Aggregate	Aggregate	Gasoline	736905.6	3399512	1031.447408	1031447.408	1031847.287	27300896	27309932.68	**26.47**	LDT1
South Coast AQMD	2022	LDT1	Aggregate	Aggregate	Diesel	387.1571	1348.408	0.39987912	399.8791198		9037.122			
South Coast AQMD	2022	LDT1	Aggregate	Aggregate	Electricity	5339.042	26794.47	0	0		221507.4			
South Coast AQMD	2022	LDT2	Aggregate	Aggregate	Gasoline	2246303	10535910	3436.155557	3436155.557	3453207.618	84740129	85348125.78	**24.72**	LDT2
South Coast AQMD	2022	LDT2	Aggregate	Aggregate	Diesel	14234.59	70193.22	17.05206088	17052.06088		607996.5			
South Coast AQMD	2022	LDT2	Aggregate	Aggregate	Electricity	22589.96	114302.6	0	0		734756.1			
South Coast AQMD	2022	LHDT1	Aggregate	Aggregate	Gasoline	175903.1	2620694	598.0685493	598068.5493	821513.5103	6298251	11115258.37	**13.53**	LHDT1
South Coast AQMD	2022	LHDT1	Aggregate	Aggregate	Diesel	119380.7	1501659	223.444961	223444.961		4817007			
South Coast AQMD	2022	LHDT2	Aggregate	Aggregate	Gasoline	30009.92	447103.1	113.5150695	113515.0695	209067.0531	1040649	2902289.397	**13.88**	LHDT2
South Coast AQMD	2022	LHDT2	Aggregate	Aggregate	Diesel	47335.63	595422.7	95.55198358	95551.98358		1861640			
South Coast AQMD	2022	MCY	Aggregate	Aggregate	Gasoline	295960.1	591920.2	56.92214589	56922.14589	56922.14589	2072370	2072370.126	**36.41**	MCY
South Coast AQMD	2022	MDV	Aggregate	Aggregate	Gasoline	1579640	7302407	2793.799561	2793799.561	2842944.316	55888916	57233722.8	**20.13**	MDV
South Coast AQMD	2022	MDV	Aggregate	Aggregate	Diesel	33348.92	163526.3	49.14475473	49144.75473		1344806			
South Coast AQMD	2022	MDV	Aggregate	Aggregate	Electricity	11658.48	59625.3	0	0		391944.3			
South Coast AQMD	2022	MH	Aggregate	Aggregate	Gasoline	35097.75	3511.179	64.70410395	64704.10395	76270.38211	333282.4	455641.5746	**5.97**	MH
South Coast AQMD	2022	MH	Aggregate	Aggregate	Diesel	12758.81	1275.881	11.56627815	11566.27815		122359.2			
South Coast AQMD	2022	MHDT	Aggregate	Aggregate	Gasoline	25445.41	509111.8	269.2842176	269284.2176	1009568.488	1367743	9307083.084	**9.22**	MHDT
South Coast AQMD	2022	MHDT	Aggregate	Aggregate	Diesel	123310	1231988	740.28427	740284.27		7939340			
South Coast AQMD	2022	OBUS	Aggregate	Aggregate	Gasoline	5959.443	119236.5	49.67589796	49675.89796	88138.04214	250653.5	576603.5972	**6.54**	OBUS
South Coast AQMD	2022	OBUS	Aggregate	Aggregate	Diesel	4274.499	41607.39	38.46214418	38462.14418		325950.1			
South Coast AQMD	2022	SBUS	Aggregate	Aggregate	Gasoline	2630.829	10523.32	11.7605267	11760.5267	39328.1885	107369.8	316915.9173	**8.06**	SBUS
South Coast AQMD	2022	SBUS	Aggregate	Aggregate	Diesel	6631.313	76524.43	27.5676618	27567.6618		209546.1			
South Coast AQMD	2022	UBUS	Aggregate	Aggregate	Gasoline	952.146	3808.584	18.40085629	18400.85629	18647.65249	89256	90734.08386	**4.87**	UBUS
South Coast AQMD	2022	UBUS	Aggregate	Aggregate	Diesel	14.14142	56.56567	0.246796198	246.7961984		1478.086			
South Coast AQMD	2022	UBUS	Aggregate	Aggregate	Electricity	17.11694	68.46776	0			1343.185			

Source: EMFAC2017 (v1.0.3) Emissions Inventory
Region Type: Air District
Region: South Coast AQMD
Calendar Year: 2023
Season: Annual
Vehicle Classification: EMFAC2007 Categories
Units: miles/day for VMT, trips/day for Trips, tons/day for Emissions, 1000 gallons/day for Fuel Consumption

Region	Calendar Y	Vehicle Cat	Model Year	Speed	Fuel	Population	VMT	Trips	Fuel Consumption	Fuel Consumption	Total Fuel Consumption	VMT	Total VMT	Miles Per Gallon	Vehicle Class
South Coas	2023	HHDT	Aggregate	Aggregate	Gasoline	75.10442936	8265.097	1502.689	1.936286145	1936.286145	1913466.474	8265.097	13656273.03	7.14	**HHD**
South Coas	2023	HHDT	Aggregate	Aggregate	Diesel	109818.6753	13648008	1133618	1911.530188	1911530.188		13648008			
South Coas	2023	LDA	Aggregate	Aggregate	Gasoline	6635002.295	2.53E+08	31352477	7971.24403	7971244.03	8020635.698	2.53E+08	255180358.3	31.82	**LDA**
South Coas	2023	LDA	Aggregate	Aggregate	Diesel	62492.97958	2469816	297086.6	49.3916685	49391.6685		2469816			
South Coas	2023	LDA	Aggregate	Aggregate	Electricity	150700.3971	6237106	751566	0	0		6237106			
South Coas	2023	LDT1	Aggregate	Aggregate	Gasoline	758467.6481	27812996	3504563	1023.913006	1023913.006	1024279.466	27812996	27821405.09	27.16	**LDT1**
South Coas	2023	LDT1	Aggregate	Aggregate	Diesel	360.7799144	8408.618	1256.88	0.366459477	366.4594769		8408.618			
South Coas	2023	LDT1	Aggregate	Aggregate	Electricity	7122.93373	303507.5	35798.19	0	0		303507.5			
South Coas	2023	LDT2	Aggregate	Aggregate	Gasoline	2285150.139	85272416	10723315	3338.798312	3338798.312	3356536.438	85272416	85922778.34	25.60	**LDT2**
South Coas	2023	LDT2	Aggregate	Aggregate	Diesel	15594.68309	650362.8	76635.83	17.73812611	17738.12611		650362.8			
South Coas	2023	LDT2	Aggregate	Aggregate	Electricity	28809.63735	917592.8	145405.4	0	0		917592.8			
South Coas	2023	LHDT1	Aggregate	Aggregate	Gasoline	174910.3847	6216643	2605904	583.3851736	583385.1736	811563.1022	6216643	11211395.79	13.81	**LHDT1**
South Coas	2023	LHDT1	Aggregate	Aggregate	Diesel	125545.0822	4994753	1579199	228.1779285	228177.9285		4994753			
South Coas	2023	LHDT2	Aggregate	Aggregate	Gasoline	30102.75324	1034569	448486.2	111.5753864	111575.3864	209423.5025	1034569	2969599.008	14.18	**LHDT2**
South Coas	2023	LHDT2	Aggregate	Aggregate	Diesel	50003.13116	1935030	628976.5	97.84811618	97848.11618		1935030			
South Coas	2023	MCY	Aggregate	Aggregate	Gasoline	305044.5141	2104624	610089	57.849018	57849.018	57849.018	2104624	2104623.657	36.38	**MCY**
South Coas	2023	MDV	Aggregate	Aggregate	Gasoline	1589862.703	55684188	7354860	2693.883526	2693883.526	2744536.341	55684188	57109879.73	20.81	**MDV**
South Coas	2023	MDV	Aggregate	Aggregate	Diesel	36128.1019	1425691	176566.9	50.65281491	50652.81491		1425691			
South Coas	2023	MDV	Aggregate	Aggregate	Electricity	16376.67653	537591.7	83475.95	0	0		537591.7			
South Coas	2023	MH	Aggregate	Aggregate	Gasoline	34679.50542	330042.9	3469.338	63.26295123	63262.95123	74893.26955	330042.9	454344.9436	6.07	**MH**
South Coas	2023	MH	Aggregate	Aggregate	Diesel	13122.69387	124302	1312.269	11.63031832	11630.31832		124302			
South Coas	2023	MHDT	Aggregate	Aggregate	Gasoline	25624.3151	1363694	512691.3	265.2060557	265206.0557	989975.6425	1363694	9484317.768	9.58	**MHDT**
South Coas	2023	MHDT	Aggregate	Aggregate	Diesel	122124.488	8120623	1221858	724.7695868	724769.5868		8120623			
South Coas	2023	OBUS	Aggregate	Aggregate	Gasoline	5955.291639	245774	119153.5	48.07750689	48077.50689	86265.88761	245774	579743.8353	6.72	**OBUS**
South Coas	2023	OBUS	Aggregate	Aggregate	Diesel	4286.940093	333969.8	41558.29	38.18838072	38188.38072		333969.8			
South Coas	2023	SBUS	Aggregate	Aggregate	Gasoline	2783.643068	112189.6	11134.57	12.19474692	12194.74692	39638.85935	112189.6	323043.5203	8.15	**SBUS**
South Coas	2023	SBUS	Aggregate	Aggregate	Diesel	6671.825716	210853.9	76991.94	27.44411242	27444.11242		210853.9			
South Coas	2023	UBUS	Aggregate	Aggregate	Gasoline	957.7686184	89782.63	3831.074	17.62416327	17624.16327	17863.66378	89782.63	91199.2533	5.11	**UBUS**
South Coas	2023	UBUS	Aggregate	Aggregate	Diesel	13.00046095	1416.622	52.00184	0.239500509	239.5005093		1416.622			
South Coas	2023	UBUS	Aggregate	Aggregate	Electricity	16.11693886	1320.163	64.46776	0			1320.163			

Appendix B

Biological Resources Report

December 12, 2021

THE ALTUM GROUP
Attention: *Thomas Strand*
44-600 Village Court, Suite 100
Palm Desert, California 92260

SUBJECT: Biological Resources Report for Tentative Tract Map No. 38222 (Vista Del Sol) Located in the City of Rancho Mirage, Riverside County, California.

Introduction

This report contains the findings of ELMT Consulting's biological resources investigation for Tentative Tract Map No. 38222 – Vista Del Sol (project site or site) located in the City of Rancho Mirage, Riverside County, California. The biological due diligence investigation was conducted by ELMT biologist Jacob H. Lloyd Davies on September 14, 2021 to document baseline conditions and to determine the potential for special-status plant and wildlife species to occur on the project site that could pose a constraint to implementation of the proposed project.

This report provides a detailed assessment of the suitability of the onsite habitat to support special-status plant and wildlife species that were identified by the California Natural Diversity Database (CNDDB) and other electronic databases as potentially occurring in the vicinity of the proposed project site. Special attention was given to the suitability of the on-site habitat to support burrowing owl (*Athene cunicularia*) and other species protected under the Coachella Valley Multiple Species Habitat Conservation Plan (CVMSHCP), and potential jurisdictional drainage features.

Project Location

The project site is generally located south of Interstate 10 and north of State Route 111 in the City of Rancho Mirage, Riverside County, California. The site is depicted on the Cathedral City quadrangle of the United States Geological Survey's (USGS) 7.5-minute topographic map series within Section 6 of Township 5 South, Range 6 East. Specifically, the project site is bounded to the west by Vista Del Sol and is located north of Country Club Drive, south of Frank Sinatra Drive, and west of Monterey Avenue within Assessor's Parcel Numbers 685-280-002 and -003. Refer to Exhibits 1-3 in Attachment A.

Project Description

The project proposes the development of Tentative Tract Map No. 38222. Refer to Attachment B, *Proposed Site Plan*.

Methodology

Literature Review

Prior to conducting the field investigation, a literature review and records search was conducted for special-status biological resources potentially occurring on or within the vicinity of the project site. Previously

recorded occurrences of special-status plant and wildlife species and their proximity to the project site were determined through a query of the CDFW's CNDDB Rarefind 5, the California Native Plant Society's (CNPS) Electronic Inventory of Rare and Endangered Vascular Plants of California, Calflora Database, compendia of special-status species published by CDFW, and the United States Fish and Wildlife Service (USFWS) species listings.

Literature detailing biological resources previously observed in the vicinity of the project site and historical land uses were reviewed to understand the extent of disturbances to the habitats on-site. Standard field guides and texts on special-status and non-special-status biological resources were reviewed for habitat requirements, as well as the following resources:

- CDFW 2012 Staff Report on Burrowing Owl Mitigation;
- Coachella Valley Multiple Species Habitat Conservation Plan;
- Google Earth Pro historic aerial imagery (1985-2021);
- United States Department of Agriculture (USDA) Natural Resource Conservation Service (NRCS), Soil Survey[1]; and
- USFWS Critical Habitat designations for Threatened and Endangered Species.

The literature review provided a baseline from which to inventory the biological resources potentially occurring on the project site. Additional recorded occurrences of these species found on or near the project site were derived from database queries. The CNDDB ArcGIS database was used, in conjunction with ArcGIS software, to locate the nearest occurrence and determine the distance from the project site.

Habitat Assessment/Field Investigation

ELMT biologist Jacob H. Lloyd Davies inventoried and evaluated the extent and conditions of the plant communities found within the boundaries of the project site and a 200-foot buffer on September 14, 2021. Plant communities identified on aerial photographs during the literature review were verified by walking meandering transects through the plant communities and along boundaries between plant communities. The plant communities were evaluated for their potential to support special-status plant and wildlife species. In addition, field staff identified any natural corridors and linkages that may support the movement of wildlife through the area. Special attention was given to special-status habitats and/or undeveloped areas, which have higher potentials to support special-status plant and wildlife species.

All plant and wildlife species observed, as well as dominant plant species within each plant community, were recorded. Wildlife detections were made through observation of scat, trails, tracks, burrows, nests, and/or visual and aural observation. In addition, site characteristics such as soil condition, topography, hydrology, anthropogenic disturbances, indicator species, condition of on-site plant communities, and presence of potential jurisdictional drainage and/or wetland features were noted.

Soil Series Assessment

Onsite and adjoining soils were researched prior to the field visit using the USDA NRCS Soil Survey for

1 A soil series is defined as a group of soils with similar profiles developed from similar parent materials under comparable climatic and vegetation conditions. These profiles include major horizons with similar thickness, arrangement, and other important characteristics, which may promote favorable conditions for certain biological resources.

Riverside County, California. In addition, a review of the local geological conditions and historical aerial photographs was conducted to assess the ecological changes the project site has undergone.

Plant Communities

Plant communities were mapped using 7.5-minute USGS topographic base maps and aerial photography. The plant communities were delineated on an aerial photograph, classified in accordance with those described in the MSHCP, and then digitized into GIS Arcview. The Arcview application was used to compute the area of each plant community in acres.

Plants

Common plant species observed during the field survey were identified by visual characteristics and morphology in the field and recorded in a field notebook. Unusual and less-familiar plants were photographed in the field and identified in the laboratory using taxonomic guides. Taxonomic nomenclature used in this study follows the 2012 Jepson Manual (Hickman 2012). In this report, scientific names are provided immediately following common names of plant species (first reference only).

Wildlife

Wildlife species detected during field surveys by sight, calls, tracks, scat, or other sign were recorded during surveys in a field notebook. Field guides were used to assist with identification of wildlife species during the survey included The Sibley Field Guide to the Birds of Western North America (Sibley 2003), A Field Guide to Western Reptiles and Amphibians (Stebbins 2003), and A Field Guide to Mammals of North America (Reid 2006). Although common names of wildlife species are fairly well standardized, scientific names are provided immediately following common names in this report (first reference only).

Jurisdictional Drainages and Wetlands

Aerial photography was reviewed prior to conducting a field investigation in order to locate and inspect any potential natural drainage features, ponded areas, or water bodies that may fall under the jurisdiction of the United States Army Corps of Engineers (Corps), Regional Water Quality Control Board (Regional Board), or CDFW. In general, surface drainage features indicated as blue-line streams on USGS maps that are observed or expected to exhibit evidence of flow are considered potential riparian/riverine habitat and are also subject to state and federal regulatory jurisdiction. In addition, ELMT reviewed jurisdictional waters information through examining historical aerial photographs to gain an understanding of the impact of land-use on natural drainage patterns in the area. The USFWS National Wetland Inventory (NWI) and Environmental Protection Agency (EPA) Water Program "My Waters" data layers were also reviewed to determine whether any hydrologic features and wetland areas have been documented on or within the vicinity of the project site.

Topography and Soils

The project site is located at an approximate elevation of 225 to 244 feet above mean sea level. Onsite topography is variable and generally slopes marginally from north to south. Based on the NRCS USDA Web Soil Survey, the project site is underlain by Myoma fine sand (5 to 15 percent slopes). Refer to Exhibit 4, *Soils*, in Attachment A. Soils onsite are generally undisturbed except for the western, northern, and eastern boudnarys that have been mechanically disturbed and compacted from pedestrian and vehicle

traffic, illicit dumping, and adjacent development.

Existing Site Condition

The project site occurs in an area of the City of Rancho Mirage that has undergone gradual urbanization. The site is bounded to the north by undeveloped, vacant land with residential development beyond; to the east by residential development; to the south by undeveloped, vacant land with residential development beyond; and to the west by Vista Del Sol with undeveloped, vacant land and commercial development beyond. The site itself is relatively undisturbed with the exception of some on-site development, recreational off-highway vehicle traffic, minor illegal dumping and camping, and surrounding development. In addition, the northern portion and eastern boundary of the site were impacted during the development of adjacent parcels to the east when these areas were utilized for mobilization of construction equipment.

Vegetation

The project site primarily supports undeveloped, vacant land that is generally consistent with naturally occurring native habitats in the immediately surrounding area. Refer to Attachment C, *Site Photographs*, for representative site photographs. The project site supports one (1) plant community: creosote bush scrub. In addition, the site supports two (2) land cover types that would be classified as disturbed (refer to Exhibit 5, *Vegetation* in Attachment A).

The creosote bush scrub plant community found onsite is dominated by creosote (*Larrea tridentata*) and has been isolated by surrounding development, and no longer provides the same diversity and density of the creosote bush scrub that historically occurred in the area. Common plant species observed during the field investigation include hoary saltbush (*Atriplex canescens*), desert croton (*Croton californicus*), sweetbush (*Bebbia juncea*), fanleaf crinklemat (*Tiquilia plicata*), desert tea (*Ephedra californica*), Mediterranean grass (*Schismus barbatus*), and mustard (*Brassica tournefortii*).

The project site also supports disturbed land that has been devegetated in recent decades by activities related to adjacent development such as equipment mobilization. These areas are unvegetated, or vegetated with a variety of native and non-native plant species, including ornamental species that entered the site from adjacent residential developments to the east. Plant species observed in disturbed areas of the site include all species observed in the creosote bush scrub plant community, tamarisk (*Tamarix ramosissima*), and assorted non-native ornamental species.
Developed land found onsite consists of paved portions of Vista Del Sol along the western boundary and a remnant concrete foundation in the southwest corner.

Wildlife

Plant communities provide foraging habitat, nesting/denning sites, and shelter from adverse weather or predation. This section provides a discussion of those wildlife species that were observed or are expected to occur within the project site. The discussion is to be used a general reference and is limited by the season, time of day, and weather conditions in which the field survey was conducted. Wildlife detections were based on calls, songs, scat, tracks, burrows, and direct observation.

Fish

No fish or hydrogeomorphic features (e.g., creeks, ponds, lakes, reservoirs) that would provide suitable habitat for fish were observed on or within the vicinity of the project site. Therefore, no fish are expected to occur and are presumed absent from the site.

Amphibians

No amphibians or hydrogeomorphic features that would provide suitable habitat for amphibian species were observed on or within the vicinity of the project site. Therefore, no amphibians are expected to occur and are presumed absent from the site.

Reptiles

The project site provides suitable foraging and cover habitat for reptilian species adapted to routine human disturbance and desert environments. The only reptilian species observed during the field investigation were western side-blotched lizard (*Uta stansburiana elegans*). Other common reptile species that could be expected to occur include southern sagebrush lizard (*Sceloporus graciosus vandenburgianus*), Great Basin fence lizard (*Sceloporus occidentalis longipes*), and desert iguana (*Dipsosaurus dorsalis*). Due to the limited availability of adjacent open space, species with large foraging ranges are not expected to occur.

Birds

The project site provides suitable foraging and nesting habitat for avian species adapted to routine human disturbance and desert environments. Bird species detected during the field investigation include mourning dove (*Zenaida macroura*), common raven (*Corvus corax*), rock pigeon (*Columba liva*), house finch (*Haemorhous mexicanus*), and verdin (*Auriparus flaviceps*).

Mammals

The project site provides suitable foraging and denning habitat for mammalian species adapted to routine human disturbance and desert environments. However, most mammal species are nocturnal and are difficult to observe during a diurnal field visit. Mammals detected and/or sign observed during the field investigation include desert cottontail (*Sylvilagus audubonii*), and coyote (*Canis latrans*). Other common mammalian species that have the potential to occur on the project site include California ground Squirrel (*Otospemophilus beecheyi*).

Nesting Birds and Raptors

No active nests or birds displaying nesting behavior were observed during the field survey, which was conducted during breeding season. Although subjected to routine disturbance, the ornamental vegetation found on-site has the potential to provide suitable nesting habitat for year-round and seasonal avian residents, as well as migrating songbirds that could occur in the area that area adapted to urban environments. (*Charadrius vociferans*). No raptors are expected to nest on-site due to lack of suitable nesting opportunities.

Nesting birds are protected pursuant to the Migratory Bird Treaty Act (MBTA) and California Fish and Game Code (Sections 3503, 3503.5, 3511, and 3513 prohibit the take, possession, or destruction of birds,

their nests or eggs). If construction occurs between February 1st and August 31st, a pre-construction clearance survey for nesting birds should be conducted within three (3) days of the start of any vegetation removal or ground disturbing activities to ensure that no nesting birds will be disturbed during construction.

Migratory Corridors and Linkages

Habitat linkages provide connections between larger habitat areas that are separated by development. Wildlife corridors are similar to linkages but provide specific opportunities for animals to disperse or migrate between areas. A corridor can be defined as a linear landscape feature of sufficient width to allow animal movement between two comparatively undisturbed habitat fragments. Adequate cover is essential for a corridor to function as a wildlife movement area. It is possible for a habitat corridor to be adequate for one species yet still inadequate for others. Wildlife corridors are features that allow for the dispersal, seasonal migration, breeding, and foraging of a variety of wildlife species. Additionally, open space can provide a buffer against both human disturbance and natural fluctuations in resources.

The project site has not been identified as occurring in a wildlife corridor or linkage. The site is generally surrounded by existing development, limiting its connectivity to surrounding habitats. In addition, there are no riparian corridors, creeks, or useful patches of steppingstone habitat (natural areas) within or connecting the site to a recognized wildlife corridor or linkage. As such, implementation of the proposed project is not expected to impact wildlife movement opportunities. Therefore, impacts to wildlife corridors or linkages are not expected to occur.

Jurisdictional Areas

There are three key agencies that regulate activities within inland streams, wetlands, and riparian areas in California. The Corps Regulatory Branch regulates discharge of dredge or fill materials into "waters of the United States" pursuant to Section 404 of the Clean Water Act (CWA) and Section 10 of the Rivers and Harbors Act. Of the State agencies, the CDFW regulates alterations to streambed and bank under Fish and Wildlife Code Sections 1600 et seq., and the Regional Board regulates discharges into surface waters pursuant to Section 401 of the CWA and the California Porter-Cologne Water Quality Control Act.

No jurisdictional drainage and/or wetland features were observed on the project site or within the during the field investigation. Further, no blueline streams have been recorded on the project site. Therefore, development of the project will not result in impacts to Corps, Regional Board, or CDFW jurisdiction and regulatory approvals will not be required.

Special-Status Biological Resources

The CNDDB was queried for reported locations of special-status plant and wildlife species as well as natural communities of special concern in the Cathedral City USGS 7.5-minute quadrangle. This singular quadrangle was used due to on-site conditions and surrounding development. A search of published records within this quadrangle was conducted using the CNDDB Rarefind 5 online software and the CDFW BIOS database and the CNPS Inventory of Rare and Endangered Plants of California that supplied information regarding the distribution and habitats of vascular plants in the vicinity of the project site. The habitat assessment evaluated the conditions of the habitat(s) within the boundaries of the project site to determine if the existing plant communities, at the time of the survey, have the potential to provide suitable habitat(s) for special-status plant and wildlife species.

The literature search identified thirteen (13) special-status plant species, sixteen (16) special-status wildlife species, and two (2) special-status plant community were identified as having potential to occur within the Cathedral City quadrangle. Special-status plant and wildlife species were evaluated for their potential to occur within the project site based on habitat requirements, availability and quality of suitable habitat, and known distributions. Species determined to have the potential to occur within the general vicinity are presented in *Table D-1: Potentially Occurring Special-Status Biological Resources*, provided in Attachment D. Refer to Table D-1 for a determination regarding the potential occurrence of special-status plant and wildlife species within the project site.

Special-Status Plants

According to the CNDDB and CNPS, sixteen (16) special-status plant species have been recorded in the Cathedral City quadrangle (refer to Attachment D). No special-status plants were observed on the project site during the field investigation. Based on habitat requirements for specific species, the availability and quality of onsite habitats, and the isolation of the site and adjacent open space from nearby habitats, it was determined that the project site has a low potential to support Coachella Valley milk-vetch (*Astragalus lentiginosus* var. *coachellae*). It was further determined that all other special-status plant species known to occur in the vicinity of the site do not have potential to occur and are presumed to be absent.

Coachella Valley Milk-Vetch

Coachella Valley milk-vetch can be either an annual or perennial herb that blooms between February and May. It is federally listed as endangered and is designated by the CNPS with the Rare Plant Rank 1B.2, indicating that is rare, threatened, or endangered in California and elsewhere, and is considered fairly threatened in California, with 20-80% of its known occurrences threatened. It is covered under the MSHCP. It is endemic to California and is only known from Riverside County. It occurs in sandy soils within desert dunes and Sonoran desert scrub, where it typically grows at elevations between 131 and 2,149 feet. Coachella Valley milk-vetch is known to occur in many locations throughout the Coachella Valley.

Coachella Valley milk-vetch was not observed during the field investigation and was determined to have a low potential to occur on-site. Since Coachella Valley milk-vetch is a covered species under the CVMSHCP, no further surveys or additional mitigation measures will be required for impacts to this species.

Special-Status Wildlife

According to the CNDDB, sixteen (16) special-status wildlife species have been reported in the Cathedral City quadrangle (refer to Attachment D). No special-status wildlife species were observed onsite during the field investigation. Based on habitat requirements for specific species and the availability and quality of on-site habitats, it was determined that the project site has a moderate potential to prairie falcon (*Falco mexicanus*), and loggerhead shrike (*Lanius ludovicianus*). It was further determined that all other special-status wildlife species known to occur in the vicinity of the site have a low potential to occur are were determined not have potential to occur and are presumed to be absent.

To ensure impacts to the aforementioned special-status species do not occur from implementation of the proposed project, a pre-construction nesting bird clearance survey shall be conducted prior to ground disturbance. With implementation of the pre-construction nesting bird clearance survey, impacts to these species will be less than significant and no mitigation will be required.

Special-Status Plant Communities

The CNDDB lists one (1) special-status plant community as being identified within the Cathedral City quadrangle: Desert Fan Palm Oasis Woodland. Based on the results of the field investigation, no special-status plant communities were observed onsite. Therefore, no special-status plant communities will be impacted by project implementation.

Critical Habitat

Under the federal Endangered Species Act, "Critical Habitat" is designated at the time of listing of a species or within one year of listing. Critical Habitat refers to specific areas within the geographical range of a species at the time it is listed that include the physical or biological features that are essential to the survival and eventual recovery of that species. Maintenance of these physical and biological features requires special management considerations or protection, regardless of whether individuals or the species are present or not. All federal agencies are required to consult with the United States Fish and Wildlife Service (USFWS) regarding activities they authorize, fund, or permit which may affect a federally listed species or its designated Critical Habitat. The purpose of the consultation is to ensure that projects will not jeopardize the continued existence of the listed species or adversely modify or destroy its designated Critical Habitat. The designation of Critical Habitat does not affect private landowners, unless a project they are proposing is on federal lands, uses federal funds, or requires federal authorization or permits (e.g., funding from the Federal Highways Administration or a CWA Permit from the Corps). If a there is a federal nexus, then the federal agency that is responsible for providing the funding or permit would consult with the USFWS.

The project site is not located within federally designated Critical Habitat (refer to Exhibit 6, *Critical Habitat*, in Attachment A). The nearest designated Critical Habitat to the site is located approximately 2.65 miles to the west for Peninsular bighorn sheep (*Ovis canadensis nelsoni*). Therefore, the loss or adverse modification of Critical Habitat will not occur as a result of the proposed project and consultation with the USFWS will not be required for implementation of the proposed project.

Coachella Valley MSHCP

The proposed project was reviewed to determine consistency with the CVMSHCP. Geographic Information System (GIS) software was utilized to map the project site in relation to the CVMSHCP including conservation areas, corridors and linkages, and sand transport areas. The CVMSHCP requires that local permittees, such as the City of Rancho Mirage, comply with various protective measures for covered species, communities, essential ecological processes, and biological corridors. In addition, certain projects may be subject to local development mitigation fees, a Joint Project Review Process, or other conservation or implementation measures.

The project site is located within the boundaries of the CVMSHCP Area, but is not located within any Conservation Areas, Preserves, Cores, or Linkages (refer to Exhibit 7, *CVMSHCP Conservation Areas* in Attachment A). The proposed project is not listed as a planned "Covered Activity" under the published CVMSHCP, but is still considered to be a current Covered Activity pursuant to Section 7.1 of the CVMSHCP. According to Section 7.1 of the CVMSHCP, take authorization will be provided for certain activities that take place outside of Conservation Areas including "*new projects approved pursuant to county and city general plans, transportation improvement plans for roads in addition to those addressed in Section 7.2, master drainage plans, capital improvement plans, water and waste management plans, the*

County's adopted Trails Master Plan, and other plans adopted by the Permittees."

As a Covered Activity located outside designated conservation areas, construction of the proposed project is expected to be consistent with the applicable avoidance, minimization, and mitigation measures described in Section 4.4 of the CVMSHCP. Since the proposed project is considered a Covered Activity under Section 7.1 of the CVMSHCP, no further avoidance, minimization, and mitigation measures are required, and the project is in compliance with the CVMSHCP.

The CVMSHCP does not identify modeled habitat for any covered species as occurring within the project site. Further, based on the results of the field investigation, the project site supports creosote bush scrub and disturbed land that has been subjected to a variety of anthropogenic disturbances. These disturbances have reduced, if not eliminated, the ability of the project site to provide suitable habitat for CVMSHCP Covered species. Due to the limited project footprint, no impacts to CVMSHCP Covered Species are expected to occur from project implementation.

Conclusion

Based literature review and field survey, and existing site conditions discussed in this report, implementation of the project will have no significant impacts on federally or State listed species known to occur in the general vicinity of the project site. Additionally, the project will have no effect on designated Critical Habitat or regional wildlife corridors/linkage because none exists within the area. No jurisdictional drainage and/or wetland features were observed on the project site during the field investigation. No further surveys are recommended. With completion of the recommendations provided below, no impacts to year-round, seasonal, or special-status avian residents or special-status species will occur from implementation of the proposed project.

As a Covered Activity located outside designated conservation areas, construction of the proposed project is expected to implement the applicable regulatory complinace measures described in Section 4.4 of the CVMSHCP. With implementation of these measures, the proposed project would be fully consistent with the biological goals and objectives of the CVMSHCP.

Recommendations

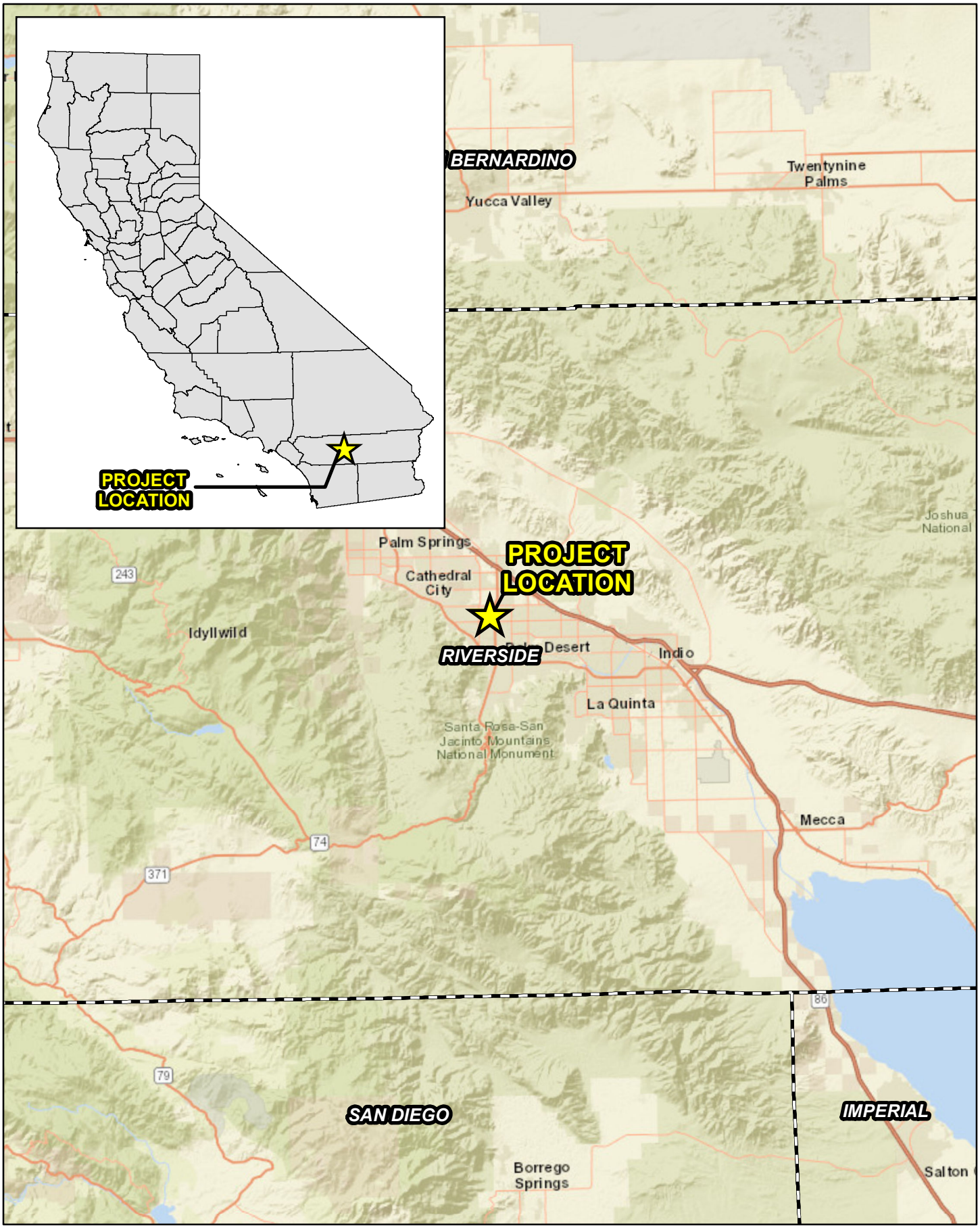
Migratory Bird Treaty Act and Fish and Game Code

Nesting birds are protected pursuant to the Migratory Bird Treaty Act (MBTA) and California Fish and Game Code (Sections 3503, 3503.5, 3511, and 3513 prohibit the take, possession, or destruction of birds, their nests or eggs). In order to protect migratory bird species, a nesting bird clearance survey should be conducted prior to any ground disturbance or vegetation removal activities that may disrupt the birds during the nesting season.

If construction occurs between February 1st and August 31st, a pre-construction clearance survey for nesting birds should be conducted within three (3) days of the start of any vegetation removal or ground disturbing activities to ensure that no nesting birds will be disturbed during construction. The biologist conducting the clearance survey should document a negative survey with a brief letter report indicating that no impacts to active avian nests will occur. If an active avian nest is discovered during the pre-construction clearance survey, construction activities should stay outside of a no-disturbance buffer. The size of the no-disturbance

Attachment A

Project Exhibits



TENTATIVE TRACT MAP NO. 38222 (VISTA DEL SOL)
BIOLOGICAL RESOURCES REPORT

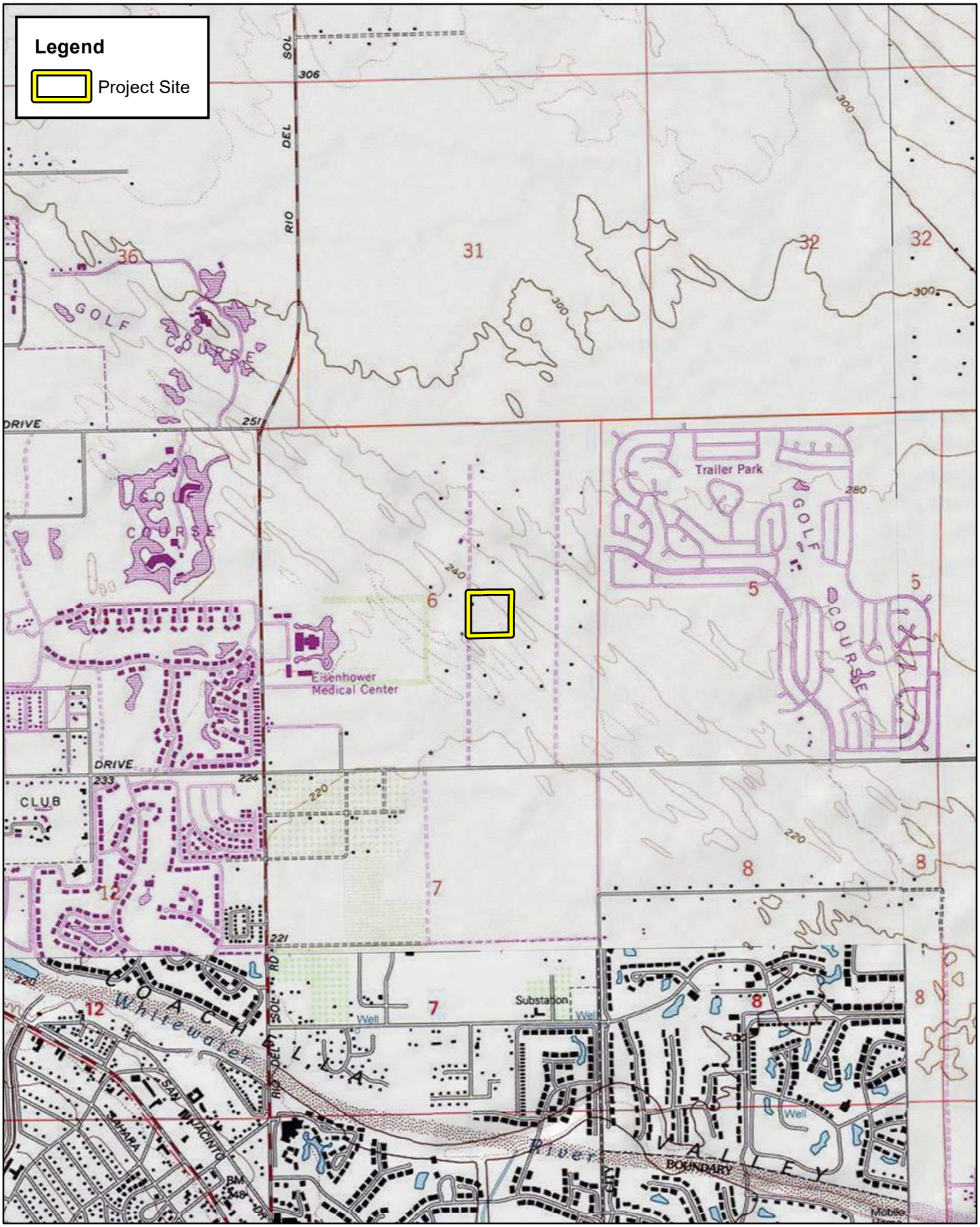
Regional Vicinity

ELMT CONSULTING

0 2.5 5 10 Miles

Source: World Street Map, Riverside County

Exhibit 1



TENTATIVE TRACT MAP NO. 38222 (VISTA DEL SOL)
BIOLOGICAL RESOURCES REPORT

Site Vicinity

ELMT CONSULTING

0 1,000 2,000 4,000 Feet

Source: USA Topographic Map, Riverside County

Exhibit 2

TENTATIVE TRACT MAP NO. 38222 (VISTA DEL SOL)
BIOLOGICAL RESOURCES REPORT

ELMT CONSULTING

0 62.5 125 250 Feet

Source: ESRI Aerial Imagery, Riverside County

Project Site

Exhibit 3

TENTATIVE TRACT MAP NO. 38222 (VISTA DEL SOL)
BIOLOGICAL RESOURCES REPORT

ELMT CONSULTING

0 62.5 125 250 Feet

Source: ESRI Aerial Imagery, Soil Survey Geographic Database, Riverside County

Soils

Exhibit 4

TENTATIVE TRACT MAP NO. 38222 (VISTA DEL SOL)
BIOLOGICAL RESOURCES REPORT

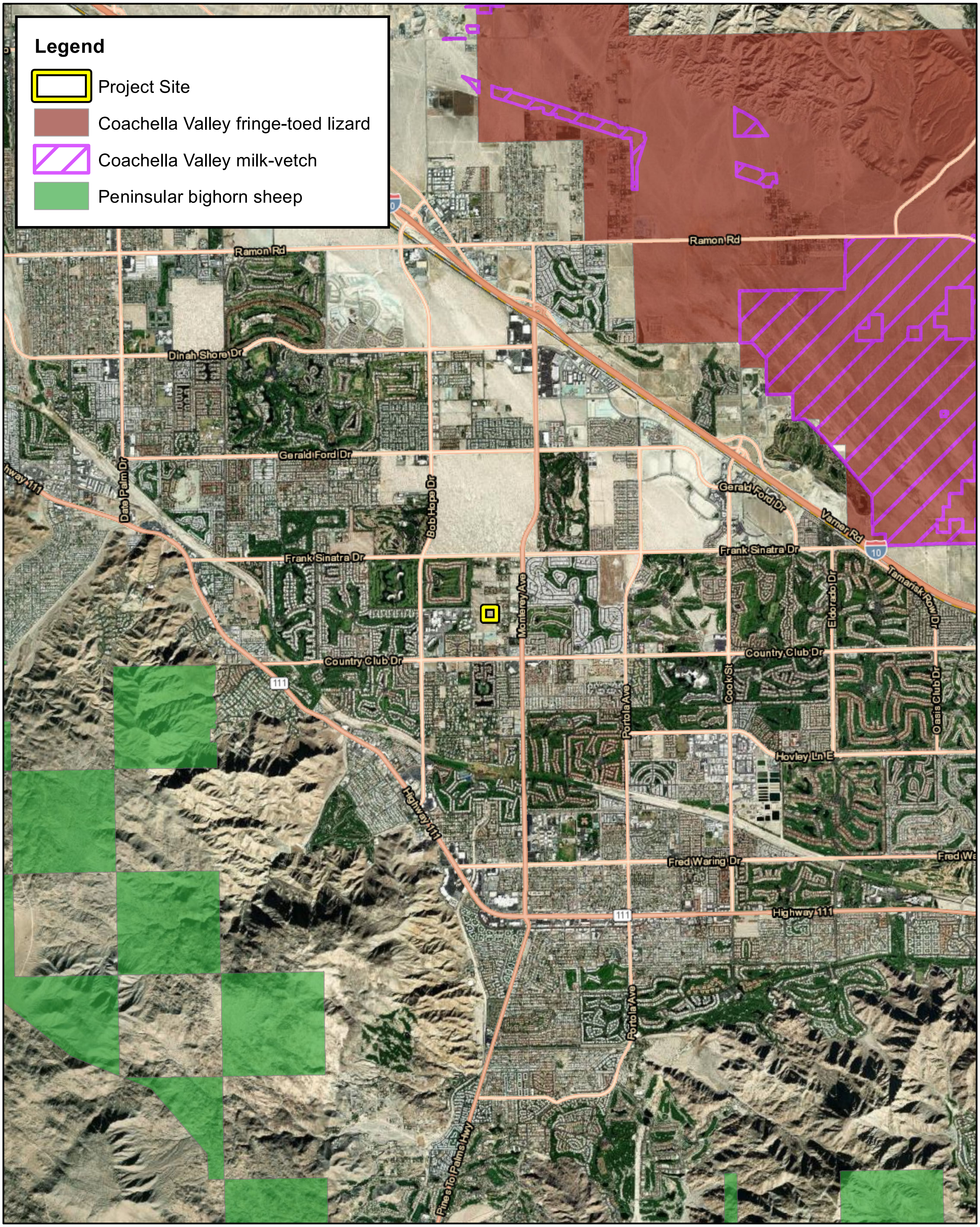
Vegetation

ELMT CONSULTING

0 62.5 125 250 Feet

Source: ESRI Aerial Imagery, Riverside County

Exhibit 5



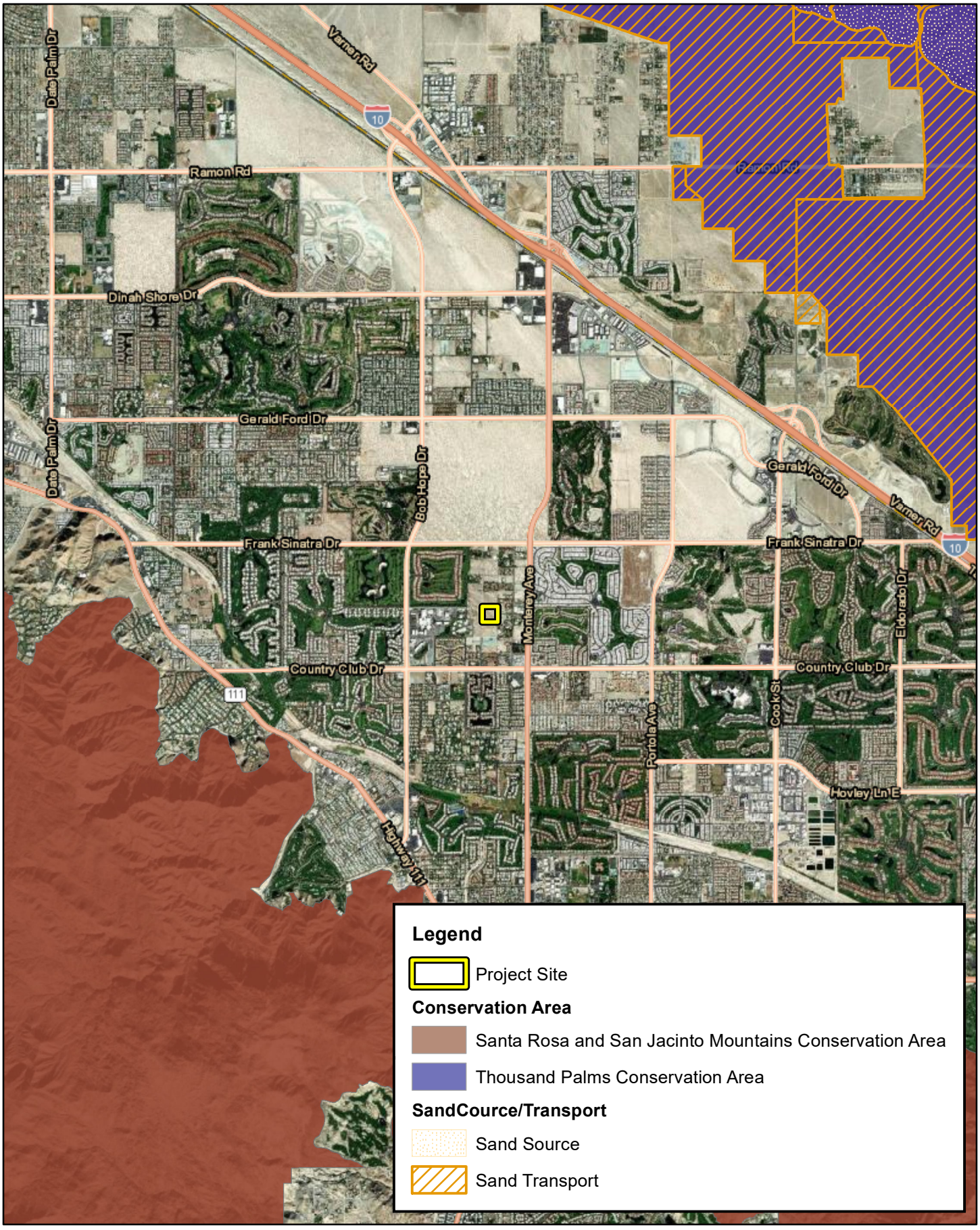
TENTATIVE TRACT MAP NO. 38222 (VISTA DEL SOL)
BIOLOGICAL RESOURCES REPORT

Critical Habitat

Exhibit 6

ELMT CONSULTING

Source: ESRI Aerial Imagery, USFWS Critical Habitat, Riverside County



TENTATIVE TRACT MAP NO. 38222 (VISTA DEL SOL)
BIOLOGICAL RESOURCES REPORT

CVMSHCP Conservation Areas

ELMT CONSULTING

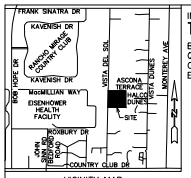
0 0.5 1 2 Miles

Source: ESRI Aerial Imagery, CVMSHCP, Riverside County

Exhibit 7

Attachment B

Site Plan



VICINITY MAP
NOT TO SCALE

IN THE CITY OF RANCHO MIRAGE, COUNTY OF RIVERSIDE, STATE OF CALIFORNIA

TENTATIVE TRACT MAP No. 38222

BEING A SUBDIVISION OF THE NORTH ONE-HALF, OF THE NORTHEAST QUARTER, OF THE NORTHWEST QUARTER, OF THE SOUTHEAST QUARTER, AND THE SOUTH ONE-HALF OF THE NORTHEAST QUARTER, OF THE NORTHWEST QUARTER, OF THE SOUTHEAST QUARTER, BOTH IN TOWNSHIP 5 SOUTH, RANGE 6 EAST, SAN BERNARDINO BASE AND MERIDIAN

OWNER:
BRAVO PROPERTIES INC., A CALIFORNIA CORPORATION

ASSESSOR'S PARCEL NUMBER:
685-280-002 & 685-280-003

DEVELOPER:
BRAVO PROPERTIES INC., A CALIFORNIA CORPORATION

LEGAL DESCRIPTION:
THE LAND REFERRED TO HEREIN IS SITUATED IN THE STATE OF CALIFORNIA, COUNTY OF RIVERSIDE, CITY OF RANCHO MIRAGE, AND DESCRIBED AS FOLLOWS:

APN 685-280-002
THE NORTH ONE-HALF, OF THE NORTHEAST ONE-QUARTER, OF THE NORTHWEST ONE-QUARTER, OF THE SOUTHEAST QUARTER OF SECTION 6, TOWNSHIP 5 SOUTH, RANGE 6 EAST, SAN BERNARDINO BASE AND MERIDIAN

EXCEPT ALL OIL GAS, AND OTHER MINERAL DEPOSITS, TOGETHER WITH THE RIGHT TO PROSPECT FOR, MINE AND REMOVE THE SAME, AS RESERVED IN THE PATENT FROM THE UNITED STATES OF AMERICA RECORDED APRIL 1, 1958, AS INSTRUMENT NO. 23556, OF OFFICIAL RECORDS.

AND

APN 685-280-003
THE SOUTH HALF OF THE NORTHEAST QUARTER OF THE NORTHWEST QUARTER OF THE SOUTHEAST QUARTER OF SECTION 6, TOWNSHIP 5 SOUTH, RANGE 6 EAST, SAN BERNARDINO BASE AND MERIDIAN, IN THE COUNTY OF RIVERSIDE, STATE OF CALIFORNIA.

EXCEPTING THEREFROM ALL OIL, GAS AND OTHER MINERAL DEPOSITS, TOGETHER WITH THE RIGHT TO PROSPECT FOR, MINE, AND REMOVE THE SAME ACCORDING TO THE PROVISIONS OF THE ACT OF CONGRESS APPROVED JUNE 1, 1938 (52 STAT. 609) AS RESERVED IN PATENTS FILED FOR RECORD NOVEMBER 29, 1963 AS INSTRUMENT NO. 125873 OF OFFICIAL RECORDS.

FLOOD PLAN REVIEW:
OUTSIDE FLOODPLAIN, REVIEW NOT REQUIRED

WATERSHED: WHITEWATER

WATER DISTRICT: COACHELLA VALLEY WATER DISTRICT

FLOOD CONTROL DISTRICT: COACHELLA VALLEY WATER DISTRICT

LOT AREA: 40,917 SQ. FT. (10.122 AC)

SCHOOL DISTRICT: DESERT SANDS UNIFIED SCHOOL

UTILITIES:

GAS:	SOUTHERN CALIFORNIA GAS	800-427-2000
ELECTRIC:	RANCHO MIRAGE ENERGY AUTHORITY	800-990-7788
ELECTRIC:	IMPERIAL IRRIGATION DISTRICT	760-482-9600
ELECTRIC:	SOUTHERN CALIFORNIA EDISON	800-990-7788
TELEPHONE:	FRONTIER COMMUNICATIONS	844-903-2037
SANITARY SEWER/WATER:	COACHELLA VALLEY WATER DISTRICT	760-398-2651
CABLE/INTERNET:	CHARTER SPECTRUM:	888-438-2427
CABLE/INTERNET:	DIRECTV	866-875-3599
CABLE/INTERNET:	FRONTIER	833-844-6538
TRASH:	BURRTEC	760-340-2113

FLOOD ZONE:
MAP NO. 06065C1595G EFFECTIVE DATE AUGUST 28, 2008

ZONE X:AREAS DETERMINED TO BE OUTSIDE OF THE 0.2% ANNUAL CHANCE FLOOD;

GENERAL OR SPECIFIC PLAN:
NOT IN A SPECIFIC PLAN

ZONING CLASSIFICATION:

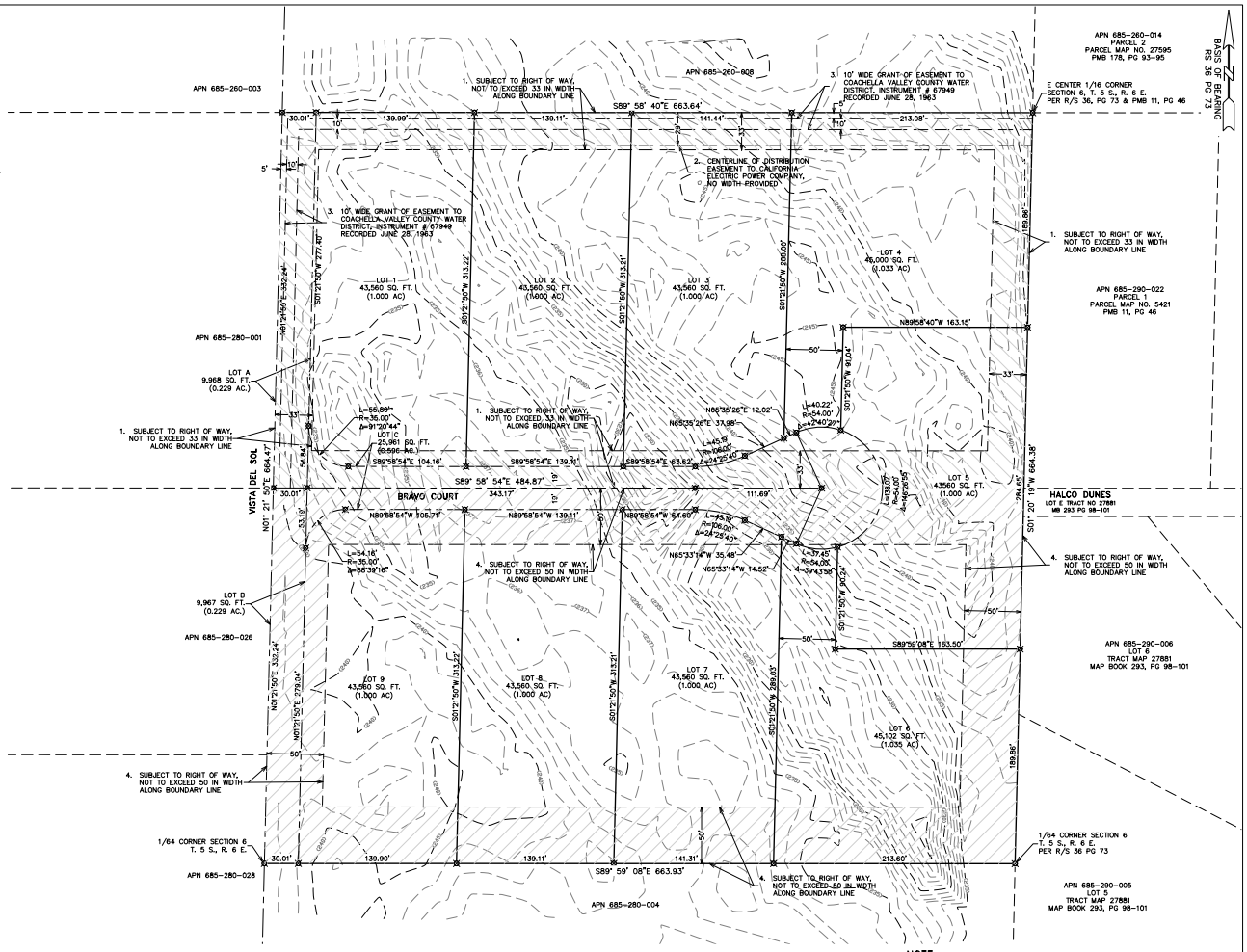
RESIDENTIAL ESTATE R-E	1 DU/AC MAX.
MINIMUM LOT SIZE	1 AC
MINIMUM LOT WIDTH	100'
MINIMUM LOT DEPTH	100'
MINIMUM FRONT SETBACK	25'
MINIMUM SIDE SETBACK	10'
MINIMUM STREET SIDE SETBACK	15'
MINIMUM REAR SETBACK	25'

EASEMENTS:

APN 685-280-002
1. A RIGHT OF WAY FOR DITCHES AND CANALS AS RESERVED BY THE UNITED STATES OF AMERICA (BLANKET IN NATURE UNABLE TO PLOT), AND RIGHT OF WAY FOR ROAD WAY AND PUBLIC UTILITY PURPOSES NOT TO EXCEED 33 FEET IN WIDTH ALONG THE BOUNDARY LINES AS STATED IN THE PATENT RECORDED APRIL 01, 1958 AS INSTRUMENT NO. 23556 OF OFFICIAL RECORDS.
2. AN EASEMENT FOR PUBLIC UTILITIES AND INCIDENTAL PURPOSES IN THE DOCUMENT RECORDED AUGUST 11, 1961 AS BOOK 2961, PAGE 412 OF OFFICIAL RECORDS.
3. AN EASEMENT FOR BUILD AND MAINTAIN A PERMANENT UNDERGROUND PIPELINE WITH ALL FIXTURES, DEVISEES, AND APPURTENANCES USED OR USEFUL IN THE OPERATION OF SAID PIPELINE, THROUGH, OVER, UNDER, ALONG, AND ACROSS AND INCIDENTAL PURPOSES IN THE DOCUMENT RECORDED JUNE 28, 1963 AS INSTRUMENT NO. 67949 OF OFFICIAL RECORDS.

APN 685-280-003
4. A RIGHT OF WAY FOR DITCHES AND CANALS AS RESERVED BY THE UNITED STATES OF AMERICA (BLANKET IN NATURE UNABLE TO PLOT), AND RIGHT OF WAY FOR ROAD WAY AND PUBLIC UTILITY PURPOSES NOT TO EXCEED 50 FEET IN WIDTH ALONG THE BOUNDARY LINES AS STATED IN THE PATENT RECORDED NOVEMBER 29, 1963 AS INSTRUMENT NO. 125873 OF OFFICIAL RECORDS.

THOMAS BROS. MAP PAGE/GRID
PAGE: 818, GRID: D2



NOTE:
1. UNAUTHORIZED CHANGES & USES: THE ENGINEER PREPARING THESE PLANS WILL NOT BE RESPONSIBLE FOR, OR LIABLE FOR, UNAUTHORIZED CHANGES TO OR USE OF THESE PLANS. ALL CHANGES TO THE PLANS MUST BE IN WRITING AND MUST BE APPROVED BY THE PREPARER OF THESE PLANS.
2. CONSTRUCTION CONTRACTOR AGREES THAT IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES, CONSTRUCTION CONTRACTOR WILL BE REQUIRED TO ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THE PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY, THAT THIS REQUIREMENT SHALL BE MADE TO APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS. AND CONSTRUCTION CONTRACTOR FURTHER AGREES TO DEFEND, INDEMNIFY AND HOLD DESIGN PROFESSIONAL HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT, EXCEPTING LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF DESIGN PROFESSIONAL.

IMPORTANT NOTICE CALL BEFORE YOU DIG
SECTION 4216 OF THE GOVERNMENT CODE REQUIRES AN INQUIRY IDENTIFICATION NUMBER BE ISSUED BEFORE A "PERMIT TO EXCAVATE" WILL BE VALID. FOR YOUR PRE-EXCAVATION I.D. NUMBER CALL UNDERGROUND SERVICE ALERT TOLL FREE 1-800-227-2600 TWO WORKING DAYS BEFORE YOU DIG

UNAUTHORIZED CHANGES & USES: THE ENGINEER PREPARING THESE PLANS WILL NOT BE RESPONSIBLE FOR, OR LIABLE FOR, UNAUTHORIZED CHANGES TO OR USES OF THESE PLANS. ALL CHANGES TO THE PLANS MUST BE IN WRITING AND MUST BE APPROVED BY THE PREPARER OF THESE PLANS.
ENGINEER'S NOTE TO CONTRACTOR: CONSTRUCTION CONTRACTOR AGREES THAT IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES, CONSTRUCTION CONTRACTOR WILL BE REQUIRED TO ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THE PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY, THAT THIS REQUIREMENT SHALL BE MADE TO APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS, AND CONSTRUCTION CONTRACTOR FURTHER AGREES TO DEFEND, INDEMNIFY AND HOLD DESIGN PROFESSIONAL HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT, EXCEPTING LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF DESIGN PROFESSIONAL. THE EXISTENCE AND LOCATION OF ANY UNDERGROUND UTILITIES OR STRUCTURES SHOWN IN THESE PLANS WERE OBTAINED BY A SEARCH OF AVAILABLE RECORDS. TO THE BEST OF OUR KNOWLEDGE, THERE ARE NO EXISTING UTILITIES EXCEPT THOSE SHOWN ON THESE PLANS. THE CONTRACTOR IS REQUIRED TO TAKE ALL PRECAUTIONARY MEASURES TO PROTECT THE UTILITIES SHOWN, AND IS RESPONSIBLE FOR THE PROTECTION OF, AND ANY DAMAGE TO THESE LINES OR STRUCTURES.

#	REVISIONS	DATE	APP.

(BENCH MARK, SEA LEVEL REF.)

(BASIS OF BEARING)
THE NORTH LINE OF THE SOUTHEAST 1/4, OF SECTION 6, TOWNSHIP 5 SOUTH, RANGE 6 EAST, SAN BERNARDINO BASE AND MERIDIAN, SHOWN AS N 89° 58' 40" W AND SHOWN IN RECORD OF SURVEY BOOK 36 PAGE 73, AS FILED WITH THE OFFICE OF THE COUNTY RECORDER OF RIVERSIDE COUNTY.

AMIR ENGINEERING & SURVEYING INC.
CIVIL ENGINEERS • LAND PLANNERS • SURVEYORS
160 LURING DRIVE, SUITE A
PALM SPRINGS, CA. 92262
PHONE: (760) 318-7424
FAX: (760) 318-7410

CITY OF RANCH MIRAGE

TENTATIVE MAP

BEING A SUBDIVISION OF THE NORTHEAST QUARTER, OF THE NORTHWEST QUARTER, OF THE SOUTHEAST QUARTER OF SECTION 6, TOWNSHIP 5 SOUTH, RANGE 6 EAST, SAN BERNARDINO BASE AND MERIDIAN

SEC. 6, T.5S., R.6E., S.B.B.&M. A.P.N'S.: 685-280-002 & 685-280-003

SHEET 1 OF 1
PRIVATE REFERENCE #
CITY REFERENCE #

Attachment C

Site Photographs

Photograph 1: From the northwest corner of the project site looking south along the western boundary.

Photograph 2: From the northwest corner of the project site looking east along the northern boundary.

Photograph 3: From the northeast corner of the project site looking west along the northern boundary.

Photograph 4: From the northeast corner of the project site looking south along the eastern boundary.

Photograph 5: From the southwest corner of the project site looking north along the eastern boundary.

Photograph 6: From the southwest corner of the project site looking northwest.

Photograph 7: From the southwest corner of the project site looking east along the southern boundary.

Photograph 8: From the southwest corner of the project site looking north along the western boundary.

Photograph 9: From the southern boundary of the project site looking northwest.

Photograph 10: The majority of the project site supports Creosote Bush Scrub in varying densities.

Attachment D

Potentially Occurring Special-Status Biological Resources

Table D-1: Potentially Occurring Special-Status Biological Resources

Scientific Name Common Name	**Status**	**Habitat**	**Observed On-site**	**Potential to Occur**
SPECIAL-STATUS WILDLIFE SPECIES				
Athene cunicularia burrowing owl	Fed: None CA: SSC CVMSHCP: Covered	Primarily a grassland species, but it persists and even thrives in some landscapes highly altered by human activity. Occurs in open, annual or perennial grasslands, deserts, and scrublands characterized by low-growing vegetation. The overriding characteristics of suitable habitat appear to be burrows for roosting and nesting and relatively short vegetation with only sparse shrubs and taller vegetation.	No	**Presumed Absent** The project site provides line-of-sight opportunities favored by burrowing owls; however, no suitable burrows (>4 inches) were observed. No burrowing owls or sign were observed.
Crotalus ruber red-diamond rattlesnake	Fed: None CA: SSC CVMSHCP: Not Covered	It can be found from the desert, through dense chaparral in the foothills (it avoids the mountains above around 4,000 feet), to warm inland mesas and valleys, all the way to the cool ocean shore. It is most commonly associated with heavy brush with large rocks or boulders. Dense chaparral in the foothills, cactus or boulder associated coastal sage scrub, oak and pine woodlands, and desert slope scrub associations are known to carry populations of the northern red-diamond rattlesnake; however, chamise and red shank associations may offer better structural habitat for refuges and food resources for this species than other habitats.	No	**Presumed Absent** There is no suitable habitat present within or adjacent to the project site.
Dinacoma caseyi Casey's June beetle	Fed: **END** CA: None CVMSHCP: Not Covered	All *Dinacoma* populations are associated with alluvial sediments occurring in or contiguous with bases of desert alluvial fans, and the broad, gently sloping, depositional surfaces at the base of the Santa Rosa mountain ranges in the dry Coachella valley region. Most commonly associated with the Carsitas series soil.	No	**Presumed Absent** There is no suitable habitat present within or adjacent to the project site.
Falco mexicanus prairie falcon	Fed: None CA: WL CVMSHCP: Not Covered	Commonly occur in arid and semiarid shrubland and grassland community types. Also occasionally found in open parklands within coniferous forests. During the breeding season, they are found commonly in foothills and mountains which provide cliffs and escarpments suitable for nest sites.	No	**Moderate** There is suitable foraging habitat present within and adjacent to the project site. But no suitable nesting habitat onsite.
Habropoda pallida white-faced bee	Fed: None CA: None CVMSHCP: Not Covered	Builds nests in clay-rich sandy slopes along water courses in the Mojave Desert. In California, it occurs from Into County south to Imperial County and east to the Nevada and Arizona borders. Prefers areas with a high density of creosote and dune-restricted endemic plants.	No	**Presumed Absent** There is no suitable habitat present within or adjacent to the project site.

Scientific Name Common Name	**Status**	**Habitat**	**Observed On-site**	**Potential to Occur**
Lanius ludovicianus loggerhead shrike	Fed: None CA: SSC CVMSHCP: Not Covered	Often found in broken woodlands, shrublands, and other habitats. Prefers open country with scattered perches for hunting and fairly dense brush for nesting.	No	**Moderate** There is suitable foraging habitat present within and adjacent to the project site. But no suitable nesting habitat onsite.
Lasiurus xanthinus western yellow bat	Fed: None CA: SSC CVMSHCP: Not Covered	Roosts in palm trees in foothill riparian, desert wash, and palm oasis habitats with access to water for foraging.	No	**Presumed Absent** There is no suitable habitat present within or adjacent to the project site.
Macrobaenetes valgum Coachella giant sand treader cricket	Fed: None CA: None CVMSHCP: Covered	Nocturnal and moisture sensitive insects. Emergence occurs with winter rains and appear at maximum densities in January-February. Can be detected via their characteristic delta-shaped burrow excavations.	No	**Presumed Absent** There is no suitable habitat present within or adjacent to the project site.
Ovis canadensis nelsoni **pop. 2** Peninsular bighorn sheep DPS	Fed: **END** CA: **THR**; FP CVMSHCP: Covered	Preferred habitat is near mountainous terrain above the desert floor that is visually open, as well as steep and rocky. Most Mojave Desert mountain ranges satisfy these requirements well. Surface water is another element that is considered important to population health. Found mainly in the Peninsular Ranges.	No	**Presumed Absent** There is no suitable habitat present within or adjacent to the project site.
Perognathus longimembris bangsi Palm Springs pocket mouse	Fed: None CA: SSC CVMSHCP: Covered	Inhabits areas having flat to gently sloping topography, sparse to moderate vegetative cover, and loosely packed or sandy soils on slopes ranging from 0% to approximately 15%. Remaining habitat in the Coachella Valley and environs is about 142,000 acres.	No	**Presumed Absent** There is no suitable habitat present within or adjacent to the project site.
Phrynosoma mcallii flat-tailed horned lizard	Fed: None CA: SSC CVMSHCP: Covered	Typical habitat is sandy desert hardpan or gravel flats with scattered sparse vegetation of low species diversity. Most common in areas with high density of harvester ants and fine windblown sand, but rarely occurs on dunes.	No	**Presumed Absent** There is no suitable habitat present within or adjacent to the project site.
Polioptila californica californica coastal California gnatcatcher	Fed: **THR** CA: SSC CVMSHCP: Not Covered	Obligate resident of sage scrub habitats that are dominated by California sagebrush. This species generally occurs below 750 feet elevation in coastal regions and below 1,500 feet inland. It prefers habitat with more low-growing vegetation.	No	**Presumed Absent** There is no suitable habitat present within or adjacent to the project site.
Stenopelmatus cahuilaensis Coachella Valley Jerusalem cricket	Fed: None CA: None CVMSHCP: Covered	Restricted to desert dunes.	No	**Presumed Absent** There is no suitable habitat present within or adjacent to the project site.
Toxostoma lecontei Le Conte's thrasher	Fed: None CA: SSC CVMSHCP: Covered	An uncommon to rare, local resident in southern California deserts from southern Mono Co. south to the Mexican border, and in western and southern San Joaquin Valley. Occurs primarily in open desert wash, desert scrub, alkali desert scrub, and desert succulent shrub habitats; also occurs in Joshua tree habitat with scattered shrubs.	No	**Presumed Absent** There is limited habitat present within and adjacent to the project site; however, the site is isolated from known occupied areas.

Scientific Name Common Name	**Status**		**Habitat**	**Observed On-site**	**Potential to Occur**
Uma inornata Coachella Valley fringe-toed lizard	Fed: CA: CVMSHCP:	**THR** **END** Covered	Sparsely-vegetated arid areas with fine wind-blown sand, including dunes, washes, and flats with sandy hummocks formed around the bases of vegetation. Needs fine, loose sand for burrowing.	No	**Presumed Absent** There is no suitable habitat present within or adjacent to the project site.
Xerospermophilus tereticaudus chlorus Coachella Valley round-tailed ground squirrel	Fed: CA: CVMSHCP:	None SSC Covered	Inhabits sandy arid regions of Lower Sonoran Life Zone. Its scrub and wash habitats include mesquite and creosote dominated sand dunes, creosote bush scrub, creosote palo verde and saltbush/alkali scrub.	No	**Presumed Absent** There is limited habitat present within and adjacent to the project site; however, the site is isolated from known occupied areas.
SPECIAL-STATUS PLANT SPECIES					
Abronia villosa* var. *aurita chaparral sand-verbena	Fed: CA: CNPS: CVMSHCP:	None None 1B.1 Not Covered	Found on the coastal side of the southern California mountains in chaparral and coastal sage scrub plant communities in areas of full sun and sandy soils. Found at elevations ranging from 262 to 5,249 feet. Blooming period is from January to September.	No	**Presumed Absent** There is no suitable habitat present within or adjacent to the project site.
Astragalus hornii* var. *hornii Horn's milk-vetch	USFWS: CDFW: CNPS: CVMSHCP:	None None 1B.1 Not Covered	Occurs in lake margins in playas, meadows and seeps. Found at elevations ranging from 197 to 2,789 feet. Blooming period is from May to October.	No	**Presumed Absent** There is no suitable habitat present within or adjacent to the project site.
Astragalus lentiginosus* var. *borreganus Borrego milk-vetch	Fed: CA: CNPS: CVMSHCP:	None None 4.3 Not Covered	Grows in sandy soils within Mojavean desert scrub and Sonoran desert scrub. Found at elevations ranging from 98 to 1,050 feet in elevation. Blooming period is from February to May.	No	**Presumed Absent** There is no suitable habitat present within or adjacent to the project site.
Astragalus lentiginosus* var. *coachellae Coachella Valley milk-vetch	Fed: CA: CNPS: CVMSHCP:	**END** None 1B.2 Covered	Preferred habitat includes desert dunes and sandy Sonoran desert scrub. Found at elevations ranging from 131 to 2,149 feet in elevation. Blooming period is from February to May.	No	**Low** There is limited habitat present within and adjacent to the project site. This species was not observed during the field investigation, which was conducted during the relevant blooming period.
Cuscuta californica* var. *apiculata pointed dodder	Fed: CA: CNPS: CVMSHCP:	None None 3 Not Covered	Occurs in Mojavean desert scrub and Sonoran desert scrub habitats. Found at elevations ranging from 0 to 1640 feet. Blooming period is from February to August.	No	**Presumed Absent** There is no suitable habitat present within or adjacent to the project site.
Euphorbia arizonica Arizona spurge	Fed: CA: CNPS: CVMSHCP:	None None 2B.3 Not Covered	Preferred habitat includes sandy, Sonoran desert scrub habitat. Found at elevations ranging from 164 to 984 feet. Blooming period is from March to April.	No	**Presumed Absent** There is no suitable habitat present within or adjacent to the project site.

Scientific Name Common Name	**Status**	**Habitat**	**Observed On-site**	**Potential to Occur**
Euphorbia platysperma flat-seeded spurge	Fed: None CA: None CNPS: 1B.2 CVMSHCP: Not Covered	Occurs within desert scrub and sandy Sonoran desert scrub habitats. Found at elevations ranging from 213 to 328 feet. Blooming period is from February to September.	No	**Presumed Absent** There is no suitable habitat present within or adjacent to the project site.
Johnstonella costata ribbed cryptantha	Fed: None CA: None CNPS: 4.3 CVMSHCP: Not Covered	Preferred habitat includes desert dunes, Mojavean desert scrub, and Sonoran desert scrub habitats on sandy soil. Found at elevations ranging from 197 to 1,640 feet. Blooming period is from February to May.	No	**Presumed Absent** There is no suitable habitat present within or adjacent to the project site.
Johnstonella holoptera winged cryptantha	Fed: None CA: None CNPS: 4.3 CVMSHCP: Not Covered	Found in Mojavean desert scrub and Sonoran desert scrub habitats. Found at elevations ranging from 328 to 5,545 feet. Blooming period is from March to April.	No	**Presumed Absent** There is no suitable habitat present within or adjacent to the project site. The project site occurs outside of the known elevation range for this species.
Lycium torreyi Torrey's box-thron	Fed: None CA: None CNPS: 4.2 CVMSHCP: Not Covered	Found in sandy, rocky, washes, streambanks and desert valleys in association with Mojavean and Sonoran Desert scrub habitats. Found at elevations ranging from 130 to 3,575 feet. Blooming period is from March to May.	No	**Presumed Absent** There is no suitable habitat present within or adjacent to the project site.
Nemacaulis denudata* var. *gracilis slender cottonheads	Fed: None CA: None CNPS: 2B.2 CVMSHCP: Not Covered	Occurs in coastal dunes, desert dunes, and Sonoran desert scrub habitats. Found at elevations ranging from 164 to 1,312 feet. Blooming period is from March to May.	No	**Presumed Absent** There is no suitable habitat present within or adjacent to the project site.
Selaginella eremophila desert spike-moss	Fed: None CA: None CNPS: 2B.2 CVMSHCP: Not Covered	Found in chaparral and Sonoran desert scrub habitats within gravelly or rocky soil. Found at elevations ranging from 656 to 2,953 feet. Blooming period is from May to July.	No	**Presumed Absent** There is no suitable habitat present within or adjacent to the project site. The project site occurs outside of the known elevation range for this species.
Stemodia durantifolia purple stemodia	Fed: None CA: None CNPS: 2B.1 CVMSHCP: Not Covered	Occurs in Sonoran desert scrub habitats. Found at elevations ranging from 591 to 984 feet. Blooming period is from January to December.	No	**Presumed Absent** There is no suitable habitat present within or adjacent to the project site. The project site occurs outside of the known elevation range for this species.
CDFW SENSITIVE HABITATS				

Scientific Name Common Name	**Status**	**Habitat**	**Observed On-site**	**Potential to Occur**
Desert Fan Palm Oasis Woodland	CDFW Sensitive Habitat	Rare plant community that is one of the most unusual biological resources located within the Coachella Valley. Found within canyons and along the San Andreas Fault Zone, where water occurs naturally. Generally characterized by open to dense groves of native desert fan palms, which are the most massive native palm in North America, growing more than 66 feet.	No	**Absent**.

U.S. Fish and Wildlife Service (Fed) - Federal
END – Federal Endangered
THR – Federal Threatened

California Department of Fish and Wildlife (CA) - California
END – California Endangered
THR – California Threatened
FP – California Fully Protected
SSC – California Species of Special Concern
WL – California Watch List

California Native Plant Society (CNPS)
California Rare Plant Rank
1B Plants Rare, Threatened, or Endangered in California and Elsewhere
2B Plants Rare, Threatened, or Endangered in California, but More Common Elsewhere
3 More Information Needed
4 Plants of Limited Distribution – A Watch List

Threat Ranks
0.1- Seriously threatened in California
0.2- Moderately threatened in California
0.3- Not very threatened in California

Attachment E

Regulations

buffer will be determined by the wildlife biologist and will depend on the level of noise and/or surrounding anthropogenic disturbances, line of sight between the nest and the construction activity, type and duration of construction activity, ambient noise, species habituation, and topographical barriers. These factors will be evaluated on a case-by-case basis when developing buffer distances. Limits of construction to avoid an active nest will be established in the field with flagging, fencing, or other appropriate barriers; and construction personnel will be instructed on the sensitivity of nest areas. A biological monitor should be present to delineate the boundaries of the buffer area and to monitor the active nest to ensure that nesting behavior is not adversely affected by the construction activity. Once the young have fledged and left the nest, or the nest otherwise becomes inactive under natural conditions, construction activities within the buffer area can occur.

Please do not hesitate to contact Tom McGill at (951) 285-6014 or tmcgill@elmtconsulting.com or Travis McGill at (909) 816-1646 or travismcgill@elmtconsulting.com should you have any questions regarding this proposal.

Sincerely,

Thomas J. McGill, Ph.D.
Managing Director

Travis J. McGill
Director

Attachments:

A. *Project Exhibits*
B. *Site Plan*
C. *Site Photographs*
D. *Potentially Occurring Special-Status Biological Resources*
E. *Regulations*

Special status species are native species that have been afforded special legal or management protection because of concern for their continued existence. There are several categories of protection at both federal and state levels, depending on the magnitude of threat to continued existence and existing knowledge of population levels.

Federal Regulations

Endangered Species Act of 1973

Federally listed threatened and endangered species and their habitats are protected under provisions of the Federal Endangered Species Act (ESA). Section 9 of the ESA prohibits "take" of threatened or endangered species. "Take" under the ESA is defined as to "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any of the specifically enumerated conduct." The presence of any federally threatened or endangered species that are in a project area generally imposes severe constraints on development, particularly if development would result in "take" of the species or its habitat. Under the regulations of the ESA, the United States Fish and Wildlife Service (USFWS) may authorize "take" when it is incidental to, but not the purpose of, an otherwise lawful act.

Critical Habitat is designated for the survival and recovery of species listed as threatened or endangered under the ESA. Critical Habitat includes those areas occupied by the species, in which are found physical and biological features that are essential to the conservation of an ESA listed species and which may require special management considerations or protection. Critical Habitat may also include unoccupied habitat if it is determined that the unoccupied habitat is essential for the conservation of the species.

Whenever federal agencies authorize, fund, or carry out actions that may adversely modify or destroy Critical Habitat, they must consult with USFWS under Section 7 of the ESA. The designation of Critical Habitat does not affect private landowners, unless a project they are proposing uses federal funds, or requires federal authorization or permits (e.g., funding from the Federal Highway Administration or a permit from the U.S. Army Corps of Engineers (Corps)).

If USFWS determines that Critical Habitat will be adversely modified or destroyed from a proposed action, the USFWS will develop reasonable and prudent alternatives in cooperation with the federal institution to ensure the purpose of the proposed action can be achieved without loss of Critical Habitat. If the action is not likely to adversely modify or destroy Critical Habitat, USFWS will include a statement in its biological opinion concerning any incidental take that may be authorized and specify terms and conditions to ensure the agency is in compliance with the opinion.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) (16 U.S. Government Code [USC] 703) makes it unlawful to pursue, capture, kill, possess, or attempt to do the same to any migratory bird or part, nest, or egg of any such bird listed in wildlife protection treaties between the United States, Great Britain, Mexico, Japan, and the countries of the former Soviet Union, and authorizes the U.S. Secretary of the Interior to protect and regulate the taking of migratory birds. It establishes seasons and bag limits for hunted species and protects migratory birds, their occupied nests, and their eggs (16 USC 703; 50 CFR 10, 21).

The MBTA covers the taking of any nests or eggs of migratory birds, except as allowed by permit pursuant to 50 CFR, Part 21. Disturbances causing nest abandonment and/or loss of reproductive effort (i.e., killing or abandonment of eggs or young) may also be considered "take." This regulation seeks to protect migratory birds and active nests.

In 1972, the MBTA was amended to include protection for migratory birds of prey (e.g., raptors). Six families of raptors occurring in North America were included in the amendment: Accipitridae (kites, hawks, and eagles); Cathartidae (New World vultures); Falconidae (falcons and caracaras); Pandionidae (ospreys); Strigidae (typical owls); and Tytonidae (barn owls). The provisions of the 1972 amendment to the MBTA protects all species and subspecies of the families listed above. The MBTA protects over 800 species including geese, ducks, shorebirds, raptors, songbirds and many relatively common species.

State Regulations

California Environmental Quality Act (CEQA)

The California Environmental Quality Act (CEQA) provides for the protection of the environment within the State of California by establishing State policy to prevent significant, avoidable damage to the environment through the use of alternatives or mitigation measures for projects. It applies to actions directly undertaken, financed, or permitted by State lead agencies. If a project is determined to be subject to CEQA, the lead agency will be required to conduct an Initial Study (IS); if the IS determines that the project may have significant impacts on the environment, the lead agency will subsequently be required to write an Environmental Impact Report (EIR). A finding of non-significant effects will require either a Negative Declaration or a Mitigated Negative Declaration instead of an EIR. Section 15380 of the CEQA Guidelines independently defines "endangered" and "rare" species separately from the definitions of the California Endangered Species Act (CESA). Under CEQA, "endangered" species of plants or animals are defined as those whose survival and reproduction in the wild are in immediate jeopardy, while "rare" species are defined as those who are in such low numbers that they could become endangered if their environment worsens.

California Endangered Species Act (CESA)

In addition to federal laws, the state of California implements the CESA which is enforced by CDFW. The CESA program maintains a separate listing of species beyond the FESA, although the provisions of each act are similar.

State-listed threatened and endangered species are protected under provisions of the CESA. Activities that may result in "take" of individuals (defined in CESA as; "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill") are regulated by CDFW. Habitat degradation or modification is not included in the definition of "take" under CESA. Nonetheless, CDFW has interpreted "take" to include the destruction of nesting, denning, or foraging habitat necessary to maintain a viable breeding population of protected species.

The State of California considers an endangered species as one whose prospects of survival and reproduction are in immediate jeopardy. A threatened species is considered as one present in such small numbers throughout its range that it is likely to become an endangered species in the near future in the

absence of special protection or management. A rare species is one that is considered present in such small numbers throughout its range that it may become endangered if its present environment worsens. State threatened and endangered species are fully protected against take, as defined above.

The CDFW has also produced a species of special concern list to serve as a species watch list. Species on this list are either of limited distribution or their habitats have been reduced substantially, such that a threat to their populations may be imminent. Species of special concern may receive special attention during environmental review, but they do not have formal statutory protection. At the federal level, USFWS also uses the label species of concern, as an informal term that refers to species which might be in need of concentrated conservation actions. As the Species of Concern designated by USFWS do not receive formal legal protection, the use of the term does not necessarily ensure that the species will be proposed for listing as a threatened or endangered species.

Fish and Game Code

Fish and Game Code Sections 3503, 3503.5, 3511, and 3513 are applicable to natural resource management. For example, Section 3503 of the Code makes it unlawful to destroy any birds' nest or any birds' eggs that are protected under the MBTA. Further, any birds in the orders Falconiformes or Strigiformes (Birds of Prey, such as hawks, eagles, and owls) are protected under Section 3503.5 of the Fish and Game Code which makes it unlawful to take, possess, or destroy their nest or eggs. A consultation with CDFW may be required prior to the removal of any bird of prey nest that may occur on a project site. Section 3511 of the Fish and Game Code lists fully protected bird species, where the CDFW is unable to authorize the issuance of permits or licenses to take these species. Pertinent species that are State fully protected by the State include golden eagle (*Aquila chrysaetos*) and white-tailed kite (*Elanus leucurus*). Section 3513 of the Fish and Game Code makes it unlawful to take or possess any migratory nongame bird as designated in the MBTA or any part of such migratory nongame bird except as provided by rules and regulations adopted by the Secretary of the Interior under provisions of the MBTA.

Native Plant Protection Act

Sections 1900–1913 of the Fish and Game Code were developed to preserve, protect, and enhance Rare and Endangered plants in the state of California. The act requires all state agencies to use their authority to carry out programs to conserve Endangered and Rare native plants. Provisions of the Native Plant Protection Act prohibit the taking of listed plants from the wild and require notification of the CDFW at least ten days in advance of any change in land use which would adversely impact listed plants. This allows the CDFW to salvage listed plant species that would otherwise be destroyed.

California Native Plant Society Rare and Endangered Plant Species

Vascular plants listed as rare or endangered by the CNPS, but which have no designated status under FESA or CESA are defined as follows:

California Rare Plant Rank

1A- Plants Presumed Extirpated in California and either Rare or Extinct Elsewhere

1B- Plants Rare, Threatened, or Endangered in California and Elsewhere

2A- Plants Presumed Extirpated in California, But More Common Elsewhere

2B- Plants Rare, Threatened, or Endangered in California, But More Common Elsewhere

3- Plants about Which More Information is Needed - A Review List

4- Plants of Limited Distribution - A Watch List

Threat Ranks

.1- Seriously threatened in California (over 80% of occurrences threatened / high degree and immediacy of threat)

.2- Moderately threatened in California (20-80% occurrences threatened / moderate degree and immediacy of threat)

.3- Not very threatened in California (<20% of occurrences threatened / low degree and immediacy of threat or no current threats known).

Local Policies

Coachella Valley MSHCP

A Multiple Species Habitat Conservation Plan (Plan) was prepared for the entire Coachella Valley and surrounding mountains to address current and potential future state and federal Endangered Species Act issues in the Plan Area. A Memorandum of Understanding ("Planning Agreement") was developed to govern the preparation of the Plan. In late 1995 and early 1996, under the auspices of CVAG, the cities of Cathedral City, Coachella, Desert Hot Springs, Indian Wells, Indio, La Quinta, Palm Desert, Palm Springs, and Rancho Mirage; County of Riverside (County); U.S. Fish and Wildlife Service (USFWS); California Department of Fish and Game (CDFG); Bureau of Land Management (BLM); U.S. Forest Service (USFS); and National Park Service (NPS) signed the Planning Agreement to initiate the planning effort. Subsequently, Caltrans, Coachella Valley Water District (CVWD), Imperial Irrigation District (IID), Riverside County Flood Control and Water Conservation District (County Flood Control), Riverside County Regional Park and Open Space District (County Parks), Riverside County Waste Resources Management District (County Waste), California Department of Parks and Recreation (State Parks), and CVMC decided to participate in the Plan.

The Plan balances environmental protection and economic development objectives in the Plan Area and simplifies compliance with endangered species related laws. The Plan is intended to satisfy the legal requirements for the issuance of Permits that will allow the Take of species covered by the Plan in the course of otherwise lawful activities. The Plan will, to the maximum extent practicable, minimize and mitigate the impacts of the Taking and provide for Conservation of the Covered Species.

The Conservation Plan includes the establishment of an MSHCP Reserve System, setting Conservation Objectives to ensure the Conservation of the Covered Species and conserved natural communities in the MSHCP Reserve System, provisions for management of the MSHCP Reserve System, and a Monitoring Program, and Adaptive Management. The MSHCP Reserve System will be established from lands within

21 Conservation Areas. Because some Take Authorization is provided under the Plan for Development in Conservation Areas, the actual MSHCP Reserve System will be somewhat smaller than the total acres in the Conservation Areas. When assembled, the Reserve System will provide for the Conservation of the Covered Species in the Plan Area.

There are three key agencies that regulate activities within inland streams, wetlands, and riparian areas in California. The Corps Regulatory Branch regulates activities pursuant to Section 404 of the Federal Clean Water Act (CWA) and Section 10 of the Rivers and Harbors Act. Of the State agencies, the CDFG regulates activities under the Fish and Game Code Section 1600-1616, and the Regional Board regulates activities pursuant to Section 401 of the CWA and the California Porter-Cologne Water Quality Control Act.

Federal Regulations

Section 404 of the Clean Water Act

Since 1972, the Corps and U.S. Environmental Protection Agency (EPA) have jointly regulated the filling of "waters of the U.S.," including wetlands, pursuant to Section 404 of the Clean Water Act (CWA). The Corps has regulatory authority over the discharge of dredged or fill material into the waters of the United States under Section 404 of the CWA. The Corps and EPA define "fill material" to include any "material placed in waters of the United States where the material has the effect of: (i) replacing any portion of a water of the United States with dry land; or (ii) changing the bottom elevation of any portion of the waters of the United States." Examples include, but are not limited to, sand, rock, clay, construction debris, wood chips, and "materials used to create any structure or infrastructure in the waters of the United States." In order to further define the scope of waters protected under the CWA, the Corps and EPA published the Clean Water Rule on June 29, 2015. Pursuant to the Clean Water Rule, the term "*waters of the United States*" is defined as follows:

(i) All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide.

(ii) All interstate waters, including interstate wetlands[1].

(iii) The territorial seas.

(iv) All impoundments of waters otherwise defined as waters of the United States under the definition.

(v) All tributaries[2] of waters identified in paragraphs (i) through (iii) mentioned above.

(vi) All waters adjacent[3] to a water identified in paragraphs (i) through (v) mentioned above, including wetlands, ponds, lakes, oxbows, impoundments, and similar waters.

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1 The term *wetlands* means those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions.

2 The terms *tributary* and *tributaries* each mean a water that contributes flow, either directly or through another water (including an impoundment identified in paragraph (iv) mentioned above), to a water identified in paragraphs (i) through (iii) mentioned above, that is characterized by the presence of the physical indicators of a bed and banks and an ordinary high water mark.

3 The term *adjacent* means bordering, contiguous, or neighboring a water identified in paragraphs (i) through (v) mentioned above, including waters separated by constructed dikes or barriers, natural river berms, beach dunes, and the like.

(vii) All prairie potholes, Carolina bays and Delmarva bays, Pocosins, western vernals pools, Texas coastal prairie wetlands, where they are determined, on a case-specific basis, to have a significant nexus to a water identified in paragraphs (i) through (iii) meantioned above.

(viii) All waters located within the 100-year floodplain of a water identified in paragraphs (i) through (iii) mentioned above and all waters located within 4,000 feet of the high tide line or ordinary high water mark of a water identified in paragraphs (i) through (v) mentioned above, where they are determined on a case-specific basis to have a significant nexus to a waters identified in paragraphs (i) through (iii) mentioned above.

The following features are not defined as "waters of the United States" even when they meet the terms of paragraphs (iv) through (viii) mentioned above:

(i) Waste treatment systems, including treatment ponds or lagoons designed to meet the requirements of the Clean Water Act.

(ii) Prior converted cropland.

(iii) The following ditches:

- (A) Ditches with ephemeral flow that are not a relocated tributary or excavated in a tributary.
- (B) Ditches with intermittent flow that are not a relocated tributary, excavated in a tributary, or drain wetlands.
- (C) Ditches that do not flow, either directly or through another water, into a water of the United States as identified in paragraphs (i) through (iii) of the previous section.

(iv) The following features:

- (A) Artificially irrigated areas that would revert to dry land should application of water to that area cease;
- (B) Artificial, constructed lakes and ponds created in dry land such as farm and stock watering ponds, irrigation ponds, settling basins, fields flooded for rice growing, log cleaning ponds, or cooling ponds;
- (C) Artificial reflecting pools or swimming pools created in dry land;
- (D) Small ornamental waters created in dry land;
- (E) Water-filled depressions created in dry land incidental to mining or construction activity, including pits excavated for obtaining fill, sand, or gravel that fill with water;
- (F) Erosional features, including gullies, rills, and other ephemeral features that do not meet the definition of a tributary, non-wetland swales, and lawfully constructed grassed waterways; and
- (G) Puddles.

(v) Groundwater, including groundwater drained through subsurface drainage systems.

(vi) Stormwater control features constructed to convey, treat, or store stormwater that are created in dry land.

(vii) Wastewater recycling structures constructed in dry land; detention and retention basins built for wastewater recycling; groundwater recharge basins; percolation ponds built for wastewater recycling; and water distributary structures built for wastewater recycling.

Section 401 of the Clean Water Act

Pursuant to Section 401 of the CWA, any applicant for a federal license or permit to conduct any activity which may result in any discharge to waters of the United States must provide certification from the State or Indian tribe in which the discharge originates. This certification provides for the protection of the physical, chemical, and biological integrity of waters, addresses impacts to water quality that may result from issuance of federal permits, and helps insure that federal actions will not violate water quality standards of the State or Indian tribe. In California, there are nine Regional Water Quality Control Boards (Regional Board) that issue or deny certification for discharges to waters of the United States and waters of the State, including wetlands, within their geographical jurisdiction. The State Water Resources Control Board assumed this responsibility when a project has the potential to result in the discharge to waters within multiple Regional Boards.

State Regulations

Fish and Game Code

Fish and Game Code Sections 1600 et. seq. establishes a fee-based process to ensure that projects conducted in and around lakes, rivers, or streams do not adversely impact fish and wildlife resources, or, when adverse impacts cannot be avoided, ensures that adequate mitigation and/or compensation is provided.

Fish and Game Code Section 1602 requires any person, state, or local governmental agency or public utility to notify the CDFW before beginning any activity that will do one or more of the following:

(1) substantially obstruct or divert the natural flow of a river, stream, or lake;
(2) substantially change or use any material from the bed, channel, or bank of a river, stream, or lake; or
(3) deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it can pass into a river, stream, or lake.

Fish and Game Code Section 1602 applies to all perennial, intermittent, and ephemeral rivers, streams, and lakes in the State. CDFW's regulatory authority extends to include riparian habitat (including wetlands) supported by a river, stream, or lake regardless of the presence or absence of hydric soils and saturated soil conditions. Generally, the CDFW takes jurisdiction to the top of bank of the stream or to the outer limit of the adjacent riparian vegetation (outer drip line), whichever is greater. Notification is generally required for any project that will take place in or in the vicinity of a river, stream, lake, or their tributaries. This includes rivers or streams that flow at least periodically or permanently through a bed or channel with banks that support fish or other aquatic life and watercourses having a surface or subsurface flow that support or have supported riparian vegetation. A Section 1602 Streambed Alteration Agreement would be required if impacts to identified CDFW jurisdictional areas occur.

Porter Cologne Act

The California *Porter-Cologne Water Quality Control Act* gives the State very broad authority to regulate waters of the State, which are defined as any surface water or groundwater, including saline waters. The Porter-Cologne Act has become an important tool in the post SWANCC and Rapanos regulatory environment, with respect to the state's authority over isolated and insignificant waters. Generally, any person proposing to discharge waste into a water body that could affect its water quality must file a Report of Waste Discharge in the event that there is no Section 404/401 nexus. Although "waste" is partially defined as any waste substance associated with human habitation, the Regional Board also interprets this to include fill discharged into water bodies.

Appendix C

Cultural Resource Investigation

CULTURAL RESOURCE INVESTIGATION IN SUPPORT OF THE VISTA DEL SOL PROJECT, CITY OF RANCHO MIRAGE, RIVERSIDE COUNTY, CALIFORNIA

Prepared by:
Roberta Thomas, M.A., RPA, and Michael Mirro, M.A., RPA

Prepared for:
The Altum Group

Technical Report No. 21-644

PaleoWest
517 S. Ivy Avenue
Monrovia, California 91016
(626) 408-8006

December 28, 2021

Keywords: CEQA; Rancho Mirage; Coachella Valley; Riverside County

CONTENTS

TABLES

MANAGEMENT SUMMARY

PaleoWest LLC (PaleoWest) was contracted by The Altum Group to conduct a Phase I cultural resource assessment for the proposed Vista Del Sol Project (Project). The proposed Project involves the division of two parcels into nine residential lots in the city of Rancho Mirage, Riverside County, California. The Project requires compliance with the California Environmental Quality Act (CEQA); the City of Rancho Mirage (City) is the Lead Agency for the purposes of the CEQA.

This report summarizes the methods and results of the cultural resource investigation of the Project area. The investigation included background research, communication with the Native American Heritage Commission (NAHC) and interested Native American tribal groups, a site visit of the Project area, and resource documentation and evaluation. The purpose of the investigation was to determine the potential for the Project to impact archaeological and historical resources under CEQA.

A cultural resource records search and literature review was completed at the Eastern Information Center (EIC) of the California Historical Resource Information System housed at University of California, Riverside. The records search indicated that no fewer than 11 previous cultural resource studies have been conducted within one-mile of the Project area resulting in the identification of at least one cultural resource. This resource is a historic period archaeological site that consists of the remains of a "jackrabbit homestead" site. No previously recorded resources were reported within the Project area.

As part of the cultural resource assessment of the Project area, PaleoWest also requested a search of the Sacred Lands File (SLF) from the NAHC. Results of the SLF search indicate that there are no known Native American cultural resources within the immediate Project area. The NAHC suggested contacting 18 individuals representing 11 Native American tribal groups to find out if they have additional information about the Project area. The 12 recommended tribal groups were contacted. To date, four responses were received.

PaleoWest completed a pedestrian survey of the Project area on December 7, 2021. No prehistoric or historic period archaeological resources were identified. In addition, no built-environment resources were identified within the Project area. While it appears that the Project area has a low sensitivity for Late Prehistoric and/or ethnohistoric archaeological sites, the Project area has a moderate sensitivity for older buried archaeological resources at deeper depths. Additionally, the Project area has a moderate to high sensitivity for encountering mid-century historic period buried archaeologist deposits. As such, PaleoWest recommends archaeological monitoring at the onset of ground disturbance to determine if continued monitoring is warranted.

In the event that potentially significant cultural resources are encountered during construction activities associated with the Project, a qualified archaeologist shall be obtained to assess the significance of the find in accordance with the criteria set forth in the CRHR. In addition, Health and Safety Code 7050.5, CEQA 15064.5(e), and Public Resources Code 5097.98 mandate the process to be followed in the unlikely event of an accidental discovery of any human remains in a location other than a dedicated cemetery.

1.0 INTRODUCTION

PaleoWest LLC (PaleoWest) was contracted by The Altum Group to conduct a Phase I cultural resource assessment for the proposed Vista Del Sol Project (Project). The proposed Project involves the division of two parcels into nine residential lots in the City of Rancho Mirage, Riverside County, California. The Project requires compliance with the California Environmental Quality Act (CEQA); the City of Rancho Mirage (City) is the Lead Agency for the purposes of the CEQA.

1.1 PROJECT LOCATION

The Project area is located within the city of Rancho Mirage along Vista Del Sol Road, north of Country Club Drive and east of Bob Hope Drive (Figures 1-1). The Project area is on Assessor's Parcel Numbers (APN) 685-280-002 and -003 and totals approximately 10 acres. As shown in Figure 1-2, the Project area is within Section 6, Township 5 South, Range 6 East, San Bernardino Baseline and Meridian (SBBM), as depicted on the Cathedral City, CA 7.5' U.S. Geological Survey (USGS) topographic quadrangle. The elevation of the Project area is between 213 and 234 feet above mean sea level (amsl).

The Project includes a Tentative Tract Map No. 38222 (TTM) and proposes to divide the two existing parcels into nine lots allowing for the development of up to nine single-family homes. The lot sizes range from 43,560 square feet to 45,102 square feet. The maximum depth of proposed excavation is approximately 5 feet for the retention basins.

Access to the Project would be provided by a proposed driveway on Vista Del Sol, which would allow cars onto a proposed private street with a cul-de-sac in the middle of the Project area. The proposed private street, named Bravo Court, would provide access to each single-family residence.

1.2 REPORT ORGANIZATION

This report documents the results of a cultural resource investigation completed for the proposed Project. Chapter 1 introduced the Project location and description. Chapter 2 states the regulatory context that should be considered for the Project. Chapter 3 synthesizes the natural and cultural setting of the Project area and surrounding region. The results of the existing cultural resource data literature and resource record review, the Sacred Lands File (SLF) search, and a summary of the Native American communications is presented in Chapter 4. The field methods employed during this investigation and findings are outlined in Chapter 5 with management recommendation provided in Chapter 6. This is followed by bibliographic references and appendices.

Figure 1-1. Project vicinity map.

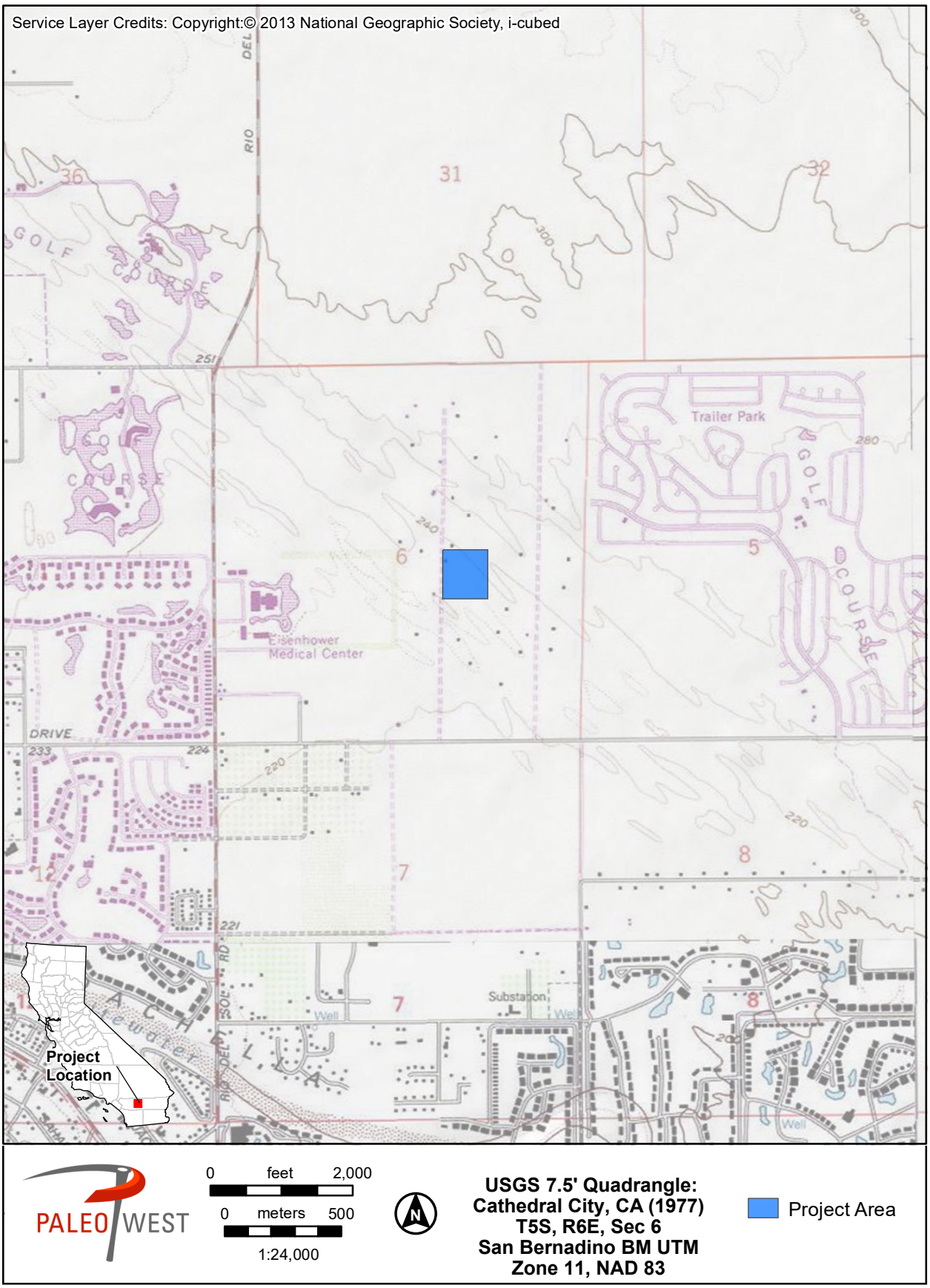

Figure 1-2. Project location map.

2.0 REGULATORY CONTEXT

2.1 STATE

2.1.1 California Environmental Quality Act

The proposed Project is subject to compliance with CEQA, as amended. Compliance with CEQA statutes and guidelines requires both public and private projects with financing or approval from a public agency to assess the project's impact on cultural resources (Public Resources Code Section 21082, 21083.2 and 21084 and California Code of Regulations 10564.5). The first step in the process is to identify cultural resources that may be impacted by the project and then determine whether the resources are "historically significant" resources.

CEQA defines historically significant resources as "resources listed or eligible for listing in the California Register of Historical Resources (CRHR)" (Public Resources Code Section 5024.1). A cultural resource may be considered historically significant if the resource is 45 years old or older, possesses integrity of location, design, setting, materials, workmanship, feeling, and association, and meets any of the following criteria for listing on the CRHR:

1. Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;
2. Is associated with the lives of persons important in our past;
3. Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or,
4. Has yielded, or may be likely to yield, information important in prehistory or history (Public Resources Code Section 5024.1).

Cultural resources are buildings, sites, humanly modified landscapes, traditional cultural properties, structures, or objects that may have historical, architectural, cultural, or scientific importance. CEQA states that if a project will have a significant impact on important cultural resources, deemed "historically significant," then project alternatives and mitigation measures must be considered.

2.1.2 California Assembly Bill 52

Signed into law in September 2014, California Assembly Bill 52 (AB 52) created a new class of resources – tribal cultural resources (TCRs) – for consideration under CEQA. TCRs may include sites, features, places, cultural landscapes, sacred places, or objects with cultural value to California Native American tribes that are listed or determined to be eligible for listing in the CRHR, included in a local register of historical resources, or a resource determined by the lead CEQA agency, in its discretion and supported by substantial evidence, to be significant and eligible for listing on the CRHR. AB 52 requires that the lead CEQA agency consult with California Native American tribes that have requested consultation for projects that may affect tribal cultural resources. The lead CEQA agency shall begin consultation with participating Native American tribes prior to the release of a negative declaration, mitigated negative declaration, or environmental impact report. Under AB 52, a project that has potential to cause

a substantial adverse change to a tribal cultural resource constitutes a significant effect on the environment unless mitigation reduces such effects to a less than significant level.

2.2 LOCAL

2.2.1 City of Rancho Mirage Historic Preservation Commission

"The Historic Preservation Commission was established in 2003, by Municipal Ordinance No. 831, to develop a program to provide a way to identify certain structures and sites which represent eras, events or persons important in Rancho Mirage's cultural, archaeological, social, economic, architectural, and/or political history for the purpose of encouraging the preservation, improvement, and promotion of Rancho Mirage's treasured properties" (City of Rancho Mirage 2017). The Historic Preservation Commission created a local registry for cultural resources called the Rancho Mirage Register of Historic Places and began designating properties for the list in 2003. Currently 72 properties appear on this list (City of Rancho Mirage 2021). None of the designated properties on the Rancho Mirage Register of Historic Places are located within the Project area.

3.0 SETTING

This section of the report summarizes information regarding the physical and cultural setting of the Project area, including the prehistoric, ethnographic, and historic contexts of the general area. Several factors, including topography, available water sources, and biological resources, affect the nature and distribution of prehistoric, ethnographic, and historic-period human activities in an area. This background provides a context for understanding the nature of the cultural resources that may be identified within the region.

3.1 ENVIRONMENTAL SETTING

The Project area is situated east of the Peninsular Ranges in the southern extent of the Coachella Valley at the western edge of the Colorado Desert. The Coachella Valley is bordered by the San Jacinto and Santa Rosa mountains (part of the Peninsular Ranges) to the southwest and by the low, rolling Indio and Mecca hills to the northeast. From the steep slopes of the San Jacinto Mountains, the desert floor descends suddenly at less than 3 kilometers (2 miles) eastward to sea level in the city of Indio, less than 20 miles southeast of the Project area.

South of the Project area, elevations gradually drop to 90 meters (300 feet) bmsl at the Salton Sea Basin. This basin has filled periodically throughout the Pleistocene and Holocene when the Colorado River shifted its course near its mouth at the Gulf of California, flowing north into the basin, and forming a large freshwater lake commonly known as Lake Cahuilla. A major water source flowing through the central valley is the Whitewater River. The river drained the southern slope of the San Bernardino Mountains for thousands of years (Laflin 2001), prior to the development of the Coachella Valley, flowing in a generally south-southeast direction 80.5 kilometers (50 miles) toward the Salton Sea. The Whitewater River was likely the largest perennial stream that entered the Salton Basin during prehistoric times, replenishing the underground aquifer during nonlacustrine intervals. The Whitewater River Storm Channel runs along the western boundary of the Project area.

Prior to the mid-1900s, the climate of the Project region was characterized by low relative humidity, very low rainfall, high summer temperatures of up to 52° C (125° F), and mild winters. Since the 1950s, the relative humidity in the area has risen gradually as more and more golf courses have been built and maintained in the Coachella Valley. High winds are common and are accompanied by blowing sand and dust during the spring and late fall. Within the desert areas surrounding the Project area, the average annual rainfall is as sparse as 6 centimeters (2.5 inches) per year and occurs primarily during the winter months. The Project area is situated within an area identified by Bean and Saubel (1972) as a Lower Sonoran life zone. The Lower Sonoran life zone is characterized by low rainfall, fine-textured alluvial to sandy soils, and xerophytic plant communities.

3.1.1 Lake Cahuilla

Arguably the most important environmental change in the Colorado Desert in the past 2,000 years was the formation of Lake Cahuilla. In response to the western diversion of the Colorado River in the Salton Trough, Lake Cahuilla filled and shrank numerous times throughout the Pleistocene and Holocene. The lake would fill until the water reached an altitude of 12 m (40

feet), the minimum crest of the delta at Cerro Prieto, where overflow would spill into the Gulf of California (Waters 1983:374). Wilke (1976) calculated that it would take roughly 12 to 20 years of receiving the entire flow of the Colorado River to fill Lake Cahuilla to an altitude of 12 m (40 feet). Alternatively, Wilke (1976) also determined that approximately 60 years would be required to completely dry out the lake without input from the Colorado River.

Utilizing radiocarbon assays, historical accounts and evidence, and cross dating of artifacts found along the former Lake Cahuilla shoreline, researchers have posited five lacustrine intervals in the Salton Basin representing an unknown number of stands of Lake Cahuilla during the past 2,000 years (Wilke 1976, Waters 1983, Cleland 1998, Laylander 1994, and Schaefer 1986). The first and earliest of these events has been dated to A.D. 700–890, followed by a gradual, but complete, dessication of the lake at about A.D. 950. The second interval began shortly after A.D. 950, peaking at approximately A.D. 965–1150; followed by another gradual, but complete, desiccation of the lake at A.D. 1210. The third interval began shortly after A.D. 1210, peaking between A.D. 1225 and 1360. The third interval was followed by a gradual, but not complete desiccation of the lake by A.D. 1450; the lake remained approximately 50 m (165 feet) deep at this time. The fourth interval lasted between A.D. 1450–1520, desiccating again by A.D. 1580. The fifth, more recent lacustrine interval of Lake Cahuilla occurred during the Spanish explorations of the region between 1540 and 1775 (Cleland 1998:13).

Recent paleoclimatic research indicates that a Medieval Warm climatic anomaly was registered throughout Far West North American between circa 1,060 and 575 cal B.P. (Graumlich 1993; Spaulding 2001; Stine 1994). Researchers believe the Medieval Warm would have restricted prehistoric occupation in the Southern California deserts to a few suitable water sources such as the Colorado River and Lake Cahuilla. High stands of Lake Cahuilla, whose source is not directly affected by climatic conditions, are in fact registered during the Medieval Warm, suggesting that the area was likely highly favorable for prehistoric occupation.

3.2 PREHISTORIC SETTING

Native American occupation of the Colorado Desert is typically divided into four cultural periods: San Dieguito (ca. 12,000–7,000 years B.P.); Pinto (ca. 7,000–4,000 B.P.); Amargosa (ca. 4,000–1,200 B.P.); and the Late Prehistoric Period (ca. 1,200–200 B.P.). These cultural periods exclude the controversial "Early Man" pre-projectile point materials from Calico. The prehistoric cultural setting discussed below begins at the Late Prehistoric period based on the archival research conducted for the study area.

3.2.1 Late Prehistoric Period

The Late Prehistoric period in the Colorado Desert is marked by the introduction of new artifact types and technological innovations from the preceding Amargosa Period and is sometimes classified as the Patayan Pattern (Cleland 1998; CSRI 1986; Schaefer 1994, 1995). This period is characterized by the introduction of ceramics, including Tizon Brown Ware from the Peninsular Ranges, Colorado Buff Wares from the Colorado River region, and the Salton Buff Ware from the Lake Cahuilla shoreline (Schaefer 1995; Waters 1982). New projectile point types, including Desert Side-notched and Cottonwood Triangular points, signify the introduction of the bow and arrow hunting technology, marking a pre-ceramic phase of the expansion of the earlier Amargosa assemblages perhaps as early as 1,500 B.P. Techniques of floodplain horticulture

were also introduced to the inhabitants along the Colorado River at the same time as ceramics. Additionally, burial practices changed from extended inhumations to cremated remains, sometimes buried in ceramic vessels. Typical of the Hohokam culture from southern Arizona, these traits were introduced to the Colorado River inhabitants and gradually spread west to the Salton trough, Peninsular Ranges, and Coastal Plains of Southern California.

The Patayan Pattern is typified by several differing settlement and subsistence systems (Schaefer 1995). Dispersed seasonal settlements, known as rancherias, were found along the Colorado River. These settlements were composed of *jacal* (i.e., adobe style) structures, semi-subterranean pit houses, *ramadas*, or brush huts, depending on the season and types of settlement. Larger rancherias would disperse to upper terraces of the Colorado River and to special collection areas during the summer months, coinciding with the flood phase of the river, returning to the lower terraces for plant harvesting. At the eastern base of the Peninsular Ranges, the settlement pattern was typified by dispersed rancherias, or villages situated at the mouths of canyons supporting perennial streams, at the base of alluvial fans near springs, or down on the valley floor where a shallow water table allowed wells to be dug (e.g., at Indian Wells). In addition to these sites, specialized sites were in all of the micro-environmental zones that were exploited seasonally. Archaeologically, these specialized sites range in composition from bedrock milling features and pot-drops along trails, to lithic chipping stations and quarries, to temporary camps containing occupational debris including bone, shell, ceramics, flaked and ground stone tools, ornamental items such as beads and pendants, as well as burn features (e.g., fire hearth).

3.3 ETHNOHISTORIC SETTING

The Cahuilla have been studied extensively by Dr. Lowell Bean and much of the following discussion is derived from Bean's description of the Cahuilla in Volume 8 of the *Handbook of North American Indians* (Bean 1978:575–587).

The Cahuilla belong to nonpolitical, nonterritorial patrimoieties that governed marriage patterns as well as patrilineal clans and lineages. Each clan, "political-ritual-corporate units" composed of 3 to 10 lineages, owned a large territory in which each lineage owned a village site with specific resource areas. Clan lineages cooperated in defense, in large communal subsistence activities, and in the performance of rituals and ceremonies. Clans were apt to own land in the valley, foothill, and mountain areas, providing them with the resources of many different ecological niches.

In prehistoric times Cahuilla shelters are believed to have been dome shaped; after contact they tended to be rectangular in shape. Cahuilla shelters were often made of brush, palm fronds, or arrowweed. Most of the Cahuilla domestic activities were performed outside the shelters within the shade of large, expansive *ramadas*.

The Cahuilla were, for the most part, hunting, collecting, harvesting, and protoagricultural peoples. As in most of California, acorns were a major staple, but the roots, leaves, seeds, and fruit of many other plants also were used. Fish, birds, insects, and large and small mammals were also available.

To gather and prepare these food resources, the Cahuilla had an extensive inventory of equipment including bows and arrows, traps, nets, disguises, blinds, spears, hooks and lines, poles for shaking down pine nuts and acorns, cactus pickers, seed beaters, digging sticks and

weights, and pry bars. In addition, the Cahuilla also had an extensive inventory of food processing equipment including hammers and anvils, mortars and pestles, manos and metates, winnowing shells and baskets, strainers, leaching baskets and bowls, knives (made of stone, bone, wood, and carrizo cane), bone saws, and drying racks made of wooden poles to dry fish.

Mountain tops, unusual rock formations, springs, and streams are held sacred to the Cahuilla as are rock art sites and burial and cremation sites. In addition, various birds are revered as sacred beings of great power and sometimes were killed ritually and mourned in mortuary ceremonies like those for important individuals. As such, bird cremation sites are considered sacred by the Cahuilla.

3.4 HISTORICAL SETTING

The history of the California desert region has been reviewed in detail by von Till Warren et al. (1981:85–105). A summary of historical events in the Project area is provided below.

Prior to 1820, very little is known about historic developments in the Coachella Valley. In the early 1850s, the Maricopa-Bradshaw route was established to serve the mining camps developing near La Paz, Arizona (von Till Warren et al. 1981:85). The Maricopa-Bradshaw route paralleled the old Cocomaricopa Trail, an Indian trail that began east of Blythe and roughly followed the present route of Interstate 10 across the Chuckwalla Valley, traversing the Mecca-Indio area and Coachella Valley to the San Gorgonio Pass. During this time, the U.S. Government was strongly promoting the establishment of a railroad route to connect the east and west coasts; however, it was not until 1877 that the Southern Pacific Railroad transected the western Colorado Desert. This railroad route connected the San Gorgonio Pass to the town of Yuma, Arizona via the eastern shore of the Salton Sea. In 1876, Southern Pacific established a railroad station at a remote desert location and named it after the nearby Indian wells. Within 3 years, the name was changed to *Indio*, the Spanish word for Indian (Gudde 1998:177).

Management of the desert lands was largely the responsibility of the General Land Office, and later the Department of Agriculture Grazing Administration. Until the passage of the Taylor Grazing Act of 1934, however, no control was exercised over the California desert lands. Due to the extremely arid nature of the California deserts, this act had virtually no impact on the region. The first legitimate attempts at range management in the Colorado desert did not occur until 1946 when responsibility for managing the desert was transferred to the Bureau of Land Management (BLM). Since that time, the BLM also has been engaged in evaluating lands for their "uses," and classifying them for different types of management (von Till Warren et al. 1981:95).

The paucity of water in many areas of the Colorado Desert discouraged farming, and agricultural development only flourished when water could be imported in significant quantities. Because of the relatively high water table in the Coachella Valley, however, the agricultural industry began to develop prior to the importation of water by means of drilling artesian wells. Beginning in the first decade of the twentieth century, Coachella Valley farmers planted extensive date, fig, and grape acreage. Towns that developed with the agricultural growth include Thermal, Mecca, Indio, and Coachella. Because of the extensive farming efforts, the water table in the Coachella Valley was seriously depleted, stimulating the formation of the Coachella Valley Water District (CVWD) to promote conservation and replenish the groundwater basin.

4.0 CULTURAL RESOURCES INVENTORY

PaleoWest completed a literature review and records search at the EIC, housed at the University of California, Riverside, on November 24, 2021. This inventory effort included the Project area and a one-mile radius around the Project area, collectively termed the Project study area. The objective of this records search was to identify prehistoric or historical cultural resources previously recorded within the study area during prior cultural resource investigations.

As part of the cultural resources inventory, PaleoWest staff also examined historical maps and aerial images to characterize the developmental history of the Project study area and vicinity. A summary of the results of the record search and background research are provided below.

4.1 PREVIOUS CULTURAL RESOURCES INVESTIGATIONS

The records search results indicate that no fewer than 11 previous cultural resource investigations have been completed within the Project study area since 1973 (Table 4-1). None of these studies include or intersect the Project area. As a result, it does not appear that any of the Project area has been previously inventoried for cultural resources.

Table 4-1. Previous Cultural Investigations within the Project Study Area

Report No.	Year	Author(s)	Title
RI-00115	1973	Philip J. Wilke	The Springs Country Club: Expected Impact on Archaeological Resources
RI-00464	1978	Nancy A. Whitney-Desautels	Archaeological Survey Report on a 160-Acre Parcel Located in the Rancho Mirage Area of the County of Riverside
RI-01122	1981	Christopher E. Drover	Environmental Impact Evaluation: Archaeological Assessment of the Proposed Extension of the Monterey and 34th Avenues near Thousand Palms, California
RI-03862	1995	Love, Bruce	Negative Archaeological Survey Report: Frank Sinatra Drive Improvements, Between Morningside Dr/Thompson Rd and Bob Hope Dr, City of Rancho Mirage, Riverside County, California
RI-04365	2000	Duke, Curt	Letter Report: Cultural Resource Assessment for the AT&T Wireless Services Facility Number C564.1, County of Riverside, California
RI-04523	2000	Duke, Curt	Letter Report; Cultural Resource Assessment for AT&T Wireless Services Facility Number C564-2, County of Riverside, California
RI-07217	2002	Curt Duke	Cultural Resource Assessment: AT&T Wireless Services Facility No. C564B Riverside County, California
RI-08263	2009	Carla Allred	Letter Report: Proposed Cellular Tower Project(s) in Riverside County, California, Site Number(s)/ Name(s): LA-3630A/ Tower Co CO CA2528 Blue Eyes TCNS# 53109
RI-09210	2013	Robert J. Wlodarski	A Record Search for the Proposed AT&T Wireless Telecommunications Site LAC564 (Hope/ Sinatra) located at 38005 Vista Del Sol, Rancho Mirage, Riverside County, California 92270

Report No.	Year	Author(s)	Title
RI-10248	2017	Curt Duke	Historic Property Survey Report Rancho Mirage Resignalization Project Highway 111/Bob Hope Drive/Country Club Drive
RI-10249	2017	Nicholas F. Hearth	Archaeological Survey Report Rancho Mirage Resignalization Project Highway 111/Bob Hope Drive/ Country Club Drive

4.2 CULTURAL RESOURCES REPORTED WITHIN ONE MILE OF THE PROJECT AREA

The records search indicated that one cultural resource was previously documented within the Project study area (Table 4-2). This resource is a historic period site that is situated just outside the southwest corner of the Project area. No cultural resources were previously documented within the Project area.

Table 4-2. Previously Recorded Cultural Resource within the Project Study Area

Primary No.	Trinomial	Age	Type	Description
P-33-029012	CA-RIV-012964	Site	Historical	A "jackrabbit homestead" from late 1950 including concrete slab foundation and scattered building debris

4.3 ADDITIONAL SOURCES

Additional sources consulted during the cultural resource literature and data review include the National Register of Historic Places, the Office of Historic Preservation Archaeological Determinations of Eligibility, and the Office of Historic Preservation Built Environment Resources Directory (BERD). There are no listed cultural resources recorded within the Project area or within one- mile of the Project area.

Historical maps consulted include Indio, CA (1901) 30-minute, Edom, CA (1941) 15-minute, and Cathedral City, CA (1958) 7.5-minute USGS quadrangles. Historical aerial images from NETROnline dated 1972, 1996, and 2002 were also reviewed. Aerial imagery indicates that in 1972 the Project area was largely undeveloped except for a small structure in the northwest corner of the property. This small structure is likely a "jackrabbit homestead" built by Charles A. Bracht in the mid-1950s (BLM 2021). A "jackrabbit homestead" is a small structure or dwelling constructed on land purchased from the U.S. government through the Small Tract Act of 1938 in order to file a patent. By 1996 this small structure is no longer extant and there appears to be no remaining evidence of the structure visible in aerial imagery. The USGS topo quads illustrate a small structure in the northwest corner of the property as early as 1958 as well as several other small structures in the immediate surrounding area. In 1996 a dirt road that follows the alignment of Vista Del Sol, immediately adjacent to the Project area, appears in the aerial imagery and by 2002 the road appears to have been paved.

The Project area lacks many of the natural resources (e.g., water) that were exploited by prehistoric inhabitants of the region. No drainages or other hydrological features are present near the Project area. The area is situated well above the high water stand of Lake Cahuilla, which was located approximately 8 to 9 km to the southeast at an elevation of 40 feet amsl. No

mesquite or other dense vegetation was observed in the Project area in any historic aerial images (UCSB 1939); however, the native soils are known to support mesquite (Soil Survey Staff 2021). A review of GLO plat maps (1856, 1914) indicate the presence of drainages and trails to the southwest but no cultural or natural features in the area.

Today, the Project study area is mostly urbanized with a few remaining discontiguous undeveloped parcels where the original landform surface may still be observed. The area originally consisted of a series of longitudinal dunes oriented northwest-southeast (UCSB 1939, 1953) and partially stabilized by vegetation (likely creosote bush and mesquite). An alluvial fan extends into the valley to the southwest at the mouth of Magnesia Spring Canyon and associated deposits extended beneath the dunes. The Whitewater River, which captures all runoff from the nearby mountains, cuts into both the dune and underlying fan deposits and flows to the southeast about 2.1 km southwest of the Project area. Drainage cuts are incised into the fan and dunes along the river floodplain and mesquite clusters were present in the area (UCSB 1939). Dunes were formed in the late Pleistocene through the Holocene from eolian sands originating at Lake Cahuilla, which blew northwest into the valley (Lancaster et al. 2012).

Most prehistoric settlement activity, including habitation and cemetery sites, in this part of the valley are most often associated with the high shoreline of Lake Cahuilla to the southeast or near the margins of the valley near the foothills and slopes where spring water and other viable natural resources are available. Site density drops significantly in the valley center northwest of the shoreline. The village of Kavanish is the closet known ethnographic habitation and is approximately 8.5 km southwest of the Project area (Bean 1978). Most other villages are found farther south or near the base of the mountains by Palm Springs. A stone circle site with 85 rock cairns was documented approximately 3 km southwest of the Project area along the foot of the mountains on the Magnesia Spring Canyon alluvial fan and low density of artifact scatters was noted along the Whitewater River 3 to 8 km to the southeast (Mirro 2012). EIC data show only isolated artifacts and small prehistoric artifacts scatters farther out in the valley to north.

Considering the available data, it appears that the Project area has a low sensitivity for Late Prehistoric and/or ethnohistoric archaeological sites. However, considering the age of the sand dunes, the possibility that older buried archaeological resources may be encountered cannot be entirely ruled out. Furthermore, the presence of the formerly extant "jackrabbit homestead" in the Project area as well as the in the immediate surrounding area suggests a moderate to high sensitivity for encountering mid-century historic period buried artifact and/or feature deposits.

4.4 NATIVE AMERICAN COORDINATION

PaleoWest contacted the Native American Heritage Commission (NAHC) on September 9, 2021, for a review of the SLF. The objective of the SLF search was to determine if the NAHC had any knowledge of Native American cultural resources (e.g., traditional use or gathering area, place of religious or sacred activity, etc.) within the immediate vicinity of the Project area. The NAHC responded on October 12, 2021, stating that the SLF was completed with negative results. The NAHC suggested that 18 individuals representing 12 Native American tribal groups be contacted to elicit information regarding cultural resource issues related to the proposed Project (Appendix A). PaleoWest sent outreach letters to the 12 recommended tribal groups on December 7, 2021. These letters will be followed up by phone calls on December 22, 2021.

To date four responses have been received. The Quechan Historic Preservation Department sent an email indicating the Tribe does not wish to comment on the Project, stating they defer

to more local tribes. Ms. Victoria Martin, Tribal Secretary for the Augustine Band of Cahuilla Indians, stated that the Tribe is unaware of any specific cultural resources within he Project area; however, if any should be encountered during the development of the Project, the Tribe requests to be contacted immediately for further evaluation. Mr. BobbyRay Esparza, Cultural Director for the Cahuilla Band of Indians, requested a copy of all the cultural materials associated with the Project for tribal review. Mr. Joseph Ontiveros, Cultural Resources Department for the Soboba Band of Luiseno Indians, indicated that the Tribe will defer to the Torres-Martinez Desert Cahuilla Indians, Agua Caliente Band of Cahuilla Indians, and Cabazon Band of Mission Indians.

5.0 FIELD INVESTIGATION

5.1 FIELD METHODS

A cultural resources survey of the Project area was completed by PaleoWest Archaeologist Alexis Francois on December 7, 2021. The fieldwork effort included an intensive pedestrian survey of the entire Project area, totaling approximately 10 acres. The intensive pedestrian survey was conducted by walking a series of parallel transects spaced at 10- to 15-m (33- to 49-ft) intervals. The archaeologist carefully inspected all areas within the Project area likely to contain or exhibit sensitive cultural resources to ensure discovery and documentation of any visible, potentially significant cultural resources within the Project area.

Prehistoric site indicators may include areas of darker soil with concentrations of ash, charcoal, bits of animal bone (burned or unburned), shell, flaked stone, ground stone, or even human bone. Historical site indicators may include fence lines, ditches, standing buildings, objects or structures such as sheds, or concentrations of materials at least 45 years in age, such as domestic refuse (e.g., glass bottles, ceramics, toys, buttons or leather shoes), refuse from other pursuits such as agriculture (e.g., metal tanks, farm machinery parts, horse shoes) or structural materials (e.g., nails, glass window panes, corrugated metal, wood posts or planks, metal pipes and fittings, railroad spurs, etc.).

5.2 FIELD RESULTS

The Project area is comprised of low-lying sand dunes and has an uphill southernly aspect with a 5%-10% slope (Figure 5-1 and 5-2). The soils are fine- to medium-grained eolian sands that are very light-tan in color made of quartz and granitic material. Vegetation within the Project area is a sparse Creosote Bush Scrub with creosote bush (*Larrea tridentata*), teddy bear cholla (*Cylindropuntia bigelovii*), cheesebush (*Ambrosia salsola*), white bursage (*Ambrosia dumosa*), fourwing saltbush (*Atriplex canescens*), and other herbaceous plants and grasses. Ground visibility in Project area is good to excellent (70-80%). Modern trash was noted throughout the Project area with larger concentrations along the western and eastern margins of the boundary near proximity the road and private property line.

No evidence of the "jackrabbit homestead" built by Charles A. Bracht in the northwest corner of the Project area was identified. An approximately 16.5 x 23 feet concrete pad or foundation of unknown age was noted in the southwest corner of the Project area (Figure 5-3). The foundation may have been associated with a "jackrabbit homestead" built by Daniel Martin Callahan after he purchased five acres of land in 1961 under the Small Tract Act of 1938; however, a building or foundation is not visible at this location in the 1972 historic aerial (BLM 2021). The extant foundation is first discernable in the 1996 aerial (Google Earth 2021). This foundation is adjacent to the previously recorded "jackrabbit homestead" (33-012964) identified outside the Project area. There is no indication that these two structures were present at the same time or were associated with one another.

No prehistoric or historic (i.e., 45 years or older) archaeological resources were identified on the surface of the Project area during the survey effort. In addition, no built-environment resources were identified during the survey.

Figure 5-1. Overview of the Project area, facing northeast.

Figure 5-2. Overview of the Project area, facing north.

Figure 5-3. Overview of the concrete pad, facing east.

6.0 MANAGEMENT RECOMMENDATIONS

As a result of the cultural resource records search and survey, no prehistoric or historic (i.e., 45 years or older) archaeological, or built-environment resources were identified in the Project area. A concrete pad of unknown age was noted within the southeast corner of the Project area; this pad does not appear on historic aerial imagery until 1996. Additionally, historic aerial images illustrate a small "jackrabbit homestead" structure in the northeast corner of the Project area; however, there was no evidence of the structure within the Project area during the survey. Considering the available data, it appears that the Project area has a low sensitivity for Late Prehistoric and/or ethnohistoric archaeological sites. However, considering the age of the sand dunes, the possibility that older buried archaeological resources may be encountered at deeper depths does exist. Furthermore, the presence of two potential "jackrabbit homesteads" in the Project area suggests a moderate to high sensitivity for encountering mid-century historic buried artifact and/or feature deposits. As such, PaleoWest recommends archaeological monitoring at the onset of ground disturbance to determine if continued monitoring is warranted.

In the event that potentially significant cultural materials are encountered during Project-related ground-disturbing activities, all work should be halted in the vicinity of the discovery until a qualified archaeologist can visit the site of discovery and assess the significance of the archaeological resource. In addition, Health and Safety Code 7050.5, CEQA 15064.5(e), and Public Resources Code 5097.98 mandate the process to be followed in the unlikely event of an accidental discovery of any human remains in a location other than a dedicated cemetery. Finally, should additional actions be proposed outside the currently defined Project area that have the potential for additional subsurface disturbance, further cultural resource management may be required.

7.0 REFERENCES

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City of Rancho Mirage

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Appendix A.
Native American Coordination

NATIVE AMERICAN HERITAGE COMMISSION

NAHC HEADQUARTERS
1550 Harbor Boulevard
Suite 100
West Sacramento,
California 95691
(916) 373-3710
nahc@nahc.ca.gov
NAHC.ca.gov

October 12, 2021

Roberta Thomas
PaleoWest Archaeology

Via Email to: rthomas@paleowest.com

Re: Vista Del Sol Phase I Project, Riverside County

Dear Ms. Thomas:

A record search of the Native American Heritage Commission (NAHC) Sacred Lands File (SLF) was completed for the information you have submitted for the above referenced project. The results were negative. However, the absence of specific site information in the SLF does not indicate the absence of cultural resources in any project area. Other sources of cultural resources should also be contacted for information regarding known and recorded sites.

Attached is a list of Native American tribes who may also have knowledge of cultural resources in the project area. This list should provide a starting place in locating areas of potential adverse impact within the proposed project area. I suggest you contact all of those indicated; if they cannot supply information, they might recommend others with specific knowledge. By contacting all those listed, your organization will be better able to respond to claims of failure to consult with the appropriate tribe. If a response has not been received within two weeks of notification, the Commission requests that you follow-up with a telephone call or email to ensure that the project information has been received.

If you receive notification of change of addresses and phone numbers from tribes, please notify me. With your assistance, we can assure that our lists contain current information.

If you have any questions or need additional information, please contact me at my email address: Andrew.Green@nahc.ca.gov.

Sincerely,

Andrew Green

Andrew Green
Cultural Resources Analyst

Attachment

Native American Heritage Commission
Native American Contact List
Riverside County
10/12/2021

Agua Caliente Band of Cahuilla Indians
Patricia Garcia-Plotkin, Director
5401 Dinah Shore Drive — Cahuilla
Palm Springs, CA, 92264
Phone: (760) 699 - 6907
Fax: (760) 699-6924
ACBCI-THPO@aguacaliente.net

Agua Caliente Band of Cahuilla Indians
Jeff Grubbe, Chairperson
5401 Dinah Shore Drive — Cahuilla
Palm Springs, CA, 92264
Phone: (760) 699 - 6800
Fax: (760) 699-6919

Augustine Band of Cahuilla Mission Indians
Amanda Vance, Chairperson
P.O. Box 846 — Cahuilla
Coachella, CA, 92236
Phone: (760) 398 - 4722
Fax: (760) 369-7161
hhaines@augustinetribe.com

Cabazon Band of Mission Indians
Doug Welmas, Chairperson
84-245 Indio Springs Parkway — Cahuilla
Indio, CA, 92203
Phone: (760) 342 - 2593
Fax: (760) 347-7880
jstapp@cabazonindians-nsn.gov

Cahuilla Band of Indians
Daniel Salgado, Chairperson
52701 U.S. Highway 371 — Cahuilla
Anza, CA, 92539
Phone: (951) 763 - 5549
Fax: (951) 763-2808
Chairman@cahuilla.net

Los Coyotes Band of Cahuilla and Cupeño Indians
Ray Chapparosa, Chairperson
P.O. Box 189 — Cahuilla
Warner Springs, CA, 92086-0189
Phone: (760) 782 - 0711
Fax: (760) 782-0712

Morongo Band of Mission Indians
Robert Martin, Chairperson
12700 Pumarra Road — Cahuilla, Serrano
Banning, CA, 92220
Phone: (951) 755 - 5110
Fax: (951) 755-5177
abrierty@morongo-nsn.gov

Morongo Band of Mission Indians
Ann Brierty, THPO
12700 Pumarra Road — Cahuilla, Serrano
Banning, CA, 92220
Phone: (951) 755 - 5259
Fax: (951) 572-6004
abrierty@morongo-nsn.gov

Quechan Tribe of the Fort Yuma Reservation
Manfred Scott, Acting Chairman
Kw'ts'an Cultural Committee
P.O. Box 1899 — Quechan
Yuma, AZ, 85366
Phone: (928) 750 - 2516
scottmanfred@yahoo.com

Quechan Tribe of the Fort Yuma Reservation
Jill McCormick, Historic Preservation Officer
P.O. Box 1899 — Quechan
Yuma, AZ, 85366
Phone: (760) 572 - 2423
historicpreservation@quechantribe.com

This list is current only as of the date of this document. Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resource Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources assessment for the proposed Vista Del Sol Phase I Project, Riverside County.

Native American Heritage Commission
Native American Contact List
Riverside County
10/12/2021

Ramona Band of Cahuilla
John Gomez, Environmental Coordinator
P. O. Box 391670 — Cahuilla
Anza, CA, 92539
Phone: (951) 763 - 4105
Fax: (951) 763-4325
jgomez@ramona-nsn.gov

Ramona Band of Cahuilla
Joseph Hamilton, Chairperson
P.O. Box 391670 — Cahuilla
Anza, CA, 92539
Phone: (951) 763 - 4105
Fax: (951) 763-4325
admin@ramona-nsn.gov

Santa Rosa Band of Cahuilla Indians
Lovina Redner, Tribal Chair
P.O. Box 391820 — Cahuilla
Anza, CA, 92539
Phone: (951) 659 - 2700
Fax: (951) 659-2228
lsaul@santarosa-nsn.gov

Soboba Band of Luiseno Indians
Isaiah Vivanco, Chairperson
P. O. Box 487 — Cahuilla
San Jacinto, CA, 92581 — Luiseno
Phone: (951) 654 - 5544
Fax: (951) 654-4198
ivivanco@soboba-nsn.gov

Soboba Band of Luiseno Indians
Joseph Ontiveros, Cultural Resource Department
P.O. BOX 487 — Cahuilla
San Jacinto, CA, 92581 — Luiseno
Phone: (951) 663 - 5279
Fax: (951) 654-4198
jontiveros@soboba-nsn.gov

Torres-Martinez Desert Cahuilla Indians
Michael Mirelez, Cultural Resource Coordinator
P.O. Box 1160 — Cahuilla
Thermal, CA, 92274
Phone: (760) 399 - 0022
Fax: (760) 397-8146
mmirelez@tmdci.org

Twenty-Nine Palms Band of Mission Indians
Anthony Madrigal, Tribal Historic Preservation Officer
46-200 Harrison Place — Chemehuevi
Coachella, CA, 92236
Phone: (760) 775 - 3259
amadrigal@29palmsbomi-nsn.gov

Twenty-Nine Palms Band of Mission Indians
Darrell Mike, Chairperson
46-200 Harrison Place — Chemehuevi
Coachella, CA, 92236
Phone: (760) 863 - 2444
Fax: (760) 863-2449
29chairman@29palmsbomi-nsn.gov

This list is current only as of the date of this document. Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resource Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources assessment for the proposed Vista Del Sol Phase I Project, Riverside County.

PALEOWEST

T: 626.408.8006
info@paleowest.com

LOS ANGELES COUNTY
517 S. Ivy Avenue
Monrovia, CA 91016

December 7, 2021

Ann Brierty, THPO
Morongo Band of Mission Indians
12700 Pumarra Road
Banning, CA 92220
Transmitted via email to abrierty@morongo-nsn.gov

RE: Cultural Resource Investigation for the Vista Del Sol Residential Development Project in the City of Rancho Mirage, Riverside County, California

Dear Ms. Brierty,

On behalf of the Altum Group, PaleoWest, LLC (PaleoWest) is conducting a cultural resource investigation in compliance with the California Environmental Quality Act for the Vista Del Sol Residential Development Project (Project) in the city of Rancho Mirage, Riverside County, California. The proposed Project consists of development of up to nine single family homes on two existing parcels (APNs 685-280-002 and -003) totaling approximately 10 acres in size. The Project area is located on the Cathedral City, Calif. 7.5' USGS quadrangle map, within Section 6 in T5S/R6E (see attached map).

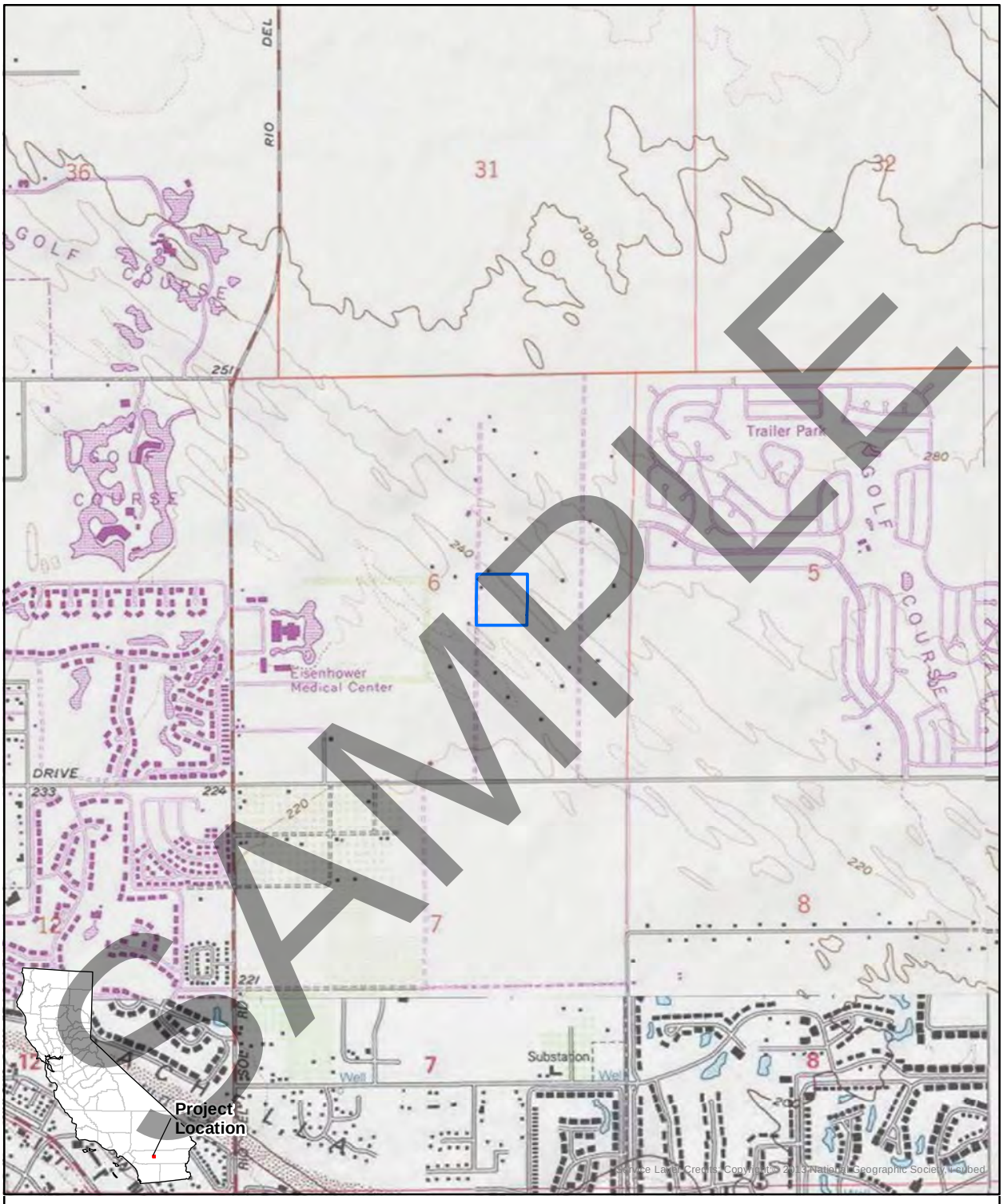
A literature review and records search for the Project area was conducted at the Eastern Information Center. The records search indicated that no cultural resources have been recorded within or immediately adjacent to the Project area. PaleoWest conducted an intensive pedestrian survey of the Project area on December 7, 2021. During the survey, PaleoWest did not identify any archaeological resources or built-environment resources within the Project area. One concrete slab of indeterminate age was identified in the southwestern corner of the Project area.

As part of the cultural resource investigation of the Project area, PaleoWest requested a search of the Native American Heritage Commission's (NAHC's) *Sacred Lands File* on September 9, 2021. The NAHC responded on October 12, 2021 indicating that no Native American cultural resources have been identified within the immediate vicinity of the Project area. However, should your records show that cultural properties exist within or near the Project area (see enclosed map), please contact me at (918) 232-4312 or rthomas@paleowest.com. I will follow-up with a phone call or email if I do not hear from you.

Your comments are very important to us, and to the successful completion of this Project. I look forward to hearing from you in the near future. Thank you, in advance, for taking the time to review this request.

Sincerely,

Roberta Thomas, M.A., RPA
Senior Archaeologist
PaleoWest



PALEO WEST

0 feet 2,000

0 meters 500

1:24,000

USGS 7.5' Quadrangles:
T5S R6E, Sec 6
UTM Zone 11, NAD 83 SBBM

Project Area

Native American Contact/Response Matrix			
Recommended Contacts (Name and Tribal Affiliation)	Initial Contact	Follow up Attempts	Comments/Notes
Patricia Garcia-Plotkin, Director, Agua Caliente Band of Cahuilla Indians	Letter/Email dated 12/7/21	Call 12/22/21	Left voicemail message
Amanda Vance, Chairperson, Augustine Band of Cahuilla Mission Indians	Letter/Email dated 12/7/21	NA	Response received via email 12/8/21. Response states that at the time of the inquiry, the Augustine Band of Cahuilla Indians is unaware of specific cultural resources that may be affected by the proposed project, however, in the event, any cultural resources are discovered during the development of this project please contact their office immediately for further evaluation.
Doug Welmas, Chairperson, Cabazon Band of Mission Indians	Letter/Email dated 12/7/21	Call 12/22/21	Reached a voicemail but appears to be for Luis Lissa? Did not leave message as this may be an incorrect number
Daniel Salgado, Chairperson, Cahuilla Band of Indians	Letter/Email dated 12/7/21	NA	Response received via email 12/8/21. Response states that the Cahuilla Band of Indians would like to request all cultural materials associated with the project for review.
Ray Chapparosa Chairman, Los Coyotes Band of Cahuilla and Cupeño Indians	Letter dated 12/7/21	Call 12/22/21	Called and left message with office staff
Ann Brierty, THPO, Morongo Band of Mission Indians	Letter/Email dated 12/7/21	Call 12/22/21	Left voicemail message
Jill McCormick, Historic Preservation Officer, Quechan Tribe of the Fort Yuma Reservation	Letter/Email dated 12/7/21	NA	Response received via email 12/13/21. Response states that the Quechan Tribe of the Fort Yuma Reservation defers to the more local Tribes and support their decisions on the project.
John Gomez, Environmental Coordinator, Ramona Band of Cahuilla	Letter/Email dated 12/7/21	Call 12/22/21	Reached a voicemail but appears to be a wrong number? Did not leave message as this may be an incorrect number
Lovina Redner, Tribal Chairperson, Santa Rosa Band of Cahuilla Indians	Letter/Email dated 12/7/21	Call 12/22/21	Left message with office staff

Native American Contact/Response Matrix			
Recommended Contacts (Name and Tribal Affiliation)	Initial Contact	Follow up Attempts	Comments/Notes
Joseph Ontiveros, Cultural Resources Department, Soboba Band of Luiseno Indians	Letter/Email dated 12/7/21	Call 12/22/21	Spoke with Mr. Ontiveros and he defers to the Torres-Martinez Desert Cahuilla Indians, Agua Caliente Band of Cahuilla Indians, and Cabazon Band of Mission Indians
Michael Mirelez, Cultural Resource Coordinator, Torres-Martinez Desert Cahuilla Indians	Letter/Email dated 12/7/21	Call 12/22/21	Attempted to leave voicemail but the mailbox is full and not accepting more voicemails
Anthony Madrigal, Tribal Historic Preservation Officer, Twenty-Nine Palms Band of Mission Indians	Letter/Email dated 12/7/21	Call 12/22/21	Left voicemail message

AUGUSTINE BAND OF CAHUILLA INDIANS
PO Box 846 84-481 Avenue 54 Coachella CA 92236
Telephone: (760) 398-4722
Fax (760) 369-7161
Tribal Chairperson: Amanda Vance
Tribal Vice-Chairperson: William Vance
Tribal Secretary: Victoria Martin

Date: December 8, 2021

RE: **Cultural Resource Investigation for the Vista Del Sol Residential Development Project in the City of Rancho Mirage, Riverside County, California**

Dear: Roberta Thomas
Tribal Consultation Manager

Thank you for the opportunity to offer input concerning the development of the above-identified project. We appreciate your sensitivity to the cultural resources that may be impacted by your project and the importance of these cultural resources to the Native American peoples that have occupied the land surrounding the area of your project for thousands of years. Unfortunately, increased development and lack of sensitivity to cultural resources have resulted in many significant cultural resources being destroyed or substantially altered and impacted. Your invitation to consult on this project is greatly appreciated.

At this time, we are unaware of specific cultural resources that may be affected by the proposed project, however, in the event, you should discover any cultural resources during the development of this project please contact our office immediately for further evaluation.

Very truly yours,

Victoria Martin

Victoria Martin, Tribal Secretary
Augustine Band of Cahuilla Indians

Roberta Thomas

From: BobbyRay Esparza <Besparza@cahuilla.net>
Sent: Wednesday, December 8, 2021 1:50 PM
To: Roberta Thomas
Cc: anthony madrigal
Subject: Re: Vista Del Sol Project (21-0695)

Hello Robbie,

The Cahuilla Band of Indians received and reviewed the project letter regarding the above project. We would like to request all cultural materials associated with the project for review.

Respectfully,

BobbyRay Esparza
Cultural Director
Cahuilla Band of Indians
Cell: (760) 423-2773
Office: (951) 763-5549
Fax: (951) 763-2808

From: Daniel Salgado <CHAIRMAN@CAHUILLA.NET>
Sent: Tuesday, December 7, 2021 5:26 PM
To: Anthony Madrigal Sr <Amadrigalsr@cahuilla.net>; BobbyRay Esparza <Besparza@cahuilla.net>
Subject: Fwd: Vista Del Sol Project (21-0695)

Daniel Salgado
Tribal Council Chairman
Cahuilla Band of Indians

From: Roberta Thomas <rthomas@paleowest.com>
Sent: Tuesday, December 7, 2021 4:40:40 PM
To: Daniel Salgado <CHAIRMAN@CAHUILLA.NET>
Subject: Vista Del Sol Project (21-0695)

Please find the attached letter and accompanying map for the Vista Del Sol Project in Riverside County.

Best,
Robbie

Roberta Thomas | Senior Archaeologist
PaleoWest
rthomas@paleowest.com
918.232.4312
www.paleowest.com

Los Angeles County Office
517 S. Ivy Avenue
Monrovia, CA, 91016

Roberta Thomas

From: Quechan Historic Preservation Officer <historicpreservation@quechantribe.com>
Sent: Monday, December 13, 2021 9:15 AM
To: Roberta Thomas
Subject: RE: Vista Del Sol Project (21-0695)

This email is to inform you that we have no comments on this project. We defer to the more local Tribes and support their decisions on the projects.

From: Quechan Historic Preservation [mailto:historicpreservation@quechantribe.com]
Sent: Monday, December 13, 2021 10:15 AM
To: historicpreservation@quechantribe.com
Subject: FW: Vista Del Sol Project (21-0695)

From: Roberta Thomas [mailto:rthomas@paleowest.com]
Sent: Tuesday, December 7, 2021 5:41 PM
To: historicpreservation@quechantribe.com
Subject: Vista Del Sol Project (21-0695)

Please find the attached letter and accompanying map for the Vista Del Sol Project in Riverside County.

Best,
Robbie

Roberta Thomas | Senior Archaeologist
PaleoWest
rthomas@paleowest.com
918.232.4312
www.paleowest.com

Los Angeles County Office
517 S. Ivy Avenue
Monrovia, CA, 91016

Appendix D

Noise Impact Study

TTM 38222 - Noise

Noise Impact Study

City of Rancho Mirage, CA

Prepared for:

Thomas Strand
The Altum Group
72140 Magnesia Falls, Suite 1
Rancho Mirage, CA 92270

Prepared by:

MD Acoustics, LLC
Francisco Irarrazabal & Robert Pearson
1197 Los Angeles Ave, Ste C-256
Simi Valley, CA 93065

Date: 10/6/2021

TABLE OF CONTENTS

LIST OF APPENDICES

LIST OF EXHIBITS

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1.0 Introduction

1.1 Purpose of Analysis and Study Objectives

This noise assessment was prepared to evaluate the potential noise impacts for the project study area and to recommend noise mitigation measures, if necessary, to minimize the potential noise impacts. The assessment was conducted and compared to the noise standards set forth by the Federal, State and Local agencies. Consistent with the City's Noise Guidelines, the project must demonstrate compliance to the applicable noise criterion as outlined within the City's Noise Element and Municipal Code.

The following is provided in this report:

- A description of the study area and the proposed project
- Information regarding the fundamentals of noise
- A description of the local noise guidelines and standards
- An analysis of traffic noise impacts to and from the project site
- An analysis of construction noise impacts

1.2 Site Location and Study Area

The project site is located along Vista del Sol, between Country Club Drive and Frank Sinatra Drive in Rancho Mirage, California, as shown in Exhibit A. The site is currently zoned as residential estate use with vacant residential use to the north, east, and south. Land use category to the west is zoned as institutional with hospital land use type.

1.3 Proposed Project Description

The Project proposes a residential-use development consisting of 9-lots, single-family residential dwelling units, on 10.122 acres. As a worst-case scenario, this assessment assumes the project is built-out in one (1) complete phase. Construction activities within the Project area will consist of on-site grading, building, paving, and architectural coating.

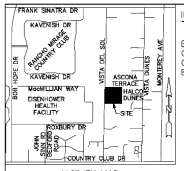
This study assesses both the traffic and short-term stationary noise to and from the project site and compares the results to the applicable City noise limits. The primary source of traffic noise propagates from Vista del Sol. The primary source of short-term stationary noise propagates from construction equipment to be deployed in the area for construction activities. The site plan used for this is illustrated in Exhibit B.

Exhibit A

Location Map

Exhibit B

Site Plan



VICINITY MAP
NOT TO SCALE

IN THE CITY OF RANCHO MIRAGE, COUNTY OF RIVERSIDE, STATE OF CALIFORNIA

TENTATIVE TRACT MAP No. 38222

BEING A SUBDIVISION OF THE NORTH ONE-HALF, OF THE NORTHEAST QUARTER, OF THE NORTHWEST QUARTER, OF THE SOUTHEAST QUARTER, AND THE SOUTH ONE-HALF OF THE NORTHEAST QUARTER, OF THE NORTHWEST QUARTER, OF THE SOUTHEAST QUARTER, BOTH IN TOWNSHIP 5 SOUTH, RANGE 6 EAST, SAN BERNARDINO BASE AND MERIDIAN

OWNER:
BRAVO PROPERTIES INC., A CALIFORNIA CORPORATION

ASSESSOR'S PARCEL NUMBER:
685-280-002 & 685-280-003

DEVELOPER:
BRAVO PROPERTIES INC., A CALIFORNIA CORPORATION

LEGAL DESCRIPTION:
THE LAND REFERRED TO HEREIN IS SITUATED IN THE STATE OF CALIFORNIA, COUNTY OF RIVERSIDE, CITY OF RANCHO MIRAGE, AND DESCRIBED AS FOLLOWS:

APN 685-280-002
THE NORTH ONE-HALF, OF THE NORTHEAST ONE-QUARTER, OF THE NORTHWEST ONE-QUARTER, OF THE SOUTHEAST QUARTER OF SECTION 6, TOWNSHIP 5 SOUTH, RANGE 6 EAST, SAN BERNARDINO BASE AND MERIDIAN

EXCEPT ALL OIL GAS, AND OTHER MINERAL DEPOSITS, TOGETHER WITH THE RIGHT TO PROSPECT FOR, MINE AND REMOVE THE SAME, AS RESERVED IN THE PATENT FROM THE UNITED STATES OF AMERICA RECORDED APRIL 1, 1958, AS INSTRUMENT NO. 23556, OF OFFICIAL RECORDS.

AND

APN 685-280-003
THE SOUTH HALF OF THE NORTHEAST QUARTER OF THE NORTHWEST QUARTER OF THE SOUTHEAST QUARTER OF SECTION 6, TOWNSHIP 5 SOUTH, RANGE 6 EAST, SAN BERNARDINO BASE AND MERIDIAN, IN THE COUNTY OF RIVERSIDE, STATE OF CALIFORNIA.

EXCEPTING THEREFROM ALL OIL, GAS AND OTHER MINERAL DEPOSITS, TOGETHER WITH THE RIGHT TO PROSPECT FOR, MINE, AND REMOVE THE SAME ACCORDING TO THE PROVISIONS OF THE ACT OF CONGRESS APPROVED JUNE 1, 1938 (52 STAT. 609) AS RESERVED IN PATENTS FILED FOR RECORD NOVEMBER 29, 1963 AS INSTRUMENT NO. 125873 OF OFFICIAL RECORDS.

FLOOD PLAN REVIEW:
OUTSIDE FLOODPLAIN, REVIEW NOT REQUIRED

WATERSHED: WHITEWATER

WATER DISTRICT: COACHELLA VALLEY WATER DISTRICT

FLOOD CONTROL DISTRICT: COACHELLA VALLEY WATER DISTRICT

LOT AREA: 40,917 SQ. FT. (10.122 AC)

SCHOOL DISTRICT: DESERT SANDS UNIFIED SCHOOL

UTILITIES:

GAS:	SOUTHERN CALIFORNIA GAS	800-427-2000
ELECTRIC:	RANCHO MIRAGE ENERGY AUTHORITY	800-990-7788
ELECTRIC:	IMPERIAL IRRIGATION DISTRICT	760-482-9600
ELECTRIC:	SOUTHERN CALIFORNIA EDISON	800-990-7788
TELEPHONE:	FRONTIER COMMUNICATIONS	844-903-2037
SANITARY SEWER/WATER:	COACHELLA VALLEY WATER DISTRICT	760-398-2651
CABLE/INTERNET:	CHARTER SPECTRUM:	888-438-2427
CABLE/INTERNET:	DIRECTV	866-875-3599
CABLE/INTERNET:	FRONTIER	833-844-6538
TRASH:	BURRTEC	760-340-2113

FLOOD ZONE:
MAP NO. 06065C1595G EFFECTIVE DATE AUGUST 28, 2008

ZONE X:AREAS DETERMINED TO BE OUTSIDE OF THE 0.2% ANNUAL CHANCE FLOOD;

GENERAL OR SPECIFIC PLAN:
NOT IN A SPECIFIC PLAN

ZONING CLASSIFICATION:

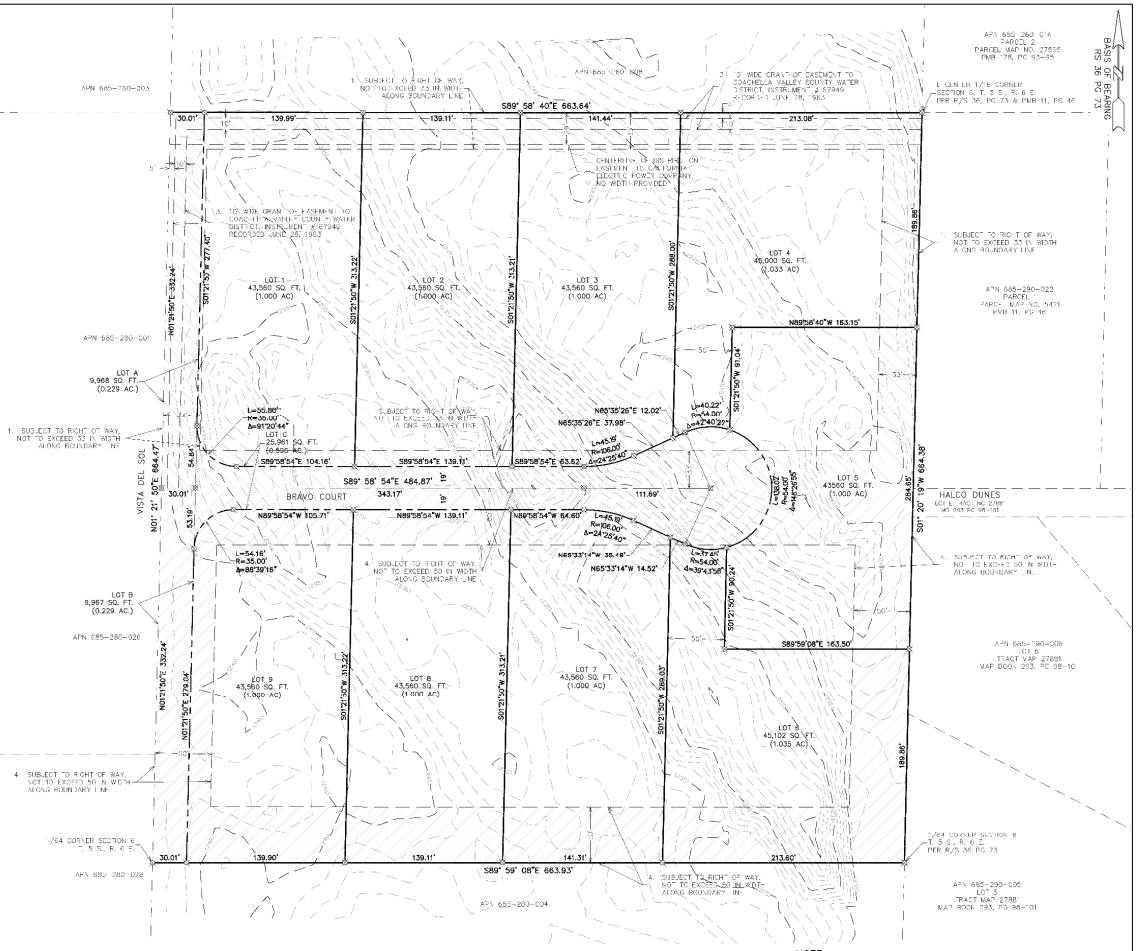
RESIDENTIAL ESTATE R-E	1 DU/AC MAX.
MINIMUM LOT SIZE	1 AC
MINIMUM LOT WIDTH	100'
MINIMUM LOT DEPTH	100'
MINIMUM FRONT SETBACK	25'
MINIMUM SIDE SETBACK	10'
MINIMUM STREET SIDE SETBACK	15'
MINIMUM REAR SETBACK	25'

EASEMENTS:

APN 685-280-002
1. A RIGHT OF WAY FOR DITCHES AND CANALS AS RESERVED BY THE UNITED STATES OF AMERICA (BLANKET IN NATURE UNABLE TO PLOT), AND RIGHT OF WAY FOR ROAD WAY AND PUBLIC UTILITY PURPOSES NOT TO EXCEED 33 FEET IN WIDTH ALONG THE BOUNDARY LINES AS STATED IN THE PATENT RECORDED APRIL 01, 1958 AS INSTRUMENT NO. 23556 OF OFFICIAL RECORDS.
2. AN EASEMENT FOR PUBLIC UTILITIES AND INCIDENTAL PURPOSES IN THE DOCUMENT RECORDED AUGUST 11, 1961 AS BOOK 2961, PAGE 412 OF OFFICIAL RECORDS.
3. AN EASEMENT FOR BUILD AND MAINTAIN A PERMANENT UNDERGROUND PIPELINE WITH ALL FIXTURES, DEVISEES, AND APPURTENANCES USED OR USEFUL IN THE OPERATION OF SAID PIPELINE, THROUGH, OVER, UNDER, ALONG, AND ACROSS AND INCIDENTAL PURPOSES IN THE DOCUMENT RECORDED JUNE 28, 1963 AS INSTRUMENT NO. 67949 OF OFFICIAL RECORDS.

APN 685-280-003
4. A RIGHT OF WAY FOR DITCHES AND CANALS AS RESERVED BY THE UNITED STATES OF AMERICA (BLANKET IN NATURE UNABLE TO PLOT), AND RIGHT OF WAY FOR ROAD WAY AND PUBLIC UTILITY PURPOSES NOT TO EXCEED 50 FEET IN WIDTH ALONG THE BOUNDARY LINES AS STATED IN THE PATENT RECORDED NOVEMBER 29, 1963 AS INSTRUMENT NO. 125873 OF OFFICIAL RECORDS.

THOMAS BROS. MAP PAGE/GRID
PAGE: 818, GRID: D2



NOTE:
1. UNAUTHORIZED CHANGES & USES: THE ENGINEER PREPARING THESE PLANS WILL NOT BE RESPONSIBLE FOR, OR LIABLE FOR, UNAUTHORIZED CHANGES TO OR USE OF THESE PLANS. ALL CHANGES TO THE PLANS MUST BE IN WRITING AND MUST BE APPROVED BY THE PREPARER OF THESE PLANS.
2. CONSTRUCTION CONTRACTOR AGREES THAT IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES, CONSTRUCTION CONTRACTOR WILL BE REQUIRED TO ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THE PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY, THAT THIS REQUIREMENT SHALL BE MADE TO APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS, AND CONSTRUCTION CONTRACTOR FURTHER AGREES TO DEFEND, INDEMNIFY AND HOLD DESIGN PROFESSIONAL HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT, EXCEPTING LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF DESIGN PROFESSIONAL.

IMPORTANT NOTICE CALL BEFORE YOU DIG
SECTION 4216 OF THE GOVERNMENT CODE REQUIRES AN INQUIRY IDENTIFICATION NUMBER BE ISSUED BEFORE A "NOTIFY TO EXCAVATE" WILL BE VALID FOR YOUR PRE-EXCAVATION I.D. NUMBER CALL UNDERGROUND SERVICE ALERT TOLL FREE 1-800-227-2600 TWO WORKING DAYS BEFORE YOU DIG

UNAUTHORIZED CHANGES & USES: THE ENGINEER PREPARING THESE PLANS WILL NOT BE RESPONSIBLE FOR, OR LIABLE FOR, UNAUTHORIZED CHANGES TO OR USES OF THESE PLANS. ALL CHANGES TO THE PLANS MUST BE IN WRITING AND MUST BE APPROVED BY THE PREPARER OF THESE PLANS.

ENGINEER'S NOTE TO CONTRACTOR: CONSTRUCTION CONTRACTOR AGREES THAT IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES, CONSTRUCTION CONTRACTOR WILL BE REQUIRED TO ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THE PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY, THAT THIS REQUIREMENT SHALL BE MADE TO APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS, AND CONSTRUCTION CONTRACTOR FURTHER AGREES TO DEFEND, INDEMNIFY AND HOLD DESIGN PROFESSIONAL HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT, EXCEPTING LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF DESIGN PROFESSIONAL. THE ENGINEER HAS LOCATED OR CAUSED TO BE LOCATED ALL KNOWN UNDERGROUND UTILITIES OR STRUCTURES SHOWN IN THESE PLANS WERE OBTAINED BY A SEARCH OF AVAILABLE RECORDS. TO THE BEST OF OUR KNOWLEDGE, THERE ARE NO EXISTING UTILITIES EXCEPT THOSE SHOWN ON THESE PLANS. THE CONTRACTOR IS REQUIRED TO TAKE ALL PRECAUTIONARY MEASURES TO PROTECT THE UTILITIES SHOWN, AND IS RESPONSIBLE FOR THE PROTECTION OF, AND ANY DAMAGE TO THESE LINES OR STRUCTURES.

#	REVISIONS	DATE	APP.

(BENCH MARK, SEA LEVEL REF.)

(BASIS OF BEARING)
THE WORK LINE OF THE SOUTHEAST 1/4, OF SECTION 6, TOWNSHIP 5 SOUTH, RANGE 6 EAST, SAN BERNARDINO BASE AND MERIDIAN, TAKEN AS N 89° 58' 40" W AND SHOWN IN RECORD OF SURVEY BOOK 35, PAGE 73, AS FILED WITH THE OFFICE OF THE COUNTY RECORDER OF RIVERSIDE COUNTY.

AMIR ENGINEERING & SURVEYING INC.
CIVIL ENGINEERS • LAND PLANNERS • SURVEYORS
150 LURING DRIVE, SUITE A
PALM SPRINGS, CA. 92262
PHONE: (760) 318-7424
FAX: (760) 318-7410

CITY OF RANCH MIRAGE
TENTATIVE MAP
BEING A SUBDIVISION OF THE NORTHEAST QUARTER, OF THE NORTHWEST QUARTER, OF THE SOUTHEAST QUARTER OF SECTION 6, TOWNSHIP 5 SOUTH, RANGE 6 EAST, SAN BERNARDINO BASE AND MERIDIAN
SEC. 6, T.5S., R.6E., S.B.B.&M. A.P.N'S.: 685-280-002 & 685-280-003

SHEET 1 OF 1
PRIVATE REFERENCE #
CITY REFERENCE #

2.0 Fundamentals of Noise

This section of the report provides basic information about noise and presents some of the terms used within the report.

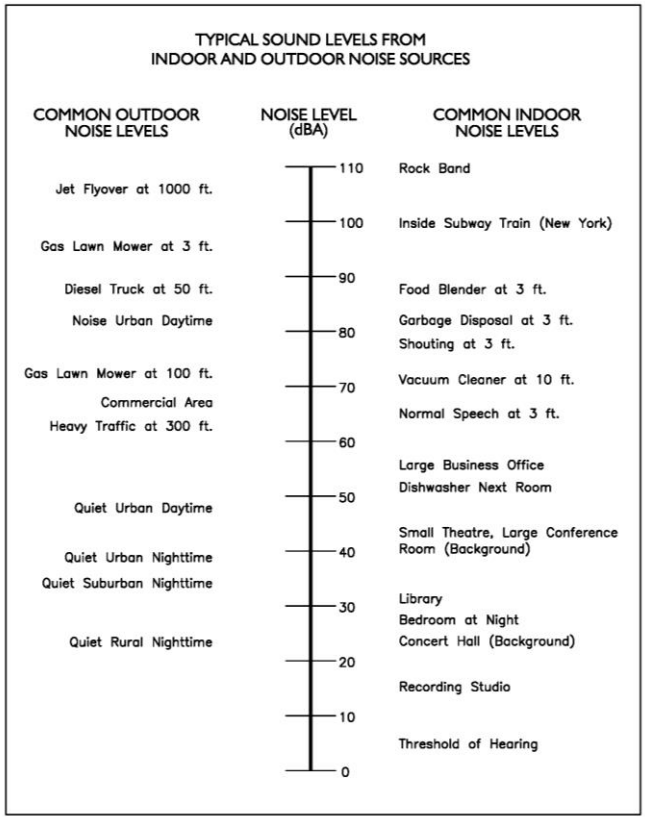
2.1 Sound, Noise and Acoustics

Sound is a disturbance created by a moving or vibrating source and is capable of being detected by the hearing organs. Sound may be thought of as mechanical energy of a moving object transmitted by pressure waves through a medium to a human ear. For traffic, or stationary noise, the medium of concern is air. *Noise* is defined as sound that is loud, unpleasant, unexpected, or unwanted.

2.2 Frequency and Hertz

A continuous sound is described by its *frequency* (pitch) and its *amplitude* (loudness). Frequency relates to the number of pressure oscillations per second. Low-frequency sounds are low in pitch (bass sounding) and high-frequency sounds are high in pitch (squeak). These oscillations per second (cycles) are commonly referred to as Hertz (Hz). The human ear can hear from the bass pitch starting out at 20 Hz all the way to the high pitch of 20,000 Hz.

Exhibit C: Typical A-Weighted Noise Levels



2.3 Sound Pressure Levels and Decibels

The *amplitude* of a sound determines it loudness. The loudness of sound increases or decreases as the amplitude increases or decreases. Sound pressure amplitude is measure in units of micro-Newton per square inch meter (N/m2), also called micro-Pascal (µPa). One µPa is approximately one hundred billionths (0.00000000001) of normal atmospheric pressure. Sound pressure level (SPL or L_p) is used to describe in logarithmic units the ratio of actual sound pressures to a reference pressure squared. These units are called decibels abbreviated dB. Exhibit C illustrates references sound levels for different noise sources.

2.4 Addition of Decibels

Because decibels are on a logarithmic scale, sound pressure levels cannot be added or subtracted by simple plus or minus addition. When two sounds or equal SPL are combined, they will produce an SPL 3 dB greater than the original single SPL. In other words, sound energy must be doubled to produce a 3 dB increase. If two sounds differ by approximately 10 dB, the higher sound level is the predominant sound.

2.5 Human Response to Changes in Noise Levels

In general, the healthy human ear is most sensitive to sounds between 1,000 Hz and 5,000 Hz, (A-weighted scale) and it perceives a sound within that range as being more intense than a sound with a higher or lower frequency with the same magnitude. For purposes of this report as well as with most environmental documents, the A-scale weighting is typically reported in terms of A-weighted decibel (dBA). Typically, the human ear can barely perceive the change in noise level of 3 dB. A change in 5 dB is readily perceptible, and a change in 10 dB is perceived as being twice or half as loud. As previously discussed, a doubling of sound energy results in a 3 dB increase in sound, which means that a doubling of sound energy (e.g. doubling the volume of traffic on a highway) would result in a barely perceptible change in sound level.

Changes in Intensity Level, dBA	Changes in Apparent Loudness
1	Not perceptible
3	Just perceptible
5	Clearly noticeable
10	Twice (or half) as loud

https://www.fhwa.dot.gov/environMent/noise/regulations_and_guidance/polguide/polguide02.cfm

2.6 Noise Descriptors

Noise in our daily environment fluctuates over time. Some noise levels occur in regular patterns, others are random. Some noise levels are constant while others are sporadic. Noise descriptors were created to describe the different time-varying noise levels.

A-Weighted Sound Level: The sound pressure level in decibels as measured on a sound level meter using the A-weighted filter network. The A-weighting filter de-emphasizes the very low and very high frequency components of the sound in a manner similar to the response of the human ear. A numerical method of rating human judgment of loudness.

Ambient Noise Level: The composite of noise from all sources, near and far. In this context, the ambient noise level constitutes the normal or existing level of environmental noise at a given location.

Community Noise Equivalent Level (CNEL): The average equivalent A-weighted sound level during a 24-hour day, obtained after addition of five (5) decibels to sound levels in the evening from 7:00 to 10:00 PM and after addition of ten (10) decibels to sound levels in the night before 7:00 AM and after 10:00 PM.

Decibel (dB): A unit for measuring the amplitude of a sound, equal to 20 times the logarithm to the base 10 of the ratio of the pressure of the sound measured to the reference pressure, which is 20 micro-pascals.

dB(A): A-weighted sound level (see definition above).

Equivalent Sound Level (LEQ): The sound level corresponding to a steady noise level over a given sample period with the same amount of acoustic energy as the actual time varying noise level. The energy average noise level during the sample period.

Habitable Room: Any room meeting the requirements of the Uniform Building Code or other applicable regulations which is intended to be used for sleeping, living, cooking or dining purposes, excluding such enclosed spaces as closets, pantries, bath or toilet rooms, service rooms, connecting corridors, laundries, unfinished attics, foyers, storage spaces, cellars, utility rooms and similar spaces.

L(n): The A-weighted sound level exceeded during a certain percentage of the sample time. For example, L10 in the sound level exceeded 10 percent of the sample time. Similarly L50, L90 and L99, etc.

Noise: *A*ny unwanted sound or sound which is undesirable because it interferes with speech and hearing, or is intense enough to damage hearing, or is otherwise annoying. The State Noise Control Act defines noise as "...excessive undesirable sound...".

Outdoor Living Area: Outdoor spaces that are associated with residential land uses typically used for passive recreational activities or other noise-sensitive uses. Such spaces include patio areas, barbecue areas, jacuzzi areas, etc. associated with residential uses; outdoor patient recovery or resting areas associated with hospitals, convalescent hospitals, or rest homes; outdoor areas associated with places of worship which have a significant role in services or other noise-sensitive activities; and outdoor school facilities routinely used for educational purposes which may be adversely impacted by noise. Outdoor areas usually not included in this definition are: front yard areas, driveways, greenbelts, maintenance areas and storage areas associated with residential land uses; exterior areas at hospitals that are not used for patient activities; outdoor areas associated with places of worship and principally used for short-term social gatherings; and, outdoor areas associated with school facilities that are not typically associated with educational uses prone to adverse noise impacts (for example, school play yard areas).

Percent Noise Levels: See L(n).

Sound Level (Noise Level): The weighted sound pressure level obtained by use of a sound level meter having a standard frequency-filter for attenuating part of the sound spectrum.

Sound Level Meter: An instrument, including a microphone, an amplifier, an output meter, and frequency weighting networks for the measurement and determination of noise and sound levels.

Single Event Noise Exposure Level (SENEL): The dB(A) level which, if it lasted for one second, would produce the same A-weighted sound energy as the actual event.

2.7 Traffic Noise Prediction

Noise levels associated with traffic depends on a variety of factors: (1) volume of traffic, (2) speed of traffic, (3) auto, medium truck (2–3 axle) and heavy truck percentage (4 axle and greater), and sound propagation. The greater the volume of traffic, higher speeds and truck percentages equate to a louder volume in noise. A doubling of the Average Daily Traffic (ADT) along a roadway will increase noise levels by approximately 3 dB; reasons for this are discussed in the sections above.

2.8 Sound Propagation

As sound propagates from a source it spreads geometrically. Sound from a small, localized source (i.e., a point source) radiates uniformly outward as it travels away from the source in a spherical pattern. The sound level attenuates at a rate of 6 dB per doubling of distance. The movement of vehicles down a roadway makes the source of the sound appear to propagate from a line (i.e., line source) rather than a point source. This line source results in the noise propagating from a roadway in a cylindrical spreading versus a spherical spreading that results from a point source. The sound level attenuates for a line source at a rate of 3 dB per doubling of distance.

As noise propagates from the source, it is affected by the ground and atmosphere. Noise models use hard site (reflective surfaces) and soft site (absorptive surfaces) to help calculate predicted noise levels. Hard site conditions assume no excessive ground absorption between the noise source and the receiver. Soft site conditions such as grass, soft dirt or landscaping attenuate noise at a rate of 1.5 dB per doubling of distance. When added to the geometric spreading, the excess ground attenuation results in an overall noise attenuation of 4.5 dB per doubling of distance for a line source and 7.5 dB per doubling of distance for a point source.

Research has demonstrated that atmospheric conditions can have a significant effect on noise levels when noise receivers are located 200 feet from a noise source. Wind, temperature, air humidity and turbulence can further impact have far sound can travel.

3.0 Ground-Borne Vibration Fundamentals

3.1 Vibration Descriptors

Ground-borne vibrations consist of rapidly fluctuating motions within the ground that have an average motion of zero. The effects of ground-borne vibrations typically only cause a nuisance to people, but at extreme vibration levels, damage to buildings may occur. Although ground-borne vibration can be felt outdoors, it is typically only an annoyance to people indoors where the associated effects of the shaking of a building can be notable. Ground-borne noise is an effect of ground-borne vibration and only exists indoors, since it is produced from noise radiated from the motion of the walls and floors of a room and may also consist of the rattling of windows or dishes on shelves.

Several different methods are used to quantify vibration amplitude.

PPV – Known as the peak particle velocity (PPV) which is the maximum instantaneous peak in vibration velocity, typically given in inches per second.

RMS – Known as root mean squared (RMS) can be used to denote vibration amplitude

VdB – A commonly used abbreviation to describe the vibration level (VdB) for a vibration source.

3.2 Vibration Perception

Typically, developed areas are continuously affected by vibration velocities of 50 VdB or lower. These continuous vibrations are not noticeable to humans whose threshold of perception is around 65 VdB. Outdoor sources that may produce perceptible vibrations are usually caused by construction equipment, steel-wheeled trains, and traffic on rough roads, while smooth roads rarely produce perceptible ground-borne noise or vibration. To counter the effects of ground-borne vibration, the Federal Transit Administration (FTA) has published guidance relative to vibration impacts. According to the FTA, fragile buildings can be exposed to ground-borne vibration levels of 0.3 inches per second without experiencing structural damage.

3.3 Vibration Perception

There are three main types of vibration propagation: surface, compression, and shear waves. Surface waves, or Rayleigh waves, travel along the ground's surface. These waves carry most of their energy along an expanding circular wave front, similar to ripples produced by throwing a rock into a pool of water. P-waves, or compression waves, are body waves that carry their energy along an expanding spherical wave front. The particle motion in these waves is longitudinal (i.e., in a "push-pull" fashion). P-waves are analogous to airborne sound waves. S-waves, or shear waves, are also body waves that carry energy along an expanding spherical wave front. However, unlike P-waves, the particle motion is transverse, or side-to-side and perpendicular to the direction of propagation.

As vibration waves propagate from a source, the vibration energy decreases in a logarithmic nature and the vibration levels typically decrease by 6 VdB per doubling of the distance from the vibration source. As stated above, this drop-off rate can vary greatly depending on the soil but has been shown to be effective enough for screening purposes, in order to identify potential vibration impacts that may need to be studied through actual field tests.

4.0 Regulatory Setting

The proposed project is located in the City of Rancho Mirage and noise regulations are addressed through the efforts of various federal, state and local government agencies. The agencies responsible for regulating noise are discussed below.

4.1 Federal Regulations

The adverse impact of noise was officially recognized by the federal government in the Noise Control Act of 1972, which serves three purposes:

- Publicize noise emission standards for interstate commerce
- Assist state and local abatement efforts
- Promote noise education and research

The Federal Office of Noise Abatement and Control (ONAC) originally was tasked with implementing the Noise Control Act. However, it was eventually eliminated leaving other federal agencies and committees to develop noise policies and programs. Some examples of these agencies are as follows: The Department of Transportation (DOT) assumed a significant role in noise control through its various agencies. The Federal Aviation Agency (FAA) is responsible to regulate noise from aircraft and airports. The Federal Highway Administration (FHWA) is responsible to regulate noise from the interstate highway system. The Occupational Safety and Health Administration (OSHA) is responsible for the prohibition of excessive noise exposure to workers.

The federal government advocates that local jurisdiction use their land use regulatory authority to arrange new development in such a way that “noise sensitive” uses are either prohibited from being constructed adjacent to a highway or, or alternatively that the developments are planned and constructed in such a manner that potential noise impacts are minimized.

Since the federal government has preempted the setting of standards for noise levels that can be emitted by the transportation source, the City is restricted to regulating the noise generated by the transportation system through nuisance abatement ordinances and land use planning.

4.2 State Regulations

Established in 1973, the California Department of Health Services Office of Noise Control (ONC) was instrumental in developing regularity tools to control and abate noise for use by local agencies. One significant model is the “Land Use Compatibility for Community Noise Environments Matrix.” The matrix allows the local jurisdiction to clearly delineate compatibility of sensitive uses with various incremental levels of noise.

The State of California has established noise insulation standards as outlined in Title 24 and the Uniform Building Code (UBC) which in some cases requires acoustical analyses to outline exterior noise levels and to ensure interior noise levels do not exceed the interior threshold. The State mandates that the legislative body of each county and city adopt a noise element as part of its comprehensive general plan.

The local noise element must recognize the land use compatibility guidelines published by the State Department of Health Services. The guidelines rank noise land use compatibility in terms of normally acceptable, conditionally acceptable, normally unacceptable, and clearly unacceptable as illustrated in Exhibit D. (Exhibit 20 of the City's GP).

Exhibit D: Land Use Compatibility Guidelines

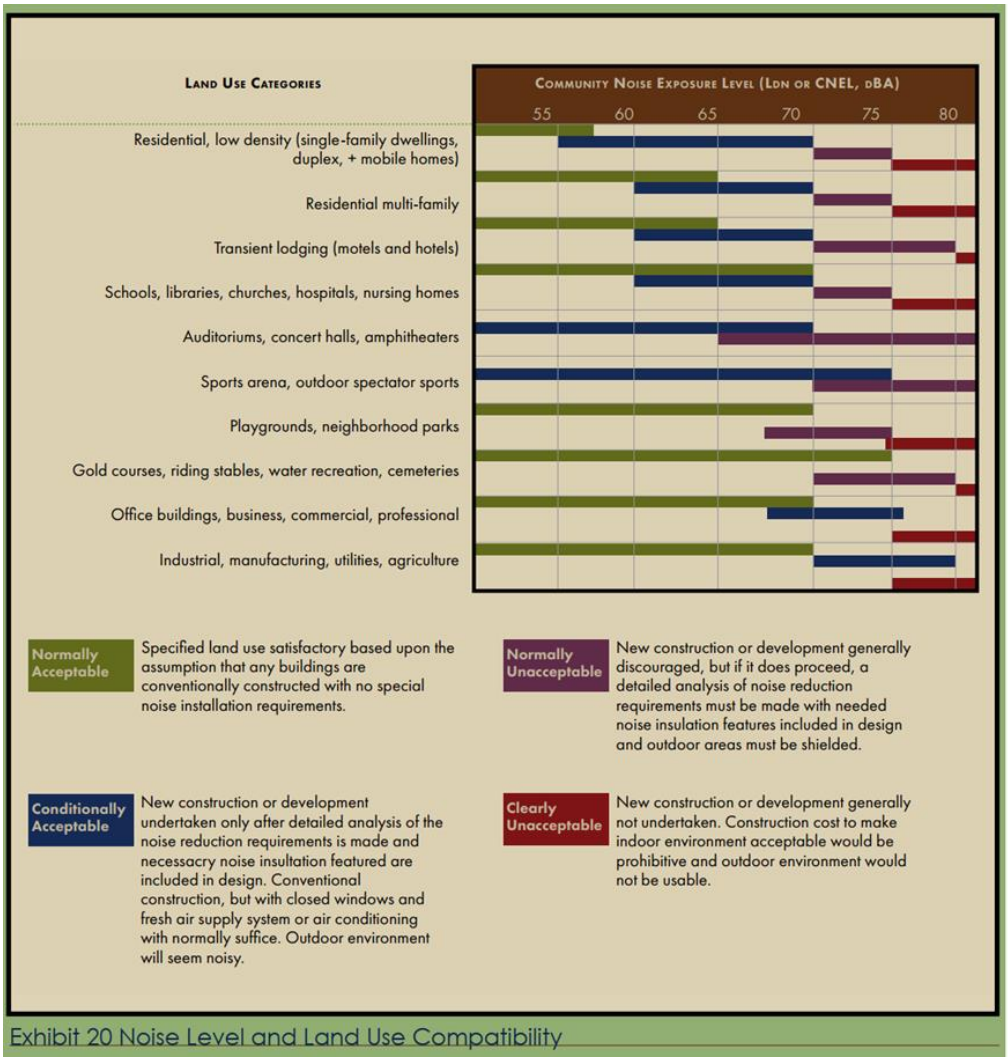


Exhibit 20 Noise Level and Land Use Compatibility

4.3 City of Rancho Mirage Noise Regulations

The City of Rancho Mirage outlines their noise regulations and standards within the Noise Element from the General Plan and the Noise Ordinance from the Municipal Code.

City of Rancho Mirage General Plan

Applicable policies and standards governing environmental noise in the City are set forth in the General Plan Noise Element. Exhibit 20 (Exhibit D of this report) of the City's Noise Element outlines the exterior noise standards for community noise environments. According to said exhibit, Single-Family residential noise limits are normally acceptable up to 57 dBA CNEL and conditionally acceptable up to 70 dBA CNEL.

In addition to the noise standards, the City has outlined goals, policies, and implementation measures to reduce potential noise impacts and are presented below:

Goals, Policies, and Implementation Measures

Policies, goals and implementation program measures from the Noise Element that would mitigate potential impacts on noise include the following.

Goal N-1: A noise environment providing peace and quiet that complements and is consistent with Rancho Mirage's resort residential character.

Policy N.1.1: Land use patterns, associated traffic and its distribution, and individual development shall be assessed for their potential to generate adverse and incompatible noise impacts. Noise exceeding normally acceptable levels shall be appropriately mitigated.

Policy N.1.2: Noise sensitive land uses, including residences, resorts, community open space, schools, libraries, churches, hospitals and convalescent homes, shall be protected from high noise levels emitted by both existing and future noise sources.

Policy N.1.3: Project designs shall be required to include measures that assure that interior levels for residential development do not exceed 45 dBA CNEL.

Policy N.1.4: Land uses allowed adjacent to Rancho Mirage's major arterials roads and highways, or the Southern Pacific Railroad/I-10 corridor, should generally be limited to those that are compatible with higher noise levels to maximize noise-related land use compatibility.

Policy N.1.5: Develop and maintain a circulation plan that is consistent with the resort residential character of Rancho Mirage, avoids impacts to existing and planned sensitive receptors/uses, and provides fixed routes for existing traffic and future truck traffic.

City of Rancho Mirage – Noise Ordinance/Municipal Code

Chapter 8.45 of the City's Municipal Code outlines the City's noise ordinance.

Section 8.45.030 – Exterior Noise Limits

No person shall operate or cause to be operated any source of sound or allow the creation of sound or noise on property owned, leased, occupied or otherwise controlled by such person which causes the noise level, as measured on any other property, to exceed:

A. The noise level for the applicable zone specified in Table 1 (Table A-1 from Section 8.45.030) for a cumulative period of more than thirty minutes in any hour of the appliable period.

Table 1: Allowable Exterior Noise Level (Table A-1)

Noise Zone	Time of Day	Noise Level dBA
Residential, Low Density	7:00 a.m. to 6:00 p.m.	55
	6:00 p.m. to 10:00 p.m.	50
	10:00 p.m. to 7:00 a.m.	45
Residential, Medium and High Density, Hospital, Open Space	7:00 a.m. to 6:00 p.m.	60
	6:00 p.m. to 10:00 p.m.	55
	10:00 p.m. to 7:00 a.m.	50
Commercial Office, Resort Commercial, Mixed Use, Institutional	7:00 a.m. to 6:00 p.m.	65
	6:00 p.m. to 10:00 p.m.	60
	10:00 p.m. to 7:00 a.m.	55
Commercial Neighborhood, General Commercial, Commercial Recreation, Light Industrial	7:00 a.m. to 6:00 p.m.	70
	6:00 p.m. to 10:00 p.m.	65
	10:00 p.m. to 7:00 a.m.	60

B. For a cumulative periods of time less than thirty minutes in an hour, all the noise standards in Table A-1 are increased according to Table 2 (Table B-1 from Section A.45.030).

Table 2: Allowable Exterior Noise Level Adjustment (Table B-1)

Duration of Sound	dBA Adjustment
15 to 30 minutes per hour	+3
10 to 15 minutes per hour	+5
5 to 10 minutes per hour	+10
1 to 5 minutes per hour	+15
Any period of time less than 1-minute per hour	+20

C. If the measured ambient noise level exceeds the dBA limits in Table A-1, the noise limits and their adjustments for the first three categories in Table B-1 shall be increased in five dBA increments as needed to encompass or reflect said ambient noise level. The maximum noise level under the last two categories in Table B-1 shall be increased, if necessary, only to equal the ambient noise level.

Per the table above outlined above, the City's noise limit for residential uses is 55 dBA during the hours of 7:00 AM to 6:00 PM, 50 dBA during the hours of 6:00 PM to 10:00 PM, 45 dBA during the hours of 10:00 PM to 7:00 AM.

Chapter 8.45.050 – Special Provisions

The following activities and noise sources shall be exempt from the provisions of this chapter:

8.45.050(E) – Construction, alteration, repair, grading or improvement of any building, structure, road or improvement to real property for which a permit has been issued by the city if said construction occurs within the allowable hours set forth in Section 15.04.030(A)(10).

Chapter 8.45.065 – Landscape Maintenance

A. It is unlawful and a public nuisance for any person to permit or perform for-hire landscape and nonemergency exterior hardscape maintenance activities such as, but not limited to, tree trimming, re-seeding, lawn mowing, leaf blowing, dust and debris clearing and any other landscaping or nonemergency exterior hardscape maintenance activities which utilize any motorized saw, sander, drill, grinder, leaf-blower, lawnmower, hedge trimmer, edger, or any other similar tool or device any time on Saturday and Sunday and between the hours of six p.m. and seven a.m. the next day during weekdays, unless otherwise provided in this section.

B. The regular mowing or grooming of golf courses, grass tennis courts, grass croquet courts, and lawn bowling areas shall be exempt from the restrictions set forth in this section. The allowed work hours for mowing or green preparation for golf courses, grass tennis courts, grass croquet courts, and lawn bowling areas shall be between five thirty a.m. and seven p.m., seven days per week and during all seasons of the year.

C. Nothing set forth in this section shall permit any person from engaging in any activities that exceed the exterior noise level limits set forth in Section 8.45.030 or otherwise constitute a public nuisance as set forth in Section 14.60.325 of the Municipal Code.

5.0 Study Method and Procedure

The following section describes the noise modeling procedures and assumptions used for this assessment.

5.1 Noise Measurement Procedure and Criteria

Noise measurements are taken to determine the existing noise levels. A noise receiver or receptor is any location in the noise analysis in which noise might produce an impact. The following criteria are used to select measurement locations and receptors:

- Locations expected to receive the highest noise impacts, such as first row of houses
- Locations that are acoustically representative and equivalent of the area of concern
- Human land usage
- Sites clear of major obstruction and contamination

MD conducted the sound level measurements in accordance to CalTrans technical noise specifications. All measurements equipment meets American National Standards Institute (ANSI) specifications for sound level meters (S1.4-1983 identified in Chapter 19.68.020.AA). The following gives a brief description of the Caltrans Technical Noise Supplement procedures for sound level measurements:

- Microphones for sound level meters were placed 5-feet above the ground for all measurements
- Sound level meters were calibrated (Larson Davis CAL 200) before and after each measurement
- Following the calibration of equipment, a wind screen was placed over the microphone
- Frequency weighting was set on “A” and slow response
- Results of the long-term noise measurements were recorded on field data sheets
- During any short-term noise measurements any noise contaminations such as barking dogs, local traffic, lawn mowers, or aircraft fly-overs were noted
- Temperature and sky conditions were observed and documented

5.2 Noise Measurement Locations

Noise monitoring locations were selected based on the distance of the project’s site to the nearest sensitive on-site receptors. Short-term noise measurements were conducted near the northeastern and southeastern corners of the project site. Also, one short term reading was taken across Vista del Sol, next to the hospital land use to the west. Measurements represent ambient levels at the site. Appendix A includes photos, field sheet, and measured noise data. Exhibit E (next page) illustrates the location of the measurements.

5.3 FHWA Traffic Noise Prediction Model

Traffic noise from vehicular traffic was projected using a computer program that replicates the FHWA Traffic Noise Prediction Model (FHWA-RD-77-108). The FHWA model arrives at the predicted noise level through a series of adjustments to the Reference Energy Mean Emission Level (REMEL). Roadway volumes and percentages correspond to the project’s traffic impact study as projected by Fehr & Peers

(Section 31 Specific Plan Transportation Impact Study – March 2019) and roadway classification. The referenced traffic data was applied to the model and is in Appendix B. The following outlines the key adjustments made to the REMEL for the roadway inputs:

- Roadway classification – (e.g. freeway, major arterial, arterial, secondary, collector, etc),
- Roadway Active Width – (distance between the center of the outer most travel lanes on each side of the roadway)
- Average Daily Traffic Volumes (ADT), Travel Speeds, Percentages of automobiles, medium trucks and heavy trucks
- Roadway grade and angle of view
- Site Conditions (e.g. soft vs. hard)
- Percentage of total ADT which flows each hour through-out a 24-hour period

Table 3 indicates the roadway parameters and vehicle distribution utilized for this study.

Table 3: Roadway Parameters and Vehicle Distribution

Roadway	Segment	Existing ADT[1]	Existing Plus Project ADT	Speed (MPH)	Site Conditions
Vista del Sol	Country Club Dr to Frank Sinatra Dr	11,700	11,785	40	Hard
Secondary and Collector Vehicle Distribution (Truck Mix)[2]					
Motor-Vehicle Type		**Daytime % (7AM to 7 PM)**	**Evening % (7 PM to 10 PM)**	**Night % (10 PM to 7 AM)**	**Total % of Traffic Flow**
Automobiles		75.5	14.0	10.5	97.42
Medium Trucks		48.9	2.2	48.9	1.84
Heavy Trucks		47.3	5.4	47.3	0.74

Notes:
[1] Per TIA (Section 31 Specific Plan Transportation Impact Study, City of Rancho Mirage, CA – Fehr & Peers, 03/2019)
[2] Vehicle distribution data is based on Riverside County Mix data for collectors and secondary roadways.

The following outlines key adjustments to the REMEL for project site parameter inputs:

- Vertical and horizontal distances (Sensitive receptor distance from noise source)
- Noise barrier vertical and horizontal distances (Noise barrier distance from sound source and receptor).
- Traffic noise source spectra
- Topography

MD projected the traffic noise levels to the on-site receptors. The project noise calculation worksheet outputs are located in Appendix B.

5.4 FHWA Roadway Construction Noise Model

The construction noise analysis utilizes the Federal Highway Administration (FHWA) Roadway Construction Noise Model (RNCM), together with several key construction parameters. Key inputs include distance to the sensitive receiver, equipment usage, % usage factor, and baseline parameters for the project site.

The project was analyzed based on the different construction phases. Construction noise is expected to be loudest during the grading, concrete and building phases of construction. The construction noise calculation output worksheet is located in Appendix C. The following assumptions relevant to short-term construction noise impacts were used:

- It is estimated that construction will occur over a 1 to 2-year time period. Construction noise is expected to be the loudest during the grading, concrete, and building phases.

Exhibit E
Measurement Locations

= Short-Term Monitoring Location

6.0 Existing Noise Environment

Three (3) short-term (30-min) ambient noise measurement were conducted at or near the project site. The noise measurements were taken to determine the existing baseline noise conditions.

6.1 Short-Term Noise Measurement Results

The results of the short-term noise data are presented in Table 4.

Table 4: Short-Term Nosie Measurement Data (dBA)[1]

Date	Location	30-minutes dB(A)				
		Start	Stop	L_{EQ}	L_{MAX}	L_{MIN}
9/21/2021	ST-1	11:14 AM	11:44 AM	46.3	67.7	33.0
9/21/2021	ST-2	11:49 AM	12:19 PM	38.5	59.1	31.0
9/21/2021	ST-3	11:31 AM	12:01 PM	51.7	55.7	49.9

Notes:
1. Short-term noise monitoring locations (ST-1 through ST-3) are illustrated in Exhibit E. The quietest measured noise level is at location ST-2.

Noise data indicate the equivalent ambient level ranged between 38.5 dBA to 51.7 dBA near the project site. Maximum levels reach 67.7 dBA at the ST-1 location. The quietest noise level measured 31.0 dBA at location ST-2. The measured ambient level at or near the project site shows that the primary noise sources are nearby major roadways, an HVAC system from adjacent residences, and natural noise sources. Additional field notes and photographs are provided in Appendix A.

7.0 Future Noise Environment Impacts and Mitigation

This assessment analyzes future noise impacts to and from the project and compares the results to the City's Noise Standards. The analysis details the estimated exterior noise levels associated with traffic from adjacent roadways.

7.1 Future Exterior Noise

The following outlines the exterior noise levels associated with the proposed project.

7.1.1 Noise Impacts to Off-Site Receptors Due to Project Generated Traffic

A worst-case project generated traffic noise level was modeled utilizing the FHWA Traffic Noise Prediction Model - FHWA-RD-77-108. Traffic noise levels were calculated 60 feet from the centerline of the analyzed roadway. The trip generation for the 9 single-family residence project is 85. The modeling is theoretical and does not take into account any existing barriers, structures, and/or topographical features that may further reduce noise levels. Therefore, the levels are shown for comparative purposes only to show the difference in with and without project conditions. In addition, the noise contours for 60, 65 and 70 dBA CNEL were calculated. The potential off-site noise impacts caused by an increase of traffic from operation of the proposed project on the nearby roadways were calculated for the following scenarios:

Existing Year (without Project): This scenario refers to existing year traffic noise conditions.

Existing Year (Plus Project): This scenario refers to existing year + project traffic noise conditions.

Table 5 compares the without and with project scenario and shows the change in traffic noise levels as a result of the proposed project. It takes a change of 3 dB or more to hear a perceptible difference. As demonstrated in Table 5, the project is anticipated to not generate change in the noise CNEL level.

The change in noise level is less than significant as 0.1 dBA noise increase is projected. No further mitigation is required.

7.1.2 Noise Impacts to On-Site Receptors Due to Traffic

Traffic noise from the local roadway network was evaluated and compared to the City's noise compatibility matrix. Per the City's Noise Compatibility Matrix (Exhibit 20, page 82 from the City's General Plan, Noise Element), single-family residential is conditionally acceptable up to 70 dBA CNEL. As shown in Table 5, Existing Plus Project traffic 70 dBA CNEL noise projections from Vista del Sol will reach up to 38 feet from the centerline of the Roadway. Residential structures are located approximately 60 feet away from Vista del Sol centerline and fall within the 70 to 65 dBA CNEL contour of the Roadway and are located within the conditionally acceptable region for single-family residential (per land use compatibility matrix). With the incorporation of a 6-foot tall wall the exterior level will be 62.3 dBA CNEL on the residence façade. The wall must be placed on top of slope or pad grade (whichever is higher) and can be following the property line.

To mitigate exterior to interior noise levels to the single-family uses the project shall implement noise control solutions to mitigate interior noise levels down to 45 dBA CNEL which requires a noise reduction of at least 17.3 dBA or more.

Table 5: Existing Scenario - Noise Levels Along Roadways (dBA CNEL)

Existing Without Project Exterior Noise Levels

Roadway	Segment	CNEL at 60 Ft (dBA)	Distance to Contour (Ft)			
			70 dBA CNEL	65 dBA CNEL	60 dBA CNEL	55 dBA CNEL
Vista del Sol	Country Club Dr to Frank Sinatra Dr	62.2	38	120	380	1201

Existing With Project Exterior Noise Levels

Roadway	Segment	CNEL at 60 Ft (dBA)	Distance to Contour (Ft)			
			70 dBA CNEL	65 dBA CNEL	60 dBA CNEL	55 dBA CNEL
Vista del Sol	Country Club Dr to Frank Sinatra Dr	62.3	38	121	383	1210

Change in Existing Noise Levels as a Result of Project

Roadway	Segment	CNEL at 60 Feet dBA[1,2]			
		Existing Without Project	Existing With Project	Change in Noise Level	Potential Significant Impact
Vista del Sol	Country Club Dr to Frank Sinatra Dr	62.2	62.3	0.1	No

Notes:
[1] Exterior noise levels calculated at 5 feet above ground level.
[2] Noise levels calculated from centerline of subject roadway.

7.1.3 Noise Impacts to Off-Site Receptors Due to Operational Traffic

The nearest off-site sensitive uses are located approximately 650 feet to the southwest (hospital facilities) and are located outside the confluence of the project site. Therefore, the project's operations will have no impact on any off-site sensitive uses.

7.2 Summary of Recommendations

The following recommendations are provided:

MM-1: The project shall achieve a minimum of 17 dBA noise reduction in the residential building shell design to meet the City's 45 dBA CNEL interior residential requirement.

MM-2: A 6-foot tall wall located at the property line is required to reduce the noise CNEL level at the residences facing Vista del Sol.

8.0 Construction Noise Impact

The degree of construction noise may vary for different areas of the project site and also vary depending on the construction activities. Noise levels associated with the construction will vary with the different phases of construction.

8.1 Construction Noise

The Environmental Protection Agency (EPA) has compiled data regarding the noise-generated characteristics of typical construction activities. The data is presented in Table 6.

Table 6: Typical Construction Noise Levels[1]

Equipment Powered by Internal Combustion Engines

Type	Noise Levels (dBA) at 50 Feet
Earth Moving	
Compactors (Rollers)	73 - 76
Front Loaders	73 - 84
Backhoes	73 - 92
Tractors	75 - 95
Scrapers, Graders	78 - 92
Pavers	85 - 87
Trucks	81 - 94
Materials Handling	
Concrete Mixers	72 - 87
Concrete Pumps	81 - 83
Cranes (Movable)	72 - 86
Cranes (Derrick)	85 - 87
Stationary	
Pumps	68 - 71
Generators	71 - 83
Compressors	75 - 86

Impact Equipment

Type	Noise Levels (dBA) at 50 Feet
Saws	71 - 82
Vibrators	68 - 82

Notes:
[1] Referenced Noise Levels from the Environmental Protection Agency (EPA)

Construction noise is considered a short-term impact and would be considered significant if construction activities are taken outside the allowable times as described in the City's Municipal Code (Section 15.04.030(A)(10)). Construction is anticipated to occur during the permissible hours (7 am to 7 pm) according to the City's Municipal Code. Construction noise will have a temporary or periodic increase in the ambient noise level above the existing within the project vicinity. Furthermore, noise reduction measures are provided to further reduce construction noise. The impact is considered less than significant however construction noise level projections are provided.

Typical operating cycles for these types of construction equipment may involve one or two minutes of full power operation followed by three to four minutes at lower power settings. Noise levels will be loudest during grading phase. A likely worst-case construction noise scenario during grading assumes the use of a grader, a dozer, and two (2) excavators, two (2) backhoes and a scraper operating at 390 feet from the nearest sensitive receptor (northeast residence).

Assuming a usage factor of 40 percent for each piece of equipment, unmitigated noise levels at 390 feet have the potential to reach 67 dBA L_{eq} and 71 dBA L_{max} at the nearest sensitive receptors during grading. Noise levels for the other construction phases would be lower and range between 50 to 63 dBA.

8.2 Construction Vibration

Construction activities can produce vibration that may be felt by adjacent land uses. The construction of the proposed project would not require the use of equipment such as pile drivers, which are known to generate substantial construction vibration levels. The primary vibration source during construction may be from a bull dozer. A large bull dozer has a vibration impact of 0.089 inches per second peak particle velocity (PPV) at 25 feet which is perceptible but below any risk to architectural damage.

The fundamental equation used to calculate vibration propagation through average soil conditions and distance is as follows:

$$PPV_{equipment} = PPV_{ref} (100/D_{rec})^n$$

Where: PPV_{ref} = reference PPV at 100ft.
D_{rec} = distance from equipment to receiver in ft.
n = 1.1 (the value related to the attenuation rate through ground)

The thresholds from the Caltrans Transportation and Construction Induced Vibration Guidance Manual in Table 7 (below) provides general thresholds and guidelines as to the vibration damage potential from vibratory impacts.

Table 7: Guideline Vibration Damage Potential Threshold Criteria

Structure and Condition	Maximum PPV (in/sec)	
	Transient Sources	Continuous/Frequent Intermittent Sources
Extremely fragile historic buildings, ruins, ancient monuments	0.12	0.08
Fragile buildings	0.2	0.1
Historic and some old buildings	0.5	0.25
Older residential structures	0.5	0.3
New residential structures	1.0	0.5
Modern industrial/commercial buildings	2.0	0.5

Source: Table 19, Transportation and Construction Vibration Guidance Manual, Caltrans, Sept. 2013.
Note: Transient sources create a single isolated vibration event, such as blasting or drop balls. Continuous/frequent intermittent sources include impact pile drivers, pogo-stick compactors, crack-and-seat equipment, vibratory pile drivers, and vibratory compaction equipment.

Table 8 gives approximate vibration levels for particular construction activities. This data provides a reasonable estimate for a wide range of soil conditions.

Table 8: Vibration Source Levels for Construction Equipment[1]

Equipment	Peak Particle Velocity (inches/second) at 25 feet	Approximate Vibration Level LV (dVB) at 25 feet
Pile driver (impact)	1.518 (upper range)	112
	0.644 (typical)	104
Pile driver (sonic)	0.734 upper range	105
	0.170 typical	93
Clam shovel drop (slurry wall)	0.202	94
Hydromill	0.008 in soil	66
(slurry wall)	0.017 in rock	75
Vibratory Roller	0.21	94
Hoe Ram	0.089	87
Large bulldozer	0.089	87
Caisson drill	0.089	87
Loaded trucks	0.076	86
Jackhammer	0.035	79
Small bulldozer	0.003	58

[1] Source: Transit Noise and Vibration Impact Assessment, Federal Transit Administration, May 2006.

At a distance of 390 feet, a large bull dozer would yield a worst-case 0.004 PPV (in/sec) which below the threshold of perception and any risk of damage. The impact is less than significant and no mitigation is required.

8.3 Construction Noise Reduction Measures

Construction operations must follow the City's General Plan and the Noise Ordinance, which states that construction, repair or excavation work performed must occur within the permissible hours. To further ensure that construction activities do not disrupt the adjacent land uses, the following measures should be taken:

1. Construction should occur during the permissible hours as defined in Section 15.04.030(A)(10).

2. During construction, the contactor shall ensure all construction equipment is equipped with appropriate noise attenuating devices.

3. The contractor should locate equipment staging areas that will create the greatest distance between construction-related noise/vibration sources and sensitive receptors nearest the project site during all project construction.

4. Idling equipment should be turned off when not in use.

5. Equipment shall be maintained so that vehicles and their loads are secured from rattling and banging.

9.0 References

State of California General Plan Guidelines: 1998. Governor's Office of Planning and Research

City of Rancho Mirage: General Plan Noise Element. 2017.

City of Rancho Mirage: Chapter 8.45 Noise of the Municipal Code.

Fehr & Peers, Section 31 Specific Plan Transportation Impact Study – Table 3-2 City of Rancho Mirage Roadway Capacity, March 2019

Appendix A:

Field Measurement Data

MD ACOUSTICS
Sound Solutions for Planning and Design
www.mdacoustics.com

AZ Office
4960 S. Gilbert Rd, Ste 1-461
Chandler, AZ 85249

CA Office
1197 E Los Angeles Ave, C-256
Simi Valley, CA 93065

20-Minute Continuous Noise Measurement Datasheet

Project:	TTM 38222 - Noise
Site Address/Location:	39901 Vista del Sol, Rancho Mirage, CA 92270
Date:	9/21/2021
Field Tech/Engineer:	Jason Schuyler
General Location:	
Sound Meter:	ST-1 & ST-2: NTi Audio A2A-07095-E0
	ST-3: NTi Audio A2A-05967-E0
Settings:	A-weighted, slow, 1-sec, 30-minute interval
Meteorological Con.:	110 degrees F, 2-3 mph wind, western direction
Site ID:	ST-1, ST-2 & ST-3

Site Observations: Clear sky, measurement was performed at the north & east lot lines. Also, a third reading was taken across Vista del Sol to the west side. Ambient noise consisted of nature sources, HVAC system from surrounding residences and traffic noise from major roadways nearby.

Site Topo: Flat

Ground Type: Soft site conditions, dessert landscape

Noise Source(s) w/ Distance:

1 -meter is approx 7' from PL.

2 - meter is approx 60' from Sienna Ridge CL.

3 - meter is 10' from PL

Figure 1: Monitoring Locations

Figure 2: ST-1 Photo

Figure 3: ST-2 Photo

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Chandler, AZ 85249

CA Office
1197 E Los Angeles Ave, C-256
Simi Valley, CA 93065

20-Minute Continuous Noise Measurement Datasheet - Cont.

Project: TTM 38222 - Noise
Site Address/Location: 39901 Vista del Sol, Rancho Mirage, CA 92270
Site ID: ST-1, ST-2 & ST-3

Figure 4: ST-1 Photo

Figure 5: ST-2 Photo

Table 1: 30-Min Baseline Noise Measurement Summary

Location	Start	Stop	Leq	Lmax	Lmin
1	11:14 AM	11:44 AM	46.3	67.7	33.0
2	11:49 AM	12:19 PM	38.5	59.1	31.0
3	11:31 AM	12:01 PM	51.7	55.7	49.9

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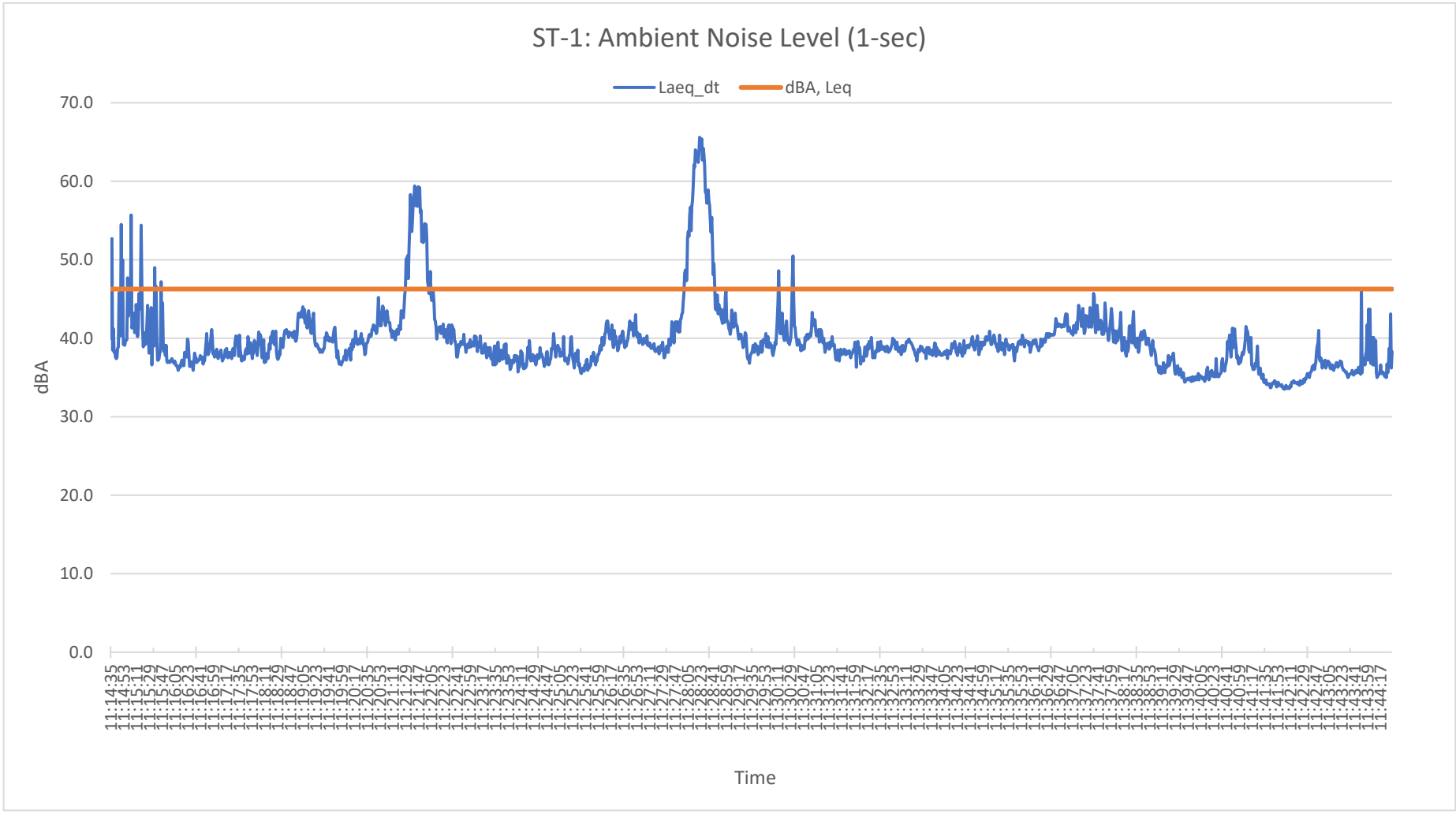
Chandler, AZ 85249

CA Office
1197 E Los Angeles Ave, C-256
Simi Valley, CA 93065

30-Minute Continuous Noise Measurement Datasheet - Cont.

Project: TTM 38222 - Noise
Site Address/Location: 39901 Vista del Sol, Rancho Mirage, CA 92270
Site ID: ST-1



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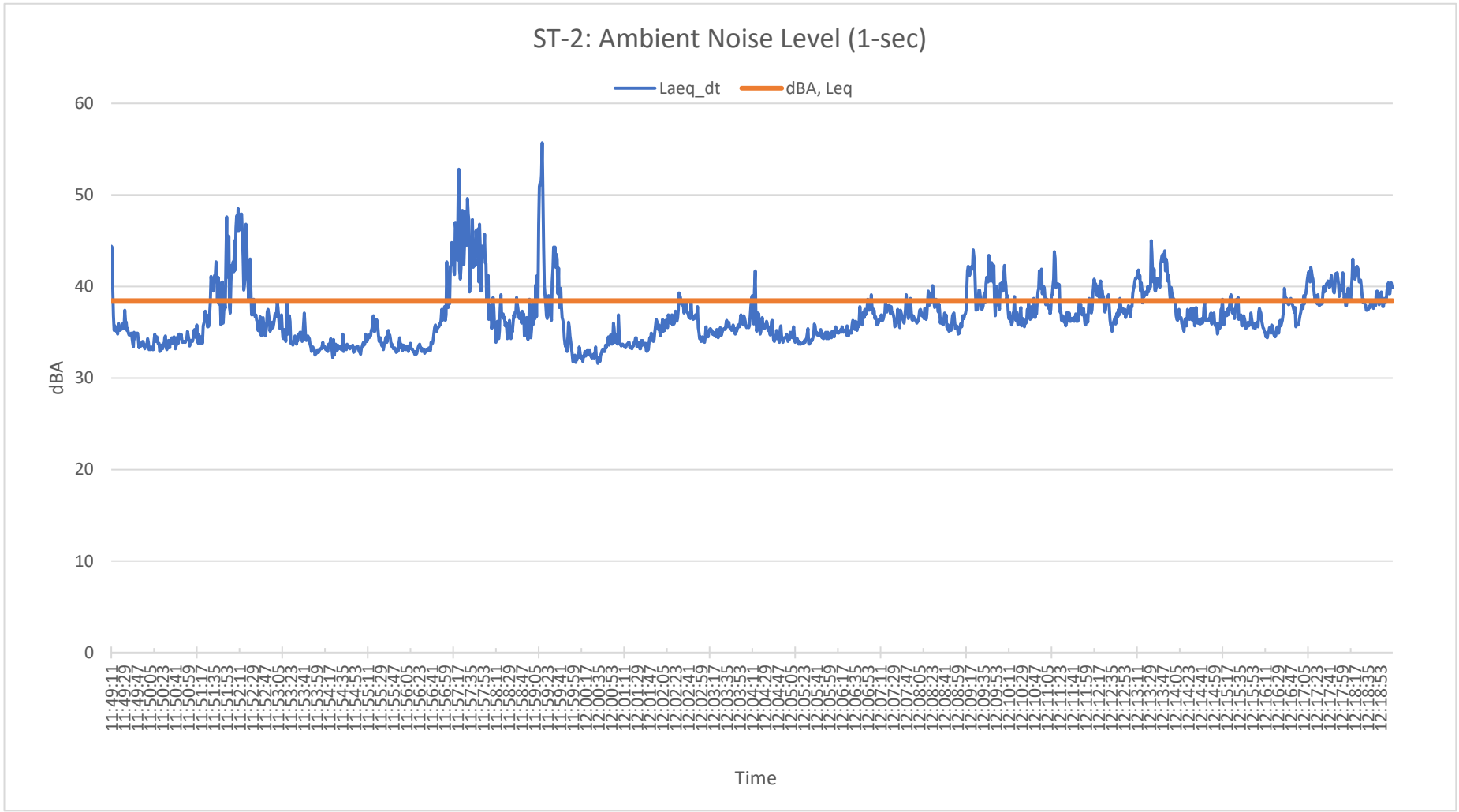
Chandler, AZ 85249

CA Office
1197 E Los Angeles Ave, C-256
Simi Valley, CA 93065

30-Minute Continuous Noise Measurement Datasheet - Cont.

Project: TTM 38222 - Noise
Site Address/Location: 39901 Vista del Sol, Rancho Mirage, CA 92270
Site ID: ST-2



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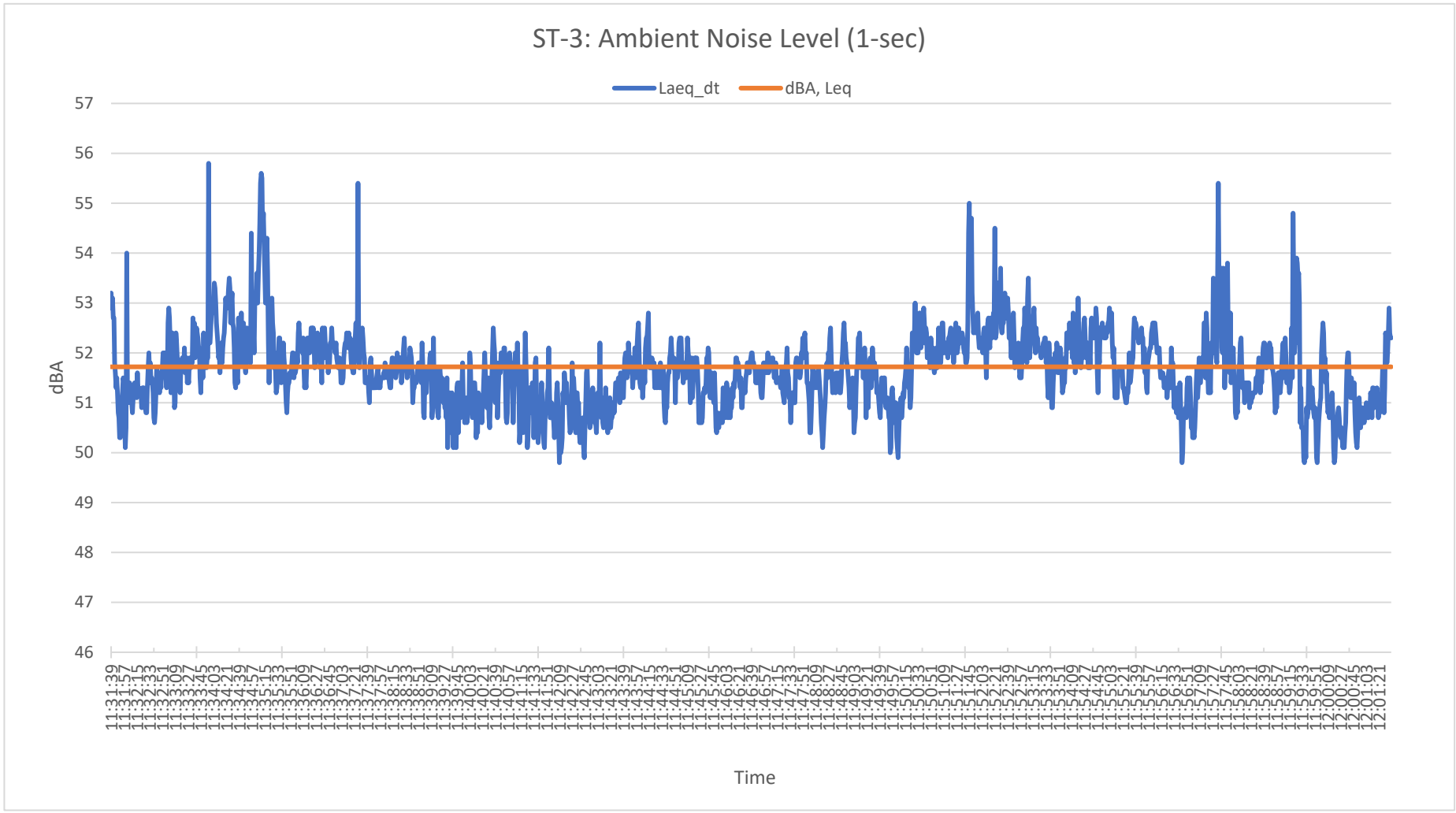
Simi Valley, CA 93065

30-Minute Continuous Noise Measurement Datasheet - Cont.

Project: TTM 38222 - Noise
Site Address/Location: 39901 Vista del Sol, Rancho Mirage, CA 92270
Site ID: ST-3



Appendix B:
Traffic FHWA Worksheets

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

PROJECT:	TTM 38222	JOB #:	0741-21-34
ROADWAY:	Vista del Sol	DATE:	1-Oct-21
LOCATION:	39901 Vista del Sol, Rancho Mirage CA 92270	ENGINEER:	F. Irarrazabal

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	11,700	
SPEED =	40	
PK HR % =	10	
NEAR LANE/FAR LANE DIS	12	
ROAD ELEVATION =	0.0	
GRADE =	0.0	%
PK HR VOL =	1,170	

RECEIVER INPUT DATA

RECEIVER DISTANCE =	60	
DIST C/L TO WALL =	42	
RECEIVER HEIGHT =	5.0	
WALL DISTANCE FROM RECEIVER	18	
PAD ELEVATION =	0.0	
ROADWAY VIEW: LF ANGLE=	-90	
RT ANGLE=	90	
DF ANGLE=	180	

SITE CONDITIONS

AUTOMOBILES =	10	
MEDIUM TRUCKS =	10	(10 = HARD SITE, 15 = SOFT SITE)
HEAVY TRUCKS =	10	

WALL INFORMATION

HTH WALL:	6.0	
AMBIENT=	0.0	
BARRIER =	0	(0 = WALL, 1 = BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVENING	NIGHT	DAILY
AUTOMOBILES	0.755	0.140	0.105	0.9742
MEDIUM TRUCK	0.489	0.022	0.489	0.0184
HEAVY TRUCKS	0.473	0.054	0.473	0.0074

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES	2.0	59.79	- -
MEDIUM TRUCKS	4.0	59.65	- -
HEAVY TRUCKS	8.0	59.65	0.00

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	65.8	63.7	62.4	56.4	64.8	65.5
MEDIUM TRUCKS	57.5	53.6	46.1	54.8	61.0	61.0
HEAVY TRUCKS	58.4	54.3	50.9	55.6	61.8	61.9
NOISE LEVELS (dBA)	67.0	64.6	62.8	60.4	67.6	68.0

NOISE IMPACTS (WITH TOPO AND BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	59.5	57.5	56.2	50.2	58.6	59.2
MEDIUM TRUCKS	51.9	48.0	40.5	49.2	55.4	55.4
HEAVY TRUCKS	53.4	49.4	46.0	50.6	56.8	56.9
NOISE LEVELS (dBA)	61.2	58.8	57.1	54.7	61.9	62.2

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	38	120	380	1201
LDN	35	110	349	1103

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

PROJECT:	TTM 38222	JOB #:	0741-21-34
ROADWAY:	Vista del Sol	DATE:	1-Oct-21
LOCATION:	39901 Vista del Sol, Rancho Mirage CA 92270	ENGINEER:	F. Irarrazabal

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	11,785	
SPEED =	40	
PK HR % =	10	
NEAR LANE/FAR LANE DIS	12	
ROAD ELEVATION =	0.0	
GRADE =	0.0	%
PK HR VOL =	1,179	

RECEIVER INPUT DATA

RECEIVER DISTANCE =	60	
DIST C/L TO WALL =	42	
RECEIVER HEIGHT =	5.0	
WALL DISTANCE FROM RECEIVER	18	
PAD ELEVATION =	0.0	
ROADWAY VIEW: LF ANGLE=	-90	
RT ANGLE=	90	
DF ANGLE=	180	

SITE CONDITIONS

AUTOMOBILES =	10	
MEDIUM TRUCKS =	10	(10 = HARD SITE, 15 = SOFT SITE)
HEAVY TRUCKS =	10	

WALL INFORMATION

HTH WALL:	6.0	
AMBIENT=	0.0	
BARRIER =	0	(0 = WALL, 1 = BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVENING	NIGHT	DAILY
AUTOMOBILES	0.755	0.140	0.105	0.9742
MEDIUM TRUCK	0.489	0.022	0.489	0.0184
HEAVY TRUCKS	0.473	0.054	0.473	0.0074

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES	2.0	59.79	- -
MEDIUM TRUCKS	4.0	59.65	- -
HEAVY TRUCKS	8.0	59.65	0.00

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	65.8	63.8	62.5	56.5	64.9	65.5
MEDIUM TRUCKS	57.5	53.6	46.2	54.9	61.0	61.1
HEAVY TRUCKS	58.4	54.4	51.0	55.6	61.8	61.9
NOISE LEVELS (dBA)	67.0	64.6	62.9	60.5	67.7	68.0

NOISE IMPACTS (WITH TOPO AND BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	59.5	57.5	56.2	50.2	58.6	59.3
MEDIUM TRUCKS	51.9	48.0	40.6	49.3	55.4	55.5
HEAVY TRUCKS	53.4	49.4	46.0	50.6	56.8	56.9
NOISE LEVELS (dBA)	61.3	58.8	57.1	54.7	61.9	62.3

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	38	121	383	1210
LDN	35	111	351	1111

Appendix C:

Construction Noise Modeling Output

Construction Noise Levels at Senstive Receptors by Phase

Activity	Leq at 390 FT (East)	Lmax at 390 FT (East)
Site Preparation	60	64
Grading	67	71
Building Construction	63	67
Architectural Coating	50	54

Equipment Summary	Reference (dBA) 50 ft Lmax
Rock Drills	96
Jack Hammers	82
Pneumatic Tools	85
Pavers	80
Dozers	85
Scrapers	87
Haul Trucks	88
Cranes	82
Portable Generators	80
Rollers	80
Tractors	80
Front-End Loaders	86
Hydraulic Excavators	86
Graders	86
Air Compressors	86
Trucks	86

Site Preparation

		Noise Level Calculation Prior to Implementation of Noise Attenuation Requirements								
No.	Equipment Description	Reference (dBA) 50 ft Lmax	Quantity	Usage Factor[1]	Distance to Receptor (ft)	Ground Effect	Shielding (dBA)	Calculated (dBA) Lmax	Calculated (dBA) Leq	Energy
1	Dozer	85	1	40	390	0.5	0	62.7	58.7	744429.345
2	Tractor/Loader/Backhoe	80	1	40	390	0.5	0	57.7	53.7	235409.229
							Lmax*	64	Leq	60
							Lw	94	Lw	92

Source: MD Acoustics, LLC - Sept. 2021.
1- Percentage of time that a piece of equipment is operating at full power.
dBA – A-weighted Decibels
Lmax- Maximum Level
Leq- Equivalent Level

Feet	Meters	Ground Effect	No Shielding Leq dBA	1 dBA Shielding Leq dBA	2 dBA Shielding Leq dBA	3 dBA Shielding Leq dBA	4 dBA Shielding Leq dBA	5 dBA Shielding Leq dBA	6 dBA Shielding Leq dBA	7 dBA Shielding Leq dBA	8 dBA Shielding Leq dBA	9 dBA Shielding Leq dBA	10 dBA Shielding Leq dBA	11 dBA Shielding LeqdBA	12 dBA Shielding Leq dBA	13 dBA Shielding Leq dBA	14 dBA Shielding Leq dBA	15 dBA Shielding Leq dBA
50	15.2	0.5	60	59	58	57	56	55	54	53	52	51	50	49	48	47	46	45
60	18.3	0.5	58	57	56	55	54	53	52	51	50	49	48	47	46	45	44	43
70	21.3	0.5	56	55	54	53	52	51	50	49	48	47	46	45	44	43	42	41
80	24.4	0.5	55	54	53	52	51	50	49	48	47	46	45	44	43	42	41	40
90	27.4	0.5	54	53	52	51	50	49	48	47	46	45	44	43	42	41	40	39
100	30.5	0.5	52	51	50	49	48	47	46	45	44	43	42	41	40	39	38	37
110	33.5	0.5	51	50	49	48	47	46	45	44	43	42	41	40	39	38	37	36
120	36.6	0.5	50	49	48	47	46	45	44	43	42	41	40	39	38	37	36	35
130	39.6	0.5	50	49	48	47	46	45	44	43	42	41	40	39	38	37	36	35
140	42.7	0.5	49	48	47	46	45	44	43	42	41	40	39	38	37	36	35	34
150	45.7	0.5	48	47	46	45	44	43	42	41	40	39	38	37	36	35	34	33
160	48.8	0.5	47	46	45	44	43	42	41	40	39	38	37	36	35	34	33	32
170	51.8	0.5	47	46	45	44	43	42	41	40	39	38	37	36	35	34	33	32
180	54.9	0.5	46	45	44	43	42	41	40	39	38	37	36	35	34	33	32	31
190	57.9	0.5	45	44	43	42	41	40	39	38	37	36	35	34	33	32	31	30
200	61.0	0.5	45	44	43	42	41	40	39	38	37	36	35	34	33	32	31	30
210	64.0	0.5	44	43	42	41	40	39	38	37	36	35	34	33	32	31	30	29
220	67.1	0.5	44	43	42	41	40	39	38	37	36	35	34	33	32	31	30	29
230	70.1	0.5	43	42	41	40	39	38	37	36	35	34	33	32	31	30	29	28
240	73.1	0.5	43	42	41	40	39	38	37	36	35	34	33	32	31	30	29	28
250	76.2	0.5	42	41	40	39	38	37	36	35	34	33	32	31	30	29	28	27
260	79.2	0.5	42	41	40	39	38	37	36	35	34	33	32	31	30	29	28	27
270	82.3	0.5	42	41	40	39	38	37	36	35	34	33	32	31	30	29	28	27
280	85.3	0.5	41	40	39	38	37	36	35	34	33	32	31	30	29	28	27	26
290	88.4	0.5	41	40	39	38	37	36	35	34	33	32	31	30	29	28	27	26
300	91.4	0.5	40	39	38	37	36	35	34	33	32	31	30	29	28	27	26	25
310	94.5	0.5	40	39	38	37	36	35	34	33	32	31	30	29	28	27	26	25
320	97.5	0.5	40	39	38	37	36	35	34	33	32	31	30	29	28	27	26	25
330	100.6	0.5	39	38	37	36	35	34	33	32	31	30	29	28	27	26	25	24
340	103.6	0.5	39	38	37	36	35	34	33	32	31	30	29	28	27	26	25	24
350	106.7	0.5	39	38	37	36	35	34	33	32	31	30	29	28	27	26	25	24
360	109.7	0.5	38	37	36	35	34	33	32	31	30	29	28	27	26	25	24	23
370	112.8	0.5	38	37	36	35	34	33	32	31	30	29	28	27	26	25	24	23

Grading

Noise Level Calculation Prior to Implementation of Noise Attenuation Requirements

No.	Equipment Description	Reference (dBA) 50 ft Lmax	Quantity	Usage Factor[1]	Distance to Receptor (ft)	Ground Effect	Shielding (dBA)	Calculated (dBA) Lmax	Calculated (dBA) Leq	Energy
1	Grader	86	1	40	390	0.5	0	63.7	59.7	937181.02
2	Dozer	85	1	40	390	0.5	0	62.7	58.7	744429.345
3	Tractor/Backhoe	80	2	40	390	0.5	0	60.7	56.7	470818.458
4	Scrapers	87	1	40	390	0.5	0	64.7	60.7	1179841
5	Excavators	86	2	40	390	0.5	0	66.7	62.7	1874362.04
							Lmax*	**71**	**Leq**	**67**
							Lw	**100**	**Lw**	**99**

Source: MD Acoustics, LLC - Sept. 2021.

1- Percentage of time that a piece of equipment is operating at full power.

dBA – A-weighted Decibels

Lmax- Maximum Level

Leq- Equivalent Level

Feet	Meters	Ground Effect	No Shielding Leq dBA	1 dBA Shielding Leq dBA	2 dBA Shielding Leq dBA	3 dBA Shielding Leq dBA	4 dBA Shielding Leq dBA	5 dBA Shielding Leq dBA	6 dBA Shielding Leq dBA	7 dBA Shielding Leq dBA	8 dBA Shielding Leq dBA	9 dBA Shielding Leq dBA	10 dBA Shielding Leq dBA	11 dBA Shielding LeqdBA	12 dBA Shielding Leq dBA	13 dBA Shielding Leq dBA	14 dBA Shielding Leq dBA	15 dBA Shielding Leq dBA
50	15.2	0.5	67	66	65	64	63	62	61	60	59	58	57	56	55	54	53	52
60	18.3	0.5	65	64	63	62	61	60	59	58	57	56	55	54	53	52	51	50
70	21.3	0.5	64	63	62	61	60	59	58	57	56	55	54	53	52	51	50	49
80	24.4	0.5	62	61	60	59	58	57	56	55	54	53	52	51	50	49	48	47
90	27.4	0.5	61	60	59	58	57	56	55	54	53	52	51	50	49	48	47	46
100	30.5	0.5	60	59	58	57	56	55	54	53	52	51	50	49	48	47	46	45
110	33.5	0.5	59	58	57	56	55	54	53	52	51	50	49	48	47	46	45	44
120	36.6	0.5	58	57	56	55	54	53	52	51	50	49	48	47	46	45	44	43
130	39.6	0.5	57	56	55	54	53	52	51	50	49	48	47	46	45	44	43	42
140	42.7	0.5	56	55	54	53	52	51	50	49	48	47	46	45	44	43	42	41
150	45.7	0.5	55	54	53	52	51	50	49	48	47	46	45	44	43	42	41	40
160	48.8	0.5	55	54	53	52	51	50	49	48	47	46	45	44	43	42	41	40
170	51.8	0.5	54	53	52	51	50	49	48	47	46	45	44	43	42	41	40	39
180	54.9	0.5	53	52	51	50	49	48	47	46	45	44	43	42	41	40	39	38
190	57.9	0.5	53	52	51	50	49	48	47	46	45	44	43	42	41	40	39	38
200	61.0	0.5	52	51	50	49	48	47	46	45	44	43	42	41	40	39	38	37
210	64.0	0.5	52	51	50	49	48	47	46	45	44	43	42	41	40	39	38	37
220	67.1	0.5	51	50	49	48	47	46	45	44	43	42	41	40	39	38	37	36
230	70.1	0.5	51	50	49	48	47	46	45	44	43	42	41	40	39	38	37	36
240	73.1	0.5	50	49	48	47	46	45	44	43	42	41	40	39	38	37	36	35
250	76.2	0.5	50	49	48	47	46	45	44	43	42	41	40	39	38	37	36	35
260	79.2	0.5	49	48	47	46	45	44	43	42	41	40	39	38	37	36	35	34
270	82.3	0.5	49	48	47	46	45	44	43	42	41	40	39	38	37	36	35	34
280	85.3	0.5	48	47	46	45	44	43	42	41	40	39	38	37	36	35	34	33
290	88.4	0.5	48	47	46	45	44	43	42	41	40	39	38	37	36	35	34	33
300	91.4	0.5	48	47	46	45	44	43	42	41	40	39	38	37	36	35	34	33
310	94.5	0.5	47	46	45	44	43	42	41	40	39	38	37	36	35	34	33	32
320	97.5	0.5	47	46	45	44	43	42	41	40	39	38	37	36	35	34	33	32
330	100.6	0.5	47	46	45	44	43	42	41	40	39	38	37	36	35	34	33	32
340	103.6	0.5	46	45	44	43	42	41	40	39	38	37	36	35	34	33	32	31
350	106.7	0.5	46	45	44	43	42	41	40	39	38	37	36	35	34	33	32	31
360	109.7	0.5	46	45	44	43	42	41	40	39	38	37	36	35	34	33	32	31
370	112.8	0.5	45	44	43	42	41	40	39	38	37	36	35	34	33	32	31	30

Building Construction

Noise Level Calculation Prior to Implementation of Noise Attenuation Requirements

No.	Equipment Description	Reference (dBA) 50 ft Lmax	Quantity	Usage Factor[1]	Distance to Receptor (ft)	Ground Effect	Shielding (dBA)	Calculated (dBA) Lmax	Calculated (dBA) Leq	Energy
1	Forklift/Tractor	80	3	40	390	0.5	0	62.5	58.5	706227.686
2	Tractor/Backhoe	80	3	40	390	0.5	0	62.5	58.5	706227.686
3	Cranes	82	1	40	390	0.5	0	59.7	55.7	373098.484
4	Generator	80	1	40	390	0.5	0	57.7	53.7	235409.229
							Lmax*	**67**	**Leq**	**63**
							Lw	**99**	**Lw**	**95**

Source: MD Acoustics, LLC - Sept. 2021.
1- Percentage of time that a piece of equipment is operating at full power.
dBA – A-weighted Decibels
Lmax- Maximum Level
Leq- Equivalent Level

Feet	Meters	Ground Effect	No Shielding Leq dBA	1 dBA Shielding Leq dBA	2 dBA Shielding Leq dBA	3 dBA Shielding Leq dBA	4 dBA Shielding Leq dBA	5 dBA Shielding Leq dBA	6 dBA Shielding Leq dBA	7 dBA Shielding Leq dBA	8 dBA Shielding Leq dBA	9 dBA Shielding Leq dBA	10 dBA Shielding Leq dBA	11 dBA Shielding LeqdBA	12 dBA Shielding Leq dBA	13 dBA Shielding Leq dBA	14 dBA Shielding Leq dBA	15 dBA Shielding Leq dBA
50	**15.2**	**0.5**	**63**	**62**	**61**	**60**	**59**	**58**	**57**	**56**	**55**	**54**	**53**	**52**	**51**	**50**	**49**	**48**
60	18.3	0.5	61	60	59	58	57	56	55	54	53	52	51	50	49	48	47	46
70	21.3	0.5	59	58	57	56	55	54	53	52	51	50	49	48	47	46	45	44
80	24.4	0.5	58	57	56	55	54	53	52	51	50	49	48	47	46	45	44	43
90	27.4	0.5	57	56	55	54	53	52	51	50	49	48	47	46	45	44	43	42
100	30.5	0.5	56	55	54	53	52	51	50	49	48	47	46	45	44	43	42	41
110	33.5	0.5	54	53	52	51	50	49	48	47	46	45	44	43	42	41	**40**	39
120	36.6	0.5	54	53	52	51	50	49	48	47	46	45	44	43	42	41	40	39
130	39.6	0.5	53	52	51	50	49	48	47	46	45	44	43	42	41	40	39	38
140	42.7	0.5	52	51	50	49	48	47	46	45	44	43	42	41	40	39	38	37
150	45.7	0.5	51	50	49	48	47	46	45	44	43	42	41	40	39	38	37	36
160	48.8	0.5	50	49	48	47	46	45	44	43	42	41	40	39	38	37	36	35
170	51.8	0.5	50	49	48	47	46	45	44	43	42	41	40	39	38	37	36	35
180	54.9	0.5	49	48	47	46	45	44	43	42	41	40	39	38	37	36	35	34
190	57.9	0.5	49	48	47	46	45	44	43	42	41	40	39	38	37	36	35	34
200	61.0	0.5	48	47	46	45	44	43	42	41	40	39	38	37	36	35	34	33
210	64.0	0.5	47	46	45	44	43	42	41	40	39	38	37	36	35	34	33	32
220	67.1	0.5	47	46	45	44	43	42	41	40	39	38	37	36	35	34	33	32
230	70.1	0.5	46	45	44	43	42	41	40	39	38	37	36	35	34	33	32	31
240	73.1	0.5	46	45	44	43	42	41	40	39	38	37	36	35	34	33	32	31
250	76.2	0.5	46	45	44	43	42	41	40	39	38	37	36	35	34	33	32	31
260	79.2	0.5	45	44	43	42	41	40	39	38	37	36	35	34	33	32	31	30
270	82.3	0.5	45	44	43	42	41	40	39	38	37	36	35	34	33	32	31	30
280	85.3	0.5	44	43	42	41	40	39	38	37	36	35	34	33	32	31	30	29
290	88.4	0.5	44	43	42	41	40	39	38	37	36	35	34	33	32	31	30	29
300	91.4	0.5	44	43	42	41	40	39	38	37	36	35	34	33	32	31	30	29
310	94.5	0.5	43	42	41	40	39	38	37	36	35	34	33	32	31	30	29	28
320	97.5	0.5	43	42	41	40	39	38	37	36	35	34	33	32	31	30	29	28
330	100.6	0.5	43	42	41	40	39	38	37	36	35	34	33	32	31	30	29	28
340	103.6	0.5	42	41	40	39	38	37	36	35	34	33	32	31	30	29	28	27
350	106.7	0.5	42	41	40	39	38	37	36	35	34	33	32	31	30	29	28	27
360	109.7	0.5	42	41	40	39	38	37	36	35	34	33	32	31	30	29	28	27
370	112.8	0.5	41	40	39	38	37	36	35	34	33	32	31	30	29	28	27	26

Architectural Coating

Noise Level Calculation Prior to Implementation of Noise Attenuation Requirements

No.	Equipment Description	Reference (dBA) 50 ft Lmax	Quantity	Usage Factor[1]	Distance to Receptor (ft)	Ground Effect	Shielding (dBA)	Calculated (dBA) Lmax	Calculated (dBA) Leq	Energy
1	Air Compressor	86	1	40	950	0.5	0	54.0	50.1	101198.946
							Lmax*	**54**	**Leq**	**50**
							Lw	**86**	**Lw**	**82**

Source: MD Acoustics, LLC - Sept. 2021.
1- Percentage of time that a piece of equipment is operating at full power.
dBA – A-weighted Decibels
Lmax- Maximum Level
Leq- Equivalent Level

Feet	Meters	Ground Effect	No Shielding Leq dBA	1 dBA Shielding Leq dBA	2 dBA Shielding Leq dBA	3 dBA Shielding Leq dBA	4 dBA Shielding Leq dBA	5 dBA Shielding Leq dBA	6 dBA Shielding Leq dBA	7 dBA Shielding Leq dBA	8 dBA Shielding Leq dBA	9 dBA Shielding Leq dBA	10 dBA Shielding Leq dBA	11 dBA Shielding LeqdBA	12 dBA Shielding Leq dBA	13 dBA Shielding Leq dBA	14 dBA Shielding Leq dBA	15 dBA Shielding Leq dBA
50	**15.2**	**0.5**	**50**	**49**	**48**	**47**	**46**	**45**	**44**	**43**	**42**	**41**	**40**	**39**	**38**	**37**	**36**	**35**
60	18.3	0.5	48	47	46	45	44	43	42	41	40	39	38	37	36	35	34	33
70	21.3	0.5	46	45	44	43	42	41	40	39	38	37	36	35	34	33	32	31
80	24.4	0.5	45	44	43	42	41	40	39	38	37	36	35	34	33	32	31	30
90	27.4	0.5	44	43	42	41	40	39	38	37	36	35	34	33	32	31	30	29
100	30.5	0.5	43	42	41	40	39	38	37	36	35	34	33	32	31	30	29	28
110	33.5	0.5	41	40	39	38	37	36	35	34	33	32	31	30	29	28	**27**	26
120	36.6	0.5	41	40	39	38	37	36	35	34	33	32	31	30	29	28	27	26
130	39.6	0.5	40	39	38	37	36	35	34	33	32	31	30	29	28	27	26	25
140	42.7	0.5	39	38	37	36	35	34	33	32	31	30	29	28	27	26	25	24
150	45.7	0.5	38	37	36	35	34	33	32	31	30	29	28	27	26	25	24	23
160	48.8	0.5	37	36	35	34	33	32	31	30	29	28	27	26	25	24	23	22
170	51.8	0.5	37	36	35	34	33	32	31	30	29	28	27	26	25	24	23	22
180	54.9	0.5	36	35	34	33	32	31	30	29	28	27	26	25	24	23	22	21
190	57.9	0.5	36	35	34	33	32	31	30	29	28	27	26	25	24	23	22	21
200	61.0	0.5	35	34	33	32	31	30	29	28	27	26	25	24	23	22	21	20
210	64.0	0.5	34	33	32	31	30	29	28	27	26	25	24	23	22	21	20	19
220	67.1	0.5	34	33	32	31	30	29	28	27	26	25	24	23	22	21	20	19
230	70.1	0.5	33	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18
240	73.1	0.5	33	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18
250	76.2	0.5	33	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18
260	79.2	0.5	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17
270	82.3	0.5	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17
280	85.3	0.5	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16
290	88.4	0.5	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16
300	91.4	0.5	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16
310	94.5	0.5	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15
320	97.5	0.5	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15
330	100.6	0.5	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15
340	103.6	0.5	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14
350	106.7	0.5	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14
360	109.7	0.5	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14
370	112.8	0.5	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13

VIBRATION LEVEL IMPACT

Project:	TTM 38222 Noise	Date: 9/30/21
Source:	Large Bulldozer	
Scenario:	Unmitigated	
Location:	Project Site	
Address:	39901 Vista del Sol, Rancho Mirage, CA 92270	

PPV = PPVref(25/D)^n (in/sec)

DATA INPUT

Equipment = Type	2	Large Bulldozer	INPUT SECTION IN BLUE
PPVref =	0.089	Reference PPV (in/sec) at 25 ft.	
D =	390.00	Distance from Equipment to Receiver (ft)	
n =	1.10	Vibration attenuation rate through the ground	

Note: Based on reference equations from Vibration Guidance Manual, California Department of Transportation, 2006, pgs 38-43.

DATA OUT RESULTS

PPV =	**0.004**	IN/SEC	OUTPUT IN RED

Appendix E

Tribal Consultation Letters

CITY OF RANCHO MIRAGE

August 2, 2022

Twenty-Nine Palms Band of Mission Indians
Attn: Darrell Mike, Tribal Chairman
46-200 Harrison Place
Coachella, CA 92236

RE: Environmental Assessment Case No. EA22-0003 and Tentative Tract Map Case No. TTM22-0002 (Tentative Tract Map No. 38222)

Dear Mr. Mike:

In conformance with Assembly Bill 52 (AB 52), we are sending you this letter to offer consultation to protect cultural resources that may occur within the City per your request. The project being considered is as follows:

The proposed Project includes a Tentative Tract Map No. 38222 (TTM) to divide the two existing parcels (APNs 685-280-002 and -003) into nine lots to allow for the development of up to 9 single-family homes. The project site totals ±10.12 acres with lot sizes ranging from 43,560 square feet to 45,102 square feet. The project site is located on the east side of Vista Del Sol, just east of Betty Ford Center and west of Vista Dunes Road. Please see the enclosed tentative map for an overview of the project.

If you wish to consult with the City regarding potential cultural resources within the City, or the AB 52 process, please contact me at 760-328-2266, or at the following address within 30 days from the receipt of this letter.

Sincerely,

Pilar Lopez
Associate Planner

CITY OF RANCHO MIRAGE

August 2, 2022

Twenty-Nine Palms
Band of Mission Indians
Attn: Anthony Madrigal, Jr., Tribal Grants
46-200 Harrison Place
Coachella, CA 92236

RE: Environmental Assessment Case No. EA22-0003 and Tentative Tract Map Case No. TTM22-0002 (Tentative Tract Map No. 38222)

Dear Mr. Madrigal:

In conformance with Assembly Bill 52 (AB 52), we are sending you this letter to offer consultation to protect cultural resources that may occur within the City per your request. The project being considered is as follows:

The proposed Project includes a Tentative Tract Map No. 38222 (TTM) to divide the two existing parcels (APNs 685-280-002 and -003) into nine lots to allow for the development of up to 9 single-family homes. The project site totals ±10.12 acres with lot sizes ranging from 43,560 square feet to 45,102 square feet. The project site is located on the east side of Vista Del Sol, just east of Betty Ford Center and west of Vista Dunes Road. Please see the enclosed tentative map for an overview of the project.

If you wish to consult with the City regarding potential cultural resources within the City, or the AB 52 process, please contact me at 760-328-2266, or at the following address within 30 days from the receipt of this letter.

Sincerely,

Pilar Lopez
Associate Planner

CITY OF RANCHO MIRAGE

August 2, 2022

Agua Caliente Band of Cahuilla Indians
Attn: Reid D Milanovich, Chairperson
5401 Dinah Shore Drive
Palm Springs, CA 92264

RE: Environmental Assessment Case No. EA22-0003 and Tentative Tract Map Case No. TTM22-0002 (Tentative Tract Map No. 38222)

Dear Mr. Milanovich:

In conformance with Assembly Bill 52 (AB 52), we are sending you this letter to offer consultation to protect cultural resources that may occur within the City per your request. The project being considered is as follows:

The proposed Project includes a Tentative Tract Map No. 38222 (TTM) to divide the two existing parcels (APNs 685-280-002 and -003) into nine lots to allow for the development of up to 9 single-family homes. The project site totals ±10.12 acres with lot sizes ranging from 43,560 square feet to 45,102 square feet. The project site is located on the east side of Vista Del Sol, just east of Betty Ford Center and west of Vista Dunes Road. Please see the enclosed tentative map for an overview of the project.

If you wish to consult with the City regarding potential cultural resources within the City, or the AB 52 process, please contact me at 760-328-2266, or at the following address within 30 days from the receipt of this letter.

Sincerely,

Pilar Lopez
Associate Planner

CITY OF RANCHO MIRAGE

August 2, 2022

Augustine Band of Cahuilla Mission Indians
Attn: Amanda Vance, Chairperson
P.O. Box 846
Coachella, CA 92236

RE: Environmental Assessment Case No. EA22-0003 and Tentative Tract Map Case No. TTM22-0002 (Tentative Tract Map No. 38222)

Dear Ms. Vance:

In conformance with Assembly Bill 52 (AB 52), we are sending you this letter to offer consultation to protect cultural resources that may occur within the City per your request. The project being considered is as follows:

The proposed Project includes a Tentative Tract Map No. 38222 (TTM) to divide the two existing parcels (APNs 685-280-002 and -003) into nine lots to allow for the development of up to 9 single-family homes. The project site totals ±10.12 acres with lot sizes ranging from 43,560 square feet to 45,102 square feet. The project site is located on the east side of Vista Del Sol, just east of Betty Ford Center and west of Vista Dunes Road. Please see the enclosed tentative map for an overview of the project.

If you wish to consult with the City regarding potential cultural resources within the City, or the AB 52 process, please contact me at 760-328-2266, or at the following address within 30 days from the receipt of this letter.

Sincerely,

Pilar Lopez
Associate Planner

CITY OF RANCHO MIRAGE

August 2, 2022

Cabazon Band of Mission Indians
Tribal Administration
Attn: Doug Todd Welmas, Tribal Chairman
84-245 Indio Springs Parkway
Indio, CA 92203

RE: Environmental Assessment Case No. EA22-0003 and Tentative Tract Map Case No. TTM22-0002 (Tentative Tract Map No. 38222)

Dear Mr. Welmas:

In conformance with Assembly Bill 52 (AB 52), we are sending you this letter to offer consultation to protect cultural resources that may occur within the City per your request. The project being considered is as follows:

The proposed Project includes a Tentative Tract Map No. 38222 (TTM) to divide the two existing parcels (APNs 685-280-002 and -003) into nine lots to allow for the development of up to 9 single-family homes. The project site totals ±10.12 acres with lot sizes ranging from 43,560 square feet to 45,102 square feet. The project site is located on the east side of Vista Del Sol, just east of Betty Ford Center and west of Vista Dunes Road. Please see the enclosed tentative map for an overview of the project.

If you wish to consult with the City regarding potential cultural resources within the City, or the AB 52 process, please contact me at 760-328-2266, or at the following address within 30 days from the receipt of this letter.

Sincerely,

Pilar Lopez
Associate Planner

CITY OF RANCHO MIRAGE

August 2, 2022

Cabazon Band of Mission Indians
Attn: Jacquelyn Barnum, Environmental Director
84-245 Indio Springs Parkway
Indio, CA 92203

RE: Environmental Assessment Case No. EA22-0003 and Tentative Tract Map Case No. TTM22-0002 (Tentative Tract Map No. 38222)

Dear Ms. Barnum:

In conformance with Assembly Bill 52 (AB 52), we are sending you this letter to offer consultation to protect cultural resources that may occur within the City per your request. The project being considered is as follows:

The proposed Project includes a Tentative Tract Map No. 38222 (TTM) to divide the two existing parcels (APNs 685-280-002 and -003) into nine lots to allow for the development of up to 9 single-family homes. The project site totals ±10.12 acres with lot sizes ranging from 43,560 square feet to 45,102 square feet. The project site is located on the east side of Vista Del Sol, just east of Betty Ford Center and west of Vista Dunes Road. Please see the enclosed tentative map for an overview of the project.

If you wish to consult with the City regarding potential cultural resources within the City, or the AB 52 process, please contact me at 760-328-2266, or at the following address within 30 days from the receipt of this letter.

Sincerely,

Pilar Lopez
Associate Planner

CITY OF RANCHO MIRAGE

August 2, 2022

Cahuilla Band of Indians
Attn: Daniel Salgado, Chair
PO Box 391760
Anza, CA 92539

RE: Environmental Assessment Case No. EA22-0003 and Tentative Tract Map Case No. TTM22-0002 (Tentative Tract Map No. 38222)

Dear Mr. Salgado:

In conformance with Assembly Bill 52 (AB 52), we are sending you this letter to offer consultation to protect cultural resources that may occur within the City per your request. The project being considered is as follows:

The proposed Project includes a Tentative Tract Map No. 38222 (TTM) to divide the two existing parcels (APNs 685-280-002 and -003) into nine lots to allow for the development of up to 9 single-family homes. The project site totals ±10.12 acres with lot sizes ranging from 43,560 square feet to 45,102 square feet. The project site is located on the east side of Vista Del Sol, just east of Betty Ford Center and west of Vista Dunes Road. Please see the enclosed tentative map for an overview of the project.

If you wish to consult with the City regarding potential cultural resources within the City, or the AB 52 process, please contact me at 760-328-2266, or at the following address within 30 days from the receipt of this letter.

Sincerely,

Pilar Lopez
Associate Planner

CITY OF RANCHO MIRAGE

August 2, 2022

Los Coyotes Band of Mission Indians
Attn: Shane Chapparosa, Chairperson
P.O. Box 189
Warner Springs, CA 92086

RE: Environmental Assessment Case No. EA22-0003 and Tentative Tract Map Case No. TTM22-0002 (Tentative Tract Map No. 38222)

Dear Mr. Cahpparosa:

In conformance with Assembly Bill 52 (AB 52), we are sending you this letter to offer consultation to protect cultural resources that may occur within the City per your request. The project being considered is as follows:

The proposed Project includes a Tentative Tract Map No. 38222 (TTM) to divide the two existing parcels (APNs 685-280-002 and -003) into nine lots to allow for the development of up to 9 single-family homes. The project site totals ±10.12 acres with lot sizes ranging from 43,560 square feet to 45,102 square feet. The project site is located on the east side of Vista Del Sol, just east of Betty Ford Center and west of Vista Dunes Road. Please see the enclosed tentative map for an overview of the project.

If you wish to consult with the City regarding potential cultural resources within the City, or the AB 52 process, please contact me at 760-328-2266, or at the following address within 30 days from the receipt of this letter.

Sincerely,

Pilar Lopez
Associate Planner

CITY OF RANCHO MIRAGE

August 2, 2022

Morongo Band of Mission Indians
Attn: Travis Armstrong, Tribal Historic Preservation Officer
12700 Pumarra Road
Banning, CA 92220

RE: Environmental Assessment Case No. EA22-0003 and Tentative Tract Map Case No. TTM22-0002 (Tentative Tract Map No. 38222)

Dear Mr. Armstrong:

In conformance with Assembly Bill 52 (AB 52), we are sending you this letter to offer consultation to protect cultural resources that may occur within the City per your request. The project being considered is as follows:

The proposed Project includes a Tentative Tract Map No. 38222 (TTM) to divide the two existing parcels (APNs 685-280-002 and -003) into nine lots to allow for the development of up to 9 single-family homes. The project site totals ±10.12 acres with lot sizes ranging from 43,560 square feet to 45,102 square feet. The project site is located on the east side of Vista Del Sol, just east of Betty Ford Center and west of Vista Dunes Road. Please see the enclosed tentative map for an overview of the project.

If you wish to consult with the City regarding potential cultural resources within the City, or the AB 52 process, please contact me at 760-328-2266, or at the following address within 30 days from the receipt of this letter.

Sincerely,

Pilar Lopez
Associate Planner

CITY OF RANCHO MIRAGE

August 2, 2022

Morongo Band of Mission Indians
Attn: Robert Martin, Tribal Chairman
12700 Pumarra Road
Banning, CA 92220

RE: Environmental Assessment Case No. EA22-0003 and Tentative Tract Map Case No. TTM22-0002 (Tentative Tract Map No. 38222)

Dear Mr. Martin:

In conformance with Assembly Bill 52 (AB 52), we are sending you this letter to offer consultation to protect cultural resources that may occur within the City per your request. The project being considered is as follows:

The proposed Project includes a Tentative Tract Map No. 38222 (TTM) to divide the two existing parcels (APNs 685-280-002 and -003) into nine lots to allow for the development of up to 9 single-family homes. The project site totals ±10.12 acres with lot sizes ranging from 43,560 square feet to 45,102 square feet. The project site is located on the east side of Vista Del Sol, just east of Betty Ford Center and west of Vista Dunes Road. Please see the enclosed tentative map for an overview of the project.

If you wish to consult with the City regarding potential cultural resources within the City, or the AB 52 process, please contact me at 760-328-2266, or at the following address within 30 days from the receipt of this letter.

Sincerely,

Pilar Lopez
Associate Planner

CITY OF RANCHO MIRAGE

August 2, 2022

Ramona Band of Cahuilla Mission
Attn: Joseph Hamilton, Chairperson
PO Box 391670
Anza, CA 92539

RE: Environmental Assessment Case No. EA22-0003 and Tentative Tract Map Case No. TTM22-0002 (Tentative Tract Map No. 38222)

Dear Mr. Hamilton:

In conformance with Assembly Bill 52 (AB 52), we are sending you this letter to offer consultation to protect cultural resources that may occur within the City per your request. The project being considered is as follows:

The proposed Project includes a Tentative Tract Map No. 38222 (TTM) to divide the two existing parcels (APNs 685-280-002 and -003) into nine lots to allow for the development of up to 9 single-family homes. The project site totals ±10.12 acres with lot sizes ranging from 43,560 square feet to 45,102 square feet. The project site is located on the east side of Vista Del Sol, just east of Betty Ford Center and west of Vista Dunes Road. Please see the enclosed tentative map for an overview of the project.

If you wish to consult with the City regarding potential cultural resources within the City, or the AB 52 process, please contact me at 760-328-2266, or at the following address within 30 days from the receipt of this letter.

Sincerely,

Pilar Lopez
Associate Planner

CITY OF RANCHO MIRAGE

August 2, 2022

Soboba Band of Luiseno Indians
Attn: Joseph Ontiveros, Cultural Resource Director
PO Box 487
San Jacinto, CA 92581

RE: Environmental Assessment Case No. EA22-0003 and Tentative Tract Map Case No. TTM22-0002 (Tentative Tract Map No. 38222)

Dear Mr. Ontiveros:

In conformance with Assembly Bill 52 (AB 52), we are sending you this letter to offer consultation to protect cultural resources that may occur within the City per your request. The project being considered is as follows:

The proposed Project includes a Tentative Tract Map No. 38222 (TTM) to divide the two existing parcels (APNs 685-280-002 and -003) into nine lots to allow for the development of up to 9 single-family homes. The project site totals ±10.12 acres with lot sizes ranging from 43,560 square feet to 45,102 square feet. The project site is located on the east side of Vista Del Sol, just east of Betty Ford Center and west of Vista Dunes Road. Please see the enclosed tentative map for an overview of the project.

If you wish to consult with the City regarding potential cultural resources within the City, or the AB 52 process, please contact me at 760-328-2266, or at the following address within 30 days from the receipt of this letter.

Sincerely,

Pilar Lopez
Associate Planner

CITY OF RANCHO MIRAGE

August 2, 2022

Santa Rosa Band of Mission Indians
Attn: Steven Estrada, Chairperson
PO Box 391820 Cahuilla
Anza, CA 92539

RE: Environmental Assessment Case No. EA22-0003 and Tentative Tract Map Case No. TTM22-0002 (Tentative Tract Map No. 38222)

Dear Mr. Estrada:

In conformance with Assembly Bill 52 (AB 52), we are sending you this letter to offer consultation to protect cultural resources that may occur within the City per your request. The project being considered is as follows:

The proposed Project includes a Tentative Tract Map No. 38222 (TTM) to divide the two existing parcels (APNs 685-280-002 and -003) into nine lots to allow for the development of up to 9 single-family homes. The project site totals ±10.12 acres with lot sizes ranging from 43,560 square feet to 45,102 square feet. The project site is located on the east side of Vista Del Sol, just east of Betty Ford Center and west of Vista Dunes Road. Please see the enclosed tentative map for an overview of the project.

If you wish to consult with the City regarding potential cultural resources within the City, or the AB 52 process, please contact me at 760-328-2266, or at the following address within 30 days from the receipt of this letter.

Sincerely,

Pilar Lopez
Associate Planner

CITY OF RANCHO MIRAGE

August 2, 2022

Torres Martinez Desert Cahuilla Indians
Attn: Michael Mirelez, Cultural Resource Coordinator
P.O. Box 1160
Thermal, CA 92274

RE: Environmental Assessment Case No. EA22-0003 and Tentative Tract Map Case No. TTM22-0002 (Tentative Tract Map No. 38222)

Dear Mr. Mirelez:

In conformance with Assembly Bill 52 (AB 52), we are sending you this letter to offer consultation to protect cultural resources that may occur within the City per your request. The project being considered is as follows:

The proposed Project includes a Tentative Tract Map No. 38222 (TTM) to divide the two existing parcels (APNs 685-280-002 and -003) into nine lots to allow for the development of up to 9 single-family homes. The project site totals ±10.12 acres with lot sizes ranging from 43,560 square feet to 45,102 square feet. The project site is located on the east side of Vista Del Sol, just east of Betty Ford Center and west of Vista Dunes Road. Please see the enclosed tentative map for an overview of the project.

If you wish to consult with the City regarding potential cultural resources within the City, or the AB 52 process, please contact me at 760-328-2266, or at the following address within 30 days from the receipt of this letter.

Sincerely,

Pilar Lopez
Associate Planner

Appendix F

Comment Letters Received from Initial Circulation of Draft IS/MND

State of California – Natural Resources Agency
DEPARTMENT OF FISH AND WILDLIFE
Inland Deserts Region
3602 Inland Empire Blvd, Suite C-220
Ontario, CA 91764
www.wildlife.ca.gov

GAVIN NEWSOM, Governor
CHARLTON H. BONHAM, Director

January 10, 2023
Sent via e-mail

Pilar Lopez
Associate Planner
City of Rancho Mirage
69-825 Highway 111
Rancho Mirage, CA 92270

VISTA DEL SOL 8-LOT SUBDIVISION (PROJECT)
MITIGATED NEGATIVE DECLARATION (MND)
SCH #: NONE

Dear Ms. Lopez:

1 The California Department of Fish and Wildlife (CDFW) received a Notice of Intent to Adopt an MND from the City of Rancho Mirage for the Project pursuant the California Environmental Quality Act (CEQA) and CEQA Guidelines.[1]

Thank you for the opportunity to provide comments and recommendations regarding those activities involved in the Project that may affect California fish and wildlife. Likewise, we appreciate the opportunity to provide comments regarding those aspects of the Project that CDFW, by law, may be required to carry out or approve through the exercise of its own regulatory authority under the Fish and Game Code.

CDFW ROLE

2 CDFW is California's **Trustee Agency** for fish and wildlife resources and holds those resources in trust by statute for all the people of the State. (Fish & G. Code, §§ 711.7, subd. (a) & 1802; Pub. Resources Code, § 21070; CEQA Guidelines § 15386, subd. (a).) CDFW, in its trustee capacity, has jurisdiction over the conservation, protection, and management of fish, wildlife, native plants, and habitat necessary for biologically sustainable populations of those species. (*Id.*, § 1802.) Similarly, for purposes of CEQA, CDFW is charged by law to provide, as available, biological expertise during public agency environmental review efforts, focusing specifically on projects and related activities that have the potential to adversely affect fish and wildlife resources.

3 CDFW is also submitting comments as a **Responsible Agency** under CEQA. (Pub. Resources Code, § 21069; CEQA Guidelines, § 15381.) CDFW expects that it may need to exercise regulatory authority as provided by the Fish and Game Code. As proposed, for example, the Project may be subject to CDFW's lake and streambed alteration regulatory authority. (Fish & G. Code, § 1600 et seq.) Likewise, to the extent implementation of the Project as proposed may result in "take" as defined by State law of any species protected under the California Endangered Species Act (CESA) (Fish & G. Code, § 2050 et seq.), the project proponent may seek related take authorization as provided by the Fish and Game Code.

PROJECT DESCRIPTION SUMMARY

4 **Proponent:** City of Rancho Mirage

Objective: The objective of the Project is to subdivide two existing parcels (APNs: 685-280-002 and -003) into eight residential lots and three lettered lots, including a private street. The Project site is 10.12 acres, and the residential lot sizes range from 43,700 square feet to 66,229 square feet. Construction is expected to occur in five phases, including site preparation, grading, building construction, paving, and architectural coating.

[1] CEQA is codified in the California Public Resources Code in section 21000 et seq. The "CEQA Guidelines" are found in Title 14 of the California Code of Regulations, commencing with section 15000.

Location: The proposed Project is located along the east side of Vista Del Sol, just east of Eisenhower Medical Center and west of Vista Dunes Road in the City of Rancho Mirage, Riverside County, California (33.764244°, -116.396440°). The Project encompasses Accessor's Parcel Numbers 685-280-002 and 685-280-003. Lands surrounding the parcels to the north, west, and south are undeveloped vacant land, whereas lands surrounding the parcels to the east are developed residential units. The Project's parcels are located within the Coachella Valley Multiple Species Habitat Conservation Plan (CVMSHCP) boundary. The Project is within the Indio subbasin of the Coachella Valley Groundwater Basin. 4

Timeframe: Construction is anticipated to begin in early 2023 and to be completed by early 2024.

COMMENTS AND RECOMMENDATIONS

CDFW has jurisdiction over the conservation, protection, and management of fish, wildlife, native plants, and habitat necessary for biologically sustainable populations of those species (i.e., biological resources). CDFW offers the comments and recommendations below to assist the City of Rancho Mirage in adequately identifying and/or mitigating the Project's significant, or potentially significant, direct and indirect impacts on fish and wildlife (biological) resources. The MND has not adequately identified and disclosed the Project's impacts (i.e., direct, indirect, and cumulative) to biological resources and whether those impacts are less than significant. CDFW offers the following comments and recommendations to assist the City in adequately identifying and mitigating the Project's significant, or potentially significant, impacts to biological resources. 5

CDFW's comments and recommendations on the MND are explained in greater detail below and summarized here. The MND bases its analysis of impacts to biological resources on a report by ELMT Consulting, which conducted a baseline field assessment of the Project site on September 14, 2021 (Appendix B of the MND). CDFW is concerned about the potential for special-status species, including those not covered under the Coachella Valley Multiple Species Habitat Conservation Plan (CVMSHCP), to occur on the Project site. The field assessment is outdated and was not conducted at the appropriate time(s) of year or using standard protocols to detect all special-status species on-site. CDFW generally considers field assessments for wildlife to be valid for a one-year period, and assessments for rare plants may be considered valid for a period of up to three years. Recent surveys during the appropriate times of the year are needed to inform appropriate avoidance, minimization, and mitigation measures, as well as to determine whether impacts to biological resources have been mitigated to a level that is less than significant. Furthermore, the mitigation measures provided in the MND are not adequate to protect nesting birds.

Circulation of CEQA Documents to the State Clearinghouse

CEQA requires lead agencies to submit draft environmental impact reports (EIR), proposed negative declarations (ND), and proposed mitigated negative declarations (MND) to the State Clearinghouse (SCH) at OPR when: 6

- A state agency is the lead agency, a responsible agency, or a trustee agency;
- A state agency otherwise has jurisdiction by law with respect to the Project; or
- The proposed Project is of statewide, regional, or areawide significance.[2]

CEQA's circulation, notice, and consultation requirements play a critical role in CDFW's trustee mandate to conserve the State's fish and wildlife resources for all the people of California.[3] CDFW is concerned that the City of Rancho Mirage has not circulated its MND for this Project through the State Clearinghouse. CDFW urges lead agencies to ensure environmental analyses are submitted to the State Clearinghouse as required by CEQA. Complying with these requirements, along with CEQA's responsible and trustee agency

[2] The "CEQA Guidelines" are found in Title 14 of the California Code of Regulations, commencing with section 15000. See CEQA Guidelines, §§ 15205, subd. (b), 15206, subd. (b)(1)-(7).)
[3] Fish & G. Code, §§ 711.7, 1802.

notice and consultation requirements, helps to ensure responsible and trustee agency input from CDFW during lead agency environmental review.

For more information about the state environmental review process generally and State Clearinghouse procedures, download the *State Clearinghouse Handbook*. You may also contact the State Clearinghouse by phone at (916) 445-0613 or email at state.clearinghouse@opr.ca.gov. OPR's November 2005 Technical Advisory regarding document submittal to the State Clearinghouse may be particularly helpful to interested lead agencies.

6

Assessment of Impacts to Biological Resources

Nesting Birds

It is the Project proponent's responsibility to comply with all applicable laws related to nesting birds and birds of prey. Fish and Game Code sections 3503, 3503.5, and 3513 afford protective measures as follows: Fish and Game Code section 3503 states that it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by Fish and Game Code or any regulation made pursuant thereto. Fish and Game Code section 3503.5 makes it unlawful to take, possess, or destroy any birds in the orders Falconiformes or Strigiformes (birds-of-prey) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by Fish and Game Code or any regulation adopted pursuant thereto. Fish and Game Code section 3513 makes it unlawful to take or possess any migratory nongame bird except as provided by rules and regulations adopted by the Secretary of the Interior under provisions of the Migratory Bird Treaty Act of 1918, as amended (16 U.S.C. § 703 et seq.).

CDFW is concerned about impacts to nesting birds from ground-disturbing activities and construction. Although the MND includes Mitigation Measure (MM) BIO-1 for nesting birds, the timing and scope are insufficient to protect nesting birds. CDFW recommends the revised MND include specific avoidance and minimization measures to ensure that impacts to nesting birds do not occur. Project-specific avoidance and minimization measures may include, but are not limited to, Project phasing and timing, monitoring of Project-related noise (where applicable), sound walls, and buffers, where appropriate. CDFW recommends that disturbance of occupied nests of migratory birds and raptors within the Project site be avoided **any time birds are nesting on-site.** Preconstruction nesting bird surveys shall be performed within 3 days prior to Project activities to determine the presence and location of nesting birds. CDFW recommends MM BIO-1 be revised as follows:

7

MM BIO-1: Avoidance of Nesting Birds

> **Nesting bird surveys shall be performed by a qualified avian biologist no more than (3) days prior to vegetation removal or ground-disturbing activities. Pre-construction surveys shall focus on both direct and indirect evidence of nesting, including nest locations and nesting behavior. The qualified avian biologist will make every effort to avoid potential nest predation as a result of survey and monitoring efforts. If active nests are found during the pre-construction nesting bird surveys, a qualified biologist shall establish an appropriate nest buffer to be marked on the ground. Nest buffers are species specific and shall be at least 300 feet for passerines and 500 feet for raptors. A smaller or larger buffer may be determined by the qualified biologist familiar with the nesting phenology of the nesting species and based on nest and buffer monitoring results. Established buffers shall remain on-site until a qualified biologist determines the young have fledged or the nest is no longer active. Active nests and adequacy of the established buffer distance shall be monitored daily by the qualified biologist until the qualified biologist has determined the young have fledged or the Project has been completed. The qualified biologist has the authority to stop work if nesting pairs exhibit signs of disturbance.**

7 Pursuant to the CEQA Guidelines, section 15097(f), CDFW has prepared a draft mitigation monitoring and reporting program (MMRP) for proposed MM BIO-1-9 (see Attachment 1).

Coachella Valley Multiple Species Habitat Conservation Plan (CVMSHCP)

8 Within the Inland Deserts Region, CDFW issued Natural Community Conservation Plan Approval and Take Authorization for the CVMSHCP per Section 2800 et seq. of the California Fish and Game Code on September 9, 2008. The CVMSHCP establishes a multiple species conservation program to minimize and mitigate habitat loss and provides for the incidental take of covered species in association with activities covered under the permit. Compliance with approved habitat plans, such as the CVMSHCP, is discussed in CEQA. Specifically, Section 15125(d) of the CEQA Guidelines requires that the CEQA document discuss any inconsistencies between a proposed Project and applicable general plans and regional plans, including habitat conservation plans and natural community conservation plans. An assessment of the impacts to the CVMSHCP as a result of this Project is necessary to address CEQA requirements. To obtain additional information regarding the CVMSHCP please go to: http://www.cvmshcp.org/.

The Project occurs within the CVMSHCP area and is subject to provisions and policies of the CVMSHCP. The Project does not occur within or share a common boundary with a Conservation Area of the CVMSHCP; however, Santa Rosa and San Jacinto Mountains Conservation Area is 2.0 miles southwest of the Project and the Thousand Palms Conservation Area is 3.8 miles northeast of the Project. To be considered a covered activity, Permittees should demonstrate that proposed actions are consistent with the CVMSHCP and its associated Implementing Agreement. The City of Rancho Mirage is the Lead Agency and a Permittee of the CVMSHCP. CDFW recommends MM BIO-2 be revised as follows:

MM BIO-2: CVMSHCP Compliance

> **Prior to construction and issuance of any grading permit, the City of Rancho Mirage shall ensure compliance with the Coachella Valley Multiple Species Habitat Conservation Plan (CVMSHCP) and its associated Implementing Agreement and shall ensure the collection of payment of the CVMSHCP Local Development Mitigation Fee.**

Special-Status Plants

9 Based on review of the California Natural Diversity Database (CNDDB) and Biogeographic Information and Observation System (BIOS), plant species that are state and/or federally listed as endangered and plant species with California Rare Plant Ranks of 1B and 2B have the potential to occur in the Project area. The California Rare Plant Rank 1B indicates plants that are rare, threatened, or endangered in California and elsewhere, and California Rare Plant Rank 2B indicates plants that are rare, threatened, or endangered in California but more common elsewhere. Impacts to these species must be analyzed during preparation of environmental documents relating to CEQA because they meet the definition of rare or endangered under CEQA Guidelines §15125 (c) and/or §15380.

The MND (Appendix B, p. 157) indicates that no special-status plants were observed during the baseline habitat assessment conducted on September 14, 2021. The desktop review states 13 special-status plant species and two special-status plant communities were identified in literature and database searches within the Cathedral City quadrangle, including species not covered by the CVMSHCP. CDFW is concerned that the baseline habitat assessment was not conducted at the appropriate time(s) of year to detect all special-status plants on the Project site. CNDDB/BIOS indicates that the following special-status plants have historically occurred near the Project location: Horn's milk-vetch (*Astragalus hornii* var. *hornii*), glandular ditaxis (*Ditaxis clariana*), and flat-seeded spurge (*Chamaesyce platysperma*). CDFW recommends that a thorough, recent, floristic-based assessment of special-status plants is completed at the appropriate time(s) of year before the City of Rancho Mirage adopts the MND. The results of this assessment should be included in a revised MND. If any rare, threatened, endangered, or other sensitive plant species are located within the Project site, CDFW recommends that the MND be revised to

include appropriate avoidance minimization, and mitigation measures. CDFW recommends adding the following mitigation measure:

MM BIO-3: Special-Status Plants

9 **A thorough floristic-based assessment of special-status plants and natural communities, following CDFW's *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities* (CDFW 2018 or most recent version) shall be performed by a qualified biologist prior to commencing Project activities. Should any state-listed plant species be present in the Project area, the Project proponent shall obtain an Incidental Take Permit for those species not covered under the CVMSHCP prior to the start of Project activities.**

Burrowing Owl (*Athene cunicularia)*

Burrowing owl is a California Species of Special Concern. Take of individual burrowing owls and their nests is defined by Fish and Game Code section 86, and prohibited by sections 3503, 3503.5, and 3513. Fish and Game Code section 3513 makes it unlawful to take or possess any migratory nongame bird except as provided by rules and regulations
10 adopted by the Secretary of the Interior under provisions of the Migratory Bird Treaty Act of 1918, as amended (16 U.S.C. § 703 et seq.). Burrowing owl is a Covered Species under the CVMSHCP, which requires that avoidance and minimization measures be implemented for this species.

The MND (Appendices Table D-1) acknowledges that "the project site provides line-of-sight opportunities favored by burrowing owls." Because the field assessment for the IS/MND is not recent and due to the potential for burrowing owl to move into disturbed sites, CDFW recommends that prior to commencing Project activities, surveys for burrowing owl be conducted by a qualified biologist in accordance with the *Staff Report on Burrowing Owl Mitigation* (CDFG 2012 or most recent version). CDFW recommends the revised MND include specific avoidance and minimization measures to ensure that impacts to burrowing owls do not occur. CDFW recommends adding the following mitigation measure:

MM BIO-4: Burrowing Owl Surveys

No less than 30 days prior to the start of Project-related activities, a burrowing owl habitat assessment shall be conducted by a qualified biologist according to the specifications of the *Staff Report on Burrowing Owl Mitigation* (Department of Fish and Game, March 2012 or most recent version).

If the habitat assessment demonstrates suitable burrowing owl habitat, then focused burrowing owl surveys shall be conducted by a qualified biologist according to the *Staff Report on Burrowing Owl Mitigation*. If burrowing owls are detected during the focused surveys, the qualified biologist and Project Applicant shall prepare a Burrowing Owl Plan that shall be submitted to CDFW for review and approval prior to commencing Project activities. The Burrowing Owl Plan shall describe proposed avoidance, minimization, and monitoring actions. The Burrowing Owl Plan shall include the number and location of occupied burrow sites, acres of burrowing owl habitat that will be impacted, details of site monitoring, and details on proposed buffers and other avoidance measures if avoidance is proposed. If impacts to occupied burrowing owl habitat or burrow cannot be avoided, the Burrowing Owl Plan shall also describe relocation actions that will be implemented. Proposed implementation of burrow exclusion and closure should only be considered as a last resort, after all other options have been evaluated as exclusion is not in itself an avoidance, minimization, or mitigation method and has the possibility to result in take. If impacts to occupied burrows cannot be avoided, information shall be provided regarding adjacent or nearby suitable

habitat available to owls along with proposed relocation actions. The Permittee shall implement the Burrowing Owl Plan following CDFW review and approval.

10 **Pre-construction burrowing owl surveys shall be conducted no less than 14 days prior to the start of Project-related activities and within 24 hours prior to ground disturbance, in accordance with the *Staff Report on Burrowing Owl Mitigation* (CDFG 2012 or most recent version). Pre-construction surveys should be performed by a qualified biologist following the recommendations and guidelines provided in the *Staff Report on Burrowing Owl Mitigation*. If the pre-construction surveys confirm occupied burrowing owl habitat, Project activities shall be immediately halted. The qualified biologist shall coordinate with CDFW and USFWS to conduct an impact assessment to develop avoidance and minimization measures to be approved by CDFW prior to commencing Project activities.**

Desert Kit Fox (*Vulpes macrotis arsipus)* and American Badger (*Taxidea taxus*)

Desert kit fox is protected as a fur-bearing mammal under Title 14 of the California Code of Regulations (Chap. 5, § 460) and may not be taken at any time. BIOS data layers showing connectivity modeling for the California Desert Linkage Network indicate that the Project site falls within high probability, core breeding habitat for kit fox. Because desert kit fox has high fidelity to natal dens, it is crucial to adequately assess whether desert kit fox is
11 present on the Project site well in advance of commencing Project activities. If desert kit fox is found on-site during breeding season, it could delay Project activities for the length of the breeding season.

American badgers are listed as a California Species of Special Concern (SSC). BIOS data layers showing predicted habitat indicate that the Project site falls near highly likely, core foraging habitat for American badgers. American badgers are nocturnal, and it is crucial to adequately assess whether they are present on the Project site well in advance of commencing Project activities. If American badgers are found on-site during breeding season, it could delay Project activities for the length of the breeding season.

The MND (p. 33) states that “the Project site provides suitable foraging and denning habitat for mammalian species.” The MND also acknowledges that most mammal species are nocturnal and are difficult to observe during a diurnal field visit. CDFW is concerned that the timing and scope of the baseline field assessment were not sufficient to assess whether desert kit fox or American badger are present on the Project site. Therefore, CDFW recommends that prior to commencing Project activities, pre-construction surveys for desert kit fox and American badger be conducted by a qualified biologist. As a result, CDFW recommends the following mitigation measures be included in the MND:

MM BIO-5: Desert Kit Fox Surveys

No more than 14 days prior to the beginning of ground disturbance and/or Project activities, a qualified biologist shall conduct pre-construction surveys to determine if potential desert kit fox burrows/dens are present in the Project area. Pre-construction surveys should include 100-percent visual coverage of the Project area and cannot be combined with other surveys conducted for other species while using the same personnel. If the pre-construction surveys confirm occupied desert kit fox habitat, Project activities shall be immediately halted, and the qualified biologist shall notify CDFW and USFWS to develop avoidance, minimization, and mitigation measures. No disturbance of active dens shall take place when juvenile desert kit fox may be present and dependent on parental care.

MM BIO-6: American Badger Surveys

No more than 30 days prior to the beginning of ground disturbance and/or construction activities, a qualified biologist shall conduct a survey to

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determine if potential American badger burrows are present in the Project area. If potential burrows are located, they shall be monitored using the best judgement of the qualified biologist. If the burrow is determined to be active, the qualified biologist shall flag and create a 50-foot buffer around the den. If impacts to the den are unavoidable, the qualified biologist will verify there are suitable burrows in avoided habitat within the Project area or outside of the Project area prior to undertaking passive relocation actions. If no suitable burrows are located, artificial burrows shall be created at least 14 days prior to passive relocation. The qualified biologist shall block the entrance of the active burrow with soil, sticks, and debris for 3-5 days to discourage the use of the burrow prior to Project activities. The entrance shall be blocked to an incrementally greater degree over the 3- to 5-day period. After the qualified biologist has determined there are no active burrows, the burrows shall be hand-excavated to prevent re-use. No disturbance of active dens shall take place when juvenile American badgers may be present and dependent on parental care. A qualified biologist shall determine appropriate buffers and maintain connectivity to adjacent habitat should natal burrows be present.

Minimizing Impacts to Other Species

12

The MND (p. 33) states that the Project site provides "suitable foraging and cover habitat for reptilian species," "suitable foraging and nesting habitat for avian species," and "suitable foraging and denning habitat for mammalian species," and lists common species identified during the biological survey but includes no avoidance and minimization measures. Because of the potential for previously undetected wildlife to occur on the Project site, CDFW recommends inclusion of the following mitigation measure to allow non-listed, non-special-status terrestrial wildlife to leave or be moved out of harm's way:

MM BIO-7: Minimizing Impacts to Other Species

To avoid impacts to terrestrial wildlife, a qualified biologist shall be on-site prior to and during all ground- and habitat-disturbing activities to inspect the Project area prior to any Project activities. Individuals of any wildlife species found shall not be harassed and shall be allowed to leave the Project area unharmed. If needed, a qualified biologist may guide, handle, or capture an individual non-listed, non-special-status wildlife species to move it to a nearby safe location within nearby refugium, or it shall be allowed to leave the Project site of its own volition. Capture methods may include hand, dip net, lizard lasso, snake tongs, and snake hook. If the wildlife species is discovered or is caught in any pits, ditches, or other types of excavations, the qualified biologist shall release it into the most suitable habitat nearby the site of capture. Movement of wildlife out of harm's way should be limited to only those individuals that would otherwise by injured or killed, and individuals should be moved only as far a necessary to ensure their safety. Measures shall be taken to prevent wildlife from re-entering the Project site. Only biologists with appropriate authorization by CDFW shall move CESA-listed or other special-status species.

Noise

13

Construction may result in substantial noise through road use, equipment, and other Project-related activities. This may adversely affect wildlife species in several ways as wildlife responses to noise can occur at exposure levels of only 55 to 60 dB (Barber et al. 2009). Anthropogenic noise can disrupt the communication of many wildlife species including frogs, birds, and bats (Sun and Narins 2005, Patricelli and Blickley 2006, Gillam and McCracken 2007, Slabbekoorn and Ripmeester 2008). Noise can also affect predator-prey relationships as many nocturnal animals such as bats and owls primarily use auditory cures (i.e., hearing) to hunt. Additionally, many prey species increase their vigilance behavior when exposed to noise because they need to rely more on visual detection of predators when auditory cues may be masked by noise (Rabin et al. 2006, Quinn et al. 2017). Noise has also been shown to reduce the density of nesting birds (Francis et al.

2009) and cause increased stress that results in decreased immune responses (Kight and Swaddle 2011).

The MND (p. 60) states "construction noise would occur due to the use of equipment that includes a combination of trucks, power tools, concrete mixers, and portable generators that when combined can reach high levels," but includes no analysis of the impacts of construction noise on biological resources. The MND indicates noise levels have the potential to reach 67 to 71 dBA during the hours when construction is permitted (p. 60), which exceeds exposure levels that may adversely affect wildlife species. CDFW is concerned about impacts to wildlife from noise generated during Project activities. Although the MND includes Mitigation Measure (MM) N-1 and N-2 for noise, the timing and scope are insufficient to protect wildlife. Because of the potential for construction noise to negatively impact wildlife, CDFW recommends the revised MND include an analysis of impacts to biological resources and specific avoidance and minimization measures to ensure that impacts to wildlife do not occur. CDFW recommends the following mitigation measure be included in the MND:

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MM BIO-8: Noise

> **Restrict use of equipment to hours least likely to disrupt wildlife (e.g., not at night or in early morning). Do not use generators except for temporary use in emergencies. Power to sites can be provided by solar PV (photovoltaic) systems, cogeneration systems (natural gas generator), small micro-hydroelectric systems, or small wind turbine systems. Consider use of noise suppression devices such as mufflers or enclosure for generators. Sounds generated from any means must be below the 55-60 dB range within 50-feet from the source.**

Artificial Light

Artificial nighttime lighting often results in light pollution, which has the potential to significantly and adversely affect fish and wildlife. Artificial lighting alters ecological processes including, but not limited to, the temporal niches of species; the repair and recovery of physiological function; the measurement of time through interference with the detection of circadian and lunar and seasonal cycles; and the detection of resources and natural enemies and navigation (Gatson et al. 2013). Many species use photoperiod cues for communication (e.g., bird song; Miller 2006), determining when to begin foraging (Stone et al. 2009), behavior thermoregulation (Beiswenger 1977), and migration (Longcore and Rich 2004). Phototaxis, a phenomenon which results in attraction and movement towards light, can disorient, entrap, and temporarily blind wildlife species that experience it (Longcore and Rich 2004).

14

The MND (p. 19) indicates that the development on the Project will "introduce new sources of lighting, including streetlights and security lighting"; however, impacts to biological resources are not analyzed and no mitigation measures are proposed. The direct and indirect impacts of artificial nighttime lighting on biological resources including migratory birds that fly at night, bats, and other nocturnal and crepuscular wildlife should be analyzed, and appropriate avoidance and minimization measures should be included in the revised MND. Because of the potential for artificial nighttime lighting used during construction and during operation of the housing development to impact biological resources, CDFW recommends that the MND be revised to include the following mitigation measure:

MM BIO-9: Artificial Light

> **During Project construction and operation, the City shall eliminate all nonessential lighting throughout the Project area and avoid or limit the use of artificial light during the hours of dawn and dusk when many wildlife species are most active. The City shall ensure that lighting for Project activities is shielded, cast downward, and does not spill over onto other properties or upward into the night sky (see the International Dark-Sky Association**

14 **standards at http://darksky.org/). Use LED lighting with a correlated color temperature of 3,000 Kelvins or less, properly dispose of hazardous waste, and recycle lighting that contains toxic compounds with a qualified recycler.**

Lake and Streambed Alteration Program

15 Fish and Game Code section 1602 requires an entity to notify CDFW prior to commencing any activity that may do one or more of the following: substantially divert or obstruct the natural flow of any river, stream, or lake; substantially change or use any material from the bed, channel, or bank of any river, stream, or lake; or deposit debris, waste or other materials that could pass into any river, stream, or lake. Note that "any river, stream or lake" includes those that are episodic (i.e., those that are dry for periods of time) as well as those that are perennial (i.e., those that flow year-round). This includes ephemeral streams, desert washes, and watercourses with a subsurface flow. It may also apply to work undertaken within the flood plain of a body of water. Upon receipt of a complete notification, CDFW determines if the proposed Project activities may substantially adversely affect existing fish and wildlife resources and whether a Lake and Streambed Alteration (LSA) Agreement is required. An LSA Agreement includes measures necessary to protect existing fish and wildlife resources. CDFW may suggest ways to modify the Project that would eliminate or reduce harmful impacts to fish and wildlife resources.

CDFW's issuance of an LSA Agreement is a "project" subject to CEQA (see Pub. Resources Code § 21065). To facilitate issuance of an LSA Agreement, if necessary, the IS/MND should fully identify the potential impacts to the lake, stream, or riparian resources, and provide adequate avoidance, mitigation, and monitoring and reporting commitments. Early consultation with CDFW is recommended since modification of the proposed Project may be required to avoid or reduce impacts to fish and wildlife resources. To submit a Lake or Streambed Alteration notification, visit: https://wildlife.ca.gov/Conservation/Environmental-Review/LSA.

Based on aerial imagery, ephemeral streams may occur on the Project site. To avoid or minimize adverse impacts to fish and wildlife resources identified above, CDFW recommends the following mitigation measure be added to the IS/MND:

MM BIO-10: Lake and Stream Alteration (LSA) Program

Prior to Project-activities and issuance of any grading permit, the Project Sponsor shall obtain written correspondence from the California Department of Fish and Wildlife (CDFW) stating that notification under section 1602 of the Fish and Game Code is not required for the Project, or the Project Sponsor shall obtain a CDFW-executed Lake and Streambed Alteration Agreement, authorizing impacts to Fish and Game Code section 1602 resources associated with the Project.

ENVIRONMENTAL DATA

16 CEQA requires that information developed in environmental impact reports and negative declarations be incorporated into a database which may be used to make subsequent or supplemental environmental determinations. (Pub. Resources Code, § 21003, subd. (e).) Accordingly, please report any special-status species and natural communities detected during Project surveys to the California Natural Diversity Database (CNDDB). The CNNDB field survey form can be filled out and submitted online at the following link: https://wildlife.ca.gov/Data/CNDDB/Submitting-Data. The types of information reported to CNDDB can be found at the following link: https://www.wildlife.ca.gov/Data/CNDDB/Plants-and-Animals.

ENVIRONMENTAL DOCUMENT FILING FEES

17 The Project, as proposed, would have an impact on fish and/or wildlife, and assessment of environmental document filing fees is necessary. Fees are payable upon filing of the Notice of Determination by the Lead Agency and serve to help defray the cost of

17 environmental review by CDFW. Payment of the environmental document filing fee is required in order for the underlying project approval to be operative, vested, and final. (Cal. Code Regs, tit. 14, § 753.5; Fish & G. Code, § 711.4; Pub. Resources Code, § 21089.)

CONCLUSION

CDFW appreciates the opportunity to comment on the MND to assist the City of Rancho Mirage in identifying and mitigating Project impacts on biological resources. CDFW concludes that the MND does not adequately identify or mitigate for the Project's significant, or potentially significant, impacts on biological resources. CDFW recommends
18 that prior to adoption of the MND, the City of Rancho Mirage revise the document to include a more complete assessment of the Project's potential impacts on biological resources, as well as appropriate avoidance, minimization, and mitigation measures to ensure those impacts are mitigated to a level less than significant. CDFW personnel are available for consultation regarding biological resources and strategies to minimize impacts.

Questions regarding this letter or further coordination should be directed to Alyssa Hockaday, Senior Environmental Scientist (Specialist), at (760) 920-8252 or Alyssa.Hockaday@wildlife.ca.gov.

Sincerely,

DocuSigned by:
Kim Freeburn
84F92FFEEFD24C8...

Kim Freeburn
Environmental Program Manager

Attachment 1: MMRP for CDFW-Proposed Mitigation Measures

ec:

Heather Brashear, Senior Environmental Scientist (Supervisor), CDFW
Heather.Brashear@wildlife.ca.gov

Vincent James, U.S. Fish and Wildlife Service
Vincent_james@fws.gov

Rollie White, U.S. Fish and Wildlife Service
Rollie_white@fws.gov

REFERENCES

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ATTACHMENT 1: MITIGATION MONITORING AND REPORTING PROGRAM (MMRP)

Biological Resources (BIO)		
Mitigation Measure (MM) Description	**Implementation Schedule**	**Responsible Party**
MM-BIO-1: Avoidance of Nesting Birds Nesting bird surveys shall be performed by a qualified avian biologist no more than (3) days prior to vegetation removal or ground-disturbing activities. Pre-construction surveys shall focus on both direct and indirect evidence of nesting, including nest locations and nesting behavior. The qualified avian biologist will make every effort to avoid potential nest predation as a result of survey and monitoring efforts. If active nests are found during the pre-construction nesting bird surveys, a qualified biologist shall establish an appropriate nest buffer to be marked on the ground. Nest buffers are species specific and shall be at least 300 feet for passerines and 500 feet for raptors. A smaller or larger buffer may be determined by the qualified biologist familiar with the nesting phenology of the nesting species and based on nest and buffer monitoring results. Established buffers shall remain on-site until a qualified biologist determines the young have fledged or the nest is no longer active. Active nests and adequacy of the established buffer distance shall be monitored daily by the qualified biologist until the qualified biologist has determined the young have fledged or the Project has been completed. The qualified biologist has the authority to stop work if nesting pairs exhibit signs of disturbance.	No more than three (3) days prior to vegetation clearing or ground-disturbing activities.	City of Rancho Mirage
MM-BIO-2: CVMSHCP Compliance Prior to construction and issuance of any grading permit, the City of Rancho Mirage shall ensure compliance with the Coachella Valley Multiple Species Habitat Conservation Plan (CVMSHCP) and its associated Implementing Agreement and shall ensure the collection of payment of the CVMSHCP Local Development Mitigation Fee.	Prior to construction and issuance of any grading permit.	City of Rancho Mirage
MM-BIO-3: Special-Status Plants A thorough floristic-based assessment of special-status plants and natural communities, following CDFW's Protocols for Surveying and Evaluating Impacts to Special Status Native	Prior to commencing Project activities.	City of Rancho Mirage

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Plant Populations and Natural Communities (CDFW 2018 or most recent version) shall be performed by a qualified biologist prior to commencing Project activities. Should any state-listed plant species be present in the Project area, the Project proponent shall obtain an Incidental Take Permit for those species not covered under the CVMSHCP prior to the start of Project activities.		
MM-BIO-4: Burrowing Owl Surveys No less than 30 days prior to the start of Project-related activities, a burrowing owl habitat assessment shall be conducted by a qualified biologist according to the specifications of the Staff Report on Burrowing Owl Mitigation (Department of Fish and Game, March 2012 or most recent version). If the habitat assessment demonstrates suitable burrowing owl habitat, then focused burrowing owl surveys shall be conducted by a qualified biologist according to the Staff Report on Burrowing Owl Mitigation. If burrowing owls are detected during the focused surveys, the qualified biologist and Project Applicant shall prepare a Burrowing Owl Plan that shall be submitted to CDFW for review and approval prior to commencing Project activities. The Burrowing Owl Plan shall describe proposed avoidance, minimization, and monitoring actions. The Burrowing Owl Plan shall include the number and location of occupied burrow sites, acres of burrowing owl habitat that will be impacted, details of site monitoring, and details on proposed buffers and other avoidance measures if avoidance is proposed. If impacts to occupied burrowing owl habitat or burrow cannot be avoided, the Burrowing Owl Plan shall also describe relocation actions that will be implemented. Proposed implementation of burrow exclusion and closure should only be considered as a last resort, after all other options have been evaluated as exclusion is not in itself an avoidance, minimization, or mitigation method and has the possibility to result in take. If impacts to occupied burrows cannot be avoided, information shall be provided regarding adjacent or nearby suitable habitat available to owls along with proposed relocation actions. The Permittee shall implement the Burrowing Owl Plan following CDFW review and approval. Pre-construction burrowing owl surveys shall be conducted no less than 14 days prior to the start of Project-related activities and within 24 hours prior to ground disturbance, in accordance with the Staff Report on Burrowing Owl Mitigation (CDFG 2012 or most recent version). Pre-construction surveys should be	**Habitat assessment:** No less than 30 days prior to start of Project-related. **Pre-construction surveys:** No less than 14 days prior to start of Project-related activities and within 24 hours prior to ground disturbance.	City of Rancho Mirage

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performed by a qualified biologist following the recommendations and guidelines provided in the Staff Report on Burrowing Owl Mitigation. If the pre-construction surveys confirm occupied burrowing owl habitat, Project activities shall be immediately halted. The qualified biologist shall coordinate with CDFW and USFWS to conduct an impact assessment to develop avoidance and minimization measures to be approved by CDFW prior to commencing Project activities.		
MM-BIO-5: Desert Kit Fox Surveys No more than 14 days prior to the beginning of ground disturbance and/or Project activities, a qualified biologist shall conduct pre-construction surveys to determine if potential desert kit fox burrows/dens are present in the Project area. Pre-construction surveys should include 100-percent visual coverage of the Project area and cannot be combined with other surveys conducted for other species while using the same personnel. If the pre-construction surveys confirm occupied desert kit fox habitat, Project activities shall be immediately halted, and the qualified biologist shall notify CDFW and USFWS to develop avoidance, minimization, and mitigation measures. No disturbance of active dens shall take place when juvenile desert kit fox may be present and dependent on parental care.	**Pre-construction surveys:** No more than 14 days prior to start of Project-related activities.	City of Rancho Mirage
MM BIO-6: American Badger Surveys No more than 30 days prior to the beginning of ground disturbance and/or construction activities, a qualified biologist shall conduct a survey to determine if potential American badger burrows are present in the Project area. If potential burrows are located, they shall be monitored using the best judgement of the qualified biologist. If the burrow is determined to be active, the qualified biologist shall flag and create a 50-foot buffer around the den. If impacts to the den are unavoidable, the qualified biologist will verify there are suitable burrows in avoided habitat within the Project area or outside of the Project area prior to undertaking passive relocation actions. If no suitable burrows are located, artificial burrows shall be created at least 14 days prior to passive relocation. The qualified biologist shall block the entrance of the active burrow with soil, sticks, and debris for 3-5 days to discourage the use of the burrow prior to Project activities. The entrance shall be blocked to an incrementally greater degree over the 3- to 5-day period. After the qualified biologist has determined there are no active burrows, the burrows shall be hand-excavated to prevent re-use. No disturbance of active dens shall take place when juvenile American badgers may be present and dependent on parental care. A	**Pre-construction surveys:** No more than 30 days prior to start of Project-related activities.	City of Rancho Mirage

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qualified biologist shall determine appropriate buffers and maintain connectivity to adjacent habitat should natal burrows be present.		
MM-BIO-7: Minimizing Impacts to Other Species To avoid impacts to terrestrial wildlife, a qualified biologist shall be on-site prior to and during all ground- and habitat-disturbing activities to inspect the Project area prior to any Project activities. Individuals of any wildlife species found shall not be harassed and shall be allowed to leave the Project area unharmed. If needed, a qualified biologist may guide, handle, or capture an individual non-listed, non-special-status wildlife species to move it to a nearby safe location within nearby refugium, or it shall be allowed to leave the Project site of its own volition. Capture methods may include hand, dip net, lizard lasso, snake tongs, and snake hook. If the wildlife species is discovered or is caught in any pits, ditches, or other types of excavations, the qualified biologist shall release it into the most suitable habitat nearby the site of capture. Movement of wildlife out of harm's way should be limited to only those individuals that would otherwise by injured or killed, and individuals should be moved only as far a necessary to ensure their safety. Measures shall be taken to prevent wildlife from re-entering the Project site. Only biologists with appropriate authorization by CDFW shall move CESA-listed or other special-status species.	Prior to and during Project activities.	City of Rancho Mirage
MM-BIO-8: Noise Restrict use of equipment to hours least likely to disrupt wildlife (e.g., not at night or in early morning). Do not use generators except for temporary use in emergencies. Power to sites can be provided by solar PV (photovoltaic) systems, cogeneration systems (natural gas generator), small micro-hydroelectric systems, or small wind turbine systems. Consider use of noise suppression devices such as mufflers or enclosure for generators. Sounds generated from any means must be below the 55-60 dB range within 50-feet from the source.	During Project activities.	City of Rancho Mirage
MM-BIO-9: Artificial Light During Project construction activities, the City shall eliminate all nonessential lighting throughout the Project area and avoid or limit the use of artificial light during the hours of dawn and dusk when many wildlife species are most active. The City shall ensure that lighting for Project activities is shielded, cast downward, and does not spill over onto other properties or upward into the night sky (see the International Dark-Sky Association standards at http://darksky.org/). Use LED lighting with a correlated color temperature of 3,000 Kelvins or	During Project activities.	City of Rancho Mirage

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less, properly dispose of hazardous waste, and recycle lighting that contains toxic compounds with a qualified recycler.		
MM BIO-10: Lake and Stream Alteration (LSA) Program Prior to Project-activities and issuance of any grading permit, the Project Sponsor shall obtain written correspondence from the California Department of Fish and Wildlife (CDFW) stating that notification under section 1602 of the Fish and Game Code is not required for the Project, or the Project Sponsor shall obtain a CDFW-executed Lake and Streambed Alteration Agreement, authorizing impacts to Fish and Game Code section 1602 resources associated with the Project.	Prior to Project-activities and issuance of any grading permit.	City of Rancho Mirage

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AGUA CALIENTE BAND OF CAHUILLA INDIANS
TRIBAL HISTORIC PRESERVATION

03-008-2021-004

January 26, 2023

[VIA EMAIL TO:pilarl@ranchomirageca.gov]
City of Rancho Mirage
Pilar Lopez
68-825 Highway 111
Rancho Mirage, California 92270

Re: IS/MND Vista Del Sol Project

Dear Pilar Lopez,

The Agua Caliente Band of Cahuilla Indians (ACBCI) appreciates your efforts to include the Tribal Historic Preservation Office (THPO) in the Vista Del Sol project. We have reviewed the documents and have the following comments:

*The presence of an archaeologist that meets the Secretary of Interior's standards during any ground disturbing activities.

*The presence of an approved Agua Caliente Native American Cultural Resource Monitor(s) during any ground disturbing activities (including archaeological testing and surveys). Should buried cultural deposits be encountered, the Monitor may request that destructive construction halt and the Monitor shall notify a Qualified Archaeologist (Secretary of the Interior's Standards and Guidelines) to investigate and, if necessary, prepare a mitigation plan for submission to the State Historic Preservation Officer and the Agua Caliente Tribal Historic Preservation Office.

20

Again, the Agua Caliente appreciates your interest in our cultural heritage. If you have questions or require additional information, please call me at (760)699-6956. You may also email me at ACBCI-THPO@aguacaliente.net.

Cordially,

Lacy Padilla
Operations Manager
Tribal Historic Preservation Office
AGUA CALIENTE BAND
OF CAHUILLA INDIANS

Appendix G

Response to Comments – CDFW Letter

Response to Comment Letters

Vista Del Sol

Lead Agency:

City of Rancho Mirage
69825 CA-111
Rancho Mirage, CA 92270

Prepared by:

The Altum Group
Anna Choudhuri
Jordan Parrish
Heather Boland
44-60 Village Court, Suite 100
Palm Desert, CA 92260

February 2023

RESPONSE TO COMMENTS

While the City of Rancho Mirage (City) is not required to respond to comments on an IS/MND, Sections 21091(d)(1) and 21092.5 of the Public Resources Code (PRC) and Section 150874 (b) of the California Environmental Quality Act (CEQA) Guidelines require that prior to project approval a Lead Agency must consider all comments received before making a final determination on the Initial Study/Mitigated Negative Declaration (IS/MND). Also, the Lead Agency must notify in writing, any public agency that submitted comments on the IS/MND, of any public hearing on the proposed project for which the IS/MND has been prepared (PRC 21092.5 and CEQA Guidelines 15073(e). The City of Rancho Mirage is the Lead Agency for the proposed Vista Del Sol Project (Project).

All letters commenting on the Draft IS/MND for the proposed project have been reproduced and are included in this section. All agencies from whom an individual letter was received during the public review period are listed below, along with our responses to comments received by each agency. All revisions to the Draft IS/MND have been made in response to the comments received during public review in ~~strike-out~~/underline.

The City prepared a Draft IS/MND for the Vista Del Sol Project and circulated the Draft IS/MND for a 20-day public review period pursuant to the requirements of Chapter 3, Section 15105, of the California Environmental Quality Act (CEQA) Guidelines. The review period gave agencies, organizations, and members of the public the opportunity to review the Draft IS/MND and provide comments on the document and the environmental analysis presented therein. The 20-day review period commenced on December 21, 2022, and ended on January 10, 2023. The Notice of Intent (NOI) to Adopt for the proposed project was posted at 69-825 Highway 111, Rancho Mirage, CA 92270 for the duration of the public review period. During the review period, the City received one formal letter from the California Department of Fish and Wildlife (CDFW) commenting on the Draft IS/MND. These comments have been attached to this document. And is presented in the table below.

Date Received	Agency	Comment	Response
January 10th, 2023	CDFW	1	Comment is noted. No further action is required in response to this comment.
January 10th, 2023	CDFW	2	Comment is noted. The City of Rancho Mirage recognizes that CDFW is a Trustee Agency. No further action is required in response to this comment.
January 10th, 2023	CDFW	3	Comment is noted. The City of Rancho Mirage recognizes that CDFW is a Responsible Agency for the project. No further action is required in response to this comment.
January 10th, 2023	CDFW	4	Comment is noted. No further action is required in response to this comment.
January 10th, 2023	CDFW	5	Comment noted. The City of Rancho Mirage has found the Biological Assessment to be sufficient. In order to mitigate any potential impacts on biological resources, we have included recommended mitigation measures that are applicable to the project site offered by CDFW. No further action is required in response to this comment.
January 10th, 2023	CDFW	6	Comment is noted. The City of Rancho Mirage recognizes that CDFW is a Responsible Agency for the project. The IS/MND will be recirculated at the State Clearinghouse for

			a period of 30 days to ensure responsible and trustee agency input. No further action is required in response to this comment.
January 10th, 2023	CDFW	7	Comment noted. MM BIO-1 has been revised in the IS/MND and MMRP as follows: ~~If unavoidable Project construction activities must begin during the nesting bird season (February 1st through August 31st), a pre-construction nesting bird survey shall be conducted no more than 14 days prior to initiation of ground disturbance and vegetation removal activities. The nesting pre-construction bird survey shall be conducted by a biologist familiar with identification of avian species known to occur in Riverside County. The nesting bird survey shall be conducted on foot inside the project boundary, including a 300-foot buffer for passerines (song birds) and 500-foot buffer for raptors in areas of suitable habitat. Inaccessible areas will be surveyed using binoculars to the extent practical. If nests are found, an avoidance buffer (dependent upon species, the proposed work activity, the existing disturbances associated with land uses outside of the site) shall be determined and demarcated by the biologist with bright orange construction fencing, flagging, construction lathe, or other means to mark the boundary. If a raptor nest is observed in a tree proposed for removal, the applicant must consult with CDFW. All construction personnel be notified of the existence of the buffer zone and to avoid entering the buffer zone during nesting season. No ground disturbing activities shall occur within this buffer area until the avian biologist has confirmed the breeding/nesting is completed and the young have fledged. Encroachment into the buffer shall occur only at the discretion of the qualified biologist.~~ <u>Nesting bird surveys shall be performed by a qualified avian biologist no more than (3) days prior to vegetation removal or ground-disturbing activities. Pre-construction surveys shall focus on both direct and indirect evidence of nesting, including nest locations and nesting behavior. The qualified avian biologist shall make every effort to avoid potential nest predation as a result of survey and monitoring efforts. If active nests are found during the preconstruction nesting bird surveys, a qualified biologist</u>

			shall establish an appropriate nest buffer to be marked on the ground. Nest buffers are species specific and shall be at least 300 feet for passerines and 500 feet for raptors. A smaller or larger buffer shall be determined by the qualified biologist familiar with the nesting phenology of the nesting species and based on nest and buffer monitoring results. Established buffers shall remain on-site until a qualified biologist determines the young have fledged or the nest is no longer active. Active nests and adequacy of the established buffer distance shall be monitored daily by the qualified biologist until the qualified biologist has determined the young have fledged or the Project has been completed. The qualified biologist shall have the authority to stop work if nesting pairs exhibit signs of disturbance.
January 10th, 2023	CDFW	8	Mitigation Measure BIO-2, CVMSHCP Compliance, will become a Condition of Approval for the project, not a mitigation measure. The applicant will pay the CVMSHCP Local Development Mitigation Fee.
January 10th, 2023	CDFW	9	A floristic based assessment of special-status plants and natural communities was conducted on the project site. Since the project site is surrounded by existing development, is isolated from native areas that support special-status plant species not covered by the CVMSHCP, and is subject to anthropogenic disturbance, the project proponent is not expected to need a State Incidental Take Permit for impacts to State-listed plant species not covered by the CVMSHCP, as they are not expected to occur.
January 10th, 2023	CDFW	10	During the initial field survey conducted on September 14, 2021, the project site was surveyed for its ability to provide suitable habitat for burrowing owl. No burrowing owls or recent sign (i.e., pellets, feathers, castings, or whitewash) was observed during the field investigation. Portions of the project site are unvegetated and/or vegetated with a variety of low-growing plant species that allow for line-of-sight observation favored by burrowing owls. However, the project site lacks suitable burrows (>4 inches in diameter) capable of providing roosting and nesting opportunities. Therefore, it was determined that the project site has a low potential to provide suitable habitat for burrowing owls and focused surveys are not recommended.

			Out of an abundance of caution, a pre-construction burrowing owl clearance survey is recommended to be conducted to ensure burrowing owl remain absent from the project site. Therefore, this portion of the CDFW recommended MM BIO-4 will be included as MM BIO-3 in the IS/MND and MMRP as follows: **BIO-3:** Pre-construction burrowing owl surveys shall be conducted no less than 14 days prior to the start of Project-related activities and within 24 hours prior to ground disturbance, in accordance with the Staff Report on Burrowing Owl Mitigation (CDFG 2012 or most recent version). Pre-construction surveys shall be performed by a qualified biologist following the recommendations and guidelines provided in the Staff Report on Burrowing Owl Mitigation. If the pre-construction surveys confirm occupied burrowing owl habitat, Project activities shall be immediately halted. The qualified biologist shall coordinate with CDFW and USFWS to conduct an impact assessment to develop avoidance and minimization measures to be approved by CDFW prior to commencing Project activities.
January 10th, 2023	CDFW	11	The comment includes CDFW's statements concerning the potential for Desert Kit Fox and American Badger to occur on the project. As previously noted, the project site is surrounded by existing development, is isolated from native areas that have the potential to support desert kit fox and American badger, and is subject to anthropogenic disturbance associated with the surrounding residential developments. During the initial field survey conducted on September 14, 2021, the project site was surveyed for its ability to provide suitable habitat for desert kit fox and American badger. No burrows/suitable denning cavities or sign was observed during the field investigation. Due to surrounding development, the project site is isolated from occupied areas supporting desert kit fox and American badger. Due to the lack of suitable burrows, and isolated nature of the project site, both desert kit fox and American badger are presumed absent from the project site. Therefore, no further surveys are recommended.

January 10th, 2023	CDFW	12	The project site is surrounded by existing development and is isolated from native areas that have the potential to support a robust population of wildlife species. Due to surrounding development, the project site is only expected to support common wildlife species adapted to urban environments. Common wildlife species expected to occur on the project site are mobile species and will likely moved during construction activities. Therefore, CDFW recommended Mitigation Measure BIO-7 does not need to be incorporated into the project.
January 10th, 2023	CDFW	13	Construction equipment use will follow the City's noise ordinance found in Chapter 8.45 – Noise of the City of Rancho Mirage Municipal Code. CDFW recommended Mitigation Measure BIO-8 does not need to be incorporated into the project.
January 10th, 2023	CDFW	14	The proposed project is not anticipated to significantly increase lighting and glare. Light sources will be designed with internal baffles to direct the lighting towards the ground and the developed areas and have a zero-side angle cut off to the horizon. Lighting for the proposed project will utilize energy-efficient LED shielded fixtures with energy savings control options and occupancy sensing units. All lighting will be consistent with the City's Exterior Glare, Heat, and Light Ordinance found in Section 17.18.050 of the City of Rancho Mirage Municipal Code.
January 10th, 2023	CDFW	15	No jurisdictional drainage and/or wetland features were observed on the project site or within the site during the field investigation. Further, no blueline streams have been recorded on the project site. Therefore, written correspondence stating that notification under section 1602 of the Fish and Game Code will be not required for the Project.
January 10th, 2023	CDFW	16	Comment noted. As determined in the Biological Assessment, there is a low likelihood of special status species to occur on the site. However, to mitigate any impacts to any special status species that may occur on the site, it has been noted on page 35 of the IS/MND that if a special-status species is documented onsite, the CNDDB field survey form will be completed.
January 10th, 2023	CDFW	17	Comment is noted. No further action is required in response to this comment.

January 10th, 2023	CDFW	18	Comment noted. The City of Rancho Mirage has found the Biological Assessment and IS/MND to be sufficient. In order to mitigate any potential impacts on biological resources, we have included recommended mitigation measures that are applicable to the project site offered by CDFW. No further action is required in response to this comment.
January 10th, 2023	CDFW	19	Comment noted. The City of Rancho Mirage will adopt the Mitigation Monitoring and Reporting Program, as revised, as a Condition of Approval.
January 26th, 2023	Agua Caliente Band of Cahuilla Indians	20	Comment noted. Mitigation Measure (MM) CUL-1 has been revised as follows: **CUL-1:** If buried cultural materials are discovered during the earth-moving operations, all work in that area should be halted or diverted until a qualified archaeologist can evaluate the nature and significance of the finds and, if necessary, develop a treatment plan in consultation with the City of Rancho Mirage and the appropriate Native American tribes. <u>The presence of a qualified archaeologist shall meet the Secretary of the Interior's standards during any ground disturbing activities.</u> MM TCR-1 has been revised as follows: **TCR-1:** If buried cultural materials are discovered during the earth-moving operations, all work in that area should be halted or diverted until a qualified archaeologist can evaluate the nature and significance of the finds and, if necessary, develop a treatment pan in consultation with the City of Rancho Mirage and the appropriate Native American tribes. <u>The presence of an archaeologist shall meet the Secretary of the Interior's standards during any ground disturbing activities.</u> In addition to the modifications mentioned above, MM TCR-2 has been added as follows: **<u>TCR-2:</u>** <u>During any ground disturbing activities (including any archaeological testing and surveys) the presence of an approved Agua Caliente Native American Cultural Resource Monitor(s) is required. Should buried cultural deposits be encountered, the Monitor shall request that destructive construction halt and the Monitor shall</u>

			notify a Qualified Archaeologist (Secretary of the Interior's Standards and Guidelines) to investigate and, if necessary, prepare a mitigation plan for submission to the State Historic Preservation Officer and the Agua Caliente Tribal Historic Preservation Office.

SUBJECT: **Response to Comments – CDFW Letter dated January 10, 2023**
Vista Del Sol 8-Lot Subdivision
City of Rancho Mirage, Riverside County

Comment 1:

The comment includes introductory statements. No response is necessary.

Comment 2:

The comment includes introductory statements concerning CDFW's role. No response is necessary.

Comment 3:

The comment includes introductory statements concerning CDFW's role. No response is necessary.

Comment 4:

The comment includes introductory statements concerning the project description. No response is necessary.

Comment 5:

The comment includes CDFW's statements concerning their comments and recommendations for the project. No response is necessary.

Comment 6:

The comment includes CDFW's statements concerning circulation of CEQA documents to the State Clearinghouse for the project. No response is necessary.

Comment 7:

Mitigation Measure BIO-1, *Avoidance of Nesting Birds*, provided by CDFW will be updated to reflect the recommended changes.

Comment 8:

Mitigation Measure BIO-2, *CVMSHCP Compliance*, will become a Condition of Approval for the project, not a mitigation measure. The applicant will pay the CVMSHCP Local Development Mitigation Fee.

Comment 9:

The comment includes CDFW's statements concerning special-status plants. No response is necessary.

Comment 10:

A floristic based assessment of special-status plants and natural communities was conducted on the project site. Since the project site is surrounded by existing development, is isolated from native areas that support special-status plant species not covered by the CVMSHCP, and is subject to anthropogenic disturbance, the project proponent is not expected to need a State Incidental Take Permit for impacts to State-listed plant species not covered by the CVMSHCP, as they are not expected to occur.

Comment 11:

During the initial field survey conducted on September 14, 2021, the project site was surveyed for its ability to provide suitable habitat for burrowing owl. No burrowing owls or recent sign (i.e., pellets, feathers, castings, or whitewash) was observed during the field investigation. Portions of the project site are unvegetated and/or vegetated with a variety of low-growing plant species that allow for line-of-sight observation favored by burrowing owls. However, the project site lacks suitable burrows (>4 inches in diameter) capable of providing roosting and nesting opportunities. Therefore, it was determined that the project site has a low potential to provide suitable habitat for burrowing owls and focused surveys are not recommended.

Out of an abundance of caution, a pre-construction burrowing owl clearance survey is recommended to be conducted to ensure burrowing owl remain absent from the project site. The last paragraph in Mitigation Measure BIO-4 provided by CDFW will be included in the MMRP.

Comment 12:

The comment includes CDFW's statements concerning the potential for Desert Kit Fox and American Badger to occur on the project. As previously noted, the project site is surrounded by existing development, is isolated from native areas that have the potential to support desert kit fox and American badger, and is subject to anthropogenic disturbance associated with the surrounding residential developments. Both desert kit fox and American badger are

During the initial field survey conducted on September 14, 2021, the project site was surveyed for its ability to provide suitable habitat for desert kit fox and American badger. No burrows/suitable denning cavities or sign was observed during the field investigation. Due to surrounding development, the project site is isolated from occupied areas supporting desert kit fox and American badger. Due to the lack of suitable burrows, and isolated nature of the project site, both desert kit fox and American badger are presumed absent from the project site. No further surveys are recommended.

Comment 13:

The comment includes a statement about minimizing impacts to other species. The project site is surrounded by existing development and is isolated from native areas that have the potential to support a robust population of wildlife species. Due to surrounding development, the project site is only expected to support common wildlife species adapted to urban environments. Common wildlife species expected to occur on the project site are mobile species and will likely moved during construction activities. CDFW recommended Mitigation Measure BIO-7 does not need to be incorporated into the project.

Comment 14:

The comment includes a statement about construction noise and the potential development of the project to affect wildlife species. Construction equipment use will follow the City's noise ordinances. CDFW recommended Mitigation Measure BIO-8 does not need to be incorporated into the project.

Comment 15:

The comment includes a statement about artificial nighttime light and the potential of the project to adversely affect fish and wildlife. The proposed project is not anticipated to significantly increase lighting and glare. Light sources will be designed with internal baffles to direct the lighting towards the ground and the developed areas and have a zero-side angle cut off to the horizon. Lighting for the proposed project will utilize energy-efficient LED shielded fixtures with energy savings control options and occupancy sensing units. All lighting will be consistent with the City's Light Pollution Ordinance.

Comment 16:

No jurisdictional drainage and/or wetland features were observed on the project site or within the during the field investigation. Further, no blueline streams have been recorded on the project site. Written correspondence stating that notification under section 1602 of the Fish and Game Code will be not required for the Project.

Comment 17:

The comment includes a statement about filling out the CNDDB field survey form if special-status species are documented onsite. If a special-status species is documented onsite, the CNDDB field survey form will be completed.

Comment 18:

The comment includes a statement about CDFW's filing fees. No response is necessary.

Comment 19:

The comment includes conclusionary statements. No response is necessary.

Comment 20:

Mitigation Measures provided in the MMRP table provided by CDFW are addressed in the responses above.

Appendix H

Geotechnical Report

Geotechnical Report

APNs 685-280-002 & 003
Rancho Mirage, California

Prepared for:

Bravo Properties, Inc.
P.O. Box 820
Palm Desert, CA 92240

LANDMARK
Geo-Engineers and Geologists

Prepared by:

LandMark Consultants, Inc.
77-948 Wildcat Drive
Palm Desert, CA 92211
(760) 360-0665

September 2021

LANDMARK
Geo-Engineers and Geologists
a MBE Company

780 N. 4th Street
El Centro, CA 92243
(760) 370-3000
landmark@landmark-ca.com

77-948 Wildcat Drive
Palm Desert, CA 92211
(760) 360-0665
gchandra@landmark-ca.com

September 24, 2021

Mr. Claudio Bravoerazo
Bravo Properties, Inc.
P.O. Box 820
Desert Hot Springs, CA 92240

Geotechnical Report
APNs 685-280-002 & 003
Rancho Mirage, California
LCI Report No.: LP21237

Dear Mr. Bravoerazo:

As per your request, ***LandMark Consultants, Inc.*** is providing the following geotechnical report for the proposed new single-family residential subdivision project located on the southeast corner of Vista Del Sol and MacMillan Way (APNs 685-280-002 & 003) in Rancho Mirage, California. The proposed development will consist of nine (9) new single-family home lots, and the proposed residential homes will be one story, wood/metal-frame structures with shallow reinforced concrete foundations and slab-on-grade concrete floors.

Purpose of Work

The purpose of this study was to investigate the upper 12 feet of subsurface soil at selected locations within the site for evaluation of physical/engineering properties. From the analysis of the field and laboratory data, professional opinions were developed and are provided in this report regarding geotechnical conditions at this site and the effect on design and construction.

Field Exploration

Subsurface exploration was performed on September 2, 2021 using a backhoe to excavate five (5) exploratory test pits to an approximate depth of 12 feet below the existing ground surface. The test pit locations are shown on the Site and Exploration Plan (Plate A-2). Bulk samples were obtained at selected depths in the test pits. The test pits were located by taped or paced measurements and should be considered approximate.

A geo-technician observed the digging operations and maintained log of the test pits during exploration. The logs were edited in final form after a review of retrieved samples and the field and laboratory data. The test pit logs are presented on Plates B-1 thru B-5 in Appendix B. Soils encountered have been classified according to the Unified Soil Classification System. A key to the test pit logs is presented on Plate B-6. The stratification lines shown on the subsurface logs represent the approximate boundaries between the various strata. However, the transition from one stratum to another may be gradual over some range of depth.

After logging and sampling the soil, the exploratory test pits were backfilled with the excavated material. The backfill was loosely placed and was not compacted to the requirements specified for engineered fill.

Laboratory Testing

Laboratory tests were conducted on selected bulk soil samples to aid in classification and evaluation of selected properties of the site soils. The tests were conducted in general conformance to the procedures of the American Society for Testing and Materials (ASTM) or other standardized methods as referenced below. The laboratory testing program consisted of the following tests:

- Particle Size Analyses (ASTM D422)
- Moisture-Density Relationship (ASTM D1557)
- Collapse Potential (ASTM D5333)
- Chemical Analyses (soluble sulfates & chlorides, pH, and resistivity) (Caltrans Methods)

The laboratory test results are presented on the subsurface logs (Appendix B) and on Plates C-1 through C-6 in Appendix C. Engineering parameters of soil strength, compressibility, and relative density utilized for developing design criteria provided within this report were extrapolated from data obtained from the field and laboratory testing program.

Site Conditions

The project site is square in plan view and is relatively flat-lying with slight undulations of dunes. The project site is currently vacant with scattered desert vegetation and weeds covering the site. The project site is bounded by Vista Del Sol on the west.

Adjacent properties are flat-lying and are approximately at the same elevation with this site. Single family residences are located to the east and vacant lots are located to the north, south, and west of the project site.

The project site lies at an elevation of approximately 230 to 240 feet above mean sea level (AMSL) in the Coachella Valley region of the California low desert. Annual rainfall in this arid region is less than 4 inches per year with four months of average summertime temperatures above 100 °F. Winter temperatures are mild, seldom reaching freezing.

Geologic Setting

The project site is located in the Coachella Valley portion of the Salton Trough physiographic province. The Salton Trough is a geologic structural depression resulting from large scale regional faulting. The trough is bounded on the northeast by the San Andreas Fault and Chocolate Mountains and the southwest by the Peninsular Range and faults of the San Jacinto Fault Zone. The Salton Trough represents the northward extension of the Gulf of California, containing both marine and non-marine sediments since the Miocene Epoch. Tectonic activity that formed the trough continues at a high rate as evidenced by deformed young sedimentary deposits and high levels of seismicity. Figure 1 shows the location of the site in relation to regional faults and physiographic features.

The surrounding regional geology includes the Peninsular Ranges (Santa Rosa and San Jacinto Mountains) to the south and west, the Salton Basin to the southeast, and the Little San Bernardino and Orocopia Mountains to the north and east. Hundreds of feet to several thousand feet of Quaternary fluvial, lacustrine, and aeolian soil deposits underlie the Coachella Valley. The southeastern part of the Coachella Valley lies below sea level. In the geologic past, the ancient Lake Cahuilla submerged the area. Calcareous tufa deposits may be observed along the ancient shoreline as high as elevation 45 feet above mean seal level (AMSL) along the Santa Rosa Mountains from La Quinta southward. Lacustrine (lake bed) deposits comprise the subsurface soils over much of the eastern Coachella Valley with alluvial outwash along the flanks of the valley.

Subsurface Soils

Subsurface soils encountered during the field exploration conducted on September 2, 2021 consist of sand (SP-SM) (Myoma fine sand). The near surface soils are non-expansive in nature. The subsurface logs (Plates B-1 thru B-5) depict the stratigraphic relationships of the various soil types.

Groundwater

Groundwater was not encountered in the test pits during the time of exploration. Well information collected near the subject site (Well 338195N1163903W001) indicates that the ground water level ranges from 190 feet to 199 feet below the ground surfaces in the last 5 years in the vicinity of the project site. Historic groundwater records in the vicinity of the project site indicate that groundwater has fluctuated between 100 and 215 feet below the ground surface over the last 60 years according to a report "Coachella Valley Investigation" conducted by the Department of Water Resources, published July 1964.

Faulting

The project site is located in the seismically active Coachella Valley of southern California with numerous mapped faults of the San Andreas Fault System traversing the region. We have performed a computer-aided search of known faults or seismic zones that lie within a 43-mile radius of the project site (Table 1). A fault map illustrating known active faults relative to the site is presented on Figure 1, *Regional Fault Map*. Figure 2 shows the project site in relation to local faults.

The criterion for fault classification adopted by the California Geological Survey defines Earthquake Fault Zones along active or potentially active faults. An active fault is one that has ruptured during Holocene time (roughly within the last 11,000 years). A fault that has ruptured during the last 1.8 million years (Quaternary time), but has not been proven by direct evidence to have not moved within Holocene time is considered to be potentially active. A fault that has not moved during Quaternary time is considered to be inactive. ***Review of the current Alquist-Priolo Earthquake Fault Zone maps (CGS, 2000a) indicates that the nearest mapped Earthquake Fault Zone is the San Andreas fault (San Bernardino-South segment) located approximately 5.5 miles northeast of the project site.***

General Ground Motion Analysis

The project site is considered likely to be subjected to moderate to strong ground motion from earthquakes in the region. Ground motions are dependent primarily on the earthquake magnitude and distance to the seismogenic (rupture) zone. Acceleration magnitudes also are dependent upon attenuation by rock and soil deposits, direction of rupture and type of fault; therefore, ground motions may vary considerably in the same general area.

2019 CBC General Ground Motion Parameters: The California Building Code (CBC) requires that a site-specific ground motion hazard analysis be performed in accordance with ASCE 7-16 Section 11.4.8 for structures on Site Class D and E sites with S_1 greater than or equal to 0.2 and Site Class E sites with S_s greater than or equal to 1.0. ***This project site has been classified as Site Class D and has a S_1 value of 0.63, which would require a site-specific ground motion hazard analysis.*** However, ASCE 7-16 Section 11.4.8 provides three exceptions which permit the use of conservative values of design parameters for certain conditions for Site Class D and E sites in lieu of a site-specific hazard analysis. The exceptions are:

- Exception 1: Structures on Site Class E sites with S_s greater than or equal to 1.0, provided the site coefficient F_a is taken as equal to that of Site Class C.
- Exception 2: Structures on Site Class D sites with S_1 greater than or equal to 0.2, provided the value of the seismic response coefficient C_s is determined by Equations 12.8-2 for values of $T \leq 1.5T_S$ and taken as equal to 1.5 times the value computed in accordance with either Equation 12.8-3 for $T_L \geq T > 1.5T_S$ or Equation 12.8-4 for $T > T_L$.
- Exception 3: Structures on Site Class E sites with S_1 greater than or equal to 0.2, provided that T is less than or equal to T_S and the equivalent static force procedure is used for design.

Based on our understanding of the proposed development, the seismic design parameters presented in Table 2 were calculated assuming that one of the exceptions listed above applies to the proposed structures at this site. **However, the structural engineer should verify that one of the exceptions is applicable to the proposed structures.** If none of the exceptions apply, our office should be consulted to perform a site-specific ground motion hazard analysis.

The 2019 CBC general ground motion parameters are based on the Risk-Targeted Maximum Considered Earthquake (MCE_R). The Structural Engineers Association of California (SEAOC) and Office of Statewide Health Planning and Development (OSHPD) Seismic Design Maps Web Application (SEAOC, 2020) was used to obtain the site coefficients and adjusted maximum considered earthquake spectral response acceleration parameters.

Design spectral response acceleration parameters are defined as the earthquake ground motions that are two-thirds (2/3) of the corresponding MCE_R ground motions. The Maximum Considered Earthquake Geometric Mean (MCE_G) peak ground acceleration adjusted for soil site class effects (PGA_M) value to be used for liquefaction and seismic settlement analysis in accordance with 2019 CBC Section 1803A.5.12 ($PGA_M = F_{PGA}*PGA$) is estimated at 0.74g for the project site. ***Design earthquake ground motion parameters are provided in Table 2.***

Seismic and Other Hazards

► **Groundshaking.** The primary seismic hazard at the project site is the potential for strong groundshaking during earthquakes along the San Andreas fault. A further discussion of groundshaking mentioned above.

► **Surface Rupture.** The project site does not lie within a State of California, Alquist-Priolo Earthquake Fault Zone or County of Riverside Fault Zone. Surface fault rupture is considered to be unlikely at the project site because of the well-delineated fault lines through the Coachella Valley as shown on USGS and CDMG maps. However, because of the high tectonic activity and deep alluvium of the region, we cannot preclude the potential for surface rupture on undiscovered or new faults that may underlie the site.

► **Liquefaction.** Liquefaction is unlikely to be a potential hazard at the site, due to groundwater deeper than 50 feet (the maximum depth that liquefaction is known to occur).

Other Potential Geologic Hazards.

► **Landsliding.** The hazard of landsliding is unlikely due to the regional planar topography. No ancient landslides are shown on geologic maps of the region and no indications of landslides were observed during our site investigation.

► **Volcanic hazards.** The site is not located in proximity to any known volcanically active area and the risk of volcanic hazards is considered very low.

► **Tsunamis, sieches, and flooding.** The site does not lie near any large bodies of water, so the threat of tsunami, sieches, or other seismically-induced flooding is unlikely.

► **Expansive soil.** The near surface soils at the project site consist of sands which are non-expansive.

Hydroconsolidation

In arid climatic regions, granular soils have a potential to collapse upon wetting. This collapse (hydro-consolidation) phenomena is the result of the lubrication of soluble cements (carbonates) in the soil matrix causing the soil to densify from its loose configuration during deposition.

A collapse potential test (Plate C-3) performed on a remolded sample from the site indicated a slight risk of collapse upon saturation.

Soil Infiltration Rate

The double ring infiltrometer (ASTM D3385) was used for infiltration test on this site, to depths of approximately 5 feet below the existing ground surface, corresponding to the anticipated bottom depth of the on-site storm-water retention system. The double ring infiltrometer consists of 12-inch inner ring and a 24-inch outer ring. With constant head test method per ASTM D3385, water is consistently added to both the outer and inner rings to maintain a constant level throughout the testing

Soil infiltration rate measured range from 10.4 in/hr to 11.1 in/hr. An oil/water separator should be installed at inlets to the storm-water retention basin to prevent sealing of the basin bottom with silt and oil residues. The field test results and rate calculations are attached in Appendix D of this report.

Site Preparation

Pre-grade Meeting: Prior to site preparation, a meeting should be held at the site with as a minimum, the owner's representative, grading contractor and geotechnical engineer in attendance.

Clearing and Grubbing: Any surface improvements, debris or vegetation including grass, trees, and weeds on the site at the time of construction should be removed from the construction area. Root balls should be completely excavated. Organic stripping should be hauled from the site and not used as fill. *Any trash, construction debris, concrete slabs, old pavement, landfill, and buried obstructions such as old foundations, un-controlled fills and utility lines exposed during rough grading should be traced to the limits of the foreign material by the grading contractor and removed under our supervision.* Any excavations resulting from site clearing should be dish-shaped to the lowest depth of disturbance and backfilled under the observation of the geotechnical engineer's representative.

Mass Grading: Prior to placing any fills, the surface 12 inches of soil should be removed, the exposed surface should be scarified to a depth of 6 to 8 inches, uniformly moisture conditioned to at least 2% over optimum moisture content, and re-compacted a minimum of 95% of the maximum density determined in accordance with ASTM D1557 methods.

House Pad Preparation: The existing surface soil within the proposed house pad areas should be removed to 36 inches below the original grade or 18 inches below the lowest foundation grade (whichever deeper), extending five feet beyond all exterior wall/column lines (including adjacent concrete areas). Exposed sub-grade should be scarified to a depth of 6 to 8 inches, uniformly moisture conditioned to at least 2% over optimum moisture content, and re-compacted a minimum of 95% of the maximum density determined in accordance with ASTM D1557 methods.

Auxiliary Structures Foundation Preparation: Auxiliary structures such as free standing or retaining walls should have footings extended to a minimum of 18 inches below grade. The existing soil beneath the structure foundation prepared in the manner described for the house pad except the preparation needs only to extend 18 inches below and beyond the footing.

Sidewalk and Concrete Hardscape Areas: In areas other than the building pad which are to receive concrete slabs, the ground surface should be over-excavated to a depth of 8 to 12 inches, uniformly moisture conditioned to at least 2% over optimum moisture, and re-compacted to at least 90% of ASTM D1557 maximum density.

The on-site soils are suitable for use as compacted fill and utility trench backfill. Imported fill soil (if required) should be similar to onsite soil or non-expansive, granular soil meeting the USCS classifications of SM, SP-SM, or SW-SM with a maximum rock size of 6 inches and no less than 5% passing the No. 200 sieve. ***The geotechnical engineer should approve imported fill soil sources before hauling material to the site.*** Native and imported materials should be placed in lifts no greater than 8 inches in loose thickness, uniformly moisture conditioned to at least 2% over optimum moisture, and re-compacted to at least 90% of ASTM D1557 maximum density.

Moisture Control and Drainage: The moisture condition of the house pad should be maintained during trenching and utility installation until concrete is placed or should be rewetted before initiating delayed construction.

Adequate site drainage is essential to future performance of the project. Infiltration of excess irrigation water and stormwaters can adversely affect the performance of the subsurface soil at the site. Positive drainage should be maintained away from all structures (5% for 5 feet minimum across unpaved areas) to prevent ponding and subsequent saturation of the native soil.

Gutters and downspouts may be considered as a means to convey water away from foundations. If landscape irrigation is allowed next to the building, drip irrigation systems or lined planter boxes should be used. The subgrade soil should be maintained in a moist, but not saturated state, and not allowed to dry out. Drainage should be maintained without ponding.

Utility Trench Backfill

On-site soil free of debris, vegetation, and other deleterious matter may be suitable for use as utility trench backfill. Backfill within roadways should be placed in layers not more than 6 to 8 inches in thickness, uniformly moisture conditioned to at least 2% over optimum moisture and mechanically compacted to a minimum of 90% of the ASTM D1557 maximum dry density except for the top 12 inches of the trench which shall be compacted to at least 95%. Native backfill should only be placed and compacted after encapsulating buried pipes with suitable bedding and pipe envelope material.

Pipe envelope/bedding should be clean sand (Sand Equivalent SE>30). Precautions should be taken in the compaction of the backfill to avoid damage to the pipes and structures.

Soil Bearing Values and Lateral Loads

The subsurface soils consist of sand with some gravel to maximum penetrated. An allowable soil bearing pressure of 1,800 psf could be used. Passive resistance of lateral earth pressure may be calculated using an equivalent fluid pressure of 350 pcf to resist lateral loadings. The top one foot of embedment should not be considered in computing passive resistance unless the adjacent area is confined by a slab or pavement. An allowable friction coefficient of 0.38 may also be used at the base of the footings to resist lateral loading. Static earth pressure equivalent to that exerted by a fluid weighing 35 pcf for unrestrained (active) conditions and 50 pcf for restrained (at-rest) conditions.

Foundations

All exterior and interior foundations should be embedded a minimum of 18 inches deep. Continuous wall footings should have a minimum width of 12 inches. Spread footings should have a minimum width of 24 inches and should not be structurally isolated. ***Recommended concrete reinforcement and sizing for all footings should be provided by the structural engineer.***

Slabs-on-Grade

Concrete slabs and flatwork should be a minimum of 4 inches thick. The concrete floor slabs may either be monolithically placed with the foundation or dowelled after footing placement. The concrete slabs may be placed on granular subgrade that has been compacted at least 90% relative compaction (ASTM D1557). ***Slab thickness and steel reinforcement should be determined by the design engineer.***

American Concrete Institute (ACI) guidelines (ACI 302.1R-04 Chapter 3, Section 3.2.3) provide recommendations regarding the use of moisture barriers beneath concrete slabs. The concrete floor slabs should be underlain by a 10-mil polyethylene vapor retarder that works as a capillary break to reduce moisture migration into the slab section. All laps and seams should be overlapped 6-inches or as recommended by the manufacturer. The vapor retarder should be protected from puncture. The joints and penetrations should be sealed with the manufacturer's recommended adhesive, pressure-sensitive tape, or both. The vapor retarder should extend a minimum of 12 inches into the footing excavations. The vapor retarder may lie directly on the granular fill with 2 inches of clean sand cover.

Placing sand over the vapor retarder may increase moisture transmission through the slab, because it provides a reservoir for bleed water from the concrete to collect. The sand placed over the vapor retarder may also move and mound prior to concrete placement, resulting in an irregular slab thickness. For areas with moisture sensitive flooring materials, ACI recommends that concrete slabs be placed without a sand cover directly over the vapor retarder, provided that the concrete mix uses a low-water cement ratio and concrete curing methods are employed to compensate for release of bleed water through the top of the slab. The vapor retarder should have a minimum thickness of 15-mil (Stego-Wrap or equivalent).

All independent concrete flatworks should be underlain by 12 inches of moisture conditioned and compacted soils. All flatwork should be jointed in square patterns and at irregularities in shape at a maximum spacing of 10 feet or the least width of the sidewalk.

Permanent Slopes

Cut and Fill slopes should be constructed generally no steeper than 3 (H):1(V) to permit slope maintenance with motor graders, and provide erosional stability from wind or rain while unprotected without landscape cover. Slopes with a 2(H):1(V) gradient are permitted, provided it is recognized that such slopes are more prone to erosion and do not permit maintenance by motorized riding equipment and require landscape cover to retard erosion.

Concrete Mixes and Corrosivity

Selected chemical analyses for corrosivity were conducted on bulk samples of the near surface soil from the project site (Plate C-4). The native soils have low levels of sulfate and chloride ion concentrations. Resistivity determinations on the soil indicate a moderate potential for metal loss because of electrochemical corrosion processes.

A minimum of 2,500 psi concrete of Type II Portland Cement with a maximum water/cement ratio of 0.60 (by weight) should be used for concrete placed in contact with native soil on this project (sitework including streets, sidewalks, driveways, patios, and other wall foundations).

Landmark does not practice corrosion engineering. We recommend that a qualified corrosion engineer evaluate the corrosion potential on metal construction materials and concrete at the site.

Observation and Density Testing

Site preparation and fill placement should be continuously observed and tested by a representative of a qualified geotechnical engineering firm. Near full-time observation services during the excavation and scarification process is necessary to detect undesirable materials or conditions and soft areas that may be encountered in the construction area.

The geotechnical firm that provides observation and testing during construction shall assume the responsibility of "***geotechnical engineer of record***" and, as such, shall perform additional tests and investigation as necessary to satisfy themselves as to the site conditions and the recommendations for site development.

Closure

We did not encounter soil conditions that would preclude implementation of the proposed project provided the recommendations contained in this report are implemented in the design and construction of this project.

We appreciate the opportunity to provide our findings and professional opinions regarding geotechnical conditions at the site. If you have any questions or comments regarding our findings, please call our office at (760) 360-0665.

Respectfully Submitted,
LandMark Consultants, Inc.

Greg M. Chandra, P.E., M.ASCE
Principal Engineer

Attachments:

Appendix A: Vicinity and Site Maps
Appendix B: Subsurface Soil Logs and Soil Key
Appendix C: Laboratory Test Results
Appendix D: Soil Infiltration Test Result

TABLES

Table 1
Summary of Characteristics of Closest Known Active Faults

Fault Name	Approximate Distance (miles)	Approximate Distance (km)	Maximum Moment Magnitude (Mw)	Fault Length (km)	Slip Rate (mm/yr)
San Andreas - San Bernardino (South)	5.5	8.8	7.4	103 ± 10	30 ± 7
Garnet Hill *	6.5	10.4			
San Andreas - San Bernardino (North)	7.2	11.6	7.5	103 ± 10	24 ± 6
San Andreas - Coachella	9.4	15.0	7.2	96 ± 10	25 ± 5
Indio Hills *	10.2	16.4			
Blue Cut *	12.9	20.7			
Eureka Peak	14.2	22.7	6.4	19 ± 2	0.6 ± 0.4
San Jacinto - Anza	19.5	31.3	7.2	91 ± 9	12 ± 6
Burnt Mtn.	20.3	32.4	6.5	21 ± 2	0.6 ± 0.4
Morongo *	21.9	35.0			
San Jacinto - Coyote Creek	22.2	35.5	6.8	41 ± 4	4 ± 2
Pinto Mtn.	23.8	38.0	7.2	74 ± 7	2.5 ± 2
Landers	27.6	44.2	7.3	83 ± 8	0.6 ± 0.4
San Jacinto - San Jacinto Valley	31.2	49.9	6.9	43 ± 4	12 ± 6
Pisgah Mtn. - Mesquite Lake	33.3	53.3	7.3	89 ± 9	0.6 ± 0.4
Johnson Valley (northern)	37.0	59.2	6.7	35 ± 4	0.6 ± 0.4
S. Emerson - Copper Mtn.	37.1	59.4	7	54 ± 5	0.6 ± 0.4
North Frontal Fault Zone - Eastern	38.2	61.1	6.7	27 ± 3	0.5 ± 0.3
Hot Springs *	40.2	64.3			
San Jacinto - Borrego	40.8	65.2	6.6	29 ± 3	4 ± 2
Earthquake Valley	41.6	66.6	6.5	20 ± 2	2 ± 1
Elsinore - Julian	42.3	67.7	7.1	76 ± 8	5 ± 2

* Note: Faults not included in CGS database.

Table 2
2019 California Building Code (CBC) and ASCE 7-16 Seismic Parameters

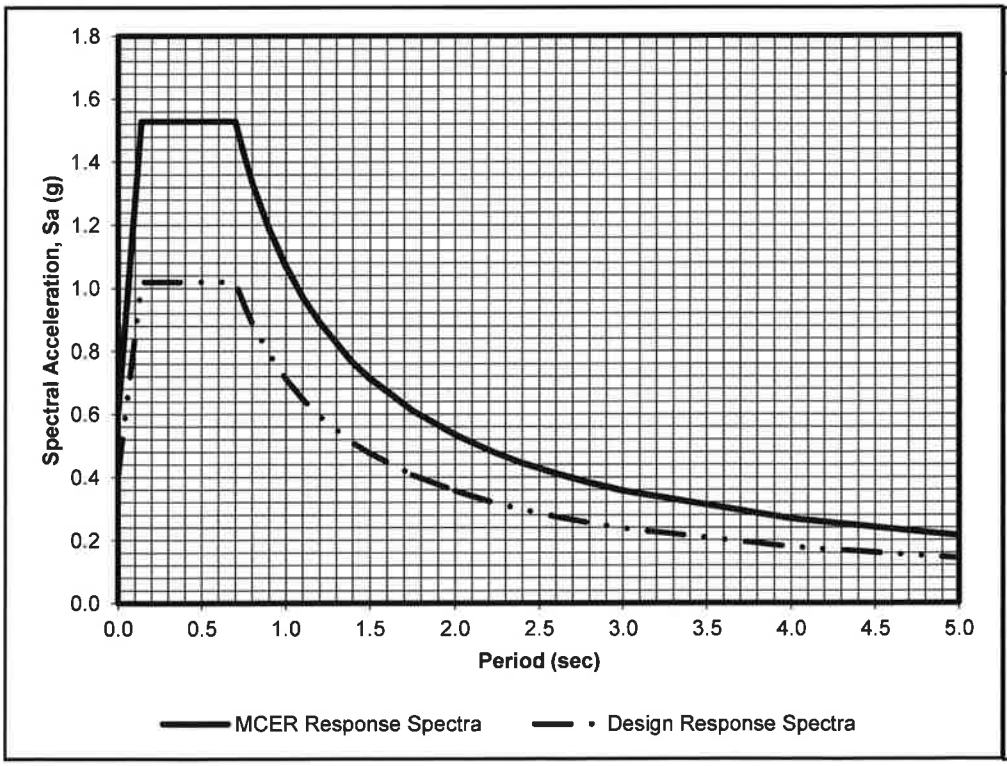
		ASCE 7-16 Reference
Soil Site Class:	**D**	Table 20.3-1
Latitude:	33.7643 N	
Longitude:	-116.3964 W	
Risk Category:	II	
Seismic Design Category:	D	

Maximum Considered Earthquake (MCE) Ground Motion

Mapped MCE_R Short Period Spectral Response	S_s	1.529 g	ASCE Figure 22-1	
Mapped MCE_R 1 second Spectral Response	S_1	0.628 g	ASCE Figure 22-2	
Short Period (0.2 s) Site Coefficient	F_a	1.00	ASCE Table 11.4-1	
Long Period (1.0 s) Site Coefficient	F_v	1.70	ASCE Table 11.4-2	
MCE_R Spectral Response Acceleration Parameter (0.2 s)	S_{MS}	1.529 g	= Fa * S_s	ASCE Equation 11.4-1
MCE_R Spectral Response Acceleration Parameter (1.0 s)	S_{M1}	1.068 g	= Fv * S_1	ASCE Equation 11.4-2

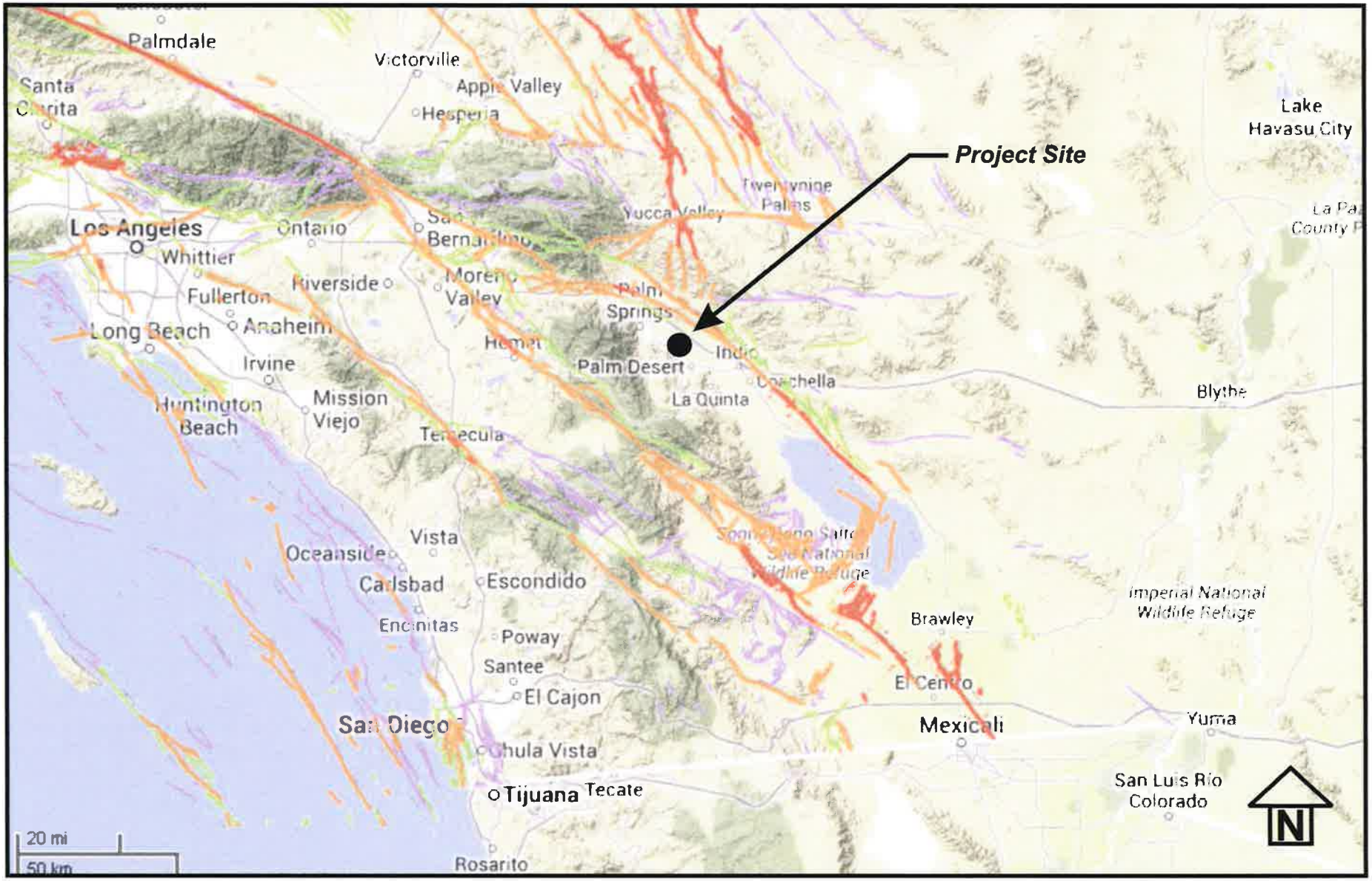
Design Earthquake Ground Motion

Design Spectral Response Acceleration Parameter (0.2 s)	S_{DS}	1.019 g	= 2/3*S_{MS}	ASCE Equation 11.4-3
Design Spectral Response Acceleration Parameter (1.0 s)	S_{D1}	0.712 g	= 2/3*S_{M1}	ASCE Equation 11.4-4
Risk Coefficient at Short Periods (less than 0.2 s)	C_{RS}	0.911		ASCE Figure 22-17
Risk Coefficient at Long Periods (greater than 1.0 s)	C_{R1}	0.893		ASCE Figure 22-18
	T_L	8.00 sec		ASCE Figure 22-12
	T_O	0.14 sec	=0.2*S_{D1}/S_{DS}	
	T_S	0.70 sec	=S_{D1}/S_{DS}	
Peak Ground Acceleration	PGA_M	0.74 g		ASCE Equation 11.8-1



Period T (sec)	Sa (g)	MCE_R Sa (g)
0.00	0.41	0.61
0.14	1.02	1.53
0.70	1.02	1.53
0.75	0.95	1.42
0.80	0.89	1.33
0.90	0.79	1.19
1.00	0.71	1.07
1.10	0.65	0.97
1.20	0.59	0.89
1.20	0.59	0.89
1.40	0.51	0.76
1.50	0.47	0.71
1.75	0.41	0.61
2.00	0.36	0.53
2.20	0.32	0.49
2.40	0.30	0.44
2.60	0.27	0.41
2.80	0.25	0.38
3.00	0.24	0.36
4.00	0.18	0.27
5.00	0.14	0.21

FIGURES



Source: California Geological Survey 2010 Fault Activity Map of California
http://www.quake.ca.gov/gmaps/FAM/faultactivitymap.html#

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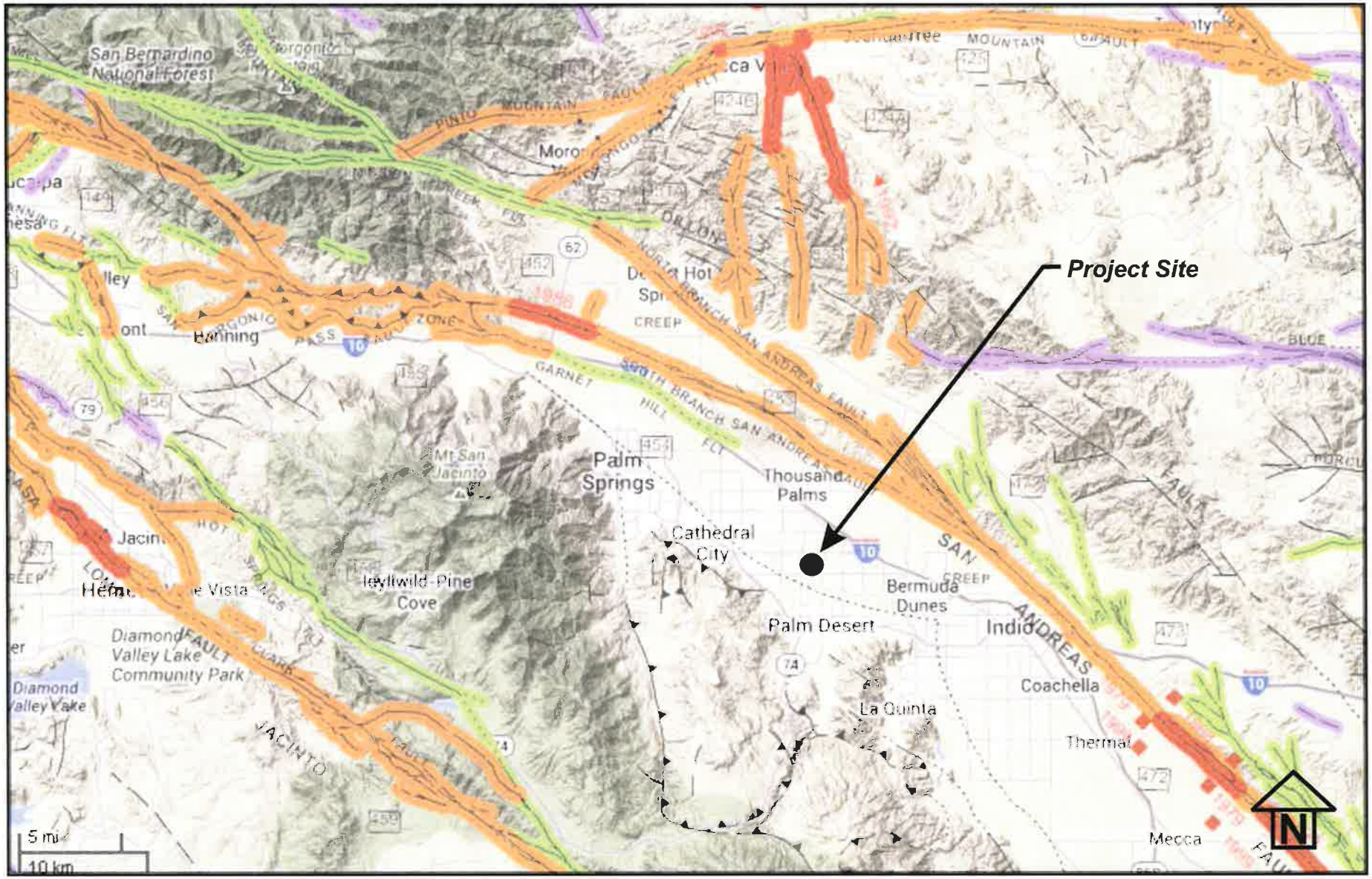
Regional Fault Map

Figure 1



Source: California Geological Survey 2010 Fault Activity Map of California
http://www.quake.ca.gov/gmaps/FAM/faultactivitymap.html#

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Map of Local Faults

Figure 2

No triangle by date indicates an intermediate point along fault break.

Fault that exhibits fault creep slippage. Hachures indicate linear extent of fault creep. Annotation (cre with leader) indicates representative locations where fault creep has been observed and recorded.

Square on fault indicates where fault creep slippage has occured that has been triggered by an earthqua on some other fault. Date of causative earthquake indicated. Squares to right and left of date indicate ter nal points between which triggered creep slippage has occurred (creep either continuous or intermitt between these end points).

Holocene fault displacement (during past 11,700 years) without historic record. Geomorphic evidence Holocene faulting includes sag ponds, scarps showing little erosion, or the following features in Holoce age deposits: offset stream courses, linear scarps, shutter ridges, and triangular faceted spurs. Recer of faulting offshore is based on the interpreted age of the youngest strata displaced by faulting.

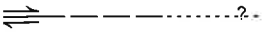
Late Quaternary fault displacement (during past 700,000 years). Geomorphic evidence similar to t described for Holocene faults except features are less distinct. Faulting may be younger, but lack younger overlying deposits precludes more accurate age classification.

Quaternary fault (age undifferentiated). Most faults of this category show evidence of displacement son time during the past 1.6 million years; possible exceptions are faults which displace rocks of undiffere ated Plio-Pleistocene age. Unnumbered Quaternary faults were based on Fault Map of California, 19 See Bulletin 201, Appendix D for source data.

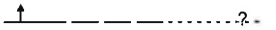
Pre-Quaternary fault (older that 1.6 million years) or fault without recognized Quaternary displacement. Some faults are shown in this category because the source of mapping used was of reconnaissnce nature, or was not done with the object of dating fault displacements. Faults in this category are not necessarily inactive.

ADDITIONAL FAULT SYMBOLS

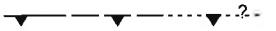
Bar and ball on downthrown side (relative or apparent).



Arrows along fault indicate relative or apparent direction of lateral movement.



Arrow on fault indicates direction of dip.



Low angle fault (barbs on upper plate). Fault surface generally dips less than 45° but locally may have be subsequently steepened. On offshore faults, barbs simply indicate a reverse fault regardless of steepne of dip.

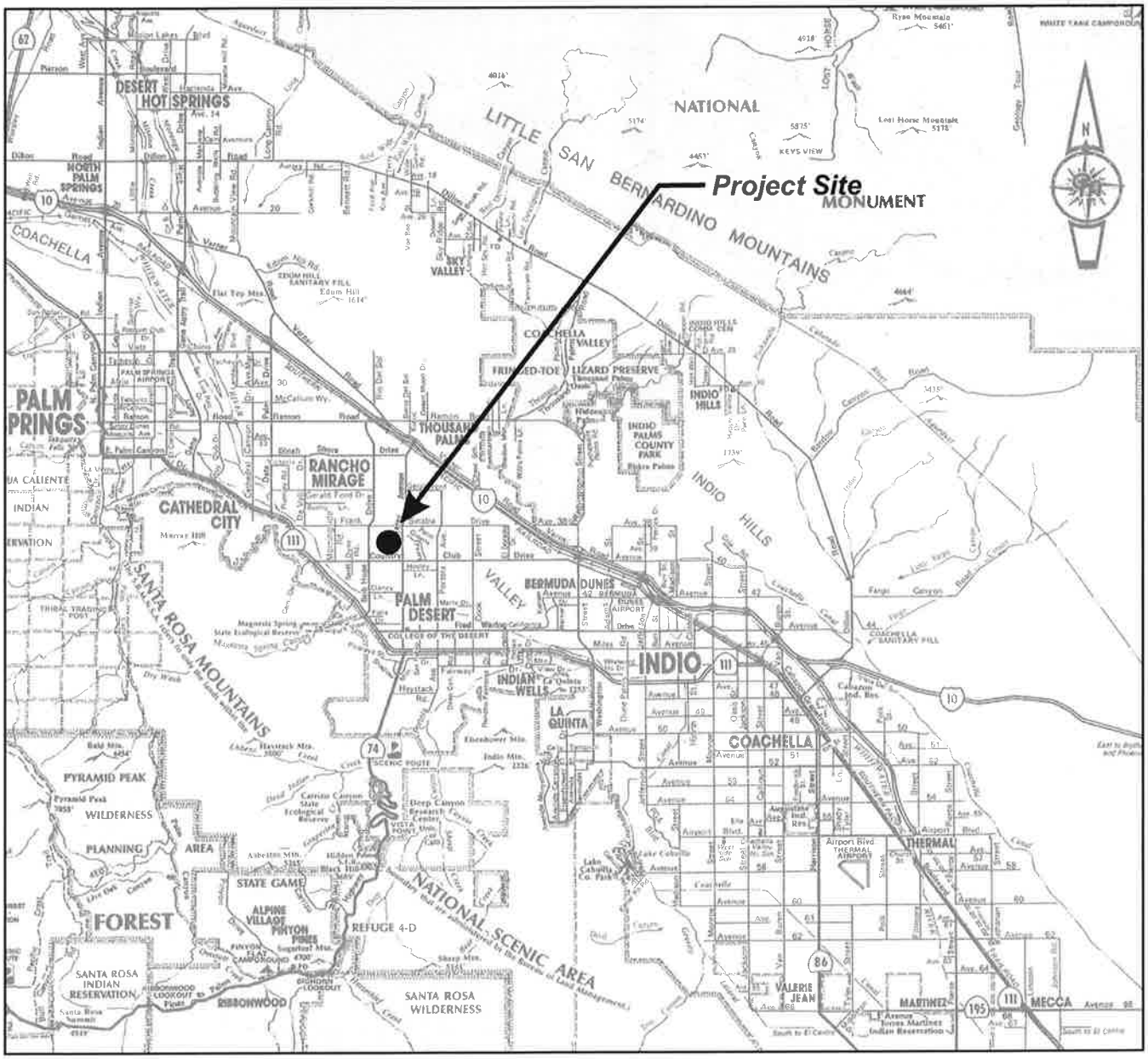
OTHER SYMBOLS

Numbers refer to annotations listed in the appendices of the accompanying report. Annotations include fa name, age of fault displacement, and pertinent references including Earthquake Fault Zone maps wher fault has been zoned by the Alquist-Priolo Earthquake Fault Zoning Act. This Act requires the State Geo gist to delineate zones to encompass faults with Holocene displacement.

Structural discontinuity (offshore) separating differing Neogene structural domains. May indicate disco nuities between basement rocks.

Brawley Seismic Zone, a linear zone of seismicity locally up to 10 km wide associated with the releasi step between the Imperial and San Andreas faults.

APPENDIX A



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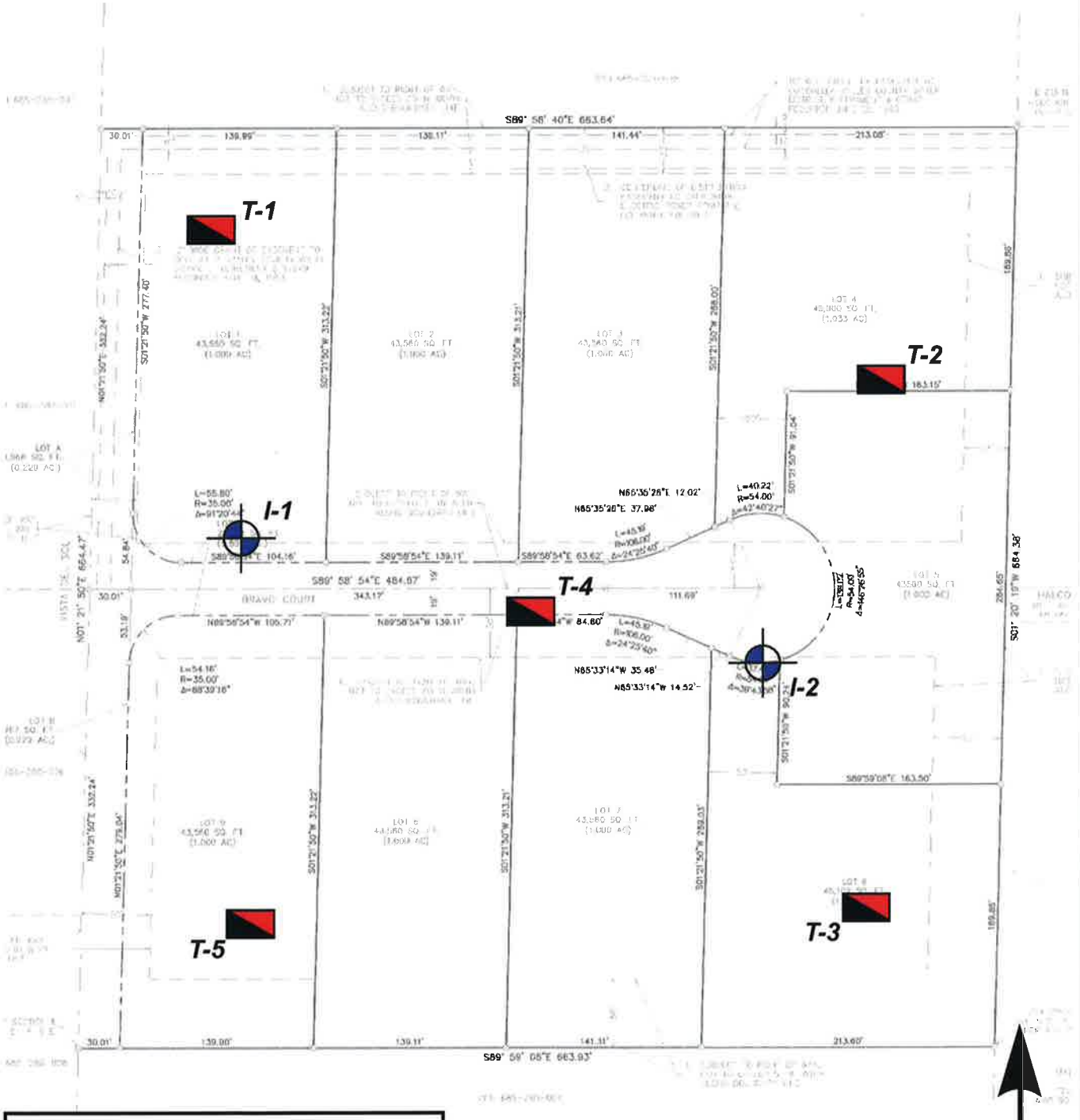
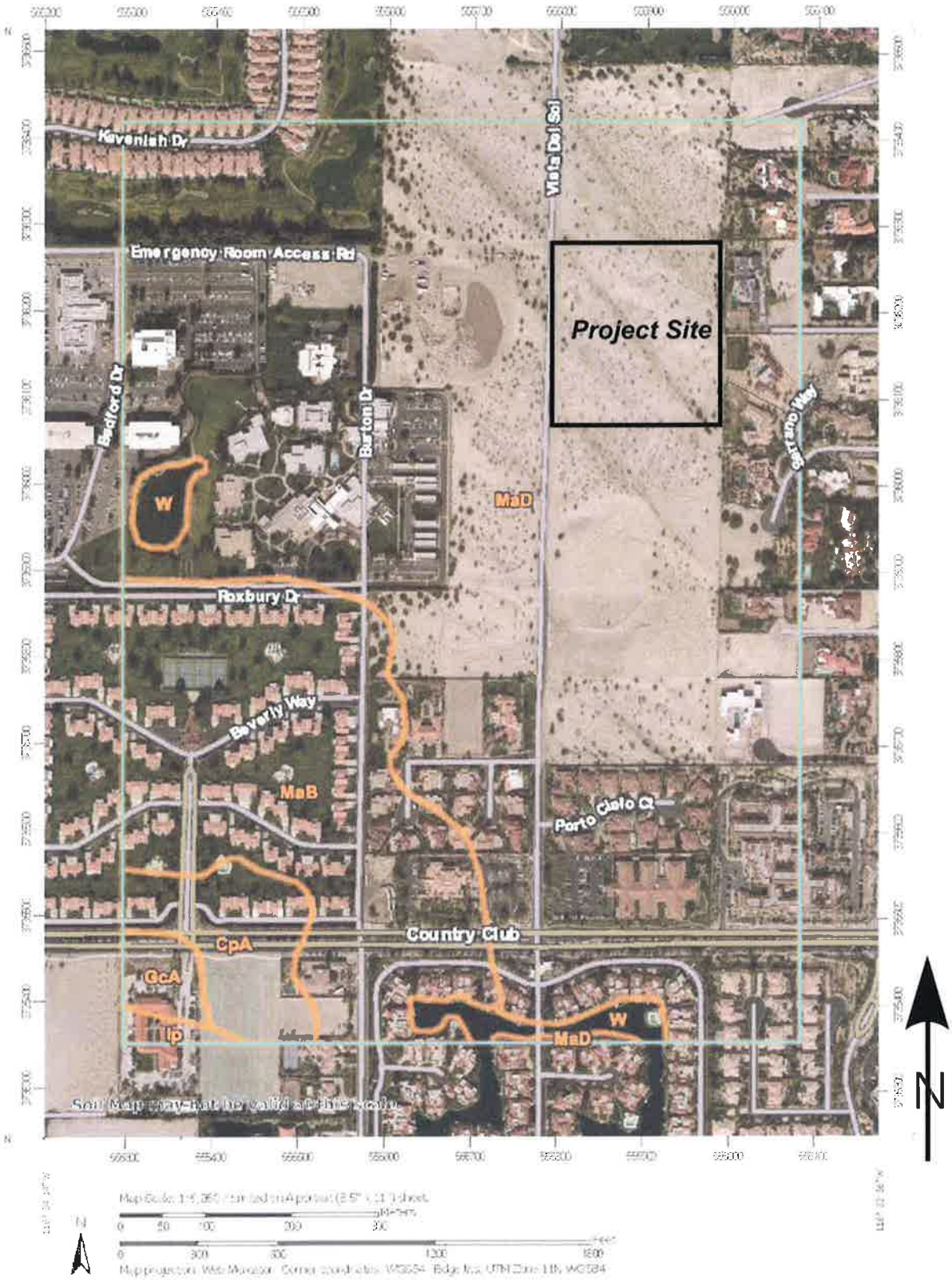
Vicinity Map

Plate A-1



LANDMARK Geo-Engineers and Geologists **Project No.: LP21237**	**Site and Exploration Plan**	**Plate A-2**



Natural Resources Conservation Service

Web Soil Survey
National Cooperative Soil Survey

6/16/2017
Page 1 of 3

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USDA Soil Conservation Soil Service Map

Plate A-3

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Riverside County, Coachella Valley Area, California
Survey Area Data: Version 8, Sep 12, 2016

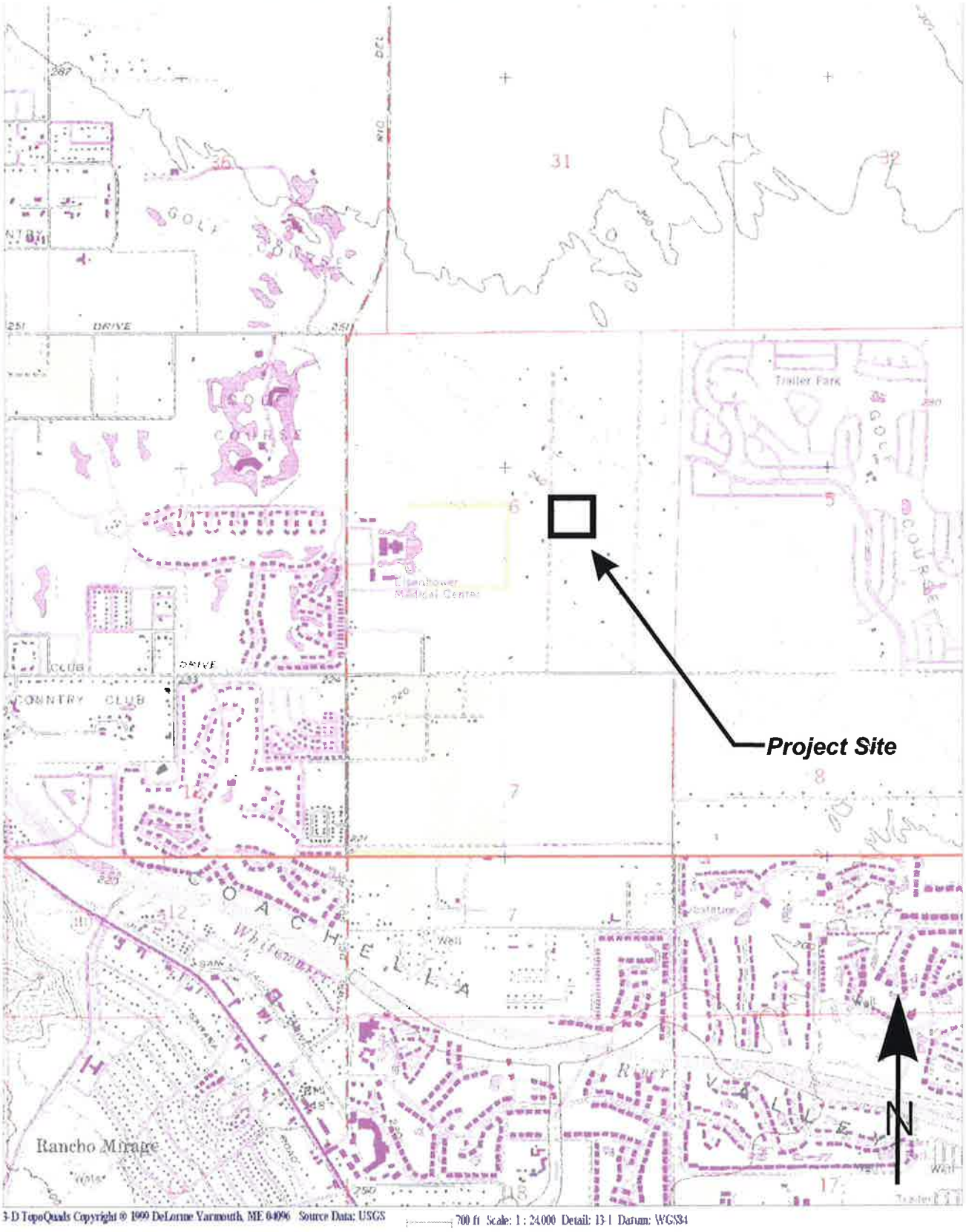
Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jan 22, 2015—Feb 10, 2015

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

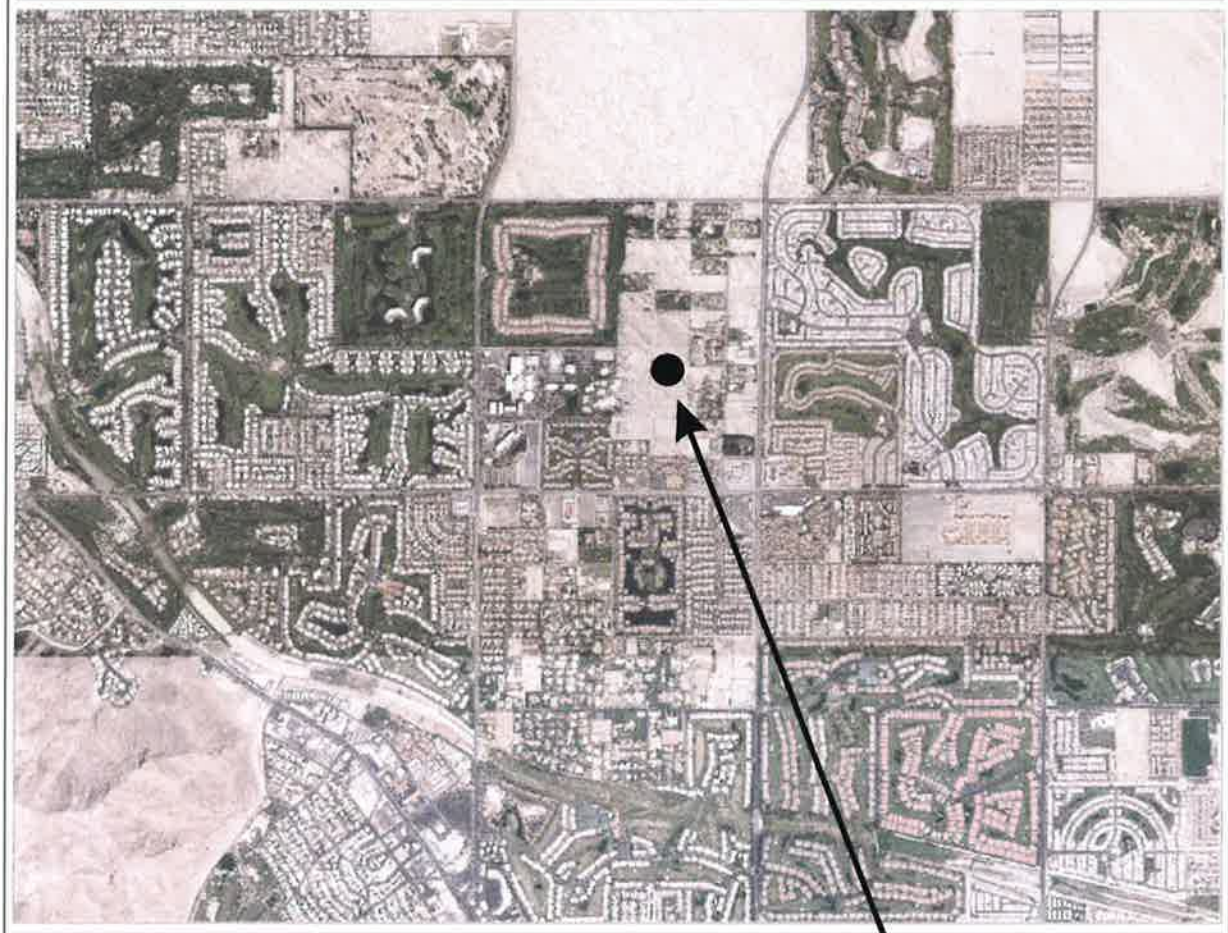
Map Unit Legend

Riverside County, Coachella Valley Area, California (CA680)			
Map Unit Symbol	**Map Unit Name**	**Acres in AOI**	**Percent of AOI**
CpA	Coachella fine sand, 0 to 2 percent slopes	7.5	3.6%
GcA	Gilman fine sandy loam, wet, 0 to 2 percent slopes	2.2	1.0%
Ip	Indio fine sandy loam	0.9	0.4%
MaB	Myoma fine sand, 0 to 5 percent slopes	37.2	17.8%
MaD	Myoma fine sand, 5 to 15 percent slopes	156.9	75.3%
W	Water	3.7	1.8%
Totals for Area of Interest		**208.3**	**100.0%**



LANDMARK Geo-Engineers and Geologists Project No.: LP21237	Topographic Map	Plate A-4

Fault Map



Legend

Notes

0 3,394 6,788 Feet

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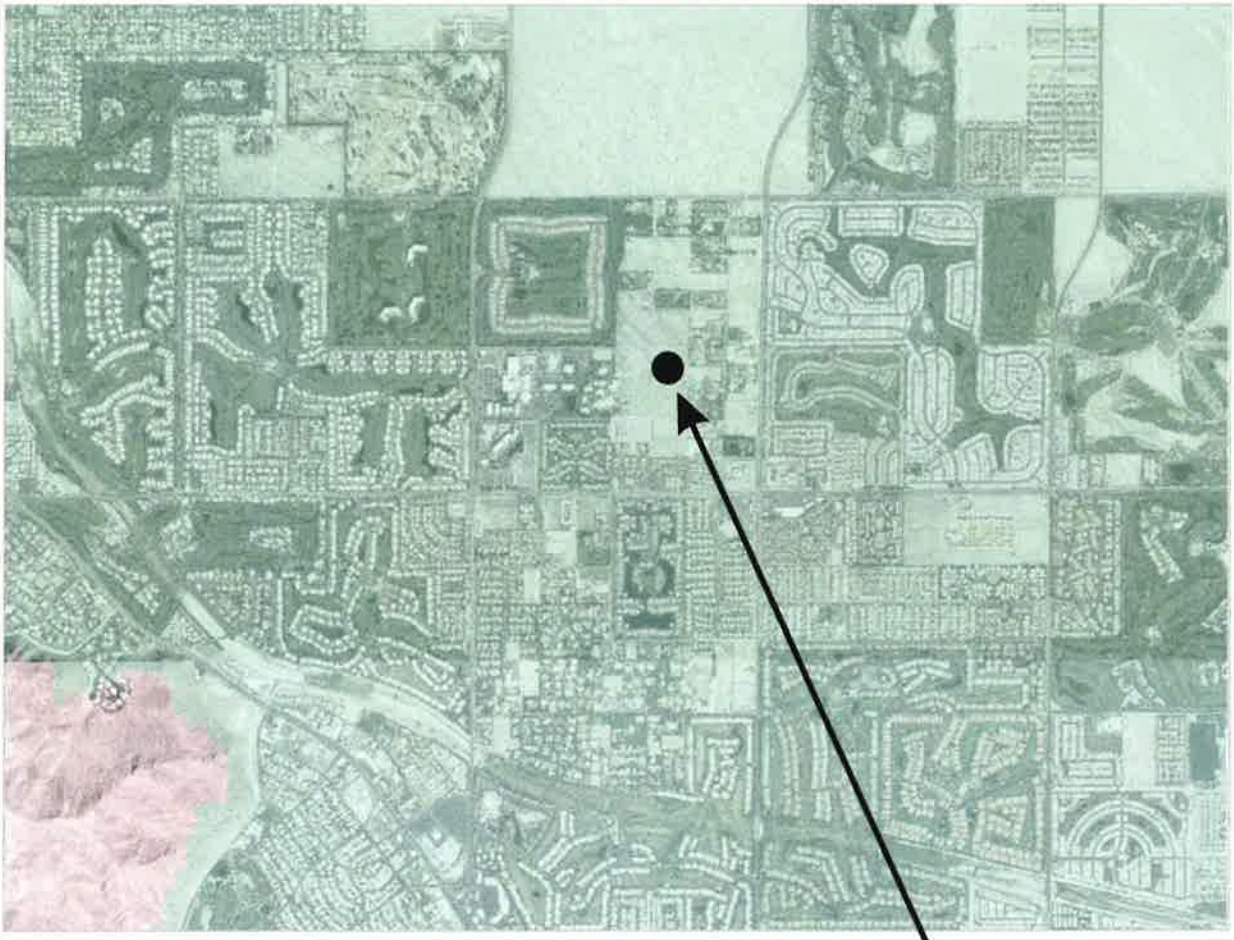
Riverside County
Geographic Information System (GIS)
Fault Map

Plate
A-5

Subsidence Map



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Subsidence

Notes

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Riverside County
Geographic Information System (GIS)
Subsidence

Plate
A-6

Liquefaction Map

Legend

Liquefaction

Notes

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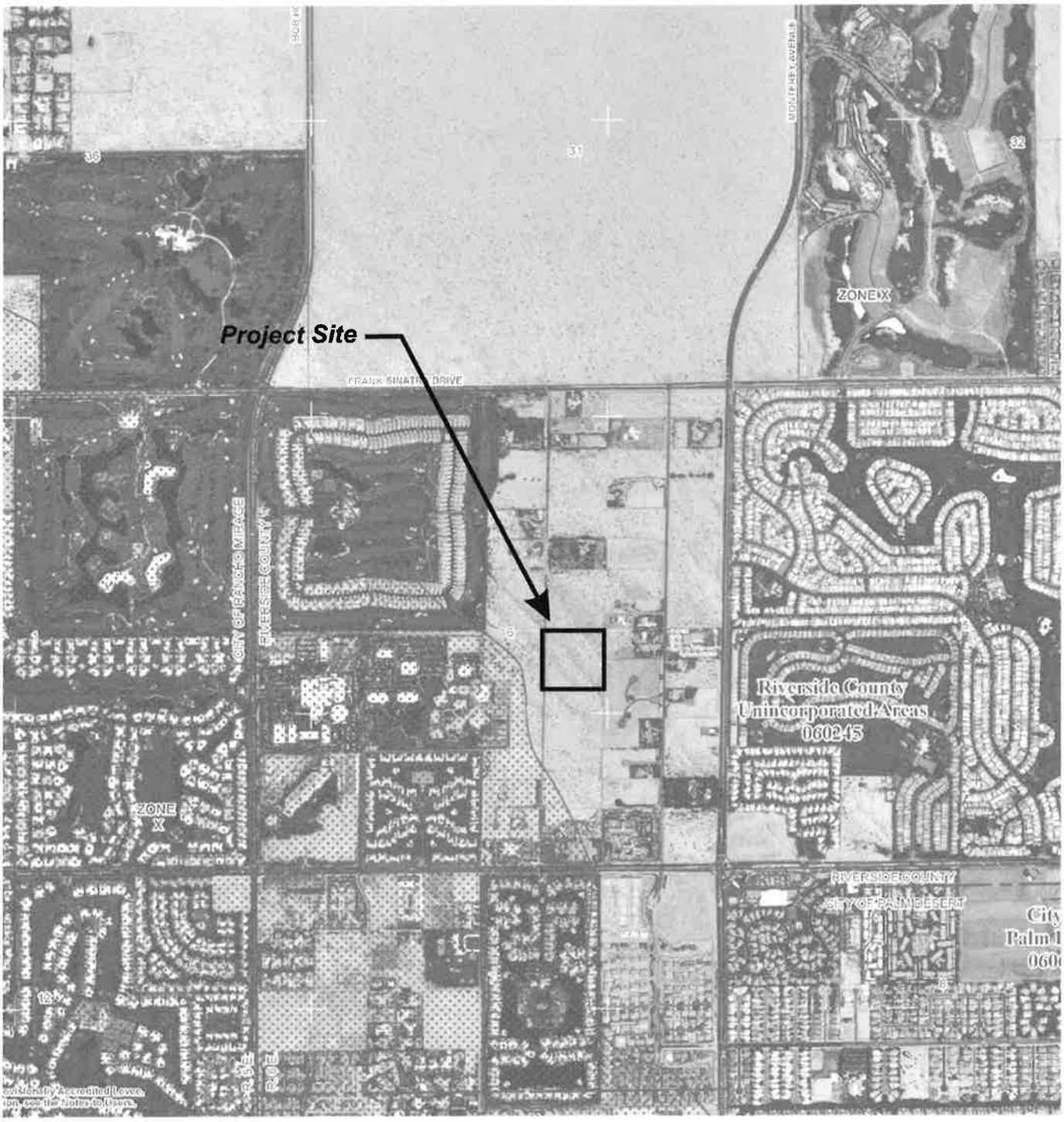
Project No.: LP21237

Riverside County
Geographic Information System (GIS)
Liquefaction Zones

Plate
A-7



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Project No.: LP21237

FEMA Flood Zones

Plate A-8

LEGEND

SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

ZONE A	No Base Flood Elevations determined.
ZONE AE	Base Flood Elevations determined.
ZONE AH	Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.
ZONE AO	Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
ZONE AR	Special Flood Hazard Area formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.
ZONE A99	Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.
ZONE V	Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.
ZONE VE	Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

ZONE X — Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

ZONE X — Areas determined to be outside the 0.2% annual chance floodplain.

ZONE D — Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

1% annual chance floodplain boundary

0.2% annual chance floodplain boundary

Floodway boundary

Zone D boundary

CBRS and OPA boundary

Boundary dividing Special Flood Hazard Area Zones and boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or flood velocities.

513 — Base Flood Elevation line and value; elevation in feet*

(EL 987) — Base Flood Elevation value where uniform within zone; elevation in feet*

* Referenced to the North American Vertical Datum of 1988

A — A — Cross section line

23 — 23 — Transect line

87°07'45", 32°22'30" — Geographic coordinates referenced to the North American Datum of 1983 (NAD 83), Western Hemisphere

4276000mN — 1000-meter Universal Transverse Mercator grid values, zone 11N

600000 FT — 5000-foot grid ticks: California State Plane coordinate system, zone VI (FIPSZONE 0406), Lambert Conformal Conic projection

DX5510 × — Bench mark (see explanation in Notes to Users section of this FIRM panel)

●M1.5 — River Mile

APPENDIX B

LOG OF TEST PIT NO. T-1

SHEET 1 OF 1

DEPTH	FIELD: SAMPLE	FIELD: USCS CLASS.	FIELD: BLOW COUNT	FIELD: POCKET PEN. (tsf)	DESCRIPTION OF MATERIAL	LABORATORY: DRY DENSITY (pcf)	LABORATORY: MOISTURE CONTENT (% dry wt.)	LABORATORY: OTHER TESTS
0	X				SAND (SP-SM): Grey-brown, dry, medium dense, fine to very fine grained	101.3	1.0	Passing #200 = 9.7%
5						83.1	3.7	
10								
15					Total Depth = 12.0 feet. Moisture and density values by Nuclear Densometer (ASTM 6938) Backfilled with excavated soil			
20								
25								
30								

DATE EXCAVATED: 9/2/21 TOTAL DEPTH: 12.0 feet DEPTH TO WATER: N/A

LOGGED BY: L. Jackson TYPE OF BIT: Backhoe DIAMETER: N/A

SURFACE ELEVATION: HAMMER WT.: N/A DROP: N/A

PROJECT NO. LP21237

LANDMARK Geo-Engineers and Geologists

PLATE B-1

LOG OF TEST PIT NO. T-2

SHEET 1 OF 1

DEPTH	FIELD: SAMPLE	FIELD: USCS CLASS.	FIELD: BLOW COUNT	FIELD: POCKET PEN. (tsf)	DESCRIPTION OF MATERIAL	LABORATORY: DRY DENSITY (pcf)	LABORATORY: MOISTURE CONTENT (% dry wt.)	LABORATORY: OTHER TESTS
0					SAND (SP-SM): Grey-brown, dry, medium dense, fine to very fine grained	88.3	1.4	
						89.6	1.9	
5								
10					Total Depth = 10.0 feet. Moisture and density values by Nuclear Densometer (ASTM 6938) Backfilled with excavated soil			
15								
20								
25								
30								

DATE EXCAVATED: 9/2/21 TOTAL DEPTH: 10.0 feet DEPTH TO WATER: N/A

LOGGED BY: L. Jackson TYPE OF BIT: Backhoe DIAMETER: N/A

SURFACE ELEVATION: HAMMER WT.: N/A DROP: N/A

PROJECT NO. LP21237

LANDMARK Geo-Engineers and Geologists

PLATE B-2

LOG OF TEST PIT NO. T-3

SHEET 1 OF 1

DEPTH	FIELD: SAMPLE	FIELD: USCS CLASS.	FIELD: BLOW COUNT	FIELD: POCKET PEN. (tsf)	DESCRIPTION OF MATERIAL	LABORATORY: DRY DENSITY (pcf)	LABORATORY: MOISTURE CONTENT (% dry wt.)	LABORATORY: OTHER TESTS
0	X				SAND (SP-SM): Grey-brown, dry, medium dense, fine to very fine grained	95.1	0.9	Passing #200 = 9.7%
5						86.1	2.1	
10					Total Depth = 10.0 feet. Moisture and density values by Nuclear Densometer (ASTM 6938) Backfilled with excavated soil			
15								
20								
25								
30								

DATE EXCAVATED: 9/2/21 TOTAL DEPTH: 10.0 feet DEPTH TO WATER: N/A

LOGGED BY: L. Jackson TYPE OF BIT: Backhoe DIAMETER: N/A

SURFACE ELEVATION: HAMMER WT.: N/A DROP: N/A

PROJECT NO. LP21237

LANDMARK Geo-Engineers and Geologists

PLATE B-3

LOG OF TEST PIT NO. T-4

SHEET 1 OF 1

DEPTH	FIELD: SAMPLE	FIELD: USCS CLASS.	FIELD: BLOW COUNT	FIELD: POCKET PEN. (tsf)	DESCRIPTION OF MATERIAL	LABORATORY: DRY DENSITY (pcf)	LABORATORY: MOISTURE CONTENT (% dry wt.)	LABORATORY: OTHER TESTS
0					SAND (SP-SM): Grey-brown, dry, medium dense, fine to very fine grained	90.6	1.3	
						88.6	1.8	
5								
10								
15					Total Depth = 11.0 feet. Moisture and density values by Nuclear Densometer (ASTM 6938) Backfilled with excavated soil			
20								
25								
30								

DATE EXCAVATED: 9/2/21 TOTAL DEPTH: 11.0 feet DEPTH TO WATER: N/A

LOGGED BY: L. Jackson TYPE OF BIT: Backhoe DIAMETER: N/A

SURFACE ELEVATION: HAMMER WT.: N/A DROP: N/A

PROJECT NO. LP21237

LANDMARK Geo-Engineers and Geologists

PLATE B-4

LOG OF TEST PIT NO. T-5

SHEET 1 OF 1

DEPTH	FIELD: SAMPLE	FIELD: USCS CLASS.	FIELD: BLOW COUNT	FIELD: POCKET PEN. (tsf)	DESCRIPTION OF MATERIAL	LABORATORY: DRY DENSITY (pcf)	LABORATORY: MOISTURE CONTENT (% dry wt.)	LABORATORY: OTHER TESTS
0					SAND (SP-SM): Grey-brown, dry, medium dense, fine to very fine grained	92.6	0.5	
						82.3	2.0	
5								
10								
15					Total Depth = 10.0 feet. Moisture and density values by Nuclear Densometer (ASTM 6938) Backfilled with excavated soil			
20								
25								
30								

DATE EXCAVATED: 9/2/21 | TOTAL DEPTH: 10.0 feet | DEPTH TO WATER: N/A

LOGGED BY: L. Jackson | TYPE OF BIT: Backhoe | DIAMETER: N/A

SURFACE ELEVATION: | HAMMER WT.: N/A | DROP: N/A

PROJECT NO. LP21237

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PLATE B-5

DEFINITION OF TERMS

PRIMARY DIVISIONS			SYMBOLS		SECONDARY DIVISIONS
Coarse grained soils More than half of material is larger that No. 200 sieve	Gravels	Clean gravels (less than 5% fines)		GW	Well graded gravels, gravel-sand mixtures, little or no fines
	More than half of coarse fraction is larger than No. 4 sieve			GP	Poorly graded gravels, or gravel-sand mixtures, little or no fines
		Gravel with fines		GM	Silty gravels, gravel-sand-silt mixtures, non-plastic fines
				GC	Clayey gravels, gravel-sand-clay mixtures, plastic fines
	Sands	Clean sands (less than 5% fines)		SW	Well graded sands, gravelly sands, little or no fines
	More than half of coarse fraction is smaller than No. 4 sieve			SP	Poorly graded sands or gravelly sands, little or no fines
		Sands with fines		SM	Silty sands, sand-silt mixtures, non-plastic fines
				SC	Clayey sands, sand-clay mixtures, plastic fines
Fine grained soils More than half of material is smaller than No. 200 sieve	Silts and clays			ML	Inorganic silts, clayey silts with slight plasticity
	Liquid limit is less than 50%			CL	Inorganic clays of low to medium plasticity, gravely, sandy, or lean clays
				OL	Organic silts and organic clays of low plasticity
	Silts and clays			MH	Inorganic silts, micaceous or diatomaceous silty soils, elastic silts
	Liquid limit is more than 50%			CH	Inorganic clays of high plasticity, fat clays
				OH	Organic clays of medium to high plasticity, organic silts
Highly organic soils				PT	Peat and other highly organic soils

GRAIN SIZES

Silts and Clays	Sand			Gravel		Cobbles	Boulders
	Fine	Medium	Coarse	Fine	Coarse		
200	40	10	4	3/4"	3"	12"	

US Standard Series Sieve — Clear Square Openings

Sands, Gravels, etc.	Blows/ft. *
Very Loose	0-4
Loose	4-10
Medium Dense	10-30
Dense	30-50
Very Dense	Over 50

Clays & Plastic Silts	Strength **	Blows/ft. *
Very Soft	0-0.25	0-2
Soft	0.25-0.5	2-4
Firm	0.5-1.0	4-8
Stiff	1.0-2.0	8-16
Very Stiff	2.0-4.0	16-32
Hard	Over 4.0	Over 32

* Number of blows of 140 lb. hammer falling 30 inches to drive a 2 inch O.D. (1 3/8 in. I.D.) split spoon (ASTM D1586).

** Unconfined compressive strength in tons/s.f. as determined by laboratory testing or approximated by the Standard Penetration Test (ASTM D1586), Pocket Penetrometer, Torvane, or visual observation.

Type of Samples:

Ring Sample Standard Penetration Test Shelby Tube Bulk (Bag) Sample

Drilling Notes:

1. Sampling and Blow Counts
   - Ring Sampler - Number of blows per foot of a 140 lb. hammer falling 30 inches.
   - Standard Penetration Test - Number of blows per foot.
   - Shelby Tube - Three (3) inch nominal diameter tube hydraulically pushed.
2. P. P. = Pocket Penetrometer (tons/s.f.).
3. NR = No recovery.
4. GWT = Ground Water Table observed @ specified time.

LANDMARK
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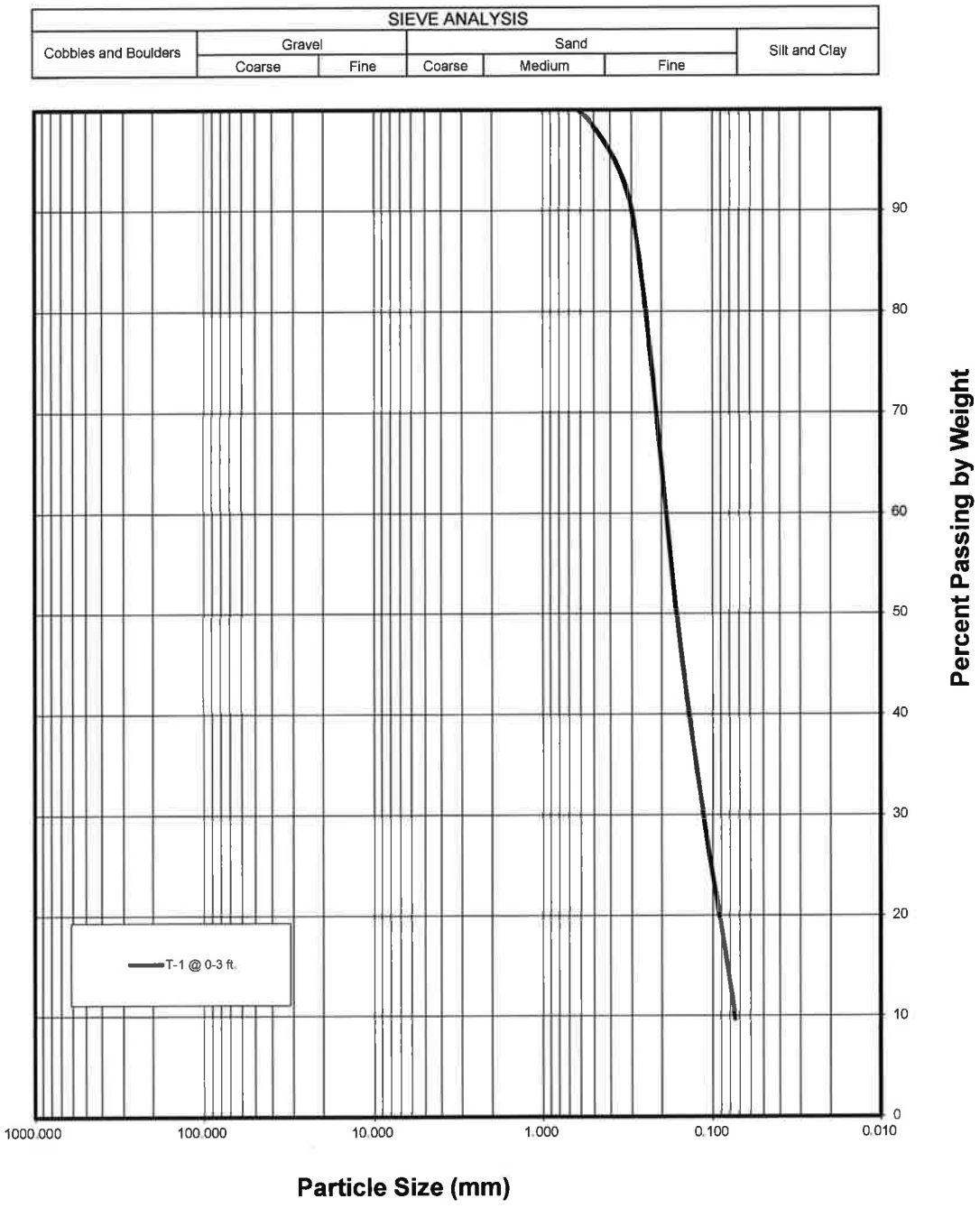
Project No. LP21237

Key to Logs

Plate
B-6

APPENDIX C



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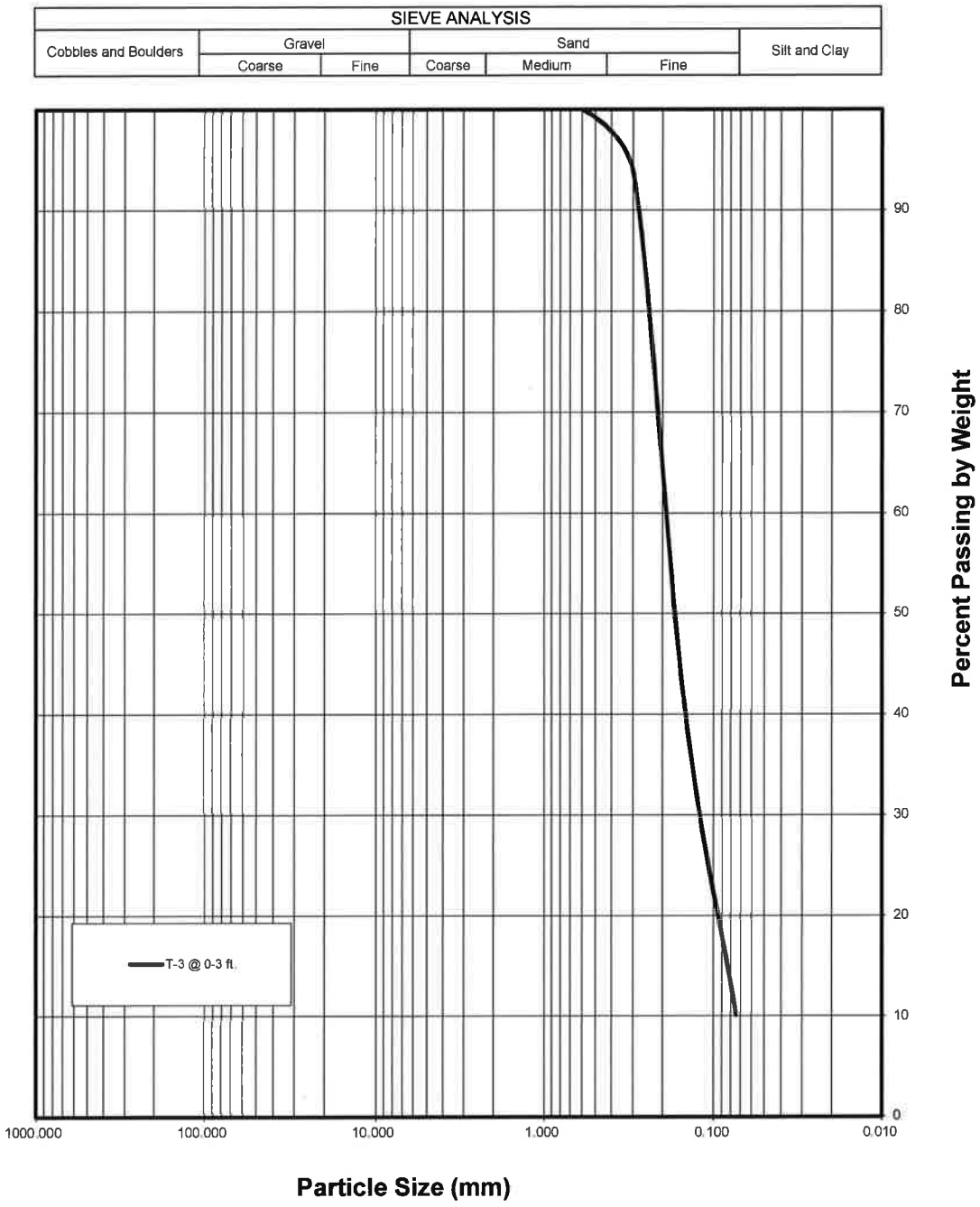
Project No.: LP21237

Grain Size Analysis

Plate
C-1



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Project No.: LP21237

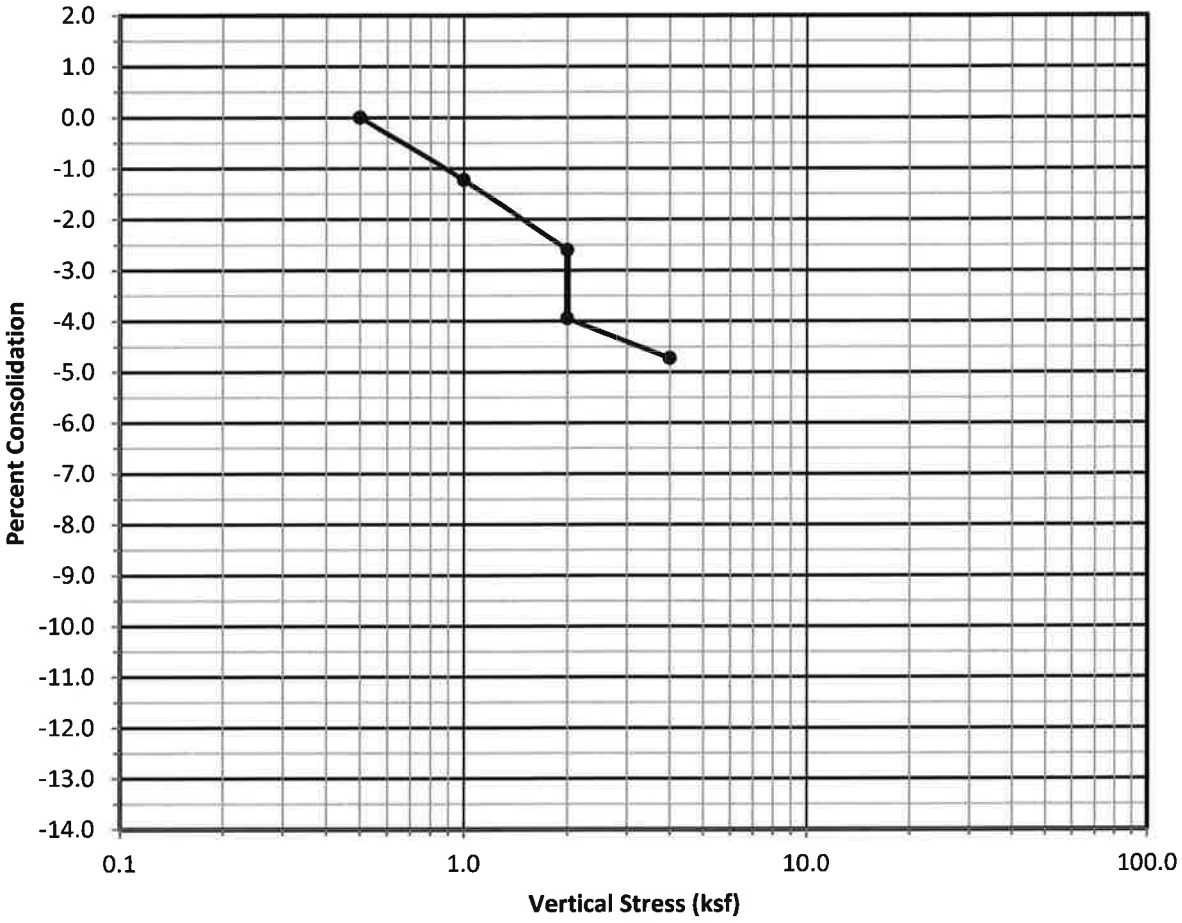
Grain Size Analysis

Plate
C-2

LANDMARK CONSULTANTS, INC.

CLIENT: Bravo Properties Inc.
PROJECT: APNs 685-280-002 & 003 - Rancho Mirage,CA
JOB NO: LP21237
DATE: 9/17/2021

COLAPSE POTENTIAL TEST (ASTM D5333)



Collapse Potential: **1.4 %** **(Slight)**

Results of Test

Sample Location: T-3 @ 5 ft.
Soil Type: Gray Brown Sand (SM/SP)
Overburden Pressure, Po: 0.48 ksf

	Initial	Final
Dry Density (pcf):	94.3	102.0
Water Content (%):	1.4	24.5
Void Ratio (e):	0.754	0.622
Saturation (%):	5.0	104.5

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Geo-Engineers and Geologists

Project No.: LP21237

One Dimensional Consolidation Test Results

Plate C-3

LANDMARK CONSULTANTS, INC.

CLIENT: Bravo Properties, Inc.
PROJECT: APNs 685-280-002 & 003 - Rancho Mirage, CA
JOB No.: LP21237
DATE: 09/14/21

CHEMICAL ANALYSIS

	Boring:	T-1	T-3	Caltrans
	Sample Depth, ft:	0-3	0-3	Method
pH:		8.7	9.4	643
Electrical Conductivity (mmhos):		--	--	424
Resistivity (ohm-cm):		10,100	20,000	643
Chloride (Cl), ppm:		80	80	422
Sulfate (SO4), ppm:		10	5	417

General Guidelines for Soil Corrosivity

Material Affected	Chemical Agent	Amount in Soil (ppm)	Degree of Corrosivity
Concrete	Soluble Sulfates	0 - 1,000	Low
		1,000 - 2,000	Moderate
		2,000 - 20,000	Severe
		> 20,000	Very Severe
Normal Grade Steel	Soluble Chlorides	0 - 200	Low
		200 - 700	Moderate
		700 - 1,500	Severe
		> 1,500	Very Severe
Normal Grade Steel	Resistivity	1 - 1,000	Very Severe
		1,000 - 2,000	Severe
		2,000 - 10,000	Moderate
		> 10,000	Low

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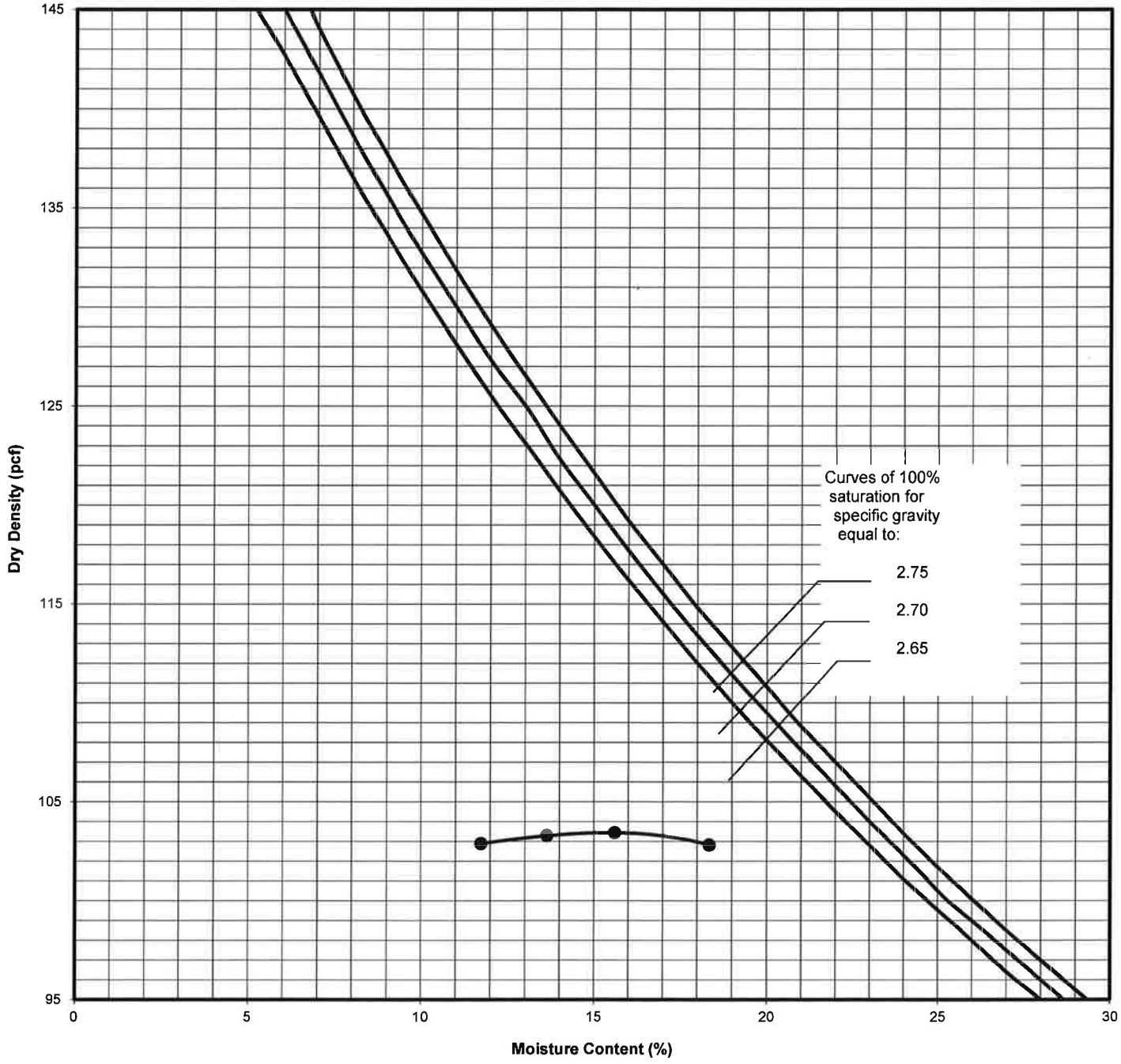
Project No.: LP21237

Selected Chemical Test Results

Plate C-4

Client: Bravo Properties Inc.
Project: APN's 685-280-002 & 003
Project No.: LP21237
Date: 9/14/2021
Lab. No.: N/A

Soil Description: Olive-Brown Silty Sand
Sample Location: T-1 @ 0-3 ft.
Test Method: ASTM D-1557 A
Maximum Dry Density (pcf): **103.4**
Optimum Moisture Content (%): **15.4**



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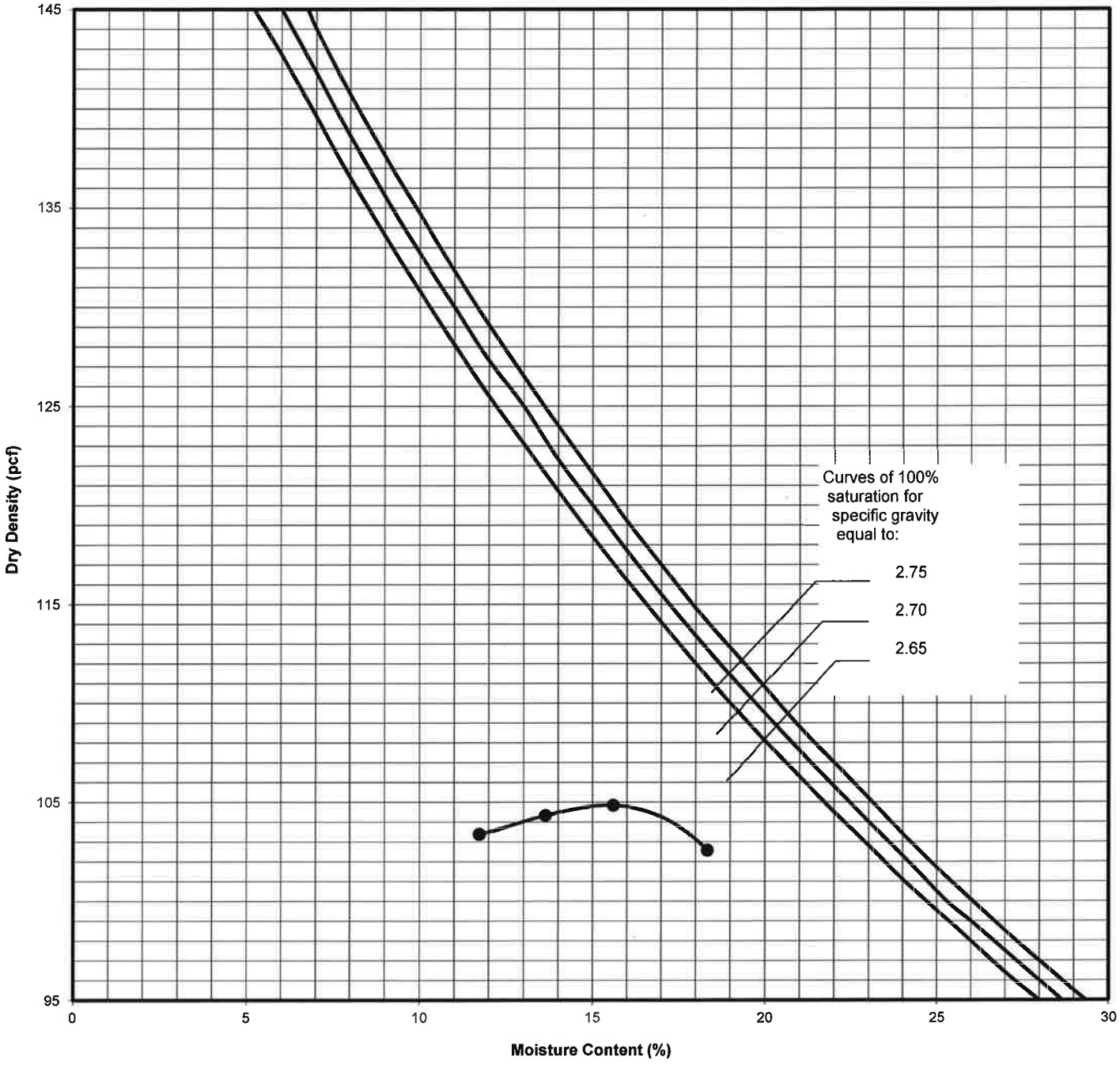
Project No.: LP21237

Moisture Density Relationship

Plate C-5

Client: Bravo Properties Inc.
Project: APN's 685-280-002 & 003
Project No.: LP21237
Date: 9/14/2021
Lab. No.: N/A

Soil Description: Olive-Brown Silty Sand
Sample Location: T-3 @ 0-3 ft.
Test Method: ASTM D-1557 A
Maximum Dry Density (pcf): **104.8**
Optimum Moisture Content (%): **15.4**



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Project No.: LP21237

Moisture Density Relationship

Plate C-6

APPENDIX D

DOUBLE RING INFILTRATION RATE CALCULATIONS

Job No.: LP21237

Test Hole: I-1

Date: 9/9/2021

INNER RING

Interval Number	Initial Water(cm)	Final Water(cm)	Con. Factor (cm to in)	Water (in)	Area Mar. (in2)	Volume (in3)	Area IR (in2)	Time (min)	Time (hr)	Vir (in/hr)
1	50	20	0.39	11.8	8.9	105.6	113.1	4	0.07	14.0
2	37	19	0.39	7.1	8.9	63.4	113.1	4	0.07	8.4
3	45	22	0.39	9.1	8.9	81.0	113.1	4	0.07	10.7
4	30	8	0.39	8.7	8.9	77.5	113.1	4	0.07	10.3
5	48	23	0.39	9.8	8.9	88.0	113.1	4	0.07	11.7
6	50	27	0.39	9.1	8.9	81.0	113.1	4	0.07	10.7
7	27	3	0.39	9.4	8.9	84.5	113.1	4	0.07	11.2
8	49	26	0.39	9.1	8.9	81.0	113.1	4	0.07	10.7
9	26	3	0.39	9.1	8.9	81.0	113.1	4	0.07	10.7
10	50	26	0.39	9.4	8.9	84.5	113.1	4	0.07	11.2
11	26	4	0.39	8.7	8.9	77.5	113.1	4	0.07	10.3
12	50	28	0.39	8.7	8.9	77.5	113.1	4	0.07	10.3
13	28	4	0.39	9.4	8.9	84.5	113.1	4	0.07	11.2
14	49	26	0.39	9.1	8.9	81.0	113.1	4	0.07	10.7
15	26	5	0.39	8.3	8.9	73.9	113.1	4	0.07	9.8
16	47	25	0.39	8.7	8.9	77.5	113.1	4	0.07	10.3
17	25	3	0.39	8.7	8.9	77.5	113.1	4	0.07	10.3
18	50	26	0.39	9.4	8.9	84.5	113.1	4	0.07	11.2
19	26	3	0.39	9.1	8.9	81.0	113.1	4	0.07	10.7
20	48	22	0.39	10.2	8.9	91.5	113.1	4	0.07	12.1
21	45	20	0.39	9.8	8.9	88.0	113.1	4	0.07	11.7
22	50	26	0.39	9.4	8.9	84.5	113.1	4	0.07	11.2
23	26	2	0.39	9.4	8.9	84.5	113.1	4	0.07	11.2
24	49	26	0.39	9.1	8.9	81.0	113.1	4	0.07	10.7
25	26	2	0.39	9.4	8.9	84.5	113.1	4	0.07	11.2
26										
27										
28										
29										
30										

AVERAGE RATE* = 11.1 (in/hr)

DOUBLE RING INFILTRATION RATE CALCULATIONS

Job No.: LP21237

Test Hole: I-2

Date: 9/9/2021

AVERAGE RATE* = 10.4 (in/hr)

INNER RING

Interval Number	Initial Water(cm)	Final Water(cm)	Con. Factor (cm to in)	Water (in)	Area Mar. (in2)	Volume (in3)	Area IR (in2)	Time (min)	Time (hr)	Vir (in/hr)
1	40	10	0.39	11.8	8.9	105.6	113.1	4	0.07	14.0
2	37	19	0.39	7.1	8.9	63.4	113.1	4	0.07	8.4
3	45	22	0.39	9.1	8.9	81.0	113.1	4	0.07	10.7
4	35	13	0.39	8.7	8.9	77.5	113.1	4	0.07	10.3
5	38	13	0.39	9.8	8.9	88.0	113.1	4	0.07	11.7
6	45	22	0.39	9.1	8.9	81.0	113.1	4	0.07	10.7
7	37	13	0.39	9.4	8.9	84.5	113.1	4	0.07	11.2
8	59	35	0.39	9.4	8.9	84.5	113.1	4	0.07	11.2
9	35	15	0.39	7.9	8.9	70.4	113.1	4	0.07	9.3
10	40	15	0.39	9.8	8.9	88.0	113.1	4	0.07	11.7
11	35	15	0.39	7.9	8.9	70.4	113.1	4	0.07	9.3
12	50	28	0.39	8.7	8.9	77.5	113.1	4	0.07	10.3
13	28	4	0.39	9.4	8.9	84.5	113.1	4	0.07	11.2
14	49	26	0.39	9.1	8.9	81.0	113.1	4	0.07	10.7
15	26	5	0.39	8.3	8.9	73.9	113.1	4	0.07	9.8
16	57	35	0.39	8.7	8.9	77.5	113.1	4	0.07	10.3
17	35	15	0.39	7.9	8.9	70.4	113.1	4	0.07	9.3
18	50	27	0.39	9.1	8.9	81.0	113.1	4	0.07	10.7
19	27	5	0.39	8.7	8.9	77.5	113.1	4	0.07	10.3
20	48	22	0.39	10.2	8.9	91.5	113.1	4	0.07	12.1
21	22	9	0.39	5.1	8.9	45.8	113.1	4	0.07	6.1
22	50	26	0.39	9.4	8.9	84.5	113.1	4	0.07	11.2
23	26	2	0.39	9.4	8.9	84.5	113.1	4	0.07	11.2
24	55	30	0.39	9.8	8.9	88.0	113.1	4	0.07	11.7
25	30	12	0.39	7.1	8.9	63.4	113.1	4	0.07	8.4
26										
27										
28										
29										
30										